

December 11, 2018

VIA ELECTRONIC FILING

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

***West Canada Creek Hydroelectric Project (FERC No. 2701)***  
***Filing of Revised Study Plan***

Dear Secretary Bose:

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company, is the Licensee, owner and operator of the West Canada Creek Hydroelectric Project (FERC No. 2701) (Project). The West Canada Creek Project consists of two developments, Prospect and Trenton, and is located on West Canada Creek in Oneida and Herkimer counties, New York. The current license for the West Canada Creek Project expires on February 28, 2023. Erie is pursuing a new license for the Project using the Commission's Integrated Licensing Process (ILP). On February 28, 2018, Erie filed a Notice of Intent (NOI) and Pre-Application Document (PAD) with the Federal Energy Commission (FERC or Commission) to initiate the ILP.

On April 30, 2018, FERC issued a notice of the PAD and NOI filing and commencement of the pre-filing process and requested comments and study requests. FERC concurrently issued Scoping Document 1 (SD1) for the Project to identify the subject areas to be addressed in FERC's environmental analysis of the Project relicensing pursuant to the National Environmental Policy Act (NEPA). On May 30 and May 31, 2018, FERC held the agency and public scoping meetings at the Town of Trenton Municipal Center in Barneveld, New York, and a site visit on May 30, 2018 at the Project. Comments on the PAD and study requests were due on June 29, 2018. On June 28, 2018, FERC provided an Additional Information Request (AIR) and comments on the PAD to Erie. In addition, Erie received multiple stakeholder comments and study requests.

On August 13, 2018, Erie filed a Proposed Study Plan (PSP) with the Commission and provided notice of this PSP to agencies and stakeholders. On September 11, 2018, pursuant to 18 CFR 5.11(e), Erie held a PSP meeting in Utica, New York to clarify the intent and contents of Erie's PSP, and identify any outstanding issues with respect to the PSP. Comments on the PSP were due for filing with FERC within 90 days of filing the PSP, on or before November 11, 2018.

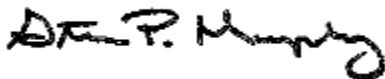
Pursuant to 18 CFR § 5.13(a), Erie is electronically filing the enclosed Revised Study Plan (RSP) for the relicensing of the West Canada Creek Project. The purpose of this RSP is to identify the study plan process schedule, address agency and stakeholder study requests, and to describe Erie's proposed studies and study approaches. In accordance with the Commission's regulations at 18 CFR § 5.1(d), Erie is providing notice of this RSP to appropriate federal and state agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding, as set forth in the attached distribution list.

The RSP electronic files can be downloaded through FERC's eLibrary at <https://www.ferc.gov/docs-filing/elibrary.asp> by searching under the Project's docket P-2701. The RSP can also be downloaded from the Project's relicensing website at: <http://www.westcanadacreekproject.com>.

In accordance with 18 C.F.R. §5.13(b) and the relicensing schedule established for the Project, any comments on the RSP must be filed within 15 days, or by December 26, 2018. In accordance with 18 C.F.R. §5.13(c), the Director of the Commission's Office of Energy Projects will issue a Study Plan Determination on January 10, 2019.

Erie looks forward to working with FERC staff, agencies, Indian tribes, local governments, non-governmental organizations, and members of the public to finalize the study plan for the West Canada Creek Project relicensing. If you have any questions concerning this RSP, or require any additional information, please contact me at (315) 598-6130 or via email at [steven.murphy@brookfieldrenewable.com](mailto:steven.murphy@brookfieldrenewable.com).

Sincerely,



Steven Murphy  
Director, Licensing  
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Attachments: Revised Study Plan

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# REVISED STUDY PLAN

## WEST CANADA CREEK HYDROELECTRIC PROJECT FERC No. 2701-NY

*Prepared for:*

**Erie Boulevard Hydropower, L.P.  
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December 2018



**REVISED STUDY PLAN  
WEST CANADA CREEK HYDROELECTRIC PROJECT  
FERC No. 2701**

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STUDY PLAN

## **DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS**

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ADA	American Disabilities Act
AW	American Whitewater
Brookfield	Brookfield Renewable
CFR	Code of Federal Regulations
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
DLA	Draft License Application
DO	dissolved oxygen
EPRI	Electric Power Research Institute
Erie or Licensee	Erie Boulevard Hydropower, L.P.
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
ft	foot/feet
FWMB	Region 6 New York State Fish and Wildlife Management Board
GIS	geographic information system
GPS	Global Positioning System
ILP	Integrated Licensing Process
IFIM	Instream Flow Incremental Methodology
Interested Parties/ Stakeholders	The broad group of individuals and entities that have an interest in a proceeding
KOP	key observation point
MVWA	Mohawk Valley Water Authority
MVTU	Mohawk Valley Trout Unlimited
MW	Megawatts
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NMPC	Niagara Mohawk Power Company
NWI	National Wetlands Inventory
NYPA	New York Power Authority
NYTU	New York Trout Unlimited
NYSDEC	New York State Department of Environmental Conservation
NYOPRHP	New York Office of Parks, Recreation, and Historic Preservation
PAD	Pre-Application Document
PLP	Preliminary Licensing Proposal

## **DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS**

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PM&E	protection, mitigation, or enhancement
Project	FERC Project No. 2701, West Canada Creek Project
Project Area	The area within the FERC project boundary
Project Boundary	The boundary line defined in the Project license issued by FERC that surrounds the Project
Project Vicinity	The general geographic area in which the Project is located; the towns of Trenton and Prospect, New York
PSP	Proposed Study Plan
RTE	Rare, Threatened or Endangered
RTK	Real Time Kinematics
Relicensing	The process of acquiring a new FERC license for an existing hydroelectric project upon expiration of the existing FERC license
Relicensing Participants	Individuals and entities that are actively participating in a proceeding
RSP	Revised Study Plan
SD	Scoping Document
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SPD	Study Plan Determination
Tailrace	Channel through which water is discharged from the powerhouse turbines
UAV	unmanned aerial vehicle
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCWA	West Canada Watershed Alliance
WQC	Water Quality Certificate

## **1.0 INTRODUCTION AND BACKGROUND**

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Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company (Brookfield), is the Licensee, owner, and operator of the existing 39.8 megawatts (MW) West Canada Creek Hydroelectric Project (FERC Project No. 2701) (Project). The West Canada Creek Project consists of two developments, Prospect and Trenton, and is located on West Canada Creek in Oneida and Herkimer counties, New York (see Figure 1-1). A detailed description of the Project is provided in the Pre-Application Document (PAD) (Erie 2018).

The Federal Energy Regulatory Commission (FERC or Commission) issued the current license for the Project on March 18, 1983, for a term of 40 years. On February 8, 1999 (amended April 14, 1999), Niagara Mohawk Power Corporation (NMPC) and Erie filed a joint application for approval of transfer of the Project license. On July 26, 1999, FERC approved the transfer of license from NMPC to Erie Boulevard Hydropower, L.P. The existing FERC license for operation of the West Canada Creek Project expires February 28, 2023.

Erie intends to file an application for a new license with FERC before February 28, 2021, 2 years prior to the license expiration. Erie is using FERC's Integrated Licensing Process (ILP) as found in Title 18 of the U.S. Code of Federal Regulations (CFR), Part 5. Erie filed a Notice of Intent (NOI) and PAD with the Commission on February 28, 2018, to initiate the ILP. Copies of the PAD are available through the FERC eLibrary by searching under the Project's docket P-2701 at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp>, or at the Project's relicensing website at <http://www.westcanadacreekproject.com>.

On April 30, 2018, FERC issued a notice of the PAD and NOI filing and commencement of the pre-filing process and requested comments and study requests. FERC concurrently issued Scoping Document 1 (SD1) for the Project to identify the subject areas to be addressed in FERC's environmental analysis of the Project relicensing pursuant to the National Environmental Policy Act (NEPA). On May 30 and May 31, 2018, FERC held the agency and public scoping meetings at the Town of Trenton Municipal Center in Barneveld, New York, and a site visit on May 30, 2018 at the Project. Comments on the PAD and study requests were due on June 29, 2018.

On August 13, 2018, Erie filed a Proposed Study Plan (PSP) with the Commission and provided notice of this PSP to agencies and stakeholders. On September 11, 2018, pursuant to 18 CFR 5.11(e), Erie held a PSP meeting in Utica, New York to clarify the intent and contents of the PSP and identify any outstanding issues with respect to the PSP. Comments on the PSP were due for filing with FERC within 90 days of filing the PSP, on or before November 11, 2018.

Erie has prepared this Revised Study Plan (RSP) per FERC's regulations at 18 CFR § 5.13. The purpose of this RSP is to identify the study plan process schedule, address agency and stakeholder study requests, and to describe Erie's proposed studies and study approaches. Section 2.0 of this RSP provides a summary of the study process, schedule, and protocols, Section 3.0 provides a summary of comments received and Erie's response, and Section 4.0 of this RSP provides the individual studies proposed by Erie. Notifications of availability of this RSP are being distributed to the stakeholders and interested parties listed in Appendix A.



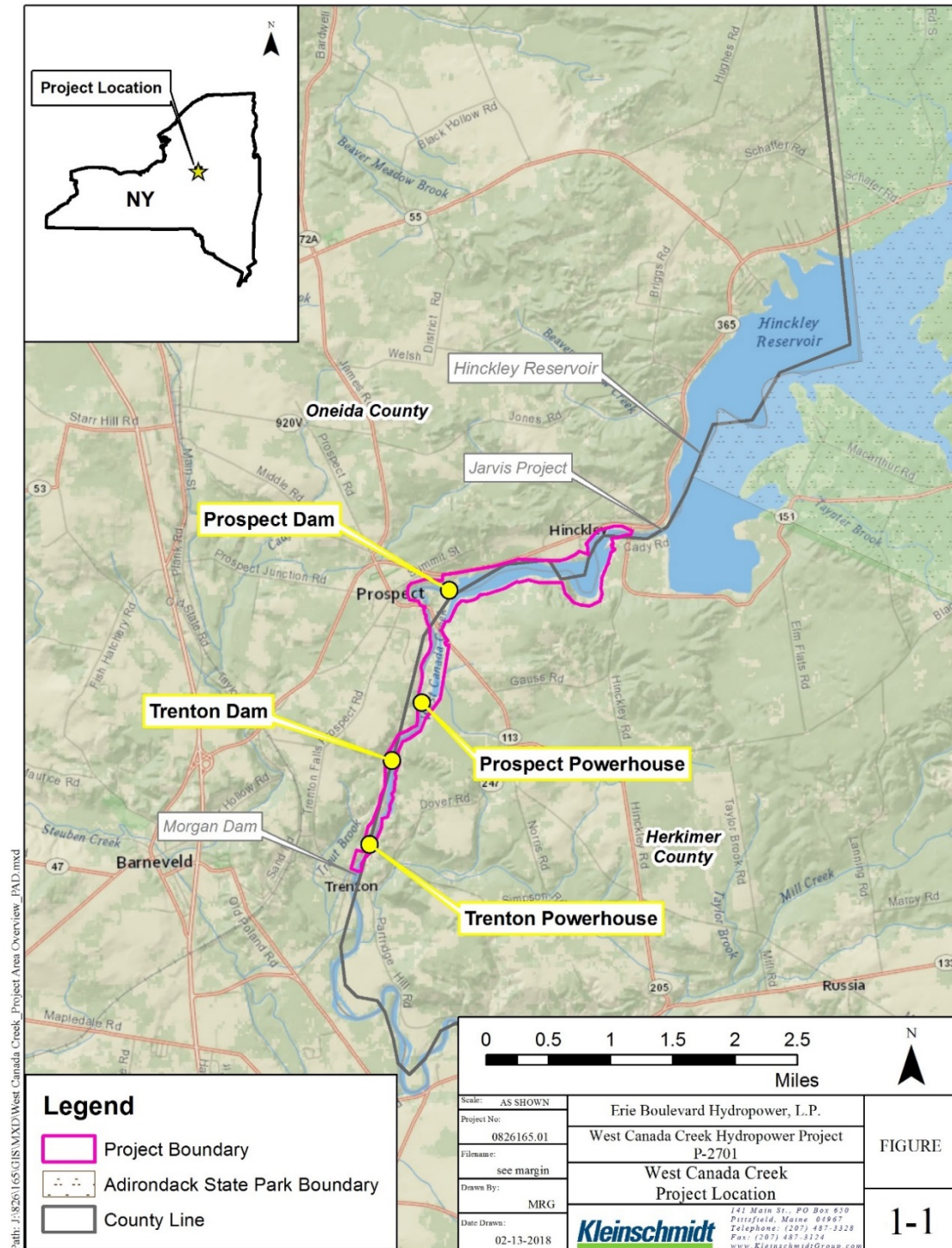


FIGURE 1-1 WEST CANADA CREEK PROJECT LOCATION

## 2.0 STUDY PLAN PROCESS

Comments on the RSP must be filed with FERC within 15 days of filing the PSP, on or before December 26, 2018. The FERC will issue its Study Plan Determination (SPD) by January 10, 2019. Erie will proceed with the studies as approved in FERC's SPD, will prepare regular progress reports, file an initial study report, hold a meeting with stakeholders and FERC staff to discuss the study results, and prepare and file an updated study report. All of the study reports will be filed with FERC via eLibrary and the public study documents will be available through eLibrary and at the relicensing website at <http://www.westcanadacreekproject.com>.

### 2.1 STUDY PLAN SCHEDULE

Table 2-1 provides a general schedule for filing comments on the RSP, FERC's Study Plan Determination, study implementation and reporting, and key milestones up through filing of the license application. Comments on the RSP must be filed with FERC within 15 days of filing the PSP, on or before December 26, 2018.

The FERC will issue its Study Plan Determination (SPD) by January 10, 2019. Erie will proceed with the studies as approved in FERC's Study Plan Determination. Erie will prepare progress reports, file an initial study report, and hold an Initial Study Report meeting with stakeholders and FERC staff to discuss the study results.

**TABLE 2-1 STUDY PLAN AND IMPLEMENTATION SCHEDULE**

ACTIVITY <sup>1</sup>	RESPONSIBLE PARTY	TIMEFRAME	REGULATION	DATES <sup>2,3</sup>
File Revised Study Plan (RSP)	Erie	Within 30 days of deadline for comments on PSP	18 CFR § 5.13(a)	12/11/2018
File Comments on RSP	Stakeholders	Within 15 days following filing of RSP	18 CFR § 5.13(b)	12/26/2018
Issuance of Study Plan Determination (SPD)	FERC	Within 30 days following filing of RSP	18 CFR § 5.13(c)	1/10/2019
Conduct First Season of Studies	Erie	Pursuant to the approved Study Plan and Schedule	18 CFR § 5.15(a)	March through November 2019
Initiate Formal Study Dispute Resolution Process (if necessary)	Mandatory Conditioning Agencies	Within 20 days of Study Plan Determination	18 CFR § 5.14(a)	1/30/19

ACTIVITY <sup>1</sup>	RESPONSIBLE PARTY	TIMEFRAME	REGULATION	DATES <sup>2,3</sup>
Dispute Resolution Panel Convenes	Dispute Resolution Panel	Within 20 days of notice of study dispute	18 CFR § 5.14(d)	2/19/19
File Comments on Study Dispute	Erie	Within 25 days of notice of study dispute	18 CFR § 5.14(i)	2/24/19
Dispute Resolution Panel Issues Recommendations	Dispute Resolution Panel	Within 50 days of notice of study dispute	18 CFR § 5.14(k)	3/21/19
FERC Issues Study Dispute Determination	FERC	Within 70 days of notice of study dispute	18 CFR § 5.14(l)	4/10/19
Conduct First Season of Studies	Erie	Pursuant to the approved Study Plan and Schedule	18 CFR § 5.15(a)	Spring-Fall 2019
	Erie	Conduct Studies	18 CFR § 5.15	Spring-Winter 2019
	Erie	• Data Collection	18 CFR § 5.15	Spring-Fall 2019
	Erie	• Data Analysis/ Consultation	18 CFR § 5.15	Summer-Fall 2019
	Erie	• Report Preparation	18 CFR § 5.15	Fall-Winter 2019
	Erie	• Study Progress Reports	18 CFR § 5.15(b)	July and October 2019
File Initial Study Report	Erie	Pursuant to the approved Study Plan OR no later than 1 year after SPD	18 CFR § 5.15(c)(1)	1/10/2020
Initial Study Report Meeting	Stakeholders	Within 15 days from Initial Study Report	18 CFR § 5.15(c)(2)	1/25/2020
File Initial Study Report Meeting Summary	Erie	Within 15 days following the Initial Study Report meeting	18 CFR § 5.15(c)(3)	2/9/2020
File Meeting Summary Disagreements	Stakeholders	Within 30 days of filing study results meeting summary	18 CFR § 5.15(c)(4)	3/10/20
File Responses to Meeting Summary Disagreements	Stakeholders	Within 30 days of filing meeting summary disagreements	18 CFR § 5.15(c)(5)	4/9/20
Resolution on Disagreements	FERC	Within 30 days of filing responses to disagreements	18 CFR § 5.15(c)(6)	5/9/20
Conduct Second Season of Studies (if necessary)	Erie		18 CFR § 5.15(a)	TBD 2020
File Preliminary Licensing Proposal (PLP) or Draft License Application (DLA)	Erie	No later than 150 days prior to deadline for filing Final License Application	18 CFR § 5.16(a)	10/1/2020
File Comments on Applicant's PLP or DLA	Stakeholders	Within 90 days of filing PLP or DLA	18 CFR § 5.16(e)	12/30/2020

ACTIVITY <sup>1</sup>	RESPONSIBLE PARTY	TIMEFRAME	REGULATION	DATES <sup>2,3</sup>
File Updated Study Report (if necessary)	Erie	Pursuant to the approved Study Plan OR no later than two years after SPD	18 CFR § 5.15(f)	1/10/2021
Updated Study Report Meeting (if necessary)	Stakeholders	Within 15 days of Updated Study Report	18 CFR § 5.15(f)	1/25/2021
File Updated Study Report Meeting Summary (if necessary)	Erie	Within 15 days of Study Results Meeting	18 CFR § 5.15(f)	2/9/2021
File Final License Application	Erie	No later than 24 months before existing license expires	18 CFR § 5.17	2/28/2021

<sup>1</sup> Activities in shaded areas are not necessary if there are no study disputes.

<sup>2</sup> If the due date falls on a weekend or holiday, the deadline is the following business day.

<sup>3</sup> The schedule is subject to change throughout the relicensing proceeding. For updated schedules, see [www.westcanadacreekproject.com](http://www.westcanadacreekproject.com).

## 2.2 STUDY PROTOCOLS AND SAFETY CONSIDERATIONS

All fieldwork that may be performed by Erie personnel, contractors, or other entities or individuals during the course of the relicensing studies will be conducted in accordance with Brookfield's safety policies and procedures. The following general understandings, concepts, and practices will apply to all field aspects of the relicensing studies:

- Personal safety is the most important consideration of each fieldwork team.
- The field crew will follow the protocols developed for the FERC-approved study, however, field crews may make minor variances to the FERC-approved study in the field to accommodate actual field conditions and unforeseen problems. In the event that minor variances are made, they will be documented and summarized in the Initial Study Report.

In the conduct of the relicensing studies, Erie will not authorize any activity that could create an unsafe condition, lead to an unsafe act, or present an unacceptable risk to the safety of the public, personnel, the environment, or operating equipment.

### **3.0 RESPONSES TO COMMENTS AND STUDY REQUESTS**

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#### **3.1 SUMMARY OF COMMENTS RECEIVED**

Erie's PSP provided FERC, regulatory agencies, and interested parties with the opportunity to comment on the studies proposed by Erie. Pursuant to 18 CFR § 5.12 "comments must include an explanation of any study plan concerns and any accommodations reached with the applicant [Erie] regarding those concerns." Any additional study requests or proposed modifications to Erie's proposed studies must follow FERC's ILP Study Request Criteria under Section 5.9(b) of the FERC's ILP regulations, as follows:

- Describe the goals and objectives of each study proposal and the information to be obtained;
- If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
- If the requestor is not a resource agency, explain any relevant public interest considerations regarding the proposed study;
- Describe existing information concerning the subject of the study proposal, and the need for additional information;
- Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
- Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
- Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

Erie received a total of 32 comment letters in response to the PAD and SD1 (see Table 3-1 and Appendix B) and 6 comment letters from stakeholders, including study requests in response to the PSP (see Table 3-2 and Appendix C), including comments from FERC, U.S. Fish and Wildlife Service (USFWS), New York State Department of Environmental Conservation (NYSDEC), American Whitewater (AW), New York Trout Unlimited (NYTU), and Citizens for

Hinckley. Study requests and comments received, including commenting entity, and summary of Erie's response and revisions to studies are summarized in Table 3-3.

FERC comments on the study plans are addressed under each study plan in Section 4.0. FERC also requested that Erie include a provision for at least one progress report under each of the proposed study schedules. Erie added clarification under each study schedule to identify that a study progress update will be provided in a Study Progress Report (anticipated in July and October 2019).

The USFWS in providing comments to the PAD requested that Erie provide additional information regarding the minimum flow valve at the Trenton powerhouse, and suggested modifications to the language and presentation of the flow duration curves in the PAD. This information will be provided in the draft license application filing.

**TABLE 3-1 SUMMARY OF PAD/SD1 COMMENTS AND/OR STUDY REQUESTS RECEIVED**

<b>FILING DATE</b>	<b>COMMENTING ENTITY</b>	<b>ILP STUDY REQUEST<sup>1</sup></b>	<b>GENERAL STUDY REQUEST<sup>2</sup></b>	<b>COMMENTS</b>
06/28/2018	Federal Energy Regulatory Commission (FERC), John Smith, Chief Mid-Atlantic Branch			✓
06/28/2018	U.S. Fish and Wildlife Service (USFWS), David Stillwell, Field Supervisor	✓		✓
07/03/2018	Environmental Protection Agency (USEPA), Grace Musumeci, Chief Environmental Review Section		✓	✓
06/29/2018	New York Department of Environmental Conservation (NYSDEC), Todd Phillip, Environmental Analyst, Division of Environmental Permit	✓		✓
07/24/2018	New York State Senator, 49 <sup>th</sup> District, James Tedisco			✓
06/26/2018	New York State Senator, 47 <sup>th</sup> District, Joseph Griffo			✓
6/13/2018	New York State Assemblyman, 118 <sup>th</sup> District, Mark Butler			✓
06/21/2018	American Whitewater (AW), Robert Nasdor, Northeast Stewardship and Legal Director	✓		✓

FILING DATE	COMMENTING ENTITY	ILP STUDY REQUEST <sup>1</sup>	GENERAL STUDY REQUEST <sup>2</sup>	COMMENTS
06/29/2018	Region 6 NYS Fish and Wildlife Management Board (FWMB), Walt Paul, Chair		✓	✓
07/02/2018	Town of Trenton, Joseph Smith, Town Supervisor			✓
06/29/2018	West Canada Watershed Alliance (WCWA), Thomas J Zembrzusi		✓	✓
06/29/2018	Citizens for Hinckley, Blake Bellinger			✓
06/18/2018	New York Trout Unlimited (NYTU), William Wellman, Hydro Chair		✓	✓
06/14/2018	Mohawk Valley Trout Unlimited (MVTU), Ken Ziobro, President			✓
06/29/2018	WCWA, Kathleen Kellogg			✓
05/31/2018	John Garver, Individual		✓	✓
06/27/2018	West Canada Creek Assn. Inc., Robert J. Grose, President			✓
05/31/2018	Kevin Keeley, Individual			✓
60/04/2018	Robert Carnevale, Individual			✓
06/28/2018	Bob Carnevale, Individual			✓
06/07/2018	Mark Reardon, Individual			✓
06/14/2018	Reed Willis, Individual			✓
06/25/2018	Steven Wheeler, Individual			✓
06/26/2018	Justin Waters, Individual			✓
06/26/2018	Patricia Gunio, Individual		✓	✓
06/26/2018	Thomas Slusarczyk Esq., Individual			✓
06/27/2018	Rosemary Darcy, Individual			✓
06/28/2018	David and Stephanie Fransman, Individuals			✓
06/29/2018	Salvatore Longo, Individual		✓	
06/29/2018	Katrina Hanna, Individual			✓
07/02/2018	Stuart Miller, Individual			✓
07/02/2018	George Doolittle, Individual			✓

<sup>1</sup>Entities provided study requests according to ILP study request criteria.<sup>2</sup>Entities provided general study request comments but did not provide detailed study request with ILP study request criteria.

**TABLE 3-2 SUMMARY OF PSP COMMENTS AND/OR STUDY REQUESTS RECEIVED**

<b>FILING DATE</b>	<b>COMMENTING ENTITY</b>	<b>ILP STUDY REQUEST<sup>1</sup></b>	<b>GENERAL STUDY REQUEST<sup>2</sup></b>	<b>COMMENTS</b>
11/13/2018	Federal Energy Regulatory Commission (FERC), John Smith, Chief Mid-Atlantic Branch			✓
11/09/2018	U.S. Fish and Wildlife Service (USFWS), David Stillwell, Field Supervisor	✓		✓
11/13/2018	New York Department of Environmental Conservation (NYSDEC), Todd Phillip, Environmental Analyst, Division of Environmental Permit	✓		✓
10/29/2018	American Whitewater (AW), Robert Nasdor, Northeast Stewardship and Legal Director	✓		✓
11/08/2018	New York Trout Unlimited (NYTU), William Wellman, Hydro Chair		✓	✓
11/09/2018	Citizens for Hinckley, Blake Bellinger			✓

<sup>1</sup>Entities provided study requests according to ILP study request criteria.<sup>2</sup>Entities provided general study request comments but did not provide detailed study request with ILP study request criteria.



**TABLE 3-3 SUMMARY OF PROPOSED STUDIES AND STUDY REQUESTS**

PROPOSED /REQUESTED STUDY	COMMENTING ENTITY <sup>1,2</sup>	PARTIALLY ADOPTED	NOT ADOPTED	SUMMARY OF ERIE'S REVISIONS TO PROPOSED STUDIES
Aquatic Mesohabitat Assessment Study (Section 4.1).	FERC, USFWS, NYSDEC, FWMB, NYTU,			Expanded methodology to include additional discussion of field methodology and logger data to include temperature and dissolved oxygen information.
Macroinvertebrate and Freshwater Mussel Surveys (Section 4.2).	FERC, USFWS, NYSDEC,	✓		Expanded methodology to include more detail on macroinvertebrate and mussel sampling approach.
Impoundment Shoreline Characterization Study (Section 4.3)	FERC, USFWS	✓		Expanded methodology to include additional discussion of field methodology and added identification of all wetlands that could be affected by Project operations.
Fish Assemblage Assessment (Section 4.4).	USFWS, NYSDEC, FWMB, NYTU, WCWA	✓		New study to collect fish assemblage information in the Project impoundments and Prospect power canal to provide additional information on fish assemblage in the impoundments and to inform the Fish Entrainment and Turbine Passage Survival Assessment.
Fish Entrainment and Turbine Passage Survival Assessment (Section 4.5)	USFWS, NYSDEC	✓		Information from the Fish Assemblage Assessment Study will help inform the study regarding the species occurrence, distribution, and relative abundance of fishes in the Project impoundments.
Water Quality Study (Section 4.6)	FERC, USFWS, NYSDEC	✓		Expanded methodology to include sampling of water quality parameters in Prospect bypass reach and downstream to confluence with Newport Dam impoundment.
Recreation Use, Needs and Access Study (Section 4.7)	FERC, AW, NYSDEC, Individuals	✓		Expanded methodology to include increased distribution of visitor survey, added angler survey questions, and provided additional detail on public access and safety assessment.
Whitewater Boating Flow and Access Study (Section 4.8)	FERC, AW, NYSDEC	✓		Separated into new stand-alone study and expanded methodology to include phased approach to assess whitewater boating flow and access within the Prospect bypass reach and downstream to Mohawk River confluence (desktop) and Newport Dam (flow assessment).

PROPOSED /REQUESTED STUDY	COMMENTING ENTITY <sup>1,2</sup>	PARTIALLY ADOPTED	NOT ADOPTED	SUMMARY OF ERIE'S REVISIONS TO PROPOSED STUDIES
Aesthetics Flow Assessment Study (Section 4.9)	FERC, <b>AW</b> , FWMB WCWA, NYTU	✓		Expanded methodology to include phased approach and flow assessment component.
West Canada Downstream Base Flow Study	<b>USFWS</b> , <b>NYSDEC</b> , WCWA, NYTU,		✓	See discussion in Section 3.3. Previous IFIM study provides sufficient information, managed for stocked brown trout fishery.
Prospect and Trenton Bypassed Reach Flow Study	<b>USFWS</b> , <b>NYSDEC</b> , NYTU		✓	See discussion in Section 3.3. Information pertaining to the study of the Project bypass reaches is provided under the Aquatic Mesohabitat Assessment Study (Section 4.1) and the Aesthetics Flow Assessment Study (Section 4.9).
Wetlands Identification Study	<b>USFWS</b> , <b>NYSDEC</b>	✓		Wetlands identification assessment is included as a component of the Aquatic Mesohabitat Assessment Study (Section 4.1). and the Impoundment Shoreline Characterization Study (Section 4.3).
Invasive Species Assessment	USEPA	✓		Invasive species assessment is included as a component of the Impoundment Shoreline Characterization Study (Section 4.3)

<sup>1</sup> Entities in bold provided study requests according to ILP study request criteria.

<sup>2</sup> USFWS-U.S. Fish and Wildlife Service, USEPA- U.S. Environmental Protection Agency, NYSDEC-New York State Department of Environmental Conservation, FWMB-Region 6 NYS Fish and Wildlife Management Board, NYTU-New York Trout Unlimited, WCWA-West Canada Watershed Alliance, AW-American Whitewater

### 3.2 PROPOSED STUDIES AND GENERAL STUDY CONSIDERATIONS

This RSP is being filed with the Commission pursuant to Section 5.13 of FERC's ILP Regulations and the Process Plan and Schedule provided in the FERC's SD2. Erie has carefully reviewed and considered agency and stakeholder comments and study requests filed in response to the PAD, SD1, SD2, PSP comments, and discussion at the PSP Meeting. Erie's determination on the appropriateness of a study request is based on the criteria for study requests contained in the ILP regulations (18 CFR § 5.9(b)). However, Erie undertook a thorough effort to identify and evaluate individual study requests regardless of whether these requests made a reasonable attempt to demonstrate consistency with FERC's study criteria.

The general purpose of the studies for the West Canada Creek relicensing are to gather pertinent resource information pertaining to potential Project-related resource effects. The studies proposed by Erie are intended to gather additional information to that provided in the PAD for the development of the draft and final license applications, and to provide pertinent resource information for consideration in FERC's environmental analysis of the relicensing of the West Canada Creek Project.

Erie is proposing nine studies for the West Canada Creek Project relicensing to address resources for which insufficient information was previously available for the PAD, or for which specific issues have been identified through scoping and stakeholder comments. This includes the seven studies originally proposed in the PSP, and two additional studies – the Fish Assemblage Assessment (Section 4.4), and the Whitewater Boating Flow and Access Study (Section 4.8), which has been separated out from the Recreation Study as an independent study. These studies include:

1. Aquatic Mesohabitat Assessment Study;
2. Macroinvertebrate and Freshwater Mussel Surveys;
3. Impoundment Shoreline Characterization Study;
4. Fish Assemblage Assessment
5. Fish Entrainment and Turbine Passage Survival Assessment;
6. Water Quality Study;
7. Recreation Use, Need and Access Study;

8. Whitewater Boating Flow and Access Study; and
9. Aesthetics Flow Assessment Study.

Section 4.0 of this RSP provides additional detail and in some cases modifies the scope and methodology of the studies presented in the PSP. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study. The individual study plans include a discussion of the criteria for study requests contained in the ILP regulations (18 CFR § 5.9(b)), including: a summary of study requests and consultation, general study description, a discussion of goals and objectives, study area, background and existing information, project nexus, methodology, consistency with standard methodologies, deliverables and schedule, estimated cost and level of effort, and references.

### **3.3 REQUESTED STUDIES NOT ADOPTED**

Erie undertook a thorough effort to identify and evaluate individual study requests regardless of whether these requests made a reasonable attempt to demonstrate consistency with FERC's study criteria. Erie's determination on the appropriateness of a study request is based on the criteria for study requests contained in the ILP regulations (18 CFR § 5.9(b)) (see Section 3.0). As indicated in Section 4.0, Erie adopted components of many of the study requests and consolidated these requests into other studies, as appropriate. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study.

As required by 18 CFR § 5.11(b)(4), if the Licensee does not adopt a requested study, an explanation of why the request was not adopted, with reference to the criteria set forth in § 5.9(b) must be included in the PSP. The following section includes a discussion of the formal study requests (those which provided the required study plan criteria set forth in § 5.9) that are not adopted by Erie.

### **3.3.1 DOWNSTREAM BASEFLOW STUDY**

#### **Study Request**

The USFWS and NYSDEC requested that Erie conduct an Instream Flow Incremental Methodology (IFIM) study downstream of the Trenton tailrace. NYSDEC is seeking to update and refine the study conducted by Ichthyological Associates (1981) in the same stream reach. The requested study recommends utilizing a quantitative IFIM. USFWS further requested an analysis of base flow vs. peak flow effects that would include macrohabitat parameters such as winter and summer temperature and dissolved oxygen (DO). The requested study was recommended to occur over two years.

#### **Erie Response**

The reach of West Canada Creek located downstream from the Project is influenced by discharges from both the Jarvis Project (FERC No. 3211) as well as the West Canada Creek Project. An IFIM study was previously completed in the reach downstream from the West Canada Creek Project by Ichthyological Associates to evaluate base flows suitable for maintaining habitat for multiple life stages of both brown trout and smallmouth bass (Ichthyological Associates 1981). The study encompassed multiple study reaches downstream of Trenton station with a total of 41 transects, including representative riffle, run and pool mesohabitat types. The study reaches included: Reach 1 (11 transects) at 0.3 miles downstream; Reach 2 (14 transects) at 1.6 miles downstream; and Reach 3 (16 transects) at 23.3 miles downstream. The instream flow study concluded that the 160 cubic feet per second (cfs) release provided optimal or near optimal flow conditions for all life stages of both brown trout and smallmouth bass.

Under the Jarvis Project (P-3211) relicensing proceedings, the USFWS and NYSDEC requested that the New York Power Authority (NPYA) (licensee to the Jarvis Project) conduct a Delphi flow study for the section of the West Canada Creek below the Morgan dam. In FERC's Study Plan Determination for the Jarvis Project, FERC concluded that Ichthyological Associates (1981) is quantitatively robust, provides predictive power, and that the habitat-flow relationships in the study had a focus on brown trout, which remains the key management species in this section of West Canada Creek (FERC 2018). FERC also deemed that "*the results of the existing IFIM study*

*will be sufficient to assess the potential effects (gains or losses in habitat) of alternative minimum flows that may be proposed during the licensing process.” FERC, therefore, did not recommend that the NYPA conduct the requested flow study.*

The NYSDEC and USFWS provided specific comments and rationale to support the need for a revised IFIM study for the West Canada Creek below the Trenton station. Erie provides responses and rationale below to refute the need for additional IFIM study for this reach and support the application of Ichthyological Associates (1981), as supported under FERC’s Study Plan Determination findings for the Jarvis Project.

The following are excerpts from NYSDEC comments and study request letter dated June 28, 2018, pertaining to the proposed IFIM study and Erie responses.

- NYSDEC: “...*the original IFIM study was performed for the Project is now 40 years old. The West Canada Creek ...has changed drastically since then. It is likely that stream characteristics and geometry...have changed since the 1980 IA study was completed. An updated survey...may result in an optimum flow that differs from that determined 40 years ago...*”

Erie Response: The NYSDEC speculates that the West Canada Creek has changed drastically since 1980 but does not provide examples to support this statement. Although Erie understands that river channels are somewhat dynamic over time (Dunn and Leopold, 1978), it is not evident that any such hypothetical changes are significant enough to substantially affect the suitability of fish habitat (*i.e.*, substrates, depths and velocities) available at different flows. However, Erie is proposing to conduct an aquatic mesohabitat survey that will document habitat types and channel conditions in the segment of West Canada Creek extending from the Trenton tailrace to the confluence of the Newport Dam impoundment (see, Aquatic Mesohabitat Assessment Study, Section 4.1).

- NYSDEC: “...*it was assumed that NMPC releases were accurate and that discharge remained constant within each release...The NYSDEC never received confirmation that the NMPC releases were accurate and that releases remained constant...*”

Erie Response: According to FERC, “New York DEC questions the accuracy of these six flows. However, flow measurements made along each transect verified the actual flows evaluated were similar to the planned flows based on the study design. Specifically, the mean difference between measured (actual) and intended (planned) flows across all transects and reaches ranged from 1 cfs to 21 cfs, with a mean difference of just 12 cfs.” (FERC, May 11, 2018). Erie concurs with FERC’s conclusion that flows were adequately accurate.

- NYSDEC: *“On page 10 of the IA study ... its stated that calculated discharge varied among transects at the same reach and release which reflected the fact that transects were located to calculate habitat availability and not discharge...”*

Erie Response: It is not uncommon for discharge calculations to vary among transects during stable inflow situations. There is inherent variability in stream bed porosity that can create “gaining” or “losing” flow depending on whether areas are well armored such as bedrock or clay or composed of materials such as sand or gravel with numerous interstitial cavities. In addition, natural stream channels in the type of topography commonly found in this region commonly lack ideal gaging conditions due to bed geometry or complexity. Under optimal conditions the variability of a flow estimate can be typically +/- 15%. For these reasons, hydrologists look at the totality of the data and apply professional judgement to provide a best-estimate of flow. This is not a study flaw; the same limitation would likely persist in a new study. Erie concludes that this criticism is, therefore, not a justification for conducting a new study.

- NYSDEC: *“Furthermore, the conclusion of the IA report... stated that the determination of usable habitat from the incremental approach should be treated as a relative rather than an absolute manner.”*

Erie Response: This cautionary note from Ichthyological Associates (1981) is consistent with the IFIM methodology and would also be applicable to any potential new quantitative IFIM study (Bovee 1982, Bovee *et al.*, 1998); the same limitation would, therefore, be applicable to any potential new study be performed. Erie concludes that this criticism is, therefore, not a justification for conducting a new study.

- NYSDEC: “...the incremental approach used in this study only considered substrate, velocity and depth; while other physical and/or biological factors...may prevent full utilization of all the indicated habitat.”

Erie Response: As noted earlier, FERC deemed that “the results of the existing IFIM study will be sufficient to assess the potential effects (gains or losses in habitat) of alternative minimum flows that may be proposed during the licensing process.” Erie notes that while Ichthyological Associates (1981) focused primarily on how flow changes affect the parameters of substrate, velocity and depth all evidence indicates that this section of river has consistently supported a healthy fishery under the existing flow regime provided by Erie, which was based on conclusions drawn from Ichthyological Associates (1981). Erie concludes that the additional parameters cited by NYSDEC are not necessarily limiting factors relative to habitat suitability, and therefore, proposes to rely on the results of Ichthyological Associates (1981).

The following are excerpts from USFWS comments and study request letter dated June 28, 2018, pertaining to the proposed IFIM study and Erie responses.

- USFWS: “Since the original license was issued, stakeholders have noted deficiencies with the 160 cfs minimum flow...below the Project...fish are noted to be confined to pools and likely heat-stressed with low DO availability. Additionally, winter temperature changes due to peaking water level changes likely cause mortality... (these issues) have demonstrated that a more detailed investigation, including additional aspects of the hydrological environment, is necessary in order to determine an adequate minimum flow...”

Erie Response: Although the USFWS hypothesizes about possible climate-induced stresses to brown trout occurring during summer and winter, it does not provide any evidence this is presently occurring. Erie has proposed both mesohabitat mapping and water quality studies (see Sections 4.1, Aquatic Mesohabitat Assessment Study, and 4.6 Water Quality Study) that would provide information about channel microhabitat (*wetted area, depth, velocity and substrate*) and macrohabitat (*water temperature and dissolved oxygen*) conditions that can be used in conjunction with the information in Ichthyological Associates (1981). Erie proposes to rely on the 1980 IFIM study (Ichthyological



Associates, 1981) to assess microhabitat effects to be consistent with FERC's determination on this reach as discussed above.

- **USFWS:** *"The PAD does not present any information from the existing flow and air and water temperature monitoring studies that include an analysis of the interrelated effects of flow volume, temperature, DO, fish and macroinvertebrate species across trophic levels and peaking operations in relation to habitat availability."*

**Erie Response:** Erie proposes to conduct studies to address these information needs as described in Sections 4.1, Aquatic Mesohabitat Assessment Study, 4.2, Macroinvertebrate and Freshwater Mussel Surveys, and 4.5, Water Quality Study. Specifically, the Aquatic Mesohabitat Assessment (Section 4.1) will document the spatial distribution of mesohabitats (e.g., pool, run, glide, riffle) downstream from the Trenton tailrace that could potentially be affected by peaking operations. Erie proposes placement of level loggers in representative mesohabitats in portions of the downstream study area to characterize changes in hydraulics between base and peaking flows (as described in Section 4.1), to inform on the magnitude and extent to which changes from base flow to peak flow may or may not affect microhabitat features. Level logger output will be linked to related transects with surveyed bed elevations so that effects of project operation and discharge on wetted area and depth can be assessed. Erie also proposes to monitor water temperature and DO between Trenton and Newport during summer climate conditions.

## **References**

- Bovee, K.D. 1982. A guide to stream habitat analysis using the instream flow incremental methodology. Office of Biol. Serv., USFWS, U.S. Dept. Of Interior, Washington, DC. FWS/OBS-82-26. 248 pp.
- Bovee, K.D., B.L. Lamb, J.M. Bartholow, C.B. Stalnaker, J. Taylor and J. Henriksen. 1998. Stream habitat analysis using the instream flow incremental methodology. U.S. Geological Survey (USGS), Biological Resources Division Information and Technology Report, USGS/BRD-1998-0004/ viii + 131 pp.
- Dunn, T., and L.B. Leopold. 1978. Water in environmental planning. W.H. Freeman and Company. New York, NY. 818 pp.
- Federal Energy Regulatory Commission (FERC). 2018. Study Plan Determination for the Hinckley (Gregory B. Jarvis Hydroelectric Project, dated May 11, 2018.

Ichthyological Associates 1981. Fish-habitat flow relationships at six flow releases below Trenton hydroelectric station on West Canada Creek, New York, during August and September 1980. Ichthyological Associates, Inc. Stamford, NY. 75 pp. plus appendices.

### **3.3.2 BYPASS REACH MINIMUM FLOW STUDY**

#### **Study Request**

The USFWS, NYSDEC, and NYTU request that Erie conduct a bypass reach flow study in the Prospect bypassed reach to determine what flows are necessary to provide adequate habitat and protection for aquatic resources in the Prospect bypassed reach. USFWS and NYSDEC recommend an IFIM study to include target species of brown trout and additional species of brook trout, rainbow trout, smallmouth bass and primary food species, water quality sampling (at least temp and DO), habitat mapping type of habitat, depths, velocities and substrates; and address changes in available habitat and min base and peaking flows.

The USFWS, NYSDEC and NYTU recommended that Erie conduct a flow demonstration study in the Trenton bypassed reach to determine what flows are necessary to provide adequate habitat and protection for aquatic resources in the Trenton bypassed reach. USFWS and NYSDEC recommended a flow demonstration to assess wetted habitat and identify aesthetics flows. NYTU comments that a comprehensive flow study is needed to determine flows needed to support habitat and aquatic resources.

#### **Erie Response**

Erie appreciates that the stakeholders understand that the two bypasses have unique characteristics as indicated by the recommendations for differing approaches in each reach. Each reach is bounded by vertical rock walls in narrow canyon-like gorges with limited safe access. Reconnaissance has shown that the upper one-third of the Prospect bypass is comprised of horizontal, smooth bedrock sheet with little or no cover, pools or attributes that create suitable aquatic habitat for the species of concern to the stakeholders. The downstream terminus of this section is a high waterfall that precludes volitional upstream passage for fish inhabiting the contiguous lower reach segment. The reach downstream from the falls, has more varied substrate and cover. Therefore, Erie has proposed to assess habitat suitability from the falls downstream to the Prospect tailrace confluence using the remote sensing methods as a component of the Aquatic

Mesohabitat Assessment Study (see Section 4.1). Erie added further detail to the study scope to clarify how it will address habitat-based stream flow concerns. In summary, Erie proposes to quantitatively map the distribution of mesohabitat, use those data to inform the location of habitat transects and associated water level recorders, gather data at a range of flows, and analyze habitat suitability from those data sets.

Based on reconnaissance, Erie has concluded that the Trenton bypass reach has even poorer access, vertical walls, significant amounts of ledge and boulder substrate, and several large waterfalls that preclude habitat connectivity for aquatic organisms, which results in minimal natural recruitment to this reach and limited value for aquatic habitat resources. Erie proposes to conduct the first phase of the Aquatic Mesohabitat Study in this reach by using remote sensing to quantitatively document existing channel conditions as described in Section 4.1. Other studies will address water quality (see Section 4.6) and aesthetics (see Section 4.9).

## **4.0 REVISED STUDY PLANS**

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### **4.1 AQUATIC MESOHABITAT ASSESSMENT STUDY**

#### **4.1.1 STUDY REQUESTS**

The USFWS and NYSDEC requested flow studies for both the Prospect and Trenton bypass reaches over 1- to 2-year sampling season. The requested study recommended utilizing a flow demonstration approach in the Trenton bypass reach and a quantitative IFIM in the Prospect bypass reach. The USFWS and NYSDEC state that the flow demonstration would evaluate wetted habitat and identify aesthetics flows, and the IFIM study would document habitat suitability for brown trout, brook trout, rainbow trout, smallmouth bass and primary food species. The FWMB and NYTU requested that Erie conduct an evaluation of adequacy of flows and water resource conditions in both bypass reaches.

FERC requested that Erie include a ground-truthing component of the National Wetlands Inventory (NWI) map as part of Erie's proposed aquatic habitat mapping study. FERC stated in comments on the PSP, that deployment of water level loggers that also record temperature would provide additional information for this study and the water quality study. FERC also recommended that this study and the Impoundment Shoreline Characterization Study include drone and/or ground surveys of all wetland habitats that could be affected by project operation and not be limited to NWI identified wetlands. FERC also requested that the RSP include a more detailed description of methodology to evaluate Project effects on wetlands. FERC requested that Erie identify the flow(s) at which unmanned aerial vehicle (UAV) data would be collected in the bypassed reaches and West Canada Creek downstream of the Trenton Development. FERC also requested that Erie clarify the field information that will assist in determining the number and location of water level loggers, the timing and length of level logger deployment, how frequently the loggers will record water stage, and whether or not discharge would be measured at one or more of the logger deployment sites.

#### **4.1.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

For the Aquatic Mesohabitat Assessment Study, Erie proposes to conduct a mesohabitat study of all fluvial parts of the project area, including both the Trenton and Prospect bypass reaches, as

well as the reach downstream from the Project extending from the Trenton tailrace to the confluence of the Newport Dam impoundment. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study. The Aquatic Mesohabitat Assessment Study will provide an assessment of conditions in both bypass reaches to document habitat types and location within the bypass reaches.

This study scope will include an initial drone aerial flight assessment of the bypass reaches and downstream study area, followed by targeted field assessment. This approach applies technology to provide data and documentation of the bypass reaches while addressing safety concerns by limiting the need for extensive on-site field studies and personnel in these areas. The results of this effort will inform the scope of this issue by providing insights into the presence or absence of potential habitat services that these reaches may or may not offer. Information gained from this study will be used to identify potential effect of Project operation on aquatic resources. Further, data collected during this study effort will be used to inform on other studies proposed by Erie (i.e., Section 4.2, Macroinvertebrate and Freshwater Mussel Survey and Section 4.7, Recreation Use, Needs and Access Study).

#### **4.1.3 GOALS AND OBJECTIVES**

The purpose of this study is to map the distribution and abundance of aquatic mesohabitat within the Project area, evaluate the types of aquatic habitats that occur there, and identify potential effects of Project operations on this habitat. The quantified spatial data generated by this survey will help to assess the effects of Project operation on the aquatic resource in the study area.

The specific goals and objective of this study are to:

- Identify the aquatic mesohabitat within the study area, including quantity and spatial distribution of habitat types, and
- Determine the potential effects of Project operations on these habitats.

#### **4.1.4 STUDY AREA**

The study area will include the Project bypass reaches within the existing Project boundary, and portions of West Canada Creek extending from the Trenton tailrace to the confluence of the Newport Dam impoundment. Reaches of West Canada Creek from the Newport Dam tailwater downstream to the confluence of the Mohawk River are outside of the proposed study area because they are subject to influences (tributaries, dams, abutting land use) that are outside the control of the West Canada Creek Project and are therefore not included in this study proposal.

#### **4.1.5 BACKGROUND AND EXISTING INFORMATION**

At the Prospect development, the bypass reach extends 1.2 miles and is composed of a narrow gorge with steep near-vertical side slopes of rock outcrops and dispersed vegetation. Substrate in the upper gorge from the dam downstream to the waterfall is dominated by relatively smooth horizontal bedrock with little object cover or variation in mesohabitat. The border of the gorge consists of primarily densely forested vegetation. Public access to the bypass reach is restricted due to steep terrain and for safety reasons. As such, there have been no known aquatic mesohabitat surveys completed in this area of the Project.

The Trenton bypass reach is approximately 0.75 miles long and is a steeply-sloped narrow gorge with a series of large waterfalls, dropping approximately 200 feet over the length of the bypass reach. Access is restricted due to the steep terrain and for public safety reasons. The gorge is bordered along the top plateau elevation primarily by forested vegetation to the east, and to the west by vegetation and Project facilities. There have been no known aquatic mesohabitat surveys completed along this reach.

Between Trenton and Newport, the West Canada Creek flows southerly through rural areas, with banks that are somewhat more open and publicly accessible and include varied substrates and mesohabitats with periodic riffles rather than waterfalls.

#### **4.1.6 PROJECT NEXUS**

Aquatic resources, including freshwater fish and macroinvertebrates, are potentially affected by Project operations. The Aquatic Mesohabitat Assessment Study will provide information regarding existing aquatic habitat within the Project bypass reaches and proposed downstream

study area, including habitat type, quantity and spatial distribution that will inform resource assessments associated with the license application.

#### **4.1.7 METHODOLOGY**

Erie proposes to map the distribution and relative abundance of mesohabitat within the study area, including macrohabitat (water quality) and microhabitat (depths and wetted area). Major aquatic mesohabitat types (i.e., riffle, run, glide, pool) will be documented using georeferenced imagery collected via UAV or drone flight. These data will then be used in conjunction with operational data to evaluate potential Project effects on aquatic resources in the study area. Erie proposes to deploy level loggers in the study area within the Prospect bypass reach, and also downstream from the Trenton tailwater to document the extent of hydraulic change occurring between base flow and peaking flow events. The level loggers will be placed at locations of representative mesohabitats.

#### **Survey Parameters**

Aquatic mesohabitat will be defined by habitat type, dominant substrate and abundance of cover. Each of these habitat parameters will be assigned specific attributes to be used for delineation during the post processing of the imagery data. These will generally include:

- Substrate: larger substrates will be identified in the post processing of imagery data. Dominant substrates in each habitat type will be identified, to the extent possible from the images, using the following standard particle classification scheme (based on Wolman, 1954):
  - Sand/Silt/Clay – any particle less than 2.0 mm across.
  - Gravel – any particle 2.0 mm to 64 mm across.
  - Cobble – any particle 64 mm to 256 mm across.
  - Boulder – any particle 256 mm to 2048 mm across.
  - Bedrock – any particle greater than 2048 mm across.
  - Where there are multiple substrate types, the two-most predominant substrate class will be assigned a relative percent dominance within individual habitats.
- Cover type: object cover (i.e., boulder, woody debris, riprap, etc.), overhead cover (i.e., overhanging limbs, structures, etc.); vegetative cover (i.e., emergent, submerged).
- Cover density: absent, low, moderate, high.

## **Field Survey**

The study area will be documented with video and aerial images captured by a Global Positioning System (GPS) -enabled UAV or drone with a high-resolution camera. The drone-based survey will fly the study area at a speed and altitude sufficient to collect geo-referenced video and image data of sufficient quality to identify and quantify mesohabitats within the study area. The survey will include both a video-documentation component supplemented by a more detailed on the ground assessment to verify aquatic mesohabitat data for further analysis. The video documentation component will include documentation of the Project bypass reaches through UAV flight photography and provide a basis for delineating quantitative upstream and downstream boundaries of each mesohabitat segment. These data will be available for review and analysis for the Aquatic Mesohabitat Assessment Study and the Recreation Use, Needs and Access Study (Section 4.7).

Additional UAV flights of the bypass reach will be conducted to document substrates and cover types within the Project's bypass reaches. Specifically, UAV mission planning will develop a flight path that traverses the study area at an appropriate altitude to collect images with enough overlap to produce a seamless orthorectified image of the study area at a resolution required to identify substrates and cover types.

Flights will be scheduled to optimize available light to minimize shadows and wind disturbance of water surface and at a time when flow is adequately low and clear to distinguish mesohabitat boundaries. The survey flight path, pass density, and altitude will be determined prior to surveying, but after an initial field safety visit. Images will be processed using an appropriate composite editor, such as Microsoft's Image Composite Editor, and then georeferenced with the assistance of ground control points collected with a Real Time Kinematics (RTK) GPS. Once images have been georeferenced, object size will be measured using a geographic information system (GIS) and produce a raster image of dominate substrates. Following object size determination, the dominate substrate size raster will be classified into a mesohabitat cover type raster using Wolman's (1954) particle classification scheme.

A field crew will also conduct an on-the-ground visit to selected segments to verify that the object size substrate classification is consistent with empirical observations. The exact number



and location of verification site visits will be determined in the field based on both review of initial information as well as safety and access logistics. The crew will also identify any seeps or small tributaries encountered in the study area. The mouth of each inflow will be georeferenced, discharge estimated, and an *in-situ* measurement of temperature and DO will be obtained.

In areas where data collection using a drone is not feasible or data collected is inadequate to meet the study objectives, Erie will conduct field surveys entirely via boat and/or on foot to quantify aquatic mesohabitat distribution in the study area, including a ground-truthing component of NWI identified wetlands within the bypass reach shoreline areas of the existing Project boundary. As with the drone data, the upstream and downstream boundaries of each mesohabitat and its attributes will be georeferenced for inclusion in GIS analyses. Erie will use the drone flyover data as a reconnaissance tool to initially canvass for candidate sampling sites throughout the study area for field investigation by examining georeferenced camera movie and picture footage. These sampling sites will then be field surveyed. The relative quantity and spatial distribution of each habitat will be characterized using handheld GPS units and the boundaries of mesohabitats will be geo-referenced. Substrate and cover will be characterized using Wolman's (1954) particle classification scheme.

Erie will deploy two level loggers in the Prospect bypass reach (in reach downstream of Prospect falls) and six level loggers at intervals between Trenton and the Newport headpond backwater to capture stage changes at base flow and under a range of generation flow discharges<sup>1</sup>. Locations will be defined by the occurrence of representative mesohabitat and channel types within the bounds of safety and access logistics. The exact location of these loggers will be determined based on field information from the initial mesohabitat survey and professional judgement. The loggers will be deployed to document the timing, magnitude and duration of stage changes in response to project operation across the range of Project discharges below Trenton. Flow events in West Canada Creek below Trenton will be defined through a review of Project operations.

The Prospect bypass reach stage measurements will be recorded at base conditions, 5 cfs and 10 cfs. Each logger location will include a surveyed cross-section of the creek bed, so that wetted

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<sup>1</sup> Erie does not anticipate conducting level logger monitoring in the Trenton bypass reach at this time as the reach is segmented by several steep waterfalls and has vertical cliff walls. These features present hazardous conditions and limit aquatic habitat connectivity.

area and depths across the transect at each discharge stage can be calculated. Monitors will also be deployed to document ambient water temperature and DO during a 4-week period of summer conditions (July-August). These data will be recorded continuously at 30-minute intervals and correlated with concurrent project operating records.

### **Data Processing**

Imagery data will be processed and incorporated into a GIS platform. The GIS will be used to quantify and map mesohabitats within the study area by geolocating boundaries as defined by the field metrics. These data will be transformed into tabular, graphs, and spatial mapping data to quantify the amount and distribution of each mesohabitat in each bypass reach and the reach downstream from Trenton. Stage-discharge curves will provide estimates of wetted aquatic habitat both within each mesohabitat as well as cumulatively in each of these reaches. Stage duration data based on operating records will show the frequency and duration of various water level stages throughout the study area and effects on wetted perimeter and depth.

For wetlands and other botanical resources, during image acquisition, the drone will be equipped with a multispectral sensor capable of collecting data in the infrared and near infrared wavelengths. These electromagnetic bands outside of the visible spectrum make the identification and differentiation of wetland and non-wetland plants easier. An image reviewer will create training data of known land cover classifications (wetland and upland vegetation cover types) and will classify the image using a Maximum Likelihood Classifier. Following post processing, the classified image will show the extent of wetland versus non-wetland vegetation cover types but will not be able to delineate to the species level.

Once quantified, Project operation and river discharge data will be assessed in the context of the aquatic mesohabitat to evaluate potential Project effects. Imagery and field data will be further processed to document locations of encountered wetlands, invasive species, Rare, Threatened or Endangered (RTE) species, and native mussels within the study area, to the extent that imagery and field data provide sufficient information for this documentation.

#### **4.1.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology is consistent with standard practices and generally accepted methods to document and characterize aquatic mesohabitat at FERC-licensed projects.

#### **4.1.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the Aquatic Mesohabitat Assessment Study within the 2019 study season. Data collection is expected to occur during a period of seasonally low flow (i.e., July through September) when mesohabitats are unencumbered by flow and are readably observable. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.1.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the study is within the range of \$75,000 to \$85,000. The Licensee believes that the proposed level of effort is adequate to document the existing aquatic mesohabitat, wetlands, RTE and invasive species, and presence of mussel beds at the West Canada Creek Project.

#### **4.1.11 REFERENCES**

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at:  
<http://www.westcanadacreekproject.com>.

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### **4.2 MACROINVERTEBRATE AND FRESHWATER MUSSEL SURVEYS**

#### **4.2.1 STUDY REQUESTS**

The USFWS recommends that Erie conduct a 1- to 2-year macroinvertebrate and freshwater mussel survey at the Prospect and Trenton reservoirs, within the Prospect bypassed reach, and downstream from the Trenton tailrace to confluence with the Mohawk River. The USFWS recommends that benthic macroinvertebrate be sampled in shallow and deep-water habitats using

a variety of techniques such as a kick net, multiplate samplers, and a ponar dredge. For mussels, the USFWS recommends use of standard sampling techniques that target mussel populations. The USFWS recommends that study guidelines recommended by the NYSDEC be applied for both benthic macroinvertebrates and freshwater mussels.

The NYSDEC recommends that a 1 to 2-year macroinvertebrate and freshwater mussel survey be conducted at the Project reservoirs, stream habitats and bypass reaches. The NYSDEC recommends that standard scientific collecting techniques be used, and that sampling be conducted seasonally and include both shallow- and deep-water sampling gear and collections be stratified by sediment size. The NYSDEC also requests that initial surveys be timed area surveys consistent with one or more of the protocols from Smith et al. 2001; Strayer and Smith 2003; or West Virginia DNR 2015.

FERC in comments provided on the PSP, states that mussel and macroinvertebrate sampling further than 1 mile downstream of Trenton and implementation of NYSDEC's Biological Assessment Profile (BAP) metrics for analysis would provide useful information to evaluate potential project effects on macroinvertebrate communities and water quality. In addition, FERC requested that Erie identify the minimum number of macroinvertebrate samples that would be collected in each sampling area. For the mussel surveys, FERC requested that Erie provide a specific description of the proposed surveys for the impoundment, bypassed reaches, and downstream of the project, including the minimum number of surveys in each area, maximum depth of survey in the impoundments, search time, and specific survey methods for each sample area.

#### **4.2.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

Erie proposes to conduct a one-year study including benthic macroinvertebrate sampling (kick nets) and a timed survey of freshwater mussel communities in representative habitats in the littoral zone of the Project's, impoundments (mussel survey only), bypass reaches, and a 12.5-mile reach of West Canada Creek downstream of the Trenton tailrace to the confluence of the Newport Dam. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address

the requested study needs and the goals and objectives of the resource study. Surveys will identify and sample habitats that contain substrates suitable for mussels and macroinvertebrates.

#### **4.2.3 GOALS AND OBJECTIVES**

The goals and objectives of this study are to provide information on existing macroinvertebrate and freshwater pearly mussel (Unionoidae) communities that could be affected by the Project operations. The information will be used to document the current macroinvertebrate, mussel communities and water quality conditions and assess potential effect of Project operations.

#### **4.2.4 STUDY AREA**

The USFWS and NYSDEC expressed concern that the Project alters natural flows which could affect macroinvertebrates and mussels in the littoral zone of the Project impoundments, the bypass reaches and downstream of the Project. Erie proposes to conduct the study within: 1) the littoral zone within the existing Project boundary of the Prospect and Trenton impoundments, 2) Project bypass reaches within the existing Project boundary, and 3) within West Canada Creek approximately 12.5 miles downstream from the Trenton station tailrace to the confluence of the Newport Dam impoundment for sampling of both macroinvertebrates and mussels as Project flows may affect these areas and is an appropriate extent to characterize Project impacts. Sampling will target representative habitats within the study area to collect information by which to assess Project related impacts on macroinvertebrates and freshwater mussels. Areas further downstream are subjected to other anthropogenic influences and, therefore, are not proposed as part of this study scope.

#### **4.2.5 BACKGROUND AND EXISTING INFORMATION**

Within the Mohawk River Basin, and at several sites in the West Canada Creek, the Rotating Intensive Basin Studies (RIBS) Intensive Network Monitoring conducted biological (macroinvertebrate) surveys in 2006. The results of these surveys indicated that conditions at all sites within West Canada Creek were non-impacted, which reflects good water quality and a diverse macroinvertebrate community.

In addition to the 2006 surveys, the NYSDEC Division of Water has conducted statewide water quality analyses since 1972 using benthic macroinvertebrate communities to monitor and assess

water quality of New York State streams. Monitoring in 2000 included sampling sites upstream of Hinckley Reservoir and downstream from the Trenton Powerhouse at Poland with all sites listed as non-impacted based on assessment of macroinvertebrate communities. These non-impacted segments reflected very good water quality and were well represented by mayflies, stoneflies and caddisflies. The macroinvertebrate community was characterized as diverse with at least 27 species in riffle habitats (Bode et al 2004).

Within the Mohawk River Valley, freshwater mussels were once present in both tributaries of the Mohawk River, the Schoharie Creek and West Canada Creek. According to the Mohawk River Basin Action Agenda, freshwater mussels in the Mohawk River and its tributaries are currently in decline (NYSDEC 2012). As indicated by review of the NYSDEC Natural Heritage database (NYSDEC 2018a) and as indicated by NYSDEC (as cited in NYPA 2017) there are no known records of any freshwater mussel species in the West Canada Creek drainage basin.

#### **4.2.6 PROJECT NEXUS**

The Project alters natural flows in the Project impoundments, in the bypass reaches of each development and a portion of West Canada Creek downstream of the Project. The areas are important for macroinvertebrates and mussel propagation and survival. Fish and wildlife species rely on macroinvertebrates and mussels as a food source and can be affected by reductions in their production.

#### **4.2.7 METHODOLOGY**

##### **4.2.7.1 BENTHIC MACROINVERTEBRATE SAMPLING**

Benthic macroinvertebrate kick net sampling is proposed in representative habitats with flowing waters in the littoral zone of Project's bypass reaches and downstream of the Trenton tailrace to the Newport Dam confluence. Kick net sampling is a standard method of sampling benthic organisms by disturbing bottom sediments and catching the disturbed organisms downstream with an aquatic net (NYSDEC 2018b). Sampling is proposed on hard bottom substrate composed of rock, rubble, gravel, and sand. Depth is proposed to be less than one meter, and current speed would generally be  $\geq 40$  cm/sec (NYSDEC 2018b). A kick sample will be collected in each of the representative mesohabitats (e.g. riffle, run, pool) for each of the study reaches (e.g. Project

bypass reaches and West Canada Creek downstream to the confluence of the Newport Dam impoundment). At a minimum two samples will be collected in each of the two Projects bypass reaches for a total of four samples. The downstream reach will be sampled approximately every 1.5 mile for a total of approximately 8 samples. An aquatic net (size 9 in. X 18 in., mesh opening size 0.8 mm X 0.9 mm) is proposed to be positioned in the water about 0.5 m downstream and the stream bottom is disturbed by foot, so that the displaced organisms float into the net. Sampling is proposed to continue for 5 minutes for 5 meters (NYSDEC 2018b).

The contents of the net will be sorted, large debris removed, and the remaining sample will be sieved with a U.S. no. 25 standard sieve and transferred to a quart jar and preserved by adding 95% ethyl alcohol (NYSDEC 2018b). When back from the field, the sample will be drained through a U.S. no. 60 sieve to remove the alcohol. The samples will be examined under a dissecting microscope and all invertebrates larger than 1.5 mm will be removed and identified. All organisms will be identified to the lowest practical taxon.

NYSDEC indicates the preferred sampling time for kick net sampling is July-September (NYSDEC 2018b). Spring sampling is generally avoided due to high numbers of naiid worms frequently occurring in spring samples (NYSDEC 2018b). Sampling is proposed to occur in the late summer, July-September as recommended by NYSDEC. The benthic macroinvertebrate community metrics proposed to be analyzed for this assessment include: 1) Species Richness, 2) Ephemeroptera, Plecoptera, and Trichoptera (EPT) Richness, and 3) Hilsenhoff's Biotic Index. Species Richness is the number of species or taxa found in the sample. High species richness values are mostly associated with clean-water conditions. EPT Richness represents the total number of species of mayflies (Ephemeroptera), stoneflies (Plecoptera), and caddisflies (Trichoptera) found in a sample. These are mostly clean-water organisms in flowing waters, and their presence generally is correlated with good water quality. Hilsenhoff's Biotic Index (HBI) is calculated by multiplying the number of individuals of each species by its assigned tolerance value, summing these products, and dividing by the total number of individuals. On a 0-10 scale, tolerance values range from intolerant (0) to tolerant (10).

#### 4.2.7.2 FRESHWATER MUSSEL SURVEY

Since there are no known records of any freshwater mussel species in the West Canada Creek drainage basin (NYPA 2017), a presence/absence survey of unionid mussels is proposed in conjunction with the proposed Aquatic Mesohabitat Assessment Study (Section 4.1) and Impoundment Shoreline Characterization Study (Section 4.3). Erie will use the drone flyover data as a reconnaissance tool to initially canvass for candidate sampling sites throughout the study area for field investigation by examining georeferenced video and picture footage. These sampling sites will then be field surveyed. Surveys will be conducted consistent with one or more of the protocols from Smith et al. 2001, Strayer and Smith 2003, or West Virginia Department of Natural Resources (DNR) 2015.

Mussel surveys will employ a stratified approach in which shallow (<6 ft) littoral areas containing suitable substrates (e.g., cobble sized or smaller) will be surveyed in the Project impoundments, bypass reaches and the reach of West Canada Creek downstream of the Project to the confluence of the Newport Dam impoundment. This qualitative methodology is appropriate for small to mid-sized rivers (DNR 2016). The timed survey will include visual observations of the substrate surface. Observation will be achieved with the aid of a viewing scope and/or snorkeling gear as applicable.

Project operation influences a large area of habitat and a complete survey of the study area is impractical. As such, the study area will be subsampled to investigate the presence of mussels. Areas of suitable substrate within the littoral zones of the study area will be divided into non-overlapping, equally sized cells (e.g., 10 m x 10 m, or 100 m<sup>2</sup> polygons). A timed survey will be conducted in a subsample of these cells at a rate of 0.2 min/m<sup>2</sup> in areas of substrate, then an additional 0.3 min/m<sup>2</sup> if mussels are found (DNR 2016). Cells will be visually surveyed completely for a minimum 20 minutes as practical. Prior to the field survey, suitable littoral habitat will be mapped and overlain with cells. Cells will be selected randomly in each of the study reaches for survey, including; Prospect impoundment (10 cells), the Trenton impoundment (up to 10 cells, if suitable habitat is present), bypass reaches (up to 10 cells, if suitable habitat is present 10 cells each), and the downstream reach (20 cells), for a total of up to 60 samples (if suitable habitat is present). Survey data will be transcribed in a dedicated field notebook or on a data sheet and include the following for each survey site:



- Site ID and location (latitude and longitude);
- Date and start/end time of survey;
- Water visibility at time of survey (measured by secchi disk);
- Predominate substrates (the two most dominate substrates);
- Photos of the Survey Location and Vouchers (by species, if applicable); and
- Number of observed mussels.

#### **4.2.7.3 DATA ANALYSIS**

Data will be organized and presented in tabular and graphical form. Imagery and geospatial data will be transferred to a GIS format and used to develop both visual maps depicting distribution of sampling sites and mussels observed in the study area.

#### **4.2.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology for the benthic macroinvertebrate sampling follows NYSDEC Standard Operating Procedure: Biological Monitoring of Surface Waters in New York State (NYSDEC 2018b) and is consistent with standard practices and generally accepted methods to document and characterize macroinvertebrate and freshwater mussel communities at FERC-licensed projects. As requested by NYSDEC, freshwater mussel surveys will be conducted consistent with one or more of the protocols from Smith et al. 2001; Strayer and Smith 2003; or West Virginia DNR 2015.

#### **4.2.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the Macroinvertebrate and Freshwater Mussel Study within the late summer period (July – September 2019). A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.2.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Macroinvertebrate and Freshwater Mussel Study is within the range of \$50,000 to \$75,000. The Licensee believes that the proposed level of effort is adequate to document the existing aquatic mesohabitat the West Canada Creek Project.

#### **4.2.11 REFERENCES**

- Bode, R.W., M.A. Novak, L.E. Abele, D.L. Heitzman, and A.J. Smith. 2004. Thirty-year trends in water quality of rivers and streams in New York State based on macroinvertebrate data, 1972-2002. Mohawk River Drainage. Stream Biomonitoring Unit, Division of Water, NY State Department of Environmental Conservation. Albany.
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- Strayer, D. L. and D. R. Smith. 2003. a guide to sampling freshwater mussel populations. Am. Fish. Soc. Mono. 8:1-103.
- West Virginia Department of Natural Resources (DNR). 2016. West Virginia Mussel Survey Protocols (April 2016 revision) by West Virginia DNR at <http://www.wvdnr.gov/Mussels/West%20Virginia%20Mussel%20Survey%20Protocols.pdf>

### **4.3 IMPOUNDMENT SHORELINE CHARACTERIZATION STUDY**

#### **4.3.1 STUDY REQUESTS**

In their study request letter, the USFWS and the NYSDEC requested an assessment of aquatic habitats and wetland identification in the Project area. Additionally, the USFWS requested an impoundment fluctuation study. The requested studies recommended providing information about the distribution and abundance of littoral habitats including wetland and aquatic vegetation within the Project area. The USEPA requested a study to document invasive plant species in the project area. FERC requested that Erie include drone and/or ground surveys of all wetland habitats that could be affected by Project operation wetlands.

#### **4.3.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

For the Impoundment Shoreline Characterization Study, Erie proposes to conduct a shoreline habitat survey to characterize the littoral habitat within the Project impoundments. Additionally, encounters with wetlands hydraulically influenced by the project, aquatic vegetation, fish spawning beds, and mussel beds will be documented. This proposed study, in conjunction with data collected in the proposed Aquatic Mesohabitat Assessment Study (Section 4.1), will provide information by which to evaluate potential Project effects on aquatic habitats within the Project area and specifically within the littoral region of the Project impoundments. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study. This study will document the distribution and abundance of aquatic habitats and resources within the study area, including wetlands, aquatic vegetation, fish spawning beds, invasive species, and document the presence of native mussels. Further, data collected during this study effort will be used to inform on other studies proposed by Erie (i.e., Section 4.2, Macroinvertebrate and Freshwater Mussel Surveys and Section 4.7, Recreation Use, Needs and Access Study).

#### **4.3.3 GOALS AND OBJECTIVES**

The purpose of the study is to map the distribution and abundance of aquatic habitat within the Project impoundments, evaluate the types of aquatic habitats that occur there, and identify any potential effects of operations of the West Canada Creek Project on this habitat.

The specific goals and objective of this study are to:

- Identify the aquatic habitats and resources within the study area, including quantity and spatial distribution of habitat types, wetlands, aquatic vegetation, fish spawning beds, mussel and invasive plants.
- Determine the potential effects of Project operation on these aquatic habitats and resources.

The quantified spatial data generated by this survey will help to assess the effects of Project operation on the aquatic resources in the study area.

#### **4.3.4 STUDY AREA**

The study area includes the littoral region of the Prospect and Trenton impoundments within the existing Project boundary.

#### **4.3.5 BACKGROUND AND EXISTING INFORMATION**

As described in the PAD (Erie 2018), the Prospect impoundment has a normal maximum surface area of 176 acres; with 161.7 acres located in the main impoundment and the remaining 13.8 acres in the forebay. At the normal surface elevation of 1,161.5 ft, the impoundment has a gross storage capacity of 3,250 acre-feet and a usable storage capacity of 803 acre-feet. The limited storage capacity at the Prospect development operates between reservoir elevations of 1,161.5 ft (normal surface elevation) and 1,156.5 ft., fluctuating approximately 5 ft daily and peaking occurs during the day and refilling during the evening.

The Trenton impoundment has a normal maximum surface area of 9-acres at a normal maximum surface elevation of 1,023.9 ft. At the normal maximum surface elevation, the impoundment has a gross storage capacity of 264 acre-feet and a useable storage capacity of 155 acre-feet. The Trenton development utilizes its reservoir's limited storage capacity as it operates between elevation 1,023.9 ft and 1,011.9 ft., fluctuating up to approximately 12 ft daily and peaking occurs during the day and during refill periods in the evening.

#### **4.3.6 PROJECT NEXUS**

Aquatic resources, including freshwater fish, macroinvertebrates, and aquatic vegetation are potentially affected by Project operations. The impoundment shoreline characterization will provide information regarding existing aquatic habitats and resources within the Project impoundments, including aquatic habitat and resource type, quantity, and spatial distribution that will inform resource assessments associated with the license application.

#### **4.3.7 METHODOLOGY**

Erie proposes to map the distribution and abundance of littoral aquatic habitat within the West Canada Creek Project impoundment in two phases. During the first phase, major aquatic habitat types will be documented using imagery collected via an UAV or drone flight. During the second phase, the accuracy of information collected in Phase 1 will be verified in the field and detailed

microhabitat data will be collected at representative transects. These data will then be used in conjunction with operational data to evaluate project effects on aquatic resources in the study area.

### **Survey Parameters**

Lentic aquatic habitat suitability is defined primarily by substrate, cover and depth. Each of these habitat parameters will be assigned specific attributes to be used for field delineation. These will generally include:

- Substrate: fines (sediment, organic detritus, mud, etc.), sand, gravel, cobble, boulder, bedrock, rubble.
- Cover type: object cover (i.e., boulder, woody debris, riprap, etc.), overhead cover (i.e., overhanging limbs, structures, etc.); vegetative cover (i.e., emergent, submerged).
- Cover density: absent, low, moderate, high.
- Depth (at normal pool): surface to substrate (ft).

To the extent possible, imagery and video data collected from the UAV survey will be used to quantify substrates, cover type and cover density. Depth information will be collected during the microhabitat field verification.

### **Phase 1 – Impoundment Shoreline Documentation**

Documentation of the impoundment shoreline fluctuation zones will be conducted using aerial imagery captured via an UAV. The flight will occur in the summer during a period of low pond (i.e., Prospect minimum surface elevation at 1,156.5 ft, and Trenton minimum surface elevation at 1,011.9 ft) to visually document those aquatic habitats and resources within the fluctuation zone. Imagery of the littoral habitat will be collected by flying parallel to the shore. The prevailing water elevation at the beginning of the survey will be documented by bench-marked survey or RTK. The impoundment surface elevation is monitored by Erie and changes in elevation during the survey will be accounted for in the analysis of the data. The imagery will be processed to determine habitat attributes and aquatic resources including wetlands, observed fish spawning beds, mussel beds, and aquatic vegetation. The imagery data will be geo-referenced to denote boundaries where a pronounced change in substrate occurs. These data will be used to quantify and map the substrates in the impoundment littoral zone.

## **Phase 2 – Microhabitat Field Verification**

Transect data will be gathered within representative littoral areas. The distribution and number of transects will be dictated by the variability detected during the shoreline habitat documentation phase, but the goal would be to have one transect accounting for each major type of shoreline slope/littoral substrate/cover condition documented during the survey. Data collection is expected at a minimum of four transects in the Prospect impoundment. Given the steep slopes, minimal littoral zone, and relatively uniform character of the littoral habitat in the Trenton impoundment fewer transects (2) are anticipated. Each transect will extend from top of bank (or to a maximum of 6 ft above the high pond elevation) to an elevation 3 feet below low pond. Verticals will be located along each transect to depict the following reservoir elevations:

- Top of bank;
- Normal high-water elevation (i.e., Prospect impoundment at 1,161.5 ft, Trenton impoundment at 1,023.9 ft);
- Toe of bank; and
- Elevation 3 ft below normal low pond elevation (i.e., Prospect impoundment at 1,156.5 feet, Trenton impoundment at 1,011.9 feet).

Additional verticals will be established at intervals wherever micro-changes in slope, substrate embeddedness, or cover are encountered. Elevations will be surveyed in Project datum so that data can be integrated with other project operation data for analysis. The locations of all transects will be geo-referenced with GPS and transect headpins marked with blazing. In addition, Erie will conduct a ground-truthing component of the NYSDEC regulated wetlands and NWI identified wetlands within the existing Project boundary of the impoundment shoreline areas.

## **Data Analysis**

Imagery and geospatial data will be transferred to a GIS format and used to develop both visual maps depicting the impoundment surface water elevation fluctuation areas and distribution, as well as tabular information quantifying the abundance and distribution of habitat features (e.g., substrate, cover) and aquatic resources (e.g., wetlands, fish spawning beds, aquatic vegetation, mussels and invasive species) in the study area.

#### **4.3.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology is consistent with standard practices and generally accepted methods to document and characterize aquatic mesohabitat and aquatic resources at FERC-licensed projects.

#### **4.3.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the study within May – September of 2019. Early season impoundment surveys will coincide with the spawning season of nest building fishes (typically late May or June). Additional survey is likely to occur later in the season when relatively stable, low pond elevation will likely be achievable and aquatic vegetation will be fully developed and readily observable. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft report will be included in the Initial Study Report. The study report will include survey methods, GIS maps showing the habitat and aquatic resources spatial distribution in the impoundment, and a discussion of observations.

#### **4.3.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Impoundment Shoreline Characterization Study is within the range of \$50,000 to \$75,000. The Licensee believes that the proposed level of effort is adequate to characterize the existing shoreline habitat along the Project impoundments of the West Canada Creek Project.

#### **4.3.11 REFERENCES**

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at: <http://www.westcanadacreekproject.com>.

### **4.4 FISH ASSEMBLAGE ASSESSMENT**

#### **4.4.1 STUDY REQUESTS**

The USFWS, NYSDEC, New York State Fish and Wildlife Management Board, Region 6 (FWMB), NYTU, and West Canada Watershed Alliance (WCWA) requested that Erie conduct a comprehensive fish survey utilizing standard fish sampling methodologies to investigate the fish

assemblage within the Project's impoundments, Prospect bypass reach, and within the mainstem of West Canada Creek from the Trenton tailwater downstream to the confluence with Mohawk River. The requested study would include sampling to occur seasonally over the course of a year, with a second year of optional study and data collection efforts would include: species sex, age, size condition, habitat information and water quality data. Agencies and stakeholders stated that a more directed survey effort is required to provide information on the existing fishery resources to evaluate potential effects of continued Project operation and to inform the Fish Entrainment and Turbine Passage Survival Study.

#### **4.4.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

Substantial information was presented in the PAD by which to characterize the fish assemblage in the Project area and evaluate impacts of continued Project operation on that fish assemblage. However, Erie understands the utility of collecting additional fish assemblage data within the Project impoundment to assess the fish populations and to inform the Fish Entrainment and Turbine Passage Survival Assessment (Section 4.5). As such, Erie proposes to conduct a fish assemblage survey in the Project impoundments only. Sampling is proposed to include a single survey event in late summer, a period in which all life stages will be present (i.e. adults, juveniles and young-of-year). A random stratified sampling methodology will be employed using a combination of boat electrofishing and gill netting techniques. No fish sampling is proposed in the bypass reaches or downstream of the Trenton tailwater. The Aquatic Mesohabitat survey will provide an assessment of potential habitat and channel conditions in both bypass reaches. Further, Erie proposes to collect updated stocking information from the NYSDEC to be included in the license application. Aquatic habitat and water quality data will be collected during other proposed studies efforts (see Section 4.1, Aquatic Mesohabitat Assessment Study, Section 4.3, Impoundment Shoreline Characterization Study, and Section 4.6, Water Quality Study). These data will provide additional information by which to evaluate the fish assemblage.

#### **4.4.3 GOALS AND OBJECTIVES**

The goals and objectives of this study are to provide information on the existing fishery resources in the Project impoundments to evaluate the potential impacts of continued Project



operation. Specific objectives include documenting species occurrence, distribution, and relative abundance of fishes in the Project impoundments.

#### **4.4.4 STUDY AREA**

The area of this study will include the Prospect and Trenton impoundments and the Prospect power canal with specific methodology and parameters at each development.

#### **4.4.5 BACKGROUND AND EXISTING INFORMATION**

A substantial amount of fisheries information has been collected in West Canada Creek and was provided in Section 5.5 of the PAD. These data, which includes trout stocking and fish assemblage information, represents a long-term data set drawn from surveys conducted from 26 years of sampling efforts, from 1988 to 2014. The survey data reveals a mixed assemblage of predominately warm water fishes (Lyons et al 2009). Coldwater fishes present in the assemblage (e.g., trout species) are largely from stocked sources (Erie 2018). The stocking data provided in the West Canada Creek PAD includes release location, quantity and size. Data collected in the Hinkley Reservoir, located immediately upstream of the West Canada Creek Project, provides further information on the local fish assemblage (NYPA 2017). Given its close proximity to the West Canada Creek Project, data collected in the Hinkley reservoir, as well as those collected downstream may be partially used to assess potential Project impacts to the local fish assemblage.<sup>2</sup> There is limited information available regarding the fish assemblage in the Project impoundments. This study is designed to provide additional information for the fisheries assemblage in the Project impoundments.

#### **4.4.6 PROJECT NEXUS**

Operation of the Project has the potential to affect fish populations and habitat quantity and quality. Fish moving downstream are subjected to potential mortality from impingement and entrainment. Determining species distribution and abundance will inform on the species that occur in the Project impoundments and provide species information that will be useful regarding

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<sup>2</sup> For example, Table 4.4.2-2 of the Jarvis PAD (NYPA 2017) provides species and length information. These data may be used to assess entrainment and turbine passage survival at the Project (see Section 4.5, Fish Entrainment and Turbine Passage Survival Assessment).

the Fish Entrainment and Turbine Passage Survival Assessment (Section 4.5) and to examine potential effects of Project operation.

#### **4.4.7 METHODOLOGY**

This study will employ a stratified-random sampling design to provide unbiased and precise fish assemblage data. Sampling will occur in the Project impoundments and Prospect power canal. Sampling will be stratified by depth in the Prospect impoundment and power canal where shallow areas (<6 ft) will be sampled via boat electrofishing and deeper areas will be sampled via experimental gill nets. The shallow habitat is expected to be minimal in the Trenton impoundment due to its gorge-like character, as such sampling is proposed to include gill netting only.

##### **4.4.7.1 BOAT ELECTROFISHING**

Boat electrofishing will occur during the daytime and night at the Prospect impoundment and power canal. All electrofishing transects will be standardized by time (500 seconds fished) such that a catch per unit effort (CPUE) may be calculated. Boat electrofishing can effectively sample fish from most near-shore littoral habitats (typically 6 feet deep or less). The survey is proposed to include 3 transects within the Prospect Impoundment and 1 transect in the Prospect power canal for a total of 4 transects. Sampling will include littoral habitat along meandering transect along the shoreline.

Electrofishing will be accomplished with the use of a 16-ft jonboat rigged with a pulsed-DC Smith-Root GPP 5.0 electrofisher with the capacity to adjust the pulse rates between 30 - 120 pulses/second and vary voltage to accommodate ambient conductivity. The electrode array includes an array of cathodes suspended from the bow to a depth of approximately six feet to project the electric field into both the shoreline epibenthic zone, as well as the upper water column. The anode array is suspended from the bow on an adjustable boom. Both anodes and cathodes will be configured to optimize the electric field under ambient low conductivity conditions. Electrofishing will be conducted in a downstream manner, following standardized methods developed specifically for large river quantitative electrofishing surveys (MBI 2002, Yoder and Kulik 2003). The starting point, end point, and boat track for each sampling station will be geo-referenced using a handheld Garmin GPS (or similar device).

All stunned fish will be collected with ¼-inch mesh dip nets and deposited into a live-well filled with aerated ambient river water. At the conclusion of each sample, all captured fish will be identified to species, classified as adult, juvenile or Young-of-Year (YOY), enumerated, weighed, measured for total length, and then released. If large numbers ( $n > 25$ ) of small fish (YOY fish or cyprinids less than 100 mm) are captured, they will be grouped by size class, enumerated, and batch-weighed with length measurements only taken from one large and one small representative specimen within each group. Fish that are not able to be identified in the field, such as small cyprinids, will be brought back to the lab for identification.

In addition to biological data, supporting data will also be collected for each sample site including: location (GPS), sampling gear type, sampling effort, average depth, water quality parameters (temperature, DO, pH and conductivity), predominant substrate, time of day, day of year, presence of cover, and proportion of vegetation cover. All data will be recorded on dedicated data sheets. Upon return from the field, data sheets will be reviewed for quality assurance and archived.

#### **4.4.7.2 GILL NETTING**

For sampling deeper habitat sub-strata (depths greater than 12 feet), where electrofishing will not be effective, sampling will be conducted with experimental gill nets consistent with standardized methods for fish capture from rivers (Bonar, Hubert, & Willis, 2009). The sampling will include two gill nets in the Prospect impoundment, one net in the Prospect power canal, and two nets in the Trenton impoundment. The nets will be 12-foot high by 100-foot in length and will be constructed of 4 to 5 panels of increasing mesh size (e.g., 1.5, 2, 2.5, 3, 3.5-inch stretched mesh) to accommodate collection of the various sized fish in the project waters. The nets will be deployed to maximize capture area where water depths are greater than net height. Nets will be set in selected locations and allowed to fish for a minimum of 4 hours prior to retrieval. The exact locations of each net set will be recorded using a handheld Garmin Vista HCx GPS (or similar device) and the time of deployment and retrieval will also be recorded. Fish processing and support data collection will occur as described above for electrofishing.

#### **4.4.7.3 DATA ANALYSIS**

All data will be standardized by effort expended (seconds of electrofishing, and net-hours, for electrofishing and gill netting, respectively). Catch per unit effort (CPUE) will be calculated for each species, station, and sampling technique. Values of CPUE for each segment and gear type will be calculated as the sum of catch from all samples within a station divided by the sum effort expended within that station.

#### **4.4.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology is consistent with standard practices and generally accepted methods to assess fish assemblages at FERC-licensed projects.

#### **4.4.9 DELIVERABLES AND SCHEDULE**

Erie will conduct the Fish Assemblage Assessment in the late summer of the 2019 study season. Sampling conducted during this period will include relevant life stages (e.g., adults, juveniles and young-of-year). A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report. The study report will include tabular data summarizing length, weight, and size class of fish captured, a map of the study area to depict the location of sample stations, and overall results including occurrence, distribution and relative abundance.

#### **4.4.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Fish Assemblage Assessment is within the range of \$40,000 to \$50,000. The Licensee believes that the proposed level of effort is adequate to characterize the fish assemblage at the Project impoundments of the West Canada Creek Project.

#### **4.4.11 REFERENCES**

- Bonar, S.A., Hubert, W.A., and D.W. Willis, editors. 2009. Standard methods for sampling North American freshwater fishes. American Fisheries Society, August 2009.
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## **4.5 FISH ENTRAINMENT AND TURBINE PASSAGE SURVIVAL ASSESSMENT**

### **4.5.1 STUDY REQUESTS**

The USFWS requested that Erie prepare an assessment of entrainment and turbine passage mortality and explore methods to exclude fish from the Project turbines and safely pass fish downstream. USFWS's proposed study recommended including collection of site specific data and reference available literature regarding target fish species and impacts at similar hydroelectric sites. The USFWS has not identified any upstream passage needs at the Project at this time. The NYSDEC requested a similar study to explore alternatives to keep all fish species out of the Project turbines, with special emphasis on brook trout, brown trout, rainbow trout, smallmouth bass, yellow perch, and any other species found in abundance during fishery surveys. The NYSDEC has requested developing alternatives to effectively passing fish downstream around the dams; including potential modification to existing trash sluices located close to the intakes. The NYSDEC stated there are currently no upstream fish passage issues identified at the Project.

### **4.5.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

For the Fish Entrainment and Turbine Passage Survival Assessment, Erie proposes to conduct a literature review of species of interest, collect site specific data (intake depth location and velocities, units generating and hydraulic capacities), and conduct an estimate of entrainment and turbine passage survival. In addition, Erie will review data collected from the Fish Assemblage

Assessment (see Section 4.4) including species occurrence, distribution, and relative abundance. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study.

#### **4.5.3 GOALS AND OBJECTIVES**

The goal of this study is to assess the potential effects of Project operations on fish entrainment and turbine strike mortality. The specific goals and objectives of this study will include:

- Provide information on impacts due to fish entrainment and mortality at the Project.
- Estimate the rate of mortality from turbine stressors with equations that predict the probability of leading-edge turbine blade strike.
- The results of the turbine strike and entrainment mortality estimates will determine the need to explore alternate methods to exclude fish from the Project turbines and safely pass fish downstream.

#### **4.5.4 STUDY AREA**

The area of this study will be limited to the Prospect and Trenton impoundments and the Prospect power canal.

#### **4.5.5 BACKGROUND AND EXISTING INFORMATION**

An existing review of background information revealed no previous fish passage studies being performed at either the Prospect or Trenton developments. The Prospect development has 3 5/8-inch clear spacing trash racks and the Trenton development has 2-inch clear spacing trash racks.

#### **4.5.6 PROJECT NEXUS**

Hydroelectric facilities have the potential to impinge or entrain fish, which may result in mortality. Currently, no existing studies have occurred to document the existence of any entrainment issues and the proposed desktop entrainment and mortality study will inform resource assessments associated with the license application.

#### 4.5.7 METHODOLOGY

Estimates of entrainment and the rate of mortality from turbine stressors will be provided with equations that predict the probability of a leading-edge turbine strike (Franke et al. 1997). The blade strike equations use turbine parameters specific to each development. These parameters include the radius ratio; or the location of the strike relative to the total radius of the turbine. A sensitivity analysis will compare the probability of strike at each of these locations and will adjust gate settings that vary discharge and correlation factors. The proposed radius ratios will represent a fish getting hit approximately half, three quarter and at the extent of the blade. These values are consistent with those used in previously successful evaluations. The turbine discharge will vary in the sensitivity analysis according to operating practices. Fish lengths will vary according to empirical data.

The blade strike model allows for the manipulation of parameters such as fish size or turbine characteristics to determine the relative effect on turbine passage survival. This predictive model is based on the work of Von Raben (Bell 1981). Franke et al. (1997) refined the Von Raben model to consider the effect of tangential projection of the fish length on blade strike probability because most turbine passage mortality at low head dams (<100 ft) is caused by fish striking a turbine blade or some other turbine component.

A correlation factor is utilized in the Advanced Hydro Turbine model to adjust the predictive model results to correspond with documented empirical data. This correlation factor was originally introduced by Von Raben (cited by Bell 1981) because the contact of a fish with a turbine component does not always result in injury or mortality (Bell 1981; Cada 1998). Therefore, Von Raben introduced the correlation factor to adjust the predicted turbine strike results to more closely match empirical results. The correlation factor is necessary because not all strikes lead to death, and not all mortality is due to blade strike. This factor also extends the applicability of these predictive equations to all injury mechanisms related to the variable parameters. As stated in Franke et al. (1997) "*such mechanisms could include mechanical mechanisms such as leading-edge strike and gap grinding as well as fluid induced mechanisms related to flow through gaps or other flow phenomena associated with blades.*" Based on a substantial number of test results obtained from studies conducted with salmonids on the west coast, Franke et al. (1997) recommends a correlation factor between 0.1 to 0.2.

The blade strike correlation factor will be calibrated with turbine mortality rates for target fish species estimated from literature values. Turbine passage survival studies have been independently performed at numerous hydroelectric projects throughout the country (Franke et al., 1997) for a wide range of species. Study data will be reviewed to identify a subset of applicable source studies that will be used to estimate mortality and strike probability of target fish species based on the design characteristics of the Trenton and Prospect developments. A logistic regression model will be constructed using a dataset compiled from the Electric Power Research Institute (EPRI) entrainment database (EPRI 1997) from studies with similar turbine types.

The results of the entrainment and turbine stressor mortality analysis will determine the basis to explore any fish passage or protection alternatives, if needed, at the Project.

#### **4.5.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology is consistent with standard practices and generally accepted methods to assess fish entrainment and mortality at FERC-licensed projects.

#### **4.5.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the Desktop Fish Entrainment and Turbine Passage Survival Assessment within the 2019 study season. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.5.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Fish Entrainment and Turbine Passage Survival Assessment is within the range of \$25,000 to \$50,000. The Licensee believes that the proposed level of effort is adequate to assess the potential effects of the West Canada Creek Project operations on fish entrainment and mortality at the Project.

#### **4.5.11 REFERENCES**

Bell, M. C. (1981, September). Updated Compendium on the Success of Passage of Small Fish Through Turbines. Tech. rep., USACE.



Cada, G.F. 1998. Better science supports fish-friendly turbine designs. *Hydro Review* 17(6):52-61.

EPRI. 1997. Turbine entrainment and survival database - field tests. Prepared by Alden Research Laboratory, Inc. EPRI Report No. TR-108630. 13 pp. (plus two 3.5" diskettes).

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at:  
<http://www.westcanadacreekproject.com>.

Franke, G. F., Webb, D. R., & Fisher, R. K. (1997). Development of Environmentally Advanced Hydropower Turbine System Design Concepts. Tech. rep., Lockheed Idaho Technologies, Co.

## **4.6 WATER QUALITY STUDY**

### **4.6.1 STUDY REQUESTS**

The USFWS requested that Erie conduct a water quality study of the Project waters that include monitoring of water temperature and DO on a continuous basis for at least 1 year, along with monthly sampling for other parameters, such as pH, turbidity, and conductivity with the application of standard water quality sampling techniques typically applied in hydropower relicensing studies. NYSDEC requested a similar water quality study of the Project impoundments, bypass reaches, and areas upstream and downstream from the Project. FERC in comments provided on the PSP, stated that water quality information, especially temperature and DO, collected in the bypassed reaches and West Canada Creek downstream of the Project would provide necessary data to evaluate project effects in these areas.

### **4.6.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

Erie proposes to conduct a water quality study to characterize water quality parameters (water temperature, DO, pH and conductivity) downstream of the Trenton and Prospect powerhouses, in the upper and lower Prospect bypass reach and in the reach of West Canada Creek between Trenton and the Newport Dam impoundment confluence. Erie understands that stakeholders have an interest in the water quality within the Prospect bypass reach. As a component of this study, Erie has proposed to include an inventory of inflow (e.g. leakage, streams and springs) to the Prospect bypass reach to evaluate flow sources that are affecting the water quality in the reach. Spot measurements of water quality parameters will be recorded in the Project impoundments during the Fish Assemblage Assessment (Section 4.4), therefore, no additional

water quality data collection is proposed as a component of this study in the impoundments. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study.

#### **4.6.3 GOALS AND OBJECTIVES**

The goal of this study is to provide baseline water quality information at the Project to assess potential impacts the Project may have on West Canada Creek and to inform the Project licensing 401 Water Quality Certificate (WQC) application for compliance with State water quality standards. The specific objective of this study is to characterize water quality parameters (water temperature, DO, pH and conductivity) within the study area from April 15 to November 15 for one (1) year.

#### **4.6.4 STUDY AREA**

Water quality monitoring is proposed in West Canada Creek immediately downstream of the Prospect and Trenton powerhouse, in the upper and lower Prospect bypass reach, and in the reach of West Canada Creek between Trenton and the Newport Dam impoundment confluence. Water quality parameters will be collected in the Project impoundments during the Fish Assemblage Study.

#### **4.6.5 BACKGROUND AND EXISTING INFORMATION**

As described in the PAD (Sections 5.4.6 and 5.4.7), the most recent water quality data for West Canada Creek was collected by the NYSDEC in 2006 as part of the RIBS Intensive Network Monitoring, the results are summarized in the 2010 Waterbody Inventory/Priority Waterbodies List report for the Mohawk River Basin (NYSDEC 2010). Water quality standards for the project waters are regulated by the NYSDEC under delegated authority from the U.S. Environmental Protection Agency (USEPA). All waters in New York State are assigned letter classifications that denotes their best uses and letter classes A, B, C and D are assigned to fresh surface waters. Letters assigned with T or TS pertain to trout or trout spawning waters respectively.

Upstream of the Project, in the Hinckley reservoir reach (water index No. H-240-180, portion 4/P799) was classified as having minor impacts due to fluctuating water levels and high flushing

rates. The inventory noted historical fish survey data showing poor growth rates in the reservoir which may be attributable to low nutrient levels and sandy substrate that limit the resource. No contaminants were found, and the reservoir was designated a Class AA for water, indicating that it is suitable for drinking water supply (NYSDEC 2010).

The West Canada Creek Project area from Hinckley tailwater to Prospect Dam is within the 1.9-mile reach designated as West Canada Creek, middle, main stem with water index No. H-240-180 (portion 3) (NYSDEC 2010). This reach is designated as Class B/B(T) with the best usages of Class B waters are primary and secondary contact recreation and fishing, and suitable for fish, shellfish and wildlife propagation and survival. This reach is also designated as trout waters. This reach was classified as impaired for aquatic life and for habitat/hydrology on the Waterbody Inventory but was not included on NYSDEC's Section 303(d) list of impaired/TMDL waters. Recreational use along this reach was categorized as stressed. Identified impairments included water level, flow, thermal variation, and restricted fish passage and suspected causes included acid/base (pH), silt/sediment (NYSDEC 2010).

Project waters (Prospect Dam to Trenton Falls) are within the 15.7-mile reach which extends from Prospect Dam to Newport classified as lower, main stem, and water index No. H-240-180 (portion 2). This reach was designated as Class C/C(T) with best usage described as fishing; and also suitable for fish, shellfish and wildlife propagation and survival; and suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes. This reach is also designated as trout waters. Identified impairments were similar to the upstream reach and include flow, thermal variation, and restricted fish passage and suspected causes included acid/base (pH) (NYSDEC 2010).

Downstream of the Project, the reach from Newport to the confluence of the Mohawk River (water index No. H-240-180, portion 1) extends approximately 17.6 miles. This reach was also designated as Class C/C(T) and designated as trout waters. Identified impairments were similar to the next upstream reach and included flow, thermal variation, and restricted fish passage and suspected causes included acid/base (pH) (NYSDEC 2010).

#### **4.6.6 PROJECT NEXUS**

The Prospect and Trenton hydroelectric developments impound the West Canada Creek affecting flow regimes downstream of the Project. These operations, along with meteorological and hydrologic conditions, may affect water quality parameters and aquatic habitat within the Project waters.

#### **4.6.7 METHODOLOGY**

Erie proposes to monitor water quality using data loggers immediately downstream of the Prospect and Trenton powerhouse (2 monitoring sites), in the upper and lower Prospect bypass reach (2 monitoring sites), and in the reach of West Canada Creek between Trenton and the Newport Dam impoundment confluence. Erie proposes to conduct water quality monitoring in the downstream reach at the level logger sites proposed for the Aquatic Mesohabitat Assessment Study (see Section 4.1). Water quality parameters will be collected in the Project impoundments during the Fish Assemblage Study (see Section 4.4). All water quality locations will be geo-referenced using GPS. These GPS locations will be included in the GIS database layer to support the documentation and reporting of collected data. The data collection period for water quality monitoring will begin in mid-April 2019 and continue through mid-November 2019.

Loggers will monitor water temperature, DO, pH, and conductivity every 30-minutes for the study period. Data will be downloaded and archived monthly throughout the monitoring period. The loggers will be suspended from the surface to mid-depth or at the bottom and secured in place with an anchor.

#### **4.6.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology is consistent with standard practices and generally accepted methods to assess water quality at FERC-licensed projects.

#### **4.6.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the Water Quality Study during the 2019 study season, with the data collection period from mid-April 2019 through mid-November 2019. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.6.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Water Quality Study is within the range of \$50,000 to \$75,000. The Licensee believes that the proposed level of effort is adequate to assess the potential effects of the West Canada Creek Project operations on water quality.

#### **4.6.11 REFERENCES**

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at:  
<http://www.westcanadacreekproject.com>.

New York State Department of Environmental Conservation (NYSDEC). 2010. Mohawk River Basin Waterbody Inventory and Priority Waterbodies List. Bureau of Watershed Assessment and Management. Available at:  
[http://www.dec.ny.gov/docs/water\\_pdf/pwlmhkw10wimohawkmidwcanada.pdf](http://www.dec.ny.gov/docs/water_pdf/pwlmhkw10wimohawkmidwcanada.pdf)

### **4.7 RECREATION USE, NEEDS AND ACCESS STUDY**

#### **4.7.1 STUDY REQUESTS**

American Whitewater requested that Erie conduct a Recreation Facilities, Use and Aesthetics Study that included an inventory and condition assessment of existing recreation facilities, a recreation use and needs assessment (e.g., observations, visitor intercept surveys and mail and/or internet surveys, and identify visitor perceptions of project operation effects), and develop a Recreation Management Plan that identifies protection, mitigation, or enhancement measures (PM&Es), as well as operations and maintenance measures and future monitoring. In addition, American Whitewater requested the study include an aesthetics assessment (see Section 4.9, Aesthetics Flow Assessment Study), an assessment of the demand for whitewater boating in the Prospect bypass reach, an assessment of existing whitewater boating opportunities in the region, and feasibility of providing additional public access (see Section 4.8, Whitewater Boating Flow and Access Study).

The NYSDEC requested a Public Access study to provide information about existing public access and potential for additional access within Project boundary and within 1 mile upstream and downstream of Project. NYSDEC requested that the study include an assessment of existing conditions, including ability of the recreation sites to meet universally accessible standards and recreation use surveys. In comments on the PSP, NYSDEC requested that Erie conduct an angler

survey in Prospect Reservoir and West Canada Creek to provide information pertaining to fishing experiences, observations of flow conditions on fishing experiences, adequacy of recreation opportunities, and opportunities for recreation enhancements. NYSDEC also stated that Erie should identify methods for expanding the existing downstream warning system (siren and strobe light) at Trenton Falls. The Town of Trenton and individuals provided no specific study requests, but requested increased public access and additional facilities, particularly at Trenton Development.

In comments on the PSP, FERC recommends in addition to disseminating the surveys at the Trenton Falls special event, that user opinion surveys be incorporated into the data collection at the Prospect boat launch and disseminated to county residents and other user groups such as fishermen, wildlife viewers, hikers, or boaters in order to provide a comprehensive understanding of recreation use and public opinion of recreation at the Project.

#### **4.7.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

For the Recreation Use, Needs and Access Study, Erie proposes to conduct a recreation site facility inventory and condition assessment, conduct recreation use counts and visitor survey, and conduct an assessment of public access opportunities and safety considerations at the Project, and characterize downstream recreation opportunities. Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study.

As stated in the PAD, public access to the Project's bypass reaches are restricted for public safety reasons. The Prospect bypass reach is a narrow gorge with steep side slopes of rock outcrops and is bordered on the east by the Prospect development power canal, and on the west by the Mohawk Valley Water Authority (MVWA) Water Treatment Plant and a previous mining operation. Portions of the western banks of the Prospect bypass reach contain apparent mining waste rock disposal which results in additional potential safety hazards. Trenton Falls Gorge consists of steeply walled gorge containing a series of waterfalls, with elevation drops of up to 100 feet at the falls and can be dangerous or conducive to accidents that could cause injury or loss of life.

Erie's proposed Aquatic Mesohabitat Assessment Study includes a drone aerial assessment of the bypass reaches, followed by targeted field assessment. Erie's proposed Recreation Use, Needs and Access study includes a review of this aerial imagery, as well as targeted field assessment, to assess potential public access locations, including potential whitewater boating access (see also Section 4.8, Whitewater Boating Flow and Access Study). This approach will provide data to document public access opportunities and constraints adjacent to and within the bypass reaches while addressing safety concerns by limiting the need for on-site field personnel in these areas.

#### **4.7.3 GOALS AND OBJECTIVES**

The goal of this study is to gather information on existing recreation facilities, use, and estimated future demand and needs, as well as public safety and access at the Project. Following are the key objectives of the study:

- Characterize existing public recreation access, including site locations and facilities, within and immediately adjacent to (abutting) the Project boundary.
- Evaluate the condition of the recreation sites and facilities within the Project boundary, including suitability of facilities to provide opportunities for persons with disabilities to participate in recreation opportunities (i.e., compliance with current Americans with Disabilities Act (ADA) design standards).
- Characterize existing special event activities within and adjacent to the Project area (i.e., Trenton Falls scenic trail events).
- Estimate existing recreation use at the Project recreation sites and conduct visitor surveys during the special event activities at Trenton Falls, and at the Prospect boat launch to determine user perceptions of the operation and management of the facilities, to evaluate the adequacy of access to the Project recreation facilities, and to identify if any changes or upgrades to the sites are needed to meet current or future recreation needs and demand.
- Identify and assess potential for additional public access areas within the existing Project boundary and associated public safety considerations.
- Characterize existing downstream recreation opportunities, including whitewater boating<sup>3</sup>, tubing, and fishing opportunities, and existing public safety alert systems.
- Evaluate the potential effects of continued operation of the Project on recreation resources and opportunities at the Project.

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<sup>3</sup> Summary of information from and reference to the Whitewater Boating Flow and Access Study, Section 4.8.

Assessment of whitewater boating opportunities are addressed under the proposed Whitewater Boating Flow and Access Study (see Section 4.8). Assessment of aesthetic resources are addressed under the proposed Aesthetics Flow Assessment Study (see Section 4.9).

#### **4.7.4 STUDY AREA**

For the recreation use and facility inventory, the study area will include the existing Project recreation sites within the existing Project boundary, including the Prospect reservoir boating access and Trenton Falls trail and access area. For the assessment of suitability of additional public access at the Project and safety evaluation, the study area includes the Project reservoirs, bypass reaches and adjacent shoreline lands within the existing Project boundary. For the downstream characterization, the study area will include West Canada Creek immediately below the Project boundary downstream to the confluence with the Mohawk River.

#### **4.7.5 BACKGROUND AND EXISTING INFORMATION**

Information pertaining to existing recreation use and access within the Project region and specifically associated with the West Canada Creek Project is provided in the PAD, Section 5.9. Erie owns and maintains a formal public boat launch and parking area to provide access to the Prospect impoundment. The boat launch is available to both motor (restricted to 10 horsepower and no jet skis) and non-motor boats and provides a turnaround drive to assist vehicles with trailers. The boat launch is located on the west side of the impoundment, approximately 1,000-feet upstream from the Prospect Dam and is accessible from State Route 365.

Erie, in partnership with the Town of Trenton, provides controlled public access to view the scenic Trenton Falls Gorge for 1 or 2 weekends in the spring and the fall annually since 2006. Erie coordinates with the Town of Trenton to schedule the number and timing of the public access weekends. Erie, in collaboration with the Town of Trenton, developed and implemented scenic viewing trails to enhance these public viewing opportunities, outside of the existing license requirements.

#### **4.7.6 PROJECT NEXUS**

Sections 4(e) and 10(a) of the Federal Power Act (FPA) require FERC to give equal consideration to all uses of the waterway on which a Project is located, and what conditions



would be placed on any license that may be issued. Per Section 10(c) of the FPA, FERC requires licensees to operate and properly maintain projects to ensure the protection of life, health, and property, and to employ measures to enhance the protection of the public that utilize project lands and waters. 18 CFR 12.42 requires the licensee to install, operate, and maintain any signs, lights, sirens, barriers, or other safety devices necessary to warn public of fluctuations in flow from project operations, and to protect/warn the public in use of project lands and waters. The proposed study will provide information on the available recreation facilities, current recreational use, and public safety considerations at the West Canada Creek Project.

#### **4.7.7 METHODOLOGY**

##### **Recreation Site Facility Inventory and Condition Assessment**

Erie will conduct a site inventory and condition assessment at the existing Project recreation sites - the Prospect Boat Launch and the Trenton Falls Trail and access area. The recreation site inventory and condition assessment will include: a brief description of the site; location of the facilities in relation to the Project boundary; type, number and condition of amenities provided at each site; an estimate of parking capacity; hours/seasons of operation; general observations of site use and accessibility; suitability of facilities to provide opportunities for persons with disabilities to participate in recreation opportunities; and accompanying photographs.

##### **Recreation Use Counts and Visitor Survey**

At the Prospect boat launch, Erie will install a traffic counter during the recreation season (Memorial Day through Labor Day) to collect site visitation data. Erie will conduct random spot counts during two days per month during this period to include one weekend day each month and/or holidays, for a total of 8 days of spot counts (Memorial Day week 1 day, June 2 days, July 2 days, August 2 days, and Labor Day week 1 day). The spot counts will include data collection for date, time, weather conditions, number of vehicles and boat trailers observed at the site, license plate (state of origin), number of visitors observed at the site, and type of recreation use. For the Trenton Falls special event days, total counts of participants will be acquired.

Intercept surveys will be administered during the Trenton Falls special event days. Erie will also provide a drop box and survey forms at the Prospect boat launch to collect additional recreation

use data at the boat launch area. In addition, Erie will provide the survey on-line for other potential survey respondents. Notification of the availability of the on-line survey will be provided at the West Canada Creek Project relicensing website, at postings at the downstream public access parking areas, and through a public notice published in the local area newspaper.

The visitor survey will include questions to document the place of residency (county and state), number of people in a party, their primary reason for visiting the Project (type of recreation activity), duration of visit, their perception of the level of use, quality and type of angling activities, and visitor opinions with regard to access, and the amount and types of recreation opportunities offered within the Project boundary. In addition, the survey will include a section for information to be collected from anglers to include angler opinion questions, such as: 1) availability and accuracy of flow information; 2) adequacy of the existing flow warning system; 3) optimal flow ranges for angling opportunities, and 4) satisfaction with the fishing experience.

### **Public Access and Safety Assessment**

Erie will inventory and map existing formal and informal public access at the Project (i.e., areas within and directly abutting the existing Project boundary). The proposed Aquatic Mesohabitat Study (see Section 4.1) includes an aerial (drone) photographic assessment of the Project bypass reaches that will be reviewed as part of this study. In addition, Erie will conduct targeted on-site field assessment to identify site constraints and public access safety considerations. Erie will assess public access opportunities and safety considerations at the Project. The assessment will include characterization of existing land use within and abutting the Project boundary, including type of use (residential, commercial, developed/undeveloped, etc.), ownership (private, public), physical constraints (steep slopes, vegetation), sensitive resource areas (i.e., wetland areas, etc.), and recreational feature opportunity (i.e., waterfall viewing, boat access, etc.).

### **Downstream Recreation Opportunities**

Erie will characterize existing downstream recreation opportunities, including angling, whitewater boating and tubing opportunities. In addition, Erie will characterize existing public safety mechanisms immediately downstream of the Project (within approximately 1 mile), and flow notification systems for the reach downstream from Trenton tailrace to Newport dam.

Additional information pertaining to the downstream recreation flow and access will be obtained as part of the Whitewater Boating Flow and Access Study (see Section 4.8).

### **Recreation Data Analysis and Report**

Erie will prepare a report that includes discussion of the methodology implemented, study area, analysis and results of the recreation study. The report will document the site inventory and condition assessment and will characterize recreation use at the Project recreation sites based on the traffic count data, spot counts, visitation data, and recreation visitor surveys. Erie will provide estimated projections of future recreation use at West Canada Creek Project using the average annual increase in population growth over the past 10 years for the adjacent counties, as reported by the Census Bureau, and discussion of trends reported in the New York Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2014-2019 (NYOPRHP 2014). The study will assess Project site opportunities and constraints, and the ability of sites to meet current and anticipated future recreation demand, public access and safety, and potential effects of Project operations on recreation opportunities at the Project reservoirs, bypass reaches, and immediately downstream of the Project within the study area.

#### **4.7.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology of recreation site inventories, traffic and spot counts, and recreation use surveys are consistent with standard practices and generally accepted methods to assess recreation use and capacity at FERC-licensed projects.

#### **4.7.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the recreation site inventory, use survey, and traffic and spot count data collection from Memorial Day 2019 through Labor Day 2019. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.7.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Recreation Use, Needs and Access Study is within the range of \$50,000 to \$75,000. The Licensee believes that the proposed level of effort is adequate

to assess the current amount of recreational use and needs within the West Canada Creek Project area.

#### **4.7.11 REFERENCES**

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at:

<http://www.westcanadacreekproject.com>.

New York State Office of Parks, Recreation and Historic Preservation (NYOPRHP). 2014. The New York State Statewide Comprehensive Outdoor Recreation Plan and Generic Environmental Impact Statement 2014 – 2019, March 26, 2014. Available at:

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Waterline. 2018. Waterline Website – West Canada Creek at Trenton Falls. Available:

<http://www.h2online.com/default.aspx?pg=si&op=365124>

### **4.8 WHITEWATER BOATING FLOW AND ACCESS STUDY**

#### **4.8.1 STUDY REQUESTS**

In comments on the PSP, FERC stated that additional information was needed to assess appropriateness and benefit of whitewater boating at the Prospect bypass reach and to assist staff in determining whether a controlled-flow whitewater boating study is needed. Specifically, FERC stated additional information needs for the Prospect bypass reach included: (1) whether there is ample parking and safe access to and from the river at a put-in and a take-out location; (2) understanding the type of experience various flow levels would provide; (3) the level of interest or demand from the whitewater community for boating the bypassed reach; and (4) the uniqueness of the experience (i.e., are there other river stretches within an hour's drive that provide a similar experience).

For the reach below Trenton Development, FERC stated that additional information was needed to make a determination on the value of the whitewater boating and tubing resource. Specifically, FERC stated additional information needs for the downstream reach included: (1) the type of user experience various flow levels provide; (2) the level of interest or demand from the

whitewater community for boating this reach; and (3) the uniqueness of the experience (i.e., are there other river reaches within an hour's drive that provide a similar experience).

American Whitewater requested that Erie conduct an assessment of the demand for whitewater boating in the Prospect bypass reach, an assessment of existing whitewater boating opportunities in the region, and feasibility of providing additional public access. American Whitewater requested that Erie conduct a Controlled-flow Whitewater Boating and Access Study, that focused on the Prospect bypass reach and the reach below Trenton station to the confluence of West Canada Creek and the Mohawk River. American Whitewater requested that the study include in a stepwise manner (Whittaker et al 2005): (Level 1) a desktop analysis, (Level 2) limited reconnaissance options, and (Level 3) intensive studies, such as multiple flow reconnaissance or controlled flow assessment.

#### **4.8.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

For the Whitewater Boating Flow and Access Study, Erie proposes to conduct an assessment of public access opportunities and safety considerations, including whitewater boating access opportunities at the Prospect bypass reach. The study methodology will follow a step-wise or phased manner and study protocols will generally follow accepted practices as provided in Whittaker, et. al (2005). These phases will include: (Level 1) desktop analysis and study planning phase, (Level 2) reconnaissance assessment (Prospect bypass reach only), and (Level 3) controlled flow assessment. This phased approach will provide information to determine the basic potential boatability, access, and safety considerations or risks, particularly for the Prospect bypass reach, which is currently unknown. This information will then be assessed to determine if any additional on-water flow reconnaissance or controlled flow assessments are warranted (i.e., for Prospect reach if proceed to Phase 3 on-water assessment).

Information regarding public safety and access obtained from the Recreation Use, Needs and Access Study (see Section 4.7) and the Aquatic Mesohabitat Study (see Section 4.1) will be assessed including a review of the aerial imagery, as well as targeted field assessment, to assess potential whitewater boating access at the Prospect bypass reach.

### **4.8.3 GOALS AND OBJECTIVES**

The goal of this study is to characterize and assess whitewater boating opportunities within the Prospect bypass reach and downstream of Trenton development within the proposed study area, including existing downstream public safety alert systems. Following are the key objectives of the study:

- Characterize whitewater boating opportunities within an hour's drive of the study area;
- Characterize hydrology data and operational constraints including historic records of minimum, maximum, and average flow rates and seasonal variations for the previous 5-year period.
- Assess adequacy of existing put-in and take-out locations for the study area downstream of Trenton Station and assess potential access locations adjacent to the Prospect bypass reach,
- Characterize the type of boating experience and potential demand;
- Identify all potential safety issues and considerations for whitewater boating opportunities; and
- Evaluate the potential effects of whitewater boating flow releases on other resources including recreational uses, aquatic resources, water quality and project generation.

### **4.8.4 STUDY AREA**

For Phase 1 of the Whitewater Boating Flow and Access Study, the study area will include the Prospect bypass reach and West Canada Creek immediately below Morgan dam downstream to the confluence with the Mohawk River, and assessment of comparable recreation opportunities within 1-hour drive from the Project area. For Phase 2, the study area includes the Prospect bypass reach from below Prospect falls to the Prospect powerhouse. For Phase 3 the study area includes the reach downstream of the Project from below Morgan dam to the confluence with Newport reservoir, and if the Phase 2 efforts determine the need to proceed to Phase 3 for the Prospect bypass reach, the study area would be the same as identified under Phase 2, to extent this reach is deemed boatable.

### **4.8.5 BACKGROUND AND EXISTING INFORMATION**

As described in the PAD, existing data is available regarding whitewater boating and tubing flow ranges downstream of the Project, including descriptions of the boating level and class types.

American Whitewater identifies two runs along this stretch with Section 1 (classified by American Whitewater as Class I-II) extending from Dover Road to Route 29 in Middleville, and Section 2 (classified by American Whitewater as Class II-II+) from Route 29 in Middleville to Route 7 at Kast Bridge north of Herkimer. Section 1 extends includes a portage around the Newport Hydroelectric Project (FERC No. 5196) about 12 miles downstream, and Section 2 extends to the Herkimer Hydroelectric Project (FERC No. 9709) located about 26 miles downstream. American Whitewater identifies the flow range for boating this reach as 600 cfs to 10,000 cfs, and that water levels are generally high enough for paddling this reach year-round (American Whitewater 2018).

#### **4.8.6 PROJECT NEXUS**

Sections 4(e) and 10(a) of the Federal Power Act (FPA) require FERC to give equal consideration to all uses of the waterway on which a Project is located, and what conditions would be placed on any license that may be issued. The proposed Whitewater Boating Flow and Access Study will provide information on the appropriateness of whitewater boating at the Prospect bypass reach and determining whether a controlled-flow whitewater boating study is needed, and further characterization of the downstream whitewater boating opportunities.

#### **4.8.7 METHODOLOGY**

##### **Phase 1 - Study Planning and Desk-Top Analysis (Level 1)**

Phase 1 involves a desk-top literature review of existing available information about West Canada Creek river channel characteristics and hydrology downstream of the Project; existing downstream recreation opportunities, including angling, whitewater boating and tubing opportunities; and regional whitewater boating opportunities within 1 hour of the Project area. In addition, existing public safety mechanisms immediately downstream of the Project will be characterized. Erie will review available hydrology information to characterize existing project hydrology data and operational constraints relative to downstream recreation boating releases. Erie will review and characterize historic records of minimum, maximum, and average flow rates and seasonal variations for the previous 5-year period.

To prepare for Phase 2, Reconnaissance Assessment, Erie will develop a Project Safety Plan which will identify field safety protocols and procedures to be implemented during the field study component. All participants will be required to adhere to these requirements and applicable safety policies. Potential access locations for the reconnaissance evaluation (Prospect) and on-water (downstream reach) evaluation will be identified. Evaluation forms for the assessment of boating opportunities relative to recreation flow releases and access will be prepared for use in Phase 2 and Phase 3 of the study.

### **Phase 2 – Reconnaissance Assessment (Prospect Bypass Reach) (Level 2)**

Erie will solicit the assistance of expert whitewater boaters affiliated with American Whitewater and/or local paddling clubs to form an small whitewater boating expert panel (no more than 5 total representatives) to conduct a preliminary reconnaissance assessment (on-land/wading exercise) during leakage flows to identify potential areas within the Prospect bypassed reach that may provide some whitewater features (obstacles, significant drops, etc.), potential limitations to navigation and safe paddling (blocked flow, strainers, etc.), and put-in and take-out access locations. A preliminary evaluation of opportunities for boating and the presence or absence of whitewater features, as well as safety concerns, will be conducted. Observations and assessments of the panel will be documented by the participants on the evaluation forms (developed under Phase 1) and through focus group discussion.

### **Phase 3 – On-Water Controlled Flow Assessment (Level 3)**

Erie with the assistance of the whitewater boating expert panel will conduct an on- water controlled flow assessment to evaluate the suitability for whitewater boating opportunities and to assess the type of experience flows provide for the downstream reach (below Morgan dam to confluence with Newport impoundment, and Prospect bypass reach (below Prospect falls to Prospect powerhouse) in the event that Phase 2 reconnaissance provides sufficient justification to proceed to Phase 3 evaluation for the Prospect bypass reach. The flow release range for the downstream reach will be 1,000 cfs and 1,400 cfs (within the range of potential station-controlled releases), and if the Prospect bypass reach controlled flow assessment is conducted, flows of 100 and 200 cfs are anticipated as target flows for the assessment.



The expert panel will complete post-evaluation forms (developed under Phase 1) to document characteristics of the downstream reach with respect to:

- Estimate of typical trip durations and existing and potential ingress and egress locations;
- Description of features such as rapids and eddies, numbers of portages, likely “attraction” rapids, or other places where boaters are likely to stop or travel on land.
- Estimate of acceptable and optimal flow ranges for different types of whitewater boating opportunities (e.g., for different skill levels, boat types, or types of boating).
- Comparability to similar rivers in the region,
- Qualitative description and estimate of likely demand for boating opportunities.
- Review flow information needs and ability for existing gages to predict flow ranges (i.e., flows suitable for boating).
- Identify safety concerns related to flows, access, and channel features.

Erie will also summarize any information obtained from the recreation survey in the Recreation Use Needs and Access Study (Section 4.7) pertaining to flow preferences for the downstream reach.

### **Data Analysis and Report**

Erie will prepare a report that includes discussion of the methodology implemented, study area, analysis and results of the Whitewater Boating Flow and Access Study. The report will document the whitewater boating opportunities within an hour’s drive of the study area and characterize hydrology data and operational constraints. The report will document the adequacy of existing put-in and take-out locations for the study area downstream of Morgan Dam, assess potential access locations adjacent to the Prospect bypass reach, and characterize the type of boating experience for the downstream reach and the Prospect reach (if Phase 3 is conducted for the Prospect reach is conducted). Finally, the report will provide information pertaining to the potential effects of flow releases on other resources, including recreational uses, aquatic resources, water quality and Project generation.

### **4.8.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology for the recreation flow and access assessment is consistent with standard practices and generally accepted methods at FERC-licensed projects.

#### **4.8.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the assessment of public access and downstream use, and data analysis during the 2019 study season. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.8.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Recreation Use, Needs and Access Study is within the range of \$50,000 to \$60,000. The Licensee believes that the proposed level of effort is adequate to assess potential whitewater boating access within the West Canada Creek Project area.

#### **4.8.11 REFERENCES**

- American Whitewater. 2018. West Canada Creek – Trenton Falls to Herkimer. Available: <https://www.americanwhitewater.org/content/River/detail/id/1453>.
- Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at: <http://www.westcanadacreekproject.com>.
- NYSDEC. 2018. Fishing the West Canada Creek. Available: <http://www.dec.ny.gov/outdoor/9238.html>
- Whittaker, Doug, Ph.D., Bo Shelby, Ph.D. and John Gangemi. 2005. Flows and Recreation: A guide to studies for river professionals, October 2005. Available at: <https://www.hydroreform.org/sites/default/files/flowrec.pdf>
- West Canada Creek Campsites. 2018. West Canada Creek Campsites Website. Available: <http://www.westcanadacreekcampsites.com/>

### **4.9 AESTHETICS FLOW ASSESSMENT STUDY**

#### **4.9.1 STUDY REQUESTS**

American Whitewater requested that Erie conduct a Recreation Facilities, Use and Aesthetics Study that includes an aesthetics assessment with a study of a range of aesthetic flows in the Project bypass reaches that would be videotaped and qualitatively analyzed and for direct observation by a team for subjective grading. FWMB and NYTU requested that Erie conduct an Aesthetics Flow Study to assess the adequacy and need for aesthetic flows in the bypass reaches. The USFWS and NYSDEC requested that Erie conduct a flow demonstration study in the

Prospect and Trenton bypass reaches to identify flow requirements for aquatic habitat and aesthetic resources. FERC, in comments on the PSP, stated the Aesthetics Assessment Study should include methods (Whittaker and Shelby 2017) for evaluating the aesthetics, such as releasing a range of flows for comparison purposes with real-time participant observations, participant opinion surveys, photographs, and film documentation, to provide an adequate basis for determining the aesthetic value of the resource.

#### **4.9.2 GENERAL DESCRIPTION OF THE PROPOSED STUDY**

Erie proposes to conduct an aesthetics resource assessment at key viewing locations adjacent to the Project bypass reaches of identified flow ranges. The study methodology will follow a step-wise or phased manner and will generally follow accepted practices as provided in Whittaker and Shelby 2017. These phases will include: (Level 1) desktop analysis, (Level 2) reconnaissance assessment, and (Level 3) controlled flow assessment. Phase 1 will include desktop analysis (Level 1) and on-site reconnaissance (Level 2) including assessment of existing aesthetic conditions, documentation of key viewing locations, and development of an evaluation form for Phase 2. Phase 2 will include a controlled flow assessment (Level 3) with documentation (photos and videos) at representative key observation points (KOP) locations adjacent to the Project bypass reaches for an identified range of flow releases. These targeted flow releases will be assessed and rated through an evaluation form and focus group discussions by an identified group of study participants (focus group). Erie has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study.

#### **4.9.3 GOALS AND OBJECTIVES**

The goal of this study is to gather information on existing aesthetic character and potential aesthetic flow viewing opportunities adjacent to the Project bypass reaches. Following are the key objectives of the study:

- Document the existing aesthetic character and conditions in the Project bypass reaches;
- Document key viewing locations and opportunities (including special event activities);
- Collect photo and video documentation under various existing and controlled flow conditions for the Project bypass reaches;

- Conduct focus group assessment of controlled flow conditions at representative key viewing locations adjacent to the Project bypass reaches; and
- Evaluate the potential effects of flow releases to other resources including recreational uses, aquatic resources, water quality and Project generation.

#### **4.9.4 STUDY AREA**

The study area will include the Prospect and Trenton bypass reaches.

#### **4.9.5 BACKGROUND AND EXISTING INFORMATION**

The PAD (Section 5.10) provides a description of the existing aesthetic character of project lands and waters, including representative photographs of key project features. In addition, the PAD provides a description of other scenic attractions in the general Project vicinity.

#### **4.9.6 PROJECT NEXUS**

The Project facilities and operation of the West Canada Creek Project has the potential to affect the aesthetic character of the Project bypass reaches, including flow over the dam and in the bypass reaches.

#### **4.9.7 METHODOLOGY**

##### **Phase 1 – Characterization of Aesthetic Features (Level 1 and 2)**

For Phase 1, Erie will characterize and document (photograph) KOP adjacent to the Project bypass reaches during both a leaf-on period and leaf-off period. The assessment will include identification of key viewing characteristics (i.e., key features/structures, waterfalls, vegetation, texture, in-channel geologic features, rapids and distance zones) and characterization of potential use and access of these areas (e.g., special event activities) based on existing available information and information obtained as part of the Recreation Use, Needs and Access Study (Section 4.7). Erie will assess and characterize the timing and flow ranges of historic flow exceedance events within the past 5 years to the extent data is available to further characterize existing flow conditions as they relate to the aesthetic character of the Project bypass reaches.

## **Phase 2 – Documentation and Assessment of Controlled Flow Releases (Level 3)**

For Phase 2, Erie will solicit the assistance of a small focus group (approximately 5 individuals) to consist of a representative from each group of interested stakeholders, such as NYSDEC, USFWS, American Whitewater, FWMB, and the Town of Trenton, to conduct a review of identified flow ranges for key identified KOP locations (i.e., view of waterfall areas) adjacent to the Prospect and Trenton bypass reaches. These KOP locations will include Prospect overlook, Prospect falls, and locations along the Trenton Falls Scenic Trail at established viewing areas of the waterfalls. The targeted flow release range for the aesthetic assessment will include 100 and 200 cfs for the Prospect bypass reach, and 250 and 500 cfs for the Trenton bypass reach. Erie will conduct photo documentation and/or aerial drone documentation of these flow ranges at each of the targeted flows and selected KOP locations. The focus group will review the flows on site, complete an evaluation form, and participate in a focus group discussion. The form will include questions pertaining to the evaluation of the aesthetic conditions for each KOP location under the targeted flow ranges and will include questions with numeric ratings (e.g., seven-point Likert scale). The actual flow ranges will not be disclosed to the focus group participants at the time of the assessment but will be characterized by a flow demonstration designation number.

## **Data Analysis and Report**

Erie will prepare a report that includes discussion of the methodology implemented, study area, analysis and results of the Aesthetic Assessment Study. The report will document the information compiled from Phase 1 and 2 efforts, including analysis and summary of the focus group evaluation form responses and discussion. The report will also include an assessment of potential effects of providing aesthetic flows on other resources, such as recreation opportunities, aquatic resources and Project power generation.

### **4.9.8 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE**

The proposed methodology for the aesthetic character assessment is consistent with standard practices and generally accepted methods to assess aesthetic resources and Project operations effects at FERC-licensed projects.

#### **4.9.9 DELIVERABLES AND SCHEDULE**

The Licensee will conduct the Aesthetics Flow Assessment Study during the 2019 study season. A study progress update will be provided in the Study Progress Report (July and October 2019) and the draft study report will be included in the Initial Study Report.

#### **4.9.10 COST AND LEVEL OF EFFORT**

The estimated cost of conducting the Aesthetics Assessment Study is within the range of \$30,000 to \$40,000. The Licensee believes that the proposed level of effort is adequate to assess the existing aesthetic character and potential aesthetic viewing opportunities within the West Canada Creek Project area.

#### **4.9.11 REFERENCES**

Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28, 2018. Available at:

<http://www.westcanadacreekproject.com>.

Whitaker, D., and B. Shelby. 2017. Flows and Aesthetics: A Guide to Concepts and Methods.

[https://www.hydroreform.org/sites/default/files/Flows%20and%20aesthetics--%20A%20guide%20to%20concepts%20and%20methods%202017\\_Final\\_web.pdf](https://www.hydroreform.org/sites/default/files/Flows%20and%20aesthetics--%20A%20guide%20to%20concepts%20and%20methods%202017_Final_web.pdf)

## **APPENDIX A**

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#### **Brookfield**

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Brookfield Renewable  
33 West 1st Street, South  
Fulton, NY 13069  
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## **APPENDIX B**

### **STUDY REQUESTS AND COMMENT LETTERS FILED IN RESPONSE TO THE PAD AND SCOPING DOCUMENT 1**

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, DC 20426

June 28, 2018

OFFICE OF ENERGY PROJECTS

Project No. 2701-059 – New York  
West Canada Creek Hydroelectric Project  
Erie Boulevard Hydroelectric, L.P.

Steven Murphy, Director of Licensing  
Brookfield Renewable  
33 West 1st Street South  
Fulton, NY 13069

**Reference: Comments on the Pre-Application Document (PAD) and Request for Additional Information**

Dear Mr. Murphy:

After reviewing the West Canada Creek Hydroelectric Project's (West Canada Creek Project) Pre-Application Document (PAD) and participating in the May 30 and 31, 2018 scoping meetings and the May 30, 2018 environmental site review, we have determined that additional information is needed to adequately assess potential project effects on environmental resources. We provide comments on the PAD and our additional information requests in Schedule A. Please file your responses to Schedule A with your proposed study plan that is due on August 13, 2018, unless otherwise specified in the additional information request.

Staff may determine a need for additional studies or information upon receipt and review of scoping comments, study requests, and your proposed study plan. As necessary, we will request additional information, studies, and/or provide additional input on proposed or requested studies after you file the proposed study plan.

Please include a master schedule in your proposed study plan that includes the steps for conducting each proposed study (i.e., data collection, data analysis, consultation, and report preparation), the distribution of progress reports, the filing date of the initial study report, and the date of the initial study report meeting. Finally, if you are likely to propose any plans for protection, mitigation, or enhancement measures, drafts of those plans should be filed, if possible, with the study report.



P-2701-059

If you have any questions, please contact Nicholas Ettema at (202) 502-6565, or via email at [nicholas.ettema@ferc.gov](mailto:nicholas.ettema@ferc.gov).

Sincerely,

John B. Smith, Chief  
Mid-Atlantic Branch  
Division of Hydropower Licensing

Enclosures: Schedule A

Schedule A  
P-2701-059

## SCHEDULE A

### COMMENTS ON THE PAD AND ADDITIONAL INFORMATION

#### Project Facilities

1. On page 4-4 of the PAD, you state that the main spillway is a 306-foot-long by 45-foot-high concrete overflow spillway. However, the 1983 License Order describes the Prospect Dam as a 306-foot-long and *52-foot-high* concrete overflow dam. Please clarify the dimensions of the concrete overflow dam.
2. On page 4-8 of the PAD, you state that the Trenton Dam is a 288-foot-long by approximately 55-foot-high concrete and masonry dam. However, the 1983 License Order describes the Trenton Dam as a 288-foot-long and *60-foot-high* concrete and masonry dam. Please clarify the dimensions of the concrete and masonry dam.

#### Project Operations

3. On page 4-4 of the PAD, you state that Prospect's dependable capacity is 11.2 megawatts (MW) for the summer period and 13.5 MW for the winter period. So that staff can calculate the annual power cost, please provide the average duration (days) of the summer and winter periods.
4. On page 4-8 of the PAD, you state that Trenton's dependable capacity is 20.8 MW for the summer period and 23.2 MW for the winter period. So that staff can calculate the annual power cost, please provide the average duration (days) of the summer and winter periods.
5. On page 4-13 of the PAD, you state that Hinckley Reservoir is operated in accordance with the 2012 Operating Diagram and governed by legally binding agreements between the New York State Canal Corporation (Canal Corporation), Mohawk Valley Water Authority, and Erie Boulevard Hydroelectric, L.P. (Erie). So that staff can better understand the past and present flow regulation and hydropower operation in West Canada Creek, please provide a copy of the current operating agreement as well as any previous operating agreements between Erie and the Canal Corporation. In addition please describe the purpose of the most recent operating agreement and 2012 Operating Diagram and why Erie's previous agreement with the Canal Corporation was updated.

**Schedule A**

P-2701-059

**Project Safety**

6. On page 5-57 of the PAD, you describe the Fisherman Alert System at the Trenton Development. However, no information is provided regarding the alert system at the Prospect Development that was observed during the environmental site review. Please describe the existing alert systems and alert procedures in detail for both developments. Please provide an approximate maximum range for the sirens at both developments.

**Aquatic Resources**

7. On pages 5-25 to 5-26 of the PAD, you describe habitat conditions for fish downstream of the Trenton Falls Development based on existing studies. So that staff can adequately review existing information regarding fish habitat downstream of the Trenton Falls Development, please file a copy of the existing studies including Niagara Mohawk Power Company's 1981 Habitat-Flow Assessment, Ichthyological Associates' 1981 Fish Habitat-Flow Relationship study, and Ichthyological Associates' 1981 Temperature Monitoring study.

8. At the public scoping meeting on May 30, 2018, a member of the public inquired about the effects of the removal of Gray's Reservoir, a reservoir previously located upstream of Hinckley Reservoir on Black Creek, on downstream hydropower operations. So that staff can evaluate potential cumulative effects of the elimination of Gray's Reservoir on flows in West Canada Creek, please describe any changes in flow releases or hydropower operation at the West Canada Creek Project as a result of the removal of Gray's Reservoir.

**Terrestrial Resources**

9. Table 5-15, on page 5-36 of the PAD, lists the acreage and specific classifications for National Wetland Inventory (NWI) mapped wetlands in the project area. This table and figure 5-6 on page 5-37, indicate that 0.19 acre of wetlands occur in the Prospect Development area of the project boundary which has a daily reservoir fluctuation of up to 5 feet. However, during the environmental site review, staff observed a small wetland near the Prospect boat launch that was not included in the NWI map. It is not clear if the NWI map is capturing all the wetlands in the project boundary. Therefore, please include a ground-truthing component of the NWI map as part of your proposed aquatic habitat mapping study described on page 6-5 of the PAD.

10. At the public scoping meeting on May 30, 2018, New York State Department of Environmental Conservation staff stated that there was a known bald eagle nest near the Prospect Development. However, you do not provide any information about this nest in your PAD. So that Commission staff can determine the potential effects of continued project operation on bald eagles, please include a map in your license application

Schedule A  
P-2701-059

indicating the location of the known bald eagle nest and its distance from the project boundary. Please file this information as privileged.

## Cultural Resources

11. So that staff can better understand historic resources at the project, please provide a more detailed description of the project's history, including a timeline of development. Although the project was not licensed by the Commission until 1983, please start the timeline with construction of the original power station in 1901. Within the timeline, please also include a description of all redevelopment and rehabilitation activities that have occurred during the project's history, including the dates of construction of the dams and any associated facilities. Additionally, there is little information in the project record that describes the circumstances behind Niagara Mohawk Power Corporation seeking a Commission license in 1983 for an 80-year-old project. If this information is available, please provide it. Finally, please file a copy of the 1993 Historic American Engineering Record (HAER) for the Trenton Development. This information can be provided in the draft license application/preliminary licensing proposal that is due in October 2020.

12. On page 5-77 of the PAD, you state that a cultural resources survey was performed in 1978 by Pratt and Pratt Archeological Consultants as part of the previous redevelopment at the Trenton Development. So that staff can understand the extent of the only cultural resources survey that has been completed at that development, please provide a copy of any report(s) from that survey. The thoroughness of the report(s) will help staff determine if additional cultural resources surveys of the project are necessary.

13. As stated in the PAD, the licensee, in partnership with the Town of Trenton, has provided controlled public access to view the scenic Trenton Falls Gorge for 1 or 2 weekends in the spring and the fall annually since 2007 via the Trenton Falls Scenic trails. The primary trail is a 0.75-mile-long crushed stone trail that starts at the Trenton Falls facility entrance/parking area, passes adjacent to project facilities, traverses along sections of the project penstock, and ends at the Trenton Falls Hydro Dam Overlook. There also are two wood mulch secondary trails (totaling approximately 0.5 mile), that provide views of the lower high falls and upper high falls, and an additional four wood mulch secondary trails (totaling approximately 0.6 mile) through a wooded and meadow landscape and a picnic area in the general vicinity of the primary trail.

On page 5-53 of the PAD, you state that the Trenton Falls Scenic Trail "traverses along adjacent areas of historic interest, such as the site of the historic Trenton Falls Hotel;" however, none of these historic sites are identified or discussed further in the PAD. In addition, at the May 30, 2018 environmental site review, it was mentioned that the Trenton Falls Scenic Trail also traverses adjacent to a cemetery; however, that cemetery is not mentioned in the PAD. So that staff can better understand the

## Schedule A

P-2701-059

archaeologic and historic setting of the project area, please provide a list of any archaeological or historic areas of interest that are located along or adjacent to the Trenton Falls Scenic Trail, a description of the areas, and where the areas are located in relation to the project boundary. Please also conduct a search of the New York State Cultural Resources Information System for the area along and adjacent to the Trenton Falls Scenic Trail in order to identify whether there are any archeological sites, New York State and National Register of Historic Places (National Register)-listed properties, properties determined eligible for the National Register, and/or previous cultural resources surveys identified in this area. Although the area of potential effect (APE), as required under section 106 of the National Historic Preservation Act [36 CFR Part 800.16(d)], has not yet been defined, the trail provides public access to the project and should be considered to be within any APE that will be defined. As a result, if the information requested above is unavailable, additional studies may be necessary to identify cultural resources and determine project effects within the APE, including along the Trenton Falls Scenic Trail.

Kevin Keeley, Remsen, NY.

Hello,

I would like to note that I believe that more recreational opportunities need to be afforded to enjoy the Trenton Falls Gorge. There is one trail that has limited views and limited access that can be enjoyed twice a year. We have this wonderful and beautiful location in our backyard that could help to draw people to our area as it did many years ago, however, access is extremely limited and does not afford the opportunity that the area really deserves to enjoy the nature that is in their backyard. I do believe this could come through multiple different facets including, but not limited to a year round park, an additional trail on the opposite side of the gorge, an actual trail through the gorge, or the offering of commercially guided recreational tours. It is extremely unfortunate that people are not able to enjoy the area to it's fullest extent due to the hydropower's influence. This should be looked at and reviewed in considering the re-licensing.

Kevin

John I Garver, PhD, Schenectady, NY.

This letter addresses three main concerns with the Scoping Document 1 for the West Canada Creek Hydroelectric Project, P-2701-059. These are: 1) Flood severity and magnitude have increased dramatically; 2) The presence of absence of threatened aquatic species is probably unknown because we lack detailed biological surveys; 3) The Trenton Falls George is a geological and scenic treasure and everything should be done to open the area to easier access for sightseeing and education.

#### 1) Flood severity and magnitude on the West Canada Creek

Changes in the flood severity and magnitude need to be evaluated and factored into planning for dams on the West Canada Creek (WCC). Analysis of discharge data in the WCC indicates that there has been a major increase in flood severity. This change has important implications for the existing infrastructure, and also for the future of dams on the river. Because the change in the last decade has been so dramatic, it is difficult to imagine how these numbers can be extrapolated in a 30 to 50 yr planning scenario.

The USGS stream gage on the West Canada Creek at Kast Bridge in Herkimer provides 100 years of discharge data. We have used a Weibull equation to calculate recurrence intervals of peak instantaneous discharge (1921 to 2017 - see figure on next page). These calculations indicate that there has been a sharp increase in flood magnitude since 1980. If taken alone, the recurrence interval of the 100-year flood (1% annual probability) since 1980 is 20% higher than a recurrence interval calculated for all the data. If one compares the data up to 1980 (i.e. 1922 to 1980 - appropriate for much of the infrastructure in the West Canada Creek), and just the data since 1980 (1980 to 2017 - appropriate for current modern planning), the peak instantaneous discharge has increased 36% for the flood with a 1% annual probability. If the Probable Maximum Flood (PMF) is the 500 yr flood (0.2% annual probability), the change is from 29 kcfs to 41 kcfs (using the same pre- and post-1980 intervals).

Of the six highest discharge events recorded by the USGS at Kast Bridge on the West Canada Creek, five of them have occurred since 2000 (2013, 2011, 2006, 2000, 2017). The change may be related to an increase lake-effect snowfall (i.e. Burnett et al., 2003, J. Climate, v. 16) that would affect discharge, especially flows of spring freshets. A hypothesis for the reason behind this change is that warmer water in Lake Ontario is leading to greater moisture availability, and hence more precipitable water downwind (which would include the WCC basin). However, not all of these recent big floods occurred in the spring, and there is also a concern that more extreme hydrological events are driving bigger and more dramatic floods in the Northeast (Haung et al., 2017, J. Hydrometeorology, v. 18, p. 1783-1798). Either way, the flood record in the last decade is clear, and an important question is how these floods will affect dams and dam operation in the WCC basin. (Figure not uploaded into text box at web site)

These data suggest that the Probable Maximum Flood is larger now than when the dams were built (Trenton Falls 1905; Prospect 1959), and it is quite possible that it will increase in the future. Thus there is a major concern for dam safety, especially during big floods.

It is possible that the dams are not designed to handle this amount of water, and we have seen the consequences of this elsewhere in the Mohawk Watershed. For the Prospect project, flows beyond 1.8 kcfs are managed using Tainter gates with a combined capacity of 16.5 k cfs. For the Trenton project flows over 1.4 kcfs are managed by a sluice gate and then tripping flashboards. I would note that the top three floods on record (2006, 2011, 2013 - measured down river) had discharge of 21.8 to 25.3 kcfs. Tainter gates failed on the Blenheim-Gilboa dam during Irene. Before Irene, no one ever dreamed we would see 110+ kcfs in the headwaters of the Schohaire Creek. The change in the hydrology in the WCC basin has been dramatic and planning should consider how high water events will affect dam safety and dam integrity.

## 2) Threatened and Endangered species

Recent focused work in the Mohawk River on fish populations in the last few years has provided critical new information about the distribution of native, non-native, and invasive species (i.e. George et al., 2018, MWS Abstracts, p.25). These recent surveys are time intensive, but they have provided important new information about the Mohawk fishery. I am not aware of any comprehensive surveys of aquatic species in any of the tributaries to the Mohawk. Thus it is unclear to me how threatened and endangered species can be fully assessed without biological surveys where population data can be evaluated.

## 3) Geological resources - Trenton Falls

The type locality of the Trenton Limestone occurs at Trenton Falls, and this is one of the most important geologic localities in North America. These strata have been studied for over 200 years, and some of the most important discoveries here have established the foundation of North American Stratigraphy.

The geology here is important because the strata record and critical time in the history of eastern North America and the strata have a rich and varied fossil record and these strata are a paleontological treasure. I have taught geology and stratigraphy in NY State for 30 years, and I have never seen the Trenton stratigraphy in this gorge, but I have tried.

Broadly speaking, the Trenton Falls are a natural treasure and one of the most iconic locations in the State of New York. Currently the rocks and Falls are essentially inaccessible (except for viewing two weekends a year). This should change. The project should investigate ways in which the gorge and the and the rocks are accessible to the public and for education.

John I. Garver, Ph.D.  
518-388-6770



robert carnevale, whitesboro, NY.

I AM A PROPERTY OWNER ON HINCKLEY RESERVOIR, AND ALSO A MEMBER OF THE CITIZENS OF HINCKLEY.

YES I DID ATTEND THE MEETING ON MAY 30 2018

WAS GLADE TO SEE THE LARGE TURN OUT AND WE DID HAVE THE NEWS COVERAGE FOR ONCE.

AND JUST LIKE I HAVE SEEN IN THE PAST NO ELECTED OFFICAL INVOLVED OR ATTENDING?

NOT SURE WHY? BUT I HAVE OVER THE YEARS CONTACTED THE FOLLOWING.

ROANN DESTITO,JOE GRIFFO,CHUCK SCHUMER,CLAUDIA TENNEY,ANTHONY

BRINDISI,MARK BUTLER,ANDREW CUOMO

ALSO THE WATER AUTHORITY,THE POWER AUTHORITY,AND CANAL CORPORATION.

AND NEWS MEDIA WKTV,UTICA OD.

THIS ISSUE IS A VERY SERIOUS ONE THAT CONCERNS MANY PEOPLE

LIVES,MONEY,ENJOYMENT,PROPERTY VALUES,SAFETY AND SO ON.BUT NO ELECTED OFFICIALS SEEN TO GET INVOLVED OR WANT TO?

HERE WE ARE THE PEOPLE TRYING TO SAVE THIS FINE RESERVOIR FROM THE GREED OF POWER COMPANYS PUTTING MONEY IN THERE POCKETS? OR IS SOME OF IT GOING INTO THE POCKETS OF ARE SO CALLED ELECTED OFFICALS?

HOW DO YOU GIVE A 30 PLUS YEAR LICENSE TO ANYONE?

THEY HAVE TAKING ADVANTAGE OF THERE RIGHTS TO THE USE AND TO NOT COMPLY WITH SET REGULATIONS.

AND THATS WHY WE HAVE THIS WATER ISSUE ON THE RESERVOIR.

NO WAY CAN YOU ISSUE A NEW LICENSE TO HAVE THEM ABUSE IT LIKE THEY HAVE OVER THE YEARS.

WE NEED TO STOP THIS NOW FOR THE FUTURE OF THE RESSERVOIR AND THE NEXT GENERATION.

SAD TO SAY AND TO SEE THAT WAS NOT THOUGHT OF BACK IN THE DAY WHEN THE LICENSE WAS ISSUED.

IT WAS NEVER TAKEN INTO CONSIDERATION OF WHAT COULD HAPPEN OR TO PROTECT ARE GENERATION FROM THIS.

MONEY CAN NOT ALWAYS DICTATE THE END RESULTS

ROBERT CARNEVALE SR.

Mark A. Reardon, Mohawk, NY.

The West Canada Creek is under severe stress as it is with providing water to the Barge Canal System and the City Of Utica. Native trout have gone extinct and if not for Brown trout stocking fish would be gone entirely. Extreme water fluctuations are and will continue to destroy the natural habitat. The small and limited amount of hydro power produced does not warrant the renewal. Millions of dollars in revenue lost from fisherman and outdoorsman to the local economy are at stake. Please listen to the riverkeepers and restore this fishery.



MARC W. BUTLER  
Member of Assembly  
118<sup>th</sup> District

THE ASSEMBLY  
STATE OF NEW YORK  
ALBANY

**ORIGINAL**

June 7, 2018

Federal Energy Regulatory Commission  
c/o Kimberly D. Bose, Secretary  
888 First St., NE  
Washington, D.C. 20426

Re: West Canada Creek Hydroelectric Project (FERC No. 2701)

Dear Secretary Bose:

I wish to add my thoughts on behalf of my constituents in both Herkimer and Oneida County as the Federal Energy Regulatory Commission (FERC) weighs an application by Erie Boulevard Hydropower/Brookfield Renewable to renew its license for hydropower generation on the West Canada Creek and in the vicinity of Hinckley Reservoir.

Hinckley Reservoir and the West Canada Creek have been the source of contention for a period of several years. The Reservoir was constructed by New York State as a feeder for the Erie Canal at the turn of the last century. Secondary uses evolved including flood control for the communities along the West Canada, a water supply source for the City of Utica, recreation, including trout fishing and, of course, and the residential and recreational opportunities that a clean clear Adirondack water body provides. Additionally, the Jarvis Hydro facility is also located just below the outlet dam of Hinckley.

More recently, Herkimer and Oneida Counties created a Water Authority, whose purpose is to oversee and manage the water system in the Greater Utica area and in two additional townships in Herkimer County. The authority now claims rights to the Hinckley Water and at some future point plans to draw a dramatically larger amount of water to its system to supply the needs of a newly constructed nanotechnology facility in the Utica area.

To further compound the matter, I have been led to believe that Erie/Brookfield "ponds and pools" its water supply, releasing the water through its turbines at a time period during the day where the power that is generated pays at a higher rate. I have been told by knowledgeable people that this fluctuation of water levels in the West Canada Creek is detrimental to the fish population.

For several years, the Mohawk Valley Water Authority and the State of New York were involved in litigation to determine who exactly was in control of the water levels on Hinckley and the West Canada Creek.

RANKING MINORITY MEMBER  
Committee on Standing Committees

MEMBER

Committee on Rules

Committee on Economic Development,  
Job Creation, Commerce and Industry

Committee on Higher Education

Committee on Agriculture

Committee on Insurance

Committee on Environmental Conservation

Subcommittee on

Agriculture Economic Development and  
Farmland Protection

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REGULATORY COMMISSION

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SECRETARY OF THE  
COMMISSION

FERC

Page 2222

Assemblyman Butler

That issue was never fully resolved in the courts, and the state and water authority are in the position of an uneasy cooperative venture. (I have included the latest news report on this issue).

Finally, there is a concern among residents about severe flooding along the West Canada in recent years. There are a variety of theories for this, but there exists a general anxiety that "things just aren't the same as they used to be."

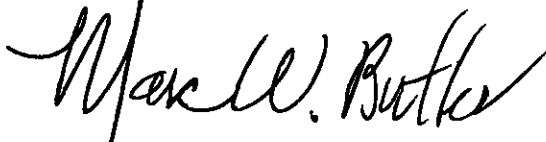
As I'm sure you can see, this is not a typical re-licensing process. There are many purposes for the use of this water, uses that are sometimes in conflict with each other. It's important to provide this context material to demonstrate the dramatically different circumstances we face since the initial license was granted to Erie/Brookfield.

While I am unable to find the specific numbers in my personal records, as an initial threshold position I would at the very least urge FERC to consider raising the minimum flow requirement in Erie/Brookfield's license and to address the issue of "pooling and ponding" to maximize profits.

FERC's determination on this issue will be significant. Hinckley and the West Canada Creek are both a wonderful resource. But they are not an infinite resource. I sincerely hope you will keep that thought in mind, listen carefully to residents' concerns, and come to a reasonable conclusion that will serve our region's purpose in both the short and long term.

Of course, I am available if you need any further input from my office.

Sincerely,



Marc W. Butler  
Member of the Assembly  
Enc.

## **Appellate court rules on Hinckley water levels**

The latest round in the contentious battle between the Mohawk Valley Water Authority and NYS Canal Corporation over Hinckley Reservoir's water levels goes to the Canal Corporation.

Posted: Mar. 27, 2018 5:27 PM

Updated: Mar. 27, 2018 5:37 PM

Posted By: Joleen Ferris, WKTV

*1 PAGE*

The latest round in the contentious battle between the Mohawk Valley Water Authority and NYS Canal Corporation over Hinckley Reservoir's water levels goes to the Canal Corporation.

"The real issue is not did they make an agreement to maintain a water level. They did. The issue is, what are the exceptions and when do they apply? The court said that's too ambiguous for us to decide without having any testimony," says attorney Mark Wolber, explaining the Appellate Division Fourth Department's recent ruling.

MVWA Executive Director Patrick Becher says the authority and Canal Corp. agreed that the Canal Corp. would maintain a minimum water level of 1,195 feet above sea level, except in conditions of extreme drought. Becher is confident the state is well aware of what they agreed to.

"Position of the Canal Corporation was that it was simply a guideline and not an actual requirement, which we found pretty startling, considering we almost walked out of negotiations several times over that exact point," says Becher.

Becher says that now the authority's board of directors will consult with their attorneys on whether or not to pursue further legal action.

reed willis, NewHartford, NY.

Hi my name is Reed Willis. I am the third generation of five that have enjoyed Hinckley reservoir dating back to the 1920's. My grandparents bought the property in the late 20's and built the camp in 1933. I grew up during a time before Brookfield's power generation dictated the level of the lake. I was at the Trenton hall meetings and listened to Brookfield talk. If you believe them if Hinckley didn't release any water they wouldn't get any. When quite the opposite is true. Either they get the water based on some curve or the state has to pay them. Hinckley dam was built to feed the barge canal. It controlled the level of lake and there was a lot of barge traffic on the canal during that time. I can remember fishing on it with my dad. There was a steady stream of barges going both ways. Yet we had water in the lake. It would be high in the spring and slowly go down over the summer. Not the wild fluctuations we see today regardless of the weather conditions. When Niagara Mohawk ran this project we didn't have these problems they went with the flow. They didn't sue us if they didn't get enough water.

I never was unable to put my boat in the water in the SPRING due to low water level prior to Brookfield entering the picture or finding my dock high and dry after not being to the lake for TWO DAYS. Plus low water levels expose many hazards to navigation on the lake. Sand bars, rocks and stumps. Low water also creates greater temperature swings of the water which cannot be good for the fishery.

In recent years I have been rehabbing the camp. I have almost daily come in the morning to an empty Prospect reservoir, leaving at night to a usually full one. Some times it is so low you can see the foundations of buildings next to the river channel. Is this good for Prospects fishery? Or the nightly flooding of the West Canada's fishery?

In conclusion Brookfield needs to BE CONTROLLED NOT IN CONTROL of this water system. They need to go with the flow, not some curve. Actual flow into Hinckley. If water is not coming in at greater than min flows. It should not be going out more than min flows!

Thank You  
Reed Willis

West Canada Creek Project (P-2701-059)

Ken Ziobro, Whitesboro, NY.

6/14/2018

. . .

Ken Ziobro

President, Mohawk Valley Chapter of Trout Unlimited #112

39 Beechnut Terrace

Whitesboro, NY 13492

Comments to FERC regarding West Canada P-2701 Scoping Document

Ms. Kimberly Bose, Secretary

Federal Energy Regulatory Commission

888 First Street NE

Washington DC 20426

I am submitting comments on behalf of the approximately 200 members of the Mohawk Valley Chapter of Trout Unlimited #112, regarding the re-licensing of the Trenton Falls Dam, operated by Erie Boulevard Hydropower L.P. (Brookfield .) As a cold-water conservation and salmonid preservation organization, there are numerous issues that need to be rectified by Brookfield Power before this process is approved.

Operating under its current license, Brookfield has not displayed concern for the ecosystem or the aquatic fish and insects that are dependent on the West Canada Creek to survive. Erratic flows and pulsing have harmed the fishery on a regular basis, and Brookfield has not stepped forward to see what it can do to ease the stress on the fishery. Brookfield should be responsible for completing a comprehensive study and report detailing the damage that is being done to the aquatic ecosystem and fish because of this erratic pulsing of the creek. Low flows during hot summer months and freezing winters do great harm to the fish and aquatic insects, and natural reproduction of trout is now nonexistent. We completely understand that Brookfield needs to make a profit, as it is a business, but we also feel there could be some compromises on their part and take steps to work with the local fishing organizations to enhance fishing opportunities and protect this resource. On any given day fisherman can be found on the West Canada Creek, including local people and those from out of state, who have come here as a destination to fish. All will tell you that it is not the fishery it was before Brookfield assumed control of the dam.

Brookfield must be required to put a system in place that can provide real-time flow volumes that are accurate. Fishermen indicate that they check the Waterline online resource that is presently available, drive a great distance to find on arrival that flows are higher than Waterline indicated, and therefore unsafe to wade and fish. We have heard from several local tourism groups that surveys show that fishermen contribute several million dollars each year to the local economy. Our area cannot afford to lose this revenue if angling conditions continue to decline. More attention must be paid to improving the safety of those using the creek for recreation. There is a siren and light strobe that is employed at Trenton Falls that is activated fifteen minutes before water is released. What about those further away that are out of sight and sound of these warnings? They have no indication that flows have increased. We have heard stories of people almost becoming stranded during unanticipated releases of water.

Using "run of the river " principles of hydro power generation, as well as other newer technologies, could be an alternative that may work with less damage to the environment and aquatic creatures, plus improving the quality of life for those that reside in the area . There are bypasses that could again carry water to support fish spawning and insect habitat that would improve the fishery. One is a reach through the Town of Prospect NY that has a beautiful scenic overlook that once focused on a magnificent waterfall that is now seen only after a heavy rainfall. Otherwise this bypass is bone dry.

In closing we realize that this is a complex issue due to the fact that both Power Authority of New York and Erie Hydropower operate separate dams that control the way water is distributed on the West Canada Creek, and that the Hinckley Dam is unlicensed This issue needs to be resolved once and for all, for it has caused problems for far too long. We are hopeful that FERC can settle these issues by not renewing Erie Hydropower L.P.( Brookfield's) license without imposing conditions that protect this unique cold-water fishery. Future generations should know that we cared enough to protect the West Canada Creek and its watershed inhabitants, human and aquatic.

Thank you for the opportunity to provide comments on this important matter.

Ken Ziobro

President, Mohawk Valley Chapter of Trout Unlimited #112



# NEW YORK STATE COUNCIL OF TROUT UNLIMITED

16 June 2018  
7 Helen Street  
Plattsburgh NY 1290  
[wellman1985@charter.net](mailto:wellman1985@charter.net)

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

Comments: Re: Scoping Document 1, West Canada Project P-2701

Dear Secretary Bose:

The following comments are provided by the New York State Council of Trout Unlimited in reference to Scoping Document 1 for this project.

## **Adequacy of Proposed Studies:**

The studies proposed by Erie (Brookfield) in figure 5, page 17, of the document are clearly inadequate and additional studies are needed to obtain a realistic picture of the ecological and environmental impacts of the proposed relicensing. Erie proposes only two studies; Aquatic Habitat Mapping and Recreational Study and Inventory. These studies, while required, are only a partial list of those needed. These include:

## **Comprehensive Fisheries Inventory and Habitat study of all Impacted Waters within the Project Boundaries:**

This study should be conducted over a period sufficient to obtain full information on fish abundance, presence, condition and any other factors deemed significant by either New York State Department of Environmental Conservation or by the US Fish and Wildlife Service. Currently available information is outdated, with major portions relying on data from 1981. An examination of current conditions is essential to properly assess fishery needs within the project.

## **Adequacy of Water Flows within the Project:**

Is 160 cfs enough? This is the currently required bypass flow below the Canal Corporation cutoff. This is highly questionable given the problems related by anglers and other observers regarding water conditions in the river corridor. Water fluctuations caused by ponding operations perilously impact the macro invertebrate

life in the riparian boundary area, as well as the fish population. A thorough examination of water flows, including their effects at differing times and volumes is clearly needed. Any such examination must by its nature look at the source of those flows, which are the currently unlicensed Hinckley Dam and its NYPA Jarvis hydro operation.

### **Adequacy of Water Flow Within Bypassed Reaches:**

Given the peaking method of operation of the project, flows within the significant lengthy bypass reaches of the Project are seriously impacted. Water resource conditions within those areas must be evaluated as part of the relicensing. Each reach, because of differing geologic conditions, will require separate study.

### **Aesthetic Effects of Relicensing:**

Both the communities of Trenton Falls and Prospect have already voiced concerns over the lack of water flows which have a dramatic and negative impact on the quality of life in those communities, and which impact their economic well being by detracting from their attractiveness. A study, perhaps using the Delphi method, is essential to evaluate the current adequacy and need for aesthetic flows over scenic reaches.

### **Cumulative Effects:**

It is unfortunate that neither the New York Power Authority nor Erie (Brookfield) thought it appropriate to combine the relicensing of the Jarvis Project P-3211 and the West Canada Project P-2701. The proximity of both projects, the effects of water flows with the stream corridor and the effects of Hinckley Dam operation combine to create cumulative effects that impact the entire riverine ecosystem. These impacts are exacerbated by two major legal and administrative concerns, which must be addressed at some point by FERC. These are:

### **The 2012 Flow Diagram Agreement between Erie (Brookfield) and the New York State Canal Commission:**

This document is not part of either the license for the Jarvis Project nor for the West Canada Project, yet it has a controlling impact on both. Although the document may meet legal requirements in itself, it presently remains outside of FERC's regulatory purview despite its significant impact. The Agreement, as necessarily amended, should be made a part of both licenses for West Canada P-2701 and Jarvis P-3211. Terms of the Agreement should not be viewed as inviolate in this proceeding, and if necessary changes should be effected to meet current conditions.

### **Unlicensed Nature of Hinckley Dam:**

This topic remains the unaddressed elephant in the room. Hinckley remains unlicensed by FERC, although apparently considered by FERC, Brookfield, and New York Power Authority as part of the Jarvis Project and within its boundaries and

despite its overriding controlling effect on the ecosystem. Saying it doesn't make it so, and any future attempt by FERC to impose conditions on the Canal Commission, given the current unrecognized nature of Hinckley, is legally problematic. Meanwhile, Hinckley continues to have the controlling influence on hydro conditions on all downstream West Canada endeavors; recreational, hydro, civic or municipal. The solution to this quandary is well within FERC's authority; that is; require that the Canal Commission, which is now part of the New York Power Authority, either merge the Hinckley Dam with the Jarvis Project P-3211 or undertake a separate license of the dam. Precedent for this action has already been thoroughly established and has been fully explicated in the earlier US Fish and Wildlife Service submission regarding the Jarvis Project.

The New York State Council of Trout Unlimited is part of America's largest and oldest cold-water conservation organization, and consists of over 6,000 members throughout New York State. Its members live in the area impacted by this Project and are anglers and enjoy the recreational benefits provided. All of the comments above have a nexus in the protection of the exceptional waters of West Canada Creek and its outstanding fishery and recreational benefits, and are directly related to the impacts of the proposed relicensing.

The Council appreciates the opportunity to provide comments on this relicensing.

For the Council:

/s/

William H. Wellman, Hydro Chair

DEC  
FWS  
Brookfield  
TU

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Erie Boulevard Hydropower, L.P.  
Application for New License

West Canada Creek Hydroelectric Project  
Project No. 2701-059 – New York

AMERICAN WHITEWATER COMMENTS & STUDY REQUESTS IN RESPONSE TO  
NOTICE OF INTENT TO FILE LICENSE APPLICATION, FILING OF PRE-APPLICATION  
DOCUMENT (PAD), COMMENCEMENT OF PRE-FILING PROCESS, AND SCOPING;  
REQUEST FOR COMMENTS ON THE PAD AND SCOPING DOCUMENT, AND  
IDENTIFICATION OF ISSUES AND ASSOCIATED STUDY REQUESTS REGARDING  
THE WEST CANADA CREEK HYDROELECTRIC PROJECTS (FERC PROJECT NO. 2701)

American Whitewater (AW) submits the following Comments and Study Requests in response to the filing of the Pre-Application Document (PAD) filed by Erie Boulevard Hydropower, L.P. for the West Canada Creek Hydroelectric Project, FERC Project No. P-2701, located in the Towns of Trenton and Russia, and Oneida and Herkimer counties, New York. The project consists of two developments: (1) Prospect Development, located approximately 33 river-miles upstream from the confluence of West Canada Creek and the Mohawk River, and, (2) Trenton Development, located approximately 31 river-miles from the confluence, with a combined installed capacity of 39.8 MW.

American Whitewater is a national non-profit 501(c)(3) river conservation and recreation organization founded in 1954. With approximately 6,000 members and 100 affiliate clubs, representing tens of thousands of whitewater paddlers across the nation, American Whitewater's mission is to protect and restore our nation's whitewater resources and to enhance opportunities to enjoy them safely. Our members are primarily conservation-oriented kayakers and canoeists, many of whom live and/or engage in recreational boating in the New York and New England region within easy proximity of West Canada Creek. American Whitewater has long been involved with the FERC licensed hydropower projects in the Adirondack region, including hydropower projects located on the Moose, Black, Beaver, and Raquette rivers, and are party to settlement agreements that provide for whitewater boating opportunities that partially mitigate for project impacts

West Canada Creek is a unique river reach located approximately 2.5 river miles below the Gregory B. Jarvis Hydroelectric Project (FERC No. 3211) situated at the Hinckley Dam and owned and operated by the Power Authority of the State of New York. The Hinckley Reservoir regulates flows for the generation of hydroelectric power at the Jarvis Project and discharges directly into the Prospect Development impoundment.

The Prospect Development includes the 52-foot tall Prospect Dam that impounds a 176-acre, 3,250 acre-feet reservoir with a drainage area of 375 miles that fluctuates 5.5 feet due to hydropower generation, a 4,500 foot power canal, and 430-foot penstock leading to a 17.3 MW powerhouse with a 135-foot head, and a 1.2-mile bypassed reach containing the 22-foot high Prospect Falls that is largely dewatered by the project except during periods of high flow when inflows exceed 1855 cfs when the impoundment is at its maximum elevation. The bypassed reach has no required aquatic base flow, and there is no public access or aesthetic flow over Prospect Falls, a unique geological feature. Public access and recreation in the natural river channel is completely prohibited by the Licensee despite the fact that the West Canada Creek is a navigable river.



Fig. 1: Prospect Falls (unknown flow)

The Trenton Development, located approximately 0.5 river miles below the Prospect Development powerhouse, includes the 60-foot tall Trenton Dam that impounds a 9 acre, 264 acre-feet reservoir with a drainage area of 376 miles that fluctuates 12 feet due to hydropower generation, a penstock and conveyance structures leading to a 22.5 MW powerhouse with a 255-



foot head and a maximum hydraulic capacity of 1425 cfs, and a bypassed reach extending approximately 4000 feet from the Trenton Dam to the powerhouse that contains an extraordinary series of waterfalls and drops that is largely dewatered except during periods of very high flow when inflows exceed the maximum hydraulic capacity of the project. The bypassed reach has no aquatic base flow or aesthetic flow, and there is no public access to view the extraordinary geologic features of the Trenton Falls Gorge except during two designated weekends annually when as many as 2000 visitors come view the dewatered gorge on a single weekend.



Fig. 2: Treston Falls Gorge, Currier & Ives Lithograph



Fig. 3: Trenton Falls Gorge (unknown flow)

## Project Impacts on Recreation and Aesthetics

American Whitewater submits these comments and study requests in order to address project impacts on recreation opportunity and aesthetics both within the project boundary and down river. Project operations have a substantial adverse impact on the ability of the recreating public to use and enjoy West Canada Creek. The purpose of relicensing is to provide FERC with necessary information in order to complete its NEPA analysis of project operations on non-power resources.

- Prospect Development

The Prospect Development is operated in store-and-release mode utilizing flows released from the Jarvis Project at the Hinckley Reservoir. Normal hydropower operations at the Prospect Development cause a 5.5-foot fluctuation in the Prospect Reservoir. The Licensee acknowledges that the Prospect Reservoir is utilized for boating and angling; however, the impacts of the 5.5-foot reservoir elevation fluctuation due to peaking operations are unclear. The PAD fails to indicate whether the lower reservoir elevation results in the dewatering of certain areas in the impoundment or restricts the ability of the public to launch boats from the boat launch on State Route 365. Reservoir fluctuations may also negatively impact on the littoral habitat, possibly resulting in a negative impact on aquatic habitat and limiting angling opportunities.

At the Prospect Dam, inflows are stored in the impoundment in order to avoid spill into the natural river channel and released into the power canal to time generation to take advantage of peak energy pricing. The result is that the natural river channel between the Prospect Dam and the powerhouse is nearly always dewatered, thus devoid of viable aquatic habitat and recreational use. There is no access to any part of the natural river channel below the Prospect Dam, and the only view of the Prospect Falls available to the public is from a gazebo in the center of Prospect a quarter-mile away. There is no shoreline access along the entire length of the bypassed reach that is bisected by State St./Military Rd. below Prospect Falls.









Fig. 4: Dewatered Prospect Bypassed Reach



With regard to boating in the natural river channel below the Prospect Dam, the reach offers the potential to offer meaningful whitewater boating opportunities if there are sufficient flows and access. While the Licensee has prohibited access and has posted a plethora of “No Trespassing” signs, the reach has been paddled and Prospect Falls is boatable under certain flow conditions.



Fig. 4: Kayaker descending Prospect Falls

While information on the reach is anecdotal at this point, we do know that this section contains a remarkable river channel buttressed by a high walled gorge, an extraordinary and runnable falls, and sufficient gradient and bedrock suitable for a quality whitewater boating experience. Under the current FERC license, that opportunity has been lost due to the lack of flows and access.

While the Licensee treats the natural river channel as its private preserve, West Canada Creek is a navigable river and the public has a right to boat downriver. FERC has long required that licensees provide public access across its property to allow the recreating public the opportunities to access the river, and FERC should do so here. The public should also be permitted shoreline access to enjoy the reach, and a shoreline trail should be constructed where possible. A trail to Prospect Falls should be provided to allow the public to access the reach throughout the year, and an aesthetic flow should be provided to allow the public to view the falls in its natural state.

Recreational boating in the natural river channel, however, will only be possible through license conditions that require the Licensee to provide access, spill navigable lows into the natural river channel, and forego generation for a specified number of hours on a specified number of days. These releases may also need to be coordinated with and included as a condition of a future FERC license for the Jarvis Project to assure that sufficient flows are available. Scheduled releases would have the added benefit of providing the public with the opportunity to view Prospect Falls under natural flow conditions.

- Trenton Falls Development

The Trenton Falls Development, much like the Prospect Development, stores, releases, and diverts flows from West Canada Creek through a penstock to its powerhouse, dewatering a 4000-foot section of the natural river channel and eliminating nearly all public access to the Trenton Falls Gorge, an extraordinarily chasm containing a series of dramatic waterfalls that was once a major tourist attraction in the region attracting thousands of visitors annually to a “must see” destination between the East Coast and Niagara Falls. For more than a century, hydropower operations at the Trenton Falls Gorge have diminished the grandeur of this extraordinary reach by damming and diverting flows, dewatering the falls and by limiting or eliminating public access. Today, the public is permitted to view the Gorge on only two weekends each year to view the towering bedrock ledges, mostly dewatered except for a trickle that gives little more than a hint of what was once a dramatic and beautiful landscape.



Fig. 5: Dewatered Trenton Falls Gorge

The Licensee has created a walking trail and informational displays along the natural river channel near its penstock and allows the public to access the trail and view the Gorge on two weekends annually. The fact that up to 2000 visitors have come to walk the trail and view the Gorge on a single weekend shows that there is substantial public interest in the site. The Licensee's restrictions, however, prevent the public from accessing this area and eliminating recreational opportunity on 99 percent of the days annually.

With regard to aesthetics, current opportunities to view the Trenton Falls Gorge is severely impaired by project operations that eliminate virtually all flows over the falls except when inflows exceed the hydraulic capacity of the project. Combined with the Licensee's access restrictions, the public has no opportunity to view the Trenton Falls Gorge in its natural state and the region is deprived of the economic benefits from tourism.

With regard to whitewater boating below the Trenton Falls Dam, there is no information available to indicate whether any of the falls are boatable under any flow conditions, and we do not propose that the Licensee study the boating potential for the natural river channel between the dam and the powerhouse. We are, however, concerned about the impact of project operations on recreation opportunity downriver from the project tailrace.

- **Whitewater Boating Below Trenton Falls**

The West Canada Creek from below the Trenton Falls Development to the confluence of West Canada Creek with the Mohawk River in Herkimer consists of approximately 30 miles of high quality whitewater. This section is known for being one of the best locations for beginner whitewater paddlers in the area. Numerous local paddling groups, clubs, and outdoor education programs rely on the summer flows of this section.

However, the Licensee's operations cause summer flows to fluctuate erratically. While these surges are signaled at the base of the Trenton Falls project with a siren and flashing lights, no notification is provided to the recreating public further downstream who may be caught unaware of water level fluctuations. Additionally, while the Licensee reports to Waterline Flowcast when it will be producing power, these predictions are often inaccurate. Releases which occur outside the predicted times, or end prematurely can result in boaters becoming stranded by the lack of flows or unprepared for higher flow conditions, limiting the recreational value of this lower section of West Canada Creek.

Under the current mode of operation, the licensee times its generation based on peak energy prices without regard to the impact of operations on recreation opportunity below the project. As a result, the highest flows below the project typically occur outside of daytime hours, limiting the quality of whitewater boating opportunities on West Canada Creek.

### Study Requests

- **Study Request 1: Recreation Facilities, Use, and Aesthetics Study**

#### *Goals and Objectives*

##### §5.9(b)(1)

The goals of the Recreation Facilities, Use, and Aesthetics Study are to:

1. Obtain information about the condition of existing recreation facilities and access to project lands and waters at the project; and existing recreation use, and demand at the project;
2. Evaluate the adequacy of existing access to impoundments and bypassed reaches in the project boundary and between the project boundary and the Mohawk River, including formal and informal access areas that are utilized for boating, angling, hiking, and other recreational use;
3. Conduct an assessment of the need to enhance recreation opportunities and access in the project boundary and between the project boundary and the Mohawk River;

4. Determine the minimum acceptable and optimal aesthetic flow in the bypassed reaches below the Prospect Development and Trenton Falls Development sufficient to protect aesthetic values; and,
5. Develop a Recreation Management Plan for the implementation of any enhancement measures and long-term monitoring of recreation demand and adequacy of facilities at the project over the term of a new licenses.

#### §5.9(b)(2)

Not applicable.

#### §5.9(b)(3)

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located, and what conditions should be placed on any license that may be issued. In making its license decision, the Commission must equally consider the environmental, recreational, fish and wildlife, aesthetics, and other non-developmental values of the project, as well as power and developmental values. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. Recreation and aesthetics have been identified as a legitimate project purpose by the Commission. The West Canada Creek Hydroelectric Project reservoirs, bypassed reaches, and riverine reach below the project boundary has the potential to offer recreational opportunities unique to the region provided that sufficient flow and access are provided.

#### *Background and Existing Information*

#### §5.9(b)(4)

Section 6.1.7 provides a general description of public recreation facilities, activities, and demand at the projects. However, the PAD provides no detailed information regarding the condition of existing facilities or type or location of various uses. The PAD provides no project-specific information regarding visitor perceptions and identified needs at the projects. Information on current use and whether existing access to facilities in the area are meeting recreation demand would inform a decision on whether additional designated public access at the projects is necessary to meet existing and future recreation demand at the projects.

The Licensee proposes to conduct a recreation study to inventory existing recreation facilities and characterize existing recreation use and access at the Project, including the Prospect boat launch and the Trenton trail public access events (during the Spring and Fall 2018 events), but claims that there are currently no known issues regarding recreation and land use resources within the Project area or associated with the Project facilities or operations. However, the Licensee is silent on the impact of project operations on boating, angling, and hiking opportunities in and below the project area. Further, no information is

provided in the PAD regarding the impact of project operations on aesthetic values in the bypassed reaches in the Prospect Development and the Trenton Falls Development.

American Whitewater maintains a rivers database representing the most comprehensive listing of whitewater boating resources in the nation including the reach between Trenton Falls and Herkimer. The PAD contains no information on whitewater boating use or the extent to which the Licensee's peaking operations impact on the availability of sufficient flows for whitewater boating downstream of the project, nor is any information provided on the suitability of the Prospect bypassed reach for whitewater boating use.

### *Project Nexus*

#### §5.9(b)(5)

The project includes two reservoirs, two bypassed reaches, and a riverine reach below the project boundary, which are inherently attractive recreation features. An analysis of existing recreation use and access at the projects would help form the basis for determining the projects' impacts upon, and ability to enhance, public recreation access opportunities. Flow over the dam and in the bypass reach directly impacts aesthetics. Also, an assessment of the current level of recreation use would provide information necessary to develop a Recreation Management Plan for efficient management of the recreational components of the project over the term of a new license.

### *Proposed Methodology*

#### §5.8(b)(6)

1. Provide the methods and results of the investigation of the existing recreation facilities conditions, as referenced in the PAD Section 6.2.1.
2. The facility inventory will include characterization of the suitability of the 1.2-mile bypassed reach below the Prospect Dam and riverine reach below the project for whitewater boating (e.g., gradient, length, character of potential flows).
3. The use and needs assessment will include all recreation activity types known to occur or potentially occurring in the project area. Specific methods should include visitor observations; on-site visitor intercept surveys at formal and informal public recreation areas at the project reservoirs, bypassed reaches, tailraces, and riverine areas; and mail and/or internet surveys targeting unique stakeholder groups that may not be practically accessed through on-site surveys (e.g., adjacent residential land owners, residents of the counties in which the projects are located, rock climbers, whitewater boaters).
4. The needs assessment will include the demand for whitewater boating in the Prospect bypassed reach, existing boating opportunities within the project region, feasibility of providing



additional public access at the project reservoir and riverine reaches (potential locations, type of facilities and access, and any associated costs), identifying visitor perceptions regarding the adequacy of recreation facilities, and access in the project area, and assessing future recreation demand and facility needs at the project under different modes of operation..

5. The aesthetic assessment will include a range of alternate spillages that should be videotaped and qualitatively analyzed, and a demonstration study should be arranged for direct observation of flows by a team for subjective grading. A rating form is employed to provide a structure for the individual observations.

6. Assess visitor perceptions of the effects of project operations and management on recreation and recreation opportunities at the project (including fluctuating reservoir levels, minimum flow releases, and anticipated changes) over a new license term. Identify potential measures to alleviate any negative effects as well as to enhance existing recreation opportunities and access.

7. A Recreation Management Plan for the projects should be included in the license application and should include, at a minimum:

(1) a description of any proposed protection, mitigation, and enhancement measures, including: location of any proposed facilities and/or access areas (including description and figure depicting the relationship of any proposed facilities to the existing project boundaries), proposed ownership and management of any proposed facilities, associated capital, and operation and maintenance costs; and a timeline for implementation;

(2) a description of operation and management measures associated with project-related recreation access and facilities; and

(3) a description of measures for future monitoring of recreation demand and adequacy of project-related facilities to meet this demand over the term of new licenses.

#### *Level of Effort and Cost*

##### §5.9(b)(7)

The estimated cost of the Recreation Facilities, Use, and Aesthetics Study for the Prospect Development and Trenton Falls Development is about \$80,000, including field studies, study report development, and drafting of a Recreation Management Plan. One field season should be sufficient to collect the required data and prepare the report.

### ● **Study Request 2: Controlled-flow Whitewater Boating and Access Study**

#### *Goals and Objectives*

##### §5.9(b)(1)

The goals of the Controlled-flow Whitewater Boating and Access Study are to:

- (a) assess the presence, quality, access needs, flow information needs, and preferred flow ranges for river-based boating resources in a stepwise manner;
- (b) assess the effects of a range of optimal and acceptable flows on whitewater recreation opportunities for whitewater paddling in the natural river channel, including: (1) the bypassed reach below the Prospect Dam and the Prospect Development powerhouse, and, (2) the river reach between the Trenton Falls powerhouse and the confluence of West Canada Creek with the Mohawk River;
- (c) assess the frequency, timing, duration and predictability of optimal and acceptable paddling flows under current, proposed, and alternative modes of operation;
- (d) identify the need for, and define adequate put-in and take-out points that promote car-top boating, and also identify the needs for parking areas;
- (e) identify the location, challenge, and other recreational attributes associated with specific rapids and other river features;
- (f) assess the flow information needs of whitewater boating and the current and potential flow information distribution system.

#### §5.9(b)(2)

Not applicable.

#### §5.9(b)(3)

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located, and what conditions should be placed on any license that may be issued. In making its license decision, the Commission must equally consider the environmental, recreational, fish and wildlife, aesthetics, and other non-developmental values of the project, as well as power and developmental values. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.

Conducting the necessary studies and implementing measures to ensure public access to outdoor recreation is in the public interest. It is widely accepted that outdoor recreation has significant benefits to participants including health, well-being, and quality-of-life. Outdoor recreation also has proven economic benefits for communities located near recreational resources. FERC has concluded elsewhere that *“to fully evaluate the project’s effect on whitewater recreation opportunities and to balance potential enhancement opportunities with their cost, a controlled-flow whitewater boating study is relevant to Commission’s public interest determination.”* The bypassed reach below the Prospect Dam and the riverine reach between the Trenton Falls powerhouse and the confluence of West Canada Creek with the Mohawk River has the potential to offer recreational opportunities unique to the region provided that sufficient flow and access are provided.

*Background and Existing Information*

## §5.9(b)(4)

Whitewater boating is currently an existing use on West Canada Creek. Below Trenton Falls, the river becomes a docile swift water to Class II river where one often sees fishermen, boaters in canoes and recreational kayaks, tubing and even an occasional motorboat. From the Dover Road Bridge in Trenton Falls (just below the release dam) to Herkimer is about 28 miles of paddling, although most whitewater boaters put-in further downstream near Middleville, NY. The Section between Route 29 in Middleville to Route 7/Kast bridge above Herkimer is a classic class II-II+ teaching section for beginner whitewater boaters. This section of river contains a series of rapids and river features that provide an opportunity to train newer paddlers to prepare them for more challenging whitewater.

American Whitewater maintains a rivers database representing the most comprehensive listing of whitewater boating resources in the nation including the reach between Trenton Falls and Herkimer. The PAD contains no information on whitewater boating use or the extent to which the Licensee's peaking operations impact on the availability of sufficient flows for whitewater boating downstream of the project, nor is any information provided on the suitability of the Prospect bypassed reach for whitewater boating use.

*Project Nexus*

## §5.9(b)(5)

West Canada Creek Hydroelectric Project controls flows in West Canada Creek from below the Jarvis Project located upstream from the Prospect Development, to the convergence of West Canada Creek with the Mohawk River, fluctuating water levels in the impoundments, diverting flows from the natural river channel, and altering the natural flow regime through its peaking operations. The bypass reaches at both the Prospect Development and the Trenton Falls Development divert flows into power canals and penstocks leading to its powerhouses, dramatically reducing the flows available in the natural river channel or bypassed reaches, eliminating naturally variable flows and damaging aquatic habitat. The diversion of natural flows through hydropower operations alters the landscape in the natural river channel, and reduces recreational opportunities that would otherwise be available.

*Study Methodology*

## §5.9(b)(6)

The study we request on the West Canada Creek Hydroelectric Projects should follow the standard methodology as described in Whittaker, et. al. (2005). This methodology is designed to assess the presence, quality, and preferred flow ranges for river-based boating resources in a step-wise manner. The process steps are generally 1) desktop analyses, 2) on-land feasibility assessment, 3) on-water single flow assessment, 4) on-water multiple flow assessment. We expect and request the

full implementation of this methodology. Because the quality of the resource has not been fully analyzed with current metrics, we request that on-water multiple flow assessments be conducted.

The study should focus on two reaches: 1) the bypassed reach between the Prospect dam and the Prospect powerhouse in the Prospect Development project boundary, and, 2) the lower reach between the Trenton Falls powerhouse and the convergence of West Canada Creek with the Mohawk River that is currently utilized by whitewater and recreational boaters and is directly impacted by project operations. The Licensee should work with the boating groups to identify target flows for the evaluation.

Given the limited known information about the boating characteristics of the bypassed reach between the Prospect Dam and the Prospect powerhouse, it will be necessary to conduct an on-land physical inspection of the reach to identify access points and potential hazards. An on-land observation of demonstration flows will also be required to identify a range of flows that should be evaluated, if appropriate, during an on-water controlled flow study following widely accepted protocols.

With regard to the boating reaches below the Trenton Falls powerhouse, there is limited information about the range of suitable flows. A controlled-flow whitewater boating study will identify the minimum acceptable and optimal boating flows on identified whitewater and recreational boating reaches, analyze the frequency with which boating opportunities at various flow levels are available under current operations, and analyze the extent to which boating opportunities would be available under alternate modes of operation.

We will work with the licensee to document the known information regarding the river. We will provide volunteers and technical support for the studies as appropriate. We hope to work collaboratively with the licensee on this study. The whitewater boating study methodology we have requested has been used on dozens of other FERC regulated reaches.

The Licensee PAD proposes no whitewater feasibility analysis. This no-action step would reveal nothing about the current project impacts on whitewater recreation or opportunities for protection, mitigation, or enhancement measures. We currently do not know the relationship between specific low and moderate flows and the paddling experiences they provide. A desktop analysis can't generate this information. Without this information we cannot fully define the project impacts, nor propose and consider provision of releases that provide targeted recreational experiences.

#### *Level of Effort and Cost*

##### *§5.9(b)(7)*

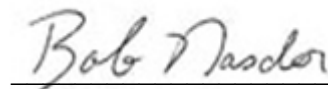
We are willing to work with the licensee on the whitewater paddling controlled-flow study to keep costs reasonable and the quality of information high. The information that is already known about

the reach between the Trenton Falls powerhouse and the confluence of West Canada Creek with the Mohawk River can jump-start the study process and avoid duplicate effort. The studies will need to integrate this information and then organize flow studies during which several flows are paddled by boaters. The consultants usually employ still image and video documentation, surveys of the boaters, a guided conversation among the boaters, and subsequently a written report. Given the collaborative approach sought by the paddling community, including in-kind contributions of time and expertise, a consultant should be able to complete this study on behalf of the licensee for a very reasonable cost. We estimate that the cost of conducting the controlled flow whitewater boating study will be approximately \$50,000 including the field work and final report preparation.

Conclusion:

We respectfully request that FERC require the Licensee Erie Boulevard Hydropower, L.P. to complete the above described (1) Recreation Facilities, Use, and Aesthetics Study, and, (2) Controlled-flow Whitewater Boating and Access Study, in order to provide FERC with sufficient information to complete its NEPA analysis of project impacts to determine appropriate license conditions that are protective of recreation values and mitigate project impacts. Thank you for considering these comments.

Respectfully submitted this 21<sup>st</sup> day of June, 2018



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Bob Nasdor

Northeast Stewardship and Legal Director  
American Whitewater  
365 Boston Post Road, Suite 250  
Sudbury, MA 01776

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Erie Boulevard Hydropower, L.P.	)	West Canada Creek Hydroelectric Project
	)	Project No. 2701-059
	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 21<sup>st</sup> day of June 2018



Carla Miner  
American Whitewater  
Stewardship Assistant

Service List for P-2701-000 Erie Boulevard Hydropower, L.P.

Contacts marked \*\* must be postal served

Party	Primary Person or Counsel of Record to be Served	Other Contact to be Served
Erie Boulevard Hydropower, L.P.	Steven Murphy Licensing Manager LAKE ONTARIO PRODUCTION CENTER 33 West First Street South Fulton, NEW YORK 13069 UNITED STATES Steven.murphy@brookfieldrenewable.com	
Erie Boulevard Hydropower, L.P.	Robert Garrett Compliance Specialist Erie Boulevard Hydropower, L.P. 399 Big Bay Road Queensbury, NEW YORK 12804 UNITED STATES robert.garrett@brookfieldrenewable.com	**Jacob S Niziol Contact/Addr No Longer Valid Orion Power New York Onondaga
Erie Boulevard Hydropower, L.P.	Steven Murphy Licensing Manager Brookfield Renewable Energy Group 33 West First Street South Fulton, NEW YORK 13069 UNITED STATES Steven.murphy@brookfieldrenewable.com	
Fourth Branch Associates (Mechanicville)	Frances Francis Spiegel & McDiarmid LLP 1875 Eye Street, NW Suite 700 Washington, DISTRICT OF COLUMBIA 20006 UNITED STATES frances.francis@spiegelmc.com	James A Besha, P.E President Fourth Branch Associates (Mechanicville) 5 Washington Sq Albany, NEW YORK 122055512 Albany jim@albanyengineering.com
New York Rivers United	Richard Roos-Collins Director, Legal Services Natural Heritage Institute 2140 Shattuck Avenue, Ste. 801 Berkeley, CALIFORNIA 94704-1229 UNITED STATES rrcollins@waterpowerlaw.com	
New York State Council of Trout Unlimited	William Wellman Region 5 Vice President NYSCTU New York State Council of Trout Unlimited 7 Helen Street Plattsburgh, NEW YORK 12901 UNITED STATES wellman1985@charter.net	Paul W Miller Region ^ Vice President NYSCTU 3825 Miller Road Blossvale, NEW YORK 13308 pmiller3825@yahoo.com

New York State Council of Trout Unlimited	William Wellman Region 5 Vice President NYSCTU New York State Council of Trout Unlimited 7 Helen Street Plattsburgh, NEW YORK 12901 UNITED STATES wellman1985@charter.net	
New York State Department of Environmental Conservation	**Unit Director New York State Department of Environmental Conservation Dam Safety Unit, Division of Water 625 Broadway Albany, NEW YORK 12233-3504 UNITED STATES	
Oswego, City of	Paul Nolan Energy Consultant Nolan, Paul V. 5515 17th Street North Arlington, VIRGINIA 22205-2722 UNITED STATES pvnpvndiver@gmail.com	**Randolph F Bateman Oswego, City of Office of the Mayor, City Hall 13 W Oneida St Oswego, NEW YORK Oswego
U.S. Department of Interior	Andrew Tittler Attorney-Advisor U.S. Department of Interior 15 State St. 8th Floor Boston, MASSACHUSETTS 02109-3502 UNITED STATES andrew.tittler@sol.doi.gov	



Steven Wheeler, Hinckley, NY.

To Whom this May Concern,

I am a 25 year landowner of property on Hinckley Lake.

It is a once in my lifetime opportunity to comment regarding this license to operate..I consider this opportunity to a privilege and I submit the following.

Erie Boulevard Hydropower, LP (AKA, Brookfield Power), is not our friend. They are not a good neighbor. They are not protecting anything but their shareholders and bottom line\$\$\$.

While I am a big supporter of private enterprise and the free markets, I believe whole heartedly in responsible usage of the natural resources available.

I have never seen anywhere except their facilities, the complete diversion of all waters to their generators. To me they are operating irresponsibly and with out regard for anyone negatively affected by their actions.

Because of their "agreement" from 2012, we suffer under an even worse rule curve that causes severe drawdown of our water levels that used to be with more moderate rates. When the lake is low, there is more silting causing a reduction of capacity of this valuable resource. There are many more negative affects caused by their irresponsible actions.

I request that your agency NOT relicense their application.

As an alternative, perhaps the license could be issued combined with the Jarvis operation under NYPA? At least then a workable solution that shares all concerns could be developed.

Respectfully,

Steven E Wheeler

Justin Waters, Deerfield, NY.  
To Whom It May Concern,

I am writing as a concerned citizen regarding the management of water levels at Hinckley Reservoir. My father lives on the lake at a residence where I was raised and have spent countless hours on the water. My fiancée and I now live in Deerfield, however we still frequent the lake on most weekends to go boating, fishing, etc.

We have witnessed first-hand how volatile the water levels can be as a result of Brookfield Power's legal connection to the operating diagram used to manage Hinckley. We find this unacceptable, as stable and sufficient water levels are imperative for safe and dependable use of the waterway. While I understand that the waterway is, in fact, a reservoir, the fact of the matter is that it is used significantly for recreation as well. The monetary gains of a downstream company that generates power should not supersede the usability of the waterway for local residents and people who travel to the lake for recreation.

Decreased ability to use the waterway for recreation as a result of fluctuating and/or insufficient water levels, to me, is detrimental to the area in many ways. Businesses located on or near the waterway should be able to count on stable and sufficient water levels, as should landowners.

We urge you to take our comments and concerns into consideration, along with those of all the other concerned residents and people who use Hinckley for recreation, when reviewing the re-licensing of Brookfield Power's West Canada Creek hydropower dams.

Thank you,

Justin D. Waters

Patricia Gunio, Bergen, NY.  
June 26, 2018

Federal Energy Regulatory Commission  
Washington, DC 20426

Subject: West Canada Creek Hydroelectric Project (FERC No. P-2701-001)  
Hinckley Reservoir

To Whom It May Concern,

My name is Patty Gunio. My husband Steve and I have owned 2.4 acres of land on Hinckley Reservoir for over 16 years. (Our permanent residence is in Bergen, NY.) We have camped on that land, enjoying the flora and fauna for 16 years, bought a small boat, built a shed, and maintained our own little "slice of heaven" with pride and pleasure (and sweat equity). For the past 6 years we have spent nearly every penny we have on building our future retirement home on that land, as money allows. Both our children, their spouses, and 6 grandchildren look forward to owning this property and enjoying the benefits of the beautiful water and wildlife for many, many years to come. Our friends and family come to share in the enjoyment of the peace and quiet of the ADK and the sights and sounds of nature that exist on Hinckley Reservoir (loons calling, watching the bald eagles soar, fishing, seeing the wildflowers that surround the lake, and watching the leaves change in the fall).

To have the hydro-electric plant (Brookfield) exploit taking more water from Hinckley Reservoir than the inflow can support is ludicrous and quite infuriating! This resource is simply over-utilized! Having owned our land for such a long period of time, we have seen the water levels rise and fall (sometimes over 2 feet in 1 day!), and on 2-3 occasions reduce the water flow bordering our property from 40 feet deep to a 2 foot deep creek. The environmental impact will be severe if the water discharge amounts are allowed to continue to exceed the inflow!! From the Bryozoans (fresh water sponges - which I have not seen in 2 years due to the extreme fall of the water levels), to the bald eagles, loons, owls, turtles, to the fish and plant life in and surrounding Hinckley Reservoir...Please don't allow this to happen!! Outcries from people living in this area have not been heard -- decisions have been made without considering the long-term impacts on our environment and the economy of the area. It's very sad when corporate greed comes before our precious and fragile environment.

Please consider conducting an environmental impact study related to the constant extreme rise and fall of Hinckley Reservoir water levels. Very simple -- Don't discharge more water than flows into the reservoir to try to keep it at a more consistent level. Fix the leaking pipes at the dam so the water isn't leaking/leaching out wasting the precious resource!

I understand that the NYSDEC does not have ultimate authority in this matter, but seeing as Governor Cuomo is trying to get people to visit the ADK, it would be a shame to have the world see that not all the ADK is precious...just certain parts. Sad that sometimes corporate greed overshadows/prohibits protecting the beautiful land and the special, unique places we have in New York State.

I would sincerely appreciate a response to this letter.

Thank you for taking the time to read my plea.

Sincerely,

Patty Gunio, a concerned part-time (for now) resident on Hinckley  
Reservoir  
5947 North Lake Road  
Bergen, NY 14416  
(585) 494-1005

Bob Carnevale, Stittville, NY.  
West Canada Creek Project (P-2701)

Federal Energy Regulatory Commission

I'd like to start by thanking the commission for giving the people a chance to address concerns that often fall on deaf ears. I have been a property owner on Hinckley Lake since 2009. During this time, I have seen property values decrease, wells dry up, severe damage to property surrounding the lake and our wildlife habitat diminish significantly.

The operating diagram that was put into place as of April 1, 2013 has devastated this lake and the region. It is very clear that the only people benefiting from the revised operating diagram are the corporations producing power. Brookfield Power and NYPA have been pointing fingers at each other for too long! My hope is that FERC will investigate this abuse of our water levels and the negative impact that this has had on Hinckley, it's landowners, tourists, and our wildlife.

The lake is already below its average as of mid-June, and will continue to drop due to the lack of rain. I'm certain that even if we were to experience sufficient rainfall, it would simply prompt the power companies to pull more water. We need FERC to recognize that we are at the mercy of corporate power and their greed. Their only objective is to generate revenue; they show no mercy for the lake and it's residents.

Please take the time to look back, to when this region was thriving and area businesses were growing! Let's protect this natural resource and put a stop to corporate greed.

Thank you for your time, I look forward to seeing FERC's findings!

Bob Carnevale

To: United States of America, Federal Energy Regulatory Commission  
From: Thomas Slusarczyk, Esq.  
Date: June 26, 2018  
Re: West Canada Creek Hydroelectric Project  
Project No. 2701-059 – New York

### **Background**

Thomas Slusarczyk, Esq. submits the following comments in response to the filing of the Pre-Application Document submitted by Erie Boulevard Hydropower, L.P. for relicensing the West Canada Creek Hydroelectric Project (FERC No. 2701) (West Canada Creek Project). The project consists of two developments, Prospect and Trenton, and is located on the West Canada Creek, in the counties of Oneida and Herkimer, New York.

Mr. Slusarczyk is a resident of hamlet of Trenton Falls located at 549 Dover Road, Barneveld, NY. His property connects to the upper reaches of the Trenton Falls gorge (Fig. 1) via historical walking paths that have provided access to the eastern edge of the gorge for generations.



Fig. 1. Unknown photographer, *Trenton Falls from East Bank* (High Falls and Mill Dam Fall), 1899 (just prior to construction of Trenton Falls Power Dam).

Mr. Slusarczyk was born and raised in the hamlet of Prospect, NY (see Fig. 2 and Fig. 3), which is located adjacent to the Prospect Gorge on the West Canada Creek two miles above the Trenton Falls gorge.



Fig. 2. John White Allen Scott, *Village of Prospect, At Upper Trenton Falls*, 1869.



Fig. 3. Unknown photographer, *Birdseye view of the Village of Prospect and Prospect Falls*, c. 1930.

On rare nights he could hear the quiet roar of the Prospect Falls, which since the construction of the Prospect power dam in the late 1950s only runs over in rare instances (Fig. 4).



Fig. 4. Dante Tranquille, *Prospect Falls from Prospect Park*, c. 1950  
(before the building of the Prospect hydro dam).

The family home in Prospect, an 18 room home which is still owned by the family (Fig. 5), was built in the early 1900s by lumberman A.C. Hall, who owned and operated a lumber mill at the current site of the Hinckley Dam.



Fig. 5. Advertisement, *Village Mansion*, c. 1900.

The dam discharges water from Hinckley Lake to the Prospect Development. Growing up in Prospect in the 1970s and 1980s afforded Mr. Slusarczyk the unique opportunity to become extremely acquainted with almost every detail of the Prospect and Trenton Falls gorges, which are directly impacted by the two developments, Prospect and Trenton. Mr. Slusarczyk spent countless time in his youth exploring the cliffs, cataracts, pools, and caves that make the gorges such a historically significant place (see Fig. 6, Fig. 7 and Fig. 8 for views of the gorges).

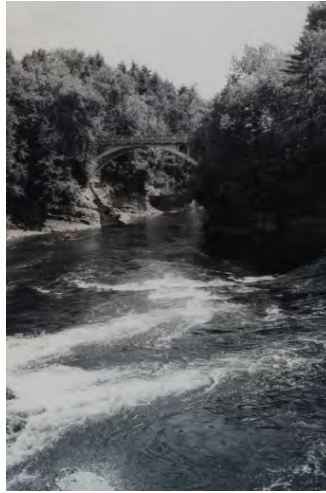


Fig. 6. Dante Tranquille, *View of Prospect Bridge from Prospect Gorge*, c. 1950.



Fig. 7. Dante Tranquille, *View of Utica City Water Pipe at Prospect Gorge (above Trenton Falls Dam)*, c. 1950.



Fig. 8. Unknown photographer, *Trenton High Falls*, c. 1901-1930.



The Prospect / Trenton Falls gorges commence at the base of the Prospect hydroelectric dam and continue for approximately 2.5 miles downstream to Trenton Falls at Morgan Dam or Village Falls (Fig. 9) near Dover Road.



Fig. 9. Wendy Harris, *By the Bridge (Morgan Dam)*, 2008.

The gorge cliffs reach almost 200 feet in height in many spots, and the gorge itself includes numerous cascades, potholes, and pools (in which some are rumored to be bottomless), not to mention the world famous Trenton Falls series of waterfalls (which include Sherman Fall (Fig. 10), Trenton High Falls (Fig. 11), and Mill Dam Fall (Fig. 12) – the Cascade of Alhambra (Fig. 13) is submerged due to the Trenton Falls power dam (Fig. 14).



Fig. 10. Dewitt Clinton Boutelle, *Trenton Falls near Utica, New York (Sherman Fall)*, 1873.



Fig. 11. Ferdinand Richardt, *Trenton High Falls*, 1858.



Fig. 12. James Brade Sword, *Old Mill Dam, Trenton Falls, N.Y. (Mill Dam Fall)*, 1872.



Fig. 13. N.E. Rulon, *Rapids above Trenton Falls N.Y. (Cascade of Alhambra)*, 1891.



Fig. 14. Judy Nelson, *Trenton Falls Power Dam and Spillway*, 2009

Another unique aspect of the gorge is that in many spots old growth maple, hemlock and cedar trees still line the top of the canyon (Fig. 15). Due to the projects that are the subject of this new license, this 2.5 mile section of historic gorge is 100% “bypassed” so water from the West Canada Creek can run through the Prospect and Trenton Falls hydroelectric plants. What’s left, except for a minimal amount of seepage, is an eerily empty dry historic gorge.



Fig. 15. Frank Wilcox, *Group of Trees, Lower High Fall Side Trail*, 2008.



After graduating high school, Mr. Slusarczyk received a degree in engineering and mathematics, and then a law degree from Syracuse University, where he was a member of the Syracuse Law Review and graduated Magna Cum Laude, *Order of the Coif*. After law school, he commenced his law practice in New York City as a Securities and Corporate lawyer for one of the largest law firms in the world, DLA Piper. After practicing law in New York City for over 15 years Mr. Slusarczyk decided to return to his childhood home in the Trenton Falls area and continue to practice securities and corporate law for public company clients that are headquartered in Manhattan. While practicing law in NYC, Mr. Slusarczyk became “obsessed” with the history and development of Trenton Falls, its artwork, and the West Canada Creek. Of particular interest was

- the geological formation of the gorges,
- the development of the Trenton Falls into a world class tourist destination in the 1800s (that rivaled Niagara Falls in scenery and visitors) (see Fig. 16 for a view of tourists in the 1840s enjoying the gorge),



Fig. 16. Victor De Grailly, *High Falls from the Western Edge of the Ravine*, c. 1844.

If fact, many visitors much preferred Trenton Falls to Niagara Falls because the Trenton gorge offered a much more diverse topography. There was a deep narrow gorge to traverse, a series of waterfalls to take in, and many smaller cataracts and potholes to view. Niagara offered one big view that had to be taken in all at once.

- the written travel accounts of various American and European tourists and celebrities that visited the gorge in the 1800s while making the “grand tour” to Niagara Falls. Notable visitors of the falls included Washington Irving, Fanny Kemble, William Cullen Bryant, Harriet Martineau, William Cullen Bryant, Margaret Fuller, John Quincy Adams, Nathaniel Parker Willis, Jenny Lind and Ulysses S. Grant, and
- the various noted Hudson River School artists that painted the gorges and its waterfalls, which is well documented by the number of these works that are in the collections of noted museums such as the Munson Williams Proctor Arts Institute (Utica, NY)(MWPI)(Fig. 11), Museum of Fine Arts (Boston)(Fig. 17), High Museum of Art (Atlanta, GA)(Fig. 10), North Carolina Museum of Art (Fig. 18), and numerous private collections in the United States (for examples, see Fig. 19 and Fig. 20).



Fig. 17. John Frederick Kensett, *Trenton Falls, New York*, 1853.



Fig. 18. Thomas Hicks, *The Musicale, Barber Shop, Trenton Falls, New York*, 1866.





Fig. 19. Dewitt Clinton Boutelle, *The Upper High Falls*, 1873.



Fig. 20. Thomas Hicks, *Upper High Fall from Below*, c. 1860.

In 1989, MWPI in Utica held an exhibition on Trenton Falls artwork from the 1800s. The exhibition catalogue contains a treasure trove of information on Trenton Falls paintings and the Hudson River artists who painted the falls and gorge. The artwork displayed in the exhibition were donated by various museums and private collectors, many pieces from Trenton Falls residences.

For the greater part of the nineteenth century the Trenton Falls gorge was one of the most popular tourist destinations in the United States. Its popularity only grew after the early 1850s when a railroad line from Utica to the falls was completed. However, over time its popularity as a tourist destination began to diminish as the railroad pushed further into the Adirondacks and the with onset of the automobile, which allowed people to travel to a wider range of destinations. With a decline in tourists into the 1890s, the owners of the Trenton Falls resort (Fig. 21), the Moore family, made the tough choice to sell the property, which included the gorge, to the Utica Gas & Electric Company for power generation. Since this time



access to the gorge became more and more limited to the point where access to the gorges for the public is completely cut off by the power generator.

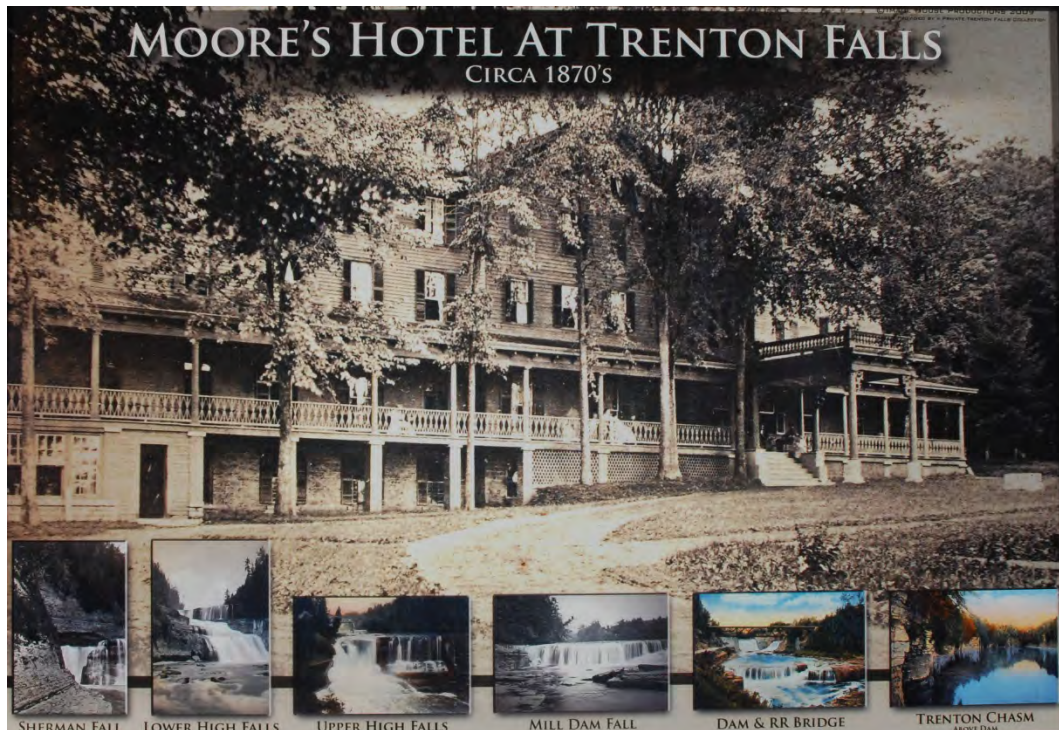


Fig. 21. Brian Ure, *Moore's Hotel at Trenton Falls*, c. 1870.

However, in 2006 the Town of Trenton joined with the power generator, Brascan Power, to allow the public to view the gorge for two weekends a year, spring and fall. Hiking Trails were constructed along the western edge of the gorge (Fig. 22) and various placards were placed along the trails that explained the historical significance of the gorge and the development of power at the site.



Fig. 22. Giorgina Talarico, *The Trail (Trenton Falls)*, 2008.



Since 2006, with the help of Brookfield Power this limited access to the gorge has turned out to be extremely popular with the public, with thousands visiting most weekends. The popularity of the gorge can also be highlighted by at least three recent popular events that have occurred in Trenton Falls since the “reopening” of the gorge in 2006. The first being the “2008 Trenton Falls Plein Air Art Show” held at the gorge trails (Fig. 23). This event was sponsored by the Tug Hill Tomorrow Land Trust.



Fig. 23. Advertising Poster, *Tug Hill Tomorrow Land Trust Advertisement*, October 11, 2008

Local and regional artists were allowed the opportunity to paint along the Trenton Falls gorge, and then have the artwork auctioned off later that day for charity. This was the first event of its kind in the area. After the Trenton Falls event, *The View* (a major regional arts center in Old Forge, NY) started its own plein air paint / auction event which continues to this day.

The next event was the holding of an annual “*Trenton Falls Arts Festival*” at a private historical residence in Trenton Falls (Fig. 24). This event was held in 2012, 2013 and 2014, and coincided with the opening of the Trenton Falls trails in September of each year.



Fig. 24. 2013 Trenton Falls Arts Festival Advertisement.

For this event, historical Trenton Falls paintings and historical documents were displayed for the public to view in a unique historical Trenton Falls barn and grounds. The festival also included a host of vendors and music. Thousands of people each year turned out for this event.

The other major event was the 150 year anniversary in 2013 of the Secretary of State William Seward and various foreign diplomats visit to the Trenton Falls gorge in 1863, the height of the Civil War (Fig. 25).

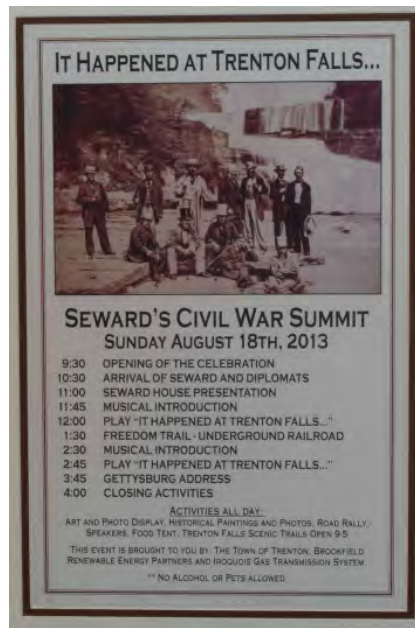


Fig. 25. Event Poster, *It happened at Trenton Falls...*  
*Seward's Civil War Summit*, (August 18, 2013).

On the request of President Lincoln, Seward and his party made a historical stop in Trenton Falls while on an east coast tour in order to convince various foreign governments to support the north during the Civil War. It is rumored that during this visit to Trenton Falls the diplomats were convinced to support the north, a turning point in the war. A historic photograph documents this event where Seward and the diplomats posed on the rocks below Trenton High Falls (Fig. 26). This 150 anniversary event was held in 2013 at the Trenton Falls trails. The event included a reenactment of Seward and his party's arrival by train to Trenton Falls from Utica, a play about Seward's visit to Trenton Falls, a series of historical talks, and a display of historical paintings and pictures of the Trenton Falls gorge. This once in life time event was extremely well attended by the public.



Fig. 26. Harper's Weekly, *The Secretary*

Not since the early 1890s, as evidenced by the popularity of the scenic Trenton Falls trails and related events, has there only recently been a reemergence of the Trenton Falls gorge as a tourist destination. For instance, between 1900-2004 when access was limited to the gorge there are only a couple of known paintings of the Trenton Falls / Prospect gorges. Since 2005 and the opening of the gorge to the public there have been at least 200 new paintings of this natural wonder (see Fig. 27, Fig 28 and Fig. 29 for examples of recent paintings of the Prospect and Trenton Falls gorges).



*Fig. 27. Pamela Underhill Karaz, Prospect Gorge, 2007.*





Fig. 28. Judy Nelson, *Upper High Falls, View from Carmichael Point*, 2006.

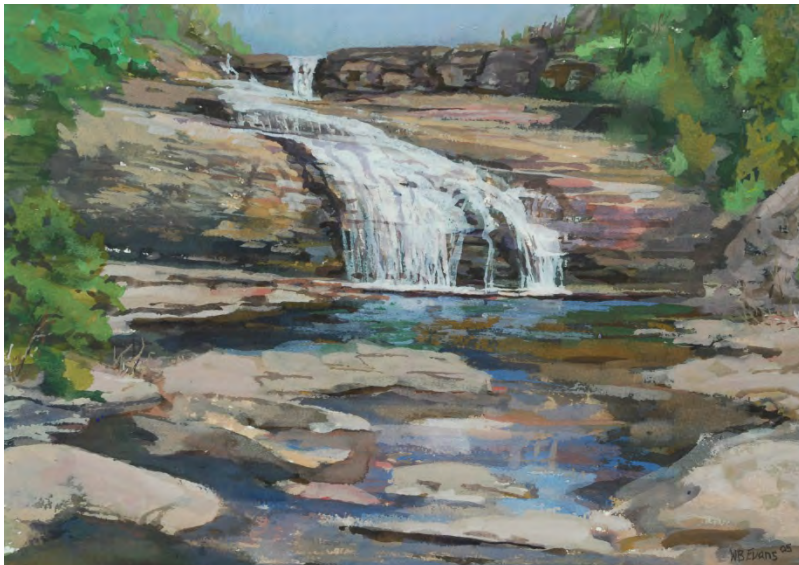


Fig. 29. William Evans, *High Falls*, 2005.

Despite the generation of power in the Prospect and Trenton Falls gorges for over 100 years, much of the gorge remains unspoiled and untouched. The entire eastern side of the gorge from Prospect Falls to Morgan Dam remain virtually untouched since the 1800s. The western side of the gorge has been significantly altered by man. Although large stretches do remain untouched. The western cliff area adjacent to the old Prospect Quarry has been removed due to quarry operations (see Fig. 30) and parts of the western cliff in Trenton Falls near the power plant have been altered by the power generation feeder pipe. Except for the Trenton Falls hydro dam the bed of the gorge from Prospect to Trenton Falls remains virtually untouched.



Fig. 30. Dante Tranquille, *Prospect Quarry – Winter*, c. 1950.

### **Comments - Decommissioning**

Section 3.5.3 of Scoping Document 1 for the West Canada Creek Hydroelectric (SD1) Project pertains to “Project Decommissioning”. This section states that

“[N]o party has suggested project decommissioning would be appropriate in this case, and we have no basis for recommending it. Thus we do not consider project decommissioning a reasonable alternate to relicensing the project with appropriate environmental measures.”

Mr. Slusarczyk formally recommends decommissioning of the project and requests that the Commission consider this a reasonable alternative to relicensing. The basis for the Commission recommending decommissioning of the project is as follows

- Geologic. Given geologic history of the Trenton Falls gorge, enhancement of this resource would be better suited if power generation did not occur on site. The Prospect / Trenton Falls Gorge is a rare natural wonder. Geologically speaking it is a relatively new feature on earth. The gorge was formed near the end of the last ice age only approximately 10,000 years ago. One can ask wouldn't it take millions of years to form a canyon that cuts through nearly 200 feet of rock? The answer is no, this can happen relatively quickly given the right conditions. Near the end of the last ice age a huge glacial lake formed in the southern Adirondacks. As ice began to melt water broke free from this lake at a narrow point, causing a “spill over” effect, where water, gravel and rocks were released at high speed causing the gorge to be carved out in a relatively short

period of time. This is similar to how the Grand Canyon was formed. The underlying limestone of the Trenton ledge, which is rich in fossil life, was formed millions of years ago and over time had moved from the Southern Hemisphere to its current location in Trenton Falls.

Trenton Falls is the “Grand Canyon” of the east and nobody knows this because access has been virtually cut off since 1901 – when power generation began. The public, which includes tourists, geologists, rafters and fisherman, need unfettered full time safe access to this major east coast site to better utilize this resource – and power generation interferes with this access. Currently, due to power production access to the Prospect and Trenton Falls gorges is strictly forbidden and patrolled constantly by power company security personnel. Such a natural wonder should not and cannot be treated like a military installation and be completely off limits to the public.

- Recreation and Land Use

Land use and recreation of the Trenton Falls gorge would be greatly improved if the project was decommissioned. Currently, the town, county and State benefit from the existing hydroelectric plants with tax revenue and the employment of a few local personnel to run/manage the facilities. It is believed that if the project was decommissioned revenue received currently could be far exceeded by revenue that would be generated by revenue generated from a comprehensive plan to develop the gorge area in to a major tourist / historical / geological destination on the east coast and United States.

Some of the areas that could be developed if this project were decommissioned include

- Promotion by State and local officials of the Trenton Falls gorge as the “Grand Canyon” of the east. Tourists would potentially flock to this area if given unfettered safe access to all areas of the gorge 365 days a year, with modern up to date facilities, including hotel(s), dining, and entertainment.

Trenton Falls is a four hour drive to New York city and there is easy train access from NYC to Utica. Currently, thousands of people a year take mini-vacations from the NYC area to Lake Placid, to hotel/resorts like the Mirror Lake Inn, and other upstate destinations. With the proper development of hotel facilities in Trenton Falls and access to the Trenton Falls gorge, central NY could tap into this market and be a major player for tourists in the northeast and beyond.

Activities at the gorge could also be tied to activities in the Utica/Central NY area – such as the Brewery District in Utica, Munson Williams Arts Institute Museum, Utica Comets games/Adirondack Bank Center events, Utica Boilermaker, Turning Stone Casino, Syracuse University Football and Basketball sports, Cooperstown (Baseball Hall of Fame and Farmers Museum), Herkimer Diamonds, etc.

The building of a major regional hospital in downtown Utica will also draw people to the Utica/Trenton Falls area.

- The building of a major hotel on gorge property, which includes onsite spa, dining services, and an entertainment venue would be a major source of revenue.

Such a facility would be the home base for tourists. They could spend time exploring the gorge plus take in other activities in the central NY area.

In particular, there is one hidden special area of the Trenton Falls / Prospect gorge that needs special recognition. Just below the Prospect Quarry to the area just above the prospect power plant there is special narrow beautiful stretch of gorge, filled with 15 feet diameter potholes, gentle cataracts, and old growth cedar trees lining the canyon walls. Being there is like stepping back in time to the age of dinosaurs. This place deserves to be enjoyed by all and not hidden from public view.

- Development of white water activities in the section of gorge below Prospect Falls to the Trenton Falls Hydroelectric Dam would be another generator of income for the area.
- Fishing tourism would be greatly increased with a more constant water flow on the West Canada Creek below Trenton Falls.
- Aquatic Resources

There is virtually no water flow in the Prospect / Trenton Falls gorges between the Prospect Falls Hydro Dam and Morgan Dam in Trenton Falls. Water that used to flow down the gorge is now diverted through the Prospect feeder canal to the Prospect hydroelectric power plant, and then diverted again at the Trenton Falls hydroelectric dam to the Trenton Falls Hydroelectric plant through a large diameter bypass pipe that runs along the western edge of the Trenton Falls gorge.

Lack of water in the gorge greatly interferes to fish populations in this stretch of gorge. Decommissioning would allow natural flows through the gorge which occurred prior to 1901. This would also benefit fish populations downstream of Morgan Dam, which is a world class trout fishery for sportsman.

## **Conclusion**

Mr. Slusarczyk respectfully requests that given the unique geological and historical nature of the gorge, and numerous alternative uses to power generation, such as tourism, geological research, fishing and rafting opportunities, that exist for the project land, the Commission consider decommissioning the project.

In partnership with the Commission, federal, state and local officials need to jump on this opportunity to consider the economic boom to area if the hydroelectric projects at Prospect and Trenton were decommissioned. The State of New York has poured millions of dollars into other projects, like Utica-nano, to improve the local economy, with no tangible results. The Commission, along with federal, state and local officials, need to understand and realize that the Trenton Falls gorge is a gem and should be properly utilized to its full capacity. This is the “Grand Canyon” of the east, and should be treated as such, and no longer can this resource blindly be hidden from view and used for something as benign as power generation given the real alternatives to power generation that do exist for such a natural wonder. The proximity of this world renowned resource to New York City, Boston, Albany, Utica, Syracuse, Rochester, Buffalo, Montreal, Toronto, Philadelphia, and Washington make it priceless. Currently, the use of this project solely for power generation is a complete waste of resources given the nature of the

resource involved. This area is now being underutilized by an over 100 year old technology and now is the time to seriously consider decommissioning and not wait another 40 years when the license may be up for renewal again.

For three generations, the generation of power within the Prospect and Trenton Falls gorges has robbed the United States of a wonder of the world. It's time this generation act and reclaim this precious resource for the public to once again enjoy after a long 118 years. **Please consider decommissioning the right choice in this unique instance.**

Respectfully submitted on June 26, 2018

/s/ Thomas Slusarczyk, Esq.

Thomas Slusarczyk, Esq.  
549 Dover Road  
Barneveld, NY 13304  
(917) 488 2930



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griffo@nysenate.gov

May 29, 2018

Federal Energy Regulatory Commission  
c/o Kimberly D. Bose, Secretary  
888 First Street, NE  
Washington, D.C. 20426

Re: *West Canada Creek Hydroelectric Project (FERC No. 2701)*

Dear Secretary Bose:

Please accept this letter on behalf of my constituents in Oneida county, who are deeply troubled by the request by Erie Boulevard Hydropower/ Brookfield Renewable to renew its license for hydropower for the West Canada Creek. The Hinckley Reservoir is an important regional asset, providing drinking water, power, water for the New York State Canal System as well as its crucial importance to the area's recreational, environmental and economic well-being.

Given the Hinckley Reservoir's importance in a multitude of areas, residents have been rightfully concerned over the existing license for hydropower for Erie Boulevard Hydropower/ Brookfield Renewable and how this company has used its license to the detriment of multi-faceted reservoir's other uses. While other communities in the state have benefitted from license arrangements which have respected and encouraged alternate uses, this has not been the case with Erie Boulevard Hydropower/ Brookfield Renewable as residents will attest. Throughout the existing license agreement, there have been numerous issues and problems and attempting to work with Erie Boulevard Hydropower/ Brookfield Renewable to address these issues has been challenging at best. While we applaud the use of this region's natural assets as a source of clean, renewable energy, my constituents and I believe that the license with Erie Boulevard Hydropower/ Brookfield Renewable should NOT be renewed.

There are certainly other ways to harness the hydropower potential of this waterway without negatively impacting the waterway's other uses. I would welcome an opportunity to further address this issue with you, including how the need for clean hydropower from this waterway can be resolved without renewing Erie Boulevard Hydropower/ Brookfield Renewable's license.

Please do not hesitate to contact my office so that I can address any questions you may have or provide you with any additional information or documentation that may be helpful to you in this regard.

Sincerely,

A handwritten signature in dark ink, appearing to read "Joseph A. Griffo".  
Joseph A. Griffo  
Senator

Ken, Whitesboro, NY.

I am submitting this for a person that is not familiar with the e-comment process. Please accept if possible.

Thank you, See below comments

Ken Ziobro

As President of the West Canada Creek Assn. and past stocking chairman for Herkimer County I feel that the out flow of the inpoundments during hot weather is totally to little. The stones in the creek bed are exposed during the day at low water release. They act as a heat sink and soak up the heat from the sun to be released at night keeping the water from cooling down and causing distress for the fish. There have been die-offs due to excessive heat.

There for please increase the out flow to double the present rate.

Respectfully:

Robert J. Grose President West Canada Creek Assn. Inc.

I can be reached at

rgrosel949@hotmail.com

or P.O. Box 101

Salisbury Center NY

13454

315 429 9572 - home

315 219 2365- cell

Rosemary Darcy, Webster, NY.

West Canada Creek Project P-2701-059

We are residents on Hinckley Lake for the past 8 years. I am very concerned with Brookfield's management of the Lake levels for several reasons:

Recreation: 8 years ago, our water level was higher. We had a floating dock and high-water levels all summer. Our first summer our 3 children dove off our dock right in front of our property into 6 feet of water. This was in July and August of 2010.

Since that time, there is no way they would be able to dive in front of our property as the dock hasn't floated in years. It has been beached. We are lucky to have 2 feet of water in our cove. Also, we haven't been able to pull our boat up to the dock. We thankfully have neighbors who graciously let us use the land in front of their property to get the boat in and out which allows us to even use our boat.

This past weekend, the water level was down 5 feet from where it should be and it isn't even July yet. Every summer I wonder if we will be able to boat all summer or even into the fall. We had to pull the boat early the last falls as the water was so low. We would normally be there with the boat in the water through October.

Safety: a few summers ago, my son took the boat out and became grounded near the Island across from the beach at Trail's End. He was using the same path all weekend when suddenly the water was so low the boat was beached. He could have seriously been injured. We also had the expense of having to buy another prop. If that wasn't enough, my husband and I did the exact same thing in August last summer. They pull the water to lower levels so quickly over a weekend that the depths change dangerously low without any regard for safety. Yet again, we had to add a new prop. Environment and Economics in the area - my uncle from the Albany area, use to Fish at Trenton Falls every year with a group of buddies, some from Pennsylvania. He said you were lucky to get a place to stay in the area because of the crowds going fly fishing for Trout. Now he and his friends no longer come to Trenton Falls as the fish are gone! What once was a hot bed of activity has been destroyed by this company and the poor water level regulation. Of course, the eggs are dying because of the fluctuating water levels destroying sea life which ultimately will affect bird life (loons, eagles, duck of varying kind which we have seen in lower amounts recently. I understand the profits from this company aren't even being returned to our area. It shows little economic sense? Policy Changes - I found it was very misleading to separate the Jarvis Project and West Canada Creek projects. They are both running off the same operating diagram so why are you separating the two projects? In addition, rain fall and precipitation aren't being considered in the plan. If we have no rain, we have no water. These 2 projects MUST be looked at together. How do you separate one continuous water flow? It's like disconnecting a head from a body?! One doesn't work without the other. Am I missing something as common sense as this?

Please do the right thing and do not renew the license for

Erie/Brookfield which is negatively impacting Hinckley Reservoir and Trenton Falls.

Rosemary Darcy

4585-414-0823

David Fransman, Cold Brook, NY.

RE: West Canada Creek Project (P-2701-059)

While understanding this project isn't being currently considered for the Jarvis Project (P-3211), it has a direct tie to the Operating Diagram that Jarvis is required to run. It is foolish to think that these two projects should be examined independently, as they are one in the same system. Hinckley (Jarvis) Dam is the direct feed to the West Canada Project therefore it should be managed as a joint entity, and be evaluated for relicensing together.

With that statement, I continue with my experience growing up on Hinckley Reservoir. As far back as I could remember the reservoir has fluctuated up and down. As a child, really all I remember is being in the water, having a good time regardless of the water level. Hinckley reservoir is where I learned to drive a boat, tube, fish, and relax. As I grew older I was taught how to be responsible, by having to check the boats and dock daily to make sure they haven't floated away or gotten beached. As a teen I didn't mind this because time was on my side, but as an adult maintaining the dock and boat gets very frustrating. Last year, a week before my wedding, both of my boats and dock were beached overnight. My fiancé at the time, family and friends spent hours getting the boats and dock back in the water, instead of enjoying each other's company. Lately, my opinions of the reservoir are much different.

At the extreme high and low water levels, I wonder what is happening to the ecosystem. When high, have fish spawned and then the levels drop dramatically to where their eggs are no longer viable? Or the less typical, when the reservoir is low has wildlife found home in an area to have it wiped away when the water rises? This thought not only applies to Hinckley reservoir. This same concern was revisited when Brookfield stated, at the scoping meeting held on May 30th, 2018, that Prospect and Trenton reservoirs have a potential operating level fluctuation of 5 and 12 feet daily. Therefore, an economical, both aquatic and terrestrial, evaluation should be conducted.

I don't understand why the Jarvis project can't be controlled more often than twice weekly, as presented in Jarvis's scoping document 1 section 3.1.2. Although it is beautiful, it frustrates me when I see water going over the Jarvis Dam. I have an appreciation for renewable energies, but see spillage as a waste. In this modern world, I would think a real-time system could be developed that would manage water at an optimal level to meet all needs of Jarvis. There are already inflow meters from the major incoming water sources. I may be oversimplifying things, but I could use some help understanding why the inflow cannot equal the out flow on a more regular basis and ditch the operating diagram to control outflows?

As I read Jarvis and West Canada project's scoping documents JOINTLY, as it should be, I see what looks to be a major flaw in the system as a whole. In section 3.1.2 of the Jarvis scoping document it states the main power generating units are Kaplan and operate at a minimum flow rate of 300 cfs. In Section 3.1.2 of the West Canada project the Prospect and Trenton Developments generate power at a minimum flow rate of 500 cfs, 200 cfs over Jarvis's minimum power generation level. This can easily create a conflict of interest. I see this as a major area of concern and wonder why such generators were installed in the first place. In Section 3.1.2 of the West Canada project, it is stated that 4 Francis turbine/generator units were retired in 1989. What were their minimum flow rates for power generation? It appears that they were replaced with only 3 units. When were these units installed? I would think 4 units would run at a lower minimum rate than 3. I request power generation at these facilities must work in tandem, even if that means repowering the Trenton and Prospect facilities with new generators that work at a 300 cfs minimum flow to match the Jarvis facility.

As we near peak recreation on Prospect and Hinckley reservoirs it's noticed that water levels are low to the point that the public Launch and Trails End Campground Launch are nearing closure. This negatively affects the community and deters people from wanting to visit, leaving local business distraught. It is apparent that the system is flawed when compared to other reservoirs, such as Delta and the Great Sacandaga. They both support great recreational use and promote the ecosystem very well. I request a study is conducted to review the recreation and land use both on Prospect and Hinckley Reservoirs jointly. This study should include an investigation

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on joint water level management of the West Canada Project and the Jarvis Project to support a "river of flow" system where inflow is equal to outflow on all projects. Such system would create a renewable energy resource while maintaining recreational access to the all the reservoirs.

Again, Renewable energies in my opinion are a great asset to us and our future families, but not if managed incorrectly. I am a bit skeptical of FERC making a positive impact, on these systems and surrounding communities, after learning that they haven't listened to the community suggestions to combine the Jarvis Project with the West Canada Project. I made the same mistake, independently looking at the Jarvis Project, so I suggest FERC takes a holistic look at the two projects. While I am not a Hydrologist, Ecologist, Biologist, or any other "ist", I put my faith in FERC to bring in the necessary people to answer all concerns brought forth. I believe FERC can make a lasting difference. Please help this community. My wife and I recently purchased a home here and would like to raise our children on the reservoir.

The voice of concerned-up land owners,  
David Fransman and Stephanie Fransman  
Davidfransman@gmail.com  
Members of Citizens for Hinkley



# United States Department of the Interior

FISH AND WILDLIFE SERVICE

3817 Luker Road  
Cortland, New York 13045



(ER 18/0202)  
FERC No. 2701-059

June 28, 2018

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

**RE: West Canada Creek Project (FERC #2701-059)  
Comments on Pre-Application Document, Scoping Document 1, and Study Requests**

Dear Ms. Bose:

The U.S. Fish and Wildlife Service (Service) has reviewed the June 30, 2017, Pre-Application Document (PAD) filed by Erie Boulevard Hydropower, L.P. (Applicant) for the West Canada Creek Project (Project) located on West Canada Creek, Oneida and Herkimer Counties, New York. The West Canada Creek Project consists of both the Prospect and Trenton Developments. We have also reviewed the April 30, 2018, Scoping Document 1 (SD1) noticed by the Federal Energy Regulatory Commission (FERC). We have the following comments on the PAD and the SD1. The Service is also submitting our study requests herein.

## **Comments on the PAD**

The PAD is well-organized and addresses most of the key issues for the Project. We have the following comments:

In Section 4.5, the PAD describes Project operations necessary to ensure a required 160 cubic feet per second (cfs) minimum base flow below the Nine Mile Creek Feeder Dam below the Trenton powerhouse. The Licensee must release a quantity of water greater than or equal to the minimum base flow plus any flow diverted at the Feeder Dam to meet this requirement. The PAD indicates that this requirement is met through coordination with both the New York State Canal Corporation and New York Power Authority so that flows both into the Project and diverted from West Canada Creek can be used to determine the necessary releases and operations at the Project. The PAD states that flows necessary to ensure the required minimum base flow

are released either through generation or through a minimum flow release valve during unexpected outages. The minimum flow release valve is stated as being capable of releasing the 160 cfs minimum flow. However, the actual capacity of the minimum flow release valve was not provided. The minimum flow release valve should also be able to release a quantity of water equal to the minimum base flow plus any flow diverted at the Feeder Dam to meet this requirement. We request that additional detail be provided regarding the capacity of the minimum flow release valve and how the minimum base flow is provided when canal diversions are occurring.

In Section 5.5.4, the PAD incorrectly indicates the lower reach assessed during the 1980 instream flow study assessed brook trout (*Salvelinus fontinalis*). We recommend this be corrected to indicate the study assessed brown trout (*Salmo trutta*) in this reach.

In Section 5.10.1, the PAD describes the Prospect bypassed reach as enclosed in steep stream banks. There is currently no required minimum flow in the Prospect bypassed reach; however, Section 5.4.4 indicates that the Mohawk Valley Water Authority Water Treatment Plant releases approximately 1.72 million gallons per day into the bypassed reach. Additionally, during our inspection of the bypassed reach during the May 30, 2018, environmental site review, additional flows were noted as entering the bypassed reach. Below we have recommended studies to assess the condition of the aquatic resources in the Prospect bypassed reach.

In Appendix D, the monthly flow duration curves are provided. These figures are difficult to read at lower flow volumes as the slope flattens greatly over this range. The Service recommends that these be plotted on a log y-axis to aid in readability at lower flow volumes.

In Table 5-9, the scientific name for American eel is *Anguilla rostrata* not *Anguilla rostrate*, and the scientific name for longnose sucker is lacking the specific epithet. Additionally, in Table 5-12, the scientific name for moose is lacking the specific epithet. We recommend that these scientific names be corrected.

### **Comments on SD1**

The SD1 adequately addresses the potential Project impacts. The contact information for the New York Field Office on page 28 should be updated to address David Stilwell.

### **Study Requests**

The Service requests that the Applicant conduct the following studies to address information gaps in the PAD and provide the information necessary to assess the effects of the Project and determine appropriate Protection, Mitigation, and Enhancement (PME) measures.

#### **I. Fishery Surveys**

The Service recommends that the Applicant conduct a thorough fisheries survey at the Project. The study should target all fish species and use a variety of gear types and methodologies. The Service is not requesting a fishery survey in the Trenton bypassed reach due to the difficulty of sampling the series of falls found in this reach.

### 1. *Goals and Objectives*

The goals and objectives of this study are to provide information on the existing fishery resources in the vicinity of the Project, including areas upstream and downstream of the dams, to aid in the determination of what the Project impacts may be.

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the New York State Department of Environmental Conservation (NYSDEC) as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout [*Oncorhynchus mykiss*]), smallmouth bass, (*Micropterus dolomieu*), yellow perch (*Perca flavescens*), and sunfish (Family: *Centrarchidae*).

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

In Sections 5.5.1 and 5.5.2, and in Table 5-9, the PAD describes the fish species found in West Canada Creek based on a variety of random, non-targeted sampling conducted with a variety of gear types over a 27-year period from 1988 through 2014. More detailed information is provided regarding the fishery of Hinckley Reservoir, which is not a Project feature; however, there is no specific information regarding the different fish species, relative abundances, or condition of the fisheries in any specific area impacted by Project operations. It is our understanding that limited to no fisheries surveys have been conducted in Prospect Pond, including the power canal, Prospect bypassed reach, or Trenton Pond. Additionally, the fishery is known to change downstream from the Project to the Mohawk River; and there is no information provided in which these differences in the fishery could be assessed. The existing information is inadequate to assess Project impacts on the existing fisheries as the fishery and impacts will vary across the Project features and impacted reaches of West Canada Creek.

### 5. *Nexus to Project Operations and Effects*

The Project's dams serve as barriers to upstream and downstream fish migration. Fish moving downstream are subjected to potential mortality from impingement and entrainment. The Project diverts all water, except during high flow spillage events, from the bypassed reaches, limiting riverine habitat. The Project modifies flows downstream from the Project and impacts habitats in the impoundments via fluctuations.

### 6. *Methodology Consistent with Accepted Practice*

The Service recommends a general fisheries study that uses standard scientific collecting techniques used in most hydroelectric licensing activities. The Applicant should conduct a thorough fisheries survey in the vicinity of the Project, including both of the reservoirs, the



Prospect bypassed reach, and West Canada Creek downstream from the Trenton powerhouse to the Mohawk River. We are not requesting a fisheries survey in the Trenton bypassed reach. We recommend that a variety of sampling gear, including gill nets, trap nets, seines, and electroshocking, be used as appropriate for site conditions. We recommend that the survey cover at least three seasons (spring, summer, and fall), and all four seasons, if possible. The Service recommends that the study be done for 1 full year, with provision for a second year of study if data collected are inadequate based on review by the Service and the NYSDEC. Information normally collected includes species, size, age, sex, and condition, as well as any specific habitat information (i.e. substrate, water depth, velocity conditions). Standard water quality data (i.e., water temperature, dissolved oxygen [DO], pH, and conductivity) are usually collected in conjunction with these surveys.

#### 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew sampling for 1 full year. The actual cost is unknown and would depend upon the gear types used, number of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries and water quality) into one task, etc. No alternative studies have been proposed, and there are no known alternatives to conducting standard fishery surveys. However, the Applicant has flexibility to design the most cost-effective way to acquire the necessary data.

### II. Fish Protection and Downstream Passage Studies

The Service recommends the Applicant prepare an assessment of entrainment and mortality at the Project and explore methods to exclude fish from the Project turbines and safely pass fish downstream. This study should collect site specific data and reference available literature regarding target fish species and impacts at similar hydroelectric sites. The Service has not identified any upstream passage needs at this time.

#### 1. *Goals and Objectives*

The goals and objectives of this study are to provide information on impacts due to fish entrainment and mortality and potential fish passage and protection structures that could be utilized at the Project. The information obtained will allow the Service's fishway engineers to evaluate the potential effectiveness of various options.

#### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

#### 3. *Public Interest*

The requestor is a resource agency.

#### 4. *Existing Information*

In Sections 4.3 and 4.4, general dimension of the intakes for the developments are described including that the Prospect development has 3 5/8"-clear spaced trashracks and that the Trenton development has 2"-clear spaced trashracks. There is no information in the PAD regarding fish entrainment or mortality at the Project. Information from the Fishery Survey will inform this study.

#### 5. *Nexus to Project Operations and Effects*

The Project's dams serve as barriers to downstream fish migration. Fish moving downstream are subjected to potential mortality from impingement and entrainment. New licenses issued for projects throughout New York and the northeast have incorporated 1"-clear spaced trashracks to physically exclude most adult fish from the turbines, alternate downstream passage routes, and other features (e.g., reduced approach velocities, adequate plunge pools, etc.) to encourage safe downstream fish passage.

#### 6. *Methodology Consistent with Accepted Practice*

The recommended study uses standard literature reviews and site-specific data collection techniques common to most hydroelectric licensing activities. The Service recommends that the Applicant explore alternatives to keep all fish species out of the turbines. We also recommend that alternatives to effectively pass fish downstream around the dams be developed. These alternatives may include any existing trash sluices located close to the intakes. The Service has not identified any needs for upstream passage at the Project, at this time.

A good starting point would be a literature search of available passage designs for the species of concern, as well as information on the relative effectiveness of each design. Existing facilities at other similar dams can be investigated. Attraction flows, guidance mechanisms, and velocities are important components of an effective fish protection and downstream passage system. An effective system also diverts fish away from the turbines and guides them to the downstream passage facility. Adequate attraction and conveyance flows are critical to the proper functioning of the fishway. A passage facility that creates a bottleneck could delay downstream movement or expose the fish to excessive predation. The Service recommends that all passage facilities be designed to prevent blockage from ice and debris and be as maintenance-free as is feasible. Effective systems must be able to operate under all flow conditions experienced in West Canada Creek.

The Service recommends, in addition to literature review and on-site investigations of existing facilities, that the Applicant collect site-specific data from the Project to aid in the design of protection and passage facilities. This information would include flows, velocities, water depths, and substrates.

We also recommend that the Applicant collect information on the passage requirements of the fish species found in West Canada Creek. This information includes swimming speeds (including burst speeds), where in the water column these fish are likely to be moving, different forms of attractants or repellents (e.g., sound, light, etc.) that may help guide each species, etc.

## 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve moderate literature review, discussions with fishway engineers, and site-specific data collection. The study could be completed in less than 1 year, but may require more time to design effective facilities. The actual cost is unknown and would depend upon the number of alternatives examined. No alternative studies have been proposed.

## III. *Macroinvertebrate and Freshwater Mussel Surveys*

The Service recommends that the Applicant conduct a thorough macroinvertebrate and freshwater mussel survey at the Project. The study should use a variety of shallow and deep-water techniques approved by the NYSDEC.

### 1. *Goals and Objectives*

The goals and objectives of this study are to provide information on the existing macroinvertebrate and freshwater mussel communities that may be impacted by Project operations. This information will be used to document the current macroinvertebrate, mussel communities, and water quality conditions and to determine potential impacts from the operation of the Project.

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish. Macroinvertebrates, including mussels, are a key component of the food base for these fisheries.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

In Sections 5.4.7 and 5.5.6, the PAD indicates that benthic macroinvertebrates have been sampled in West Canada Creek downstream from the Project; however, no data are available for locations in the Project impoundments or bypassed reaches. Additionally, the data presented are from 2006 and earlier, which do not reflect conditions that are representative of downstream flows resulting from the 2012 Operating Diagram for Hinckley Reservoir. Current information is needed due to the change in conditions of the system. In Section 5.5.7, the PAD indicates that freshwater mussels are currently in decline; however, no information relating to the current condition and species information of the freshwater mussel community at and below the Project are presented.

5. *Nexus to Project Operations and Effects*

Freshwater mussels and other aquatic macroinvertebrates are important components of the ecosystem in both Hinckley Reservoir and West Canada Creek. The Project affects water levels in the impoundments and flows downstream from the dams. Macroinvertebrate communities can be impacted by these water level and flow fluctuations. The dams block fish movements both upstream and downstream. Mussels rely on fish for their movement and reproductive success.

6. *Methodology Consistent with Accepted Practice*

The recommended study uses standard scientific collecting techniques common to most hydroelectric licensing activities. The Service recommends that the Applicant conduct benthic macroinvertebrate studies in the impoundments and Prospect bypassed reach and in areas downstream from the Project to the confluence with the Mohawk River. Sampling should be conducted seasonally and include both shallow water and deep water gear, along with targeted mussel surveys. Sampling in different habitats (e.g., different depths and substrates) using a variety of techniques such as kick net sampling, multiplate samplers, and ponar dredge will help to identify variability in the macroinvertebrate communities. Seasonal sampling is also desirable to establish baseline conditions. For mussels, standard sampling techniques targeting mussel populations should be utilized. The Applicant should follow specific study guidelines as recommended by the NYSDEC for both benthic macroinvertebrates and freshwater mussels.

7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew sampling on a seasonal basis. The study would last for 1-2 years. The actual cost is unknown and would depend upon the gear types used, number of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries and water quality) into one task, etc. No alternative studies have been proposed.

VI. *Wetlands Identification Study*

The Service recommends that the Applicant verify all key aquatic habitats at the Project, including wetlands and submerged aquatic vegetation. This study will involve verification of existing data and mapping of occurrence to update the information on these habitats for the Project.

1. *Goals and Objectives*

The goals and objectives of this study are to identify key aquatic habitat areas in the vicinity of the Project. The study will provide information on the extent and quality of wetlands and aquatic vegetation and the wildlife they support. This information is necessary to characterize the aquatic habitats and the wildlife they support in the Project vicinity.

2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and

enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

3. *Public Interest*

The requestor is a resource agency.

4. *Existing Information*

In Section 5.7, the PAD summarizes the Service's National Wetlands Inventory (NWI) and NYSDEC delineations of wetlands in the vicinity of the Project; however, these surveys are not precise enough to capture all regulated wetlands, thus there is a need for wetland vegetation surveys. No information is provided regarding submerged aquatic vegetation.

5. *Nexus to Project Operations and Effects*

Operation of the Project affects water levels and velocities, as well as the timing and location of releases. These factors can impact aquatic vegetation and wetlands, which can be important habitats for fish and wildlife. The information will be used to determine what, if any, impacts the Project is having on these resources and what the appropriate PME measures might be.

6. *Methodology Consistent with Accepted Practice*

The Service recommends that the Applicant document all wetlands and other aquatic vegetation within the vicinity of the Project. The NWI maps are frequently used as the starting point in identifying wetlands. The Applicant should confirm the boundaries of any wetlands identified in the PAD and conduct an additional search for any wetland areas at the Project. Submerged aquatic vegetation in the impoundments should be mapped and identified. The Service is not requesting detailed delineation of wetlands at the Project.

7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort and cost are relatively low. Much of the information will be collected during habitat mapping of the impoundments and stream reaches for other studies. We recommend this study to ensure that there are no gaps in the wetland and aquatic vegetation information for the Project. The remaining information can probably be collected during field work related to other studies. The Applicant has proposed to develop an Aquatic Habitat Mapping Study, in consultation with the Service, and this study may suffice, provided that it addresses the methodology provided herein.

V. *Impoundment Fluctuation Studies*

The Service recommends the Applicant study the habitats impacted by impoundment fluctuations at the Project. The study should focus on and map the range of elevations impacted by the daily swings in water level in the impoundments and note important habitat types and amount of area impacted by Project operations.

## 1. Goals and Objectives

The goals and objectives of this study are to provide information regarding the habitat in the impoundments and how it is impacted by changes in water levels. This information will then be used to determine what impacts need to be addressed and whether an alternative operational mode may be more desirable.

## 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

## 3. Public Interest

The requestor is a resource agency.

## 4. Existing Information

In Section 4.5, the PAD provides information related to the maximum and target fluctuation levels of the Project impoundments. The Prospect impoundment may fluctuate up to 5 feet daily, and the Trenton impoundment may fluctuate up to 12 feet daily. In Section 5.3.4, the PAD provides general descriptions of the impoundment shorelines. There are no data provided regarding habitat within the impoundments that may be affected by the Project operations.

## 5. Nexus to Project Operations and Effects

The Project operates in a ponding fashion and large fluctuations occur in the reservoirs that impact shoreline habitats in the vicinity of the Project. These fluctuations create a zone around the impoundment shoreline that is periodically dewatered. The habitat in this zone is usually not as valuable to aquatic organisms and plants as the habitat with more constant water levels. These fluctuations can impact wetlands and shallow littoral vegetation, as well as the invertebrates, fish, birds, mammals, amphibians, and reptiles that use these habitats.

## 6. Methodology Consistent with Accepted Practice

The recommended study uses standard study techniques used in many hydroelectric licensing activities at projects with ponding operations. The Service recommends that the Applicant map the aerial extent and habitat in the fluctuation zones at full pond and at drawdowns consistent with existing and proposed Project operations in the impoundments for both developments. The maps should identify the extent of the changes in, and adjacent to, the impoundment areas, substrate and type of habitat, the depth at various pond levels, and any important habitat types (i.e., wetlands and submerged aquatic vegetation, fish spawning beds, mussel beds) that may be present. Steep slopes, fluctuations in stream flow, and fluctuations in reservoir elevations can lead to mass movement, and we recommend that eroding or potentially erodible areas within the fluctuation zone be evaluated and included in the maps.

## 7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice

The level of effort would be moderate and would involve one crew surveying the impoundments for 1-2 years. The actual cost is unknown but would depend on the variety of habitats found in the impoundments. The Applicant has proposed to develop an Aquatic Habitat Mapping Study, in consultation with the Service, and this study may suffice, provided that it addresses the methodology provided herein.

## VI. Downstream West Canada Base Flow Study

The Service recommends the Applicant build on the existing instream flow study by conducting a more robust Instream Flow Incremental Methodology (IFIM) study that incorporates notably lacking information necessary to determine flows downstream from the Project related to peaking flows, water quality, and species and life stages represented in West Canada Creek. This study can build on the existing data, but a more rigorous approach is needed to determine downstream impacts and flow requirements.

### 1. *Goals and Objectives*

The goals and objectives of this study are to determine whether the existing base flow requirements and peaking operations provide adequate habitat and protection for aquatic resources in West Canada Creek downstream from the Project. This study should address changes in available habitat at minimum base and peaking flows (dual-flow), a range of species and life stages of target species, and critical water quality parameters associated with different flows (i.e., temperature, DO).

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

In Section 5.5.4, the PAD summarizes a 1980 instream flow study, and a 1981 air and water temperature monitoring assessment, conducted in West Canada Creek below the Trenton development during the original licensing of the Project. The instream flow study assessed weighted usable width (WUW) of stream habitat at six different flows (~85 cfs – 350 cfs) at three different reaches downstream of Morgan Dam. The study quantified the usable habitat for adult, juvenile, and fry stages for brown trout (all reaches) and smallmouth bass (lower reach only). The flow study found that little increase in WUW occurred for either species above a flow of 160 cfs. While the velocities recorded for the study were measured in order to determine

habitat characteristics and varied considerably around the intended flow, we note that the overall trend in flows in the study increased and suggests that the releases provided additional water with increasing intended flow. The average flow across all of the transects in each reach is suggestive of the intended flow, as well. The Service believes the instream flow study, while limited, was generally well-conducted. It reflects some of the trade-offs in WUW between increasing depth and increasing velocity for the limited species and life stages studied across a limited range of flows. The air and water temperature monitoring study demonstrated that existing temperatures in West Canada Creek were marginal for the growth and feeding of brown trout.

Since the original license was issued for the Project, stakeholders have noted deficiencies with the 160 cfs minimum flow requirement and the maintenance of a trout fishery below the Project. During periods when the minimum flow is released, fish are noted to be confined to pools and likely heat-stressed with low DO availability. The NYSDEC notes that natural reproduction of trout does not occur in West Canada Creek, and the existence of a notable trout fishery is largely dependent on the heavy brown trout stocking efforts of the NYSDEC. Additionally, winter temperature changes due to peaking water level changes likely cause mortality due to impacts from ice and freezing stress. The 1980 instream flow study provided insight into the changes in available habitat, but these changes were only based on changes in velocity and depth at lower flows. The flows based on this analysis have been in place since the original license was issued and the issues noted above have demonstrated that a more detailed investigation, including additional aspects of the hydrological environment, is necessary in order to determine an adequate minimum base flow and to meet the resource management goals for West Canada Creek.

The PAD does not present any information from the existing instream flow and air and water temperature monitoring studies that include an analysis of the interrelated effects of flow volume, temperature, DO, fish and macroinvertebrate species across trophic levels, and peaking operations in relation to habitat availability. Other peaking projects in New York (e.g., Salmon River – FERC No. 11408) and across the country have conducted IFIM studies that assess these multiple aspects of the aquatic environment in a dual flow analysis that looks at habitat availability at both minimum base and peaking generation flows. These are two fundamentally different flow regimes that occur, on a daily basis, downstream of peaking projects. The PAD also does not include any information regarding winter changes in temperature and habitat impacts from peaking operations.

#### 5. *Nexus to Project Operations and Effects*

The Project operates in a peaking mode and thus affects flows downstream from the dam. The flows can vary daily from less than 500 cfs to 1,400 cfs. The current license requires a minimum base flow of 160 cfs below Morgan Dam.

#### 6. *Methodology Consistent with Accepted Practice*

The Service recommends that the Applicant conduct an IFIM study on West Canada Creek downstream of the Trenton development. This study should follow the methodologies for IFIM in the Instream Flows for Riverine Resource Stewardship (2004) guidance that have been



updated considerably since the 1980 instream flow study was conducted. The study can utilize the structure and the data from the 1980 instream flow study, as applicable, but should provide additional information regarding the changes in available habitat at minimum base versus peaking flows. Temperature and DO should also be incorporated into the analysis to allow for the evaluation of water quality conditions at each flow studied. The analysis should present data and maps that show the changes in these water quality conditions as flows move downstream across a range of ambient air temperatures, including colder winter temperatures. The information presented should describe the changes in water quality across the range of water depths at each sampling location and habitat type. This analysis would be most effective if it incorporated a planned, consistent release of 160 cfs under adverse (air temperature greater than 80° F) conditions to set a baseline for the protection offered by the existing minimum base flow requirement. The study should also allow for a determination of the impacts from the daily generation flows overlain on the base flows.

While brown trout is the primary game species, the Service requests that the Applicant incorporate additional species of resource concern into the analysis including brook trout, rainbow trout, smallmouth bass, and primary food species, including macroinvertebrates. We also request that spawning and egg incubation life stages be added to the analysis, as these are necessary life stages for successful reproduction.

The Service also recommends that the Applicant conduct habitat mapping of the downstream study reach. This mapping would identify the type of habitat in each section (e.g., riffle, run, pool) along with depths, velocities, and substrates. This will allow for interpretation of changes in habitat that occur with changing flows and water quality conditions.

#### *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort for this study will likely be high. A team of several biologists will likely need to establish transects for flow and water quality monitoring for 1-2 seasons. Some modeling and detailed mapping of the results along with literature and data review to update the 1980 instream flow study will be needed. The Applicant can likely combine some of the water quality data from the Water Quality Study into the analysis. The habitat mapping would be done separately and would likely take a crew of two people 3-5 days. The actual cost is unknown, but will likely be moderate to high; however, this is justified due to the importance of the resources being addressed. The Applicant has proposed to develop an Aquatic Habitat Mapping Study, in consultation with the Service, and this study may partially suffice, provided that it addresses the habitat mapping requested for this study. No alternative studies to an IFIM that would allow for the assessment of the dual-flow, year-round, multi-species, water quality-driven impacts below the Project have been presented.

#### **VII. Prospect Bypassed Reach Flow Study**

The Service recommends the Applicant conduct an IFIM study in the 1.2-mile-long Prospect bypassed reach. This reach does not have a minimum flow requirement and is largely dewatered; however, substantial portions of the bypassed reach could provide valuable aquatic habitat with adequate flow. A flow study is needed to determine minimum flow requirements in this reach for aquatic habitat and aesthetic resources.

1. *Goals and Objectives*

The goals and objectives of this study are to determine what flows are necessary to provide adequate habitat and protection for aquatic resources in the Prospect bypassed reach. This study should address a range of species and life stages of target species, and critical water quality parameters associated with different flows (i.e., temperature, DO).

2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

3. *Public Interest*

The requestor is a resource agency.

4. *Existing Information*

In Section 5.10.1, the PAD describes the 1.2-mile-long Prospect bypassed reach as enclosed in steep stream banks. There is currently no required minimum flow in the Prospect bypassed reach; however, Section 5.4.4 indicates that the Mohawk Valley Water Authority Water Treatment Plant releases approximately 1.72 million gallons per day into the bypassed reach. Additionally, at the inspection of the bypassed reach during the May 30, 2018, environmental site review, additional flows were noted as entering the bypassed reach, and we noted that the entire reach is not a steep-walled gorge. With additional water, this reach may provide additional aquatic habitat for fish and wildlife resources. There is no information presented in the PAD to assess suitable flows for aquatic habitat and water quality standards in the Prospect bypassed reach.

5. *Nexus to Project Operations and Effects*

The Project impounds West Canada Creek and bypasses the river channel between Prospect Dam and the powerhouse limiting aquatic habitat in this reach. Additionally, this reach is of importance for aesthetic views of Prospect Falls and recreational boating opportunities, which would also be enhanced by providing flows in this reach.

6. *Methodology Consistent with Accepted Practice*

The Service recommends that the Applicant conduct an IFIM study on the bypassed reach of the Prospect development. This study should follow the methodologies for IFIM in the Instream Flows for Riverine Resource Stewardship (2004) guidance. This analysis should include important water quality parameters such as temperature and DO.

While brown trout is the primary game species, the Service requests that the Applicant incorporate additional species of resource concern into the analysis including brook trout,

rainbow trout, and primary food species, including macroinvertebrates. Additionally, we request that spawning and egg incubation life stages be added to the analysis, as these are necessary life stages for successful reproduction.

The Service also recommends that the Applicant conduct habitat mapping of the study reach. This mapping would identify the type of habitat in each section (e.g., riffle, run, pool) along with depths, velocities, and substrates. This will allow for interpretation of changes in habitat that occur with changing flows and water quality conditions.

#### 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort for this study will likely be moderate. A small team of biologists will likely need to establish transects for flow and water quality monitoring for 1-2 seasons. Some modeling and detailed mapping of the results along with literature and data review will be needed. This study can be conducted in conjunction with the base flow study identified above, thus reducing some of the logistical costs. The Applicant can likely combine some of the water quality data from the Water Quality Study into the analysis. The habitat mapping would be done separately and would likely take a crew of two people 1-2 days. The actual cost is unknown, but will likely be moderate. The Applicant has proposed to develop an Aquatic Habitat Mapping Study, in consultation with the Service, and this study may partially suffice, provided that it addresses the habitat mapping requested for this study. No alternative studies to an IFIM that would allow for the assessment of suitable flows in this reach have been presented.

### VIII. Trenton Bypassed Reach Flow Study

The Service recommends the Applicant conduct a flow demonstration study in the 4,000-foot-long Trenton bypassed reach. This reach does not have a minimum flow requirement and is largely dewatered. The Service notes that there is likely habitat for macroinvertebrates and forage species in this reach. A flow demonstration study should be sufficient to determine minimum flow requirements in this reach for aquatic habitat and aesthetic resources.

#### 1. *Goals and Objectives*

The goals and objectives of this study are to determine what flows are necessary to provide adequate habitat and protection for aquatic resources in the Trenton bypassed reach. This study is primarily intended to provide information for wetted habitat for aquatic species, and is not intended to be a full-flow analysis for fisheries resources.

#### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

In Section 5.10.1, the PAD describes the 4,000-foot-long Trenton bypassed reach as enclosed in steep stream banks and cliffs with several waterfalls. There is currently no required minimum flow in the Trenton bypassed reach. There is no information presented in the PAD to assess suitable flows for aquatic habitat in the Trenton bypassed reach.

### 5. *Nexus to Project Operations and Effects*

The Project impounds West Canada Creek and bypasses the river channel between the Trenton Dam and the powerhouse limiting aquatic habitat in this reach. Additionally, this reach is of importance for aesthetic views of Trenton Falls Gorge, which would also be enhanced by providing flows in this reach. Currently, allowable access to the Trenton Falls Gorge is not associated with any minimum flow release, negatively affecting the aesthetic recreation value of the Project.

### 6. *Methodology Consistent with Accepted Practice*

The Service recommends that the Applicant conduct a flow demonstration study for the Trenton bypassed reach. This study should provide a range of suitable flows, developed in consultation with the stakeholders, for assessment for wetted habitat and aesthetics. The stakeholders should be given an opportunity to rank the flows, and this study can be used as a basis for discussion regarding what the flow in the Trenton bypassed reach should be.

### 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort for this study will likely be low. A meeting may be needed to develop the list of flows to be observed. A day in the field will need to be arranged for the observations, and a follow up meeting to discuss the results of the study will be needed. The actual cost is unknown, but will likely be low, depending on the method and difficulty in providing the requested flows. No alternative studies have been presented that would allow for the assessment of suitable flows in this reach.

## IX. *Water Quality*

The Service recommends that the Applicant conduct a thorough water quality assessment at the Project. The study should provide relevant water quality information to determine if the Project meets minimum water quality standards for the preservation of beneficial uses at the Project including fish and wildlife habitat and recreation.

1. *Goals and Objectives*

The goals and objectives of this study are to provide baseline water quality information to allow a proper determination of the potential impacts at the Project. These data are necessary to evaluate how water quality may influence the current condition of the fishery and the adequacy of the minimum flows at the Project as they relate to water quality.

2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek, especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch, and sunfish.

3. *Public Interest*

The requestor is a resource agency.

4. *Existing Information*

In Section 5.4.7, the PAD indicates that water quality data have been collected in West Canada Creek downstream from the Project; however, no data are presented for locations in the Project impoundments, bypassed reaches, or for downstream reaches. The existing data are from 2006 and earlier, which do not reflect conditions that are representative of downstream flows resulting from the 2012 Operating Diagram for Hinckley Reservoir. Current information is needed due to the changes in the operating regime of the system.

5. *Nexus to Project Operations and Effects*

The Project impounds the river, creates multiple bypassed reaches, and alters downstream flows. This could impact such water quality factors as temperature and DO, which are critical to the quality of the aquatic habitat.

6. *Methodology Consistent with Accepted Practice*

The recommended study uses standard scientific water quality sampling techniques used in most hydroelectric licensing activities. These studies should include water temperature and DO monitoring on a continuous basis for at least 1 year, along with monthly sampling of other parameters such as pH, turbidity, and conductivity. An additional year of monitoring may be requested based on a review of the first year's results. This information will be used to document baseline water quality conditions and to determine potential impacts from the Project's operations. We recommend that water quality data be collected from the impoundments, the Prospect power canal, the head and lower portions of all bypassed reaches, and below all powerhouses at the Project. We also recommend that a series of locations downstream between the Trenton development and the Mohawk River be sampled. These locations could be used to supplement the IFIM study requested above. The data should be presented in conjunction with generation for each associated development, noting which units were operating, any unit trips,

any operation of the minimum flow valve at the Trenton development, and any spillage that may occur. Data from the downstream U.S. Geological Survey gauge should also be provided, along with daily rainfall and temperature data.

7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would be moderate and would involve a crew monitoring continuous measurement devices and collecting monthly samples while undertaking other work such as fisheries or macroinvertebrate surveys. In addition, temperature and DO loggers would be installed, with data being periodically downloaded. The actual cost is unknown but would be relatively low. No alternative water quality studies have been presented.

\* \* \* \* \*

The Service recommends that the Proposed Study Plan (PSP) developed by the Applicant incorporate all of the above-listed studies. We also recommend that the study proposals incorporated into the PSP be as detailed as possible so that all parties know exactly what is being agreed to when the study plan is approved.

Thank you for the opportunity to comment on this PAD and SD1 and the opportunity to provide study requests. If you have any questions or desire additional information, please contact John Wiley at 607-753-9334.

Sincerely,



David A. Stilwell  
Field Supervisor

cc: FERC e-file  
NYSDEC, Utica, NY (T. Phillips)  
NYSDEC, Watertown, NY (D. McDonald)  
OEPC, Washington, DC (S. Alam)  
FWS, BER (ERT), Falls Church, VA (S. Nash)  
FWS, Hadley, MA (S. Simon)  
SOL, Boston, MA (L. Tyhach)

COMMENTS ON WEST CANADA CREEK HYDROELECTRIC PROJECT P 2701-059

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

Dear Ms. Bose:

I am a member of the Board of Directors for the West Canada Watershed Alliance (WCWA). Our organization advocates for the West Canada Creek's healthy aquatic environment and beneficial uses of the river by our community members, sports fishermen, recreationalists, and tourists. I attended both the environmental site review and the scoping meeting held on May 30, 2018. We have four general areas of comments to offer at this stage of the West Canada Creek (Brookfield) hydroelectric project (P 2701-059) relicensing process.

1. Relicensing schedule for the West Canada Creek (Brookfield) and Jarvis (P-3211) hydroelectric projects.

Many WCWA members reside along the banks of the lower West Canada Creek (downstream from both the Brookfield and Jarvis projects, and are long-time observant monitors of river conditions. We realize that hydrologic conditions in the lower West Canada Creek are highly regulated, resulting from releases from Hinckley Reservoir and diversions to support Canal operations, Mohawk Valley Water Authority (MVWA) diversions from Hinckley, and hydropower operations at both the Jarvis and Brookfield projects. The two hydroelectric projects are inextricably intertwined in a complex system that has many water management and environmental demands on it. We also know that the Jarvis relicensing process is well underway. Thus, it does not seem wise to separate the relicensing process of the Jarvis and Brookfield projects from an environmental and community impact point of view. We are dealing with a single hydrologic system, and many of the environmental and community impacts are identical. Would it not be more efficient, consistent, and effective to address the impacts of both projects together at the same time? (This comment was also made on October 26, 2017 in connection with the Jarvis relicensing process.)

2. The 2012 Operating Diagram

The Brookfield PAD and Scoping documents state that the flow that passes through the project turbines is determined by the 2012 Hinckley Reservoir Operating Diagram. The New York Power Authority (NYPA), which controls the outflow from Hinckley Reservoir must comply with the directions of the Hinckley Dam's owner, the NYS Canal Corporation (NYCC) Since recent governmental reorganization, the NYCC is a public corporation under the jurisdiction of NYPA.

The WCWA has several issues with the 2012 Operating Diagram. Some background is helpful:

- a. The original 1920 Operating Diagram was developed as part of a legal agreement to settle a water rights dispute between New York State (NYCC) and Utica Gas and Electric, the hydropower company in existence at that time (Brookfield's predecessors). The operating diagram was developed to maximize hydropower production and canal operations.
- b. Also associated with the construction of Hinckley Dam was the 1917 Agreement between the NYCC and MVWA's predecessor to secure a municipal water source for Utica. It is significant

that the 1917 Agreement gave Utica rights to divert up to 75 cubic feet per second (cfs) from Hinckley contingent upon them constructing and maintaining a 6 billion-gallon compensating reservoir to replace withdrawals when Hinckley inflow fell below 335 cfs. (The city eventually built the 1.2-billion-gallon Gray Reservoir on Hinckley Tributary Black Creek, but it was destroyed in 2002 over dam safety issues.)

- c. The 2012 Operating diagram resulted from a lawsuit between MVWA and the NYCC. It made deviations from the diagram easier, sought to maintain a higher summertime water level, but vacated the requirement that MVWA provide compensating storage to draw upon during droughts. It was developed and adopted with no input from other resource agencies, from NYPA or Brookfield, or from the public or NGO's. There was no formal State Environmental Quality Review (SEQR) to assess environmental impacts of implementing the 2012 Operating diagram.

The WCWA requests the FERC require as part of the Brookfield (as we asked of the Jarvis) relicensing process, that a study be conducted to assess the environmental, economic, and societal impacts the 2012 Operating diagram. An overarching consideration is what, 100 years after its construction, is the best use of the water impounded by the Hinckley Dam. Some relevant points:

- The Erie Canal is no longer a vital part of the state's commercial transportation network. Its current value is its draw to recreational boaters and its economic benefits to the communities along its route. Despite its importance to tourism, recreational use of the Canal does not sustain Canal operations economically. Its place in New York's governmental hierarchy has been "passed around" from the NYS Department of Transportation, to the NYS Thruway Authority, and most recently, to NYPA. In developing a Hinckley Operating Diagram, the actual needs of the modern, recreation-oriented Erie Canal ought to be considered. For example, with a much-reduced frequency of lockages, does the canal need as much water from Hinckley as it did when commercial barge traffic was much more frequent? Additionally, how much water is "wasted" throughout the canal system's aging infrastructure and leaking locks that could otherwise be retained in Hinckley Reservoir?
- The importance of recreation and tourism to the local and regional economy may not have been considered as an important factor when the 2012 Operating diagram was developed. Could Hinckley Reservoir and the river downstream become more reliable recreational venues if the goals of the Operating Diagram reflected the need for a higher, more stable summer elevation and more reliable releases to the river downstream? Would the lower West Canada Creek support a healthier and more abundant sport fishery if flow rates were more fish-friendly and minimum flow targets were higher than 160 cfs?
- Regarding hydropower potential, the same amount of water would flow through the turbines, regardless of the Operating Diagram. Obviously, the timing would be likely be different, and perhaps profitability would be affected. Any potential loss in profits should be weighed against economic gains of a more environment- and recreation-friendly water management scheme.

(This comment was also made on October 26, 2017 in connection with the Jarvis relicensing process.)

### 3. The Dewatered Natural Channel

Present Brookfield operations (except for when water is spilling over the Hinckley Dam) divert all the water released at the Jarvis project into holding reservoirs for the Prospect and then Trenton Falls



hydropower facilities and away from the natural West Canada Creek channel. The operations essentially dewater approximately 2 miles of some of the nation's most spectacular series of waterfalls contained in what's locally known as "the Gorge." There is no legal public access to this area. We understand that when applicants were granted licenses in the past, the FERC may not have fully understood the ecological harm done by dewatering a natural river channel, but that is no longer the case.

The WCWA requests the FERC require these conditions of the licensee:

- Some water held in the Prospect Pond be released so that there is always water flowing down the natural channel of the West Canada Creek and over the several waterfalls. The amount of water released to the natural channel and its seasonal variability would be determined by the needs to sustain a healthy fishery and the more subjective needs of a positive aesthetic experience for viewing the waterfalls.
- Safe access be provided for the public to get to the river channel itself along the course of the two-mile reach that is presently dewatered.

The Gorge was one of our state's and our nation's first tourist destinations, and even figured prominently in our Civil War history. For a time in the 1800's, it was one of the area's economic drivers as a tourism draw and inspiration to landscape artists. Since hydropower operations began in the early 1900's however, the public has virtually been shut out of experiencing and enjoying this natural wonder. The only legal access presently afforded is a couple of weekends a year when Brookfield opens a scenic trail along the rim of the west bank to view (usually) dewatered falls from a great distance. This is a totally inadequate substitute for what could be a unique and year-round recreational and aesthetic experience.

#### 4. Brookfield Peaking Operations

Brookfield's normal daily operation of storing Hinckley releases in the Prospect and Trenton Falls reservoirs for maximum generation of hydroelectricity during peak demand during the day has several negative environmental consequences. Perhaps the most critical of these is its effect on the world class trout fishery in the reach below the Trenton Falls powerhouse all the way down to the mouth of the West Canada Creek at the Mohawk River, some 33 miles downstream. If ambient flow conditions are low, the periods of non-generation during the day have resulted in thermal stress for the fish and other aquatic life, both in summer and winter. The NY Department of Environmental Conservation has listed the entire river below the Trenton Falls plant as impaired, because of the peaking operations.

Additionally, when Trenton Falls units do come on line, it is done rapidly, resulting in a steep rise in flow into the river downstream, and a potential safety risk to anglers and river recreationalists. Although there is a warning siren announcing a sudden release, the siren is not audible to people on or in the river even a few miles downstream. Brookfield does maintain a website that daily publishes timing of its predicted releases for the day, but those predictions do not always correspond to what happens.

The WCWA requests the FERC:

- Consider setting the terms of the license to allow only "run-of-the-river" operation so that the adverse environmental and safety damages and risks associated with peaking are outright eliminated.

- Re-examine the present minimum flow requirement of 160 cfs for adequacy in protecting the aquatic ecosystem
- Require the licensee to install a real-time gaging station and maintain a publicly accessible website that informs of the stage and discharge of the West Canada Creek close to the Trenton Falls powerhouse and below the Morgan Dam. The Dover Road bridge may be an acceptable site for a gage that would provide this information. (Not needed if peaking operations will no longer be permitted.)
- Conduct a study of the forecasted release-wave travel-time at various points downstream. Include expected time of wave arrival on the real-time website. Install additional warning sirens at a few key points on the river. (Not needed if peaking operations will no longer be permitted.)

In closing, riverside and reservoir home and business owners, other local residents and the many advocates of the West Canada Creek and Hinckley Reservoir have for many years been frozen out of providing input to the decisions made that govern the management of these treasured resources. A state-led process that was supposed to ensure a continuing dialogue was called for by Governor Patterson after the disastrous 2007 drought, but it was never implemented. We have been frustrated by the lack of transparency of the principal water managers. We appreciate this opportunity afforded by FERC relicensing process to have input, and to be granted a formal venue for consideration of the concerns we have been voicing for years. We are encouraged by FERC's own mandate to consider other important values of the resource, and not just its hydropower potential, and we hope your evaluation is not hamstrung by defaulting to "making the best" out of the 2012 Operating diagram.

Some of these issues have been presented in recent years at the Mohawk Watershed Alliance Symposium held annually in March at Union College in Schenectady, NY. I encourage FERC to include in the record these papers of relevance to issues surrounding management of Hinckley Reservoir, presented by affiliates of the West Canada Watershed Alliance. (They are available online.) They will give the FERC a more detailed perspective of the issues important to local residents, environmental advocates, sports fishermen, and recreationalists:

1. Montecalvo, Frank (2013) "The Competing Interests in the Waters of the West Canada Creek" *in* Proceedings from the Mohawk Watershed Symposium 2013 in Schenectady, New York, p 49-53. [http://minerva.union.edu/garverj/mws/MWS\\_2013\\_Abstract\\_Volume.pdf](http://minerva.union.edu/garverj/mws/MWS_2013_Abstract_Volume.pdf)
2. Zembrzuski, Thomas (2014) "A Century of West Canada Creek Water Management: The Case Against the Fragmented Approach" *in* Proceedings from the Mohawk Watershed Symposium 2013 in Schenectady, New York, p 50-55. [http://minerva.union.edu/garverj/mws/2014/MWS\\_2014\\_Abstract\\_Volume\\_s.pdf](http://minerva.union.edu/garverj/mws/2014/MWS_2014_Abstract_Volume_s.pdf)

Sincerely,  
 Thomas J Zembrzuski, Hydrologist (Ret.)  
 Board Member, West Canada Watershed Alliance

520 Russia Road  
 Poland, NY 13431

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 6  
207 Genesee Street, Utica, NY 13501-2885  
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www.dec.ny.gov

June 28, 2018

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

Re: West Canada Creek Project (P-2701-059)  
Review of Notice of Intent to File Application for New License, Comments on Pre-Application Document and Request for Studies

Dear Ms. Bose:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the February 28, 2018 Pre-Application Document (PAD) submitted by Erie Boulevard Hydropower, L.P., a Brookfield Renewable Company (Erie), for the relicensing of the West Canada Creek Hydroelectric Project with FERC Project Number 2701 (Project). NYSDEC has also reviewed the Federal Energy Regulatory Commission's (FERC) Scoping Document #1 (SD1) for the Project. The following provides NYSDEC's comments on the PAD and studies requested pursuant to the relicensing process. The NYSDEC has no comments on SD1.

Erie has submitted the PAD for relicensing of the existing 39.8 megawatts (MW) of hydroelectric power production and is comprised of two developments, Prospect and Trenton, that are located on West Canada Creek in Oneida and Herkimer counties, New York.

The Project consists of two developments located on the West Canada Creek in the Town of Trenton in Oneida county and the Town of Russia in Herkimer county, New York. The upstream facility is the Prospect Development and it is located approximately 33 river miles from the confluence of West Canada Creek and the Mohawk River. The downstream facility is the Trenton Development which is located approximately 31 river miles from the confluence of West Canada Creek and the Mohawk River.

The Prospect Development consists of a 176-acre impoundment; a concrete overflow dam with earthen dikes on either end; a 4,500-foot long earthen power canal extending from the south dike to a concrete intake; a 430-foot long steel penstock; a 1.2 mile long bypass reach; a reinforced concrete powerhouse with a single turbine generator unit that has a nameplate capacity of 17.3 MW; 6.9 kilovolts (kV) generator leads, 15 kV breaker, 6.6/46 kV transformer, a 46 kV switch connecting to the National Grid interconnection point within the substation; and appurtenant facilities. The Prospect Dam has a 306-foot long by 45-foot high main spillway situated between a 400-foot long by 47-foot high north dike and a 475-foot long by 47-foot high south dike. The main

spillway is controlled by three 27-foot wide Tainter gates and seven 27-foot wide needle beam bays with each gate and bay separated by a 4-foot concrete pier. Both dikes are constructed of earthen embankments with impervious cores. The spillway crest is reported at an elevation of 1,146.5 feet and the impoundment's normal pool elevation is reported at 1,161.5 feet.

At the Prospect Development, water flows through the earthen power canal and a 250-foot long by 65-foot wide forebay which extends from the south side of the dam to a concrete reinforced intake structure with a head gate hoist frame and an electrical equipment house. The intake structure is reported to have 3 5/8-inch clear spacing vertical steel trashracks with a motor operated rack rake and a fixed wheel type steel gate that is operated by a 60,000-pound capacity two-drum cable motor driven hoist and slots for stop logs. The Prospect Development has a bypass reach that is an approximate 1.2-mile section of the West Canada Creek. The penstock leading to the Prospect Powerhouse is reported to be 430-foot long by 13.5-foot in diameter and of steel construction. The Prospect Powerhouse is reported to have one vertical shaft turbine with a Francis runner with a designed capacity of 23,700 horsepower (hp), a designed head capacity of 135 feet, a minimum safe operating limit of 4 MW at a hydraulic capacity of 525 cubic feet per second (cfs) and a maximum hydraulic capacity of 1,855 cfs. Prospect's reported dependable capacity amount was 11.2 MW for the summer period and 13.5 MW for the winter period. The tailrace of the Prospect Powerhouse has a direct discharge into the Trenton impoundment.

The Trenton Development is reported to be composed of a 9-acre impoundment; a 288-foot long by 55-foot high concrete masonry dam with a 100-foot long by 56-foot high main spillway, non-overflow sections, an auxiliary spillway; a 20-foot wide concrete intake structure with 2-inch clear spaced trashracks leading to a 14-foot diameter tunnel/pipeline; a surge tank; four 7-foot diameter penstocks; a 4,000-foot long bypass reach; two adjoining powerhouses with Units 1, 2, 3, & 4 retired in place and Units 5, 6, & 7 operational with a total rated capacity of 22.5 MW; 13.2 kV generator leads, three 15 kV breakers, two 13.2/46 kV transformers, two 46 kV switches connecting to the National Grid interconnection point within the substation; and appurtenant facilities. The main spillway has 6-foot high trippable wooden flashboards and a 10-foot high by 15-foot wide sluice gate with a reported crest elevation of 1,017.9 feet. The reported crest of the east non-overflow section is 1,024.59 feet and the reported crest of the west non-overflow spillway is 1,026.59 feet. The east non-overflow spillway is separated from the auxiliary spillway by a rock island with the reported crest elevation of the auxiliary spillway at 1,016.2 feet. The impoundment has a reported normal pool elevation at 1,023.9 feet.

At the Trenton Development, there is a powerhouse complex located on the west bank of the West Canada Creek with Powerhouse No. 1 containing retired Units 1, 2, 3, & 4 and Powerhouse No. 2 containing the operational Units 5, 6, & 7 with a total nameplate rating reported as 22,540 kW. Each of these units have a vertical Francis type runner with a design capacity of 10,500 hp and a design head of 255 feet, a single unit safe operating limit of 2.5 MW at a hydraulic capacity of 145 cfs and a maximum station hydraulic capacity of 1,425 cfs. Trenton's reported dependable capacity was 20.8 MW for the summer period and 23.2 MW for the winter period. The tailrace of the Trenton Powerhouse has a direct discharge into West Canada Creek.

## **Comments on the Pre-Application Document**

Within PAD sub-section **5.4 Water Resources**, the following information was identified:

**5.4.2 Stream Flow Characteristics:** On page 5-14 the last sentence of the first paragraph states; “Flow data for the West Canada Creek Project at the Prospect Dam and Trenton Dam are based on prorations of their respective drainage areas.”

**5.4.4 Existing and Proposed Uses of Project Waters:** On page 5-15 the last sentence in the last paragraph states; that prior instream flow studies conducted by Ichthyological Associates in 1980 determined 160 cfs was optimal to maintain aquatic habitat for various life stages of fishes downstream of Trenton Station. See comments on section 5.5.4 below for further details.

**5.4.7 Existing Water Quality Data:** On page 5-19 the last full sentence in the last paragraph states; that this reach of the creek was classified as impaired for aquatic life and for habitat/hydrology on the Waterbody Inventory, but was not included on NYSDEC’s Section 303(d) list of impaired/TMDL waters.

The middle section of West Canada Creek from Prospect to Hinckley Reservoir [Water Index No. H-240-180 (portion 3)] listed in the Waterbody Inventory/Priority Waterbodies List (WI/WPL), located at the following URL: <https://www.dec.ny.gov/chemical/36739.html> , provides the following details not included in the PAD.

- Overview - Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.
- Source Assessment - In the reach of the stream just below this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. The daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

The middle section of West Canada Creek from Newport to Prospect [Water Index No. H-240-180 (portion 2)] listed in the WI/PWL, located at the following URL: <https://www.dec.ny.gov/chemical/36739.html>. (Revised 04/06/2010), provides the following details not included in the PAD.

- Overview - Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.

- Source Assessment - In the upper reaches of this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Other hydro facilities are located at Newport and at Herkimer (Cross Bridge). Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

The lower section of West Canada Creek from the mouth to Newport [Water Index No. H-240-180 (portion 1)] listed in the WI/PWL, located at the following URL: <https://www.dec.ny.gov/chemical/36739.html>, provides the following details not included in the PAD.

- Overview - Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.
- Source Assessment - In the reaches above this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Other hydro facilities are located at Newport and at Herkimer (Cross Bridge). Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

In section **5.5.1 Existing Fish and Aquatic Resources**, on page 5-22 the PAD states that historically, the Hinckley Reservoir has proved to be a poor fishery, with previous stocking failures of walleye, lake trout, brook trout, rainbow trout and tiger muskellunge (HRWG, 2008). The PAD also mentions that a combination of factors may have contributed to these failures, including a large seasonal water surface elevation fluctuation, poor water chemistry, low nutrient levels, hardness and conductivity, and substrate composition of approximately 80 percent sand (HRWG 2008, NYSDEC 2010).

The statement regarding the “stable water surface elevation” in Prospect reservoir is extremely misleading as the PAD states; that when there is sufficient flow (within range of 500 cfs to 1,400 cfs) provided from Hinckley Reservoir discharges upstream, the Prospect Reservoir can fluctuate up to approximately 5 feet daily and peaking occurs during the day and refill periods during the evening periods. Furthermore, during the stakeholders site visit on May 30, 2018, it was stated by Erie that the Prospect reservoir would fluctuate 5 feet twice per day during peaking operations. The only reason for the presence of a trout fishery in this section of the West Canada Creek system is

due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD) as no evidence of natural reproduction has been demonstrated nor is it likely to occur in a system that is thermally stressed due to the suspected causes and identified impairments as mentioned in the WI/WPL found at the following URL: <https://www.dec.ny.gov/chemical/36739.html>. (Revised 04/06/2010).

The PAD also states on page 5-22 that the Prospect Reservoir is stocked with approximately 3,400 brown trout annually by NYSDEC (HRWG, 2008). The trout stocking program has proven successful at Prospect; contributing factors may include the relatively stable water surface elevation and suitability of substrates (e.g. cobble and bolder). In section **5.5.2 Stocked Fishery**, the PAD identifies historical stocking data in Table 5-10 for brook trout and brown trout from 2011 to 2017. This table demonstrates that the NYSDEC has stocked an average of 53,968 trout annually in West Canada Creek to maintain a “renowned trout stream”.

If Erie placed a request for information with the NYSDEC Bureau of Fisheries regional office in Watertown, NY information would have been provided for stocking data in West Canada Creek from 1990 through 2017 as recorded in the Regional Stocking Cards Database and Erie would have received data for 2016 which demonstrates that the NYSDEC stocked approximately 52,190 trout in West Canada Creek. Additionally, to establish a higher quality fishery (i.e., renowned trout stream”), NYSDEC Fishing Regulations permit only catch and release fishing in West Canada Creek from Trenton Falls Dam downstream to the first bridge (Comstock Bridge) to the mouth of Cincinnati Creek.

In **Section 5.5.4 Downstream Habitat and Minimum Flow Assessment**, located on Pages 5-25 through 5-26 of the PAD, Erie describes the 1980 flow study performed by Ichthyological Associates to look at various flows for certain target species. On page 5-26 of the PAD it states; that the target species included brown trout for the upstream reaches (Reaches 1 and 2) and brook trout and smallmouth bass for downstream reach (Reach 3). However, the Introduction to the 12/01/1980 report written by Ichthyological Associates (IA) states; that the incremental method is used to quantify the usable habitat for three life stages (adult, juvenile, fry) of brown trout and smallmouth bass. This information was then used to determine the adequacy of six NMPC nominal releases to provide usable habitat for these target species. The IA study on page 1 stated that the study objective was to determine the changes in the amount of usable fish habitat. This study was not designed to establish a minimum base flow for the support and propagation all aquatic life; such as fish, wildlife, benthic macroinvertebrates, freshwater pearly mussels, and plant communities in a balanced ecological manner.

Pages 2-3 of the IA study states that where West Canada Creek is currently accessible, it is presently considered a successful “put-and-take” brown trout fishery. In a 1976 stream survey of West Canada Creek made by the NYSDEC, brown trout was found to be the most abundant and widely distributed game species (Hasse 1977). A few other game fish species were observed including rainbow trout, brook trout, smallmouth bass, largemouth bass, and walleye. The smallmouth and largemouth bass observed in this study were considered stunted. The NYSDEC identified 25 fish species during the 1976 survey, and three additional species were collected by IA personnel in 1980 (Table 2). Brook trout were not included in this study nor were rainbow trout included for this study but the PAD mentions on page 5-22 that the Prospect reservoir historically

supported a fishery for rainbow trout and the IA study mentions both brook trout and rainbow trout as being present.

On page 5-26 the PAD stated that the study found usable habitat and stream width for adult brown trout remained consistent between 160 cfs and 300 cfs releases. This study also found that optimum or near optimum flow was provided for adult, fry and juvenile brown trout at 160 cfs. For Reach 3, the study concluded that usable habitat and stream width was low for both adult and fry smallmouth bass and remained consistent over all releases studied. The study concluded that a minimum release of 160 cfs provided optimum flow for juvenile bass and near optimum flow for fry and adults (Ichthyological Associates 1981a).

The 1980 IA study on page 6 also stated that transects were located to sample hydraulic controls and habitat types and were not intended to measure discharge. The discharge calculation, however, should approximate stream discharge even though measurements were not made in straight channels with smooth substrate and laminar flow and that the transects were not always located perpendicular to the flow. It was assumed that the Niagara Mohawk Power Company (NMPC) releases were accurate and that discharge remained constant with each release. The NYSDEC never received confirmation that the NMPC releases were accurate and that discharge remained constant with each release.

On page 10 of the 1980 IA study under the Results section it stated that the calculated discharge varied among transects at the same reach and release which reflected the fact that transects were located to calculate habitat availability, not discharge.

In the conclusion of the 1980 IA study, on page 16, it stated that usable habitat for adult brown trout remained fairly consistent between the 160 cfs and 350 cfs releases as did percent usable stream width between 160 cfs and 300 cfs releases (Tables 16, 19, and 22; Figs 15 and 15); however, previously on page 14 it stated that the greatest amount of usable habitat was available for adult brown trout at 250 cfs, 300 cfs, and 200 cfs releases at reaches 1, 2, and 3, respectively. The study also stated that the percent usable stream width was highest at 200 cfs and 250 cfs at reach 1 and 200 cfs at reaches 2 and 3 (Fig. 15). This implies that brown trout would have more usable habitat at a rate of flow that is higher than 160 cfs.

Furthermore, the conclusion of the 1980 IA study on page 17 clearly stated; that the determination of usable habitat from the incremental approach should be treated in a relative rather than an absolute manner because these numbers represented the potential habitat available to a certain species during a certain life history stage (Sheppard 1980, p 15). The conclusion also stated that the incremental approach used in this study to determine usable habitat only considered substrate, velocity, and depth; while other physical and/or biological factors (e.g., temperature, water quality, food supply, flow regulation, and intra- and interspecific interactions) may prevent full utilization of all the indicated habitat.

It is very likely that stream characteristics (e.g., width, depth, substrate and habitat type distribution) have changed since the 1980 IA study was completed. Usable habitat must also consider temperature, water quality, food supply, flow regulation and intra-and inter-specific



interactions. The optimum flow for maximum usable habitat for the current system may differ from that determined nearly 40 years ago during the IA study.

On page 5-26 the PAD stated that though water temperatures may not be optimal for brown trout growth and feeding in West Canada Creek during the summer months, it is generally adequate to support brown trout survival during this period; however, no evidence is presented regarding impacts to brown trout survival in this heavily stocked area.

Section **5.5.7 Freshwater Mussels** of the PAD stated that within the Mohawk River Valley, freshwater mussels were once present in both tributaries of the Mohawk River; the Schoharie Creek and West Canada Creek. The PAD also mentioned that according to the Mohawk River Basin Action Agenda, freshwater mussels in the Mohawk River and its tributaries are currently in decline (NYSDEC 2012). This was indicated by review of the NYSDEC Natural Heritage database (NYSDEC 2018h) and as indicated by NYSDEC (as cited in NYPA 2017) there are no known records of any freshwater mussel species in the West Canada Creek drainage basin. Currently no surveys have been performed in West Canada Creek to determine either the presence or absence of freshwater mussels.

In section 4.4.7 of the PAD for the Gregory B. Jarvis Hydropower Project (FERC No. 3211, NYPA 2017) it stated that there are no known studies of benthic macroinvertebrate communities in the Project area. The Jarvis PAD does mention that the Hinckley Reservoir Working Group noted that on September 26, 2007, NYSDEC biologists found thousands of stranded and dehydrated snails that had died in Hinckley Reservoir as the result of low water levels. In section 4.4.7 of the Jarvis PAD it also stated that based on the unionid records in adjacent basins and the presence of an appropriate fish species hosts within the West Canada Creek drainage, it is possible that unionids are present within the West Canada Creek including Hinckley Reservoir, but have not been documented to date.

### **Comments on Scoping Document 1**

The NYSDEC does not have any direct comments on Scoping Document 1 (SD1). Any data gaps required to identify Project impacts are addressed below in the Study Requests section.

### **Study Requests**

The NYSDEC requests the following studies be performed:

#### **I. Fish Surveys**

Erie should conduct comprehensive fisheries surveys within the vicinity of the Project. Comprehensive sampling for fisheries data collection should include, but not be limited to, the use of electrofishing, gill netting, trap netting, minnow traps, seining, and angling. The survey work should be done for at least one (1) full year; with an option for a second year of study should the data collected be deemed inadequate upon review by the NYSDEC and the United States Fish and Wildlife Service (USFWS). The survey should cover at least three seasons (spring, summer, and fall), and all four seasons, if possible. The information collected should include species

identification, size, age, sex, and condition, as well as movement patterns and habitat utilization. Standard water quality data (e.g. water temperature, dissolved oxygen, pH, conductivity, and turbidity) should also be collected in conjunction with these surveys. These studies should focus on the general fishery resources.

### 1. *Goals and Objectives*

The goals and objectives of this study are to provide information on the existing fishery and resources in the vicinity of the Project's, impoundments, bypass reaches, and downstream habitats that are potentially impacted by Project operations to aid in the determination of what the impacts of this Project may be. The information to be collected should include both the temporal and spatial aspects of species distribution; age, size, sex, and condition data; habitat utilization; and fish movement patterns.

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout [*Salvelinus fontinalis*], brown trout [*Salmo trutta*], and rainbow trout [*Oncorhynchus mykiss*]), smallmouth bass (*Micropterus dolomieu*), yellow perch (*Perca flavescens*) and sunfish (Family: *Centrarchidae*). Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

The information in the PAD is based on irregular surveys between 1988 and 2014 provided by the NYSDEC to the Gregory B. Jarvis Hydroelectric Project (FERC No. 3211), Herkimer-Oneida Counties Planning Program and the Hinckley Reservoir Working Group documents, along with NYSDEC stocking records obtained online. The Jarvis Project was provided data by the NYSDEC for the irregular sampling efforts between 1989 and 2014 regarding fish species found in Hinckley Reservoir and irregular sampling efforts between 1988 and 2010 for West Canada Creek upstream and downstream of the West Canada Creek Project except for one 2009 survey (NYSDEC Survey No. 609207).

The PAD states that the Prospect Reservoir trout stocking program has proven successful however, the 2009 NYSDEC Survey placed 4 – 150ft. multiple mesh gill nets for 17 hours in Prospect Reservoir and only caught a total of 3 fish (1-Golden Shiner [*Notemigonus crysoleucas*], 1-Smallmouth Bass, and 1-White Sucker [*Catostomus commersonii*]) none of which were trout. No fish sampling has occurred in the Trenton Project Reservoir/Impoundment. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011.

The primary reason for the presence of a trout fishery in this section of the West Canada Creek system is due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD) as no evidence of natural reproduction has been demonstrated nor is it likely to occur in a system that is thermally stressed due to the suspected causes and identified impairments as mentioned in the WI/WPL.

The NYSDEC's WI/WPL found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

Updated and comprehensive information on the fishery resources is needed to determine potential impacts of the Project along with any protection, mitigation, and enhancement (PME) measures that may aid in ameliorating these impacts.

#### *5. Nexus to Projects Operations and Effects*

The Project dams serve as barriers to upstream and downstream migration for both fish and immature aquatic invertebrates. Fish moving downstream are subjected to potential mortality from impingement and entrainment. The Project modifies water levels in the impoundment; modifies flows and impacts habitat downstream from the Project, and impact habitats in the impoundments through fluctuations.

#### *6. Methodology Consistent with Accepted Practice*

The recommended study uses standard scientific collecting techniques used in most hydro licensing activities. Erie should conduct sampling in both Prospect's and Trenton's impoundments including the Prospect Power Canal, the Prospect by-pass reach, and within the West Canada Creek downstream of the Trenton powerhouse to the confluence with the Mohawk River. The NYSDEC requests that surveys be completed in three seasons (spring, summer, and fall), and during the winter if conditions allow. A second study year may be warranted pending the results of the first sampling year and review of the data by NYSDEC and the USFWS. Information normally collected includes species, sex, age, size and condition, as well as specific habitat information (substrate, velocity, water depth) and water quality data (water temperature, dissolved oxygen, pH, and conductivity).

## 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew sampling on a seasonal basis. The study would last for 1-2 years. The actual cost is unknown and would depend upon the gear types used, number of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries, macroinvertebrates, and water quality) into one task, etc. The existing literature is inadequate to fully address projects impacts, and there are no alternatives to conducting standard fishery surveys. However, the Erie has flexibility to design the most cost-effective way to acquire the necessary data.

## II. Macroinvertebrate & Freshwater Pearly Mussel Surveys

Information is needed regarding macroinvertebrate populations (including freshwater mussels) in the impoundments, bypass reaches, and downstream of the Project. A critical evaluation (both qualitative and quantitative) of macroinvertebrate communities in all instream habitats affected by the operation of the Project is needed. Very little information is known regarding the macroinvertebrate populations, especially freshwater mussels, within the Project boundaries. Information regarding aquatic insects and freshwater mussels in this section of West Canada Creek is of great importance to the NYSDEC.

### 1. *Goals and Objectives*

The goals and objectives of this study are to provide information on the existing macroinvertebrate and freshwater pearly mussel populations in the impoundments, bypass reaches, and downstream habitats affected by Project operations. This information will be used to assess impacts the Project has on the West Canada Creek aquatic ecosystem, assess if current water quality standards are impaired and determine any protection, mitigation, and enhancement measures that may aid in ameliorating these impacts. This information is also necessary to the required § 401 WQC application for the Project and the Projects compliance with New York State water quality standards.

### 2. *Resource Management Goals*

The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities. Fish communities are an integral component of mussel management. West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, *Salvelinus fontinalis*, brown trout, *Salmo trutta*, and rainbow trout, *Oncorhynchus mykiss*), smallmouth bass, (*Micropterus dolomieu*), yellow perch (*Perca flavescens*) and sunfish (Family: *Centrarchidae*). Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

Macroinvertebrate information presented in the PAD is limited to areas upstream and downstream of the Project. Freshwater mussel information is virtually non-existent for West Canada Creek and the Project Reservoirs. The Mohawk River Basin Action Agenda mentioned in the PAD states that freshwater mussels in the Mohawk River and its tributaries are currently in decline while the Jarvis PAD acknowledges that freshwater mussels may be present in West Canada Creek due to the presence of the appropriate fish species hosts.

The NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

More thorough sampling is needed in the area immediately below the dams, bypass reaches, and the impoundments in order to help document the current status of macroinvertebrates and freshwater pearly mussels to determine appropriate minimum flow needs and the macroinvertebrate and mussel data will be considered by the NYSDEC in connection with its review of the required § 401 WQC application for the Project.

### 5. *Nexus to Projects Operations and Effects*

The Project alters the natural flows upstream, in the bypass reaches for each facility, and downstream of the Project. These areas are important for macroinvertebrate and freshwater pearly mussel propagation and survival. Fish and wildlife species rely on the macroinvertebrate and mussel communities as a food source and can be impacted by reductions in their production. The parasitic larvae of unionid freshwater mussels require a fish host to complete their life cycle. Fluctuating water levels in the impoundment also affects macroinvertebrate communities in the littoral zone of the impoundment. Fish and mussel communities in the impoundments, bypass reaches, and downstream reaches are impacted as a result of impoundment fluctuations.

## 6. *Methodology Consistent with Accepted Practice*

The recommended study uses standard scientific collecting techniques used in most hydro licensing activities. Sampling should be conducted seasonally and include the use of both shallow water and deep-water sampling gear. Collections should be stratified by microhabitat (sediment size). Macroinvertebrates will be identified to species. Since any one sampling year may experience atypical environmental conditions (dry year versus wet year; low water versus high water; colder versus warmer temperature years) the NYSDEC recommends more than 1 year of data collection to try to capture typical environmental conditions and to establish current baseline conditions in West Canada Creek affected by the Project.

Surveys of populations of freshwater pearly mussels should be carried out in impoundments, stream habitats and bypass reaches of the Project boundaries. The full areal extent of the survey should include:

- a. all areas of direct disturbance by hydropower project maintenance and improvement;
- b. anywhere there will be alteration of stream banks or the stream bed related to the Project;
- c. areas with permanent or temporary changes to flow, sedimentation, intake of water or discharge of effluent, chemical discharge, or potential chemical spill discharge;
- d. equipment in stream or other disturbance; and
- e. all areas hydrologically influenced by the hydropower project.

Initial surveys should be timed area surveys consistent with one or more of the protocols referenced below.

- Smith, D. R., R. F. Vilella, and D. P. Lemarie'. 2001. Survey protocol for assessment of endangered freshwater mussels in the Allegheny River. J. N. Am. Benthol. Soc. 20(1):118-132.
- Strayer, D.L., and D.R. Smith. A guide to sampling freshwater mussel populations. American Fisheries Society, Monograph 8, Bethesda, Maryland.
- West Virginia Mussel Survey Protocols (April 2015 revision) by West Virginia DNR available at:  
<http://www.wvdnr.gov/Mussels/West%20Virginia%20Mussel%20Survey%20Protocols.pdf>

Further, all bivalve species encountered, including invasive species, should be identified and noted in survey reports. Discovery of species listed as NYS Endangered or Threatened may require additional more detailed surveys after Smith et al. 2001.

## 7. *Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew sampling on a seasonal basis. The study would last for 1-2 years. The actual cost is unknown and would depend upon the gear types used, number of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries, macroinvertebrates, freshwater mussels, and water quality) into one task, etc. The existing literature is inadequate to fully address Project impacts, and there are no alternatives to

conducting standard macroinvertebrate and freshwater mussel surveys. However, Erie has flexibility to design the most cost-effective way to acquire the necessary data.

### III. Fish Protection and Downstream Passage Studies

The Project dams serve as barriers to upstream and downstream fish migration. The Project is a barrier to upstream resident fish migration in this section of West Canada Creek; however, multiple artificial and natural barriers downstream of the Project prevent diadromous fish migration from reaching the Project. Therefore, there are currently no upstream fish passage issues identified at this Project. Fish moving downstream are subjected to potential mortality from impingement and entrainment. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011. Re-licensed hydroelectric projects on the Beaver River, as well as similar rivers throughout New York State, have incorporated 1" –clear trashracks to physically exclude most adult fish from the turbines, alternate downstream passage routes, and other features (e.g., reduced approach velocities, adequate plunge pools, ... etc.) to encourage safe downstream fish passage.

Erie should explore alternatives to keep all fish species out of the turbines, with special emphasis on brook trout, brown trout, rainbow trout, smallmouth bass, yellow perch, and any other species found in abundance during fishery surveys. They also need to develop alternatives to effectively pass fish downstream around the dam. These alternatives may include modifying any existing trash sluices located close to the intakes.

This study should include a literature search of available passage designs for the species of concern, as well as information on the relative effectiveness of each design. Existing facilities at other dams should be investigated. Careful attention should be paid to attraction flows, guidance mechanisms, and velocities. The fish moving downriver must be diverted away from the turbines and guided to the downstream passage facility. Adequate attraction and conveyance flows must be provided. The passage facility should not create a bottleneck that would delay downstream movement or expose the fish to excessive predation. All passage facilities should be designed to prevent blockage from ice and debris and should be as maintenance-free as is feasible. They must be able to operate under all flow conditions experienced in West Canada Creek.

In addition to literature review and on-site investigations of existing facilities, the Erie should collect site-specific data from the Project to aid in the design of protection and passage facilities. This information should include flows, velocities, water depths, and substrates.

The Erie should also collect information on the passage requirements of the fish species found in the Hinckley Reservoir as this Jarvis Project empties directly into the Prospect Reservoir. This information should include swimming speeds (including burst speeds), where in the water column these fish are likely to be moving, different forms of attractants or repellents (e.g., sound, light,) that may help guide each species.

### *1. Goals and Objectives*

The goals and objectives of this study are to provide information on potential fish passage and protection structures that could be utilized at these sites. The information obtained will allow the NYSDEC aquatic biologists and the USFWS's fishway engineers to evaluate the potential effectiveness of various options.

### *2. Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

### *3. Public Interest*

The requestor is a resource agency.

### *4. Existing Information*

Currently, the Prospect Development has 3-5/8"-clear spaced trashracks and the Trenton Development has 2"-clear spaced trashracks. The PAD does not mention if any fish passage studies have been performed at either the Prospect or Trenton Developments. The fisheries information in the PAD is based on irregular surveys between 1988 and 2014 provided by the NYSDEC to the Gregory B. Jarvis Hydroelectric Project (FERC No. 3211), Herkimer-Oneida Counties Planning Program and the Hinckley Reservoir Working Group documents, along with NYSDEC stocking records. The Jarvis Project was provided data by the NYSDEC for the irregular sampling efforts between 1989 and 2014 regarding fish species found in Hinckley Reservoir and irregular sampling efforts between 1988 and 2010 for West Canada Creek upstream and downstream of the West Canada Creek Project except for one 2009 survey (NYSDEC Survey No. 609207).

The PAD states that the Prospect Reservoir trout stocking program has proven successful however, the 2009 NYSDEC Survey placed 4 – 150ft. multiple mesh gill nets for 17 hours in Prospect Reservoir and only caught a total of 3 fish (1-Golden Shiner, 1-Smallmouth Bass, and 1-White Sucker) with none of them being trout. No fish sampling has occurred in the Trenton Project Reservoir/Impoundment. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011.

The NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these



documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

#### *5. Nexus to Projects Operations and Effects*

The Project dams block fish movements both upstream and downstream. The turbine intakes may impinge or entrain fish, resulting in mortality. The existing minimum flow release structures may not be adequate for fish passage.

#### *6. Methodology Consistent with Accepted Practice*

The recommended study uses standard literature reviews and site-specific data collection techniques common to most hydro licensing activities.

#### *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve moderate literature review, discussions with fishway engineers, and site-specific data collection. The study could be completed in less than 1 year, but may require more time to design effective facilities. The actual cost is unknown and would depend upon the number of alternatives examined. The existing information in the PAD is inadequate to allow a thorough examination of alternatives. However, most of the information needed should be available in the existing literature.

### **IV. Base Flow Studies**

The Project was part of an Instream Flow Incremental Methodology (IFIM) study in 1980. The 1980 IA stream flow study was not designed to establish a minimum base flow for the support and propagation all aquatic life; such as fish, wildlife, benthic macroinvertebrates, freshwater pearly mussels, and plant communities in a balanced ecological manner. The 1980 IA study was designed to determine the changes in the amount of usable fish habitat downstream of the Morgan Dam (Nine-Mile Feeder Canal Intake). No studies were previously performed in the two bypass reaches associated with the Project.

It is important to note that the initial IFIM performed for the Project is now 40-years old. The West Canada Creek and its watershed have changed drastically over that period. It is likely that stream characteristics and channel geometry (e.g., width, depth, entrenchment, substrate and habitat type distribution, etc.) have changed since the 1980 IA study was completed. All of these

items challenge whether the IFIM study performed in 1978 by Ichthyological Associates is still valid. An updated survey specifically designed to determine target base flow may result in an optimum flow for the current system that differs from that determined nearly 40 years ago during the IA study.

The 1980 Ichthyological Associates (IA) study on page 1 stated that the study objective was to determine the changes in the amount of usable fish habitat and on page 6 stated that transects were located to sample hydraulic controls and habitat types and were not intended to measure discharge. The discharge calculation, however, should approximate stream discharge even though measurements were not made in straight channels with smooth substrate and laminar flow and that the transects were not always located perpendicular to the flow. It was assumed that the NMPC releases were accurate and that discharge remained constant with each release. The NYSDEC never received confirmation that the NMPC releases were accurate and that discharge remained constant with each release.

On page 10 of the 1980 IA study under the Results section it stated that the calculated discharge varied among transects at the same reach and release which reflected the fact that transects were located to calculate habitat availability, not discharge.

In the conclusion of the 1980 IA study on page 16 it stated that usable habitat for adult brown trout remained fairly consistent between the 160 cfs and 350 cfs releases as did percent usable stream width between 160 cfs and 300 cfs releases (Tables 16, 19, and 22; Figs 15 and 15); however, previously on page 14 it stated that the greatest amount of usable habitat was available for adult brown trout at 250 cfs, 300 cfs, and 200 cfs releases at reaches 1, 2, and 3, respectively. The study also stated that the percent usable stream width was highest at 200 cfs and 250 cfs at reach 1 and 200 cfs at reaches 2 and 3 (Fig. 15). This implies that brown trout would have more usable habitat at a rate of flow that is higher than 160 cfs.

Furthermore, the conclusion of the 1980 IA study on page 17 clearly stated; that the determination of usable habitat from the incremental approach should be treated in a relative rather than an absolute manner because these numbers represented the potential habitat available to a certain species during a certain life history stage (Sheppard 1980, p 15). The conclusion also stated that the incremental approach used in this study to determine usable habitat only considered substrate, velocity, and depth; while other physical and/or biological factors (e.g., temperature, water quality, food supply, flow regulation, and intra- and interspecific interactions) may prevent full utilization of all the indicated habitat.

### *1. Goals and Objectives*

The goals and objectives of this study are to determine whether the existing base flow requirements provide appropriate protection for aquatic resources, or whether a different flow regime is necessary. This information will be used to assess impacts the Project has on the West Canada Creek aquatic ecosystem, assess if current water quality standards are impaired and determine any protection, mitigation, and enhancement measures that may aid in ameliorating these impacts.

Flow studies should be conducted to determine what the appropriate minimum base flow is in each bypass reach and identify if the IA study results provides enough discharge for the West Canada Creek below Trenton Falls.

Erie should also conduct habitat mapping for the bypass reaches and the downstream study reaches selected below Trenton Falls. This mapping should identify the type of habitat in each section (e.g., run, riffle, pool) along with depths, velocities, and substrates. The final data will then be used in conjunction with fisheries, macroinvertebrate, and habitat mapping data to negotiate base flow regimes. This information is also necessary to the required § 401 WQC application for the Project and their compliance with State water quality standards.

## *2. Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

## *3. Public Interest*

The requestor is a resource agency.

## *4. Existing Information*

The current FERC license (FERC No. 2701) requires that a continuous minimum flow of 160 cfs must be maintained in West Canada Creek, as measured downstream of the NYSCC diversion weir at the Nine Mile Creek Feeder Dam. No information regarding how the base flows, deviations from the required base flows, or operating the Project in peaking generation mode, effect aquatic life in the bypass reaches and downstream to the confluence with the Mohawk River.

The NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional

fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

The recreational fishery on the West Canada Creek between Trenton Falls and Herkimer was reported to have the greatest angling pressure due to an angler effort of 14,942 hours, which translates to 20 angler-hours/acre. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011 in an attempt to maintain a quality recreational fishery at a significant cost. The primary reason for the presence of a trout fishery in this section of the West Canada Creek system is due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD).

#### *5. Nexus to Projects Operations and Effects*

Operation of the Project results in a variable flow regime downstream from the Project and virtually no flow at times in the bypass reaches. The existing base flows may or may not provide adequate mitigation for this periodic dewatering. This study is necessary to determine the appropriate PME measures that may aid in ameliorating these impacts.

#### *6. Methodology Consistent with Accepted Practice*

The NYSDEC recommends that Erie reconduct an IFIM study on the West Canada Creek downstream of the Trenton Development and within the Prospect by-pass reach, following the methodologies for IFIM in the Instream Flows for Riverine Resource Stewardship (2004) guidance. IFIM methods have been updated since the original 1980 instream flow study was conducted. The new study should incorporate dual flow methodology, taking into account the changes in available habitat at minimum flow versus peak flow. The addition of water quality monitoring during the sampling should be included in the new study and include at a minimum temperature and dissolved oxygen. These two parameters directly influence the ability of aquatic species to utilize habitat identified by the IFIM study through velocity, substrate and water depth. The NYSDEC agrees with the USFWS that this analysis would be most effective if it incorporated a planned, consistent release of 160 cfs under adverse air temperatures (greater than 80 degrees Fahrenheit) to set a baseline for the protection of offered by the existing minimum base flow requirement.

The NYSDEC also requests that the IFIM study include additional species of resource concern into the analysis, to include at a minimum brook trout, rainbow trout, smallmouth bass, and any primary food species. The addition of spawning and egg incubation life stages should also be added to the study.

The NYSDEC is not recommending that an IFIM study be completed within the Trenton by-pass reach. The geomorphology of this by-pass reach is substantially different than that of the Prospect by-pass reach and the West Canada Creek downstream of the Trenton powerhouse. Instead, the NYSDEC requests that a flow demonstration study be completed in the Trenton by-pass reach to assess wetted habitat, mainly ideal for macroinvertebrates, and to identify aesthetics important to community. This study will allow for discussion regarding the proper flow in the Trenton by-pass reach.

## *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

Effort for studies of this kind is high. A team of several biologists will be required to establish transects for flow and water quality monitoring for 1-2 seasons. Modeling and detailed mapping of the results along with literature and data review to update the 1980 inflow study will be needed. The exact cost and hours to perform the study is unknown. No alternative studies to an IFIM that would allow for the assessment of a dual-flow, year-round, multi-species, water quality-driven issues below the Project or in the bypass reaches have been presented.

## *V. Water Quality*

Baseline water quality studies are needed to allow a proper determination of potential Project impacts. These studies should include water temperature and dissolved oxygen (DO) on a continuous basis for at least 1 full year, along with monthly sampling of other parameters such as pH, turbidity, and conductivity. An additional year of monitoring may be needed based on a review of the first year's study results. This information will be used to document baseline water quality conditions and to determine potential impacts from the Projects operations. Data should be collected from the impoundments, bypass reaches and the areas upstream and downstream from the Project.

### *1. Goals and Objectives*

The goals and objectives of this study are to provide baseline water quality information related to the Project. This information will be used to assess impacts the Project has on the West Canada Creek aquatic ecosystem, assess if current water quality standards are impaired and determine any PME measures that may aid in ameliorating these impacts. This information is also necessary to the required § 401 WQC application for the Project and their compliance with State water quality standards.

### *2. Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

### *3. Public Interest*

The requestor is a resource agency.

#### *4. Existing Information*

Statements in the PAD regarding the “stable water surface elevation” in Prospect reservoir is extremely misleading. It is known that when there is sufficient flow (within range of 500 cfs to 1,400 cfs) provided from Hinckley Reservoir discharges upstream, the Prospect Reservoir can fluctuate up to approximately 5 feet daily and peaking occurs during the day and refill periods during the evening periods. Furthermore, during the stakeholders site visit on May 30, 2018, it was stated by the Erie that the Prospect Reservoir would fluctuate 5 feet twice per day during peaking operations. Water quality may also be affected by repeated fluctuations in an impoundment due to shoreline erosion or resuspension of sediments. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011. The primary reason for the presence of a trout fishery in this section of the West Canada Creek system is due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD) as no evidence of natural reproduction has been demonstrated nor is it likely to occur in a system that is thermally stressed due to the suspected causes and identified impairments as mentioned in the WI/WPL.

The NYSDEC’s WI/WPL, found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

#### *5. Nexus to Projects Operations and Effects*

The existing Project impounds West Canada Creek. Operation of the Project results in a variable flow regime downstream from the Project and virtually no flow at times in the bypass reaches. The existing base flows may or may not provide adequate mitigation for this periodic dewatering. This study is necessary to determine the appropriate protection, mitigation, and enhancement measures that may aid in ameliorating these impacts. This could impact such water quality factors as temperature and DO, which are critical to the quality of the aquatic habitat.

#### *6. Methodology Consistent with Accepted Practice*

The recommended study uses standard water quality sampling techniques commonly used in most hydro licensing activities.

## *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would be low and would involve one crew collecting monthly samples (i.e., pH, turbidity, conductivity) while undertaking other work such as fisheries or macroinvertebrate and freshwater mussel surveys. In addition, temperature and DO loggers would be installed, with data being periodically downloaded. The actual cost is unknown but would be relatively low. The existing data for the immediate vicinity of the Project is limited.

## *VI. Wetland Delineation/Mapping*

The NYSDEC generally agrees with the proposed Aquatic Habitat Mapping Study listed in Section 6.2.1 of the PAD so long as Erie includes mapping of any associated wetland habitat, including any in Prospect Reservoir, as this could potentially be an important spawning and rearing habitat for cool/warm water fishes. Erie should document all wetlands within the Project's vicinity. The NYSDEC and the USFWS's wetland maps were consulted, but the delineations need to be field verified. The Erie should also identify any aquatic vegetation found in the Project's vicinity. This information is necessary to characterize the aquatic habitats in the Project's vicinity.

### *1. Goals and Objectives*

The goals and objectives of this study are to identify key aquatic habitat areas in the Project's vicinity. The study will provide information on the extent and quality of wetlands and aquatic vegetation.

### *2. Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

### *3. Public Interest*

The requestor is a resource agency.

### *4. Existing Information*

In Section 5.7.1 of the PAD it states that no formal surveys of wetland or riparian vegetation have been performed for the Project. Generally, NWI and NYSDEC delineations are not precise enough to capture all regulated wetlands, thus there is a need for wetland vegetation and aquatic plant surveys for this Project.

## *5. Nexus to Projects Operations and Effects*

Operation of this Project affects water levels and velocities, as well as the timing and location of releases. These factors can impact aquatic vegetation and wetlands, which can be important habitats for fish and wildlife. The information will be used to determine what, if any, impacts the Project may have on these resources and what the appropriate protection and mitigation measures might be.

## *6. Methodology Consistent with Accepted Practice*

The NYSDEC and NWI maps that are frequently used as the starting point in delineating wetlands. We expect Erie to use techniques commonly accepted by the scientific community.

## *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort and associated costs should be relatively low. Much of the readily available information is already presented in the PAD, and the remaining information can probably be collected during field work related to other studies. No alternative studies have been proposed.

# VII. Public Access

## *1. Goals and Objectives*

The goals and objectives of this study are to provide information on the existing public access facilities in the vicinity of the Project (within 1 mile upstream and downstream of the Project's boundary), including the potential to create additional public access where feasible. The current condition of the existing public access facilities and the need for improvements, especially upgrades that would be necessary to ensure the facilities are universally accessible and are ADA compliant, should be the focus of this study. For a recreation feature to be adequately universally accessible there must be accessible parking which includes an access aisle, and an accessible path that leads from the accessible parking to the accessible feature of interest.

## *2. Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities. During any upgrades to existing recreation features or construction of new recreation features the NYSDEC has a Regional Access



Coordinator evaluate each site for the potential to improve the site to be more universally accessible.

### *3. Public Interest*

The requestor is a resource agency.

### *4. Existing Information*

In Section 5.9.2.1 of the PAD lists ownership of a formal boat launch and parking area at the Prospect impoundment and includes photographs. There is no mention or photograph of accessible parking, an accessible path leading from the parking area to the launch feature, or if the boat launch is accessible to persons with disabilities.

Section 5.9.2.2 of the PAD on page 5-49 mentions an ADA compliant parking area and photograph 5-3 on page 5-51 depicts the Trenton Falls Scenic Trail Parking and ADA Accessible Overlook Area. It is unclear in the PAD if the ADA compliant parking area mentioned on page 5-49 is the same as in photograph 5-3 on page 5-51. The PAD does not specify whether the primary 0.75-mile-long trail is also universally accessible and mentions that it is only open to the public 1 or 2 weekends in the spring and fall for viewing the scenic Trenton Falls Gorge.

In Section 5.9.3, Downstream Recreation Opportunities, the PAD mentions a privately owned informal access point.

### *5. Nexus to Projects Operations and Effects*

The 2014-2019 NYS State Comprehensive Outdoor Recreation Plan (SCORP) was written by the New York State Office of Parks and Recreation and Historic Preservation (NYSOPRHP) identified Herkimer County and Oneida County, New York as having a moderate need for additional fishing, boating, and swimming access and a high need for localized winter activities as shown in Table 3.10 on pages 30 and 31.

### *6. Methodology Consistent with Accepted Practice*

The recommended study uses standard techniques used in most hydro licensing activities. More information on the guidance and standards of universal accessibility can be found on the United States Access Board web-site at the following URL: <https://www.access-board.gov/>.

### *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve field site visits to the existing facilities with the parties of interest and recreational surveys of use as well as investigating the potential to upgrade existing access sites to meet universally accessible standards and to potentially add new access sites following the United States Access Board guidance and standards. The actual cost is unknown and would depend upon the number of observational and interview surveys to be conducted. The ability to combine multiple studies (e.g., fisheries, recreation observational surveys, macroinvertebrate

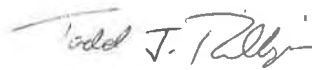
surveys, and water quality) into one task may help to reduce the overall cost. The existing literature is inadequate to fully address Project impacts, and there are no alternatives to conducting standard recreation surveys. However, Erie has flexibility to design the most cost-effective way to acquire the necessary data.

## Conclusion

Under the Integrated Licensing Process (ILP), the Licensee is required to file and have approved by the FERC a formal Study Plan. The Draft Study Plan developed by Erie should incorporate all of the above-listed studies. The study proposals incorporated into the Draft Study Plan should be as detailed as possible so that all parties know exactly what is being agreed to when the Study Plan is approved.

Thank you for the opportunity to comment on the PAD and scoping document and propose study requests during the relicensing and Clean Water Act § 401 Water Quality Certification process. If you have any questions or desire additional information, please contact me at (315) 793-2740 or [todd.phillips@dec.ny.gov](mailto:todd.phillips@dec.ny.gov).

Sincerely,



Todd J. Phillips  
Environmental Analyst  
NYSDEC Division of Environmental Permit

cc: File  
Steven Murphy, Erie

ec: Nick Ettema, FERC  
Emily Carter, FERC  
John Wiley, USFWS  
Bill Wellman, Trout Unlimited  
Kara Paulsen, NYSDEC  
Michele Stefanucci, NYSDEC  
Judy Drabicki, NYSDEC  
Thomas Voss, NYSDEC  
Fred Munk, NYSDEC  
Jana Lantry, NYSDEC  
Dick McDonald, NYSDEC  
David Erway, NYSDEC  
Christopher Balk, NYSDEC

June 28, 2018

Federal Energy Regulatory Commission  
c/o Kimberly D. Bose, Secretary  
888 First Street, NE  
Washington, D.C. 20426

Re: West Canada Creek Hydroelectric Project (FERC No. 2701)

Dear Secretary Bose:

Please accept these comments on behalf of the Citizens for Hinckley Lake. Our group is made up of 290, and growing, property owners, business owners, and general recreational users at Hinckley Lake. While our main focus is the lake, we would like to discuss all of the areas of the West Canada Creek that Brookfield Renewable (Brookfield) negatively impacts.

Hydropower production is supposed to be a clean, renewable resource that is a positive for the environment. This is most definitely not the case with Brookfield's, Erie Boulevard West Canada Creek Hydroelectric Project (P-2701). The two dams with this project have been damaging the entire West Canada Creek's natural environment for over a century now, from the upper end of Hinckley Lake all the way down to where it empties into the Mohawk River. This has become even worst since Brookfield took over management of the dams in 1999. Since this time we have seen some of the lowest water levels the lake has ever experienced on numerous occasions. The entire West Canada continues to suffer from Brookfield's management of the water and legal attachment to the lake to produce power.

Brookfield continuously demands water from Hinckley and has pursued legal action against the New York State Canal Corporation (NYSCC) when deviations have been made to Hinckley's Operating Diagram to protect the Mohawk Valley Water Authority's municipal water supply. Power production should NEVER supersede protecting a municipal water supply. But it is obvious Brookfield believes power production is most important.

Brookfield uses the Prospect reservoir to pool and release water to produce power. This fluctuation of water is over five feet and it often occurs daily. It gets so low that kayak's cannot navigate through the Prospect reservoir in some areas and most definitely damages the fish population and other wildlife there. And even more devastating is that Brookfield's management of the water has killed off the native trout in the West Canada Creek downstream. The only trout in the stream are stocked, as the native trout have been unable to reproduce due to the excessive water being released downstream on a consistent basis. This has deterred the many trout fishermen that used to come here to fish from coming here anymore. The West Canada Creek used to be known as one of the best trout streams in the country at one time. This is not the case anymore due to Brookfield's power production.

Brookfield diverts all water away from the natural waterfalls and gorges. People are only allowed to see a very limited portion of this unique and beautiful area a couple of times a year. Many do not even know any of this exists. Yet, Brookfield has stated that they have had at times thousands of people over a single weekend come view the limited sections of this area when they open it up twice a year. This demonstrates that there is a huge interest in this area and what it has to offer.

Brookfield's West Canada Creek Project is as abusive to the environment as any project can be. From Hinckley Lake to the West Canada creek below, Brookfield continues to destroy the natural environment. With the many issues we have seen at Hinckley Lake due to Brookfield's legal attachment to the management of it with the 2012 Operating Diagram, Brookfield has shown no interest in resolving the issues they have caused. They have demonstrated that they could not care less about the devastating impacts they have had on the lake's fisheries and all other environmental habitat, the local economy, recreation, and aesthetics of the lake.

We have contacted Brookfield in the past when water levels have gone extremely low and a representative for them basically told us that Hinckley is not for recreation. Yet recreation is very important for the quality of life to the thousands that utilize this lake each year. It is an industry that is very important to this area as well. The lake is important to the local economy as the hundreds of properties that line its shoreline pay taxes to the towns and the businesses on Hinckley and in the surrounding towns that benefit from the lake obviously are very important to our local economy. Hinckley Lake was built by taking the land of the people that lived here, ***it is owned by, us, the People of the State of New York***. It was built to supply water to the New York State Canal system. Once the needs are met for the canal system, it should be managed in the best interest of the public that technically owns it. Not in the best interest of a Canadian power company. And in doing so, this would better protect the municipal water supply and boost power production at the Jarvis Project. Hinckley Lake is no different than any of the other man made lakes in Upstate New York in that the main reason most of them were originally built was for other uses than recreation. Yet over the years recreation, living or having seasonal camps on these man made lakes has become increasingly popular and has become the new industry for the towns that border these lakes. Hinckley should be and can be managed in a similar way to those other man made lakes, most notably the NYSCC's Delta Lake. Hinckley could be and should be managed, in more of a river of flow using target levels of between elevations 1220'-1225', with a target of 1223' from May to Columbus Day weekend each year.

It is very obvious that Brookfield negatively impacts and has created many challenges to our region's natural resource due to their hydropower production. One other area that needs to be looked at is the economic impact. Central New York is an economically challenged area and is need of new industry. Yet, this area is losing out on millions of dollars each year due to Brookfield's abuse of this unique and important water way. Hinckley Lake already attracts thousands of people each year. But due to the 2012 Operating Diagram creating large water fluctuations and creating low water levels many people are deterred from coming here at times. This

has become increasingly worse over the years as well. It should be noted that the 2012 Operating Diagram and its predecessor, the 1920 Operating Diagram, were created due to legal litigation by the downstream dam owners to be sure water is supplied to the West Canada Creek Hydropower dams. Hinckley Lake has never come close to reaching its maximum economic potential. The trout fishermen that come visit the area have dwindled over the years due to the impacts of Brookfield's management of the water way. The water falls and gorges are dry and can only be viewed on an extremely limited basis each year. This is a very unique and beautiful area with the lake, waterfalls and gorges, and what used to be a renowned trout-fishing stream. We fall very short of reaching our economic potential in this region due to the abusive management of the water just to make, in the whole scheme of things, a little bit of electricity. *So we, along with FERC must ask ourselves, is the power produced here worth more than the potential economic impact our natural resources could offer us and is it worth more than destroying our natural environment?* We, as the Citizens for Hinckley Lake, do not believe so. If the lake levels were more stabilized, and the river system allowed to flow more to its original state, and the falls and gorges opened up fully to the public it would be a huge economic boost to an area that is in desperate need of new industry. The fishermen would come back, not only to the West Canada Creek but to Hinckley Lake as well. People would come view and enjoy the waterfalls and gorges. And more people would most definitely come utilize the lake year round. The existing businesses would flourish, and new businesses would come in over time thus creating new jobs and new opportunity. This area is also centrally located to many other attractions in New York State making it a prime area for tourists to visit and stay. Millions of dollars could potentially be brought to our small towns and communities.

Hydropower production should not take away from the natural beauty that our area has to offer but unfortunately it has for too many years now. Hydropower production is most definitely not more important than the natural environment. Brookfield's dams should produce power in a way that the people do not notice and the natural environment is not harmed in anyway. The West Canada Creek needs to flow naturally again and Hinckley Lake's water levels need to be more stable. While it may take some years, the fisheries and other environmental wildlife can bounce back and flourish again. The natural environment, the economic impact, as well as the quality of life for this region that makes up the West Canada Creek and Hinckley Lake far outweigh the manner in which power is produced by Brookfield's dams. This backwards-legal "agreement" between Brookfield and the NYSCC needs to end and quite frankly we see the best way to end this legal attachment to the lake is to not relicense Brookfield for their West Canada Creek Project. As of the date of this letter, the New York Power Authority (NYPA) and the NYSCC have deviated from the Operating Diagram and reduced outflow to 250cfs due to the 2012 Operating Diagram, again, putting water levels at a much lower than normal level. This was done to protect not only the recreational season but to protect all of the uses of the lake. Yet Brookfield is still going to want water later on or to be compensated monetarily. It puts NYPA and the NYSCC in a very difficult situation. It is wrong that NYPA and the NYSCC be penalized for doing the right thing especially when

Brookfield already benefits greatly from the headwater benefits the Hinckley dam provides. Brookfield would not be able to produce nearly the power they do if the Hinckley dam was never built.

The Citizens for Hinckley Lake are very supportive of hydropower production as it is a clean renewable resource. But we are not supportive of it when it destroys an entire regions waterway. With the management of Hinckley Lake in a more of river-of-flow using target levels of between 1220'-1225', the New York Power Authority's Jarvis Project (P-3211) would be able to produce more consistent power on a regular basis in a clean and non-intrusive manner to the lake's environment and its many other uses. This is how hydropower production should be.

It is evident that if Brookfield's West Canada Creek Project dams were no longer here and they had no legal connection to the operation of the lake, many of our issues would be solved. I am confident that if people had the foresight back when these dams were originally proposed to be built, that they would have never been allowed to be built. It is obvious that many people have serious issues with these dams and many join us in objecting Brookfield be relicensed for this project again. This project has proven to have significant and demoralizing impacts on the fisheries, natural environment, recreational, and aesthetic value of Hinckley Lake and the entire West Canada Creek. It has also put the other uses of the lake into jeopardy as well. There are certainly other ways to produce power without negatively impacting our waterways other uses and needs, yet Brookfield has no interest in that and is impossible to work with. With that said we, the Citizens for Hinckley Lake, again request that Brookfield NOT be relicensed for the West Canada Creek Project.

We hope FERC will utilize our comments to create the appropriate study plans needed to fully understand the devastating impact that Brookfield has had here. Thank you for the opportunity to express our extreme concerns with this project as it has negatively impacted us for way too long. If you have any questions, please do not hesitate to contact me.

Sincerely,

Blake Bellinger  
Citizens for Hinckley Lake  
Bla19ke@yahoo.com

**Federal Energy Regulatory Commission  
c/o Kimberly D. Bose, Secretary  
888 First Street, NE  
Washington, DC 20426**

**Re: WEST CANADA CREEK HYDROELECTRIC PROJECT  
FERC NO. 2701**

Dear Secretary Bose:

By way of perspective, I am a life long resident of the Oneida / Herkimer County, New York area and currently reside in Herkimer County. I have enjoyed visiting the Hinckley Reservoir area my entire life and currently own property on Hinckley Reservoir. I also direct a large growing business headquartered in this area (but not at or near Hinckley Reservoir).

I understand the Federal Energy Regulatory Commission ("FERC") is in the initial stages of considering the re-licensing of Brookfield Renewable's Prospect and Trenton Falls Hydroelectric plants on the West Canada Creek with the current licenses expiring in 2023. In a separate matter, FERC is also considering the re-licensing of New York Power Authority's Jarvis Hydroelectric plant at Hinckley Reservoir (license expires in 2022).

As you are aware, there are many varied interests for the Hinckley Reservoir and the West Canada Creek (“Reservoir / Creek”). These interests include:

- Business interests
  - power generation
  - local businesses which directly or indirectly benefit from tourist activities
- Land owner’s interests
  - Primary residences
  - Seasonal homes
- Environmental interests – Impacts to wildlife, fish, soil, water quality
- Recreation interests– Fishing, boating, camping, hiking
- Water interests
  - Greater Utica water supply
  - Erie Canal supply
  - Potential business and residential development

I am sure that the list above is not exhaustive, but it at least demonstrates the diverse groups involved. As I read some of the information available on the current situation at the Reservoir / Creek, experience the day to day on-site and discuss this



topic with friends and neighbors, I find the conversation comes back to “what are the appropriate water levels”. Its peculiar to me that we use various water level statistics and seem to draw a variety of distinctly different conclusions from the same body of information.

I understand that FERC is developing a study plan to consider the license renewal. I believe that your study at a minimum has several data needs. The first data need is the independent development of reliable statistics which (1) measure the capacity of the Reservoir / Creek as its configured today, (2) measure the amounts of usable water, (3) determines whether the water level information published by the Canal Corp. and other accurately portrays the historical record, and (4) provides other information needed to assess the capabilities of the Reservoir / Creek to meet all the water needs, at all points of the year. The second data need for the study is the determination of the water requirements of each of the constituents. For example, what does it takes to service the power plants, to service the Erie Canal, to service the Utica area water needs, what levels are needed for land owners and visitors to swim, boat, etc. and what levels are needed to provide an adequate habitat for fish and other wildlife, just to name a few. The determination of water

requirements should mirror the actual water use (i.e. large short-term needs and the like). Lastly, we need to perform a realistic comparison of the capacity to the identified needs, including an assessment of potential variability. Ultimately an answer to the question, can the Reservoir / Creek meet the existing needs?

The Plan also needs to consider how the management of the water resources at the Reservoir / Creek can be executed in a way that considers all the interested parties as decisions are made. From my perspective, it appears that historically decisions concerning water usage have been made with a limited number of the constituents involved, or through costly litigation. When the Reservoir / Creek are full, there are generally limited issues. But as water levels fluctuate, a management plan should exist to prioritize needs and actions, and to communicate the actions so that all participants know the steps required to address the situation. If nothing else, the situation in 2007 should have taught everyone that a game plan is needed.

The re-licensing process will provide the go ahead to operate the hydro electric plants for an additional 40 years. This moment seems like an opportunity to review the situation and make a realistic decision as to whether we expect too much from

the Reservoir / Creek? Are we prepared to handle another significant drought like 2007? Or 1964 (see below)? How do we balance Utica's need for water, the Canal's needs, the hydroelectric plants' needs with those of the environment or the land owners? Is the current operating plan working or are there too many needs and not enough capacity? Are the parties involved at the Reservoir / Creek willing to working together to find a solution that works for all because they are part of the community, or has their response been confrontation because they are not part of the community?

If we were to wipe the slate clean today and start again, I wonder "would we do things differently"? Maybe this is the opportunity. Let's take the time to do the work and get this right.

Respectfully submitted

Salvatore A. Longo



Hinckley Lake in 1964

Walt Paul, South Colton, NY.  
June 29, 2018

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

Comments: Re: Scoping Document 1, West Canada Project P-2701

Dear Secretary Bose:

The following comments are submitted on behalf of the Region 6 New York State Fish and Wildlife Management Board. There are currently concerns regarding Brookfield's flow management practices and other issues that need to be addressed through re-licensing.

Areas of concern:

Jarvis Project It is unfortunate that neither the New York Power Authority nor Erie (Brookfield) thought it appropriate to combine the relicensing of the Jarvis Project P-3211 and the West Canada Project P-2701. The proximity of both projects, the effects of water flows with the stream corridor and the effects of Hinkley Dam operation combine to create cumulative effects that impact the entire riverine ecosystem.

Adequacy of Proposed Studies: The studies proposed by Erie (Brookfield) in figure 5, page 17, of the document are clearly inadequate and additional studies are needed to obtain a realistic picture of the ecological and environmental impacts of the proposed relicensing.

Erie proposes only two studies; Aquatic Habitat Mapping and Recreational Study and Inventory. These studies, while required, are only a partial list of those needed. Additional studies needed include:

Comprehensive Fisheries Inventory and Habitat study of all Impacted Waters within the Project Boundaries particularly those areas that have been regularly devoid of any water:

This study should be conducted over a period sufficient to obtain full information on fish abundance, presence, condition and any other factors deemed significant by either New York State Department of Environmental Conservation or by the US Fish and Wildlife Service. Currently available information is outdated, with major portions relying on data from 1981. An examination of current conditions is essential to properly assess fishery needs within the project.

Adequacy of Water Flows within the Project:

The current 160 cfs is not near enough to sustain the ecological environment? This is the currently required bypass flow below the Canal Corporation cutoff. This is not adequate and we highly recommend increase in the flow to at least 260cfs to adequately support the downstream ecosystem.

Water fluctuations caused by ponding operations perilously impact the macro invertebrate life in the riparian boundary area, as well as the fish population. The examination must by its nature look at the source of those flows, which are the currently unlicensed Hinkley Dam and its NYPA Jarvis hydro operation.

Adequacy of Water Flow Within Bypassed Reaches:

Given the peaking method of operation of the project, flows within the significant lengthy bypass reaches of the Project are seriously impacted. Water resource conditions within those areas must be evaluated as part of the relicensing. Each

reach, because of differing geological conditions, will require separate study.

Aesthetic Effects of Relicensing:

Both the communities of Trenton Falls and Prospect have already voiced concerns over the lack of water flows which have a dramatic and negative impact on the quality of life in those communities, and which impact their economic wellbeing by detracting from their attractiveness. Property values are very adversely affected when the water levels fluctuate to the extremes that Brookfield in conjunction with the Canal Corp, have done over the years. A Study, perhaps using the Delphi method, is essential to evaluate the current adequacy and need for aesthetic flows over scenic reaches.

Legal and administrative concerns, which must be addressed at some point by FERC:

The 2012 Flow Diagram Agreement between Erie (Brookfield) and the New York State Canal Commission:

This document is not part of either the license for the Jarvis Project nor for the West Canada Project, yet it has a controlling impact on both. Although the document may meet legal requirements in itself, it presently remains outside of FERC's regulatory purview despite its significant impact. The Agreement, as necessarily amended, should be made a part of both licenses for West Canada P-2701 and Jarvis P-3211. Terms of the Agreement should not be viewed as inviolate in this proceeding, and if necessary changes should be effected to meet current conditions.

Unlicensed Nature of Hinckley Dam and the Canal Corp:

Hinckley remains unlicensed by FERC, although apparently considered by FERC, Brookfield, and New York Power Authority as part of the Jarvis Project and within its boundaries and despite its overriding controlling effect on the ecosystem. Saying it doesn't make it so, and any future attempt by FERC to impose conditions on the Canal Commission, given the current unrecognized nature of Hinckley, is legally problematic. Meanwhile, Hinckley continues to have the controlling influence on hydro conditions on all downstream West Canada endeavors; recreational, hydro, civic or municipal. The solution to this quandary is well within FERC's authority; that is; require that the Canal Commission, which is now part of the New York Power Authority, either merge the Hinckley Dam with the Jarvis Project P-3211 or undertake a separate license of the dam. Precedent for this action has already been thoroughly established and has been fully explicated in the earlier US Fish and Wildlife Service submission regarding the Jarvis Project.

Advisory Committee - If there is currently no advisory committee for this project one should be created as part of relicensing.

The Region 6 Fish & Wildlife Management Board has many members that live in the area and are impacted by this Project. Anglers and other outdoor users provide extensive economic benefits to the area and local economy.

All of the comments above have a nexus in the protection of the exceptional waters of West Canada Creek and its outstanding fishery and recreational benefits, and are directly related to the impacts of the proposed relicensing. With the D.E.C. being a critical player in this effort the Region 6 FWMB is hereby advising the Department that these items need attention and action.

Sincerely Yours,  
Walt Paul  
Walt Paul  
Chair  
Region 6 FWMB  
946 Racquette River Rd.  
South Colton, N.Y. 13687  
(315) 262-2919

wal tpaul @twc. com

20180629-5071(32982195)

June 29, 2018

COMMENTS ON WEST CANADA CREEK HYDROELECTRIC PROJECT P-2701-059

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

Dear Ms. Bose:

I am a resident of Barneveld, NY with land adjacent to the West Canada Creek. My views have been influenced as a landowner on the creek, President of the Chamber Alliance of the Mohawk Valley for almost 4 years, Executive Director of the West Canada Watershed Alliance for 10 years and I am currently on the Town of Trenton Planning Board.

As a tax paying landowner having a private business like Brookfield that employs people, pays taxes and gives back to the community is truly vital. However the License they are currently having to abide by is outdated and not advantageous to the community which includes reservoir residents, creek residents, visitors and recreational users to our geological and historic area.

My main concerns are safety, access, previous agreements and education. It has been a pleasure seeing the comments coming in with all the incredible amount of research that has been done. While I don't always agree with the direction they might be taking the fact remains there is a passion and appreciation of this great resource which everyone wants to share but also preserve.

With the reopening of the gorge while extremely limited it has shown the public interest is still there and not just locals but people from all over the US and other countries. Some of the events that have been generated from the reopening are 2008 Plein Air Art Show, 2013 the 150 year anniversary visit to the Trenton Falls gorge in 1863 by the Secretary of State William Seward and various diplomats at the height of the Civil War, 2014 Trails and Tales and Trenton Falls Art Festival. Having a building with energy, running water, bathrooms along with a room for scientists, students and the public to use for educational, cultural, and other events would really help the area and allow others to learn what is so special about this area.

Many landowners have agreements dating back to 1909-1915 when the Moore family sold to the Utica Gas & Electric Company for power generation. My land was part of the Beardsely Agreement other agreements included Doolittle, Comstock and Newport Energy. There was supposed to be a guaranteed flow of 333 cfs in the creek below the dam. In the fall of 2007 we had a water crisis that if it has happened in May of 2008 could have impacted the F.X. Matt Brewery. The Brewery caught on fire in 2008 but if it had happened in the fall of 2007 there might not have been enough water to put it out or enough water for a hospital or other businesses let alone residents. 2007 was drier than normal but nothing compared to the drought of 1963-64 which lasted for months. The Hinckley Working Group was created and while it gathered a great deal of data affected private interests were deliberately kept out of the group which included Brookfield and other users of the creek. It did produce a communication scheme that the agencies will use to prevent a crisis from happening again it did not bring to the table the other users of this great treasure.

[https://www.health.ny.gov/environmental/investigations/hinckley\\_reservoir/docs/2008-04-30\\_report\\_to\\_the\\_governor.pdf](https://www.health.ny.gov/environmental/investigations/hinckley_reservoir/docs/2008-04-30_report_to_the_governor.pdf)



As a user of the creek safety is a great concern along with the damage being done to the aquatic life and erosion to the creek bed from peaking. Brookfield has sirens and lights up near Dover Road but when you are down farther you can not hear or see them and if you are try and rely on Waterline <http://www.h2oline.com/default.aspx?pg=si&op=365124> for what is going to be happening on the creek it isn't reliable. It needs to be accurate and done in real time. If you are using Waterline to figure out when you want to be on the creek as a tuber, kayaker you might just get stranded but as a fisherman you could drown if it comes up to fast which it usually does during peak energy needs.

In conclusion working with all the users of our great resource is so important. We can all learn from each other in the process of seeing what is happening on the water, where the water is going and how it is being used. The impact to our economy and the West Canada Creek which includes Hinckley Reservoir has to be acknowledge. The history and geology of this area needs to be shared with everyone especially educators, geologists and historians so we don't lose what makes this area so great.

Sincerely,  
Kathleen Kellogg  
Executive Director-West Canada Watershed Alliance  
P.O. Box 272  
Barneveld NY 13304  
315-725-1688

June 28, 2018

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E., Room 1A  
Washington, D.C. 20426

RE: FERC Scoping Document, West Canada Creek Hydroelectric Project No. 2701-059

Dear Secretary Bose:


My home/property is along the West Canada Creek and includes deeded riparian rights which must be recognized and protected. These legal rights need to be an integral part of any action which concerns water useage and flow. Please refer to the following pages from my deed's abstract of title which includes the Beardsley Agreement with stated flow requirements. Please refer to the page which is numbered 68 at the top for verification of the required 333cfs. There are other landowners along the West Canada with deeds which include the Beardsley Agreement. Other agreements with the same flow requirements include, but are not limited to the Doolittle, Comstock, and Comstock Adams/Millard, copies of which are attached. These agreements are a part of the property owners' deeds, still exist and have not been modified. They must not be disregarded.

I assert my rights and common law rights as a lower riparian owner, and per my deeded agreement I am entitled to an uninterrupted and adequate flow of 333cfs. Also, per the agreement, when the flow is less than 333 cfs at the intake, there is to be no diversion, without compensating flow. If there is to be any "peaking", the low flow must not be allowed to go below the agreed 333 cfs. This will help to guarantee the health of the river, not only for the fish and animals, but, for all who love the West Canada.

West Canada is used for fishing, recreation, canoeing, tubing, bird watching, nature appreciation, camping, education, etc., and has great historical significance. Water flows must be preserved according to the deeds in order to keep the West Canada Creek a viable resource, both environmentally and economically. It is important to preserve the integrity of this river for all in our area, for the visitors who come from around the world, and for future generations.

Thank you for considering this information.

Sincerely,

A handwritten signature in cursive script that reads "Katrina Hanna".

Katrina Hanna  
8228 State Route 28  
Barneveld, NY 13304  
[klhanna@roadrunner.com](mailto:klhanna@roadrunner.com)

**This Indenture,**

016255

Made the 5th  
 September, Nineteen Hundred and Eighty-Nine  
 Between

day of

BLANDINA IJAMS, residing at Route 28, Town of Trenton,  
 Barneveld, New York,

part y of the first part, and

KATRINA L. HANNA, residing at 10324 Millsa Road  
 Utica, New York

Witnesseth that the part y of the first part, in consideration of  
 ONE Dollar (\$ 1.00-----)

lawful money of the United States, and other good and valuable consideration  
 paid by the part y of the second part, does hereby grant and release unto the  
 part y of the second part, her heirs and assigns forever, all

ALL THAT PIECE OR PARCEL OF LAND situate in the Town of Trenton, County  
 of Oneida and State of New York, and more particularly described as a portion  
 of Lot 122 of the Serviss' Patent, bounded and described as follows:

Beginning at an iron rod in the northeasterly boundary of an existing  
 State highway #5559 (Poland - Trenton) or Touring Route #28, at its  
 intersection with the division line between the property now or formerly of  
 George J. Villiere on the south, and the property herein described on the  
 north; thence S 89° 34' E along the first mentioned division line 442.25 feet  
 to an iron rod on the division line between the property now or formerly of  
 George J. Villiere on the southwest and the property herein described on the  
 northeast; thence S 20° 24' E along the last mentioned division line 209.71  
 feet to an iron rod on the division line between the property now or formerly  
 of Edward Blask and Freida Blask on the southeast and the property herein  
 described on the northwest; thence S 89° 34' E along the last mentioned  
 division line 21.46 feet to an iron rod on the division line between the  
 property now or formerly of Edward Blask and Freida Blask on the southwest and  
 the property herein described on the northeast; thence S 20° 24' E along the  
 last mentioned division line 200.00 feet to an iron rod on the division line  
 between the property now or formerly of E. Kenneth Beckwith and Wendy McCord  
 Beckwith on the southeast and the property herein described on the northwest;  
 thence S 89° 34' E along the last mentioned division line 142 feet to a gun  
 barrel on the top of bank of the West Canada Creek; thence northerly along the  
 top of bank of West Canada Creek 860± feet to an iron pipe on the division  
 line between the property now or formerly of William Evans and Jane B. Evans  
 on the north and the property herein described on the south; thence N 80° 24'  
 W along the last mentioned division line 1630 feet to an iron pipe on the  
 northeasterly boundary of said highway; thence S 28° 12' E along the last  
 mentioned boundary 368 feet to a point; thence S 13° 19' E along said boundary  
 388 feet to the point of beginning, containing 22.68 acres more or less.

All bearings are referred to Magnetic North as the needle pointed in 1968  
 A.D.

This conveyance is made and accepted subject to (a) rights reserved for  
 telephone lines and water pipelines in deed from Geo. A. Burhyte and Anna M.  
 Burhyte to Walter S. Boynton and wife dated April 22, 1908, and recorded in  
 the Oneida County Clerk's Office on April 30, 1908, in Book of Deeds 640 at  
 page 163; (b) terms and conditions and rights contained in Agreement by and  
 between Emily Gail Beardsley and Consolidated Water Company of Utica dated  
 June 9, 1915, and recorded in the Oneida County Clerk's Office on December 19,  
 1922, in Book of Deeds 815 at page 61; and (c) rights reserved relative to  
 location and maintenance of electric wires for carrying current to other  
 premises in deed from Frederick S. Kellogg and wife to Esther C. Gibson dated  
 July 10, 1946 and recorded in the Oneida County Clerk's Office on July 12,  
 1946 in Book of Deeds 1125 at page 317.

Subject to easements, rights of way, covenants and restrictions of  
 record.

BEING the same premises conveyed to the party of the first part by  
 Henrietta S. Mitchell dated the July 18, 1974, and recorded on July 22, 1974,  
 in the Oneida County Clerk's Office in Book of Deeds 1993 at page 982.

LIBER 2484 PAGE 23

Together with the appurtenances and all the estate and rights of the part y of the first part in and to said premises,  
To have and to hold the premises herein granted unto the part y of the second part, her heirs and assigns forever.

LIBER 2484 PAGE 24

And said part y of the first part

covenants as follows:

First, That the part y of the second part shall quietly enjoy the said premises;

Second, That said part y of the first part

will forever warrant the title to said premises.

Third, That, in Compliance with Sec. 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

In Witness Whereof, the part y of the first part has hereunto set her hand and seal the day and year first above written.

In Presence of

Blandina Ijams  
Blandina Ijams



State of New York } On this 5th day of September,  
County of Oneida } ss. Nineteen Hundred and Eighty-Nine,  
before me, the subscriber, personally appeared  
Blandina Ijams,

to me personally known and known to me to be the same person described in and who  
executed the within instrument and she duly acknowledged to me that she  
executed the same.

Don P. Munroe  
Notary Public

DON P. MUNROE  
Notary Public in the State of New York  
Appointed in Civil Case No. 2519790  
My Commission Expires 4/30/91

016265

**WARRANT**  
WARRANT WITH LIEN COVENANT

BLANDINA IJAMS

TO

KATRINA L. HANNA

Dated, September 5, 19 89

RECORD AND RETURN TO:

Don P. Munroe, Esq.  
Rossi, Kehoe, Hurnane & Hughes  
Attorneys at Law  
P.O. Box 209  
Bacon, New York 13023

KATRINA L. HANNA  
10324 MILLE RENO  
UTICA, New York 13702

Sheet No 1

"A"

-----	) Warranty Deed
Geo.A.Burhyte and Anna M Burhyte,his	) Dated April 22,1908
wife,Trenton,N.Y	) Ack'd April 30,1908
to	) Cons.\$1950 00
Walter S.Boynton and Harriet A.Boynton,	) Rec April 30, 1908
his wife, Carthage,N.Y.	) Bk.Deeds 640
-----	) Pg.163

Conveys,

All that tract or parcel of land situate in the Town of Trenton, County of Oneida and State of N.Y., being part of lots Nos.120 and 122 in Servis Patent and which according to former conveyances is bounded as follows.

Beginning at a basswoodtree on the west bank of the West Canada creek and running thence N 87 3/4° W 25 chains and 41 links to the center of the road leading from John C Frank's to Russia, thence along said road S 27 1/2° E 20 chains and 73 links, thence along said road S 1 1/2° E 10 chains and 50 links, thence N 84° E 3 chains and 57 links (along the center of said road) thence S 10° E 3 chains and 50 links to the south line of lot No 122 in said patent, thence on said south line S 72 1/2° E 19 chains and 14 links to the center of the road, leading from Francis Milbur's to Russia, thence along said road N 34 3/4° E 3 chains and 50 links, thence N 17 1/2° E 6 chains and 30 links on a line of stone wall on the west side of the road, thence along the same S 72° E 2 chains to the center of the above named road, thence N 29° E 6 chains and 73 links along the center of said road to a post in the fence 43 links N 78° W from the east bank of the West Canada Creek, thence along said creek as it winds and turns to the place of beginning, containing 70 acres of land, more or less.

Also a right to take water from the spring on the lands of said parties of the first part which now supplies the premises hereby conveyed and also the residence of said Burhyte either by the present jointly used pipe or by a separate pipe, with free access to the same for necessary construction and maintenance but no pipes shall be placed or maintained which shall be placed at such level at said spring as to take more than 1/2 of the water flowing therefrom, to which he is entitled.

Sheet No.2

Excepting and reserving from the operation of this conveyance that portion of the above described premises conveyed by Ira B. Link and wife to William Furery by deed dated Dec 30, 1878 and rec in Oneida County Clerk's office Dec 31, 1878 in book 383 of deeds, pg. 269 and which contains 15 and  $\frac{1}{4}$  acres of land more or less.

Also excepting and reserving at all times, the right to keep and maintain the present telephone line across the premises hereby conveyed with free access for necessary reconstruction or repairs.

It is further stipulated as a condition of this grant, that the said parties of the second part shall not cut or permit to be cut or taken away from the premises hereby conveyed, any standing timber in excess of the amount necessary for fuel for one house or family thereon, until the purchase money mortgage this day executed by said grantees to the party of the first part is fully paid and satisfied

Also excepting and reserving to the said parties of the first part, the right to convey water from the spring above mentioned across the premises hereby conveyed to their residence either by the pipe which now supplies their said residence. And also the premises hereby conveyed or at their option by a separate pipe over substantially the same route occupied by the existing pipe with free access at all times for necessary construction and maintenance purposes.

"B"

----->	Agreement
Emily Gale Beardsley, wife of Samuel A	) Dated June 9, 1915
Beardsley, Jr., Utica, N.Y	) Ack'd June 9, 1915 &c
with	) Cons. \$50.00 &c
Consolidated Water Company of Utica,	) Rec Dec. 19, 1922
----->	) Bk. Deeds 815, pg 61

WITNESSETH

WHEREAS, the Water Company is a corporation incorporated under the Transportation Corporation Law of the State of N.Y. and engaged in furnishing pure and wholesome water to the City of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof and;

Sheet No 21

WHEREAS it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purpose

WHEREAS, the said Water Company has taken such additional supply of water from the West Canada Creek in the manner hereinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits to the West Canada Creek at Hinckley, Herkimer County, N.Y. through which said pipe line said Water Company has obtained its supply of water, and,

WHEREAS, it is the plan and purpose of the said Water Company to so divert and take water from the said West Canada Creek as not to unreasonably deprive any of the riparian owners of said West Canada Creek of water so far as said water Company is concerned, which purpose is to be accomplished, by means of storage reservoirs, storing up water in storage reservoirs in periods of flood and high water, and letting water out from such storage reservoirs in periods of low flow, when the Water Company is diverting water, it being the intention, plan and purpose of said Water Company to replace and restore from said storage reservoirs to the said West Canada Creek, above the point of diversion whenever any water shall be diverted in periods of low flow from its storage reservoir or reservoirs a quantity of water in equal in amount to that diverted from said creek at such periods of low water, and

WHEREAS, the said Water Company in or about the year 1906 constructed and built a large Reservoir on Black Creek, one of the tributaries of said West Canada Creek, at Bennetts Mills, so called, in the towns of Ohio and Norway, Herkimer County, N.Y. to be filled with water at times of flood and freshet, and from which, in periods of low water, said water company, when diverting or taking any water from said West Canada Creek, should restore a quantity of water equal in amount to that diverted, whenever the flow of water in said West Canada Creek might be less than 333 cubic feet per second at the present electric plant of the Utica



Sheet No.3

Gas and Electric Company at Trenton Falls, N Y ,and,

WHEREAS, said reservoir has been in operation since the completion of its said construction in the year 1906 and,

WHEREAS, Emily Gale Beardsley of the first part is the owner of certain lands and premises situate lying and being on the west bank of the West Canada Creek in the town of Trenton, Oneida County, and state of N.Y., bounded and described as follows.

All that part of lots Nos. 120 and 122 in Services Patent and bounded as follows. The same premises described in No. "A" above, except herein the sixth course reads, "thence on said south line south  $73\frac{1}{2}^{\circ}$ " etc.

Excepting and reserving therefrom all that certain piece or parcel of land situate, lying and being in the town and County aforesaid, known and distinguished as being a part of lot No 122 in Services Patent and bounded as follows. Beginning at a point in the center of the road leading from Henry Miller's house to Russia at the northeasterly corner of the lands of William Tormy and running thence south  $7\frac{1}{2}^{\circ}$  east along the lands of said Rormy to the south line of said lot No. 122, 3 chs. and 40 links, thence S  $71^{\circ}$  E 19 chs. and 20 links along said line to the center of the road, leading from the house of Francis A. Wilbur, thence along said road north  $39\frac{1}{2}^{\circ}$  east 3 chs. and 50 links, thence north  $19^{\circ}$  east 6 chs and 30 links on a line of stone wall on the west side of the road thence south  $70\frac{1}{2}^{\circ}$  east 1 ch and 86 links to the center of the road, thence north  $30^{\circ}$  east 4 chs. and 50 links, thence south  $66\frac{1}{2}^{\circ}$  west 5 chs. and 50 links, thence south  $86^{\circ}$  23st 5 chs. and 50 links; thence north  $89^{\circ}$  west 1 chain and 50 links, thence north  $80\frac{1}{2}^{\circ}$  west 3 chs. and thence south  $88\frac{3}{4}^{\circ}$  west 11 chs. and 54 links to the place of beginning, containing  $15\frac{1}{4}$  acres of land, more or less, surveyed Sept 1878 by Henry Broadwell" and being the same lands that were conveyed to the said Emily Gale Beardsley of the first part from Samuel A. Beardsley, Jr. by warranty deed dated June 24, 1914, and rec. June 25, 1914 in Oneida County Clerk's office in



Sheet No.4.

Bk Deeds 708,pg.276, and

WHEREAS the said Emily Gale Beardsley of the first part, for the consideration hereinafter expressed, has agreed to release all claims for damages, both past and future to her said premises above described on account of the diversion of any of the waste or surplus water of the said West Canada Creek by the Water Company, as hereinafter provided, when the flow of water in said creek is greater than 333 cubic ft. of water per second at the aforesaid present electric plant of the Utica Gas and Electric Company at Trenton, N.Y. and has also agreed to the diversion of water from above her aforesaid premises by the Water Company from said West Canada Creek at all periods when the flow of water in said creek at the said electric plant is less than 333 cubic ft. per second, provided the said Water Company restores to the said West Canada Creek from its reservoir or reservoirs above the point of its diversion a quantity of water equal to the amount diverted when the flow of water in said stream at said Electric plant is less than 333 cubic ft. per second as herein provided

Agree

Article One                      The said Emily Gale Beardsley of the first part hereby gives, grants and conveys to the said Consolidated Water Company of Utica, N.Y. the perpetual right to take, divert and utilize water from said West Canada Creek, for its corporate purposes through its intake or intakes and conduit or pipe or pipes, now constructed or hereafter to be constructed above aforesaid lands and premises of the party of the first part, upon the express conditions and subject to the terms and restrictions hereinafter stated

Article Two                      Whenever the flow of water in said West Canada creek at the present electric plant of the Utica Gas & Electric Company at Trenton Falls, N.Y. is in excess of 333 cubic ft. per second, the said Water Company may take and divert at all times such an amount of water from the excess of 333 cubic ft. per

Sheet No.5.

second from said West Canada Creek as it may need for its corporate purposes without restoring water to the said creek from the reservoirs of the Water Company, and without any claim for damages by the party of the first part, her heirs, successors or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described from, through or under the said Emily Gale Beardsley all damages for which are hereby forever released

Article Three Said Water Company shall at no time take and divert water from said West Canada Creek when the amount of water flowing in said creek at the present electric plant of the Utica Gas & Electric Company at Trenton, N.Y. is less than 333 cubic ft. per second, unless said Water Company shall replace in said West Canada Creek from its reservoir or reservoirs constructed or to be constructed by it upon the said West Canada Creek, or any of the tributaries thereof, above the point of diversion an amount of water equal to that diverted by it, the Water Company's reservoir or reservoirs are to be filled with water in times of flood and freshet and at times when the natural flow of water in said West Canada Creek at the said present electric plant of the Utica Gas & Electric Company at Trenton, N.Y. without diminution by diversion by the Water Company, is in excess of 333 cubic ft per second, it is the intention of this agreement that said water company shall not attempt to fill its reservoir or reservoirs at any time when the amount of water in said West Canada Creek at the said Electric plant is less than 333 cubic ft. per second, nor shall <sup>be</sup> any diversion from said West Canada Creek by the Water Company when the flow in said creek at the present electric plant of the Utica Gas and Electric Company is less than 333 cubic ft per second, except <sup>said</sup> upon restoration by <sup>said</sup> water Company to said Creek from its aforesaid reservoir or reservoirs of an amount of water equal to that diverted. The Water Company shall have at all times the perpetual right to take and divert water from said West Canada Creek, without any claim for damages by the party of the first part, her heirs, successors.

Sheet No.6.

or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described, from, through or under the said Emily Gale Beardsley, whenever the flow of water is said creek at said electric plant is less than 333 cubic ft per second, provided that the Water Company its successors or assigns shall at such times restore to said West Canada Creek above the point of intake, from its aforesaid storage reservoirs an amount of water equal to the diverted.

Article Four                      The said Emily Gale Beardsley shall have at all times the right of access to the intake chambers and valves of the Water Company upon reasonable and timely notice transmitted by her by telephone or otherwise to the Water Company at its office in Utica, N.Y. so as to fully enable the said Emily Gale Beardsley at any time to determine the amount of water diverted and said Emily Gale Beardsley shall upon reasonable and timely notice to the Water Company also have the right of access to the Water Company's discharge pipes, weirs and locks at any of its storage reservoirs so as to determine the amount of water restored.

Article Five                      No action on the part of the State of N Y in diverting water from said West Canada Creek for canal purposes, or impounding water in any dam or reservoir owned by or controlled by the State shall be deemed a violation of this contract, or any part thereof.

Article Six.                      The party of the first part, said Emily Gale Beardsley also covenants and agrees to forever Warrant and Defend the water Company party of the second part, in the quiet and peaceable possession of the rights and privileges and easements hereby conveyed.

Article Seventh.                      This agreement binds the parties hereto their heirs, successors and assigns, and the covenants and agreements herein contained run with the land above described and binds the same whether owned by the said Emily Gale Beardsley or her heirs, executors or assigns, and likewise the covenants and agreements herein contained to be performed by the Water Company,

Sheet No 7.

bind the said Water Company in favor of the said Emily Gale  
Beardsley her heirs, successors or assigns at any time owning the  
above described land.

## (5a)

This agreement, made in duplicate this nineteenth day of March, 1909, between The Consolidated Water Company of Utica, N. Y., a corporation created and organized under the laws of the State of New York, hereinafter called the "Water Company," and The Newport Electric Light and Power Company, of Newport, Herkimer county, N. Y., a corporation also created and organized under the laws of the State of New York, hereinafter called the "Power Company,"

WITNESSETH: Whereas, the Water Company is a corporation incorporated and engaged, under the transportation laws of the State of New York in furnishing pure and wholesome water to the city of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof; and

Whereas, it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purposes; and

Whereas, said Water Company has taken such additional supply of water from the watershed of the West Canada creek in the manner herinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits from its reservoir in the town of Deerfield, Oneida county, N. Y., to the West Canada creek at Hinckley, Herkimer county, N. Y., through which pipe line said Water Company has obtained its supply of water; and

Whereas, it was the plan, purpose and intention of said Water Company to so divert and take water from said West Canada creek as not to cause injury or diminution to any of the water power on the said West Canada creek, so far as said Water Company is concerned, it being the intention, plan and purpose of the said Water Company, to replace and restore to the said

West Canada creek whenever any water was diverted in periods of low water, from its storage reservoir or reservoirs, a quantity of water equal in amount to that so diverted in periods of low water from said creek; and

Whereas, the said Water Company in or about the year 1906 constructed and built a large reservoir on Black creek, one of the tributaries of said West Canada creek, at Bennett's Mill, so called, in the towns of Ohio and Norway, Herkimer county, N. Y., to be filled with water at times of flood and freshet, and from which in periods of low water said Water Company, when diverting or taking any water from said West Canada creek, should restore a quantity of water equal in amount to that diverted, so as to cause no injury or diminution to the water powers on said creek, so far as it, the Water Company, was concerned; and

Whereas, said reservoir has been in operation since its said construction, a portion of which time, the year, 1908, has been a period of unusual drought; and

Whereas, the Power Company has a water power at the village of Newport, Herkimer county, N. Y., upon said West Canada creek, purchased from Frank P. Fitch and Fred M. Howe under deed dated February 1, 1902; and recorded in Herkimer County Clerk's Office on the 7th day of February, 1902; in Book of Deeds, No. 176, at page 442, to which reference is hereby made for a more particular description; and

Whereas, the Power Company has no objection to the diversion of any of the waste or surplus waters of said stream by the Water Company, so long as such diversion causes no injury or diminution to the water power of the Power Company; and

Whereas, some question has arisen between the parties hereto, whether the said Water Company has

restored to said stream from its reservoir, when diverting in periods of drought and low water, as much water as it has diverted; and

Whereas, it is desirable that said Power Company should have at all time accurate, full and complete information as regards the quantity of water diverted by said Water Company,

Now therefore, in consideration of the promises and of the sum of one thousand dollars (\$1,000), to the Power Company in hand paid by the Water Company, the receipt whereof is hereby acknowledged and confessed, and in further consideration of the mutual covenants and agreements herein contained, it is agreed by and between the parties hereto as follows:

Article I. The Power Company hereby gives, grants and conveys to the Water Company the right to take, divert and utilize water from the said West Canada creek for the purpose of supplying the city of Utica and other places with water for public and private uses, through its intake or intakes, upon the express conditions, and subject to the terms and restrictions hereinafter stated.

Article II. Whenever the flow of water in said West Canada creek, at the Water Company's intake at Hinckley, N. Y., is in excess of three hundred thirty-three (333) cubic feet per second, the said Water Company may take and divert such amount of water from the excess of said three hundred thirty-three (333) cubic feet per second from said West Canada creek, as it needs for its corporate purposes, without restoring water to said creek from the reservoirs of the Water Company.

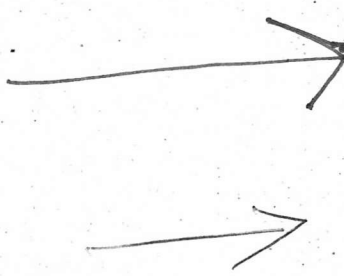
Article III. The measurement of the natural flow of the said West Canada creek at the Water Company's intake shall be determined by means of suitable gages



and gaging stations which shall be established and maintained, wholly or in part, by said Water Company on West Canada creek, or on said creek and Black creek tributary thereto, at the nearest suitable and practicable point or points above said Water Company's intake at Hinckley, the stations referred to shall be established at the nearest suitable point or points above the flow line of the present Hinckley dam or any future dam at Hinckley. The natural flow at said Water Company's intake shall be determined from the flow measured at the above stations by increasing the measured flow in direct proportion to the increase in the drainage area between the point or points of gaging and the Water Company's intake. It is agreed that the drainage area above the Water Company's present intake at Hinckley is 372 square miles. In the operation of the Water Company in accordance with this agreement the drainage area above the gaging stations shall be determined from the topographic maps of the United States Geological Survey. The gages and gaging stations of the Water Company shall be accessible at any and all times to the Power Company for the purpose of examining the methods and accuracy of the gagings, and upon request the Water Company shall furnish the Power Company with a copy of the tables or measurements of discharge which are made or used in connection with said gages in determining the flow of said streams.

Article IV. The said Water Company shall at no time take or divert water from said West Canada creek when the amount of water flowing in said creek at the Water Company's intake at Hinckley, N. Y., determined as aforesaid, is less than said three hundred thirty-three (333) cubic feet per second, unless said Water Company shall replace in said West Canada





creek, from its reservoir or reservoirs constructed or to be constructed by it upon said West Canada creek, or any of the tributaries thereof, an amount of water equal to that diverted by it, said reservoir or reservoirs to be filled with water in times of flood and freshet, and at times, when, at the Water Company's intake at Hinckley, N. Y., the natural flow of said stream, without diminution by any diversion by the Water Company is in excess of said three hundred thirty-three (333) cubic feet per second. It is the intention of this agreement that said Water Company shall not attempt to fill its reservoirs at any time when the amount of water at the Water Company's intake, in said West Canada creek, is less than said three hundred thirty-three (333) cubic feet per second; nor shall there be any diversion from said West Canada creek by the Water Company when the flow in said creek at the Water Company's intake is less than said three hundred thirty-three (333) cubic feet per second, except upon restoration by said Water Company to said creek, from its reservoir or reservoirs, of an amount of water equal to that diverted.

Article V. The restoration herein required to be made by the Water Company from its reservoir or reservoirs shall be made twenty-four (24) hours in advance of diversion.

Article VI. If at any time hereafter the flow of water in said West Canada creek shall not be sufficient to operate the above described power of the Power Company, such lack of water to so operate said power shall be presumptive evidence, rebuttable by the Water Company, that the said Water Company has failed to comply with the terms of this agreement, provided that the Power Company shall promptly notify the Water within twenty-four (24) hours after such lack of water,

Company at its office at Utica, N. Y., by a notice in writing, served by the Power Company upon the Water Company at its office in Utica, N. Y., of any claim of such failure of water; and in connection with any such claim, the Water Company shall have the right to fully inspect the machinery, plant and property of the Power Company.

Article VII. The Power Company also, in consideration of the aforesaid sum of one thousand dollars (\$1,000) hereby releases the Water Company from any and all claims for damages on account of any past diversion from the said West Canada creek by the Water Company, or for or on account of any matter or thing whatsoever.

Article VIII. The Power Company shall have at all times the right of access to the intake chambers and valves of the Water Company, upon reasonable and timely notice transmitted by it by telephone or otherwise to the Water Company at its office in Utica, N. Y., so as to fully enable the Power Company at any time to determine the amount of water diverted; and said Power Company shall also have right of access, upon said reasonable and timely notice, to the Company's discharge pipes, weirs and works, at its storage reservoir, so as to determine the amount of water restored, and also said Power Company shall, upon such reasonable and timely request, have access to the Water Company's books, papers and records, with reference to the amount of water diverted by it, and with reference to the amount of restored water.

Article IX. The covenants herein shall be binding upon each of the parties hereto, their successors and assigns. The Power Company shall have the right at any time, upon failure by the Water Company, its successors or assigns, to comply with the terms of this

agreement, to bring an action in equity to compel the specific performance of the terms of this agreement, and for the recovery of any and all damages that may be awarded by reason of the failure of the Water Company to fulfill the terms hereof.

In witness whereof, the parties hereto have caused these Presents to be signed by their Presidents and their corporate seals to be hereunto affixed this 19th day of March, 1909.

CONSOLIDATED WATER COMPANY OF  
UTICA, N. Y.

(Seal) By EDMUND LE B. GARDNER,  
President.

NEWPORT ELECTRIC LIGHT & POWER  
COMPANY,

(Seal) By GEORGE T. WOODIN,  
President.

STATE OF NEW JERSEY, }  
COUNTY OF PASSAIC, } ss.:

On this 23d day of March, 1909, before me, personally came Edward Le B. Gardner, to me known, who being by me duly sworn did depose and say that he resides at Ridgewood, New Jersey; that he is an officer of the Consolidated Water Company of Utica, N. Y., one of the corporations described in and which executed the foregoing instrument, to wit: its president; that he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was fixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

RICHARD ROSSITOR,  
Commissioner of Deeds for New Jersey.

STATE OF NEW YORK, }  
COUNTY OF HERKIMER, } ss.:

On this 20th day of March, 1909, before me, personally came, George T. Woodin, to me known, who being by me duly sworn did depose and say that he resides at Newport, N. Y.; that he is an officer of the Newport Electric Light & Power Company, one of the corporations described in and which executed the foregoing instrument, to wit, its president; that he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

GEORGIA V. BYROM,  
Notary Public.

# Doolittle Agreement

State of New York

County of Oneida SS.

On this 9th day of June 1915 before me the subscriber personally appeared Amelia Lowery Doolittle to me known and known to me to be the same person described in and who executed the foregoing instrument, and she duly acknowledged to me that she executed the same.

Stephen G. Eldred, Notary Public.

Oneida Co. N. Y.

State of New York

County of Oneida SS:

On this 14th day of June 1915 before me, the subscriber personally appeared William S. Bacot to me known, who being by me duly sworn did depose and say that he resides in the city of Utica, N. Y. that he is an officer of Consolidated Water Company of Utica, N. Y. the corporation described in and which executed the foregoing instrument, to wit: its president that he knows the seal of said corporation, that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto as president by like order.

H. B. Miles, Notary Public. (seal)

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Rec'd. Dec. 19, 1922 at 11:00 A.M.

*J. M. Lathorne*

Clerk.

673.

THIS INDENTURE made the 13th day of December in the year Nineteen Hundred and twenty two, BETWEEN Charles H. Cleveland and Bertha A. Cleveland, his wife of the city of Rome, Oneida County, New York, parties of the first part, and Rueben Morrell and Nellie Morrell his wife of the same place, parties of the second part:

WITNESSETH that the said parties of the first part in consideration of one dollar and other valuable consideration lawful money of the United States, paid by the parties of the second part, does hereby grant and release unto the said parties of the second part, their heirs and assigns forever, all that tract or parcel of land situate in the town of Verona aforesaid, being part of lot no. 184 of the late Oneida Reservation, and bounded as follows: Beginning at a stake standing in the easterly line of said lot and in the line between the towns of Verona and Westmoreland and at the southeasterly corner of land formerly owned by George Seaton, and running thence south 27 deg. east on the east line of said lot 23 ch. and 12 lks. to the southeasterly corner of said lot; thence south 63 dg. west on the south line of said lot 35 chs. 50 lks. to the southwesterly corner of said lot; thence north 27 deg. west on the west line of said lot 28 chs. 35 lks. to the southwesterly corner of said Seaton's land thence north 71 dg. east, 38 chs. 70 lks. to the place of beginning, containing one hundred acres of land, be the same more or less.

Also all that piece of land, lying in the town of Verona aforesaid, and being part of lot no. 191 in the Oneida Reservation and bounded thus; Beginning at a stake on the line or

upon the said West Canada Creek or any of the tributaries thereof, above the point of diversion an amount of water equal to that diverted by it; the Water Company's reservoir or reservoirs are to be filled with water in times of flood and freshet, and at times when the natural flow of water in said West Canada Creek at said electric plant without diminution by diversion by the Water Company, is in excess of three hundred thirty three (333) cubic feet per second. It is the intention of this agreement that said Water Company shall not attempt to fill its reservoir or reservoirs at any time when the amount of water in said West Canada Creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, nor shall there be any diversion from said West Canada Creek by the Water Company when the flow in said creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, except upon restoration by said Water Company to said Creek from its aforesaid reservoir or reservoirs of an amount of water equal to that diverted. The Water Company shall have at all times the perpetual right to take and divert water from said West Canada Creek, without any claim for damages by the party of the first part, her heirs, successors or assigns or by any person or persons corporation or corporations at any time owning the lands above described from, through or under the said Amelia Lowery Doolittle whenever the flow of water in said creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, provided that the Water Company its successors or assigns shall at such times restore to said West Canada Creek above the point of intake, from its aforesaid storage reservoirs, an amount of water equal to that diverted.

ARTICLE IV. The said Amelia Lowery Doolittle shall have at all times the right of access to the intake chambers and valves of the Water Company upon reasonable and timely notice transmitted by her by telephone or otherwise to the Water Company at its office in Utica, N. Y. so as to fully enable the said Amelia Lowery Doolittle at any time to determine the amount of water diverted, and said Amelia Lowery Doolittle upon reasonable and timely notice to the Water Company shall have right of access to the Water Company's discharge pipes, weirs and locks at any of its storage reservoirs so as to determine the amount of water restored.

Article V. No action on the part of the State of New York in diverting water from said West Canada Creek for canal purposes, or impounding water in any dam or reservoir owned or controlled by the State shall be deemed to be a violation of this contract, or any part thereof.

Article VI. The party of the first part, said Amelia Lowery Doolittle also covenants and agrees to forever Warrant and Defend the Water Company party of the second part, in the quiet and peaceable possession of the rights and privileges and easements hereby conveyed.

Article VII. This agreement binds the parties hereto, their heirs, successors and assigns and the covenants and agreements herein contained run with the land above described, and bind the same whether said land is owned by the said Amelia Lowery Doolittle or her heirs executors or assigns; and likewise the covenants and agreements herein contained to be performed by the Water Company, bind the said Water Company in favor of the said Amelia Lowery Doolittle her heirs, successors or assigns, at any time owning said land.

IN WITNESS WHEREOF the party of the first part has hereunto set her hand and seal, and the party of the second part has caused these presents to be signed by its President and its corporate seal to be hereunto affixed this 9th day of June, 1915.

Amelia Lowery Doolittle L.S.

Consolidated Water Company of Utica, N. Y.

(seal)

by W. S. Bacot, its president.



Russia in Herkimer Co. about thirty seven chs. and 49 lks. thence northerly along the line of the aforesaid road about 39 chs. and 80 links to the south westerly corner of lands now or formerly in possession of A. B. Pierce from thence along the south line of said Pierce premises to the west bank of the West Canada Creek, and from thence along down the West Bank of the West Canada Creek as it winds and turns to the place of beginning, containing about 101 acres of land be the same more or less, and being the same premises deeded to William J. Williams deed bearing date Oct. 1, 1874 by John Aldinger and wife, Sarah, and recorded &c." and being the same lands that were conveyed to the said Amelia Lowery Doolittle of the first part from Frank P. Williams and wife by warranty deed dated May 8, 1911 and recorded May 13 1911 in Oneida County Clerk's office in Book of Deeds No. 658 at page 148, and

WHEREAS the said Amelia Lowery Doolittle of the first part, for the consideration herein after expressed has agreed to release all claims for damages, both past and future, to her said premises above described on account of the diversion of any of the waste or surplus water of the said West Canada Creek by the Water Company as hereinafter provided, when the flow of water in said creek is greater than three hundred and thirty three (333) cubic feet of water per second at the electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. and has also agreed to the diversion of water from above her aforesaid described premises by the Water Company from said West Canada Creek at all periods when the flow of water in said creek at said electric plant is less than three hundred and thirty three (333) cubic feet per second, provided the said Water Company restores to the said West Canada Creek from its reservoir or reservoirs above the point <sup>a quantity of water equal to the amount</sup> diverted when the flow of water at said electric plant in said stream is less than three hundred and thirty three (333) cubic feet per second.

NOW THEREFORE in consideration of the premises and the sum of fifty dollars (\$50.00) to the said Amelia Lowery Doolittle in hand paid by the Water Company, the receipt whereof is hereby acknowledged and confessed, and in consideration of the mutual covenants and agreements herein contained it is agreed by and between the parties hereto as follows:

ARTICLE I: The said Amelia Lowery Doolittle of the first part hereby gives, grants and conveys to the said Consolidated Water Company of Utica, N. Y. the perpetual right to take, divert and utilize water from said West Canada Creek, for its corporate purposes through its intake or intakes and conduit pipe or pipes, now constructed or hereafter to be constructed above the aforesaid lands and premises of the party of the first part, upon the express conditions and subject to the terms and restrictions hereinafter stated.

Article II: Whenever the flow of water in said West Canada Creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. is in excess of three hundred thirty three (333) cubic feet per second, the said Water Company may take and divert all times ~~such~~ such an amount of water from the excess of three hundred thirty three (333) cubic feet per second from said West Canada Creek, as it may need for its corporate purposes without restoring water to the said creek from the reservoirs of the Water Company and without any claim for damages by the party of the first part, her heirs, successors or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described from, through or under the said Amelia Lowery Doolittle all of which damages are hereby forever released.

ARTICLE THREE. Said water company shall at no time take and divert water from said West Canada Creek when the amount of water flowing in said creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. is less than three hundred thirty three (333) cubic feet per second, unless said Water Company shall replace in said West Canada Creek, from its reservoir or reservoirs constructed or to be constructed by it

696.

THIS AGREEMENT made in duplicate this 9th day of June 1915 between Amelia Lowery Doolittle wife of W. C. J. Doolittle residing at Cornelia Street Utica, N. Y. party of the first part and the Consolidated Water Company of Utica, N. Y. a corporation created and organized under the laws of the State of New York, hereinafter called the Water Company, party of the second part, WITNESSETH

WHEREAS, the Water Company is a corporation incorporated under the Transportation Corporations Law of the State of New York and is engaged in furnishing pure and wholesome water to the city of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof; and

Whereas, it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purposes; and

Whereas, the said Water Company has taken such additional supply of water from the West Canada Creek in the manner hereinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of Water pipes or conduits to the West Canada Creek at Minckley, Herkimer County, N. Y. through which said pipes line said Water Company has obtained its supply of water; and

Whereas, it is the plan and purpose of the said Water Company to do divert and take water from the said West Canada Creek, as not to unreasonably deprive any of the riparian owners on said West Canada Creek, of water so far as said Water Company is concerned, which purpose is to be accomplished by means of storage reservoirs, storing up water in storage reservoirs in periods of flood and high water, and letting water out from such such storage reservoirs in periods of low flow, when the water Company is diverting water, it being the intention, plan and purpose of said water company to replace and restore from said storage reservoirs to the said West Canada Creek, above the point of diversion whenever any water shall be diverted in periods of low flow, from its storage reservoir or reservoirs, a quantity of water equal in amount to that diverted from said creek at such periods of low water and

Whereas, the said Water Company in or about the year 1906 constructed and built a large reservoir on Black Creek, one of the tributaries of said West Canada Creek, at Bennetts Mills so called, in the towns of Ohio and Norway, Herkimer County, N. Y. to be filled with water at times of flood and freshet and from which, in periods of low water, said Water Company, when diverting or taking any water from said West Canada Creek, should restore a quantity of water equal in amount to that diverted, whenever the flow of water in said West Canada Creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. might be less than three hundred and thirty three (333) <sup>cubic</sup> feet per second, and

Whereas, said reservoir has been in operation since the completion of its said construction in the year 1906 and

Whereas, Amelia Lowery Doolittle of the first part is the owner of certain lands and premises lying and being on the west bank of the West Canada Creek in the town of Trenton, Oneida County, and State of New York, bounded and described as follows:

All that certain piece or parcel of land lying and being in the town of Trenton, County of Oneida and State of New York, and bounded and described as follows: to wit: Beginning at the south east corner of lot no. one hundred and twelve in Services Patent at a stake on the west bank of the West Canada Creek and running thence on the south line of said lot north 75 degrees 30 minutes west to the center of the road leading from the village of Trenton to



# Comstock Agreement

THIS AGREEMENT, Made in duplicate this 25 day of June 1909, between Will G. Comstock of Ellsworth, Nebraska, party of the first part, and the Consolidated Water Company of Utica, N.Y., a corporation created and organized under the laws of the State of New York, hereinafter called the "Water Company", of the second part,

## WITNESSETH:

WHEREAS, the Water Company is a corporation incorporated and engaged, under the transportation corporations law of the State of New York, in furnishing pure and wholesome water to the city of Utica and the inhabitants thereof, and to other places and towns and the inhabitants thereof; and WHEREAS, it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purposes, and WHEREAS, said Water Company has taken such additional supply of water from the watershed of the West Canada Creek in the manner hereinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits from its reservoir in the town of Deerfield, Oneida County, to the West Canada Creek at Kinckley, Herkimer County, N.Y., through which said pipe line said Water Company has obtained its supply of water; and

WHEREAS, it was the plan, purpose and intention of the said Water Company to so divert and take water from said West Canada Creek as not to cause injury or deprivation of water to any of the riparian owners on said West Canada Creek, so far as said Water Company is concerned, by means of storage reservoirs, storing up water in periods of floods and high water; it being the intention, plan and purpose of said Water Company to replace and restore from said storage reservoirs to the said West Canada Creek, whenever any water was diverted in periods of low water from its storage reservoir or reservoirs, a quantity of water equal in amount to that diverted in periods of low water from said creek; and

WHEREAS, the said Water Company in or about the year 1906 constructed and built a large reservoir on Black Creek, one of the tributaries of said West Canada Creek, at Bennett's Mills, so called, in the towns of Ohio and Norway, Herkimer County, N.Y., to be filled with water at times of flood and freshet, and from which in periods of low water, said Water Company, when diverting or taking any water from said West Canada Creek, should restore a quantity of water equal in amount to that diverted, whenever the flow of water in said West Canada Creek at the point of diversion was less than three hundred thirty-three (333) cubic feet second; and WHEREAS, said reservoir has been in operation since its said construction in the year 1906; and WHEREAS, the said Will G. Comstock of the first part is the owner of certain lands and premises in the Town of Trenton, Oneida County, N.Y., and the Town of Russia, Herkimer County, N.Y., which said lands and premises adjoin said West Canada Creek, and are described as follows, viz: All those two certain farms the said Will G. Comstock, the one known as the Ash farm in the Town of Trenton, County of Oneida and State of New York, and the other as the Russia Farm, situate in the Town of Russia, Herkimer County, and State of New York, both of said farms being the property formerly of Hon. William Comstock, now deceased, and were purchased at public sale from the estate of the said William Comstock, deceased. Both of said farms are situate upon and are bounded by the West Canada Creek, the said West Canada Creek flowing across, along and over said farms, the Ash farm being bounded on the north and east by said West Canada Creek and the Russia Farm being bounded upon the west by said West Canada Creek.

It is understood and agreed that said farms are subject to certain mortgages that have been upon said farms a number of years, and this conveyance is made subject to said mortgages.

WHEREAS, said Comstock of the first part has no objection to the diversion of any of the waste or surplus waters of said West Canada Creek by the Water Company, so long as there is no diversion, then the flow of said West Canada Creek is less than three hundred thirty-three (333) cubic feet per second at the Water Company's intake, and has no objection to the diversion of water at other periods, provided the said Water Company restores to the said West Canada Creek, from its reservoir or reservoirs above the point of its diversion, a quantity of water equal to the amount diverted, when the flow of water in said stream is less than three hundred thirty-three (333) cubic feet per second.

NOW THEREFORE, in consideration of the premises and of the sum of fifty Dollars (\$50.00) to the said Will G. Comstock in hand paid by the Water Company, the receipt whereof is hereby acknowledged and confessed, and in further consideration of the mutual covenants and agreements herein contained, it is agreed by and between the parties hereto, as follows:

ARTICLE I. The said Will G. Comstock hereby gives, grants, and conveys to the said Consolidated Water Company of Utica, N.Y. the right to take, divert and utilize water from said West Canada Creek for the purpose of supplying the city of Utica and other places with water for public and private uses through its intake of intakes, upon the express condition, and subject to the terms and restrictions hereinafter stated.

ARTICLE II. Whenever the flow in said West Canada Creek at the Water Company's intake at Hinckley, N.Y. is in excess of three hundred thirty-three (333) cubic feet per second, the said Water Company may take and divert such amount of water from the excess of three hundred thirty-three (333) cubic feet per second from said West Canada Creek as it needs for its corporate purposes without restoring water to said Creek from the reservoirs of the Water Company.

ARTICLE III. Said Water Company shall at no time take or divert water from said West Canada Creek, when the amount of water flowing in said creek at the Water Company's intake at Hinckley, N.Y. is less than three hundred thirty-three (333) cubic feet per second, unless said Water Company shall replace in said West Canada Creek from its reservoir or reservoirs constructed or to be constructed by it upon said West Canada Creek, or any of the tributaries thereof, above the point of diversion, an amount of water equal to that diverted by it, said reservoir or reservoirs to be filled with water in times of flood and freshet, and at times, when, at the Water Company's intake at Hinckley, N.Y. the natural flow of said stream, without diminution by any diversion, is in excess of said three hundred thirty-three (333) cubic feet per second. It is the intention of this agreement that said Water Company shall not attempt to fill its reservoirs at any time when the amount of water at the Water Company's intake, in said West Canada Creek, is less than said 333 cubic feet per second, nor shall there be any diversion from said West Canada Creek by the Water Company when the flow in said Creek at the Water Company's intake at Hinckley, N.Y. is less than said three hundred thirty three (333) cubic feet per second, except upon restoration by said Water Company to said Creek, from its reservoir or reservoirs, of an amount of water equal to that diverted.

ARTICLE IV. The said Will G. Comstock shall have at all times the right of access to the intake chambers and valves of the Water Company, upon reasonable and timely notice transmitted by him by telephone or otherwise to the Water Company at its office in Utica, N.Y., so as to fully enable the said Comstock at any

time to determine the amount of water diverted; and said Comstock shall also have right of access, upon said reasonable and timely notice, to the Company's discharge pipes, weirs and works at its storage reservoir, so as to determine the amount of water restored, and also said Comstock shall, upon such reasonable and timely request have access to the Water Company's books, records and papers with reference to the amount of water diverted by it, and with reference to the amount of restored water.

ARTICLE V. It is understood and agreed that the execution of this agreement on the part of the said Comstock of the first part shall under no circumstances be construed to be the waiver of any claim for damages that the party of the first part may have against the party of the second part by reason of floods caused by the breaking of any dams or reservoirs of the Water Company.

ARTICLE VI. It is also understood and agreed that the water rights hereby conveyed to the Water Company shall not be sold by the Water Company to the State of New York for canal purposes, but that the water diverted hereunder by the Water Company shall be used for the corporate purposes of the party of the second part, for domestic and municipal purposes.

ARTICLE VII. The covenants herein shall be binding upon each of the parties hereto, their successors and assigns. The said Comstock shall have the right at any time, upon failure by the Water Company, its successors or assigns, to comply with the terms of this agreement, to bring an action in equity to compel the specific performance of the terms of this agreement, and for the recovery of any and all damages that may be awarded by reason of the failure of the Water Company to fulfill the terms hereof.

IN WITNESS WHEREOF, the party of the first part has hereunto set his hand and seal, and the party of the second part has caused these presents to be signed by its President and its corporate seal to be hereunto affixed this --- day of 1909

Will G. Comstock (L.S.)

Consolidated Water Company of Utica, N.Y.

(Seal)

By Richard U. Sherman President

State of Colorado :  
City & County of Denver :ss

On this 25th day of June, 1909, before me, the subscriber, personally came Will G. Comstock to me known and known to me to be the same person described in and who executed the foregoing instrument, and he duly acknowledged to me that he executed the same.

Charlotte Custer  
Notary Public

(Seal)

My Commission expires Jan. 23, 1913.

State of New York :  
County of Oneida :ss

On this 26 day of May, 1909, before me personally came Richard U. Sherman to me known, who being by me duly sworn did depose and say that he resides in Utica, N.Y.; that he is an officer of the Consolidated Water Company of Utica, N.Y., the corporation described in and which executed the foregoing instrument, to-wit, its president. That he knows the corporate seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of directors of said corporation, and that he signed his name thereto by like authority.

A. B. Tracy  
Notary Public,  
Oneida Co.  
Certificate filed in Herkimer Co.

Office of CLERK and RECORDER

City and County of Oneida

sealer  
affix  
to  
the  
seal  
(X)

19213  
10/25/06

For and in consideration of the sum of \$15.00 to me in hand paid I hereby give and grant to the Consolidated Water Company of Utica, N.Y., the right and privilege to take and divert at all times water from the west canada creek, or tributary streams upon the express condition however that any taking or storing of water therefrom by said Consolidated Water Company from said west canada Creek shall not diminish the flow of water in said Creek so as to interfere with the use of said creek upon my lands for any or all farming and domestic purposes.

Fernando D. Wood

State of New York, )  
:ss:  
County of Herkimer, )

On or before this First day of September 1905 before me the subscriber personally appeared Fernando D. Wood to me known and known to me to be the same person described in and who executed the foregoing instrument and he duly acknowledged to me that he executed the same.

Milo Moore

Justice of the Peace.

Recorded November 5, 1906 at 4:50 P. M.

xd

10/25/06  
3 PAGE  
10/25/06  
10/25/06  
10/25/06

For and in consideration of the sum of \$15.00 to me in hand paid I hereby give and grant to the Consolidated Water Company of Utica, N.Y., the right and privilege to take and divert at all times water from the west canada creek, or tributary streams upon the express condition however, that any taking or storing of water therefrom by said Consolidated Water Company from said West canada Creek shall not diminish the flow of water in said Creek so as to interfere with the use of said creek upon my lands for any or all farming and domestic purposes.

Villeroy B. Moon (L.S.)

State of New York, )  
:ss:  
County of Herkimer, )

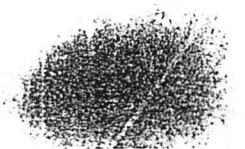
On or before this first day of September 1905 before me the subscriber personally appeared Villeroy B. Moon to me known and known to me to be the same person described in and who executed the foregoing instrument and he duly acknowledged to me that he executed the same.

Milo Moore

Justice of the Peace.

Recorded November 5, 1906 at 4:50 P. M.

Irvin T. Barnes  
Clark



Comstock (Millards) Adams

Form 341X N. Y. DEED-WARRANTY with Lien Certificate

PUBLISHED BY THE N. Y. DEED OFFICE  
100 NASSAU ST. NEW YORK, N. Y.

# This Indenture

12499

Made the 15<sup>th</sup> day of July,  
Nineteen Hundred and Eighty-Four

Between D. NELSON ADAMS, 1 Chase Manhattan Plaza, New York, New York,

part Y of the first part, and

PETER deP. MILLARD, 150 E. 73rd Street, New York, New York,

Witnesseth that the party of the first part, in consideration of

the sum of One Dollar (\$1.00) lawful money of the United States, and other good and valuable consideration paid by the party of the second part, do hereby grant and release unto the party of the second part, his heirs and assigns forever,

ALL THAT TRACT OR PARCEL OF LAND situate in the Town of Trenton, Oneida Co. N.Y. beginning at the northwest corner of land owned by Frank A. Wilber (now deceased); running thence along the north line of said Wilber's land in an easterly direction to land owned by M.A. Blue (1910); thence along said Blue's land in a northerly direction to West Canada Creek, thence along the bank of said Creek at low water mark northerly past the Comstock Bridge (so-called) as said creek winds and turns northerly then westerly then southerly until the line comes to land now owned by A. Barhyte (1910) near the highway, thence westerly to the center of the highway, thence along said center of highway to the place of beginning, containing 155 acres be the same more or less. Reference being made to deed from Frank A. Wilber and Harriet C., his wife to Wm. H. Comstock, recorded in Oneida Co. Clerk's Office on the 22nd day of June 1885 in Liber 441 of deeds at page 355, also to the deed from Samuel Thomas and Sally, his wife, to Paris W. Comstock recorded in Oneida Co. Clerk's Office Oct. 4, 1834 in Book No. 65 of deeds, page 454; also to deed from Phebe Ames and others to Paris W. Comstock recorded in Oneida Co. Clerk's Office Oct. 29, 1852 in Book of Deeds No. 169 page 430, which said last two described pieces and a parcel of land were conveyed to Roxina Comstock after the death of said Paris W. Comstock by all his children Gardner P. Comstock and William H. Comstock and by the Last Will of Roxina Skinner (formerly Comstock) conveyed to William H. Comstock, reference being had to said last Will recorded in Oneida Co. Clerk's Office March 4, 1884, in Book 429 of Deeds, page 392.

EXCEPTING THEREFROM, HOWEVER, whatever reparation rights may have heretofore been conveyed by Mary R. Comstock, individually and as executrix of the last Will and Testament of William H. Comstock, deceased, and Will G. Comstock and Roxina Comstock, his wife, and Earl Comstock and Soph V., his wife, on or before April 11, 1910.

The above described premises being the same premises described in certain Warranty Deed dated May 24, 1926 wherein Grace E. Brown of Syracuse, N.Y., widow of Cary L. Brown, dec'd, Gideon E. Brown of Syracuse, N.Y., son and only heir at law of Cary L. Brown, dec'd., Mary C. Brown, wife of Gideon E. Brown, Fred H. Brown and Grace M. Brown North, former wife of Fred H. Brown severally of Syracuse, N.Y. were grantors and Patrick H. Powers and Agnes C. Powers of Barnavald, N.Y. were grantees, and which said deed was duly recorded in the Office of the Clerk of the County of Oneida on the 11th day of June, 1926 in Book of Deeds No. 860 at page 56.

EXCEPTING AND RESERVING lands lying within the right-of-way of New York State Route No. 28.

2181 IN 121

EXCEPTING from the property hereinabove conveyed all of that piece of parcel thereof more fully described in certain Warranty Deed dated December 19, 1928 wherein Patrick H. Powers and Agnes C., his wife, of Trenton, N.Y. were grantors and the County of Oneida, State of New York was grantee, and which said deed was duly recorded in the Office of the Clerk of the County of Oneida on the 29th day of January, 1930 in Book of Deeds 903 at page 169, to which said deed reference is hereby made for a more full and complete description of the premises therein conveyed.

ALSO EXCEPTING from the premises herein conveyed all that piece or parcel of the lands hereinabove conveyed more fully described in certain Warranty Deed dated June 10, 1933, wherein Agnes C. Powers of Trenton, N.Y. was grantor and the County of Oneida, State of New York was grantee, and which said deed was duly recorded in the Office of the Clerk of the County of Oneida on the 14th day of July, 1933 in Book of Deeds No. 938 at page 166 and to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by D. Nelson Adams to Douglas A. Bitteker and wife by deed dated June 26, 1967, recorded in the Oneida County Clerk's Office on June 28, 1967, in Book of Deeds 1859 at page 583, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that tract or parcel of land conveyed by D. Nelson Adams to Mitchell R. Thomas by deed dated August 31, 1970, recorded in the Oneida County Clerk's Office on September 2, 1970, in Book of Deeds 1918 at page 600, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed. And subject to the rights, if any, of successors in title of said Mitchell Thomas to take water from a certain spring situate in the southerly portion of the premises herein conveyed and to use and maintain a spring box and water pipe line to carry water to the lands conveyed to Mitchell Thomas as aforesaid.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by Daniel N. Adams, Jr. to Gordon E. Muth and Lois P. Muth by deed dated August 8, 1975, and recorded in the Oneida County Clerk's Office on August 12, 1975, in Book of Deeds 2012 at page 712, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by Daniel N. Adams, Jr. to D. Nelson Adams by deed dated August 21, 1976, and recorded in the Oneida County Clerk's Office on August 23, 1976, in Book of Deeds 2030 at page 573 to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by Daniel N. Adams, Jr. to the Town of Trenton, Oneida County, New York, by deed dated August 7, 1975, and recorded September 14, 1976, in Book of Deeds 2031 at page 629, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by Daniel N. Adams, Jr. to William W. House, III and Mary K. House by deed dated November 16, 1977, and recorded in the Oneida County Clerk's Office on November 18, 1977, in Book of Deeds 2056 at page 467, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land appropriated by the People of the State of New York, by Notice of Appropriation, Poland-Trenton S.H. 5559, Oneida County-Town of Trenton, Map No. 71, Parcel Nos. 96, 97, recorded in the Oneida County Clerk's Office March 25, 1980, in Book of Deeds 2095 at page 741 to which Notice of Appropriation reference is hereby made for a more full and complete description of the property therein conveyed.



ALSO EXCEPTING AND RESERVING from the premises herein conveyed all that piece or parcel of land conveyed by Daniel N. Adams, Jr. to Robert Zech and Barbara Zech by deed dated October 28, 1982, and recorded in the Oneida County Clerk's Office on November 15, 1982, in Book of Deeds 2134 at page 333, to which said deed reference is hereby made for a more full and complete description of the property therein conveyed.

ALSO EXCEPTING AND RESERVING from the premises herein conveyed the following described piece or parcel of land: ALL that tract, piece or parcel of land situate in the Town of Trenton, County of Oneida, State of New York and more particularly described as a portion of Great Lot No. 121 of the Servis Patent, shown as Lot No. 5 and Lot No. 6 on a Map entitled "Brook Trout Bend, Town of Trenton, N.Y. Subdivision Plat, Phase 1", dated June 1975, and originally filed in the Oneida County Clerk's Office on Aug. 12, 1975, in Map Roll 884 and refiled in the Oneida County Clerk's Office on May 7, 1976, in Map Roll 884.

SUBJECT TO AND TOGETHER WITH the rights, if any, under the terms of agreement between Will G. Comstock and the Consolidated Water Co. of Utica, N.Y. dated June 25, 1909 and recorded in the Oneida County Clerk's Office July 23, 1909, in Book of Deeds 653 at page 21.

THE PREMISES HEREIN CONVEYED are part of the premises conveyed to the party of the first part by Francis Powers by deed dated February 7, 1962, and recorded in the Oneida County Clerk's Office February 16, 1962, in Book of Deeds 1713 at page 117 and consists of two parcels, one lying on the northerly side of New York State Route No. 28 and the other lying on the southerly side of New York State Route No. 28. The parcel lying on the northerly side of New York State Route No. 28 is bounded on the south by New York State Route No. 28, on the east and north by the West Canada Creek, and on the west by the West Canada Creek and the easterly line of Lots 4, 5, and 6 and subdivision road of Brook Trout Bend Subdivision, as shown on a map entitled "Brook Trout Bend, Town of Trenton, N.Y., Subdivision Plat I" dated June 1975 (Map Roll 884). The parcel lying on the southerly side of New York State Route No. 28 is bounded and described as follows: Beginning at a N.Y.S. concrete monument at a point in the southerly line of New York State Route No. 28 at the intersection of the westerly line of Blue Road, running thence S 25° 51' 26" E along the westerly line of Blue Road a distance of 656.40 feet to a point, thence S 25° 14' 19" E continuing along the westerly line of Blue Road a distance of 246.66 feet to a point; thence S 22° 22' 11" E continuing along the westerly line of Blue Road a distance of 78.43 feet, thence S 26° 32' 10" E continuing along the westerly line of Blue Road a distance of 198.33 feet to an iron pipe set; thence S 30° 18' 03" W a distance of 358.21 feet to an iron pipe set; thence N 80° 34' 38" W a distance of 1359.89 feet to an iron re-bar set; thence N 10° 12' 08" W a distance of 815.77 feet to an iron pipe set on the southerly line of New York State Route No. 28; thence the following courses and distances along the southerly side of New York State Route 28 (a) N 72° 01' 29" E a distance of 310.14 feet (b) N 71° 51' 47" E a distance of 327.92 feet (c) N 72° 13' 26" E a distance of 334.64 feet to a New York State concrete monument (d) N 89° 08' 35" E a distance of 105.17 feet to a New York State concrete monument, and (e) N 70° 00' 00" E a distance of 134.52 feet to the place of beginning, containing 35.828 acres more or less.

Together with the appurtenances and all the estate and rights of the party of the first part in and to said premises.

To have and to hold the premises herein granted unto the party of the second part, his heirs and assigns forever.

100-2181 PAGE 124

And said party of the first part

First, That the party of the second part shall quietly enjoy the said premises; covenant as follows;

Second, That said party of the first part

will forever Warrant the title to said premises.

Third, That, in Compliance with Sec. 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

In Witness Whereof, the party of the first part has hereunto set his hand and seal the day and year first above written.

In Presence of

D. Nelson Adams  
D. Nelson Adams

State of New York } ss.  
County of Oneida }  
before me, the subscriber, personally appeared  
D. Nelson Adams,

On this 15<sup>th</sup> day of July,  
Nineteen Hundred and Eighty-Four

to me personally known and known to me to be the same person described in and who executed the within Instrument, and he acknowledged to me that he executed the same.

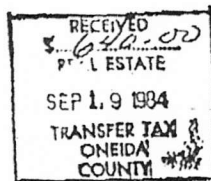
Don F. Burnham  
Notary Public

RECORDED  
LIBER OF PAGE

SEP 19 PM 1:30

Sandra Arnes  
ONEIDA COUNTY CLERK

DON F. BURNHAM  
Notary Public in the State of New York  
Resident in Oneida County  
My Commission Expires March 30, 1985



130.42  
028  
146



**This Indenture,**

016255

Made the 5th  
 September, Nineteen Hundred and Eighty-Nine  
 Between

day of

BLANDINA IJAMS, residing at Route 28, Town of Trenton,  
 Barneveld, New York,

part y of the first part, and

KATRINA L. HANNA, residing at 10324 Millsa Road  
 Utica, New York

Witnesseth that the part y of the first part, in consideration of  
 ONE Dollar (\$ 1.00-----)

lawful money of the United States, and other good and valuable consideration  
 paid by the part y of the second part, does hereby grant and release unto the  
 part y of the second part, her heirs and assigns forever, all

ALL THAT PIECE OR PARCEL OF LAND situate in the Town of Trenton, County  
 of Oneida and State of New York, and more particularly described as a portion  
 of Lot 122 of the Serviss' Patent, bounded and described as follows:

Beginning at an iron rod in the northeasterly boundary of an existing  
 State Highway #5559 (Poland - Trenton) or Touring Route #28, at its  
 intersection with the division line between the property now or formerly of  
 George J. Villiere on the south, and the property herein described on the  
 north; thence S 89° 34' E along the first mentioned division line 442.25 feet  
 to an iron rod on the division line between the property now or formerly of  
 George J. Villiere on the southwest and the property herein described on the  
 northeast; thence S 20° 24' E along the last mentioned division line 209.71  
 feet to an iron rod on the division line between the property now or formerly  
 of Edward Blask and Freida Blask on the southeast and the property herein  
 described on the northwest; thence S 89° 34' E along the last mentioned  
 division line 21.46 feet to an iron rod on the division line between the  
 property now or formerly of Edward Blask and Freida Blask on the southwest and  
 the property herein described on the northeast; thence S 20° 24' E along the  
 last mentioned division line 200.00 feet to an iron rod on the division line  
 between the property now or formerly of E. Kenneth Beckwith and Wendy McCord  
 Beckwith on the southeast and the property herein described on the northwest;  
 thence S 89° 34' E along the last mentioned division line 142 feet to a gun  
 barrel on the top of bank of the West Canada Creek; thence northerly along the  
 top of bank of West Canada Creek 860± feet to an iron pipe on the division  
 line between the property now or formerly of William Evans and Jane B. Evans  
 on the north and the property herein described on the south; thence N 80° 24'  
 W along the last mentioned division line 1630 feet to an iron pipe on the  
 northeasterly boundary of said highway; thence S 28° 12' E along the last  
 mentioned boundary 368 feet to a point; thence S 13° 19' E along said boundary  
 388 feet to the point of beginning, containing 22.68 acres more or less.

All bearings are referred to Magnetic North as the needle pointed in 1968  
 A.D.

This conveyance is made and accepted subject to (a) rights reserved for  
 telephone lines and water pipelines in deed from Geo. A. Burhyte and Anna M.  
 Burhyte to Walter S. Boynton and wife dated April 22, 1908, and recorded in  
 the Oneida County Clerk's Office on April 30, 1908, in Book of Deeds 640 at  
 page 163; (b) terms and conditions and rights contained in Agreement by and  
 between Emily Gail Beardsley and Consolidated Water Company of Utica dated  
 June 9, 1915, and recorded in the Oneida County Clerk's Office on December 19,  
 1922, in Book of Deeds 815 at page 61; and (c) rights reserved relative to  
 location and maintenance of electric wires for carrying current to other  
 premises in deed from Frederick S. Kellogg and wife to Esther C. Gibson dated  
 July 10, 1946 and recorded in the Oneida County Clerk's Office on July 12,  
 1946 in Book of Deeds 1125 at page 317.

Subject to easements, rights of way, covenants and restrictions of  
 record.

BEING the same premises conveyed to the party of the first part by  
 Henrietta S. Mitchell dated the July 18, 1974, and recorded on July 22, 1974,  
 in the Oneida County Clerk's Office in Book of Deeds 1993 at page 982.

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Together with the appurtenances and all the estate and rights of the part y of the first part in and to said premises,  
To have and to hold the premises herein granted unto the part y of the second part, her heirs and assigns forever.

LIBER 2484 PAGE 24

And said part y of the first part

covenants as follows:

First, That the part y of the second part shall quietly enjoy the said premises;

Second, That said part y of the first part

will forever warrant the title to said premises.

Third, That, in Compliance with Sec. 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

In Witness Whereof, the part y of the first part has hereunto set her hand and seal the day and year first above written.

In Presence of

Blandina Ijams  
Blandina Ijams



State of New York } On this 5th day of September,  
County of Oneida } ss. Nineteen Hundred and Eighty-Nine,  
before me, the subscriber, personally appeared  
Blandina Ijams,

to me personally known and known to me to be the same person described in and who  
executed the within instrument and she duly acknowledged to me that she  
executed the same.

Don P. Munroe  
Notary Public

DON P. MUNROE  
Notary Public in the State of New York  
Appointed in Civil Case No. 2519790  
My Commission Expires 4/30/91

016265

**WARRANT**  
WARRANT WITH LIEN COVENANT

BLANDINA IJAMS

TO

KATRINA L. HANNA

Dated, September 5, 19 89

RECORD AND RETURN TO:

Don P. Munroe, Esq.  
Rossi, Kehoe, Hurnane & Hughes  
Attorneys at Law  
P.O. Box 209  
Watson, New York 13563

KATRINA L. HANNA  
10324 Mill & Reno  
UNION, New York 13702

Sheet No 1

"A"

-----	) Warranty Deed
Geo.A.Burhyte and Anna M Burhyte,his	) Dated April 22,1908
wife,Trenton,N.Y	) Ack'd April 30,1908
to	) Cons.\$1950 00
Walter S.Boynton and Harriet A.Boynton,	) Rec April 30, 1908
his wife, Carthage,N.Y.	) Bk.Deeds 640
-----	) Pg.163

Conveys,

All that tract or parcel of land situate in the Town of Trenton, County of Oneida and State of N.Y., being part of lots Nos.120 and 122 in Servis Patent and which according to former conveyances is bounded as follows.

Beginning at a basswoodtree on the west bank of the West Canada creek and running thence N 87 3/4° W 25 chains and 41 links to the center of the road leading from John C Frank's to Russia, thence along said road S 27 1/2° E 20 chains and 73 links, thence along said road S 1 1/2° E 10 chains and 50 links, thence N 84° E 3 chains and 57 links (along the center of said road) thence S 10° E 3 chains and 50 links to the south line of lot No 122 in said patent, thence on said south line S 72 1/2° E 19 chains and 14 links to the center of the road, leading from Francis Milbur's to Russia, thence along said road N 34 3/4° E 3 chains and 50 links, thence N 17 1/2° E 6 chains and 30 links on a line of stone wall on the west side of the road, thence along the same S 72° E 2 chains to the center of the above named road, thence N 29° E 6 chains and 73 links along the center of said road to a post in the fence 43 links N 78° W from the east bank of the West Canada Creek, thence along said creek as it winds and turns to the place of beginning, containing 70 acres of land, more or less.

Also a right to take water from the spring on the lands of said parties of the first part which now supplies the premises hereby conveyed and also the residence of said Burhyte either by the present jointly used pipe or by a separate pipe, with free access to the same for necessary construction and maintenance but no pipes shall be placed or maintained which shall be placed at such level at said spring as to take more than 1/2 of the water flowing therefrom, to which he is entitled.

Sheet No.2

Excepting and reserving from the operation of this conveyance that portion of the above described premises conveyed by Ira B. Link and wife to William Furery by deed dated Dec 30, 1878 and rec in Oneida County Clerk's office Dec 31, 1878 in book 383 of deeds, pg. 269 and which contains 15 and  $\frac{1}{4}$  acres of land more or less.

Also excepting and reserving at all times, the right to keep and maintain the present telephone line across the premises hereby conveyed with free access for necessary reconstruction or repairs.

It is further stipulated as a condition of this grant, that the said parties of the second part shall not cut or permit to be cut or taken away from the premises hereby conveyed, any standing timber in excess of the amount necessary for fuel for one house or family thereon, until the purchase money mortgage this day executed by said grantees to the party of the first part is fully paid and satisfied

Also excepting and reserving to the said parties of the first part, the right to convey water from the spring above mentioned across the premises hereby conveyed to their residence either by the pipe which now supplies their said residence. And also the premises hereby conveyed or at their option by a separate pipe over substantially the same route occupied by the existing pipe with free access at all times for necessary construction and maintenance purposes.

"B"

----->	Agreement
Emily Gale Beardsley, wife of Samuel A	) Dated June 9, 1915
Beardsley, Jr., Utica, N.Y	) Ack'd June 9, 1915 &c
with	) Cons. \$50.00 &c
Consolidated Water Company of Utica,	) Rec Dec. 19, 1922
----->	) Bk. Deeds 815, pg 61

WITNESSETH

WHEREAS, the Water Company is a corporation incorporated under the Transportation Corporation Law of the State of N.Y. and engaged in furnishing pure and wholesome water to the City of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof and;

Sheet No 21

WHEREAS it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purpose

WHEREAS, the said Water Company has taken such additional supply of water from the West Canada Creek in the manner hereinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits to the West Canada Creek at Hinckley, Herkimer County, N.Y. through which said pipe line said Water Company has obtained its supply of water, and,

WHEREAS, it is the plan and purpose of the said Water Company to so divert and take water from the said West Canada Creek as not to unreasonably deprive any of the riparian owners of said West Canada Creek of water so far as said water Company is concerned, which purpose is to be accomplished, by means of storage reservoirs, storing up water in storage reservoirs in periods of flood and high water, and letting water out from such storage reservoirs in periods of low flow, when the Water Company is diverting water, it being the intention, plan and purpose of said Water Company to replace and restore from said storage reservoirs to the said West Canada Creek, above the point of diversion whenever any water shall be diverted in periods of low flow from its storage reservoir or reservoirs a quantity of water in equal in amount to that diverted from said creek at such periods of low water, and

WHEREAS, the said Water Company in or about the year 1906 constructed and built a large Reservoir on Black Creek, one of the tributaries of said West Canada Creek, at Bennetts Mills, so called, in the towns of Ohio and Norway, Herkimer County, N.Y. to be filled with water at times of flood and freshet, and from which, in periods of low water, said water company, when diverting or taking any water from said West Canada Creek, should restore a quantity of water equal in amount to that diverted, whenever the flow of water in said West Canada Creek might be less than 333 cubic feet per second at the present electric plant of the Utica

Sheet No.3

Gas and Electric Company at Trenton Falls, N Y ,and,

WHEREAS, said reservoir has been in operation since the completion of its said construction in the year 1906 and,

WHEREAS, Emily Gale Beardsley of the first part is the owner of certain lands and premises situate lying and being on the west bank of the West Canada Creek in the town of Trenton, Oneida County, and state of N.Y., bounded and described as follows.

All that part of lots Nos. 120 and 122 in Services Patent and bounded as follows. The same premises described in No. "A" above, except herein the sixth course reads, "thence on said south line south  $73\frac{1}{2}^{\circ}$ " etc.

Excepting and reserving therefrom all that certain piece or parcel of land situate, lying and being in the town and County aforesaid, known and distinguished as being a part of lot No 122 in Services Patent and bounded as follows. Beginning at a point in the center of the road leading from Henry Miller's house to Russia at the northeasterly corner of the lands of William Tormy and running thence south  $7\frac{1}{2}^{\circ}$  east along the lands of said Rormy to the south line of said lot No. 122, 3 chs. and 40 links, thence S  $71^{\circ}$  E 19 chs. and 20 links along said line to the center of the road, leading from the house of Francis A. Wilbur, thence along said road north  $39\frac{1}{2}^{\circ}$  east 3 chs. and 50 links, thence north  $19^{\circ}$  east 6 chs and 30 links on a line of stone wall on the west side of the road thence south  $70\frac{1}{2}^{\circ}$  east 1 ch and 86 links to the center of the road, thence north  $30^{\circ}$  east 4 chs. and 50 links, thence south  $66\frac{1}{2}^{\circ}$  west 5 chs. and 50 links, thence south  $86^{\circ}$  23st 5 chs. and 50 links; thence north  $89^{\circ}$  west 1 chain and 50 links, thence north  $80\frac{1}{2}^{\circ}$  west 3 chs. and thence south  $88\frac{3}{4}^{\circ}$  west 11 chs. and 54 links to the place of beginning, containing  $15\frac{1}{4}$  acres of land, more or less, surveyed Sept 1878 by Henry Broadwell" and being the same lands that were conveyed to the said Emily Gale Beardsley of the first part from Samuel A. Beardsley, Jr. by warranty deed dated June 24, 1914, and rec. June 25, 1914 in Oneida County Clerk's office in

Sheet No.4.

Bk Deeds 708,pg.276, and

WHEREAS the said Emily Gale Beardsley of the first part, for the consideration hereinafter expressed, has agreed to release all claims for damages, both past and future to her said premises above described on account of the diversion of any of the waste or surplus water of the said West Canada Creek by the Water Company, as hereinafter provided, when the flow of water in said creek is greater than 333 cubic ft. of water per second at the aforesaid present electric plant of the Utica Gas and Electric Company at Trenton, N.Y. and has also agreed to the diversion of water from above her aforesaid premises by the Water Company from said West Canada Creek at all periods when the flow of water in said creek at the said electric plant is less than 333 cubic ft. per second, provided the said Water Company restores to the said West Canada Creek from its reservoir or reservoirs above the point of its diversion a quantity of water equal to the amount diverted when the flow of water in said stream at said Electric plant is less than 333 cubic ft. per second as herein provided

Agree

Article One                      The said Emily Gale Beardsley of the first part hereby gives, grants and conveys to the said Consolidated Water Company of Utica, N.Y. the perpetual right to take, divert and utilize water from said West Canada Creek, for its corporate purposes through its intake or intakes and conduit or pipe or pipes, now constructed or hereafter to be constructed above aforesaid lands and premises of the party of the first part, upon the express conditions and subject to the terms and restrictions hereinafter stated

Article Two                      Whenever the flow of water in said West Canada creek at the present electric plant of the Utica Gas & Electric Company at Trenton Falls, N.Y. is in excess of 333 cubic ft. per second, the said Water Company may take and divert at all times such an amount of water from the excess of 333 cubic ft. per



Sheet No.5.

second from said West Canada Creek as it may need for its corporate purposes without restoring water to the said creek from the reservoirs of the Water Company, and without any claim for damages by the party of the first part, her heirs, successors or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described from, through or under the said Emily Gale Beardsley all damages for which are hereby forever released

Article Three Said Water Company shall at no time take and divert water from said West Canada Creek when the amount of water flowing in said creek at the present electric plant of the Utica Gas & Electric Company at Trenton, N.Y. is less than 333 cubic ft. per second, unless said Water Company shall replace in said West Canada Creek from its reservoir or reservoirs constructed or to be constructed by it upon the said West Canada Creek, or any of the tributaries thereof, above the point of diversion an amount of water equal to that diverted by it, the Water Company's reservoir or reservoirs are to be filled with water in times of flood and freshet and at times when the natural flow of water in said West Canada Creek at the said present electric plant of the Utica Gas & Electric Company at Trenton, N.Y. without diminution by diversion by the Water Company, is in excess of 333 cubic ft per second, it is the intention of this agreement that said water company shall not attempt to fill its reservoir or reservoirs at any time when the amount of water in said West Canada Creek at the said Electric plant is less than 333 cubic ft. per second, nor shall <sup>be</sup> any diversion from said West Canada Creek by the Water Company when the flow in said creek at the present electric plant of the Utica Gas and Electric Company is less than 333 cubic ft per second, except <sup>said</sup> upon restoration by <sup>said</sup> water Company to said Creek from its aforesaid reservoir or reservoirs of an amount of water equal to that diverted. The Water Company shall have at all times the perpetual right to take and divert water from said West Canada Creek, without any claim for damages by the party of the first part, her heirs, successors.



Sheet No.6.

or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described, from, through or under the said Emily Gale Beardsley, whenever the flow of water is said creek at said electric plant is less than 333 cubic ft per second, provided that the Water Company its successors or assigns shall at such times restore to said West Canada Creek above the point of intake, from its aforesaid storage reservoirs an amount of water equal to the diverted.

Article Four                      The said Emily Gale Beardsley shall have at all times the right of access to the intake chambers and valves of the Water Company upon reasonable and timely notice transmitted by her by telephone or otherwise to the Water Company at its office in Utica, N.Y. so as to fully enable the said Emily Gale Beardsley at any time to determine the amount of water diverted and said Emily Gale Beardsley shall upon reasonable and timely notice to the Water Company also have the right of access to the Water Company's discharge pipes, weirs and locks at any of its storage reservoirs so as to determine the amount of water restored.

Article Five                      No action on the part of the State of N Y in diverting water from said West Canada Creek for canal purposes, or impounding water in any dam or reservoir owned by or controlled by the State shall be deemed a violation of this contract, or any part thereof.

Article Six.                      The party of the first part, said Emily Gale Beardsley also covenants and agrees to forever Warrant and Defend the water Company party of the second part, in the quiet and peaceable possession of the rights and privileges and easements hereby conveyed.

Article Seventh.                      This agreement binds the parties hereto their heirs, successors and assigns, and the covenants and agreements herein contained run with the land above described and binds the same whether owned by the said Emily Gale Beardsley or her heirs, executors or assigns, and likewise the covenants and agreements herein contained to be performed by the Water Company,

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bind the said Water Company in favor of the said Emily Gale  
Beardsley her heirs, successors or assigns at any time owning the  
above described land.

## (5a)

This agreement, made in duplicate this nineteenth day of March, 1909, between The Consolidated Water Company of Utica, N. Y., a corporation created and organized under the laws of the State of New York, hereinafter called the "Water Company," and The Newport Electric Light and Power Company, of Newport, Herkimer county, N. Y., a corporation also created and organized under the laws of the State of New York, hereinafter called the "Power Company,"

WITNESSETH: Whereas, the Water Company is a corporation incorporated and engaged, under the transportation laws of the State of New York in furnishing pure and wholesome water to the city of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof; and

Whereas, it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purposes; and

Whereas, said Water Company has taken such additional supply of water from the watershed of the West Canada creek in the manner herinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits from its reservoir in the town of Deerfield, Oneida county, N. Y., to the West Canada creek at Hinckley, Herkimer county, N. Y., through which pipe line said Water Company has obtained its supply of water; and

Whereas, it was the plan, purpose and intention of said Water Company to so divert and take water from said West Canada creek as not to cause injury or diminution to any of the water power on the said West Canada creek, so far as said Water Company is concerned, it being the intention, plan and purpose of the said Water Company, to replace and restore to the said

West Canada creek whenever any water was diverted in periods of low water, from its storage reservoir or reservoirs, a quantity of water equal in amount to that so diverted in periods of low water from said creek; and

Whereas, the said Water Company in or about the year 1906 constructed and built a large reservoir on Black creek, one of the tributaries of said West Canada creek, at Bennett's Mill, so called, in the towns of Ohio and Norway, Herkimer county, N. Y., to be filled with water at times of flood and freshet, and from which in periods of low water said Water Company, when diverting or taking any water from said West Canada creek, should restore a quantity of water equal in amount to that diverted, so as to cause no injury or diminution to the water powers on said creek, so far as it, the Water Company, was concerned; and

Whereas, said reservoir has been in operation since its said construction, a portion of which time, the year, 1908, has been a period of unusual drought; and

Whereas, the Power Company has a water power at the village of Newport, Herkimer county, N. Y., upon said West Canada creek, purchased from Frank P. Fitch and Fred M. Howe under deed dated February 1, 1902; and recorded in Herkimer County Clerk's Office on the 7th day of February, 1902; in Book of Deeds, No. 176, at page 442, to which reference is hereby made for a more particular description; and

Whereas, the Power Company has no objection to the diversion of any of the waste or surplus waters of said stream by the Water Company, so long as such diversion causes no injury or diminution to the water power of the Power Company; and

Whereas, some question has arisen between the parties hereto, whether the said Water Company has

restored to said stream from its reservoir, when diverting in periods of drought and low water, as much water as it has diverted; and

Whereas, it is desirable that said Power Company should have at all time accurate, full and complete information as regards the quantity of water diverted by said Water Company,

Now therefore, in consideration of the promises and of the sum of one thousand dollars (\$1,000), to the Power Company in hand paid by the Water Company, the receipt whereof is hereby acknowledged and confessed, and in further consideration of the mutual covenants and agreements herein contained, it is agreed by and between the parties hereto as follows:

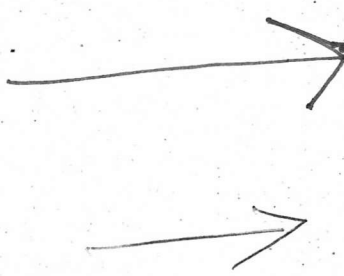
Article I. The Power Company hereby gives, grants and conveys to the Water Company the right to take, divert and utilize water from the said West Canada creek for the purpose of supplying the city of Utica and other places with water for public and private uses, through its intake or intakes, upon the express conditions, and subject to the terms and restrictions hereinafter stated.

Article II. Whenever the flow of water in said West Canada creek, at the Water Company's intake at Hinckley, N. Y., is in excess of three hundred thirty-three (333) cubic feet per second, the said Water Company may take and divert such amount of water from the excess of said three hundred thirty-three (333) cubic feet per second from said West Canada creek, as it needs for its corporate purposes, without restoring water to said creek from the reservoirs of the Water Company.

Article III. The measurement of the natural flow of the said West Canada creek at the Water Company's intake shall be determined by means of suitable gages

and gaging stations which shall be established and maintained, wholly or in part, by said Water Company on West Canada creek, or on said creek and Black creek tributary thereto, at the nearest suitable and practicable point or points above said Water Company's intake at Hinckley, the stations referred to shall be established at the nearest suitable point or points above the flow line of the present Hinckley dam or any future dam at Hinckley. The natural flow at said Water Company's intake shall be determined from the flow measured at the above stations by increasing the measured flow in direct proportion to the increase in the drainage area between the point or points of gaging and the Water Company's intake. It is agreed that the drainage area above the Water Company's present intake at Hinckley is 372 square miles. In the operation of the Water Company in accordance with this agreement the drainage area above the gaging stations shall be determined from the topographic maps of the United States Geological Survey. The gages and gaging stations of the Water Company shall be accessible at any and all times to the Power Company for the purpose of examining the methods and accuracy of the gagings, and upon request the Water Company shall furnish the Power Company with a copy of the tables or measurements of discharge which are made or used in connection with said gages in determining the flow of said streams.

Article IV. The said Water Company shall at no time take or divert water from said West Canada creek when the amount of water flowing in said creek at the Water Company's intake at Hinckley, N. Y., determined as aforesaid, is less than said three hundred thirty-three (333) cubic feet per second, unless said Water Company shall replace in said West Canada



creek, from its reservoir or reservoirs constructed or to be constructed by it upon said West Canada creek, or any of the tributaries thereof, an amount of water equal to that diverted by it, said reservoir or reservoirs to be filled with water in times of flood and freshet, and at times, when, at the Water Company's intake at Hinckley, N. Y., the natural flow of said stream, without diminution by any diversion by the Water Company is in excess of said three hundred thirty-three (333) cubic feet per second. It is the intention of this agreement that said Water Company shall not attempt to fill its reservoirs at any time when the amount of water at the Water Company's intake, in said West Canada creek, is less than said three hundred thirty-three (333) cubic feet per second; nor shall there be any diversion from said West Canada creek by the Water Company when the flow in said creek at the Water Company's intake is less than said three hundred thirty-three (333) cubic feet per second, except upon restoration by said Water Company to said creek, from its reservoir or reservoirs, of an amount of water equal to that diverted.

Article V. The restoration herein required to be made by the Water Company from its reservoir or reservoirs shall be made twenty-four (24) hours in advance of diversion.

Article VI. If at any time hereafter the flow of water in said West Canada creek shall not be sufficient to operate the above described power of the Power Company, such lack of water to so operate said power shall be presumptive evidence, rebuttable by the Water Company, that the said Water Company has failed to comply with the terms of this agreement, provided that the Power Company shall promptly notify the Water within twenty-four (24) hours after such lack of water,



Company at its office at Utica, N. Y., by a notice in writing, served by the Power Company upon the Water Company at its office in Utica, N. Y., of any claim of such failure of water; and in connection with any such claim, the Water Company shall have the right to fully inspect the machinery, plant and property of the Power Company.

Article VII. The Power Company also, in consideration of the aforesaid sum of one thousand dollars (\$1,000) hereby releases the Water Company from any and all claims for damages on account of any past diversion from the said West Canada creek by the Water Company, or for or on account of any matter or thing whatsoever.

Article VIII. The Power Company shall have at all times the right of access to the intake chambers and valves of the Water Company, upon reasonable and timely notice transmitted by it by telephone or otherwise to the Water Company at its office in Utica, N. Y., so as to fully enable the Power Company at any time to determine the amount of water diverted; and said Power Company shall also have right of access, upon said reasonable and timely notice, to the Company's discharge pipes, weirs and works, at its storage reservoir, so as to determine the amount of water restored, and also said Power Company shall, upon such reasonable and timely request, have access to the Water Company's books, papers and records, with reference to the amount of water diverted by it, and with reference to the amount of restored water.

Article IX. The covenants herein shall be binding upon each of the parties hereto, their successors and assigns. The Power Company shall have the right at any time, upon failure by the Water Company, its successors or assigns, to comply with the terms of this



agreement, to bring an action in equity to compel the specific performance of the terms of this agreement, and for the recovery of any and all damages that may be awarded by reason of the failure of the Water Company to fulfill the terms hereof.

In witness whereof, the parties hereto have caused these Presents to be signed by their Presidents and their corporate seals to be hereunto affixed this 19th day of March, 1909.

CONSOLIDATED WATER COMPANY OF  
UTICA, N. Y.

(Seal) By EDMUND LE B. GARDNER,  
President.

NEWPORT ELECTRIC LIGHT & POWER  
COMPANY,

(Seal) By GEORGE T. WOODIN,  
President.

STATE OF NEW JERSEY, }  
COUNTY OF PASSAIC, } ss.:

On this 23d day of March, 1909, before me, personally came Edward Le B. Gardner, to me known, who being by me duly sworn did depose and say that he resides at Ridgewood, New Jersey; that he is an officer of the Consolidated Water Company of Utica, N. Y., one of the corporations described in and which executed the foregoing instrument, to wit: its president; that he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was fixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

RICHARD ROSSITOR,  
Commissioner of Deeds for New Jersey.

STATE OF NEW YORK, }  
COUNTY OF HERKIMER, } ss.:

On this 20th day of March, 1909, before me, personally came, George T. Woodin, to me known, who being by me duly sworn did depose and say that he resides at Newport, N. Y.; that he is an officer of the Newport Electric Light & Power Company, one of the corporations described in and which executed the foregoing instrument, to wit, its president; that he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

GEORGIA V. BYROM,  
Notary Public.

# TOWN OF TRENTON

JOSEPH E. SMITH, Supervisor  
STANLEY K. HARRIS, Town Clerk  
ANNE MCGAHEY Town Justice  
DON C. CANNON, Town Justice  
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trenton@town.trenton.ny.us

STEPHEN A. GODFREY, Councilman  
BETSY BEIL MACK, Councilwoman  
DAVID HOKE, Councilman  
MICHAEL BENNISON, Councilman

ORIGINAL

June 26, 2018

FILED  
SECRETARY OF THE  
COMMISSION  
JUL - 2 P 1:26  
FEDERAL ENERGY  
REGULATORY COMMISSION

## FERC SCOPING DOCUMENT WEST CANADA CREEK HYDROELECTRIC PROJECT N0.2701-059

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E., Room 1A  
Washington, DC 20426

Dear Secretary Bose;

The Town of Trenton is a relatively small municipality (approximately 4500 people) located in Central New York State on State Rt. 12 just north of the NYS Thruway. Our NE border starts directly at the Jarvis Hydropower Dam with over half of our Eastern Border being defined by the West Canada Creek. So as you can see, this particular project is of great interest to not only our Town officials, but every resident as well. We all witness the daily public use of this wonderful natural asset, and do our best to make sure that this waterway is protected so that future generations can enjoy it too. We also partner with Brookfield Renewable two weekends a year to allow the public access to the natural beauty of the West Canada as it flows through the Trenton Falls area. While we have always worked well with Brookfield Renewable, we do feel that a number of issues need to be addressed that could protect and preserve this area. It is our hope and goal that all can work together to not only allow private industry to provide much needed renewable power to the citizens of New York State, but that a way can be found to also retain the beauty of this exceptional resource and provide the local residents and it's many visitors with long denied benefits.

**The Town of Trenton is an equal opportunity provider, and employer.**

With that in mind, the Town Board would like the following concerns to be addressed by FERC in regards to the relicensing of the above referenced West Canada Hydroelectric Project by Erie Boulevard Hydropower, LP .

While putting this communication together, we have had the opportunity to review a few other letters that have been sent to your committee and find that one in particular not only supports our goals in the endeavor, but has some quality photographs included with it that we simply do not have in our possession. So instead of plagiarizing their submission, we ask that you include in your review the submission by American Whitewater on the 21<sup>st</sup> of June, 2018.

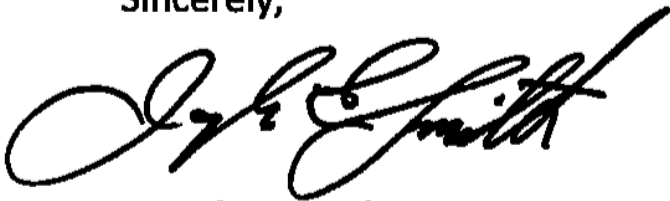
- 1) The Trenton Town Board requests that Brookfield Renewable enhance the Trenton Falls Scenic Trails Trail Head and Parking Areas to include a pavilion to be built by Brookfield that includes electric and water with restroom facilities and to be large enough to provide shelter for at least 200 people. The pavilion will not only provide shelter during periods when the trails are open and the weather is poor, but will also provide an area where non-profit groups can easily set up their tables to provide refreshments for fundraiser purposes. Additionally, the pavilion will provide a facility where invited special guests can effectively speak to the attendees via a public address system, and a screening area for presentations of a Historical/Education nature. The Town Board also requests that Brookfield re-open the upper portion of the trail that has been closed for several years due to a dangerous situation involving a large outcrop (rock) that is very unstable above the trail system. This outcropping should be removed and the remainder of the trail re-worked to ascertain a safe environment for the public. This particular portion of the trails has always been a favorite of the public due to its pathway along the rushing creek just below the Dam and its access to the remains of the historical train trestles that carried many passengers over the creek at that point. The Northern most point of this trail also ends near the base of the Dam and allows a large gathering area for pictures and conversations between the Volunteers and the Public.

- 2) The Trenton Town Board requests the Prospect Falls Gorge 3-mile Bypassed Reach area (from the Prospect Dam to the Trenton Falls Generator Tail Race), have sufficient water flow on a 24/7 basis that will provide adequate coverage to the majority of the original Prospect Falls, just downstream of the Prospect Power Dam. In the recent past, Brookfield has run a minimum CFS release to cover the Prospect Falls area during periods of community special events, such as the Prospect Labor Day Parade. This minimum CFS flow is requested on a permanent basis for the community to enjoy and the environment to thrive. Additionally, there are two (2) public view points in the Hamlet of Prospect that allow public viewing of the Falls that were cleared of obstructing trees by Brookfield Renewable about ten years ago. Trenton requests that Brookfield maintain these site lines and remove obstructing foliage as needed. The present FERC license has allowed these Hydro Plants to take ALL of the West Canada Creek river water, leaving the 3-mile Bypassed Reach desolate of any water flow, resulting in the taking away of the historical natural beauty of our beloved Prospect-Trenton Falls Gorge area.
- 3) The Trenton Town Board requests that both the Prospect Generator and the Trenton Falls Generator to be operated as a Run-Of-The-River type Generator, thereby eliminating the ability to Peak and Pond as is the current practice. The Peaking and Ponding operation now in use has frustrated Trophy Water Fly Fisherman with ever changing rapid fluctuations in water flows and the killing off of the insect life that the Trout rely upon in their food chain. Not to mention the uncertainty that the many residents that live along the Creek, along with the many seasonal visitors, have to deal with when using this area for numerous recreational activities including Canoeing, Kayaking and Tubing.
- 4) The Trenton Town Board requests that Brookfield Renewable provide funding for a roughly \$300,000.00 Capital Project for installation of a new LED Street Lighting District in the Trenton Commercial Corridor (approximately one mile of NYS Rt.12 N). This new lighting district will improve the safety and visibility for all drivers using this major state highway through the business corridor that serves as the main access to the Trenton Falls and Hinckley Lake areas, as well as all Recreational points north and south of the Town of Trenton. For over 120 years, the hydroelectric energy harnessed through the West Canada Creek Hydroelectric Projects has been taken for profit by others without any considerations for the local community and their needs. We believe it is time for the community to benefit from the electric generation produced at these local plants by providing reliable electric street lighting on this community's busiest local commercial corridor.

- 5) The Trenton Town Board requests that Brookfield Renewable fund a roughly \$50,000.00 capital project to replace the existing Hinckley Sewer District Pump Station Control Panel and Equipment with all required accessories. This would also include a stationary Emergency Generator System to provide immediate back up electricity services in case of an emergency and a fenced in secure area to protect this facility. This requested change is due to the fact that the original system is having some major maintenance issues and was previously installed as a 3-phase operation. By replacing it with a single phase system, it will create a simpler more user friendly system that can be maintained at a much lower cost. The Hinckley Sewer District discharges directly into the "Prospect Pond" that is part of the West Canada Creek, just above the Prospect Dam. There are currently only 17 users of this system and for them to be charged with paying for these improvements would be a major financial burden for most of them.

Thank you for your time and considerations on these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph E. Smith". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

Joseph E. Smith  
Town Supervisor  
[supervisor@town.trenton.ny.us](mailto:supervisor@town.trenton.ny.us)

cc: File

Stuart Miller, New Hartford, NY.

Ferc relicensing Brookfield Renewable West Canada Creek Project (FERC No. 2701)  
Opportunity

Central New York has a golden opportunity to enhance its tourism economic engine. This opportunity will not last and if not acted on, it will go away for 30 more years. There are currently three major tremendously underutilized and misused public resources in the central New York that could bring a real change to this region's attractiveness for summer tourism. Hinckley Reservoir, Trenton Falls and the lower West Canada Creek offer the potential to bring thousands of new visitors to our region each year. They could become major economic drivers for the residents of Herkimer and Oneida counties.

What if Hinckley water levels were consistent all season long, what if people could go and visit the incredibly beautiful, but hidden Trenton Falls throughout the year, and what if the West Canada Creek had steady and consistent flows all season long? The result would bring thousands more visitors to central New York each year. The value of property on Hinckley Reservoir and surrounding towns like Prospect and use of its park would increase dramatically. The beauty of Trenton Falls, which once played host to a conference of world leaders would again be available to the public.

And West Canada Creek would potentially become one of the best rivers in the northeast for fishing and floating.

What are the current issues with these wonderful resources:

Hinkley Reservoir - Right now the water levels fluctuate so much that the lake is avoided by many potential visitors because its recreational use is so unpredictable. In addition, home and property values suffer also because of this inconsistency. Just compare property values between Hinkley area and the Fulton Chain Lakes.

Trenton Falls - Think about how many visitors go to the Letchworth gorge, Ithaca gorges, and the Ausable Chasm. Similar tourist traffic would visit Trenton Falls if it were open all year long. Right now it is only available a couple days each year.

What a waste of a precious public resource.

West Canada Creek - The current release patterns are ruining this incredible fishery and recreational waterway. For fishing, the current flows significantly negatively impact the predictability of insect hatches. Fishermen tend to visit streams with reliable fishing conditions. For example, the reliable flows on the Delaware watershed have lead to a very popular fishery and increase in regional tourism. If the release patterns were more consistent more fisherman would visit the West Canada.

What needs to happen... Brookfield Renewable needs to stop fluctuating the flows at its hydropower plant on the West Canada Creek and keep Hinkley at consistent level!

Water level data shows that water levels have fluctuated over 20 ft in the past 10 year period just during the months of June-September (peak recreational use). Compare this to the Fulton Chain, Oneida Lake, Delta Lake which have only fluctuated a few feet during the same period and you can understand how Hinckley is not fulfilling its potential as a recreational destination.

Yes the NY Canal system also draws water, but controlling the hydroelectric draws is a necessary first step!

Sincerely,

Stuart Miller

Geroge Leiter Doolittle, Barneveld, NY.

We need an even water flow and the fishermen and floaters will be happy and this river will have a chance. It was once one of the best trout streams in the state. Riparian rights were legally established back in 1909-1915 with a minimum flow of 333 CFS but we all know that has been ignored. Without it we don't have a good fishing river or recreational river. I have lived on the banks of the West Canada for over 80 years.





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866**

**ORIGIN/**

**JUN 28 2018**

**Kimberly D. Bose, Secretary  
Federal Energy Regulatory  
Commission  
888 First St., N.E.  
Room IA  
Washington, DC 20426**

**FILED  
SECRETARY OF THE  
COMMISSION  
2018 JUL -3 A 11:19  
FEDERAL ENERGY  
REGULATORY COMMISSION**

**RE: West Canada Creek Hydroelectric Project, Project 2701-059**

**Dear Ms. Bose:**

The Environmental Protection Agency (EPA) has reviewed the Federal Energy Regulatory Commissions' (FERC) April 2018 Scoping Document for the West Canada Creek Hydroelectric Project. The West Canada Creek Project is owned by Erie Boulevard Hydropower, L.P, (Erie) and consists of two developments, Prospect and Trenton, and is located on the West Canada Creek in the counties of Oneida and Herkimer, New York. The purpose of FERC's environmental assessment (EA) will be to evaluate the environmental impacts of renewing Erie's license for the West Canada Creek Project after the current license expires on February 28, 2023. No change to the existing project operation is being requested.

EPA finds that the Scoping Document points out many issues for discussion in the EA. However, EPA has the following comments.

1. The environmental assessment should include a discussion concerning climate change in the region, and whether the infrastructure of the two hydroelectric developments may require resiliency adaptations, particularly to heavy precipitation (downpours) and flooding.
2. An analysis of invasive plant species within the property owned by Erie adjacent to the project, and whether an invasive species management plan should be required.
3. The relationships, both operational and environmental, between the Hinkley Reservoir use by the Hinkley Water Treatment facility (now operated by SUEZ), the Jarvis Project, the West Canada Creek Project and the Canal Corporation, should be written in plain language, to be understood by the public and resource managers. It is also EPA's understanding that Utica, NY is actively promoting the area to microchip

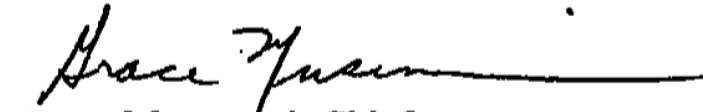
Internet Address (URL) • <http://www.epa.gov>

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manufacturers, as the Hinkley Water Treatment facility has the capacity to treat and deliver more water (<https://www.governor.ny.gov/news/governor-cuomo-announces-danfoss-establish-new-manufacturing-operations-utica>). This should be discussed within the cumulative effects section of the EA, as well.

Thank you for the opportunity to comment. If you have any questions, please contact Lingard Knutson at (212) 637-3747 or [Knutson.lingard@epa.gov](mailto:Knutson.lingard@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Grace Musumeci", followed by a horizontal line.

Grace Musumeci, Chief  
Environmental Review Section

**ORIGINAL**

June 29, 2018

**COMMENTS ON WEST CANADA CREEK HYDROELECTRIC PROJECT P-2701-059**

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

Dear Ms. Bose:

We need an even water flow and the fishermen and floaters will be happy and this river will have a chance. It was once one of the best trout streams in the state. Riparian rights were legally established back between 1909-1915 with a minimum flow of 333 cfs but we all know that has been ignored. Without it we don't have a good fishing river or recreational river. I have lived on the banks of the West Canada for over 80 years.

I am also including the Doolittle Agreement.

Sincerely,  
George (Leiter) Doolittle  
Route 28  
Barneveld NY 13304

FILED  
SECRETARY OF THE  
COMMISSION  
2018 JUL -9 P 4:07  
FEDERAL ENERGY  
REGULATORY COMMISSION



696.

THIS AGREEMENT made in duplicate this 9th day of June 1915 between Amelia Lowery Doolittle wife of W. C. J. Doolittle residing at Cornelia Street Utica, N. Y. party of the first part and the Consolidated Water Company of Utica, N. Y. a corporation created and organized under the laws of the State of New York, hereinafter called the Water Company, party of the second part, WITNESSETH

WHEREAS, the Water Company is a corporation incorporated under the Transportation Corporations Law of the State of New York and is engaged in furnishing pure and wholesome water to the city of Utica and the inhabitants thereof and to other places and towns and the inhabitants thereof; and

Whereas, it heretofore became necessary for the said Water Company to obtain an additional supply of water for its corporate purposes; and

Whereas, the said Water Company has taken such additional supply of water from the West Canada Creek in the manner hereinafter more specifically stated, the said Water Company having in or about the year 1906 built and constructed a line of water pipes or conduits to the West Canada Creek at Hinckley, Herkimer County, N. Y. through which said pipes line said Water Company has obtained its supply of water; and

Whereas, it is the plan and purpose of the said Water Company to do divert and take water from the said West Canada Creek, as not to unreasonably deprive any of the riparian owners on said West Canada Creek, of water so far as said Water Company is concerned, which purpose is to be accomplished by means of storage reservoirs, storing up water in storage reservoirs in periods of flood and high water, and letting water out from such such storage reservoirs in periods of low flow, when the water Company is diverting water, it being the intention, plan and purpose of said water company to replace and restore from said storage reservoirs to the said West Canada Creek, above the point of diversion whenever any water shall be diverted in periods of low flow, from its storage reservoir or reservoirs, a quantity of water equal in amount to that diverted from said creek at such periods of low water and

Whereas, the said Water Company in or about the year 1906 constructed and built a large reservoir on Black Creek, one of the tributaries of said West Canada Creek, at Bennetts Mills so called, in the towns of Ohio and Norway, Herkimer County, N. Y. to be filled with water at times of flood and freshet and from which, in periods of low water, said Water Company, when diverting or taking any water from said West Canada Creek, should restore a quantity of water equal in amount to that diverted, whenever the flow of water in said West Canada Creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. might be less than three hundred and thirty three (333) cubic feet per second, and

Whereas, said reservoir has been in operation since the completion of its said construction in the year 1906 and

Whereas, Amelia Lowery Doolittle of the first part is the owner of certain lands and premises lying and being on the west bank of the West Canada Creek in the town of Trenton, Oneida County, and State of New York, bounded and described as follows:

All that certain piece or parcel of land lying and being in the town of Trenton, County of Oneida and State of New York, and bounded and described as follows: to wit: Beginning at the south east corner of lot no. one hundred and twelve in Services Patent at a stake on the west bank of the West Canada Creek and running thence on the south line of said lot north 75 degrees 30 minutes west to the center of the road leading from the village of Trenton to



Russia in Herkimer Co. about thirty seven chs. and 49 lks. thence northerly along the line of the aforesaid road about 39 chs. and 80 links to the south westerly corner of lands now or formerly in possession of A. B. Pierce from thence along the south line of said Pierce premises to the west bank of the West Canada Creek, and from thence along down the West Bank of the West Canada Creek as it winds and turns to the place of beginning, containing about 101 acres of land be the same more or less, and being the same premises deeded to William J. Williams deed bearing date Oct. 1, 1878 by John Aldinger and wife, Sarah, and recorded &c." and being the same lands that were conveyed to the said Amelia Lowery Doolittle of the first part from Frank P. Williams and wife by warranty deed dated May 8, 1911 and recorded May 13 1911 in Oneida County Clerk's office in Book of Deeds No. 658 at page 148, and

WHEREAS the said Amelia Lowery Doolittle of the first part, for the consideration herein after expressed has agreed to release all claims for damages, both past and future, to her said premises above described on account of the diversion of any of the waste or surplus water of the said West Canada Creek by the Water Company as hereinafter provided, when the flow of water in said creek is greater than three hundred and thirty three (333) cubic feet of water per second at the electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. and has also agreed to the diversion of water from above her aforesaid described premises by the Water Company from said West Canada Creek at all periods when the flow of water in said creek at said electric plant is less than three hundred and thirty three (333) cubic feet per second, provided the said Water Company restores to the said West Canada Creek from its reservoir or reservoirs <sup>a quantity of water equal to the amount</sup> above the point diverted when the flow of water at said electric plant in said stream is less than three hundred and thirty three (333) cubic feet per second.

NOW THEREFORE in consideration of the premises and the sum of fifty dollars (\$50.00) to the said Amelia Lowery Doolittle in hand paid by the Water Company, the receipt whereof is hereby acknowledged and confessed, and in consideration of the mutual covenants and agreements herein contained it is agreed by and between the parties hereto as follows:

ARTICLE I: The said Amelia Lowery Doolittle of the first part hereby gives, grants and conveys to the said Consolidated Water Company of Utica, N. Y. the perpetual right to take, divert and utilize water from said West Canada Creek, for its corporate purposes through its intake or intakes and conduit pipe or pipes, now constructed or hereafter to be constructed above the aforesaid lands and premises of the party of the first part, upon the express conditions and subject to the terms and restrictions hereinafter stated.

Article II: Whenever the flow of water in said West Canada Creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. is in excess of three hundred thirty three (333) cubic feet per second, the said Water Company may take and divert all times ~~each time~~ such an amount of water from the excess of three hundred thirty three (333) cubic feet per second from said West Canada Creek, as it may need for its corporate purposes without restoring water to the said creek from the reservoirs of the Water Company and without any claim for damages by the party of the first part, her heirs, successors or assigns, or by any person or persons, corporation or corporations at any time owning the lands above described from, through or under the said Amelia Lowery Doolittle all of which damages are hereby forever released.

ARTICLE THREE. Said water company shall at no time take and divert water from said West Canada Creek when the amount of water flowing in said creek at the present electric plant of the Utica Gas and Electric Company at Trenton Falls, N. Y. is less than three hundred thirty three (333) cubic feet per second, unless said Water Company shall replace in said West Canada Creek, from its reservoir or reservoirs constructed or to be constructed by it



upon the said West Canada Creek or any of the tributaries thereof, above the point of diversion an amount of water equal to that diverted by it; the Water Company's reservoir or reservoirs are to be filled with water in times of flood and freshet, and at times when the natural flow of water in said West Canada Creek at said electric plant without diminution by diversion by the Water Company, is in excess of three hundred thirty three (333) cubic feet per second. It is the intention of this agreement that said Water Company shall not attempt to fill its reservoir or reservoirs at any time when the amount of water in said West Canada Creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, nor shall there be any diversion from said West Canada Creek by the Water Company when the flow in said creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, except upon restoration by said Water Company to said Creek from its aforesaid reservoir or reservoirs of an amount of water equal to that diverted. The Water Company shall have at all times the perpetual right to take and divert water from said West Canada Creek, without any claim for damages by the party of the first part, her heirs, successors or assigns or by any person or persons corporation or corporations at any time owning the lands above described from, through or under the said Amelia Lowery Doolittle whenever the flow of water in said creek at said electric plant is less than three hundred thirty three (333) cubic feet per second, provided that the Water Company its successors or assigns shall at such times restore to said West Canada Creek above the point of intake, from its aforesaid storage reservoirs, an amount of water equal to that diverted.

ARTICLE IV. The said Amelia Lowery Doolittle shall have at all times the right of access to the intake chambers and valves of the Water Company upon reasonable and timely notice transmitted by her by telephone or otherwise to the Water Company at its office in Utica, N. Y. so as to fully enable the said Amelia Lowery Doolittle at any time to determine the amount of water diverted, and said Amelia Lowery Doolittle upon reasonable and timely notice to the Water Company shall have right of access to the Water Company's discharge pipes, weirs and locks at any of its storage reservoirs so as to determine the amount of water restored.

Article V. No action on the part of the State of New York in diverting water from said West Canada Creek for canal purposes, or impounding water in any dam or reservoir owned or controlled by the State shall be deemed to be a violation of this contract, or any part thereof.

Article VI. The party of the first part, said Amelia Lowery Doolittle also covenants and agrees to forever warrant and defend the Water Company party of the second part, in the quiet and peaceable possession of the rights and privileges and easements hereby conveyed.

Article VII. This agreement binds the parties hereto, their heirs, successors and assigns and the covenants and agreements herein contained run with the land above described, and bind the same whether said land is owned by the said Amelia Lowery Doolittle or her heirs, executors or assigns; and likewise the covenants and agreements herein contained to be performed by the Water Company, bind the said Water Company in favor of the said Amelia Lowery Doolittle her heirs, successors or assigns, at any time owning said land.

IN WITNESS WHEREOF the party of the first part has hereunto set her hand and seal, and the party of the second part has caused these presents to be signed by its President and its corporate seal to be hereunto affixed this 2th day of June, 1915.

Amelia Lowery Doolittle L.S.

Consolidated Water Company of Utica, N. Y.

by W. S. Macot, its president.

(seal)



State of New York

County of Oneida SS.

On this 9th day of June 1915 before me the subscriber personally appeared Amelia Lowery Deolittle to me known and known to me to be the same person described in and who executed the foregoing instrument, and she duly acknowledged to me that she executed the same.

Stephen G. Eldred, Notary Public.

Oneida Co. N. Y.

State of New York

County of Oneida SS.

On this 14th day of June 1915 before me, the subscriber personally appeared William E. Bacot to me known, who being by me duly sworn did depose and say that he resides in the city of Utica, N. Y. that he is an officer of Consolidated Water Company of Utica, N. Y. the corporation described in and which executed the foregoing instrument, to wit: its president that he knows the seal of said corporation, that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto as president by like order.

H. B. Miles, Notary Public. (seal)

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Rec'd. Dec. 19, 1922 at 11:00 A.M.

*J. M. Rattabone*

Clerk.

573.

THIS INDENTURE made the 15th day of December in the year Nineteen Hundred and twenty two, BETWEEN Charles H. Cleveland and Bertha A. Cleveland, his wife of the city of Rome, Oneida County, New York, parties of the first part, and Rueben Morrell and Nellie Morrell his wife of the same place, parties of the second part:

WITNESSETH that the said parties of the first part in consideration of one dollar and other valuable consideration lawful money of the United States, paid by the parties of the second part, does hereby grant and release unto the said parties of the second part, their heirs and assigns forever, all that tract or parcel of land situate in the town of Verona aforesaid, being part of lot no. 184 of the late Oneida Reservation, and bounded as follows: Beginning at a stake standing in the easterly line of said lot and in the line between the towns of Verona and Westmoreland and at the southeasterly corner of land formerly owned by George Seaton, and running thence south 27 deg. east on the east line of said lot 23 ch. and 12 lks. to the southeasterly corner of said lot; thence south 63 deg. west on the south line of said lot 38 chs. 60 lks. to the southwesterly corner of said lot; thence north 27 deg. west on the west line of said lot 28 chs. 55 lks. to the southwesterly corner of said Seaton's land thence north 71 deg. east, 38 chs. 70 lks. to the place of beginning, containing one hundred acres of land, be the same more or less.

Also all that piece of land, lying in the town of Verona aforesaid, and being part of lot no. 191 in the Oneida Reservation and bounded thus; Beginning at a stake on the line or

**Chairman**  
Social Services

**Committees:**

Banks  
Codes  
Crime Victims, Crime and Correction  
Elections  
Environmental Conservation  
Health  
Libraries Select Committee

**THE SENATE  
STATE OF NEW YORK**



**JAMES N. TEDISCO**  
**Senator, 49th District**

July 6, 2018

**Albany Office:**  
803 Legislative Office Building  
Albany, New York 12247  
(518) 455-2181  
Fax (518) 426-6821  
**District Office:**  
636 Plank Road, #205  
Clifton Park, New York 12065  
(518) 885-1829  
Fax (518) 371-2649  
**Satellite Office:**  
Fulton County Office Building  
223 West Main Street  
Johnstown, New York 12095  
(518) 762-3733  
Fax (518) 762-3721

**ORIGINAL**

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

Re: West Canada Creek Hydroelectric Project (FERC No. 2701)

Dear Secretary Bose:

I am writing on behalf of my constituents in Herkimer County, NY who are concerned with the re-licensing of Brookfield Renewable's West Canada Creek Project. As I have been informed, the 2012 Operating Diagram and the legal ties Brookfield Renewable has to that diagram has caused many difficulties at Hinckley Reservoir over the years. The reservoir and the entire West Canada Creek Watershed are an important resource for our state, and the current management of Hinckley Reservoir and the West Canada Creek has been reported as having a negative impact on fisheries, local businesses, property values and recreation.

What is most concerning is that the local economy has seemingly never reached its full potential due to an unforeseeable, annual 30 to 50-foot water level fluctuation which both causes people to avoid coming to Hinckley and decreases the value of properties along its shoreline. With a large lake, numerous waterfalls, a gorge, and a renowned trout stream within this watershed, this unique and beautiful area should be preserved as a regional destination for people to visit, as it was prior to hydropower production, giving a much-needed boost to the local economy. The purpose of hydropower production is to serve as renewable energy that will provide positive benefits for the environment, yet in the case of Hinckley Reservoir and the West Canada Creek, this benefit has been difficult for the residents to identify.

Madame Secretary, I am requesting that FERC consider the aforementioned when allowing for future power production so that Hinckley Reservoir's water levels are managed carefully from May through October and so the West Canada Creek is managed in a more predictable manner. With your consideration, the residents in the area will be able to enjoy a more stable environment for recreation, while preserving hydropower obligations and flood protection protocol.

Sincerely,

A handwritten signature in black ink that reads "James N. Tedisco".  
James N. Tedisco  
49th Senatorial District

E-Mail: [tedisco@nysenate.gov](mailto:tedisco@nysenate.gov)

Website: [www.tedisco.nysenate.gov](http://www.tedisco.nysenate.gov)



## **APPENDIX C**

### **STUDY REQUESTS AND COMMENT LETTERS FILED IN RESPONSE TO THE PROPOSED STUDY PLAN**

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, DC 20426

November 13, 2018

OFFICE OF ENERGY PROJECTS

Project No. 2701-059 –New York  
West Canada Creek Hydroelectric Project  
Erie Boulevard Hydropower, L.P.

Mr. Steven Murphy, Director of Licensing  
Brookfield Renewable  
33 West 1st Street South  
Fulton, NY 13069

**Subject: Staff Comments on the Proposed Study Plan for the West Canada  
Creek Hydroelectric Project**

Dear Mr. Murphy:

We have reviewed your proposed study plan (PSP) for the West Canada Creek Hydroelectric Project (West Canada Creek Project), filed on August 13, 2018. In addition to our verbal comments provided during the September 11, 2018, proposed study plan meeting, we are providing written comments pursuant to section 5.12 of the Commission's regulations. We anticipate that Erie Boulevard Hydropower, L.P. (Erie) will take our comments into consideration during development of the revised study plan, which must be filed with the Commission by December 11, 2018.

In the attached Schedule A, we provide detailed comments on your proposed studies. If you have any questions, please contact Nick Ettema at (202) 502-6565, or via email at [nicholas.ettema@ferc.gov](mailto:nicholas.ettema@ferc.gov).

Sincerely,

John B. Smith, Chief  
Mid-Atlantic Branch  
Division of Hydropower Licensing

Attachments: Schedule A

Schedule A  
P-2701-059

## **SCHEDULE A**

### **Comments on the Proposed Study Plan**

#### General

Within your schedule for each of the proposed studies, please include a provision for filing at least one progress report, as required by 18 C.F.R. §5.11(b)(3). This provision should describe the manner and extent to which information will be shared, and include sufficient time for technical review of the analysis.

#### Aquatic Mesohabitat Assessment Study

In section 4.1.7 you indicate video and aerial images of West Canada Creek will be captured by a GPS-enabled UAV or drone with a high resolution camera. Please identify the flow(s) at which you would collect this data in the bypassed reaches and West Canada Creek downstream of the Trenton Development.

In section 4.1.7 you indicate that the number and location of water level loggers will be determined based on field information. Please clarify what field information will assist in determining the number and location of water level loggers. In addition, please describe the timing and length of level logger deployment and how frequently the loggers will record water stage. Further, please indicate whether or not discharge would be measured at one or more of the logger deployment sites. Direct measurements of discharge over several flow ranges would be useful to identify operating scenarios that achieve a specific flow.

During the study plan meeting you indicated that the proposed water level loggers would only record water surface elevation. Many types of level loggers also record water temperature. The U.S. Fish and Wildlife Service (FWS), New York Department of Environmental Conservation (New York DEC), and other stakeholders have expressed concerns regarding the effect of project operation on water quantity and water temperature downstream of the Trenton Development and none of the proposed studies completely address these concerns. Deployment of water level loggers that also record temperature would provide information to evaluate project effects for this study and the proposed water quality study.

In section 4.1.7 you state that you would ground-truth wetlands identified in the National Wetland Inventory (NWI) within the project boundary. However, several potentially unidentified wetlands as well as NWI-identified wetlands, exist within and downstream of the project boundary that could be affected by project operation (i.e. changing water levels). Therefore, the proposed study (and the impoundment shoreline

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characterization study) should include drone and/or ground surveys of all wetland habitats that could be affected by project operation, and not be limited to NWI-identified wetlands or wetlands located within the project boundary. Additionally, you state that once quantified, project operation and river discharge data will be assessed in the context of the aquatic mesohabitat to evaluate potential project effects. However, it is not clear what methods you will use to correlate changing water levels to potential effects on wetland habitat. Therefore, please provide a more detailed description of how you plan to use the collected data to evaluate project effects on wetlands.

Macroinvertebrate and Freshwater Mussel Surveys

In section 4.2.4 you state that the study area will extend approximately 1 mile downstream of the Trenton Development's tailrace. While effects on macroinvertebrates and any mussels would likely be greatest near the Trenton tailrace, it is unclear why the proposed study area would terminate 1 mile downstream of the project because effects of the project on mussels and macroinvertebrates could extend beyond this point. Mussel and macroinvertebrate surveys farther downstream would provide useful information to evaluate potential project effects on these communities.

In section 4.2.7 you describe macroinvertebrate sampling methods consistent with New York DEC's standard operating procedures for biological monitoring of surface waters and state that samples would be collected within representative habitats in the littoral zone of the impoundments, bypassed reaches, and West Canada Creek. At this time it is unclear how many different habitat types exist within these areas and whether or not sampling in all representative habitats is necessary. Therefore, please identify a minimum number of macroinvertebrate samples that would be collected in each sampling area.

In section 4.2.7 you propose to use several metrics to evaluate the macroinvertebrate community. While these metrics are useful, the New York DEC's standard operating procedures for macroinvertebrate community analysis includes methods for a Biological Assessment Profile (BAP) which plots individual community metrics on a common scale of 0 to 10 (severe impact to non-impacted) to describe water quality. New York DEC's BAP would provide additional information to evaluate project effects on the macroinvertebrate community and water quality.

In section 4.2.7 you generally identify several methods commonly utilized in New York that could be used to conduct mussel surveys. Please provide a specific description of the proposed mussel surveys for the impoundment, bypassed reaches, and West Canada Creek downstream of the project including the minimum number of surveys in each area, maximum depth of survey in the impoundments, search time, and specific survey methods such as qualitative timed searches using snorkel gear or other means appropriate for each sample area.

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Water Quality Study

In section 4.5.4 you identify two locations to monitor water quality (water temperature, dissolved oxygen, pH, and conductivity), the Prospect tailrace and the Trenton tailrace. However, project operation affects water quantity and likely affects water quality in the bypassed reaches and areas downstream of the Trenton tailrace. Water quality information, especially temperature and dissolved oxygen, collected in the bypassed reaches and West Canada Creek downstream of the project would provide necessary data to evaluate project effects in these areas.

Recreation Use, Needs, and Access Study

In section 4.6.2 you propose to conduct an assessment of public access and whitewater boating opportunities and safety considerations at the Prospect bypassed reach and characterize existing recreation opportunities, including whitewater boating, downstream of the Trenton Development. However, you are not proposing a controlled-flow whitewater boating study as part of the PSP.

For the Prospect bypassed reach, you propose to review aerial drone footage collected during the Aquatic Mesohabitat Assessment Study and to complete a targeted field assessment to evaluate potential public access locations, including potential whitewater boating access. Currently, there is no existing information regarding the water levels that would provide a quality whitewater boating experience in the Prospect bypassed reach because flows are rarely available and existing public safety policies restrict access to the reach. However, the gradient of the bypassed reach between Prospect Dam and Trenton Reservoir, Prospect Falls itself, and images of full banks, river bends, and whitewater in the Prospect bypassed reach provided by American Whitewater (filed June 21, 2018) and by Thomas Slusarczyk (filed June 26, 2018) demonstrate the characteristics of a potentially boatable reach. Information that is lacking in order to make a determination about the boatability of this reach includes: (1) whether there is ample parking and safe access to and from the river at a put-in and a take-out location; (2) understanding the type of experience various flow levels would provide; (3) the level of interest or demand from the whitewater community for boating the bypassed reach; and (4) the uniqueness of the experience (i.e., are there other river stretches within an hour's drive that provide a similar experience). Addressing these information needs in the Recreation Use, Needs, and Access Study would allow staff the ability to assess the appropriateness and benefit of whitewater boating at this location and assist staff in determining whether a controlled-flow whitewater boating study is needed.

Regarding the river reach below the Trenton Development, you state that there are existing data available to characterize whitewater boating opportunities downstream of the Trenton tailrace, but you do not propose a controlled-flow whitewater boating study for this reach. This reach of river is known to be used by tubers and whitewater boaters.

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The information provided on the American Whitewater website states that from Dover Road (approximately 1,600 feet downstream of the Trenton powerhouse) to the town of Herkimer (about 26 miles) is boatable from 600 cfs to 10,000 cfs. This range of flows would provide significantly different experiences on the river for beginner, intermediate, and advanced boaters. The appropriate flow ranges for each skill level have not been quantified. Information that would help staff make a determination on the value of this resource would include a description of: (1) the type of user experience various flow levels provide; (2) the level of interest or demand from the whitewater community for boating this reach; and (3) the uniqueness of the experience (i.e., are there other river reaches within an hour's drive that provide a similar experience).

To determine user perceptions of the operation and management of project recreation facilities, evaluate the adequacy of access to the recreation facilities, and to identify if any changes or upgrades to the sites are needed to meet current or future demand, you propose to estimate recreation use at the project recreation sites using spot counts and user opinion surveys. Traffic spot counts will be conducted at the Prospect Boat Launch and user opinion surveys will be administered during the Trenton Falls special event days, which occur two weekends per year. The user opinion surveys will document residency, group size, reason for visiting, duration of visit, and perception of level of use. The surveys will also collect opinions on access and the amount and types of recreation opportunities offered within the project boundary. This will provide valuable input from visitors to Trenton Falls, but it will provide information from a specific group of recreation users and may not include input or opinions from other recreation perspectives including fishermen, wildlife viewers, hikers, or boaters. It is important to have information from users of various recreation opportunities within the project boundary. User opinion surveys should also be incorporated into the data collection at the Prospect Boat Launch and disseminated to county residents and other user groups such as those described above in order to provide a comprehensive understanding of recreation use and public opinion of recreation at the project.

### Aesthetics Assessment Study

In section 4.7.7 you state that you will conduct an aesthetics resource inventory to describe the aesthetic character of the project area using existing information, supplemented by on-site data collection. You state that you will identify key viewsheds and characterize key aesthetic character types within the study area, using data from the aerial drone flight conducted for the Aquatic Mesohabitat Assessment Study and data from the Recreation Use, Needs, and Access Study. You also state that you will assess and characterize the timing and flow ranges of historic flow exceedance events within the past 5 years, to the extent data is available, to further characterize existing flow conditions.

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In their comments on the PSP, the Town of Trenton, West Canada Creek Watershed Alliance, and other stakeholders, request that Erie provide sufficient flow to cover the waterfalls in the Prospect and Trenton bypassed reaches. In their comments on the PSP, Trout Unlimited, American Whitewater, U.S. Fish and Wildlife Service, the New York State Fish and Wildlife Management Board, and the New York State Department of Environmental Conservation request a flow demonstration study to determine minimum and optimal aesthetic flow levels in the bypassed reaches of the West Canada Creek Project. However, the Aesthetics Assessment Study as proposed does not adequately address these comments and would not provide sufficient information for staff to address the value of various aesthetic flow quantities. In order to supplement the information that will be collected to describe the character of the bypassed reaches and known viewing locations, the study should provide information that would help define the aesthetic value of flows in the bypassed reaches, which include multiple large waterfalls. Standard practices and generally accepted methods for evaluating the aesthetics of a location with significant public interest include releasing a range of flows for comparison purposes (Whitaker and Shelby, 2017). When releases are paired with real-time participant observations, participant opinion surveys, photographs, and film documentation, the resource can be studied and evaluated thoroughly. The combination of these study activities would provide an adequate basis for determining the aesthetic value of the resource.

## REFERENCE

Whitaker, D., and B. Shelby. 2017. Flows and Aesthetics: A Guide to Concepts and Methods. [https://www.hydroreform.org/sites/default/files/Flows%20and%20aesthetics--20A%20guide%20to%20concepts%20and%20methods%202017\\_Final\\_web.pdf](https://www.hydroreform.org/sites/default/files/Flows%20and%20aesthetics--20A%20guide%20to%20concepts%20and%20methods%202017_Final_web.pdf)

Document Content(s)

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# United States Department of the Interior

FISH AND WILDLIFE SERVICE

3817 Luker Road  
Cortland, New York 13045



November 9, 2018

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

**RE: West Canada Creek Project (FERC #2701-059)  
Comments on Proposed Study Plan**

Dear Ms. Bose:

The U.S. Fish and Wildlife Service (Service) has reviewed the August 13, 2018, Proposed Study Plan (PSP) filed by Erie Boulevard Hydropower, L.P. (Applicant) for the West Canada Creek Project (Project) located on West Canada Creek, Oneida and Herkimer Counties, New York. The Project consists of both the Prospect and Trenton Developments. We participated in the May 30, 2018, and May 31, 2018, scoping meetings and site visit held by the Federal Energy Regulatory Commission (FERC) and provided our comments on the Preliminary Application Document (PAD) and study requests in a letter dated June 28, 2018. By letter dated June 28, 2018, the FERC submitted an Additional Information Request (AIR) to the Applicant for inclusion with the PSP. The Service participated in the September 11, 2018, Study Plan Meeting regarding the PSP and provided initial comments regarding the PSP. We have the following comments on the PSP, incorporating the information contained in the Applicant's response to the FERC's AIR.

**Comments on the PAD**

In our June 28, 2018, letter, the Service provided comments on the PAD, requested additional information regarding the minimum flow valve at the Trenton powerhouse, and suggested modifications to the language and presentation of the flow duration curves in the PAD. The Applicant did not respond to these comments and request for additional information in the PSP. We anticipate that the Applicant will respond to these in the Revised Study Plan (RSP). We recommend that the Applicant provide an appendix, including all stakeholder comments and requests for additional information, to ensure that all stakeholder issues are clearly addressed.



## **General Comments**

The Service requested that the Applicant conduct nine studies to address information gaps in the PAD, provide the information necessary to assess the effects of the Project, and determine appropriate Protection, Mitigation, and Enhancement measures. These studies were: 1) Fisheries Surveys, Fish Passage and Downstream Protection Studies, Macroinvertebrate and Freshwater Mussel Surveys, Impoundment Fluctuation Studies, Downstream West Canada Base Flow Study, Prospect Bypass Reach Flow Study, Trenton Bypass Reach Flow Study, and Water Quality Study. The Applicant has proposed in the PSP not to adopt the Fisheries Survey or Downstream West Canada Base Flow Study and has only partially adopted the remainder of our requested studies. In effect, the Applicant has not adopted our requests for a Prospect Bypass Reach Flow Study or Trenton Bypass Reach Flow Study, as no study related to flow has been included in the PSP.

The Applicant states in the PSP that they have "...adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study." However, the Applicant has been inconsistent in presenting what specific approaches and aspects of the requested methodologies have been adopted and the rationale, with adequate justification, for why the study methodologies were altered. The Applicant has indicated that studies were "Partially Adopted," which does not provide clarity to the requesting entities as to which aspects of the requested studies were adopted. We request that the Applicant provide an appendix for each formal study request indicating each aspect of the methodology (e.g., geographic scope, individual data to be collected, types of methods to be utilized for each type of data) requested and the Applicant's response to these aspects of the methodology, including adequate justification<sup>1</sup> and discussion of any changes, to ensure that all requesting entities understand what aspects of the methodology have been altered and why.

We are particularly concerned with the Applicant's lack of adoption of studies and methodologies related to fisheries and flow regulation impacts at the Project as these are two of the most fundamental resource issues of concern raised during the scoping process. The Service and other stakeholders provided comments on the PSP at the Study Plan Meeting, and we anticipate that the Applicant will incorporate those comments and concerns into the RSP. We provide more detailed comments below.

## **Comments on Studies Not Adopted**

### **I. Fishery Surveys**

The Service reviewed the existing information in the PAD and noted that limited fisheries surveys have been conducted in Prospect Pond, including the power canal, Prospect bypassed reach, and Trenton Pond. Additionally, the fishery is expected to change downstream from the Project in the reach of West Canada Creek that extends to the Mohawk River<sup>2</sup>; however, there is no information specific to the downstream reach presented.

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<sup>1</sup> Per 18 CFR § 5.9(b)

<sup>2</sup> The 1980 IFIM and water temperature monitoring studies targeted brown trout (*Salmo trutta*) in the upper portion of the river and smallmouth bass (*Micropterus dolomieu*) in the lower portion of the river.



The New York State Department of Environmental Conservation has detailed dates and locations for the fisheries surveys used in the Jarvis (FERC No. 3211) PAD, which was copied for the Project PAD. Only two fisheries surveys have been conducted in areas affected by Project operations since 1996. One limited survey (a short gill net set) in Prospect Pond in 2009 found a total of three fish, none of which was brown trout, rainbow trout (*Oncorhynchus mykiss*), or chain pickerel (*Esox niger*) as described in the summary of Prospect Reservoir fisheries found in Section 5.5 of the PAD. The other study was conducted nearly 15 years ago at the mouth of West Canada Creek, which is approximately 28 miles downstream from the Project. No fishery surveys have been conducted in the last 20 years in the Trenton Reservoir, or anywhere downstream from the Project to the mouth of West Canada Creek.

We disagree that the Hinckley Reservoir and upstream areas on West Canada Creek can be used as surrogates for the Project reservoirs and downstream areas of West Canada Creek as these areas differ notably in their habitat<sup>3</sup> and are not subject to the impacts associated with the Project<sup>4</sup>. The Service requested detailed fisheries surveys in order to aid in the evaluation of Project impacts; the Applicant has not provided any existing information that would serve that objective. We recommend that our requested Fisheries Survey, as described in our June 28, 2018, request for studies, be included in the RSP.

## II. Downstream West Canada Base Flow Study

The Service recommended the Applicant build on the existing 1980 instream flow study by conducting a more robust Instream Flow Incremental Methodology (IFIM) study that would yield data necessary to determine flows downstream from the Project related to peaking flows, assess water quality, and determine fish species and life stages represented in West Canada Creek. This more robust study can build on the existing 1980 IFIM study, but a more rigorous approach is needed to determine downstream impacts and flow requirements.

The Applicant has proposed not to adopt our requested downstream flow study stating that the Service has not provided any evidence that there are “climate-induced” stresses to trout in West Canada Creek and proposing instead to rely on aquatic habitat mapping and limited water quality sampling<sup>5</sup> in order to evaluate the impacts of the minimum and peaking flows on the downstream aquatic community. The scoping process, records of fish kills provided by the New York State Department of Environmental Conservation (NYSDEC), and the 1980 downstream temperature monitoring study submitted in the Applicant’s response to FERC’s AIR show that downstream temperatures are regularly unsuitable<sup>6</sup> for the survival and reproduction of trout species, a primary management concern.

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<sup>3</sup> Hinckley Reservoir is 16 times larger than Prospect Pond and 316 times larger than Trenton Pond. Trenton Pond is also enclosed within a cliff-lined shore.

<sup>4</sup> The Hinckley Reservoir fluctuates seasonally, as governed by the 2012 Operating Diagram, over ranges in which the Prospect and Trenton Reservoirs fluctuate daily due to their smaller size.

<sup>5</sup> The Applicant is only proposing to have one water quality monitor directly below the Trenton powerhouse.

<sup>6</sup> The 1980 temperature monitoring study measured maximum water temperatures of 29.5 °C with daily fluctuations of 12.5 °C, which are higher than the 21 °C maximum temperature and the 1 – 5 °C daily fluctuations recommended by the NYDEC in waters designated as trout streams.



The Applicant proposes to rely on the existing 1980 IFIM study; however, this existing study alone does not address the goals and objective of the Service's requested downstream flow study that deals specifically with the impacts of flow variability (including peaking flows) on habitat and water quality across a wider range of life stages in the downstream reach of West Canada Creek. We note that the FERC's conclusions regarding the applicability of the 1980 IFIM study were focused on habitat<sup>7</sup> and are not sufficient to address the goals and objectives of our requested downstream flow study. The Applicant has proposed to install level loggers downstream in West Canada Creek; however, this will only provide information regarding the quantity of water and timing of peaking flows downstream. The Applicant has not proposed a method to measure the quality (temperature and DO) of different downstream flows under different ambient conditions, the primary objective of our requested downstream flow study.

The impacts to the downstream fishery due to minimum and peaking flows is a primary concern for the relicensing of the Project. The Service strongly recommends that the Applicant include our requested Downstream West Canada Base Flow Study, as described in our June 28, 2018, request for studies, in the RSP. The Service is available to provide technical assistance to the Applicant regarding the design of this study for inclusion in the RSP.

### III. Prospect Bypass Reach Flow Study

The Service recommended that the Applicant conduct an IFIM study in the 1.2-mile-long Prospect bypassed reach. This reach does not have a minimum flow requirement and is largely dewatered; however, substantial portions of the bypassed reach could provide valuable aquatic habitat with adequate flow. A flow study is needed to determine minimum flow requirements in this reach for aquatic habitat and aesthetic resources.

The Applicant has proposed only to conduct an Aquatic Mesohabitat Assessment Study, and has not addressed our request for a flow study in this reach. The goals and objectives of this study request are to determine what flows are necessary to provide adequate habitat and protection for aquatic resources in the Prospect bypassed reach. The Applicant has not provided any additional information that would justify not conducting this study. The Service recommends that the Applicant include our requested Prospect Bypass Reach Flow Study, as described in our June 28, 2018, request for studies, in the RSP.

### IV. Trenton Bypass Reach Flow Study

The Service recommended that the Applicant conduct a flow demonstration study in the 4,000-foot-long Trenton bypassed reach. This reach does not have a minimum flow requirement and is largely dewatered. The Service notes that there is likely habitat for macroinvertebrates and forage species in this reach. A flow demonstration study should be sufficient to determine minimum flow requirements in this reach for aquatic habitat and aesthetic resources.

The Applicant has proposed only to conduct an Aquatic Mesohabitat Assessment Study and an Aesthetics Study, and has not addressed our request for a flow study in this reach. The goals and objectives of this study are to determine what flows are necessary to provide adequate habitat

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<sup>7</sup> The FERC stated "... the results of the existing IFIM study will be sufficient to assess the potential effects (gains or losses in habitat) of alternative minimum flows that may be proposed during the licensing process"



and protection for aquatic resources in the Trenton bypassed reach. The Applicant has not provided any additional information that would justify not conducting this study. The Service recommends that the Applicant include our requested Trenton Bypass Reach Flow Study, as described in our June 28, 2018, request for studies, in the RSP.

### **Comments on Proposed Studies**

#### **I. Aquatic Mesohabitat Assessment Study**

The Applicant has proposed to conduct a mesohabitat study of all fluvial parts of the Project area, including both the Trenton and Prospect bypass reaches, as well as the reach downstream from the Project extending from the Trenton tailrace to the Newport Dam impoundment. The Applicant has proposed to include an initial drone aerial flight assessment of the bypass reaches and downstream study area, followed by targeted assessment.

The Service does not agree with the Applicant's determination that this method is "...consistent with standard practices and generally accepted methods to document and characterize aquatic mesohabitat..." We appreciate the Applicant's demonstration of this technology at the Study Planning Meeting and do see utility in the methods to be employed in this study, especially for areas that are difficult to access. However, we expect the Applicant to provide evidence that all results based on this novel experimental design (e.g., substrate classifications, mesohabitat determinations) are ground-truthed through subsampling with in-the-field measurements in at least 20 transects. The amount and type of variation from in-the-field versus drone-collected data should be presented and discussed.

The Service does not agree with the Applicant's proposal to limit the study area to the downstream reach above the Newport Dam. The Applicant's justification for this restricted study area is that the reach below the Newport Dam is "beyond the control" of the Project. However, the United States Geological Survey gauge 26 miles downstream, and below the Newport Dam, reliably shows that peaking flows from the Project predominate in West Canada Creek below the Newport Dam. We have provided a graph of flows in West Canada Creek from the summer of 2015, a low flow year, which shows these strong fluctuations, and indicates that the releases from the Project provide nearly all of the flow in West Canada Creek during low flow periods (Appendix A). The low flows recorded at the gauge are approximately 200 cubic feet per second, indicating little tributary flow affecting the system in this reach.

We note that the Newport Project (FERC No. 5196) is a run-of-river facility and that impacts to river systems are well-known to occur below these projects due to passing peaking flows from upstream Projects<sup>8</sup>. Additionally, the proposed study area is inconsistent with previous studies conducted for the original licensing of the Project and with FERC's geographic scope presented during scoping. The Service recommends that the Applicant extend this study downstream to the junction with the Mohawk River.

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<sup>8</sup> Jager, H. I., and M.S. Bevelhimer. 2007. How run-of-river operation affects hydropower generation and value. *Environmental Management* 40, no. 6 (December 1, 2007): 1004–15.



## II. Macroinvertebrate and Freshwater Mussel Surveys

The Applicant has proposed to conduct benthic macroinvertebrate kick net sampling and a presence/absence survey of freshwater pearly mussel (Unionidae) communities in representative habitats in the littoral zone of the Project's reservoirs, in the bypass reaches, and approximately 1 mile downstream of the Trenton tailrace. The goals and objectives of our requested study are to provide information on the existing macroinvertebrate and freshwater mussel communities that may be impacted by Project operations. This information will be used to document the current macroinvertebrate, mussel communities, and water quality conditions, and to determine potential impacts from the operation of the Project.

For the same reasons as those discussed in the Aquatic Mesohabitat Assessment Study, namely that the effects of the Project can predominate even 26 miles downstream, the Service does not agree with the downstream extent of this proposed study. The Applicant has proposed a different arbitrary limitation on the scope of the study area for this study in this case. The Service recommends that the Applicant extend this study downstream to the junction with the Mohawk River. We recommend that the applicant propose multiple locations both above and below the Newport Dam to the Mohawk River. Mussel surveys should be conducted in areas identified in the aerial reconnaissance surveys from the Aquatic Mesohabitat Assessment Study.

## III. Impoundment Shoreline Characterization Study

The Applicant has proposed to map the distribution and abundance of aquatic habitat within the Project impoundments, evaluate the types of aquatic habitats that occur there, and identify any potential effects of operations of the West Canada Creek Project on these habitats. The Service generally supports this study; however, the Applicant did not include mapping of fish spawning beds, potential areas of fish stranding, and mussel beds in this study, as requested in our Impoundment Fluctuation Study, as described in our June 28, 2018, request for studies. The Applicant did not provide any additional information or justification for the omission of these resources in this study. The Service recommends that the study include the measurement of these fishery and freshwater mussel resources.

## IV. Fish Entrainment and Turbine Passage Survival Assessment

The Applicant has proposed to conduct a literature review of species of interest, collect site data (i.e., intake depth, location, and velocities, units generating, and hydraulic capacities), and conduct an estimate of entrainment and turbine passage survival at the Project. The Applicant is proposing to use these results to inform the need to explore alternative methods to exclude fish from the Project turbines and safely pass fish downstream. The Service supports this approach and will revisit fish protection and downstream fish passage after our review of the results of this study in the Initial Study Report.

The Service has expressed our concern with the lack of a Fishery Survey at the Project. These data are an integral component of the "empirical data" that the Applicant proposes to use in the analysis for this study. There is no existing information regarding the fish species, the length or age of these species, or the relative abundance of these species in either the Prospect or Trenton impoundments. These data are a necessary component of this study and are not transferable



from data collected in Hinckley Reservoir upstream, as we have discussed above. We recommend that our requested Fisheries Survey, as described in our June 28, 2018, request for studies, be included in the RSP.

#### V. Water Quality Study

The Applicant has proposed to conduct a water quality study to characterize water quality parameters (water temperature, DO, pH, and conductivity) below the Trenton and Prospect powerhouses using loggers capable of 15-minute interval readings from April 15 to November 15 for 1 year. The Applicant is not proposing to collect water quality information from the impoundments, the bypassed reaches, or in areas downstream from the Trenton powerhouse.

The Service has expressed our concerns with the lack of water quality information in the downstream reach due to Project impacts both in our comments on the Downstream West Canada Flow Study and the Aquatic Mesohabitat Assessment Study. The Applicant has not provided any additional data regarding the water quality conditions in the bypassed reaches or in the impoundments in the PSP other than to cite the NYSDEC river classifications for the reaches. At the Study Plan Meeting, the Service requested information regarding whether the impoundments at the Project stratify during the summer. The Applicant was unaware of any information related to this basic characteristic of reservoir dynamics that can strongly influence downstream water quality conditions. The Service recommends that the Applicant include additional monitoring locations in the impoundments, top and bottom of the bypassed reaches, and downstream in West Canada Creek, as described in our June 28, 2018, request for studies, in the RSP.

#### VI. Recreation Use, Needs, and Access Study

The Applicant has proposed to conduct a recreation site facility inventory and condition assessment, conduct recreation counts and visitor surveys, conduct a public access and safety assessment, and characterize downstream recreation opportunities at the Project. The Service supports the requests of the boating and recreation groups to evaluate the recreation opportunities at the Project, as this is one of the central issues raised during the scoping process.

The Applicant currently restricts access to the fishing and aesthetic viewing opportunities in the bypassed reaches and Trenton Reservoir. The Applicant largely justifies this restriction due to safety concerns. The Service recommends that the Applicant include criteria from an established methodology regarding how they will conduct the public access and safety assessment as a component of this study to ensure safe access is clearly defined.

#### VII. Aesthetic Assessment Study

The Applicant has proposed to conduct an aesthetic resources inventory within the study area to describe the existing aesthetic character of the Project area using existing information, supplemented by on-site data collection. The Applicant proposes to identify key observation points, take representative photographs, and characterize the timing and flow ranges of historic flow exceedance events within the past 5 years.


The Service notes that this study was not requested by any stakeholder during the scoping process and will not provide any additional information not readily available within the PAD. The Applicant and stakeholders have indicated where the scenic waterfall locations are and identified likely viewing locations from both the Prospect Town Park and along the Trenton Falls Trail. Photos of these vistas are readily available both in the PAD and in the comments supplied by the stakeholders on the PAD. Flow exceedance curves were provided in the PAD. The Service requested flow studies in both the Prospect and Trenton bypass reaches, in part, to identify flows that are suitable for aesthetic resources at the Project. The Applicant's proposed study does not allow for the stakeholders to evaluate the aesthetic value of any particular flow in order to inform recommendations for flows in these reaches.

The Service recommends that the Applicant include our requested flow observation study in the Trenton Bypass Reach Flow Study, as described in our June 28, 2018, request for studies, in the RSP. The Service also recommends that the Applicant include our requested IFIM study in the Prospect Bypass Reach Flow Study, as described in our June 28, 2018, request for studies, in the RSP. Both of these studies will allow the stakeholders to evaluate aesthetic flows in the bypassed reaches and address the additional aquatic resources present in the Prospect bypassed reach.

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The Service appreciates this opportunity to provide comments on the PSP. The Service requests that the RSP developed by the Applicant incorporate all of recommendations and requested studies as described above. If you have any questions or desire additional information, please contact John Wiley at 607-753-9334.

Sincerely,

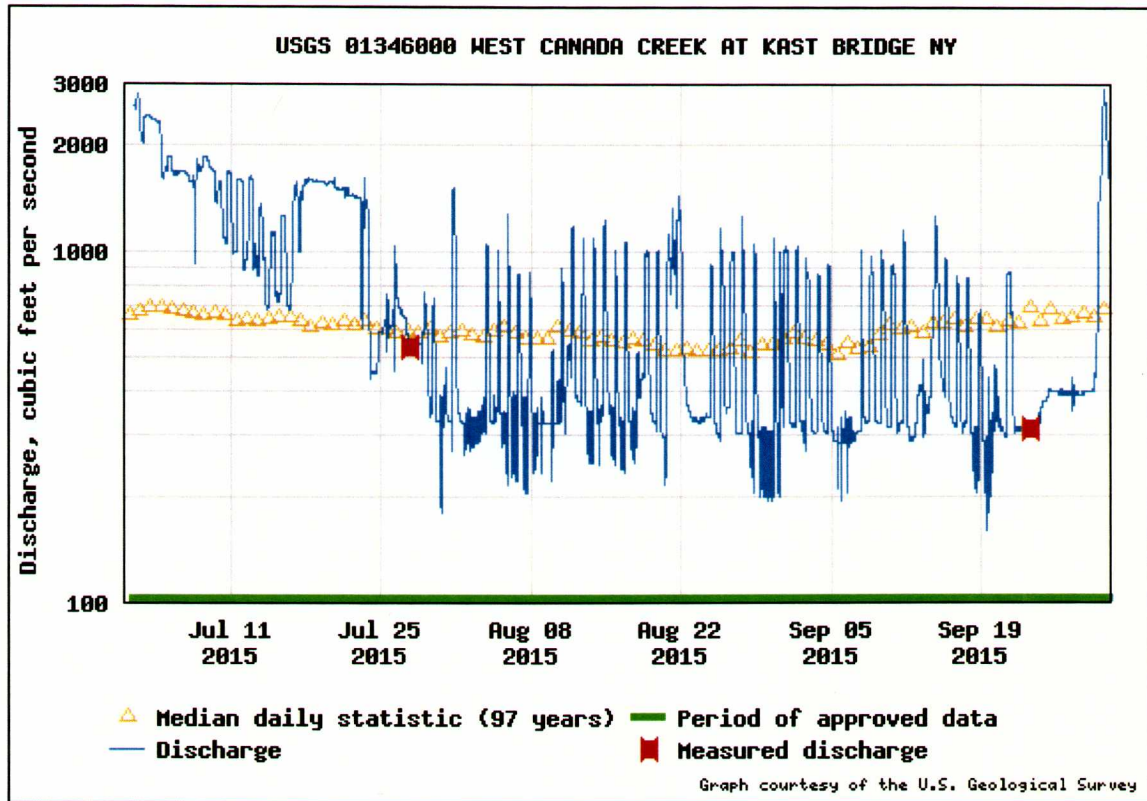
  
for David A. Stilwell  
Field Supervisor

cc: Brookfield, Fulton, NY (S. Murphy)  
Trout Unlimited, Plattsburg, NY (W. Wellman)  
American Whitewater, Sudbury, MA (R. Nasdor)  
West Canada Watershed Alliance (K. Kellogg)  
NYSDEC, Utica, NY (T. Phillips)  
NYSDEC, Watertown, NY (D. McDonald)  
SOL, Boston, MA (L. Tyhach)



## Appendix A

Flow records for peaking flows in West Canada Creek below the Newport Dam



# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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November 13, 2018

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

Re: West Canada Creek Project (P-2701-059)  
NYSDEC Comments on Proposed Study Plan

Dear Secretary Bose:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the August 13, 2018, Proposed Study Plan (PSP) filed by Erie Boulevard Hydropower, L.P., a Brookfield Renewable Company (Erie), for the relicensing of the West Canada Creek Hydroelectric Project with FERC Project Number 2701 (Project). This document provides NYSDEC's comments on the PSP pursuant to the Integrated Licensing Process (ILP) and 18 C.F.R. § 5.12.

## **Comments on Proposed Studies**

The NYSDEC offers the following comments on the proposed studies:

### **I. Aquatic Mesohabitat Assessment Study**

The 'targeted field assessment should include thorough investigation of any areas where tributary streams or seeps from springs exist, as these areas are likely habitat for both fish and aquatic macroinvertebrates, particularly during periods of low flow and above average air temperatures as likely occurred from late June through late August 2018. The portion of the study area of West Canada Creek extending downstream from the Trenton tailrace to the confluence of the Newport Dam impoundment should be thoroughly investigated by the targeted field assessment as this section is known as a "renowned trout stream" and aerial flight assessments could be extremely difficult due to water depth, water clarity, and vegetation cover during certain times of the year. Additional assessment methods may need to be explored based on weather and stream conditions in the project area when the field work is conducted.

Level loggers should also be placed in multiple locations throughout both the Prospect and Trenton bypass reaches to document the extent of hydraulic changes occurring within the bypass reaches. Temperature and DO loggers should be deployed at the same locations.

On pages 4-4 and 4-5 of the PSP in Section 4.1.7 (Methodology), of the Aquatic Mesohabitat Assessment Study, the Erie states that after the images have been georeferenced, object size will be measured using a geographic information system (GIS) and produce a raster image of dominate substrates. Following object size determination, the dominate substrate size raster will be classified into a mesohabitat cover type raster using Wolman's (1954) particle classification scheme. The NYSDEC requests that Erie ground-truth the data collected by the unmanned aerial vehicle (UAV) flights to ensure that the correct particle size is assigned to the substrate identified from the imagery data.

## II. Macroinvertebrate and Freshwater Mussels Surveys

NYSDEC's request regarding timed area surveys is specific to surveying freshwater mussels. Kick-net sampling is not a recommended method for surveying freshwater mussels.

Section 4.4.7 of the Gregory B. Jarvis Hydropower Project PAD (FERC No. 3211, NYPA 2017) stated that based on the unionid records in adjacent basins and the presence of an appropriate fish species hosts within the West Canada Creek drainage, it is possible that unionid mussels are present within the West Canada Creek including Hinckley Reservoir, but have not been documented to date. No surveys have been conducted in West Canada Creek to determine either the presence or absence of freshwater mussels; therefore, mussel surveys are necessary to determine which, if any, species are present and how Project operation may impact them and their habitat.

In Section 4.2.8 (Consistency with Generally Accepted Scientific Practice), for the Macroinvertebrate and Freshwater Mussel Surveys, on page 4-10 of the PSP Erie proposes to "*sample benthic macroinvertebrates following the NYSDEC Standard Operating Procedures for Biological Monitoring (NYSDEC 2018)*". Section 4.2.8 should reference the "Standard Operating Procedure: Biological Monitoring of Surface Waters in New York State" that was updated in May 2018 and is displayed on page 4-11 in Section 4.2.11 (References), for the Macroinvertebrate and Freshwater Mussel Surveys, of the PSP. More information regarding the Standard Operating Procedure: Biological Monitoring of Surface Waters in New York State may be found at the following URL: [https://dec.ny.gov/docs/water\\_pdf/sop20818biomon.pdf](https://dec.ny.gov/docs/water_pdf/sop20818biomon.pdf).

The last sentence in Section 4.2.8 on pages 4-10 through 4-11, Erie states that "*as requested by NYSDEC, surveys will be conducted consistent with one or more of the protocols from Smith et al. 2001; Strayer and Smith 2003; or West Virginia DNR 2015.*" This statement should be corrected to state that freshwater mussel surveys will be conducted consistent with one or more of the protocols from Smith et al. 2001; Strayer and Smith 2003; or West Virginia DNR 2015.

Freshwater pearly mussels surveys should be carried out in the impoundments/reservoirs, stream habitats and bypass reaches of the hydropower facility. The full areal extent of the survey should include:

- all areas of direct disturbance by hydropower project maintenance and improvement;
- anywhere there will be alteration of stream banks or the stream bed related to the project;

- areas with permanent or temporary changes to flow, sedimentation, intake of water or discharge of effluent, chemical discharge, or potential chemical spill discharge;
- equipment in stream or other disturbance; and
- all areas hydrologically influenced by the hydropower project.

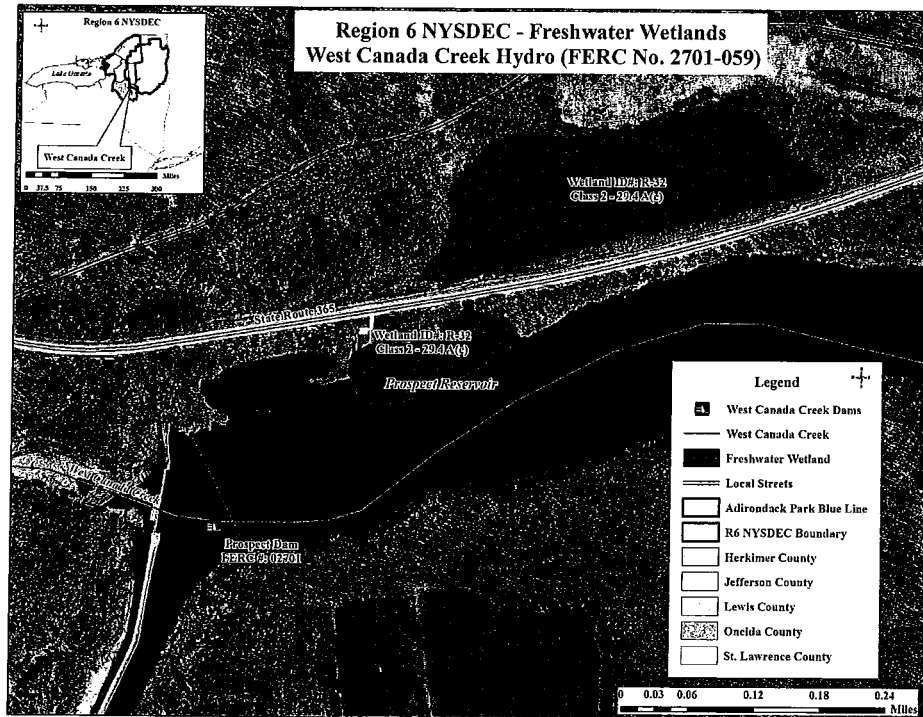
Initial freshwater mussel surveys should be timed area surveys consistent with one or more of the protocols referenced below:

- Smith, D. R., R. F. Vilella, and D. P. Lemarie'. 2001. Survey protocol for assessment of endangered freshwater mussels in the Allegheny River. J. N. Am. Benthol. Soc. 20(1):118-132;
- Strayer, D.L., and D.R. Smith. A guide to sampling freshwater mussel populations. American Fisheries Society, Monograph 8, Bethesda, Maryland; and
- West Virginia Mussel Survey Protocols (April 2015 revision) by West Virginia DNR available at:  
<http://www.wvdnr.gov/Mussels/West%20Virginia%20Mussel%20Survey%20Protocols.pdf>

Furthermore, all bivalve species encountered, including invasive species, should be identified and noted in survey reports. Discovery of Federally or State-listed threatened and endangered species may require additional more detailed surveys after Smith et al. 2001.

### III. Impoundment Shoreline Characterization Surveys

The NYSDEC generally concurs with the proposed Impoundment Shoreline Characterization Study provided that Erie includes a ground-truthing component of the NYSDEC Regulated Wetland(s) as well as the National Inventory of Wetland (NWI) wetlands that fall within the project boundary. Consideration should be given to NYSDEC Wetland ID# R-32 which is a 29.4-acre Class 2 wetland that crosses NYS Rte. 365 and extends into the Prospect Reservoir. As currently mapped, Wetland R-32 also extends onto the Prospect Boat Launch parking area (see Figure 3.0 below).



**Figure 3.0 – NYS Regulated Wetland on Prospect Reservoir**

#### IV. Fish Entrainment and Turbine Passage Survival Assessment Study

Surveys of fish in each impoundment are needed to identify the fish species for which literature reviews are necessary. No previous fish passage studies have been performed at either the Prospect or Trenton developments. The current clear spacing of the trash racks are 3 5/8-inch for the Prospect development and 2-inch clear spacing for the Trenton development. Fish impingement (trapped against, or injurious contact with an intake screen or bar rack) at the intake should be accounted for in a passage survival study.

#### V. Water Quality Study

Determining water quality at only two locations (i.e., below the Trenton and Prospect powerhouses) is insufficient, will not permit determination of Project impacts on West Canada Creek, will not provide enough information to adequately inform the Project licensing 401 Water Quality Certificate (WQC) application for compliance with State water quality standards, and will not inform on Project impacts to macroinvertebrate, mussel and fish habitats at other locations within the Project boundary. It is essential that Erie evaluate water quality data (water temperature, DO, pH, and conductivity) at several sites throughout the Project to permit evaluation of Project operation impacts on water quality in West Canada Creek, to inform the 401 WQC application, and to inform of Project impacts to macroinvertebrate, mussel and fish habitats. Water quality parameters should be determined at several sites and should minimally include: Jarvis Project tailrace, Prospect Reservoir, Prospect tailrace, Trenton Reservoir, Trenton tailrace, downstream of the New York State Canal Corporation's diversion weir (NineMile Creek Feeder Dam), Prospect bypass reach, and Trenton bypass reach.

On pages 4-21 through 4-23 in Section 4.5.5 (Background and Existing Information), for the Water Quality Study, only selective information from the NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) is provided concerning the source assessments for impairments to aquatic life and for habitat/hydrology in this section of West Canada Creek. Erie excluded the information that states aquatic life and habitat are impaired primarily due to water level/flow, thermal change and restricted passage, which should be incorporated into the record and assessment of the Project. Specifically, the following information should be incorporated:

From the following URL: <https://www.dec.ny.gov/chemical/36739.html>. (Revised 01/29/2010), the middle section of West Canada Creek from Prospect to Hinckley Reservoir [Water Index No. H-240-180 (portion 3)] listed in the Waterbody Inventory/Priority Waterbodies List (WI/WPL) provides the following details not entirely included in the PAD or the PSP:

#### Overview

Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.

#### Source Assessment

In the reach of the stream just below this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. The daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

From the following URL: <https://www.dec.ny.gov/chemical/36739.html>. (Revised 04/06/2010), the lower section of West Canada Creek from Newport to Prospect [Water Index No. H-240-180 (portion 2)] listed in the WI/PWL provides the following details not entirely included in the PAD or the PSP:

#### Overview

Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.

### Source Assessment

In the upper reaches of this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Other hydro facilities are located at Newport and at Herkimer (Kast Bridge). Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

From the following URL: <https://www.dec.ny.gov/chemical/36739.html>. (Revised 01/29/2010), the lower section of West Canada Creek from the mouth to Newport [Water Index No. H-240-180 (portion 1)] listed in the WI/PWL provides the following details not entirely included in the PAD or PSP.:

### Overview

Natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation.

### Source Assessment

In the reaches above this segment (Trenton Falls to Prospect) the stream is nearly dewatered to support hydropower generation. A major Niagara Mohawk hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Other hydro facilities are located at Newport and at Herkimer (Cross Bridge). Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage. (DEC/DFWMR, Region 6, April 2002).

## VI. Recreation Use, Need and Access Study

The Recreation Use, Needs and Access Study should include a survey of anglers to provide the angling public the opportunity to provide their observations and opinions on the West Canada Creek, how 2018 water flow conditions impacted their fishing experiences and opportunities, the adequacy of recreational opportunities, and how opportunities might be improved upon (e.g., addition of fishing platforms, launch development and/or improvements). The NYSDEC does not have boating access sites on West Canada Creek. Every NYSDEC public access site was purchased through the Public Fishing Rights (PFR) program and the deeds specifically state; "The



sole and exclusive right, privilege and easement of occupying and using at all times hereafter as a fishing ground and for no other purpose for the use and benefit of the public.” (example from Proposal #17 on the West Canada Creek, Herkimer County Book of Deeds; Liber: 344 on Page: 221).

The most widely fished section, a 2.4-mile section of the West Canada Creek below the Trenton Falls Dam, houses a siren and strobe light at Trenton Falls 15 minutes before water is released. Local fisherman have routinely stated that depending on conditions, the siren cannot be heard downstream very far which creates an unsafe condition for fisherman wading the river. Erie should identify methods for expanding the existing warning system to protect fisherman and other users of the resource near the Trenton Falls Dam.

## VII. Aesthetics Assessment Study

The NYSDEC generally concurs with the proposed Aesthetics Assessment Study, however, requests clarification on the assessment of existing flows and viewing opportunities at the Prospect and Trenton bypass reaches. In Section 4.7.7 (Methodology) on page 4-32 of the PSP, Erie does not state what different flows will be assessed in the bypass reaches other than a characterization of the timing and flow ranges of historic flow exceedance events with the past 5 years. To achieve the goal of assessing the aesthetical characteristics of potential flows within the bypass reaches a key objective should be to visually evaluate and compile data of the aesthetical properties provided by different flow regimes within the bypass reaches.

### **Comments on Studies Not Proposed**

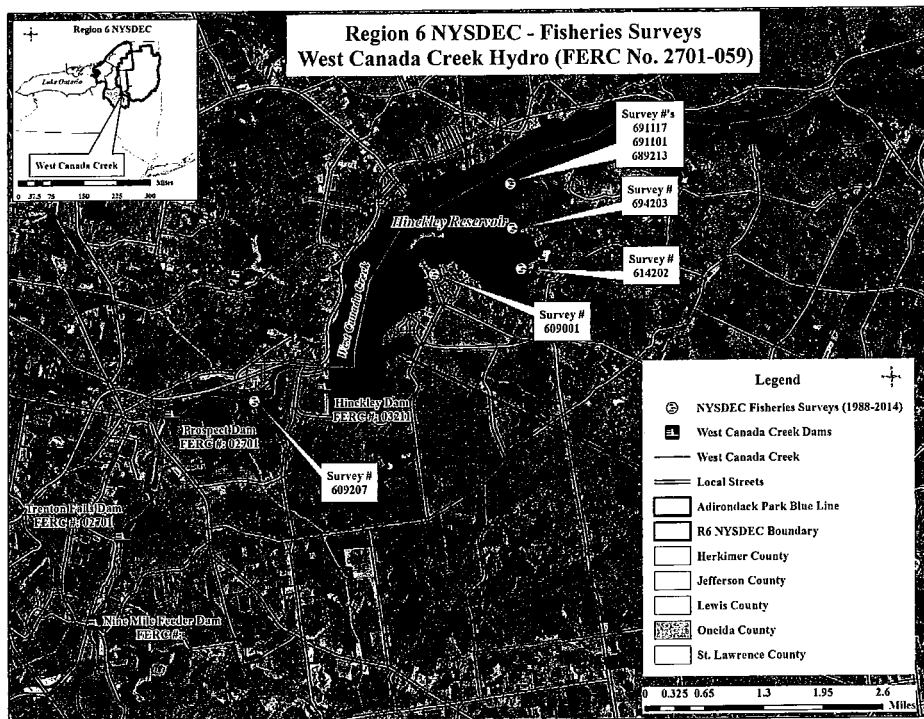
#### *I. Comprehensive Fisheries Surveys*

The NYSDEC disagrees with Erie’s rationale for not adopting a Fisheries Survey in the PSP. A Fisheries Survey is needed to identify the fish species assemblage in the Project boundary to effectively assess how Project operations impact the fish community. More specifically, Erie and other stakeholders can better assess how Project operations impact habitat and the fish species present if this study is performed. Fisheries survey data will also inform the Fish Entrainment and Turbine Passage Survival Study.

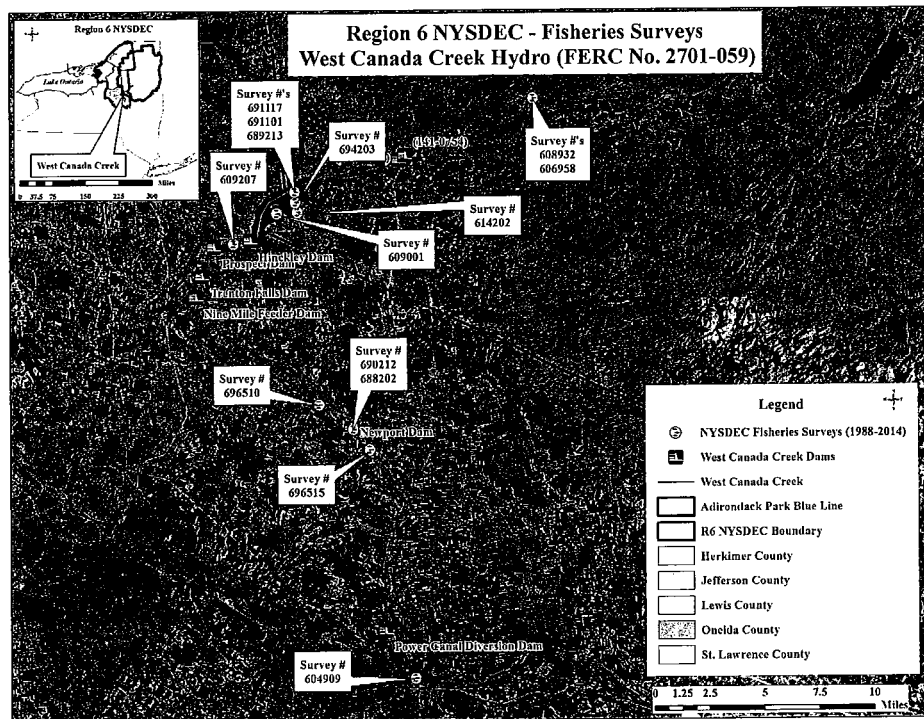
Erie incorrectly states that there are 26 years of sampling efforts (Section 3.3.1, pages 3-5 to 3-6) that, when combined with stocking information, provide fish assemblage information that is applicable to the area within the Project boundary. Erie states that species and length information from the surveys outside of the Project boundary and collected many years ago can be used to assess entrainment and turbine passage survival at the Project. The information in the Preliminary Application Document (PAD) is based on NYSDEC stocking records (obtained online) and 14 sampling events that occurred 1988-2014. Of these 14 sampling events, only six (6) were surveys that provided information on fish assemblages and biological data is limited (Table 1). Two (2) of these 6 surveys occurred in Hinckley (1989, 1994), three (3) of the 6 surveys occurred in West Canada Creek (2004, 2006, 2008) and were approximately nine (9) miles or more from the Project boundary, and only one (1) survey occurred within the Project boundary in Prospect Reservoir in 2009 (Table 1, Figures 1 and 2). The 2009 General Biological Survey conducted in Prospect

Reservoir resulted in the capture of only three fish (one golden shiner (*Notemigonus crysoleucas*), one smallmouth bass (*Micropterus dolomieu*), and one white sucker (*Catostomus commersonii*)); therefore, likely does not represent the fish community present in the reservoir which is stocked with trout. Biological data collected from the three fish sampled in Prospect and from fish sampled in Hinckley nearly 25 years ago is not applicable to the current status of fish within the Project boundary. For all fish populations, community structure, and species-specific age structure, growth rates, survival, recruitment, etc. change over time as habitat, prey availability and species composition, water temperature and other factors vary over time. No NYSDEC Fisheries surveys or sampling has ever occurred in the Trenton Project Reservoir/Impoundment.

<b>Table 1. Summary of NYSDEC Fisheries Surveys on West Canada Creek 1988 – 2014.</b>				
<b>Survey No.</b>	<b>Water</b>	<b>FIN</b>	<b>Date</b>	<b>Purpose</b>
614202	Hinckley Reservoir	H-240-180-P799	6/27/2014	TSMF collection
609207	Prospect Reservoir	H-240-180-P5355	10/21/2009	General biological survey
609001	Hinckley Reservoir	H-240-180-P799	6/2/2009	Whirling disease sampling
608932	West Canada Creek	H-240-180	9/25/2008	General biological survey
606958	West Canada Creek	H-240-180	7/6/2006	General biological survey
604909	West Canada Creek	H-240-180	5/19/2004	General biological survey
696510	West Canada Creek	H-240-180	7/26/1996	CROTS survey
696511	West Canada Creek	H-240-180	7/26/1996	CROTS survey
694203	Hinckley Reservoir	H-240-180-P799	6/23/1994	General biological survey
691117	Hinckley Reservoir	H-240-180-P799	9/10/1991	Other, see comments
691101	Hinckley Reservoir	H-240-180-P799	5/16/1991	Other, see comments
690212	West Canada Creek	H-240-180	8/21/1990	Stream protection
689213	Hinckley Reservoir	H-240-180-P799	8/24/1989	General biological survey
688202	West Canada Creek	H-240-180	7/28/1988	Pre-reclamation survey



**Figure 1. NYSDEC Surveys West Canada Creek Hydro - FERC No. 2701-059 (1988-2014)**



**Figure 2. NYSDEC Surveys on West Canada Creek (1988-2014)**

## II. Downstream Base Flow Study

The NYSDEC disagrees with Erie's rationale for not adopting a Downstream Baseflow Study for inclusion in the PSP. A Base Flow Study is necessary to determine the minimum base flow needed to support aquatic life, and how different flow regimes impact water quality parameters (e.g., water temperature, DO) critical for aquatic life. The Instream Flow Incremental Methodology (IFIM) study, conducted in 1980-1981, was not designed to establish a minimum base flow for the support and propagation of aquatic life. The 1981 IA study was designed to determine the changes in the amount of usable fish habitat based on substrate, velocity, and depth; however, did not consider how different flows impact other habitat variables critical for aquatic life (e.g., temperature, water quality, DO). A Base Flow Study using current methodology and with consideration of flow, air temperature, water temperature and DO is needed to adequately evaluate Project operation impacts to aquatic resources and inform the Project licensing 401 Water Quality Certificate (WQC) application for compliance with State water quality standards. Currently, releases (i.e., flows) from the Project are not recorded downstream of Trenton Falls; therefore, there is no way to determine what base flows are during planned reductions or how reduced flows may have impacted aquatic habitat.

## III. Prospect and Trenton Bypass Reach Flow Studies

The NYSDEC believes that the USFWS's Prospect and Trenton Bypass Reach Flow Studies, as described in the USFWS's June 28, 2018, request for studies letter, should be implemented by Erie. Erie has proposed to conduct an Aquatic Mesohabitat Assessment Study and an Aesthetic Study but is not proposing to perform a flow study of any kind in either of the bypass reaches. A flow demonstration through each bypass reach would allow resource agencies and Erie to determine what habitat is likely available for forage species fish and macroinvertebrates through these currently completely bypassed stretches of West Canada Creek. The two bypass reaches have been historically dry and void of water since the initial licensing, potentially resulting water quality issues.

### **NYSDEC Request for Studies**

As identified in the NYSDEC's Request for Studies submitted to FERC on June 28, 2018, the NYSDEC continues to respectfully request the following studies be performed to identify information needed to issue a 401 Water Quality Certification as part of the re-licensing of the Project.

#### I. Fish Community Study

Erie should conduct comprehensive fisheries surveys within the vicinity of the Project to inform how the Project impacts fish populations and species composition and inform the Fish Entrainment and Turbine Passage Survival Assessment. The NYSDEC requests Erie to use a variety of gear types during different seasons because the ability of any particular gear to capture fish is affected by fish species, size and behavior, the in-water physical and hydrological conditions of the sampling site and other seasonal variables. No single gear is effective for sampling all potential

species that may be found in a lake; however, multiple gears types used in combination throughout the season can effectively sample the majority of fish species present. During the fisheries surveys it is important to also collect water quality data because it will allow for evaluation of lake trophic status and characterization of ambient water quality conditions. Coinciding with the fish surveys, we request collection of standard water quality data (e.g. water temperature, DO, pH, conductivity, and turbidity) consistent with NYSDEC Division of Water Lake Classification and Inventory Monitoring Program procedures. The survey work should occur spring through fall of at least one year; with an option for a second year of study should the data collected be deemed inadequate upon review by the NYSDEC and the USFWS (e.g., due to anomalous weather condition). Erie must collect biological data, including length, weight, age to inform the assessment of entrainment and passage survival at the Project. An angler survey is needed in Prospect Reservoir and in West Canada Creek to determine the quality of angling opportunities (e.g., species-specific catch rates) within the Project boundary, gain insight into potential Project impacts to the fishery, and identify anglers' desired fishing opportunities. An angler survey would inform Erie on which species contribute most to recreational opportunities, and the species to focus on when evaluating impacts of Project operations on habitat (e.g., flow, temperature, DO), entrainment, impingement, and turbine survival.

### 1. *Goals and Objectives*

The goal of the Fish Community Study is to provide Erie with the fish species composition within areas impacted by Project operations to permit determination and evaluation of how Project operations impact the fish community. The habitat information collected during the other studies proposed by Erie combined with knowledge of the fish community determined from this proposed study are both needed to adequately evaluate Project impacts to aquatic resources.

More specifically, the Fish Community Study objectives are to:

- Identify the fish species that comprise the fish community within the Project's impoundments, bypass reaches, and tailraces using a comprehensive sampling approach. This information is critical to effectively assess Project impacts to aquatic resources.
- Determine the potential effects of the Project operations on fishing quality and fish species targeted by anglers.
- Gather the biological information needed to inform the Fish Entrainment and Turbine Passage Survival Assessment.
- Provide information necessary to inform actions needed for protection, mitigation, and enhancement of aquatic resources impacted by the project.

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), and rainbow trout (*Oncorhynchus mykiss*)), smallmouth bass, yellow perch (*Perca flavescens*) and sunfish (Family: *Centrarchidae*). Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and

maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

The information in the PAD is based on irregular surveys between 1988 and 2014 provided by the NYSDEC to the Gregory B. Jarvis Hydroelectric Project (FERC No. 3211), Herkimer-Oneida Counties Planning Program and the Hinckley Reservoir Working Group documents, along with NYSDEC stocking records obtained online. The data provided to the Jarvis Project by NYSDEC included data from the 14 sampling events that occurred between 1988 and 2014, of which 1 occurred within the Project boundary and provides very limited catch information and 5 only provide limited insight into West Canada's fish community that existed over 25 years ago (Hinckley Reservoir surveys) or from over 9 miles from the Project boundaries (West Canada Creek surveys).

The PAD states that the Prospect Reservoir trout stocking program has proven successful; however, fish survey data does not support this statement. One fish survey was conducted in Prospect Reservoir (2009; Table 1) and only 3 fish were caught (1-golden shiner, 1-smallmouth bass, and 1-white sucker), none of which were trout. No fish sampling has occurred in the Trenton Project Reservoir/Impoundment. The primary reason for the presence of a trout fishery in the Project boundary is due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD). Survival of stocked fish is not known. There is no evidence of natural reproduction nor is it likely to occur in a system that is thermally stressed due to the suspected causes and identified impairments as mentioned in the Waterbody Inventory/Priority Waterbodies List (WI/WPL).

The NYSDEC's WI/WPL found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower generation. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

Page 23 of the April 30, 2008 report to the Governor from the Hinckley Reservoir Working Group (HRWG) states that observations by NYSDEC staff since the 160 cfs minimum flows were instituted showed anchor ice and frazil ice formation during the winter, and warm water during the summer have negative effects on the stream. According to NYSDEC field observations, the ice froze out food sources and eliminated habitat while the warm water reduced the oxygen and carrying capacity of the stream and produced thermal shock to the fish. The extent of the impact is not known.

On page 46 of the 2008 report to the Governor the HRWG stated that based on comments from 1,100 fishermen interviewed by NYSDEC Fisheries staff during the 2007 West Canada Creek creel census, the summer and fall of 2006 was one of the best years for fishing on the West Canada Creek below Trenton Falls. The summer and fall of 2007 was one of the worst years for fishing in recent memory according to many of the same anglers. Anglers blamed the low flows for poor fishing in 2007 (NYSDEC 2007).

Fisherman interviewed during the 2007 West Canada Creek creel survey reported the flow regime on the creek below Trenton Falls appeared normal for the first part of the summer. By late July, fishermen and other recreational users of the creek were beginning to question the long periods of low flows compared to previous years. This phenomenon was more noticeable from Trenton Falls to Newport, a stretch of creek with few tributaries. The USGS stream flow gage at Kast Bridge recorded values below normal for this time frame (HRWG 2008).

NYSDEC records from 1992 documented water temperatures in West Canada Creek at Newport reached 83°F during a heat wave. There was a fish kill of hundreds of brown trout at that time from Newport to Herkimer. At Middleville, temperatures on July 31, 2007 were 82°F, based on a spot check by NYSDEC staff preparing for a training session. Cooler weather arrived, resulting in a drop in the stream temperature of a few degrees. No fish kills were noticed by the NYSDEC in 2007. To monitor the temporary flow reduction to 120 cfs in West Canada Creek below Trenton Falls, the NYSDEC biologists began monitoring the stream temperatures on September 28, 2007 by taking samples at the Trenton Falls and Middleville. The data showed the water temperatures were fluctuating four to nine degrees on a daily basis which is about twice the rate when flows were higher (HRWG,2008).

In 2018, reduced flows into the Hinckley Reservoir and reduced reservoir elevation resulted in planned reduced flows into Prospect Reservoir and at Trenton Falls. These reduced flows occurred during near record and record air temperatures and continued to occur through much of the summer when air temperatures were above average. Coldwater game fish, such as trout can undergo severe physiological stress when water temperatures exceed 70°F. On June 28, 2018 NYSDEC staff deployed temperature loggers, recording at hourly intervals, at several locations in West Canada Creek downstream from the Project area. For the temperature logger deployed near Trenton Falls, water temperature first exceeded 70°F at 3:00pm (for four hours) on June 30, 2018. Temperatures declined to the mid-60s at night. This cycle continued until July 20, when nighttime water temperatures remained in the upper 60s and daytime temperatures exceeded 70°F. Conditions worsened and temperatures exceeded 70°F from August 10 through 7:00am on August 20. Water temperatures below 66°F were not recorded again until mid-September. These extreme temperatures likely resulted in mortality or movement of trout to areas outside of the



renowned trophy trout section of West Canada Creek. Releases (i.e., flows) from the Project are not recorded in this area; therefore, there is no way to determine what baseflows were during the planned reductions or how reduced flows may have impacted fish habitat (e.g., water temperature, dissolved oxygen) and the fish community in the area.

Updated and comprehensive information on the fishery resources is needed to determine potential impacts of the Project on fish habitats and communities. Comprehensive and up-to-date fisheries information will be paramount to assist in developing potential protection, mitigation, and enhancement measures that may aid in ameliorating these impacts.

#### *5. Nexus to Projects Operations and Effects*

Freshwater fish and their habitat are among the aquatic resources potentially affected by Project operations. Knowledge of the fish community currently present, fish size and age structure throughout the Project is the essential to adequately evaluate how the impacts of Project operation on habitats in turn impact the fish community; how the fish populations are impacted by entrainment, impingement and passage through turbines; and is essential to inform Erie of what actions can minimize negative impacts or enhance benefits to fish and other aquatic resources should they exist. The Project operations alter water levels and habitats in the impoundments, and alters flows and impacts habitat (e.g., flow, temperature, DO) within the bypass reaches and downstream from the Project. An angler survey is needed in Prospect Reservoir and in West Canada Creek to determine the quality of fishing opportunities (e.g., species-specific catch rates) within the Project boundary, gain more insight into potential Project impacts to the fishery (e.g., how catch rates change under different flow regimes), and identify anglers' desired fishing opportunities. This would inform Erie about which species to focus on when evaluating impacts of Project operations on habitat (e.g., flow, temperature, DO). Finally, an angler survey would provide Erie with another opportunity to collect biological data that would inform the Fish Entrainment and Turbine Passage Survival Assessment.

#### *6. Methodology Consistent with Accepted Practice*

The recommended study uses standard scientific collecting techniques used in most hydro licensing activities.

The NYSDEC requests Erie to use a variety of gear types during different seasons because of the ability of any particular gear to capture fish is affected by fish species, size and behavior, the in-water physical and hydrological conditions of the sampling site and other seasonal variables. No single gear is effective for all potential species that may be found in a lake; however, multiple gears types used in combination throughout the season can effectively sample the majority of fish species present. Coinciding with the fish surveys, we request collection of standard water quality data (e.g. water temperature, dissolved oxygen, pH, conductivity, and turbidity) consistent with NYSDEC Division of Water Lake Classification and Inventory Monitoring Program procedures. The survey work should occur spring through fall of at least one year; with an option for a second year of study if the data collected is deemed inadequate upon review by the NYSDEC and the USFWS (e.g., due to anomalous weather condition). Erie must collect biological data, including length, weight, age to inform the assessment of entrainment, impingement and passage survival at

the Project. An angler survey in Prospect Reservoir and downstream of Trenton Falls in the renowned trophy trout section is also recommended.

### *Potential Sampling of Bypass Reaches and the Tailraces Including Below Trenton Falls*

Backpack electrofishing is an effective method for sampling streams and could be used to assess the fish community in the bypass reaches and wadeable portions of the tailraces. Boat electrofishing is an effective method of sampling larger tributaries.

### *Potential Sampling of the Impoundments*

Fyke nets are typically used to sample fish using the littoral zone and have been used effectively to capture large numbers of pre-spawning and spawning fish (e.g., walleye, yellow perch, crappie) in the spring (Table 2). Fyke nets set in late summer can sample the nearshore fish community, effectively capturing some species not typically collected with other gear traditionally used (Jackson et al. 2012). The fyke net used for warmwater fish community surveys is the AFS North American standardized fyke net (Bonar et al. 2009). The number of sites selected for fyke netting is dependent on lake size and habitat diversity. The minimum number should increase with increasing lake size: a minimum of 3 sites for lakes up to 200 acres, 6 sites for lakes 200-400 acres, 8 sites for lakes 400-1000 acres, and 10 sites for lakes larger than 1000 acres.

A shoreline bag seine is generally used as an effective means to capture fish that reside near shore or in shallow water and it is most efficient at capturing species that reside in the middle of the water column (Lyons 1986; Table 2). Fishes typically targeted with bag seines are cyprinid minnows and age-0 fishes. The bag seine used for warmwater fish community surveys is the seine described in the DEC Centrarchid and Percid Sampling Manuals (Green 1989, Forney et al. 1994). The number of sites selected for seining is dependent on lake size and habitat diversity. The minimum number should increase with increasing lake size: a minimum of 3 sites for lakes up to 200 acres, 6 sites for lakes 200-400 acres, 8 sites for lakes 400-1000 acres, and 10 sites for lakes larger than 1000 acres.

Gill nets are often used to sample a broad range of species at deeper water depths where many other gears are not effective (Table 2). They are useful for determining species composition and were a suggested method for sampling fish communities in the DEC Centrarchid Sampling Manual (Green 1989). However, gill nets have drawbacks that limit their utility, with high catch variability and size selectivity. Experimental gill nets, which have a range of different mesh sizes, are often used to sample different sized fish, but do not ensure that the complete range of species and sizes are captured (Pope et al. 2009). The gill net used for warmwater fish community surveys is the experimental gill net described in the DEC Percid sampling manual (Forney et al. 1994). If the impoundment is thermally stratified, netting should occur at sites above and below the thermocline to effectively sample the warm-, cool-, and cold-water species.

Boat electrofishing is an active capture method that is most effective at sampling the littoral zone of lakes and ponds for centrarchids, percids and most other species that utilize the shoreline area (Table 2). Electrofishing is size selective, with a general increase in capture efficiency with increasing fish length (Reynolds and Simpson 1978). However, it is not as size selective as trap

and gill nets and samples collected via electrofishing are generally more representative of the overall structure (age, size, growth) of fish populations. Also, the relative capture vulnerability of many littoral species, particularly adult centrarchids, to electrofishing is typically greater than it is to other gear types (Green 1989).

Table 2. Some suggested standard sampling gear, time of year and day, and potential water temperature range for determining fish communities in impoundments.

Gear type	Time of year	Time of day	Water temperature range
Fyke net	April - June	set afternoon / tend morning	59°-73°F
Bag seine	August - September	day	Before fall cooling
Experimental gillnet	September - October	set afternoon / tend morning	≤68°F
Boat electrofisher	September - October	night	59°F-73°F

### *Angler Survey*

An angler survey in West Canada Creek could be completed using the same standard survey method as was used in the NYSDEC 2007 West Canada Creek angler survey. Standard angler survey methods typically used for lakes could be used to conduct an angler survey in Prospect Reservoir.

### *Biological Data Collection*

Minimally, all fish should be identified to species, length and weight recorded, and age structures collected (i.e., scales for non-lethal collection methods and otoliths for lethal collection methods) for future age determination.

### *Water Quality Data*

Coinciding with the fish surveys, we request collection of standard water quality data (e.g. water temperature, dissolved oxygen, pH, conductivity, and turbidity) consistent with NYSDEC Division of Water Lake Classification and Inventory Monitoring Program procedures.

## *7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice*

The level of effort would involve one field crew sampling on a seasonal basis. The study would last for 1-2 years. The actual cost is unknown and would depend upon the gear types used, number of sampling locations, local labor costs, the ability to combine multiple studies (e.g., fisheries, macroinvertebrates, freshwater mussels, and water quality) into one task, etc. The existing literature is inadequate to fully address Project impacts, there are no alternatives to conducting standard fishery surveys, and existing survey data is either outdated, collected far from

the Project area, or insufficient to adequately inform the Erie of Project impacts to the fish community. Erie does have flexibility to design the most cost-effective way to acquire the necessary data.

## II. Base Flow Study

A Base Flow Study is needed to determine the minimum base flow needed to support aquatic life, and how different flow regimes impact water quality parameters (e.g., water temperature, DO) critical for aquatic life. The Instream Flow Incremental Methodology (IFIM) study, conducted in 1980-1981, was not designed to establish a minimum base flow for the support and propagation of aquatic life. The 1981 IA study was designed to determine the changes in the amount of usable fish habitat based on substrate, velocity, and depth; however, did not consider how different flows impact other habitat variables critical for aquatic life (e.g., temperature, water quality, DO). A Base Flow Study using current methodology and with consideration of flow, air temperature, water temperature and DO is needed to adequately evaluate Project operation impacts to aquatic resources and inform the Project licensing 401 Water Quality Certificate (WQC) application for compliance with State water quality standards.

### 1. *Goals and Objectives*

The goal of this study is to use currently accepted methods to evaluate how Project operation impacts aquatic habitat under different flow regimes, with consideration of air temperatures, impact water quality parameters (e.g., water temperature, DO) critical for aquatic life. This information will permit adequate assessment of impacts of Project operation on the West Canada Creek aquatic ecosystem

More specifically, the Base Flow Study objectives are to:

- Develop an Instream Flow model.
- Determine the minimum base flow needed to support aquatic life in bypass reaches and in West Canada Creek below Trenton Falls.
- Inform the §401 WQC application for the Project and their compliance with State water quality standards.
- Provide information necessary to inform actions needed for protection, mitigation, and enhancement of aquatic resources impacted by the project.

### 2. *Resource Management Goals*

West Canada Creek, in the vicinity of the Project, is managed by the NYSDEC as a mixed cool/cold water fishery. The NYSDEC's fishery management goals include sustaining and enhancing all existing viable fisheries resources of West Canada Creek especially for trout (brook trout, brown trout, and rainbow trout), smallmouth bass, yellow perch and sunfish. Additional goals include promoting the maintenance and propagation of all fish, wildlife and plant species in an ecological balance, and assuring designated water quality standards are achieved and maintained. The management goal for freshwater pearly mussels is to maintain populations composed of an array of self-sustaining and genetically diverse communities.

### 3. *Public Interest*

The requestor is a resource agency.

### 4. *Existing Information*

The current FERC license (FERC No. 2701) requires that a continuous minimum flow of 160 cfs must be maintained in West Canada Creek, as measured downstream of the NYSCC diversion weir at the Nine Mile Creek Feeder Dam. No information exists regarding how the base flows, deviations from the required base flows, or operating the Project in peaking generation mode, effect aquatic life in the bypass reaches and downstream to the confluence with the Mohawk River. The previous 1981 IA study did not measure discharge.

The response from the NYPA to FERC dated May 4, 2018 regarding comments received on the Revised Study Plan for the relicensing of the Gregory B. Jarvis Power Project (Hinckley Reservoir), FERC No. P-3211, it states that “the Power Authority has consistently maintained that impacts associated with instream flows downstream of the Prospect and Trenton Falls Developments would be analyzed in the relicensing of the West Canada Creek project and do not have any nexus to Jarvis Project operations” (20180504-5130 FERC PDF).

An Instream Flow Incremental Methodology (IFIM) study was conducted in 1980 – 1981. The 1981 IA stream flow study was not designed to establish a minimum base flow for the support and propagation of aquatic life; such as fish, wildlife, benthic macroinvertebrates, freshwater pearly mussels, and plant communities in a balanced ecological manner. The 1981 IA study was designed to determine the changes in the amount of usable fish habitat. It is likely that stream characteristics (e.g., width, depth, substrate and habitat type distribution) have changed since the 1981 IA study was completed as this system has seen multiple high-water events since 1980 – 1981. Multiple weather-related events that have recently made national news like the Hurricane Irene and Tropical Storm Lee events in 2011 and the Superstorm Sandy event in 2012 have created high-water events in the Mohawk River valley and its tributaries.

The 1981 IA study on page 1 stated that the study objective was to determine the changes in the amount of usable fish habitat. On page 6 of the 1981 IA study it stated that transects were located to sample hydraulic controls and habitat types and were not intended to measure discharge. The discharge calculation, however, should approximate stream discharge even though measurements were not made in straight channels with smooth substrate and laminar flow and that transects were not always located perpendicular to the flow. It was assumed that the NMPC releases were accurate and that discharge remained constant with each release. The NYSDEC never received confirmation that the NMPC releases were accurate and that discharge remained constant with each release. If a minimum base flow is to be set by a discharge value then a Downstream Baseflow Study that measures the actual discharge is highly warranted

On page 10 of the 1981 IA study under the Results section it stated that the calculated discharge varied among transects at the same reach and release which reflected the fact that transects were located to calculate habitat availability, not discharge.

In the conclusion of the 1980 IA study on page 16 it stated that usable habitat for adult brown trout remained fairly consistent between the 160 cfs and 350 cfs releases as did percent usable stream width between 160 cfs and 300 cfs releases (Tables 16, 19, and 22; Figs 15 and 15); however, previously on page 14 it stated that the greatest amount of usable habitat was available for adult brown trout at 250 cfs, 300 cfs, and 200 cfs releases at reaches 1, 2, and 3, respectively. The study also stated that the percent usable stream width was highest at 200 cfs and 250 cfs at reach 1 and 200 cfs at reaches 2 and 3 (Fig. 15). This implies that brown trout would have more usable habitat at a rate of flow that is higher than 160 cfs.

Furthermore, the conclusion of the 1981 IA study on page 17 clearly stated; that the determination of usable habitat from the incremental approach should be treated in a relative rather than an absolute manner because these numbers represented the potential habitat available to a certain species during a certain life history stage (Sheppard 1980, p 15). The conclusion also stated that the incremental approach used in this study to determine usable habitat only considered substrate, velocity, and depth; while other physical and/or biological factors (e.g., temperature, water quality, food supply, flow regulation, and intra- and interspecific interactions) may prevent full utilization of all of the indicated habitat.

The response from the NYPA to FERC dated May 4, 2018 regarding comments received on the Revised Study Plan for the relicensing of the Gregory B. Jarvis Power Project (Hinckley Reservoir), FERC No. P-3211, it states that "the Power Authority has consistently maintained that impacts associated with instream flows downstream of the Prospect and Trenton Falls Developments would be analyzed in the relicensing of the West Canada Creek project and do not have any nexus to Jarvis Project operations" (20180504-5130 FERC PDF).

The NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) found at: <https://www.dec.ny.gov/chemical/36739.html>, for portion 2 of West Canada Creek (from Newport to Prospect) and portion 3 of West Canada Creek (from Prospect to Hinckley) lists aquatic life as impaired, recreation as stressed, and habitat/hydrology as impaired. The overview from these documents states that natural resources habitat and hydrology and aquatic life support in this portion of West Canada Creek are impaired by significant fluctuations in stream flow and other hydrologic modifications resulting from hydropower. The source assessment states that in these reaches of the West Canada Creek, the stream is nearly dewatered to support hydropower generation. A major hydropower facility at Trenton Falls operates on storage mode rather than run-of-river. Farther downstream (Trenton Falls to mouth) the daily fluctuations in stream flow produce temperature extremes in the summer and winter. Several fish kills related to low flow, high stream temperatures during the summer have been documented in the past decade. The regional fisheries staff has also received numerous complaints regarding impacts on the fishing resource. The fishery is also affected by several dams on the stream that restrict fish passage.

On page 46 of the 2008 report to the Governor the HRWG stated that based on comments from 1,100 fishermen interviewed by NYSDEC Fisheries staff conducting the 2007 West Canada Creek creel census, the summer and fall of 2006 was one of the best years for fishing on the West Canada Creek below Trenton Falls. The summer and fall of 2007 was one of the worst years for fishing in recent memory according to many of the same anglers. Anglers blamed the low flows for poor fishing in 2007 (NYSDEC 2007).

Fisherman interviewed during the 2007 West Canada Creek creel survey reported the flow regime on the creek below Trenton Falls appeared normal for the first part of the summer. By late July, fishermen and other recreational users of the creek were beginning to question the long periods of low flows compared to previous years. This phenomenon was more noticeable from Trenton Falls to Newport, a stretch of creek with few tributaries. The USGS stream flow gauge at Kast Bridge recorded values below normal for this time frame (HRWG 2008).

NYSDEC records from 1992 documented water temperatures in West Canada Creek at Newport reached 83°F during the heat wave. There was a fish kill of hundreds of brown trout at that time from Newport to Herkimer. At Middleville, temperatures on July 31, 2007 were 82°F, based on a spot check by NYSDEC staff preparing for a training session. Cooler weather arrived, resulting in a drop in the stream temperature of a few degrees. No fish kills were noticed by the NYSDEC in 2007. To monitor the temporary flow reduction to 120 cfs in West Canada Creek below Trenton Falls, the NYSDEC biologists began monitoring the stream temperatures on September 28, 2007 by taking samples at the Trenton Falls and Middleville. The data showed the water temperatures were fluctuating four to nine degrees on a daily basis which is about twice the rate when flows were higher (HRWG 2008).

The recreational fishery on the West Canada Creek between Trenton Falls and Herkimer was reported to have the greatest angling pressure due to an angler effort of 14,942 hours, which translates to 20 angler-hours/acre. On average, the NYSDEC has stocked approximately 52,190 trout in West Canada Creek annually since 2011 in an attempt to maintain a quality recreational fishery at a significant cost. The primary reason for the presence of a trout fishery in this section of the West Canada Creek system is due to the large number of trout stocked annually by the NYSDEC (Table 5-10 of the PAD).

In 2018, reduced flows into the Hinckley Reservoir and reduced reservoir elevation resulted in planned reduced flows into Prospect Reservoir and at Trenton Falls. These reduced flows occurred during near record and record air temperatures and continued to occur through much of the summer when air temperatures were above average. Coldwater game fish, such as trout can undergo severe physiological stress when water temperatures exceed 70°F. On June 28, 2018 NYSDEC staff deployed temperature loggers, recording at hourly intervals, at several locations in West Canada Creek downstream from the Project area. For the temperature logger deployed near Trenton Falls, water temperature first exceeded 70°F at 3:00pm (for four hours) on June 30, 2018. Temperatures declined to the mid-60s at night. This cycle continued until July 20, when nighttime water temperatures remained in the upper 60s and daytime temperatures exceeded 70°F. Conditions worsened and temperatures exceeded 70°F from August 10 through 7:00am on August 20. Water temperatures below 66°F were not recorded again until mid-September. These extreme temperatures likely resulted in mortality or movement of trout to areas outside of the renowned trophy trout section of West Canada Creek. Releases (i.e., flows) from the Project are not recorded in this area; therefore, there is no way to determine what base flows were during the planned reductions or how reduced flows may have impacted fish habitat (e.g., water temperature, dissolved oxygen) and the fish community in the area.



## *5. Nexus to Projects Operations and Effects*

Project operations impact flow and aquatic resources. Operation of the hydroelectric project results in a peaking mode which creates a variable flow regime downstream from the Project and virtually no flow at times in the bypass reaches. The current license requires a minimum base flow of 160 cfs as measured below the Morgan dam; however, this was based on the 1981 IA Study conducted over 35 years ago using methods that differ from the current and widely accepted standard methods available now. A Base Flow Study, using currently accepted methods, is needed to ensure minimum base flows are appropriate for protecting aquatic resources over the next few decades. This study is necessary to determine if the existing base flow requirements provide appropriate protection for aquatic resources, or whether a different flow regime is necessary. This study will inform actions needed for protection, mitigation, and enhancement of aquatic resources impacted by the project. This study is necessary to inform the §401 WQC application for the Project and compliance with State water quality standards.

## *6. Methodology Consistent with Accepted Practice*

The NYSDEC recommends that Erie conduct an IFIM study on the West Canada Creek downstream of the Trenton development. This study should follow the methodologies for IFIM in the Instream Flows for Riverine Resource Stewardship (2004) guidance that have been updated considerably since the 1980 – 1981 instream flow study was conducted. The study can utilize the structure and the data of the 1980 – 1981 instream flow study, as applicable, but should also provide additional information regarding the changes in available habitat at minimum base flows versus peaking flows. In addition, temperature and DO should be incorporated into the analysis to allow for the evaluation of water quality conditions at each flow studied. The analysis should present data and maps that show the changes in these water quality conditions as flows move downstream across a range of ambient air temperatures, including colder winter temperatures. The information presented should describe the changes in water quality across the range of water depths at each sampling location and habitat type. This analysis would be most effective if it incorporated a planned, consistent release of 160 cfs under adverse (air temperature greater than 80° F) to set a baseline for the protection offered by the existing minimum base flow requirement.

While brown trout is the primary game species, the NYSDEC requests that Erie incorporate additional species of resource concern into the analysis including brook trout, rainbow trout, smallmouth bass, and primary forage species. Additionally, we request that spawning and egg incubation life stages be added to the analysis, as these are necessary life stages for successful reproduction.

The NYSDEC also recommends that Erie conduct habitat mapping of the downstream study reach. This mapping would identify the type of habitat in each section (e.g., riffle, run, pool) along with depths, velocities, and substrates. The mapping will allow for interpretation of changes in habitat with the changing flows and water quality conditions.

The recommended study uses a standard study design that has been used in many hydro licensing activities.

## 7. Level of Effort, Cost, and Why Alternative Studies Will Not Suffice

The level of effort for this study will likely be high. A team of several biologists will likely be needed to establish transects for flow and water quality monitoring for 1-2 seasons. The addition of some modeling and detailed mapping of the results along with literature and data reviews to update the 1980 – 1981 instream flow study will be needed. The Applicant can likely combine some of the water quality data from the Water Quality Study into the analysis. The habitat mapping would be done separately and would likely take a crew of two people 3-5 days. The actual cost is unknown but will likely be one of the costliest studies for this relicensing.

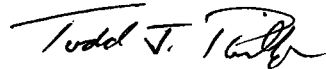
The cost is commensurate with the important resource issues to be addressed. Erie has proposed to develop an Aquatic Habitat Mapping Study, in consultation with the NYSDEC and the USFWS, and this study may partially suffice, provided that it addresses the habitat mapping requested for this study. No alternative studies to an IFIM that would allow for the assessment of a dual-flow, year-round, multi-species, water quality-driven issues below the Project.

## Conclusion

Under the ILP, the Licensee is required to file and have approved by the FERC a Revised Study Plan (RSP). The RSP issued by Erie should address the above-listed comments and incorporate the two additional studies requested by the NYSDEC.

Thank you for the opportunity to comment on the PSP during the relicensing and Clean Water Act § 401 Water Quality Certification process. If you have any questions or desire additional information, please contact me at (315) 793-2740 or [todd.phillips@dec.ny.gov](mailto:todd.phillips@dec.ny.gov).

Sincerely,



Todd J. Phillips  
Environmental Analyst  
NYSDEC Division of Environmental Permits

cc: File  
Steven Murphy, Erie

ec: Nick Ettema, FERC  
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John Wiley, USFWS  
Bill Wellman, Trout Unlimited  
Bob Nasdor, American Whitewater  
Kara Paulsen, NYSDEC

Jana Lantry, NYSDEC  
Dick McDonald, NYSDEC  
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Terry Tyoe, NYSDEC  
Thomas Voss, NYSDEC  
Randy Young, NYSDEC

# NEW YORK STATE COUNCIL OF TROUT UNLIMITED

8 November 2018  
7 Helen Street  
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Ms. Kimberly Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington DC 20426

## Proposed Study Plan Comments- West Canada Creek Project P-2701

Dear Secretary Bose:

The New York State Council of Trout Unlimited (NYSCTU) has reviewed the Proposed Study Plan as submitted and amended by Erie Boulevard Hydropower for this project. The New York State Council previously submitted comments on the initial Proposed Study Plan on 14 June 2018.

The Council regrets that Erie Boulevard Power has again failed to address the bulk of the concerns voiced in our earlier letter, just as they have failed to previously address the concerns noted and addressed in the 5 November 2018 letter of the US Fish and Wildlife Service. The Council has reviewed and fully supports the concerns noted by the USFWS.

General Comments: The studies currently proposed by the applicant are clearly inadequate because they (a) fail to provide a comprehensive, holistic study of the needs and concerns of the entire riverine system of the West Canada, (b) improperly segment the issues that are addressed, and (c) fail to consider the cumulative effects of the applicant's operations on the West Canada ecosystem. Issues as presented in the applicant's study are isolated from the real-world impact of their hydro operations on the health of the entire West Canada basin and its aquatic inhabitants. Without repeating each of the many concerns noted by USFWS, all of which are shared by Trout Unlimited, some especial egregious omissions are noted below:

West Canada Base Flow Study: Global warming, with its direct impact on fisheries (especially cold water trout fisheries), is a well-recognized factor in fisheries assessment and habitat research. That fact must be accepted by the Study proponents, and the Study Plan must be revised to include a realistic, holistic assessment of stream flow impact and conditions from Jarvis Dam to the mouth of the West Canada. Ample evidence exists of the problems already occurring on this highly regarded fishery, particularly those caused by high temperatures and inadequate flows. The West Canada is one of the East's most noted trout streams, and it should be respected as such. Simply stated, it deserves a thorough, complete and exhaustive Instream Flow Incremental Methodology (IFIM) Study of the type and scale that we have stated should be conducted. As noted by USFWS, the current IFIM study does not adequately address the impacts of peaking flows on water

quality and habitat. The necessity of such a requirement is basic in addressing relicensing of this project.

**Fisheries Surveys:** As noted in our letter of 14 June, currently available fisheries survey information is outdated. The Proposed Study Plan (PSP) does not adequately address the need for current information for the entire river system, which must include Prospect Pond, Trenton Pond, and the bypassed reaches. Information is also lacking on the lower stretches of the river, where the fishery's characteristics are much different than in its upper reaches. The attempt to use Jarvis/Hinckley information as a surrogate for current conditions is also ill-placed. Simply, conditions and impact of hydro power creation on Hinckley Reservoir are not the same as the project reservoirs; nor is it the West Canada Creek below the Brookfield facilities and to its mouth on the Mohawk.

**Bypass Reach Flow Studies:** The PSP does not adequately address the need for and methodology of studies to assess the Prospect and Trenton bypass reaches.

**Trenton Bypass Reach:** The proposal to conduct only an Aesthetics and an Aquatic Mesohabitat assessment does not address the urgent requirement for a comprehensive flow study in this reach of nearly a mile, particularly because it does not even currently have a minimum flow requirement and is usually dewatered. A comprehensive study here is necessary to determine when and to what extent flows are needed to support aquatic resources in this reach.

**Prospect Bypass Reach:** This reach also does not currently have a minimum flow requirement for its over one mile length. As in the case of Trenton, a comprehensive study is obviously needed to determine suitable flows for the protection of habitat and aquatic resources. Both Prospect and Trenton may prove to be additional natural resource sites if they are provided with sufficient and timely water.

**Inadequate Water Quality assessments and studies:** As currently proposed by the applicant, water quality studies throughout the West Canada would be limited to the river portion above Newport Dam. This is not a sufficient enough stretch of the river to allow FERC to properly gage water quality, flow adequacy, and the hydrographic impacts of the licensee's operations. Available data shows that peaking flows from the licensee's operations constitute a significant, if not overwhelming, portion of the downstream flows, especially during periods of general low flows. The operational impact of the applicant's activities on the resources of West Canada Creek below the Newport Dam is a valid requirement for a more detailed, comprehensive further study.

**Other Deficiencies and Comments:** Both the NYSCTU letter of 14 June and the USFS's comments include additional requests and comments that still remain unaddressed in the current proposal. NYSCTU continues to endorse the measures recommended by the Service, and to support its own comments made in our letter of 14 June.

The NYS Council appreciates the opportunity to comment on this matter.

Sincerely,

William H. Wellman, Hydro Chair, New York State Council of Trout Unlimited

CC: NYSCTU

DEC: T. Phillips

FWS: Patch

Brookfield: Murphy

American Whitewater: Nasdor

Document Content(s)

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UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Erie Boulevard Hydropower, L.P.  
Application for New License

West Canada Creek Hydroelectric Project  
Project No. 2701 – New York

AMERICAN WHITEWATER COMMENTS & STUDY REQUESTS IN  
RESPONSE TO PROPOSED STUDY PLAN FOR THE WEST CANADA CREEK  
HYDROELECTRIC PROJECTS (FERC PROJECT NO. 2701)

American Whitewater (AW) submits the following comments in response to the Proposed Study Plan filed by Erie Boulevard Hydropower, L.P. for the West Canada Creek Hydroelectric Project (FERC Project No.2701-NY). We incorporate by reference our previously submitted comments and study request, and we request that the Licensee revise and amend its Proposed Study Plan to correct the deficiencies in the proposed plan that fail to adequately address the ecological and recreational impacts of project operations in and below the project boundary.

The West Canada Creek Hydroelectric Project consists of two developments, Prospect and Trenton Falls, under the current FERC license, a continuous minimum flow of 160 cfs or less is released below the Trenton Falls Development. Both the Prospect and Trenton Falls developments contain bypassed reaches that are completely dewatered by project operations with no required minimum flows under the current FERC license.

The Project alters the natural hydrology of West Canada Creek downstream from the Trenton Development, eliminating naturally variable flows and replacing them with daily hydropeaks that fluctuate flows downstream from the project from low base flows to the project's maximum hydraulic capacity. The project rarely spills into either of the bypassed reaches, and the Licensee prohibits all public access to the natural river channel below the Prospect and Trenton Falls dams.

**Comments on Proposed Study Plans**

**4.1 AQUATIC MESOHABITAT ASSESSMENT STUDY**

We support requests by USFWS and NYSDEC to require the Licensee to conduct a robust flow study in the Prospect and Trenton Falls bypassed reaches as well as the reach below the Trenton Falls powerhouse, as these areas are significantly impacted by the Licensee's peaking operations. As requested by the resource agencies, the



Licensee needs to assess the impact of various flows on available physical habitat in the bypassed reaches to determine the minimum aquatic base flows necessary to support aquatic habitat.

The Licensee seeks to unreasonably limit the scope of this study by proposing a drone “fly over” to survey the bypassed reaches to assess only the mesohabitat under current flow conditions. Presently the project license allows for a dewatered natural river channel, eliminating suitable habitat that would be found in the river’s natural state. While we concur that aerial drone video recording of the bypassed reaches would be useful to document the river structure, it would not take the place of a properly conducted IFIM study as requested by the resource agencies. Limiting the habitat assessment to only current flow conditions improperly presumes that the Licensee will be permitted to continue to operate the project under a new license in the manner that it has operated under the current license rather than restoring habitat under new license conditions.

We believe that a new license should consider other modes of operation that would restore flows to the natural river channel bypassed reaches by providing an appropriate aquatic base flow. In addition, the Licensee should assess the natural flow variability on the West Canada Creek in order to evaluate other modes of operation that would restore flow variability in these natural river reaches.

Additionally, the Licensee does not propose to study the impact of its flow alteration on habitat suitability below the project. We request that the Licensee modify its proposed study methodology to include an analysis of indicators of hydrological alteration comparing its hydropeaking operations to the unaltered natural flow regime on the West Canada Creek and studying the impact of this flow alteration.

#### 4.2 MACROINVERTEBRATE AND FRESHWATER MUSSEL SURVEYS

We support study requests by USFWS and NYDEC requiring the Licensee to conduct macroinvertebrate and freshwater mussel surveys in the Prospect and Trenton impoundments and bypassed reaches as well as downstream from the Trenton tailrace to the Mohawk River. Project operations negatively impact aquatic habitat by unnaturally fluctuating impoundment levels, dewatering bypassed reaches, and hydropeaking in the riverine reach below the project. We support the request of those resource agencies for robust macroinvertebrate and freshwater mussel surveys as fish and wildlife species rely on macroinvertebrates and mussels as a food source and can be affected by reductions in their production through flow alteration at the project.

The study proposed by the Licensee unreasonably limits the geographic scope of the study to 1-mile below the Trenton tailrace rather than extending the survey to the Mohawk River notwithstanding project impact that extend well beyond the proposed study area. Additionally, the Licensee does not propose to study the impact of its flow diversion on the macroinvertebrate communities in the bypassed reaches that have significantly dewatered the natural river channel. As part of this study, the Licensee should compare the existing community to an unimpacted reach to determine the health of the macroinvertebrate community in the bypassed reaches.

#### 4.3 IMPOUNDMENT SHORELINE CHARACTERIZATION STUDY

No comments

#### 4.4 FISH ENTRAINMENT AND TURBINE PASSAGE SURVIVAL ASSESSMENT

No comments

#### 4.5 WATER QUALITY STUDY

We support the request by USFWS and NYSDEC that the Licensee complete a water quality study in project impoundments, bypassed reaches, and downstream from project powerhouses including sample locations downstream of the project down to the Mohawk River that may be impacted by project operations. Water quality in project impoundments are impacted by fluctuations in impoundment levels due to peaking operations, as is the reach between the Trenton Falls tailrace and the confluence with the Mohawk River. Water quality in bypassed reaches below the Prospect and Trenton Falls dams are profoundly impacted by project operations, as these areas are nearly completely dewatered by the flow diversion into penstocks leading to the project powerhouses. As the Supreme Court made clear in PUD No. 1, “water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery.” PUD No.1 of Jefferson County v. Washington Department of Ecology (92-1911) 511 U.S. 700 (1994).

While the Licensee proposes to complete a Water Quality Study, it unreasonably limits the geographic scope of the study to exclude project bypassed reaches as well as the downstream reach beyond the area immediately below the Trenton Falls tailrace. The Licensee should expand the scope of this study and FERC should require sampling locations in the bypassed reaches and further downstream from the powerhouses to

assess the impact of the Licensee's peaking operations on water quality in these reaches.

The Licensee has proposed to limit the sampling locations for the water quality study to two sites, one at each powerhouse outlet in this project. These sampling locations are inadequate and not representative of the areas impacted by project operations. Sampling at one of the deepest points in the river where cold water is being introduced from an impoundment and a small dam immediately upstream is not a sufficient basis for assessing DO and water temperature throughout the project area. The proposed sampling locations do not in any way reflect the shallow, rocky character of West Canada Creek, and are not indicative of habitat conditions.

The Licensee proposed as part of the study process to install five water level loggers in West Canada Creek below the power project. We request that water quality measurements be logged at each of these locations so that an accurate assessment may be conducted on the impacts of the power project on water quality. We also request that level logging and water quality data be collected in the bypassed sections. Additionally, the licensee would not commit to the number, locations, or process for selecting locations for the water level loggers. We propose that these locations be selected with input from USFWS and NYSDEC to ensure accurate and representative data.

#### 4.6 RECREATION USE, NEEDS AND ACCESS STUDY

The West Canada Creek Hydroelectric Project impacts recreational resources in and below the project boundary by fluctuating impoundment levels above the Prospect Dam, eliminating boating opportunity in the dewatered natural river channel bypassed reaches, prohibiting public access to project lands, eliminating aesthetic views of Prospect Falls and Trenton Falls, and altering natural flows through its peaking operations that adversely impact boating and angling opportunities from below the Trenton Falls powerhouse to the convergence with the Mohawk River. In order to assist FERC with its NEPA analysis of project impacts on recreation values, the Licensee needs to assess existing recreation facilities, use, and access, as well as impediments that limit recreation opportunity in the project area. These impediments must necessarily include the current mode of project operations and any access restrictions. We are seeking to determine whether the Prospect Development bypassed reach has the potential to provide high-quality whitewater boating once sufficient flows are provided. In addition, we are seeking to determine whether a change in project operations would restore whitewater boating opportunities that have been lost due to project operations.

American Whitewater requested that the Licensee conduct a Recreation Facilities, Use and Aesthetics Study. In addition to typical elements required in FERC recreation studies including facilities inventory, recreation use and needs, and present and future demand, we requested a more robust study that included an assessment of the whitewater boating potential of the bypassed reaches and the downstream reach between the Trenton Falls powerhouse and the Mohawk River that is adversely impacted by project operations. As the Licensee currently prohibits access to and recreation in the natural river bypassed reaches, we are also seeking an assessment of the need for recreation access within the project boundary for boating, hiking, and aesthetic viewing opportunity.

Our study request seeks the following goals & objectives:

- (a) assess the presence, quality, access needs, flow information needs, and preferred flow ranges for river-based boating resources in a stepwise manner;
- (b) assess the effects of a range of optimal and acceptable flows on whitewater recreation opportunities for whitewater paddling in the natural river channel, including: (1) the bypassed reach below the Prospect Dam and the Prospect Development powerhouse, and, (2) the river reach between the Trenton Falls powerhouse and the confluence of West Canada Creek with the Mohawk River;
- (c) assess the frequency, timing, duration and predictability of optimal and acceptable paddling flows under current, proposed, and alternative modes of operation;
- (d) identify the need for, and define adequate put-in and take-out points that promote car-top boating, and also identify the needs for parking areas;
- (e) identify the location, challenge, and other recreational attributes associated with specific rapids and other river features;
- (f) assess the flow information needs of whitewater boating and the current and potential flow information distribution system.

In response to American Whitewater's study requests, the Licensee purports to conduct a study of recreation use, needs, and access in the project area.<sup>1</sup> The proposed study is deficient in that it fails to utilize standard methodology for conducting a study of whitewater boating in the project area. Instead, the licensee solely proposes to evaluate current whitewater boating access under the current mode of operation and without providing additional public access. Such an analysis will yield no useful information on potential whitewater boating use of the bypassed and downstream reaches that are impacted by project operations. A fundamental purpose of a whitewater boating study is

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<sup>1</sup> The Licensee has proposed a separate Aesthetics Assessment Study. As discussed *infra*, this proposed study is deficient in that it proposes to study project aesthetics under current dewatered conditions rather than under variable flow conditions using standard methodology.

to determine the minimum acceptable and optimal boating flows on a river reach, yet the proposed study wholly ignores flow as a necessary element of whitewater boating.

With regard to the Prospect Falls natural river channel bypassed reach, nothing is known about the minimum acceptable or optimal boating flows, although there is anecdotal information that this reach has been previously boated under spill conditions. While the reach below the Trenton Falls powerhouse and Herkimer is listed in the American Whitewater rivers database and is frequently used by recreational boaters and tubers, minimum acceptable and optimal boating flows are similarly unknown. Boaters, however, report that the Licensee's hydropeaking operation often leaves boaters stranded as the required minimum flow of 160 cfs is insufficient for boating.

The Proposed Study Plan fails to elaborate on how its supposed study "has adopted approaches and incorporated aspects of the methodology provided in the stakeholders' study requests with the intent to efficiently and effectively address the requested study needs and the goals and objectives of the resource study." The Licensee seeks to avoid its obligation to conduct a meaningful examination of the flows necessary for whitewater boating, the frequency with which those flows are available under current operations, and the opportunity that would exist under a different mode of operation. Mitigation for project impacts could include access improvements, bypassed reach flow information, scheduled spill in the Prospect bypassed reach, and modifications to generation schedules to provide sufficient boating flows below the project.

It is widely accepted in FERC relicensing proceedings that an assessment of the whitewater boating opportunity impacted by hydropower projects requires a controlled-flow study following a standard methodology in a stepwise manner. In *Flows & Recreation: A Guide to Studies for Recreation Professionals*, Whittaker et al. specify the step-wise approach to conducting whitewater boating studies<sup>2</sup>. The steps are as follows:

- Level 1 – “desk-top” options: This is the initial information collection and integration phase. It usually focuses on “desk-top” methods using existing information, or limited interviews with people familiar with flows and recreation on the reach.
- Level 2 – limited reconnaissance options: This increases the degree of resolution through limited reconnaissance-based studies, more intensive analysis of existing information, or more extensive interviews.

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<sup>2</sup> *Flows and Recreation: A Guide to Studies for River Professionals* by Doug Whittaker, Bo Shelby, and John Gangemi ( 2005)

- Level 3 – intensive studies: This substantially increases the degree of resolution through more intensive studies, which may include multiple flow reconnaissance, flow comparison surveys, or controlled flow studies.

The Licensee does not intend to follow the standard methodology for assessing whitewater boating opportunity on either the Prospect bypassed reach or below the Trenton Falls development.<sup>3</sup> In doing so, the Licensee seeks to avoid collecting data that would evaluate the adequacy of current recreational opportunities and the need for additional measures under a new license. The purpose of the studies is to provide FERC with sufficient information with which to complete its NEPA analysis, and the Licensee's unwillingness to complete a robust study will prevent FERC from performing an adequate environmental review of the project.

The Licensee's proposed recreation study relied on a user survey which would be conducted during the two weekends a year when the public is allowed to access the Trenton Falls overlooks. Proper recreation management requires identification and planning for different user groups. A survey of day hikers will not be representative of the whitewater boaters, fisherman, or any other user group. We propose that separate surveys be conducted to target other user groups.

The Trenton Falls Gorge and Prospect Falls were a significant tourist attraction while in their natural state before the current hydro project eliminated public recreation activities and diminished the natural aesthetics. We request that any recreation survey include economic questions to help determine the opportunity cost to local tourism of the current state of the hydro project. Users should at a minimum be asked how far they traveled to view the falls and if they spent any money in the area, if they have been to West Canada Creek before, and would they visit again.

#### 4.7 AESTHETICS ASSESSMENT STUDY

American Whitewater and numerous other stakeholders requested that the Licensee conduct an aesthetic flow study in the Prospect and Trenton Falls bypassed reaches. These river reaches contain a series of dramatic falls carving a deep gorge and was once a major tourist attraction in the region. Hydropower facilities and operations have eliminated nearly all opportunities that the public once had due to the diversion of all flows from the natural river channel. To compound matters, the Licensee prohibits the public from viewing Prospect Falls throughout the year, threatening anyone who attempts access with arrest for trespass. At Trenton Falls, public access to view the falls is limited to two weekends annually that can draw thousands of visitors to view the

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<sup>3</sup> Stakeholders have not requested a whitewater flow study in the Trenton Falls bypassed reach.

dewatered gorge. One can expect that there would be significant public demand if flows to the falls were restored and access regularly provided to allow the public to view these extraordinary geologic features in their natural state. Access restrictions imposed by the Licensee cannot be justified by project operations.

While the Licensee purportedly proposes to conduct an Aesthetics Assessment Study, the study plan is wholly inadequate. Rather than employing standard methodology in which a team of evaluators are assigned to observe aesthetic features under a range of flow conditions from various vantage points, the Licensee instead proposes to assess project aesthetics only under the current dewatered flow conditions. Protecting aesthetic resources in the project boundary so that FERC can perform its NEPA analysis requires an assessment of both flows and access. Assessing the aesthetic character of the Prospect and Trenton Falls bypassed reaches from distant, rarely accessible, or obstructed viewpoints under dewatered flow conditions will not provide FERC with adequate data with which to perform its NEPA analysis.

### **Conclusion**

American Whitewater respectfully requests that the Licensee revise its Proposed Study Plan to address these comments and concerns in order to provide FERC with sufficient information to conduct its NEPA analysis of project impacts.

Respectfully submitted this 29<sup>th</sup> day of October, 2018

Bob Nasdor  
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UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Erie Boulevard Hydropower, L.P.	)	West Canada Creek Hydroelectric Project
	)	Project No. 2701
	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 29<sup>th</sup> day of October 2018



Carla Miner  
American Whitewater  
Stewardship Assistant

## Service List for P-2701-000 Erie Boulevard Hydropower, L.P.

Contacts marked \*\* must be postal served

Party	Primary Person or Counsel of Record to be Served	Other Contact to be Served
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New York Rivers United	Richard Roos-Collins Director, Legal Services Natural Heritage Institute 2140 Shattuck Avenue, Ste. 801 Berkeley, CALIFORNIA 94704-1229 UNITED STATES rrcollins@waterpowerlaw.com	
New York State Council of Trout Unlimited	William Wellman Region 5 Vice President NYSCTU New York State Council of Trout Unlimited 7 Helen Street	Paul W Miller Region ^ Vice President NYSCTU 3825 Miller Road

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November 9, 2018

Federal Energy Regulatory Commission  
c/o Kimberly D. Bose, Secretary  
888 First Street, NE  
Washington, D.C. 20426

Re: West Canada Creek Hydroelectric Project (FERC No. 2701)

Dear Secretary Bose:

The Citizens for Hinckley Lake has reviewed the proposed study plan submitted to the Federal Energy Regulatory Commission (FERC) by Brookfield Renewable (Brookfield) as well as the Scoping Document 2 revised by FERC in regards to the West Canada Creek Hydroelectric Project (P-2701). While our focus will continue to mainly be on Hinckley Lake's Jarvis Project (P-3211), we will continue to be active in the West Canada Creek Project because of the negative impacts Brookfield has had on the lake over the years.

## General Comments

We want to be sure that FERC understands that we are fully supportive of hydropower production as it is a clean, renewable resource that is positive for the environment in most cases. But we are NOT in favor of Brookfield being relicensed under their current operation as Brookfield has stated they would like to do. Brookfield's current operation is not a positive to the entire West Canada river system including Hinckley Lake all the way down to the influence of the Mohawk River. There are certainly more positive ways to harness the power of this waterway in which the fisheries and other aquatic resources, recreation, the local economy, and other areas are not negatively impacted. No one is in favor of relicensing Brookfield under their current operations as it would NOT be in the best interest of the public. Many changes need to occur. Brookfield needs to manage their hydropower dams in a way that in essence goes unnoticed and that creates a much more natural flow of water, they need to create a positive relationship with the other entities that utilize this water way, as well as create a positive working relationship with the general public that relies on this water way for work, recreation, and their overall quality of life.

## Canal Corporation planned for a new Reservoir (Gray Reservoir)

Attached (at the end of this document) is a news article from 2010, which describes the plans the New York State Canal Corporation (NYSCC) had in place to build a new reservoir in the same area as the Gray Reservoir upstream from Hinckley on the Black Creek. The new reservoir would have been larger than the old Gray Reservoir. The article demonstrates the continued difficulty for the NYSCC to deviate from the operating diagram due to the legal constraints that Brookfield continued to hold them to, even

when the public drinking water supply was in jeopardy, recreation was devastated, and obviously the natural resources damaged. This was all due to a bad agreement made between entities back in the early 1900's. Due to Brookfield's continued greed, the NYSCC saw the only option to solving all of the issues at Hinckley was to build this new reservoir to help supplement the lake water during dry times as the NYSCC had to continue to release water downstream to Brookfield no matter the situation to stay in compliance with the operating diagram.

## Gray Reservoir impact on Hinckley and the West Canada

During the Scoping Meeting one of our members spoke about the Gray Reservoir dam being dismantled and the possible impacts that has had on Hinckley and the West Canada. The attached (at the end of this document) news article gives more insight on that. The debate of the Gray Reservoir has gone on for years and yet no one has concrete evidence on whether how or if it has impacted Hinckley. The Citizens for Hinckley Lake believes that it does have a small impact in that it could replace the Mohawk Valley Water Authorities (MVWA) withdrawal of water from Hinckley. Yet in the whole scheme of things, the MVWA's withdrawal is quite minimal compared to what is released downstream for hydropower production. Whether the Gray Reservoir was still in use today or not, we believe that a high steadier water level in Hinckley Lake with a more natural river of flow release from May thru Columbus Day weekend every year would solve all of the issues.

## 2018 Hinckley Operation

Water levels at Hinckley again quickly dropped to the low levels this past June. Despite the dryer than normal conditions in the Upstate NY region, Hinckley's levels were much lower than any other human controlled lake in the area. The 2012 Operating Diagram and its attachment to Brookfield's West Canada Creek dams down below Hinckley again caused the low levels. The New York Power Authority (NYPA) and the NYSCC made the difficult decision to reduce outflow from Hinckley to 250cfs to steady the water levels in the lake for the summer season. This outflow stayed at 250cfs for the majority of the summer months. This was great news for the MVWA, property owners, business owners, and general public that utilize the lake. But it was again a difficult decision to make for NYSCC and NYPA due to the fact that Brookfield will still hold them accountable for giving them water later on or monetarily compensating them even though they made a decision that was in the best interest of the public. Also, If the NYSCC and NYPA were able to slow the release up earlier in June when the water level was much higher, they probably could have made it a release of between 300-400cfs and NYPA would have been able to produce more consistent power for a longer period of time without devastating the fisheries and recreational aspects of the lake. That would have been the ideal situation for all involved. But again, Brookfield was the issue.

With the reduction of the outflow to 250cfs, it proved that the NYSCC could still manage the canal system with the reduced outflow while keeping Hinckley's water levels steadier

during a dry period. This proves that Hinckley can be and should be managed similar to other human controlled lakes in the upstate NY/Adirondack area.

## Conclusion

As we continue to reiterate, Brookfield is a major problem with this water way. A lot of changes are needed. We look to FERC to leave no stone unturned in this process so that we can solve the problems that have plagued Hinckley Lake and this entire waterway for too many years now. One can continue to look at Brookfield's West Canada Creek Project and envision how much different everything would be if they were not there. The fisheries and other wildlife that rely on the lake would flourish and be unharmed, the local economy would reach its full potential, and recreation would be consistent and reliable year round.

Thank you for allowing us to partake in this process. We look forward to continuing to be actively involved in the relicensing process for both the Jarvis Project and the West Canada Creek Project. If there is any more information that is needed, please do not hesitate to contact me.

Sincerely

Blake Bellinger  
Citizens for Hinckley Lake  
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# OBSERVER-DISPATCH

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## State Canal Corp. plans new reservoir

By BRYON ACKERMAN

Posted Mar 10, 2010 at 12:01 AM

Updated Mar 10, 2010 at 10:21 AM

There will be no changes today to the water releases from Hinckley Reservoir. Oneida County Executive Anthony Picente said it's "just unacceptable" that the state Canal Corp. and Erie Boulevard Hydropower are willing to wait on the weather before making changes. The Canal Corp. needs to "just get a backbone" and make the changes," Picente said.

On a day when Hinckley Reservoir's water level dropped even lower, a top state Canal Corp. official said Wednesday the agency has applied for \$50 million in federal stimulus money to build an additional 6-billion-gallon reservoir in northern Herkimer County.

The new body of water would sit very close to where the old Gray Dam once stood, a dam whose razing in 2002 has become a flashpoint in the debate over water resource management in the Mohawk Valley.

Director of Canals Carmella Mantello said the new reservoir would be about one-fourth the size of the 25-billion-gallon capacity Hinckley Reservoir. Building it could solve many regional water concerns, potentially ending the legal and other conflicts that emerge when the existing reservoir runs low:

-- The Mohawk Valley Water Authority could expand its services to additional municipalities seeking public water in western Herkimer County and central and western Oneida County.

-- Additional hydropower could be generated without worries that a water shortage could divert resources from this purpose.



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<https://www.uticaod.com/x2096608329/Canal-Corp-We-re-commit...>

-- The Canal Corp.'s function of supplying sufficient water for canals, fisheries and recreational purposes would not find itself in competition with the Mohawk Valley's water supply.

Mantello said the application, submitted months ago, is well-detailed. The agency is now working on garnering support for it and building necessary partnerships to make the project move forward.

"I think all of us recognize that something of this magnitude will require all of the stakeholders - including the state - having to step up to address this issue," Mantello said. "We're committed to resolving the issue here in the Mohawk Valley."

Initial reaction from the water authority was decidedly negative, however.

"If you spend money on another reservoir, you're flushing it down the drain," Water Authority Board of Directors Vice Chairman Bruce Brodsky said.

A new reservoir would be a waste of taxpayer money and isn't needed because there is plenty of water, he said. Until 2007, deviations from the normal water management plan were easily made to avoid problems, and the Gray Dam really wasn't needed, Brodsky said.

Meanwhile, Hinckley keeps dropping. As of 6:45 p.m. Wednesday, the reservoir's elevation was at 1,188 feet above sea level - more than a half foot below the lowest point reached in 2007 and only 3 feet from potentially impacting the drinking water supply.

The Canal Corp. and Erie Boulevard Hydropower did not reduce releases of water from the reservoir Wednesday. More conference calls among involved agencies are scheduled for today, even as the prospect for rain this weekend emerged.

In the meantime, no water-conservation measures were enacted locally.

### **A second reservoir?**

There once was a second reservoir in the Hinckley Reservoir watershed: a 1.2-billion-gallon reservoir created by the Gray Dam, which was built in 1905. The

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Water Authority tore down the Gray Dam in 2002, a move that's come under much criticism ever since.

Water Authority Executive Director Patrick Becher has said the reservoir created by Gray Dam was almost never used. Even if the dam had still existed, it would have made very little difference in the water crisis of 2007, when state agencies decided to shift water resources to avoid draining Hinckley Reservoir even more deeply, he said.

Now, the proposed 6-billion-gallon reservoir would be that same area, but could have a different name due to the strong feelings regarding the Gray Dam name.

Herkimer County Administrator James Wallace said he supports building a new reservoir in the region.

"I think it would be very helpful," Wallace said.

Oneida County Executive Director Anthony Picente said he found out about the Canal Corp.'s stimulus money application "by accident" after it had been made.

"I don't know that that's the solution," he said of building a new reservoir. There might be better uses locally for stimulus funding such as accessing other reservoirs or addressing sewer issues, he said.

He expressed concern that a "devious" Canal Corp. is talking about regional cooperation even while it quietly applied for a new reservoir.

"Evidently, they already decided that's the solution," Picente said.

#### **'A cost to us'**

Picente, Wallace and the water authority continued Wednesday to call for cutbacks on releases from the reservoir, but those requests were denied during a 2 p.m. conference call. A second conference call at 4:30 p.m. was cancelled.

Mantello said it might be premature to reduce releases at this time.

The canals are closed this time of year, but Erie Boulevard Hydropower relies on water released from the reservoir to produce power, Mantello said. The Canal Corp., which controls releases from the reservoir, can't deviate from the nearly-

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century-old operating diagram without facing possible legal consequences from the power company, she said.

But the Canal Corp. would act if the water level drops to 1,185 feet above sea level, she said.

"No matter what, the Canal Corp. - we and all of the other stakeholders - aren't going to jeopardize public drinking water," she said.

Julie Smith-Galvin, a spokeswoman for Brookfield Renewable Power Inc., which owns Erie Boulevard Hydropower, said the company has rights to the water being released from the reservoir and is looking to be compensated if releases are reduced. The company has offered to split costs 50/50 with the Water Authority, whose board has refused to do so, she said.

"There is a cost to us," she said. "We need to find an agreement."

Smith-Galvin said she didn't want to speculate about whether action would be taken if the reservoir drops to even lower levels, but she said the company wants to cooperate to avoid putting drinking water at risk.

Picente said it's "just unacceptable" that the state Canal Corp. and Erie Boulevard Hydropower are willing to wait on the weather and risk the water level dropping closer to 1,185 feet above sea level. The Canal Corp. needs to "just get a backbone" and make the changes, Picente said.

In a released statement, Water Authority Board of Directors Chairman Elis DeLia said the water level should not be allowed to drop. The power company could recoup lost revenues by over-releasing water when the reservoir is full, as has been done in the past, DeLia said.

"MVWA will not task its customers to incur added costs when there is a no-cost solution available - operating diagram deviations," DeLia said. "MVWA regards dedicated customer payments for non-essential, non-critical needs as a breach of its fiduciary responsibility as a public authority."

### **Weather impact**

Officials are hoping for precipitation and warm temperatures to melt snow and fill the Hinckley Reservoir, which is at its lowest point in some time.

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Hydrologist Stephen DiRienzo of the National Weather Service's Albany office said reservoir levels were expected to flatten Wednesday, but they decreased instead. There could be some snow melt today resulting in reservoir levels possibly beginning to increase, he said. Cold temperatures at night, however, have been freezing melted snow.

Precipitation, likely rain, is expected sometime Saturday or Sunday, he said. It's quite possible the reservoir could increase from its current 1,188 feet above sea level to 1,191 feet above sea level by Monday, but it's not likely to get much higher than that within the next few days, he said.

"Hopefully, it will rise," he said.

### **Hinckley Reservoir timeline**

-- **1905:** Gray Dam built to create a 1.2-billion-gallon reservoir and to provide compensating flows for water that the Mohawk Valley Water Authority's predecessor agency was taking from the West Canada Creek.

-- **1907:** A test release of 500 million gallons of water from Gray Reservoir produces results that are not noticeable in the West Canada Creek. It would be the only time Gray Dam was ever used.

-- **1915:** Hinckley Reservoir comes into service. Its maximum capacity is 25 billion gallons.

-- **1996:** Gray Dam has rusted mostly open. The state Department of Environmental Conservation determines the dam to be dangerous. Also that year, the Utica Water Board transitions into the Mohawk Valley Water Authority.

-- **2002:** The water authority dismantles the Gray Dam.

-- **2007:** Hinckley Reservoir falls to within about 3 feet of impacting the water supply of 130,000 Water Authority customers. Water Authority officials say Gray Dam would not have made a difference, but state Canal Corp. officials disagree.



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-- **March 2010:** Hinckley Reservoir again is within 3 feet of potentially affecting the drinking supply. Director of Canals Carmella Mantello says the Canal Corp. applied in the fall for \$50 million of federal stimulus money to build a new 6-billion-gallon reservoir in the area of the old Gray Dam. At its current water level, Hinckley Reservoir is holding only 4.5 billion gallons.

Document Content(s)

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