VOLUME II
FINAL LICENSE APPLICATION

EXHIBIT E

WEST CANADA CREEK HYDROELECTRIC PROJECT
FERC NO. 2701-NY

Submitted by:

Erie Boulevard Hydropower, L.P.
Fulton, New York

Prepared by:

Kleinschmidt

February 2021

WEST CANADA CREEK HYDROELECTRIC PROJECT

FERC NO. 2701

EXHIBIT E

ENVIRONMENTAL REPORT

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
1.1 Application 1-1
1.2 Purpose of Action and Need for Power 1-1
1.3 Statutory and Regulatory Requirements 1-4
1.3.1 Federal Power Act 1-4
1.3.1.1 Section 18 Fishway Prescriptions 1-4
1.3.1.2 Section 4(e) Conditions 1-4
1.3.1.3 Section 10(j) Recommendations 1-4
1.3.2 Section 401 of the Clean Water Act 1-5
1.3.3 Endangered Species Act 1-5
1.3.4 Magnuson-Stevens Fishery Conservation and Management Act 1-5
1.3.5 Coastal Zone Management Act 1-6
1.3.6 National Historic Preservation Act 1-6
1.3.7 Wild and Scenic Rivers and Wilderness Acts 1-7
1.4 Public Review and Consultation 1-7
1.4.1 Scoping 1-8
1.4.2 Relicensing Studies 1-8
1.4.3 Comments on the Draft License Application 1-10

2.0 PROPOSED ACTION AND ALTERNATIVES 2-1
2.1 No-Action Alternative 2-1
2.1.1 Existing Project Facilities 2-1
2.1.1.1 Prospect Development 2-1
2.1.1.2 Trenton Development 2-2
2.1.2 Project Safety 2-3
2.1.3 Existing Project Operations 2-3
2.1.3.1 Prospect Development 2-4
2.1.3.2 Trenton Development 2-4
2.1.3.3 Downstream Base Flow Requirements 2-5
2.1.4 Existing Environmental Measures 2-5
2.2 Applicant's Proposed Action 2-6
2.2.1 Proposed Project Facilities and Operations 2-6
2.2.2 Proposed Environmental Measures 2-6
2.3 Alternatives Considered but Eliminated from Further Analysis 2-10
2.3.1 Federal Government Takeover of the Project 2-10
2.3.2 Issuing a Non-Power License 2-10
2.3.3 Decommissioning the Project 2-10

3.0 ENVIRONMENTAL ANALYSIS 3-1
3.1 General Description of the River Basin 3-1
3.1.1 River Basin Overview 3-1
3.1.2 Major Land and Water Uses 3-1
3.1.3 Dams within the Basin 3-2
3.1.4 Tributary Rivers and Streams 3-3
3.1.5 Climate 3-3
3.2 Geologic and Soil Resources 3-6
3.2.1 Affected Environment 3-6
3.2.1.1 Prospect Development 3-6
3.2.1.2 Trenton Development 3-9
3.2.2 Environmental Effects 3-9
3.2.3 Proposed Environmental Measures 3-10
3.2.4 Unavoidable Adverse Effects 3-10
3.3 Water Resources 3-11
3.3.1 Affected Environment 3-11
3.3.1.1 Water Quantity, Storage and Use 3-11
3.3.1.2 Water Quality 3-16
3.3.2 Environmental Effects 3-25
3.3.2.1 Water Quantity 3-25
3.3.2.2 Water Quality 3-26
3.3.3 Proposed Environmental Measures 3-27
3.3.4 Unavoidable Adverse Effects 3-28
3.4 Fish and Aquatic Resources 3-28
3.4.1 Affected Environment 3-28
3.4.1.1 Aquatic Habitat 3-28
3.4.1.2 Fish Assemblage and Management 3-37
3.4.1.3 Fish Entrainment 3-48
3.4.1.4 Benthic Macroinvertebrates 3-50
3.4.1.5 Freshwater Mussels 3-55
3.4.2 Environmental Effects 3-59
3.4.2.1 Aquatic Habitat 3-59
3.4.2.2 Fish Assemblage 3-61
3.4.2.3 Fish Entrainment 3-63
3.4.2.4 Benthic Macroinvertebrates 3-63
3.4.2.5 Freshwater Mussels 3-64
3.4.3 Proposed Environmental Measures 3-65
3.4.4 Unavoidable Adverse Effects 3-66
3.5 Wildlife and Botanical Resources 3-66
3.5.1 Affected Environment 3-66

3.5.1.1 Botanical Resources 3-66
3.5.1.2 Wetland, Riparian and Littoral Habitats 3-66
3.5.1.3 Wildlife Resources 3-69
3.5.2 Environmental Effects 3-70
3.5.3 Proposed Environmental Measures 3-71
3.5.4 Unavoidable Adverse Effects 3-71
3.6 Threatened, Endangered, and Special Status Species 3-72
3.6.1 Affected Environment 3-72
3.6.1.1 Threatened and Endangered Species: State and Federally Listed Species 3-72
3.6.1.2 Migratory Birds 3-73
3.6.1.3 Critical Habitats 3-74
3.6.2 Environmental Effects 3-74
3.6.3 Proposed Environmental Measures 3-75
3.6.4 Unavoidable Adverse Effects 3-75
3.7 Recreation Resources 3-75
3.7.1 Affected Environment 3-75
3.7.1.1 Regional Recreation Resources 3-75
3.7.1.2 Project Recreational Resources 3-79
3.7.1.3 Project Recreation Visitation 3-89
3.7.1.4 Downstream West Canada Creek 3-91
3.7.2 Environmental Effects 3-96
3.7.2.1 Prospect Development 3-96
3.7.2.2 Trenton Development 3-98
3.7.3 Downstream West Canada Creek 3-99
3.7.4 Proposed Environmental Measures 3-101
3.7.5 Unavoidable Adverse Effects 3-102
3.8 Land Use and Aesthetic Resources 3-102
3.8.1 Affected Environment 3-102
3.8.1.1 Land Use 3-102
3.8.1.2 Aesthetics 3-104
3.8.2 Environmental Effects 3-112
3.8.2.1 Land Use 3-112
3.8.2.2 Aesthetics 3-113
3.8.3 Proposed Environmental Measures 3-115
3.8.4 Unavoidable Adverse Effects 3-115
3.9 Cultural and Tribal Resources 3-115
3.9.1 Affected Environment 3-115
3.9.1.1 Historic Properties 3-116
3.9.1.2 Archeological Resources 3-117

3.9.1.3 Area of Potential Effect 3-118
3.9.1.4 Tribal Resources 3-119
3.9.2 Environmental Effects 3-119
3.9.3 Proposed Environmental Measures 3-120
3.9.4 Unavoidable Adverse Effects 3-120
3.10 Socioeconomic Resources 3-120
3.10.1 Affected Environment 3-120
3.10.2 Environmental Effects 3-123
3.10.3 Proposed Environmental Measures 3-124
3.10.4 Unavoidable Adverse Effects 3-124

4.0 ECONOMIC ANALYSIS 4-1
4.1 Cost and Value of Operating and Maintaining the License 4-1
4.2 Costs of Proposed Protection, Mitigation and Enhancement Measures 4-1

5.0 CONSISTENCY WITH COMPREHENSIVE PLANS 5-1

6.0 REFERENCES 6-1

LIST OF TABLES

Table 1-1 List of Studies and Study Status 1-9
Table 3-1 Soils Map Unit Legend 3-7
Table 3-2 Hinckley Reservoir Daily Outflow (cfs) (Period July 2001 - December 2019) 3-11
Table 3-3 Prospect Development Daily Outflow (cfs) (Period 1999-2019) 3-12
Table 3-4 Trenton Development Daily Outflow (cfs) (Period 1999-2019) 3-13
Table 3-5 Applicable Water Quality Classifications 3-17
Table 3-6 Applicable Water Quality Standards 3-18
Table 3-7 Prospect Impoundment Shoreline Habitat classifications 3-30
Table 3-8 Comparison of Species Composition of NYSDEC Sampling and 2019 Sampling Efforts in West Canada Creek 3-41
Table 3-9 Species found in Prospect Impoundment in 2019 Electrofishing and Gillnetting Survey 3-43
Table 3-10 Length Class Composition Percentages by Species within the Prospect Impoundment 3-44
Table 3-11 Fish Species caught in September 2019 with Backpack and Barge Electrofishing in Lower West Canada Creek 3-46
Table 3-12 NYSDEC Brown Trout Stocking in Prospect Impoundment 3-47

Table 3-13 NYSDEC Stocking Numbers for West Canada Creek and Cincinnati Creek 3-48
Table 3-14 Fish Swim Speeds by Length 3-49
Table 3-15 Inventory of NWI Wetlands Within the Project Boundary 3-68
Table 3-16 Summary of Whitewater Boating Opportunities within Approximately 60 Miles of the West Canada Creek Project 3-76
Table 3-17 Summary of West Canada Creek Campground Rental Counts 3-93
Table 3-18 Summary of Flow Ranges during the Aesthetic Flow Assessment 3-108
Table 3-19 Prospect Bypass Reach Frequency of Targeted Aesthetic Study Flow Ranges (2015-2019) 3-111
Table 3-20 Trenton Bypass Frequency of Targeted Aesthetic Study Flow Ranges 3-112
Table 3-21 Population in Towns Surrounding the Project Area 3-121
Table 3-22 Place of Residence and Density, 2010 3-121
Table 3-23 Significant Industries in Mohawk Valley Region (2019) 3-122
Table 3-24 Herkimer and Oneida Counties Higher Education Institutions 3-123
Table 4-1 West Canada Creek Project Estimated Costs for PME Measures 4-1

LIST OF FIGURES

Figure 1-1 Location of Project and Project Area 1-2
Figure 3-1 Key Features in the Vicinity of the Project 3-4
Figure 3-2 West Canada Creek Watershed and Tributaries 3-5
Figure 3-3 Project Area Soils 3-8
Figure 3-4 West Canada Creek Tributaries 3-14
Figure 3-5 West Canada Creek Downstream Tributaries 3-15
Figure 3-6 Location of Water Quality Monitoring Sites at the Prospect Development 3-19
Figure 3-7 Location of Water Quality and Air Temperature Monitoring Sites at the Trenton Development 3-22
Figure 3-8 Location of Six Water Quality Monitoring Sites between Nine Mile Creek Feeder Dam and the Confluence with the Mohawk River 3-24
Figure 3-9 Prospect Impoundment Shoreline Characterization 3-29
Figure 3-10 Trenton Impoundment and Photo Locations 3-32
Figure 3-11 Prospect Impoundment, Trenton Impoundment and the Prospect Bypass Reach Sampling Sites 3-39
Figure 3-12 West Canada Creek Sampling Sites during 2019 Fish Assemblage Survey 3-40
Figure 3-13 Macroinvertebrate Sampling Sites within the Prospect Bypass Reach 3-52
Figure 3-14 Macroinvertebrate Sampling Sites within the Trenton Bypass Reach 3-53
Figure 3-15 Macroinvertebrate Sampling Sites Downstream West Canada Creek 3-54
Figure 3-16 Mussel Sampling Sites within Prospect Impoundment 3-56

Figure 3-17 Mussel Sampling Sites within the Prospect Bypass Reach 3-57
Figure 3-18 Mussel Sampling Sites within downstream West Canada Creek..... 3-58
Figure 3-19 Wetlands within the Project Vicinity 3-67
Figure 3-20 Whitewater Boating Opportunities Within 60 Miles of the Project..... 3-80
Figure 3-21 Project Recreation Facilities 3-82
Figure 3-22 Trenton Falls Scenic Trail Area 3-86
Figure 3-23 Recreation Opportunities Downstream of the Project..... 3-92
Figure 3-24 Adjacent Land Ownership Prospect Development..... 3-105
Figure 3-25 Adjacent Land Ownership Trenton Development..... 3-106
Figure 3-26 West Canada Creek Aesthetic Assessment Study Area with KOP Locations 3-109

LIST OF PHOTOS

Photo 3-1 Waterfall Inflow to the Lower Prospect Bypass Reach 3-31
Photo 3-2 Trenton Impoundment Bedrock Gorge 3-33
Photo 3-3 Trenton Impoundment Boulder and Cobble Deposits..... 3-33
Photo 3-4 Upper Portion of Trenton Bypass Reach 3-34
Photo 3-5 Aerial View of Prospect Boat Launch..... 3-81
Photo 3-6 Parking Area and Turn Around at the Prospect Boat Launch..... 3-83
Photo 3-7 Trenton Trail and Information Kiosk 3-87
Photo 3-8 Trenton Falls Trail Cradle Overlook Area..... 3-88
Photo 3-9 ADA Parking Area and Overlook..... 3-88

APPENDICES

Appendix A Consultation Documentation
Appendix B Responses to Draft License Application Comments

DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

ADA	American Disabilities Act
AIR	Additional Information Request
APE	Area of Potential Effect
AW	American Whitewater
BAP	Biological Assessment Profile
ºC	degrees Celsius
Census Bureau	U.S. Census Bureau
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CRIS	Cultural Resource Information System
CWA	Clean Water Act
CZMA	Coastal Zone Management Area
DLA	Draft License Application
DO	dissolved oxygen
EFH	Essential Fish Habitat
Erie or Licensee	Erie Boulevard Hydropower, L.P.
ESA	Endangered Species Act
ºF	degrees Fahrenheit
FAS	Fisherman Alert System
FERC or Commission	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
fps	feet per second
ft	feet
HAER	Historic American Engineering Record
ILP	Integrated Licensing Process
Interested Parties/ Stakeholders	The broad group of individuals and entities that have an interest in a proceeding

DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

IPaC	Information for Planning and Consultation Resource List
ISR	Initial Study Report
KOA	Kampground of America
KOP	Key Observation Point
kW	kilowatt
kWh	kilowatt-hours
kV	kilovolts
MGD	million gallons per day
mg/L	milligram per liter
ml	milliliter
mm	millimeter
MVWA	Mohawk Valley Water Authority
MW	megawatt
NEPA	National Environmental Policy Act
NFCT	Northern Forest Canoe Trail
NGO	Non-governmental organization
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NYDOS	New York Department of State
NYISO	New York Independent System Operator
NYNHP	New York Natural Heritage Program
NYPA	New York Power Authority
NYSDEC	New York State Department of Environmental Conservation

DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

NYSCC	New York State Canal Corporation
NYSDOT	New York State Department of Transportation
NYOPRHP	New York Office of Parks, Recreation, and Historic Preservation
NYTU	New York Trout Unlimited
PAD	Pre-Application Document
PLC	Programmable Logic Controller
PME	Protection, Mitigation, and Enhancement
PRISM	Partnerships for Regional Invasive Species Management
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 those areas needed for operation of 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
REA	Ready for Environmental Analysis
Relicensing	The process of acquiring a new FERC license for an existing hydroelectric project upon expiration of the existing FERC license
RIBS	Rotating Intensive Basin Studies
RM	river mile
RSP	Revised Study Plan
RV	recreational vehicle
SAV	submerged aquatic vegetation
SD	Scoping Document
SWLMP	Streamflow and Water Level Monitoring Plan
SHPO	State Historic Preservation Office
SLELO	Saint Lawrence and Eastern Lake Ontario PRISM

DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

SPD	Study Plan Determination
SPDES	State Pollution Discharge Elimination System
Tailrace	Channel through which water is discharged from the powerhouse turbines
TCP	Traditional Cultural Properties
UAV	Unmanned Aerial Vehicle
µS/cm	microsiemens/centimeter
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQC	Water Quality Certificate
WTP	Water Treatment Plant
YOY	young of year

1.0 INTRODUCTION

1.1 Application

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company, is the Licensee, owner, and operator of the 39.8 megawatts (MW) West Canada Creek Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC or Commission) Project No. 2701. The West Canada Creek Project consists of two developments, Prospect and Trenton, located on West Canada Creek in Oneida and Herkimer counties, New York (Figure 1-1). There are no lands of the United States included within the Project boundary.

The current license, issued for the Project by the Commission on March 18, 1983 (22 FERC ¶ 62,347), expires on February 28, 2023. Erie is pursuing a new license for major Project, existing dam, under FERC's Integrated Licensing Process (ILP). Erie prepared this Environmental Exhibit as part of the Final License Application (FLA). The purpose of this Environmental Exhibit is to: (1) describe the existing and proposed project facilities, lands, and waters; (2) describe existing and proposed project operations and maintenance; and (3) provide an analysis of the effects of the proposed relicensing on environmental resources identified during scoping, including protection, mitigation, and enhancement (PME) measures for each resource area potentially affected by the relicensing.

1.2 Purpose of Action and Need for Power

FERC must decide if a license will be issued to Erie for the continued operation of the Project and what conditions, if any, should be placed should a new license be issued. In addition to the power and developmental purposes for which licenses are issued, FERC must give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality.

Peak demands for power can vary greatly depending on day versus night and from season to season. Hydropower generation plants that have peaking ability provide a reliable source of renewable energy to the grid to help maintain the balance between electricity supply and demand. The flexibility and storage capacity of hydropower peaking plants also support continued development of intermittent renewable energy sources, such as solar or wind, by providing quick response to changes in output.

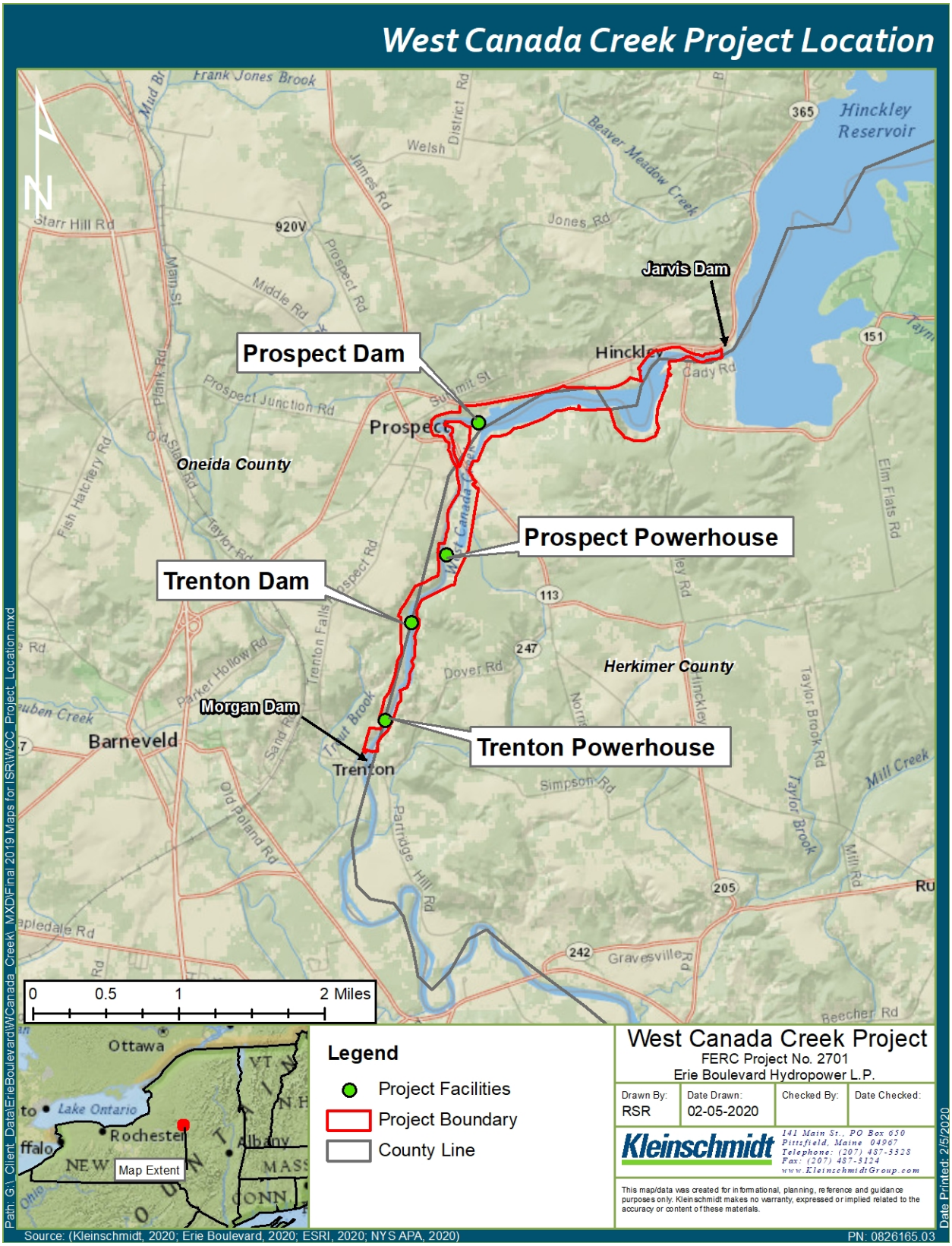


Figure 1-1 Location of Project and Project Area

The electrical output from the Project is sold to the New York wholesale electricity market administered by the New York Independent System Operator (NYISO). The Project generates emission-free, renewable power and provides peaking and variable output generation of value to the grid. The New York State Climate Leadership and Community Protection Act (CLCPA) sets forth a goal to obtain 70 percent of New York State's electric generation from renewable energy sources by 2030. The CLCPA also sets forth a goal for an 85 percent statewide reduction in greenhouse gas emissions by 2050 (New York State 2021, NYSDEC 2021). If issued a new license, the power from the Project would help meet the renewable energy goal of the state, reduce reliance on natural gas to meet sudden changes in demand, and facilitate adoption of other intermittent renewable energy sources.

According to the NYISO recent report, *Annual Grid & Markets Report, The Vision for a Greener Grid* (NYISO 2020), "*To the extent that the CLCPA leads to the elimination of all fossil fuel-based resources supplying the grid, the carbon-free resources supplying the grid will need to offer comparable dispatchable capabilities to meet electricity demand currently provided by the fossil fuel resources. Fossil fuel plants can typically be dispatched to a rated output level for extended periods while also offering a level of flexibility to ramp up or down as needed to continuously balance load and supply. Outside of hydro generation, renewable resources tend to be intermittent and, by definition, unable to follow dispatch signals from the grid operator to increase production in the same manner as fossil fuel resources*." This report details many expected and potential issues that the NYISO must be prepared to address in the coming years in order to meet reliability standards while integrating more renewables to the grid. Maintaining ability to balance load and generation with high levels of intermittent generation is expected to be a major challenge (NYISO 2020).

If peaking capabilities were limited or curtailed at the West Canada Creek Project, the NYISO would need to rely more heavily on natural gas burning facilities to meet peak power demands now and into the foreseeable future. Issuing a new license for the West Canada Creek Project would allow Erie to continue to generate renewable electricity at the Project for the term of a new license, helping support state and federal goals for renewable energy production and helping facilitate the development of other renewable sources of energy.

1.3 Statutory and Regulatory Requirements

1.3.1 Federal Power Act

Issuance of a new license for the Project is subject to requirements under the Federal Power Act (FPA) and other federal statutes. Requirements applicable to this FLA are summarized below.

1.3.1.1 Section 18 Fishway Prescriptions

Under Section 18 of the FPA, the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have the authority to prescribe fishways at federally regulated hydropower projects. Currently there are no fish passage facilities or prescriptions at the Project. Nor are there any fish passage facilities for eel or any other fish passage at the downstream Nine Mile Feeder Creek, Newport, or Herkimer dams, or the upstream Hinckley Dam. No preliminary prescriptions have been filed by either agency. Following the filing of the FLA, fishway prescriptions, if any, will be filed within 60 days after FERC's Notice for Acceptance and Ready for Environmental Analysis (REA Notice) per FERC's ILP regulations, 18 Code of Federal Regulation (CFR) §5.23(a).

1.3.1.2 Section 4(e) Conditions

Section 4(e) of the FPA provides that any license issued by FERC for a project within a federal reservation shall be subject to and contain such conditions as the Secretary of the responsible federal land management agency deems necessary for the adequate protection and use of the reservation. This Project does not encompass any federal lands; therefore, these conditions do not apply.

1.3.1.3 Section 10(j) Recommendations

Under Section 10(j) of the FPA, FERC must consider recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the Project prior to issuing the new license. FERC will include these conditions unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. No preliminary Section 10(j) recommendations have been provided for inclusion in this application.

1.3.2 Section 401 of the Clean Water Act

Section 401 of the Clean Water Act (CWA)[1] (USEPA 2020a) requires Erie to obtain certification from the appropriate state pollution control agency verifying compliance with the CWA or to obtain a waiver of certification. The New York State Department of Environmental Conservation (NYSDEC) is the state agency responsible for water quality certifications for the Project. Erie will request water quality certification (WQC) from the NYSDEC in accordance with 18 CFR §5.23(b) within 60 days of FERC's issuance of notice of acceptance of the FLA and REA notice.

1.3.3 Endangered Species Act

The Endangered Species Act (ESA) (19 United States Code [USC] § 1536(c)), as amended, provides a program for the conservation of threatened and endangered plants and animals and their habitats in which they are found. The lead federal agencies for implementing ESA are the USFWS and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. Section 7 of the ESA, requires federal agencies, in consultation with the USFWS and/or NOAA to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. On April 30, 2018, FERC granted Erie designation as the FERC's non-federal representative for carrying out information consultation pursuant to Section 7 of the ESA. No federally listed species are known to occur within the Project area. See additional discussion in Section 3.7, *Threatened, Endangered, and Special Status Species*.

1.3.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with NOAA Fisheries on actions that may adversely affect Essential Fish Habitat (EFH). EFH is only applicable to federally managed commercial fish species that live at least one component of their lifecycle in marine waters. All fish in West Canada Creek are freshwater species that are not managed commercially; therefore, there is no designated EFH in the Project area.

[1] On June 1, 2020, EPA finalized the Clean Water Act Section 401 Certification Rule. The final rule establishes procedures that promote consistent implementation of CWA Section 401 and regulatory certainty in the federal licensing and permitting process. The final rule became effective on September 11, 2020 (EPA 2020).

1.3.5 Coastal Zone Management Act

Under Section 307 (c)(3)(A) of the Coastal Zone Management Act (CZMA), FERC cannot issue a license for a project within or affecting a states' coastal zone unless the state's CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification. The Project is not located within nor will it affect the designated coastal zone or resources of New York State. Erie consulted with the New York Department of State (NYDOS) and by email dated June 2, 2020. The NYDOS concurred that the Project was located outside of the designated coastal zone area (see Appendix A). Therefore, the Project is not subject to coastal zone management program review for FERC's relicensing of the Project.

1.3.6 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires FERC to consider the effect of its undertakings on historic properties. Historic properties are any prehistoric or historic districts, sites, buildings, structures, Traditional Cultural Properties (TCPs), and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (NRHP). Section 106 of the NHPA is implemented through the Advisory Council on Historic Preservation (Council regulations "Protection of Historic Properties" (36 CFR Part 800). FERC initiated consultation under Section 106 with federally recognized Indian tribes, including Oneida Nation of New York, St. Regis Mohawk Tribe, and the Oneida Tribe of Indians of Wisconsin, by letters dated March 9, 2018.

On April 30, 2018, FERC granted Erie designation as the Commission's non-federal representative for executing informal consultation pursuant to Section 106 of the NHPA. Erie consulted with the New York State Historic Preservation Office (SHPO) and the tribes that may have an interest in the Project regarding the relicensing via distribution of the Notice of Intent (NOI), Pre-Application Document (PAD), and subsequent ILP filings. FERC (letters dated March 9, 2018) and Erie (via distribution of the NOI, PAD and ILP filings) consulted with the Oneida Indian Nation, the Oneida Tribe of Indians of Wisconsin, and the St. Regis Mohawk Tribe. The Oneida Nation of New York, via email (April 4, 2018) responded that the Nation had no comments or concerns regarding the Project. No additional comments were received.

The New York SHPO reviewed the Project in accordance with Section 106 of the NHPA, and stated that it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking (letter dated April 17, 2020). Erie also consulted with the New York SHPO regarding the proposed Area of Potential Effect (APE), as defined under Section 106 of the NHPA [36 CFR Part 800.16(d)], for the proposed action (letter dated November 16, 2020). The New York SHPO (letter dated December 1, 2020) stated no concerns with the proposed APE for this Project, which includes land within the existing Project boundary. See Section 3.9, *Cultural and Tribal Resources*, for additional information, and Appendix A for documentation of correspondence.

1.3.7 Wild and Scenic Rivers and Wilderness Acts

Section 7(a) of the Wild and Scenic Rivers Act requires federal agencies to make a determination as to whether the operation of a project under a new license would unreasonably diminish the scenic, recreational, and fish and wildlife values present in the designated area. The Wilderness Act of 1964 established a National Wilderness Preservation System. No nationally designated wild and scenic rivers or wilderness areas are located within the Project boundary or in the vicinity of the Project.

1.4 Public Review and Consultation

The Commission requires that applicants consult with appropriate resource agencies, tribes, and other entities before filing an application for a new license. Pursuant to a 18 CFR § 5.18(b)(5)(G), a list of names and addresses of every federal, state, and interstate resource agency, Indian tribe, and member of the public (Distribution List) with which the Licensee consulted in preparation of this Environmental Document is provided in Appendix A. The following subsections summarize the key relicensing consultation conducted as part of the ILP for the West Canada Creek Project relicensing. With the exception of comment letters provided by stakeholders on the Draft License Application (DLA) and other documentation provided in Appendix A, pre-filing consultation is not included with the FLA because these documents and letters are already in the administrative record on eLibrary, as required under the ILP.

1.4.1 Scoping

On February 28, 2018, Erie filed a NOI and the PAD with FERC to initiate the ILP and consultation with federal and state agencies, Tribes, non-governmental organizations (NGOs) and other interested parties (refer to Distribution List). 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 issued Scoping Document 1 (SD1) on April 30, 2018, Scoping Document 2 (SD2) on August 13, 2018, and Scoping Document 3 (SD3)[2] on December 21, 2020, 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 agency and public scoping meetings at the Trenton Municipal Center in Barneveld, New York, along with a Project site visit on May 30, 2018. 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. Erie also received multiple stakeholder comments and study requests. Erie filed responses to the AIR on August 13, 2018, and November 13, 2018.

1.4.2 Relicensing Studies

On August 13, 2018, Erie filed a Proposed Study Plan (PSP) with the FERC and provided notification of the PSP filing 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.

On December 11, 2018, Erie filed a Revised Study Plan (RSP), and provided notification of the RSP filing to agencies and stakeholders. On March 7, 2019, FERC issued the Study Plan Determination (SPD) approving the RSP with modifications. On October 31, 2019, Erie requested a revision of the Process Plan and Schedule to change the Initial Study Report

[2] FERC's SD3 states the Commission will conduct its NEPA review in accordance with the Council on Environmental Quality (CEQ) final rule issued on July 15, 2020, revising the regulations under 40 CFR Parts 1500–1518. The SD3 removes discussion of cumulative analysis and states Commission staff will consider and evaluate effects that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action (FERC 2020a).

(ISR) filing date to March 7, 2020, to align with one year following the issuance of FERC's SPD, and FERC granted this revision on December 5, 2019. Erie successfully completed all nine studies, included in the Commission's SPD. The results of these studies are provided via separate study report documents as part of the ISR and Updated Study Report (USR) filings, as noted in Table 1-1.

As part of the study implementation and in accordance with FERC's SPD, Erie initiated consultation with agencies and stakeholders, including the USFWS, the NYSDEC, American Whitewater (AW), the New York State Fish and Wildlife Management Board, New York Trout Unlimited (NYTU), and the Town of Trenton, regarding aspects of the Project's relicensing studies. Documentation of this consultation was provided in the ISR, study reports, and the Study Progress Reports filed with FERC and distributed to the stakeholders on July 29, 2019, October 31, 2019, and November 30, 2020.

Table 1-1 List of Studies and Study Status

Study Report	Status
Aquatic Mesohabitat Assessment Study (Kleinschmidt 2020a)	Completed - filed in the ISR[1]
Macroinvertebrate and Freshwater Mussel Survey (Kleinschmidt 2020b)	Completed - filed in the ISR
Impoundment Shoreline Characterization Study (Kleinschmidt 2020c)	Completed - filed in the ISR
Fish Assemblage Assessment (Kleinschmidt 2020d)	Completed and filed in the ISR
Updated Fish Entrainment and Turbine Passage Survival Assessment (Kleinschmidt 2020e)	Completed - filed in the ISR; updated study report provided in the USR[2]
Water Quality Study (Kleinschmidt 2020f)	Completed - filed in the ISR
Recreation Use, Needs and Access Study (Kleinschmidt 2020g)	Completed - filed in the ISR
Whitewater Boating Flow and Access Study (Kleinschmidt 2020h)	Completed - progress report in the ISR and study report provided in this USR
Aesthetic Flow Assessment Study (EDR 2020)	Completed - filed in the ISR, additional information provided in the USR

[1] Initial Study Report, filed on March 6, 2020.
[2] Updated Study Report, filed on January 11, 2021.

In accordance with 18 CFR § 5.15(c), Erie filed the ISR on March 6, 2020, and provided notification of the ISR filing to agencies and stakeholders. The ISR provided the results of the field studies conducted in 2019 pursuant to the FERC's SPD. Erie held the ISR meeting on March 19, 2020, and filed an ISR meeting summary with the FERC on April 3, 2020.

Comments on the ISR were filed by FERC (dated May 5, 2020), the USFWS (dated May 6, 2020), the NYSDEC (dated May 6, 2020), and AW (dated May 5, 2020). Erie filed with FERC on June 5, 2020, responses to the ISR comments. FERC issued a Director's Determination on any Disagreements/Amendments on July 6, 2020, requiring Erie to provide additional information pertaining to the Fish Entrainment and Turbine Passage Survival Assessment.

Erie filed the USR and associated supporting study documents on January 11, 2021, and provided notification of the USR filing to agencies and stakeholders. The USR included the results of the Whitewater Boating Flow and Access Study conducted in 2020, additional information associated with the Aesthetic Flow Assessment Study and the Updated Fish Entrainment and Turbine Passage Survival Assessment. Pursuant to 18 CFR § 5.15(f), Erie held an USR meeting with interested parties and FERC staff on January 25, 2021, and filed a USR meeting summary on February 8, 2021.

Stakeholders may file any disagreements on or before March 11, 2021, concerning the USR meeting summary, as well as any recommendations for modified or new studies, which must be accompanied by justification in accordance with FERC's regulations (18 CFR § 5.15(c)(4), and meet the applicable criteria as defined by 18 CFR §5.15(d) and §5.15(e). Additionally, as defined in 18 CFR § 5.15(f), the proponent of any proposed or modified studies must also demonstrate extraordinary circumstances warranting approval of any proposal for new information gathering or studies. Erie subsequently has 30 days, on or before April 10, 2021, to file any responses to comments. FERC will then have an additional 30 days, on or before May 10, 2021, to issue a determination regarding any disagreements and/or modifications to the approved study plans.

1.4.3 Comments on the Draft License Application

Erie filed the DLA on October 1, 2020, and provided notice of the DLA to agencies and stakeholders, as well as notification that in accordance with FERC regulations (18 CFR § 5.16(e)), participants and Commission staff may submit comments to the Licensee regarding the DLA within 90 days following the filing, i.e., by December 30, 2020. Erie received comments from FERC (letter dated December 29, 2020), NYSDEC (letter dated December 30, 2020), and AW (letter dated December 28, 2020). Appendix A provides copies of DLA comment letters received, and Appendix B provides Erie's responses to comments, and/or an explanation of how comments have been addressed in the FLA, as appropriate.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 No-Action Alternative

The No-Action Alternative is to continue to operate and maintain the Project under the terms and conditions of the current license. No new environmental PME measures would be implemented and the current Project facilities, Project boundary and operations would be maintained. The No-Action Alternative represents the baseline energy production and environmental conditions for comparison with other alternatives.

2.1.1 Existing Project Facilities

2.1.1.1 Prospect Development

The Prospect Development is located at river mile (RM) 33 and is the uppermost Project development. The Prospect Development is composed of: a 176-acre impoundment; a concrete overflow dam with earthfill dikes on either end; a 4,500-foot-long canal extending from a south dike to a concrete intake; a 430-foot-long steel penstock; an approximate 1.3-mile-long bypass reach; a reinforced concrete powerhouse containing a single turbine generator unit with 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 impoundment has a normal maximum surface area of 176 acres (with 162 acres in the main impoundment and 14 acres in the forebay) at a normal maximum surface elevation of 1,161.5 feet U.S. Geological Survey (USGS). At normal maximum surface elevation, the impoundment has a gross storage capacity of 3,250 acre-feet and a useable storage capacity of 803 acre-feet. Estimated shoreline includes 4.7 miles at Prospect impoundment and 1.3 miles at Prospect canal/forebay.

Water is diverted through an earthen power canal dike and forebay that extends from the south side of the dam to a concrete intake structure. The forebay is approximately 250 feet long by 65 feet wide. The intake consists of a concrete reinforced structure with a head gate hoist frame and electrical equipment house, and equipped with vertical steel trashracks with 3 5/8-inch clear spacing. A 430-foot-long by 13.5-foot-diameter steel penstock conveys water from the intake to the Prospect Powerhouse.

The Prospect bypass reach extends approximately 1.3 miles between the Prospect dam and the Prospect Powerhouse. The Prospect bypass reach is a narrow gorge with steep side slopes of rock outcrops and dispersed vegetation, and bordered along the top elevation with primarily forested vegetation. The Prospect canal extends to the east and the Mohawk Valley Water Authority (MVWA) Hinckley Reservoir Water Treatment Plant (WTP) is located to the west of the bypass reach. Access to the bypass reach is restricted due to the steep terrain and for public safety reasons.

2.1.1.2 Trenton Development

The Trenton Development is located at RM 31 and is the lowermost Project development. The Trenton Development is composed of: a 9 acre impoundment; a concrete masonry dam with a spillway, non-overflow sections, and auxiliary spillway; a concrete intake and a 14-foot-diameter tunnel/pipeline; a surge tank; four 7-foot-diameter penstocks; an approximate 4,000-foot-long bypass reach; two adjoining powerhouses housing retired in-place (Unit Nos. 1, 2, 3, and 4) and operational Unit Nos. 5, 6, and 7 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 Trenton Dam is a 288-foot-long by approximately 61-foot-high concrete and masonry dam consisting of a main spillway with non-overflow sections on either side and an auxiliary spillway. The Trenton intake resides on the west side of the impoundment and approximately 100 feet upstream of the dam and is equipped with a single set of trashracks with 2-inch clear spacing. From the intake, a concrete lined 14-foot-diameter tunnel, approximately 1,284 feet long, connects to a 14-foot-diameter steel pipeline. The 14-foot-diameter steel pipeline reduces to a 12-foot-diameter steel pipeline that extends to a surge tank. The total pipeline length is approximately 2,000 feet.

The Trenton impoundment has a normal maximum surface area of 9-acres at a normal maximum surface elevation of 1,023.9 feet USGS with an estimated 1.2 miles of shoreline. At 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 bypass reach extends approximately 0.7 miles between the Trenton Dam and Trenton Powerhouse. The bypass reach (Trenton Falls Gorge) is a steeply-sloped narrow gorge with a series of waterfalls, dropping approximately 200 feet over the length of the

bypass reach. Access to the bypass reach is restricted due to the steep terrain and for public safety reasons. The gorge is bordered along the top elevation with primarily forested vegetation to the east and to the west with vegetation and Project facilities.

Exhibit A, *Project Description,* provides additional detail about the existing Project facilities.

2.1.2 Project Safety

Erie has developed, according to FERC's Guidelines, Public Safety Plans for the Prospect and Trenton developments, which are revised on a regular basis as conditions warrant. These plans (and revisions) are reviewed and accepted by the FERC New York Regional Office. Erie implements public safety and security measures, such as signage, fencing, alert/warning devices, and boat barriers to protect public safety and for Project security purposes. Erie maintains a Fishermen Alert System (FAS) below the Trenton Powerhouse that includes 2 sirens (located at the Trenton Powerhouse and adjacent to Nine Mile Creek Feeder Dam) and one beacon/strobe (located on Dover Bridge). The FAS is activated prior to loading any unit or increasing the flow from the Trenton Powerhouse. Additionally, the FAS is activated prior to releasing any flows at the Trenton Dam. The siren is only activated during daylight hours, while the beacon strobe is activated 24 hours /7 days a week. There is associated downstream signage to inform the public that when the siren sounds there is a danger of fast rising water.

Erie provides information regarding flow releases at the Trenton Powerhouse via SafeWaters, a publicly accessible website and toll-free phone line (SafeWaters 2020). SafeWaters is updated daily and based on river gauge information, approximate forecasts, and estimated flows. The actual flows can vary and change quickly at any time. The SafeWaters information should be used as an additional source of information of potential flow ranges. Users are encouraged to always be alert and wear an approved flotation device and to never go in or near the water until the user knows and accepts the risks in the area (SafeWaters 2020).

Exhibit H, *Description of Project Management and Need for Power*, provides additional detail regarding Erie's safety programs.

2.1.3 Existing Project Operations

Inflow to the Project is provided by outflows from the Hinckley Reservoir and the upstream Jarvis Project (FERC No. 3211) operated by the New York Power Authority

(NYPA). Hinckley Reservoir is operated by the New York State Canal Corporation (NYSCC) in accordance with the 2012 Hinckley Reservoir Operating Diagram (NYPA 2020) and governed by operating agreements amongst the NYSCC, the MVWA, and Erie[3]. The NYPA hydrologist communicates with the Erie water resource manager twice a week to discuss the application of the 2012 Operating Diagram based upon the time of year and the Hinckley Reservoir elevation. The Project is typically operated so that daily average inflows are released from the Prospect and Trenton developments on the same day to maintain daily average outflows. The two developments are typically operated in tandem such that outflow from the Prospect Development is followed by similar outflow at the downstream Trenton Development.

2.1.3.1 Prospect Development

The Prospect Development utilizes its reservoir's limited storage capacity as it operates between reservoir elevations of 1,161.5 feet (normal surface elevation) and 1,156.5 feet. When sufficient flow (within range of 500 cubic feet per second [cfs] to 1,400 cfs) is provided from Hinckley Reservoir discharges upstream, the Prospect Reservoir can fluctuate up to approximately 5 feet daily with peaking typically occurring during the day and the refill periods occurring during the evening. When inflows are above or below the sufficient flow range (within 500 cfs to 1,400 cfs), the Prospect Development will typically operate as a run-of-river plant. However, when flows are below 500 cfs, Prospect's unit is operating below its optimal efficiency which may cause cavitation. To prevent damage to the unit due to cavitation, the unit may cycle on and off, thus operating in peaking mode. Instrumentation is used to monitor headwater level at the Prospect Development.

2.1.3.2 Trenton Development

The Trenton Development utilizes its reservoir's limited storage capacity as it operates between elevation 1,023.9 (normal surface elevation) and 1,011.9 feet. When sufficient flow (within range of 500 cfs to 1,400 cfs) is provided from upstream, the Trenton Reservoir can fluctuate up to approximately 12 feet daily. When inflows are above or below the sufficient flow range (within range of 500 cfs to 1,400 cfs), the Trenton Development will typically operate as a run-of-river plant. The required 160 cfs base flow is passed either through the Trenton Development generating units or operations at the

[3] The 2012 Operating Diagram was accepted and became effective in 2013 by an agreement by NYSCC and MVWA dated February 1, 2013, and an agreement by NYSCC and Erie dated January 13, 2015.

Trenton Dam. The turbine inlet valves and the base flow valve are electronically controlled by a programmable logic controller (PLC). If the base flow is interrupted by a turbine shutdown, the base flow valve tied to Unit no. 6 at the powerhouse is automated to open a specific amount to allow the passage of the required base flow.

2.1.3.3 Downstream Base Flow Requirements

As required by the current FERC license for the Project, Erie, as licensee, coordinates with the NYPA and NYSCC to provide a base flow of 160 cfs or inflow, downstream of NYSCC diversion weir (Nine Mile Creek Feeder Dam or Morgan Dam). Prior instream flow studies conducted by Ichthyological Associates[4] determined 160 cfs provided acceptable conditions to maintain aquatic habitat for various life stages of fishes downstream of Trenton Powerhouse.

During the operating season[5] for the canal system, the NYSCC may divert flows below the Trenton Falls Development tailrace at the NYSCC diversion weir into the Nine Mile Feeder Canal to supplement downstream canal water levels to help maintain navigability in the canal system. During the period 2013 to 2019, monthly average NYSCC diversion flows into the Nine Mile Feeder Canal ranged from 0 cfs to 69.6 cfs, with lowest daily average diversion of 0 cfs and highest daily average diversion of 74 cfs during this period (NYSCC 2020b). When the canal is operating, the base flow from the Project must include 160 cfs plus the amount diverted into the Nine Mile Feeder Canal.

Exhibit B, *Project Operations*, provides additional detail about existing Project operations that would be continued under the no action alternative.

2.1.4 Existing Environmental Measures

Under the current license, Erie provides the following PME measures for recreational and aquatic resources:

- Provide a continuous base flow of 160 cfs or inflow from the Project, whichever is less, as immediately measured downstream of the NYSCC diversion weir.

[4] This base flow requirement was assessed in consultation with NYSDEC as part of an instream flow study (Ichthyological Associates, 1981a) and air and water temperature monitoring assessment (Ichthyological Associates, 1981b) conducted during the previous relicensing proceeding.
[5] The New York State canal system navigation season typically runs from mid-May to mid-October (NYSCC 2020a).

- Maintain a formal boat launch to provide public access to the Prospect impoundment.
- If any previously unrecorded archeological sites are discovered during the course of construction or development of any Project works or other facilities at the Project, Erie will stop construction activity, consult with a qualified archeologist, and if necessary, consult with the New York SHPO to develop a mitigation plan for the protection of significant archeological resources.

Although not required under the existing license, Erie voluntarily developed in partnership with the Town of Trenton, the Trenton Falls Scenic Trail, a scenic viewing trail along the Trenton Falls Gorge at the Trenton Development. Erie provides controlled public access during one or two weekends in the spring and one or two weekends fall to view the Trenton Falls Gorge.

Although not required under the existing license, Erie voluntarily installed an automated base flow release valve at the Trenton Station to provide the required downstream baseflow of 160 cfs, in the event if the base flow is interrupted by a turbine shutdown. Although not required under the existing license, Erie voluntarily implemented and provided public information regarding flow releases at the Trenton Powerhouse via SafeWaters, a publicly accessible website and toll-free phone line.

2.2 Applicant's Proposed Action

2.2.1 Proposed Project Facilities and Operations

Erie is proposing no modifications of the existing Project facilities. The existing dam, powerhouse, and appurtenant features are all well maintained and in good working order. No changes of these facilities that are outside normal maintenance practices or the FERC's safety requirements are required or proposed. As described in Section 2.2.2, Erie proposes to continue the existing licensed mode of project operations. See additional description of proposed measures in Section 2.2.2, *Proposed Environmental Measures*.

2.2.2 Proposed Environmental Measures

Erie proposes the following PMEs for the benefit of Project-related resources.

Downstream Base Flows - Erie proposes to continue to coordinate with the NYPA (licensee of the upstream Jarvis Project P-3211), and the NYSCC to provide a base flow of 160 cfs or Project inflow, whichever is less, in West Canada Creek as immediately measured

downstream of NYSCC diversion weir (Nine Mile Creek Feeder Dam). See Section 2.1.3, *Existing Project Operations*, and Exhibit B for further description of existing Project operations.

Automated Base Flow Release Valve - During the existing license term, Erie voluntarily installed an automated base flow release valve at the Trenton Station to provide the required downstream base flow of 160 cfs, in the event if the base flow is interrupted by a turbine shutdown. Erie proposes to continue operation of the automated base flow release valve under the new license.

Streamflow and Water Level Monitoring Plan (SWLMP) - Erie proposes to within 12 months of license issuance develop a SWLMP, in consultation with NYSDEC, that includes:

- Implementation of a binary staff gage on West Canada Creek downstream of the Morgan Dam diversion;
- Measures to maintain a continuous year round minimum leakage-type flow (no greater than 3 cfs) within the Prospect bypass to help retain habitat connectivity and water quality. These flows may be temporarily modified in the event of: (1) approved maintenance activities, (2) extreme hydrologic conditions[6], (3) emergency electrical system conditions[7], or (4) agreement between the Licensee and the NYSDEC;
- Measures for monitoring of existing impoundment and tailrace gages;
- Measures for maintaining and calibrating gages; and
- Provision to notify the Commission and NYSDEC, as soon as possible, but no later than 30 days after each such incident, of any deviations with the operational license requirements.

[6] "Extreme Hydrologic Conditions" means the occurrence of events beyond the Licensee's control such as, but not limited to, abnormal precipitation, extreme runoff, flood conditions, ice conditions, drought conditions, inflow restrictions or other hydrologic conditions such that the operational restrictions and requirements contained herein are not likely to be achieved or are inconsistent with the safe operation of the Project.

[7] "Emergency Electrical System Conditions" means operating emergencies beyond the Licensee's control which require changes in flow regimes to eliminate such emergencies which may in some circumstances include, but are not limited to, equipment failure or other temporary abnormal operating conditions, generating unit operation or third-party mandated interruptions under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authorities.

Recreation Management Plan - Erie proposes to within 12 months of license issuance develop a Recreation Management Plan, in consultation with NYSDEC, that will include provisions for:

- A description of the existing Project recreation facilities (i.e., Prospect boat launch and Trenton Falls Scenic Trail);
- A description of the operation and maintenance of the Project recreational facilities;
- Measures to assess and implement, as appropriate, universally accessible features, consistent with Americans with Disabilities Act (ADA) guidelines and standards for the following existing facilities: parking and shoreline/launch access at the existing Prospect Boat Launch; and appropriate railing dimensions and proper toe clearance of the existing overlook railing at Trenton Falls Scenic Trail accessible overlook.

Prospect Boat Launch - Erie proposes to maintain existing public access and facilities at the Prospect boat launch over the term of a new license.

Trenton Falls Scenic Trail - During the existing license term, Erie voluntarily (outside of any current license requirements) developed and implemented the Trenton Trail Scenic Trail system and associated special event in coordination with the Town of Trenton to enhance public recreation opportunities in a safe and controlled manner at Trenton Falls. Erie proposes, over the term of a new license, to continue these special events in coordination with the Town of Trenton to provide controlled public access to the Trenton Falls Scenic Trail annually during one or two weekends in the spring and one or two weekends in the fall, to be scheduled in consultation with the Town of Trenton.

Downstream Whitewater Boating Flows - Erie proposes to provide scheduled Project flow releases to downstream West Canada Creek to supplement downstream tributary flows, if sufficient inflow is available from Hinckley Reservoir, in order to provide tubing and whitewater opportunities along the 28-mile stretch of the West Canada Creek below Trenton. This proposal also gives consideration of release timing of these scheduled flows in relation to wade fishing opportunities in the Trophy Section of the West Canada Creek. Erie would provide these releases to obtain flows within the targeted range of 800 cfs to 1,200 cfs as measured at the USGS Kast Bridge Gage (No. 01346000) with a targeted 4-hour duration on 10 weekdays and 10 weekend days annually.

Erie will implement these targeted flow releases during May through September, on the second and third Wednesday each month and second and third Saturday of each month within the 8:00 am to 12:00 pm period. Releasing of these flows within this time period would allow for wade fishing opportunities in the Trophy Section during early morning and late evening hours, and provide downstream flows in the late morning and afternoon for tubing and whitewater boating opportunities due to the 8- hour travel time to Kast Bridge and furthest take-out location for whitewater boating. In the event inflow from Hinckley Reservoir is actual or forecasted to be less than or greater than the supplemental Project flows needed to achieve the downstream targeted releases or if Project maintenance or construction activities or outages limit Erie's ability to provide the releases, Erie will not be required to reschedule and provide any additional flow releases to compensate.

Flow information - During the existing license term, Erie voluntarily (outside of any current license requirements), implemented and provided public information regarding flow releases at the Trenton Powerhouse via SafeWaters, a publicly accessible website and toll-free phone line. Erie proposes to continue to provide this flow release information on SafeWaters (or a comparable system) over the term of a new license. This will include additional posting notification of the scheduled whitewater boating flows releases below Trenton, including any cancellations, in the event sufficient flow or circumstances arise in which these flow releases cannot be provided. Additionally, Erie proposes to post via SafeWaters (or a comparable system) proposed scheduled aesthetic flow events and unscheduled spill events within the Prospect bypass reach.

Aesthetics **-** Erie proposes the following aesthetic flows in the Project bypass reaches, if sufficient inflow is available from Hinckley Reservoir to sustain minimum generation and the targeted aesthetic flows:

- Prospect bypass reach - Provide aesthetic flow releases with a target flow of 300 cfs in the Prospect bypass reach for a targeted 4-hour duration for up to 2 spring special event days to be scheduled in consultation with the Town of Trenton.
- Trenton bypass reach- Provide aesthetic flow releases with a target flow of 300 cfs in the Trenton bypass reach for a targeted 8-hour duration for up to 2 scheduled Trenton Falls Scenic Trail special events to be scheduled in consultation with the Town of Trenton.

In the event that sufficient inflow from Hinckley Reservoir is not available to achieve these target releases, or if Project maintenance or construction activities limit Erie's ability to provide the targeted number of proposed releases annually, Erie will not be required to reschedule and provide any additional flow releases to compensate.

Cultural Resources - If any previously unrecorded archeological sites are discovered during the course of construction or development of any Project works or other facilities at the Project, Erie will stop construction activity, consult with a qualified archeologist, and if necessary, consult with the New York SHPO to develop a mitigation plan for the protection of significant archeological resources.

2.3 Alternatives Considered but Eliminated from Further Analysis

2.3.1 Federal Government Takeover of the Project

No party has suggested that federal takeover of the Project would be appropriate, and no federal agency has expressed an interest in operating the Project. No evidence indicates that a federal takeover should be recommended to United States Congress. A federal takeover of the Project is not a reasonable alternative and has not been considered in this analysis.

2.3.2 Issuing a Non-Power License

A non-power license is not a reasonable alternative to a new license with continuing PME measures; and has not been considered in this analysis. A non-power license has not been sought by any party; there is no basis for concluding that the Project should no longer be used to produce power.

2.3.3 Decommissioning the Project

The Project provides a viable, safe, and clean renewable source of power to the region, and it provides recreational opportunities to the public. If the Project were decommissioned, its contribution to renewable energy and recreation would cease. Project decommissioning or license denial is not a reasonable alternative and has not been considered in this analysis.

3.0 ENVIRONMENTAL ANALYSIS

3.1 General Description of the River Basin

3.1.1 River Basin Overview

The West Canada Creek Basin drains portions of Hamilton, Herkimer and Oneida counties in central New York, and is a sub-basin to the Mohawk River Basin. The Mohawk River is 140-miles-long with a drainage area of roughly 3,460 square miles and the largest tributary to the Hudson River (representing approximately 25 percent of the Hudson River Basin) (NYSDEC 2010). West Canada Creek is the second largest tributary of the Mohawk River and has a total drainage area of 561 square miles. The West Canada Creek originates in the Adirondack Mountains in Hamilton County and extends approximately 75 miles to its confluence with the Mohawk River (Figure 3-1).

From its origins, West Canada Creek flows south or south-westerly downstream to Hinckley Reservoir. Flows from Hinckley Reservoir release directly into the Project's Prospect Reservoir. The Prospect Reservoir extends southwest from the tailrace of Hinckley Dam approximately 2 miles downstream to the Prospect Dam located at RM 33, which has a drainage area of approximately 375 square miles. West Canada Creek flows downstream from Prospect Dam through the Prospect bypass reach and the Trenton Reservoir to the Trenton Dam located at RM 31, with a drainage area of approximately 376 square miles. From the Trenton Dam, West Canada Creek flows south approximately 0.75 mile through Trenton Falls Gorge to the Trenton Powerhouse. Below the Project area, flows continue downstream to the Nine Mile Creek Feeder Dam located approximately 0.25 mile downstream of the Trenton tailrace. From the Nine Mile Creek Feeder Dam, the West Canada Creek flows downstream, past Newport and Herkimer Dams (refer to Section 3.1.3) and ultimately to its confluence with the Mohawk River.

3.1.2 Major Land and Water Uses

The Project is located in the Adirondack Mountains physiographic province, close to the edge of the mountain range and near the center of New York state. The Project is located in the Western Hills subdivision of the Adirondacks characterized by foothills and streams flowing from the higher mountains. (NYSDOT 2013). The upper portions of the West Canada Creek Basin are primarily forested with dispersed rural residential use. The lower

portion of the basin includes forested, dispersed rural residential, and agricultural use, along with residential and commercial use in the towns and villages in the vicinity, such as Prospect, Trenton Falls, Gravesville, Poland, Newport, Middleville and Herkimer. The Adirondack Park encompasses much of the watershed north of the Project boundary.

Land use within the West Canada Creek Basin is dominated by deciduous forest (47 percent), evergreen forest (13 percent) and mixed forest (10 percent). Within 1,000 feet of the Project boundary, the majority of land cover is scrub/shrub (21 percent), open water (15 percent) and evergreen forest (9.5 percent). Lands adjacent to the Project are generally wooded, but several farm fields are scattered in the area. A majority of this land is privately owned and consists of private year-round or vacation residences and rural vacant land (Herkimer County 2020). Lands within the Project boundary are primarily wooded and used for the operation and maintenance of the Project.

Water uses within the basin include navigation, hydroelectric generation, drinking water supply, flows for aquatic resources, and recreation. During the operating season for the canal system, the NYSCC may divert flows at the NYSCC diversion weir into the Nine Mile Feeder Canal. Flows are diverted primarily during the navigation season with releases to supplement downstream canal water levels to help maintain navigability in the canal system (Erie 2018).

The MVWA withdraws water from the Hinckley Reservoir to supply drinking water to approximately 128,000 residents throughout 18 municipalities in Oneida and Herkimer counties (MVWA 2020). The MVWA WTP, located to the west of the Prospect bypass, was placed in service in 1992. The MVWA WTP has a State Pollutant Discharge Elimination System (SPDES) discharge permit which allows the WTP to discharge flow from the WTP backwash lagoons into West Canada Creek. The permit was issued in 1990 and is renewed on a 5-year interval (NYSDEC 2018a). Approximately 1.72 million gallons per day (MGD) is discharged from outfall 1 into West Canada Creek at the Prospect Development's bypass reach in the vicinity of the WTP (NYSDEC 2018b).

3.1.3 Dams within the Basin

Dams within the West Canada Creek Basin include the upstream Hinckley Dam, the Prospect Dam and Trenton Dam, and downstream, Nine Mile Creek Feeder Dam, the Newport Dam, and the Herkimer Dam (Figure 3-1). Downstream of the Trenton Dam (approximately 1 mile) is the Nine Mile Creek Feeder Dam (NYSCC diversion weir). The

Nine Mile Creek Feeder Dam is owned and operated by the NYSCC and is used to divert navigation flows into the Nine Mile Feeder Canal. Approximately 13 miles downstream of the Nine Mile Creek Feeder Dam is the Newport Dam associated with the Newport Hydroelectric Project which operates under an exempt FERC license (FERC No. 5196) with a 1,960-kilowatt (kW) capacity. Further downstream, approximately 26 miles below the Nine Mile Creek Feeder Dam is the Herkimer Dam associated with the Herkimer Hydroelectric Project (FERC No. 9709), with a licensed capacity of 1,680 kW.

3.1.4 Tributary Rivers and Streams

There are no major tributaries that exist on West Canada Creek within the Project boundary. Upstream of the Project, the main tributaries that contribute flow to Hinckley Reservoir are West Canada Creek and Black Creek, and other minor tributaries which drain into the reservoir include Kreskern Creek, Remus Brook, Taynter Brook, Buttermilk Brook, Beaver Meadow Creek, the Thomas Pond outlet, and a few other unnamed tributaries (NYPA 2020). Downstream of the Project, Cincinnati Creek is the largest tributary in the lower West Canada Creek reach, and other tributaries include Mill Creek, White Creek, and Cold Brook (Figure 3-2). Although minor tributaries, there are short periods during localized precipitation events where these tributaries contribute significant flow into lower West Canada Creek (see Section 3.4, *Water Resources*).

3.1.5 Climate

The climate of the Project area is characterized by warm summers and cold, snowy winters. In Oneida and Herkimer counties, New York, the average daily high temperature in July is 79 degrees Fahrenheit (°F) and the average daily low in January in 10 °F . Precipitation is fairly evenly distributed throughout the year, receiving approximately 48 inches of precipitation each year. The average seasonal snowfall is 106 inches (Bestplaces.net 2020).

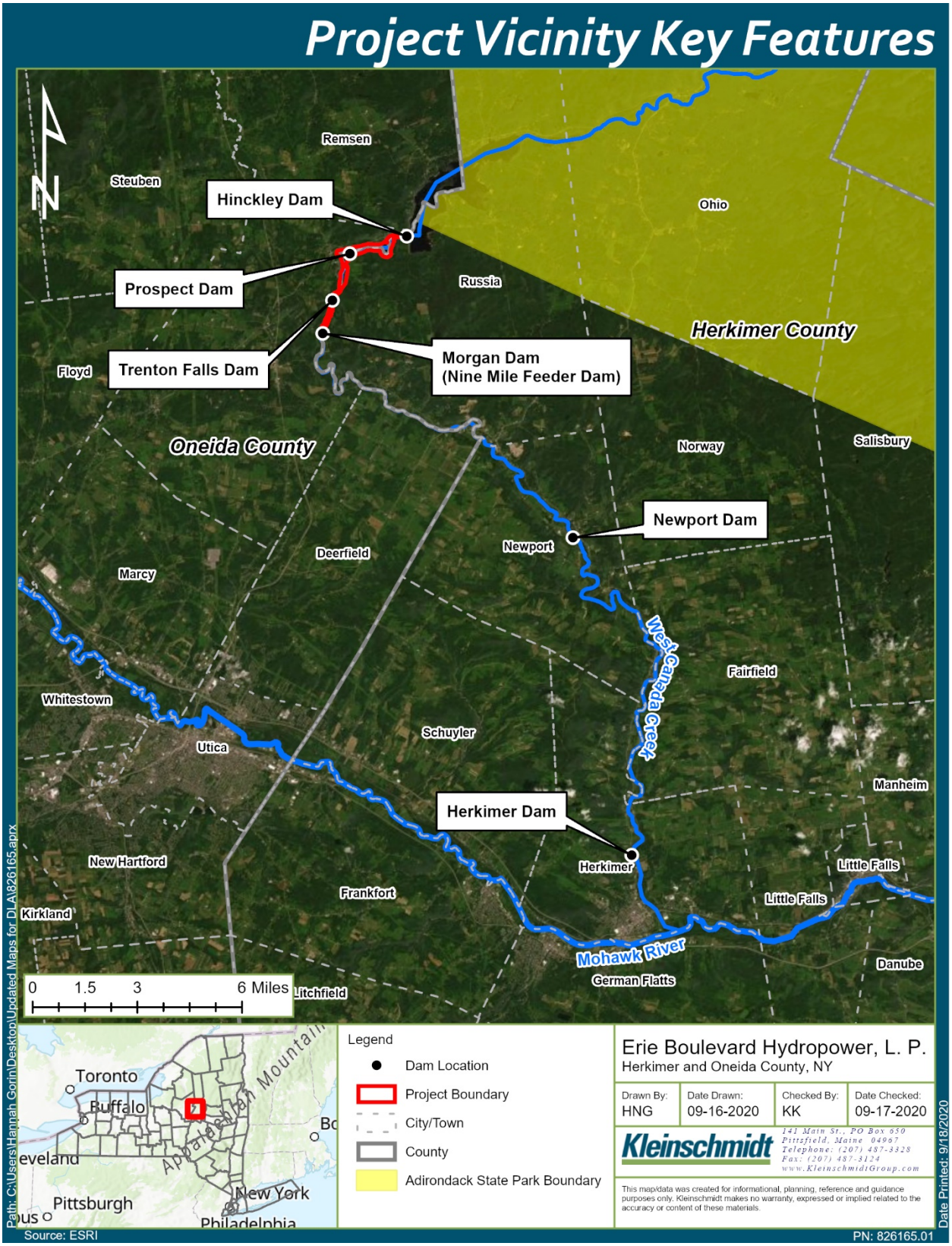


Figure 3-1 Key Features in the Vicinity of the Project

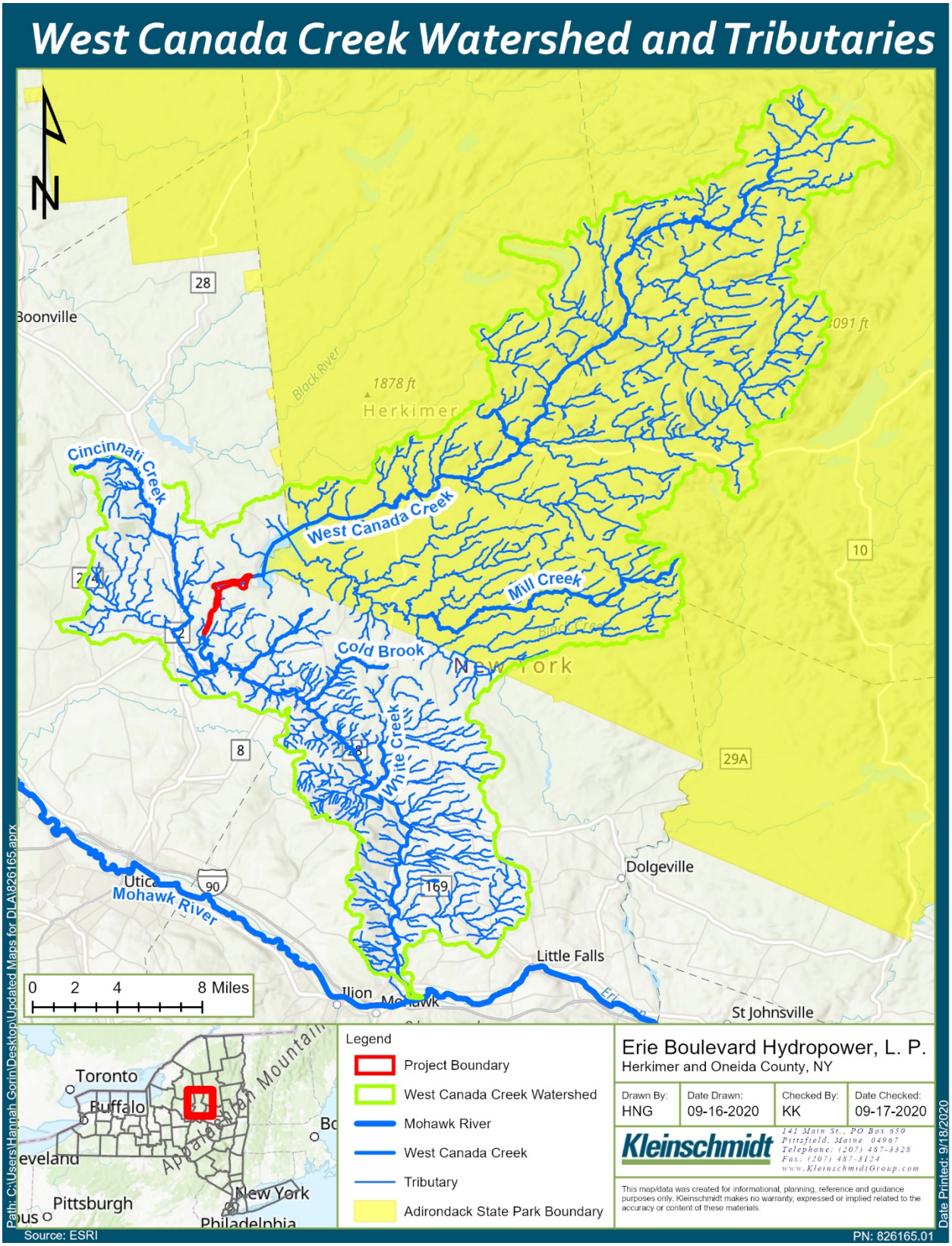


Figure 3-2 West Canada Creek Watershed and Tributaries

3.2 Geologic and Soil Resources

3.2.1 Affected Environment

The Adirondack Mountains province is dominated by hard, crystalline, igneous rock (NYSDOT 2013). Valleys in this province are produced by bedrock structures. The Trenton Falls area is known for the Trenton Falls Gorge. The area contains limestone deposits and fossils. The limestone deposits along the sides of the Trenton Falls Gorge include layers of folded and broken limestone amongst layers of undisturbed limestone. Each layer is, on average, a few inches thick (Miller 1908).

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) conducted soil surveys covering most of the Project area. The largest land unit type within the Project area is cut and fill land, which comprises 14.6 percent of the area of interest (Table 3-1, Figure 3-3). The majority (70 percent) of the cut and fill land is composed of udorthents, which contain channery loam and very gravelly sandy loam, and similar soils. Approximately 6.5 percent of the Project area is composed of rough broken land, and the majority (70 percent) of this category consists of eutrudepts, which consist of channery loam; rough broken land; and similar soils (NRCS 2018).

3.2.1.1 Prospect Development

The Prospect impoundment has approximately 4.7 miles of shoreline, and the Prospect canal/forebay has approximately 1.3 miles of shoreline. The Prospect impoundment is long and narrow except for an area approximately 4,000 feet downstream of Hinckley Dam where the impoundments exhibits an S-curve where it widens to form a deep cove along the southern shoreline. Habitat along the shoreline of the impoundment is predominantly forested with areas of development consisting mostly of private homes on the eastern end of the impoundment (Kleinschmidt 2020c). The banks along the south shore are steep (generally greater than 10 percent gradient). The banks of the northern shoreline, overall, have a low gradient with marshy areas particularly in the lower half of the impoundment downstream of the S-curve. The slope of the banks, on both sides of the impoundment, diminish as the impoundment leads into the canal.

Table 3-1 Soils Map Unit Legend

Map Unit Symbol	Map Unit Name
NOTCOM	No Digital Data Available
BrB	Broadalbin loam, 2 to 8 percent slopes
BrD	Broadalbin loam, 15 to 25 percent slopes
Cu	Cut and fill land
GP	Gravel Pit
HgB	Hartland-Agawam complex, 3 to 8 percent slopes
HmA	Hinckley gravelly loamy sand, 0 to 3 percent slopes
HnD	Hinckley and Windsor soils, 15 to 25 percent slopes
HnF	Hinckley and Windsor soils, 25 to 70 percent slopes
HsD	Honeoye and Mohawk very stony silt loams, 0 to 25 percent slopes
HvB	Howard gravelly silt loam, 3 to 8 percent slopes
In	Ilion silt loam
McB	Manheim silt loam, 3 to 8 percent slopes
MsB	Mosherville very fine sandy loam, 2 to 8 percent slopes
PpB	Phelps gravelly fine sandy loam, 0 to 4 percent slopes
Ro	Rough broken land
Te	Teel fine sandy loam
W	Water
WnC	Windsor loamy fine sand, 8 to 15
1	Udifluvents-Fluvaquents complex, frequently flooded
25	Pits, quarry
55A	Adams loamy sand, 0 to 3 percent slopes
55B	Adams loamy sand, 3 to 8 percent slopes
55C	Adams loamy sand, 8 to 15 percent slopes
57A	Croghan loamy fine sand, 0 to 3 percent slopes
90E	Windsor loamy fine sand, 25 to 55 percent slopes
94	Naumburg loamy sand
119B	Pyrities loam, 3 to 8 percent slopes
119D	Pyrities loam, 15 to 25 percent slopes
350B	Alton gravelly loam, 3 to 8 percent slopes
350C	Alton gravelly loam, 8 to 15 percent slopes
802E	Howard and Alton gravelly loams, 25 to 45 percent slopes, cool
W	Water

Source: NRCS 2018

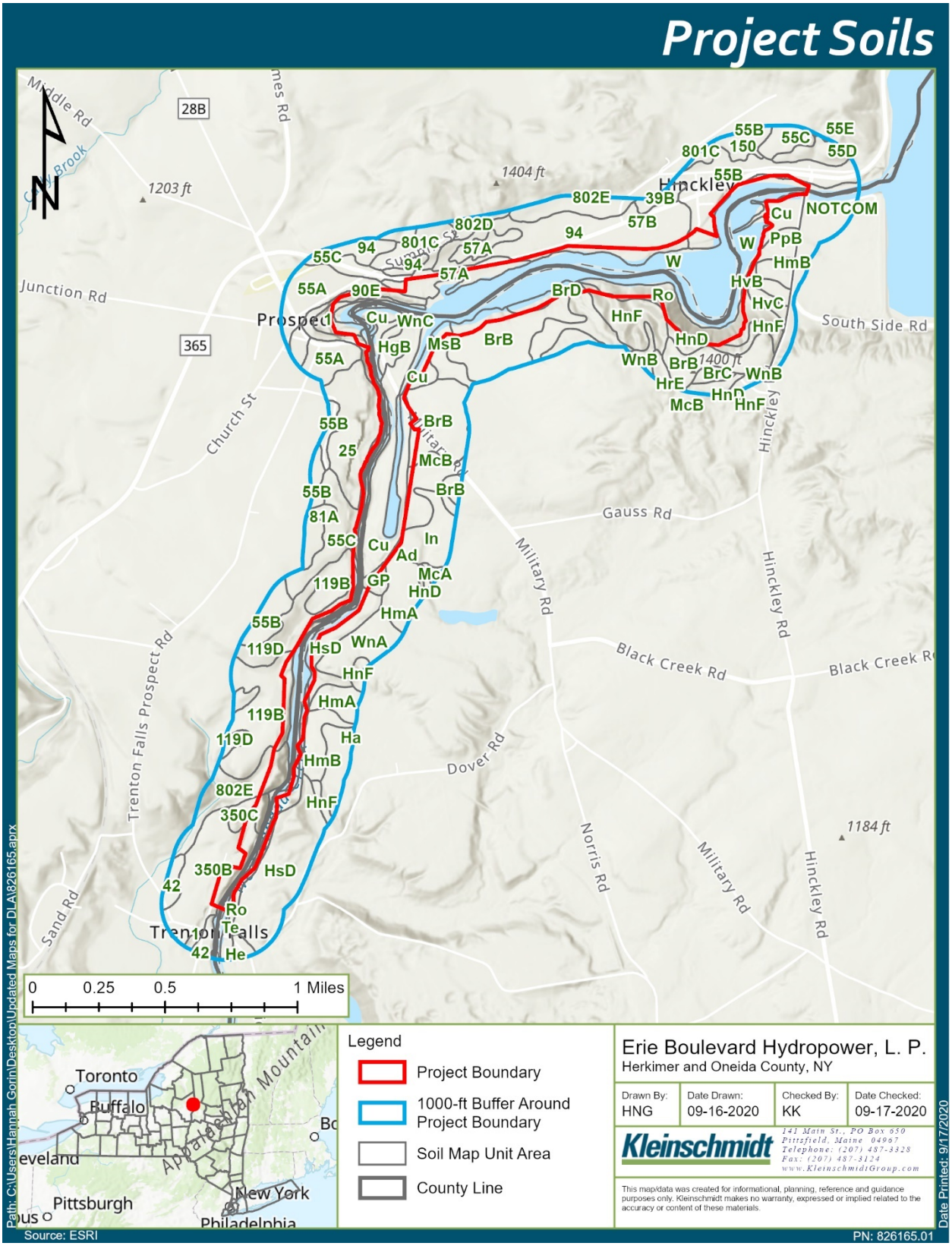


Figure 3-3 Project Area Soils

The Prospect bypass reach shoreline extends through a narrow gorge that contains walls of bedrock, ledges, and steep slopes. From the spillway downstream to the Military Road bridge the reach is approximately 200 to 250-feet-wide; the upper 0.3 miles is dominated by a continuous horizontal, smooth bedrock ledge, with pockets of pool and riffle mesohabitat types. There is a significant waterfall at the downstream end of this ledge, followed by a plunge pool and a widened area composed of broken rubble, boulder cobble, and other alluvial materials. Below Military Road, the reach runs south in a relatively straight line, and enters a narrow bedrock-controlled channel surrounded by steep vertical canyon walls, with almost no sloping embankments (Kleinschmidt 2020a).

3.2.1.2 Trenton Development

At the Trenton Development, the impoundment and bypass reach shorelines are forested and contain exposed bedrock with sharp, dramatic ledges. The Trenton impoundment has an estimated approximately 1.2 miles of impoundment shoreline, and is approximately 3,000 feet in length, extending from the Prospect tailrace to the Trenton Dam, an area of approximately 9 acres at normal pond elevation. Shoreline areas consists of high, nearly vertical bedrock walls that form a narrow gorge along the length of the impoundment. The nearly vertical gorge walls flank the impoundment and extend below the water surface resulting in minimal littoral habitat except in a few areas containing boulder and cobble deposits. Boulder and cobble deposits were mostly found in small patches adjacent to indentations in the gorge wall or along the inside bend in the channel, where slower moving waters would deposit coarse sediment and substrate (Kleinschmidt 2020c).

The Trenton bypass reach is approximately 3,703 feet (0.7-mile) long and approximately 200-feet-wide. The substrate is dominated by a continuous horizontal, smooth ledge, in a deep bedrock-controlled vertical-walled canyon, with no sloping embankments. There are significant waterfalls (Mill Dam Falls, Upper High Falls, Lower High Falls, and Sherman Falls), each followed by a plunge pool. Substrates are ledge and highly scoured, scattered deposits of boulder and cobble, with no fines such as silt, sand or small gravel (Kleinschmidt 2020a).

3.2.2 Environmental Effects

In the SD3 (FERC 2020a), FERC did not identify any specific resource issues related to geologic or soil resources. Agencies and stakeholders did not express concern, provide

comments, or submit study plan requests with respect to geologic and soil resources during the scoping and study phases of the relicensing process.

Erie proposes to continue the current licensed mode of operation, with the additional proposed PME measures as described in Section 2.2, *Applicant's Proposed Action*. Erie is not proposing any new Project construction activities and or any associated soil disturbing activities beyond typical maintenance activities at the Project. Erie would implement erosion and sediment control measures, as appropriate, with any Project maintenance or construction activities. The Project operations, and associated impoundment fluctuations and flow releases would continue as under the existing conditions. Erie's proposed bypass reach flows for Prospect would be within the same range as existing leakage conditions, and Erie's proposed downstream West Canada Creek whitewater boating flows would be within the same ranges (800 cfs to 1,400 cfs) that occur under existing conditions to the downstream West Canada Creek.

The Project impoundment shorelines are primarily forested, consist of steep bedrock ledges, or areas with existing established shoreline aquatic vegetation as developed under the existing operating regime. While no formal studies specifically assessing geology and soils were conducted, other studies performed in connection with the relicensing observed no areas of significant erosion associated with Project operations (Kleinschmidt 2020a, 2020c). Therefore, continued operation of the Project is not anticipated to have an adverse effect on geologic and soil resources.

3.2.3 Proposed Environmental Measures

During scoping and study plan development and implementation, no specific resource issues related to geologic or soil resources were identified. Erie is not proposing any changes or environmental measures associated with geology and soils resources. Erie would implement erosion and sediment control measures, as appropriate, with any Project maintenance or construction activities.

3.2.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on geologic or soil resources.

3.3 Water Resources

3.3.1 Affected Environment

3.3.1.1 Water Quantity, Storage and Use

Project Area

Inflow to the Project is regulated and from the upstream Hinckley Reservoir which has a usable storage capacity of 75,417 acre-feet at spillway crest elevation of 1,225 feet (NYPA 2020). Inflow to the West Canada Creek Project is provided from Hinckley Reservoir through discharges from the upstream Jarvis Hydroelectric Project (P-3211) or spill over the Hinckley dam. Table 3-2 provides the mean, maximum, and minimum monthly daily average outflows for Hinckley Reservoir as reported by NYPA in the Jarvis Project Final License Application (NYPA 2020).

Table 3-2 Hinckley Reservoir Daily Outflow (cfs) (Period July 2001 - December 2019)

Month	Min	Max	Avg
January	298	6,381	1,088
February	106	2,261	944
March	104	4,449	1,044
April	246	15,820	2,085
May	298	7,912	1,251
June	245	13,062	868
July	178	7,696	697
August	234	2,311	569
September	119	3,744	590
October	120	4,942	829
November	298	16,803	1,176
December	223	4,156	1,068

Source: NYPA 2020.

Prospect Development discharges directly into Trenton Development. Trenton Development discharges directly into West Canada Creek. The Prospect impoundment has a normal maximum surface area of 176 acres (impoundment and forebay) at a normal maximum surface elevation of 1,161.5 feet USGS with a gross storage capacity of 3,250 acre-feet and a useable storage capacity of 803 acre-feet. The Trenton impoundment has a normal maximum surface area of 9-acres at a normal maximum surface elevation of

1,023.9 feet USGS with an estimated a gross storage capacity of 264 acre-feet and a useable storage capacity of 155 acre-feet.

Streamflow data provided for West Canada Creek Project is based on the downstream USGS Gage No. 01346000 at Kast Bridge located on West Canada Creek in Herkimer, New York, for the period of 1999 to 2019. Flow data for the West Canada Creek Project at the Prospect Dam and Trenton Dam are based on prorations of their respective drainage areas. Table 3-3 and Table 3-4 present the mean, maximum, and minimum monthly daily average outflows for the Prospect Development and Trenton Development, respectively, for the period 1999 to 2019. The annual and monthly flow duration curves are provided in Exhibit B, Appendix B-1.

Table 3-3 Prospect Development Daily Outflow (cfs) (Period 1999-2019)

Month	Min	Max	Avg
January	374	5,993	1,155
February	234	3,860	1,037
March	284	4,462	1,338
April	395	14,003	2,233
May	319	7,909	1,316
June	184	13,786	930
July	205	8,344	723
August	197	2,786	589
September	146	5,819	596
October	126	4,890	952
November	395	12,770	1,233
December	443	4,252	1,233

Source: Prorated from USGS No. 01346000 at Kast Bridge, Herkimer NY, for the period of 1999-2019; prorating factor is 0.726.

Table 3-4 Trenton Development Daily Outflow (cfs) (Period 1999-2019)

Month	Min	Max	Avg
January	375	6,006	1,158
February	234	3,868	1,039
March	285	4,472	1,341
April	396	1,4033	2,238
May	319	7,925	1,319
June	185	1,3815	932
July	206	8,362	725
August	197	2,792	590
September	146	5,831	597
October	127	4,901	954
November	396	1,2797	1,236
December	444	4,261	1,236

Source: Prorated from USGS No. 01346000 at Kast Bridge, Herkimer NY, for the period of 1999-2019; prorating factor is 0.727.

Downstream West Canada Creek

West Canada Creek flows south-southeasterly for approximately 33 miles between Trenton tailrace and the confluence with the Mohawk River. This portion of West Canada Creek is free-flowing except for three low head dams: Nine Mile Creek Feeder Dam (NYSCC diversion weir), the Newport dam, and Herkimer dam (see Section 3.1.3). There are numerous tributaries within the lower West Canada Creek (see Figure 3-4, and Figure 3-5), including the larger tributaries of Cincinnati Creek, Mill Creek, Cold Brook, and White Creek. These tributaries can have a localized influence on water quality and quantity within the lower West Canada Creek (Kleinschmidt 2020d).

From Trenton Development tailrace downstream to approximately two miles above Newport, the river is generally 120 feet or less in width. Gradient increases in the section from the Newport dam tailwater to Kast Bridge; the river width is variable and exceeds 200 feet in places. Below Kast Bridge the gradient eases, boulders are less prevalent, and the creek is consistently at least 200-feet-wide. At Herkimer, the river enters the Mohawk River floodplain, confluences with a side arm of the Mohawk at RM 3.0, and abruptly follows an easterly course parallel to the Mohawk River, somewhat meandering through alluvial lowlands (Kleinschmidt 2020a).

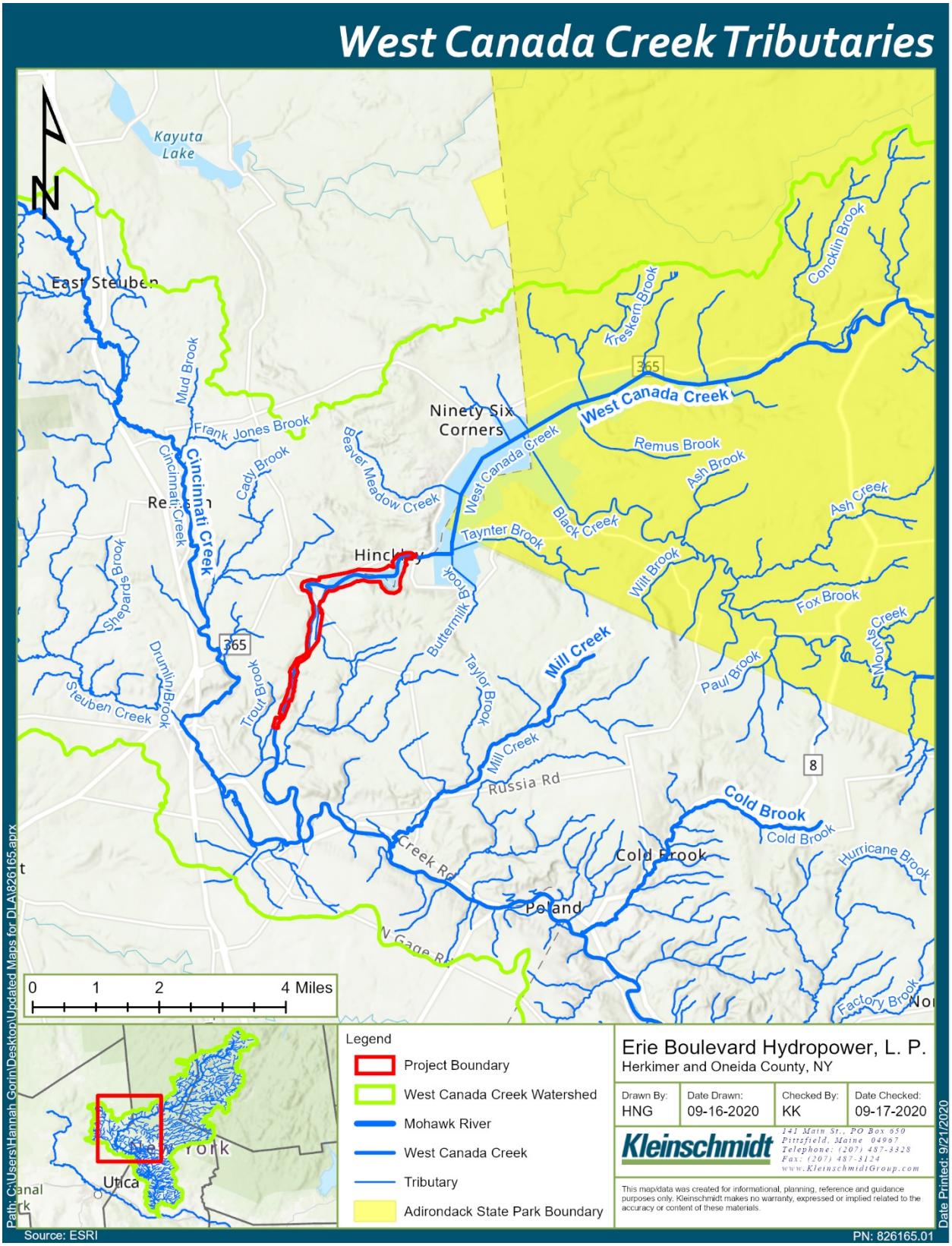


Figure 3-4 West Canada Creek Tributaries

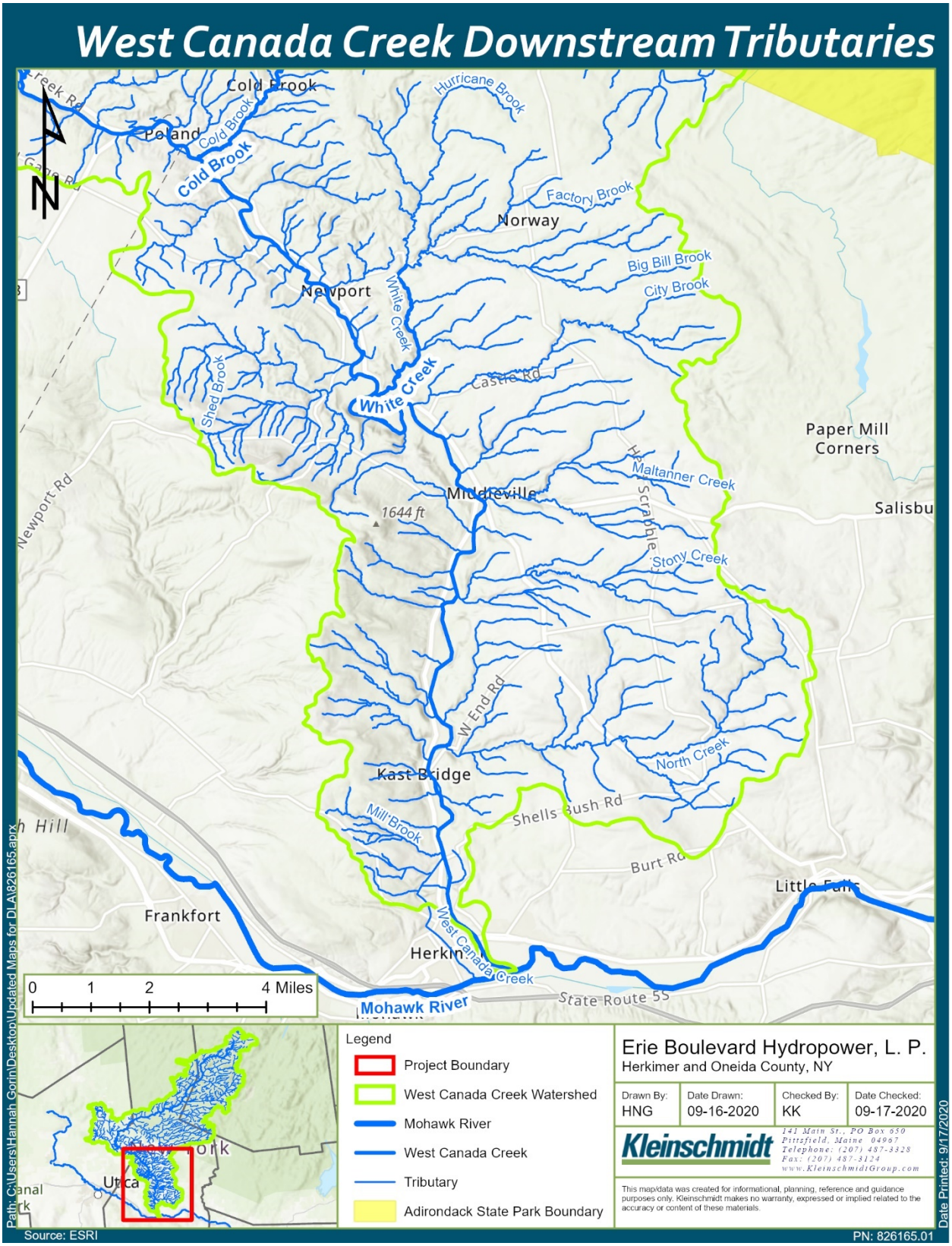


Figure 3-5 West Canada Creek Downstream Tributaries

Stream flows are measured at Kast Bridge USGS gage (01346000). During the period November 1, 2014-November 30, 2019, the monthly average flow ranged from 719 cfs in August to 3,101 cfs in April. The monthly minimum flow ranged from 159 cfs in June to 659 cfs in December; the maximum monthly flow was lowest (2,930 cfs) in September and was highest in October (26,775 cfs). The average annual flow ranged from 1,238 cfs in 2016 to 2,203 cfs in 2019. The two highest outflow events occurred on October 31 to November 1, 2019, and July 1, 2017.

The flood of record in West Canada Creek (as recorded at USGS Gage #01346000 Kast Bridge) occurred from October 31 to November 1, 2019. The flow event followed approximately 2 to 5 inches of rain throughout the southern Adirondacks and Mohawk Valley (NWS 2020a). The river stage at both Hinckley Dam and Kast Bridge exceeded the major flood stage level on October 31, 2019 (NWS 2020b). The major flood stage at Kast Bridge gage is 8 feet or 14,216 cfs, and on October 31, 2019, the recorded flood crest was 10.94 feet or approximately 27,500 cfs based on preliminary reviews of USGS (NWS 2020b, NWS 2020c).

3.3.1.2 Water Quality

Water Quality Standards

The CWA was established in 1972 under the Federal Water Pollution Control Act Amendment and within the CWA, Sections 303 and 305 guide the national program for water quality protection for the United States (USEPA 2020a, 2020b). 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 denote their best use; 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. The water quality classifications for the West Canada Creek Drainage Basin are identified in NYSDEC's water quality regulations 6 NYCRR Part 880 (New York State 2020a) and water quality standards associated with fresh surface waters are provided at 6 NYCRR Part 703 (New York State 2020b, 2020c).

Table 3-5 summarizes the water quality classifications that are applicable to waters within West Canada Creek directly upstream, within Project waters, and downstream of the Project. Waters upstream of the Project are classified as AA, a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact

recreation; and fishing. Project waters from Hinckley Dam to Prospect Dam are classified as Class B, best usages of Class B waters are primary and secondary contact recreation and fishing. Project waters from Prospect Dam to Trenton Powerhouse, as well as the reach downstream of the Trenton Falls Project to Kast Bridge are classified as Class C. Class C waters best usage is fishing and is suitable for primary and secondary contact recreation. All the segments are also classified as T for trout waters. Table 3-6 provides a summary of applicable standards for the various parameters for each classification within these specified stream segments.

Table 3-5 Applicable Water Quality Classifications

Stream Segment	Classification	Classification Description Best Usage	
McIntosh Bridge to Hinckley Dam	AA/AA(T)	The best usages of Class AA waters are a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish, shellfish and wildlife propagation and survival.	These reaches are also designated as trout waters (T). Any water quality standard, guidance value, or thermal criterion that specifically refers to trout or trout waters applies.
Hinckley Dam to Prospect Dam	B/B(T)	The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival.	
Prospect Dam to Trenton Powerhouse	C/C(T)	The best usage of Class C waters is fishing. These waters shall be suitable for fish, shellfish and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.	
Trenton Powerhouse to Kast Bridge	C/C(T)		
Kast Bridge to Confluence with Mohawk River	C/C(T)		

Source: New York State 2020a, 2020b.

Table 3-6 Applicable Water Quality Standards

Parameter	Classes	Standard
pH	AA, B, C,	Shall not be less than 6.5 nor more than 8.5.
Dissolved oxygen (DO)	AA, B, C	For trout waters (T), the minimum daily average shall not be less than 6.0 mg/L, and at no time shall the concentration be less than 5.0 mg/L.
Dissolved Solids	AA, B, C	Shall be kept as low as practicable to maintain the best usage of waters but in no case shall it exceed 500 mg/L.
Total Coliforms (number per 100 ml)	AA	The monthly median value and more than 20 percent of the samples, from a minimum of five examinations, shall not exceed 50 and 240, respectively.
Total Coliforms (number per 100 ml)	B, C	The monthly median value and more than 20 percent of the samples, from a minimum of five examinations, shall not exceed 2,400 and 5,000, respectively.
Fecal coliforms (number per 100 ml)	B, C,	The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.

Source: New York State 2020.
Key: mg/L -milligrams per liter; ml - milliliter.

Water Quality Data

Prospect Impoundment

Erie conducted a Water Quality Study on West Canada Creek (water temperature, dissolved oxygen [DO], pH and conductivity) from April 15 to November 15 of 2019. The following summarizes key results; additional information is provided in the Water Quality Study Report (Kleinschmidt 2020f). Ten vertical profiles of water temperature, DO, conductivity, and pH were completed within the Prospect impoundment at a deep location (Figure 3-6). Water temperature and DO exhibited the typical seasonal trend of lower water temperatures and higher DO in spring and fall; in summer, water temperature was higher and DO was lower. Conductivity was also lowest in the spring and increased throughout the summer. In the spring and fall profiles, water temperature and DO were uniform throughout the water column; in the summer, water temperature and DO decreased slightly with increasing depth. The lowest water temperature (7.6 ºCelsius [ºC]) was measured on May 2, 2019, and the maximum water temperature observed was 21.8 ºC near the surface on August 8, 2019 (Kleinschmidt 2020f).

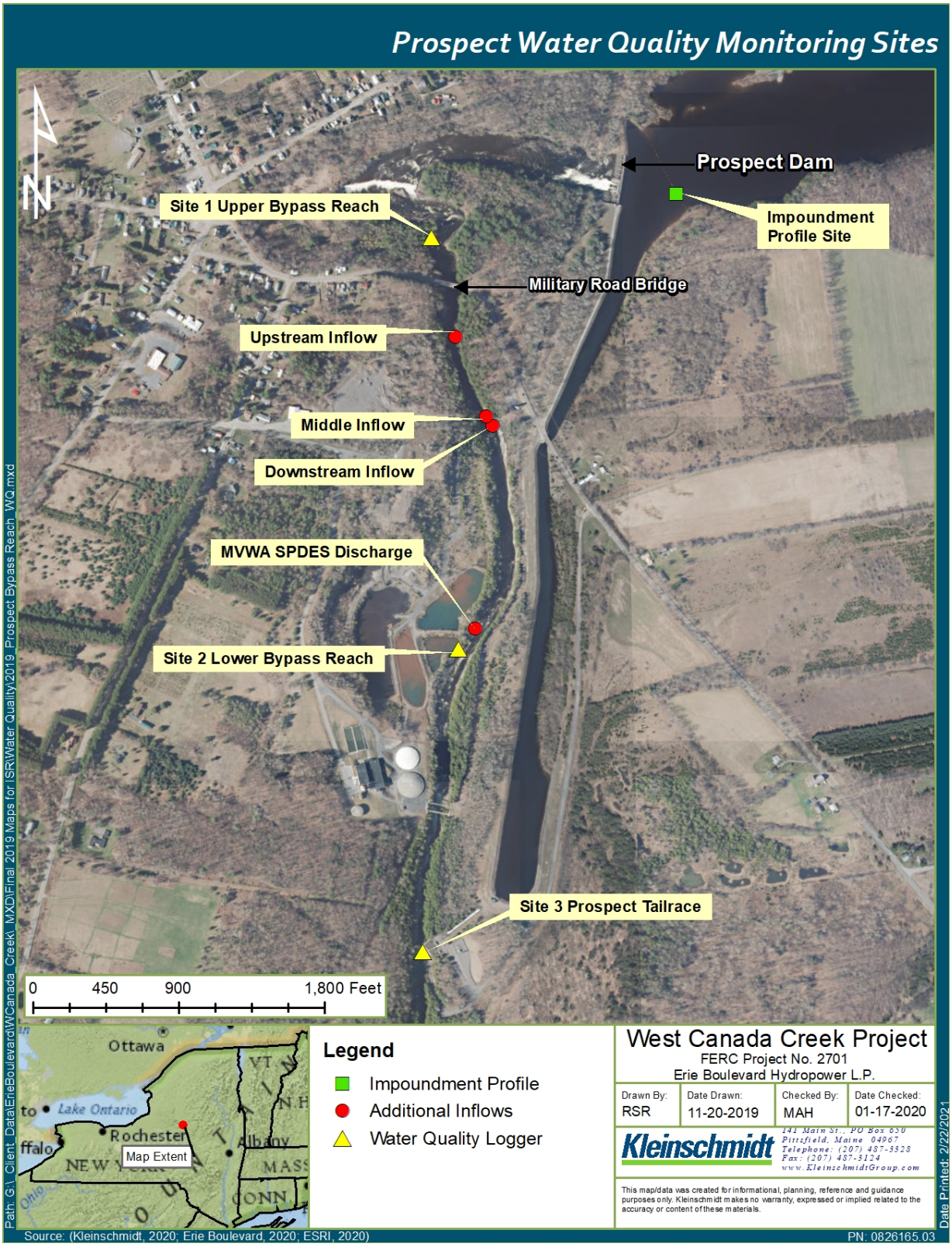


Figure 3-6 Location of Water Quality Monitoring Sites at the Prospect Development

In the May through August, September 18, and October 3, 2019, profiles, DO was generally uniform or decreased slightly with increasing depth. During most profiles, the water temperature was uniform or decreased slightly with increasing depth. However, the impoundment stratified[8] at a depth of approximately 31 to 35 feet on August 8 and September 4, 2019. The vertical profile with the lowest average DO occurred on August 8, 2019 (average 3.2 milligrams per liter [mg/L], range 2.3 mg/L to 4.1 mg/L). The average DO increased after August 8, 2019 with the highest DO measured during the last profile on October 17, 2019 (average 15 mg/L, range 12.8 mg/L to 15.6 mg/L). During this period, the lowest measurements of DO in the Prospect impoundment also coincided with the DO ranges measured in the upstream Jarvis Project tailwater as reported under the Jarvis Project relicensing proceeding studies (NYPA 2019, 2020). While DO and pH parameters were measured to be outside of the New York state water quality standard range[9] in the Prospect impoundment during the warm summer months (July, August and September), these trends were not necessarily conveyed downstream as evidenced by data collected in the Prospect bypass reach, Project tailraces and monitoring locations downstream (Kleinschmidt 2020f).

Prospect Bypass Reach

Water temperature, DO, conductivity, and pH were continuously monitored at two sites in the Prospect bypass reach (Figure 3-6). Both natural seasonal and diurnal variability and Project operations affected the water quality trends. Water temperature was similar at both bypass reach stations and attained maximum levels in the afternoon in response to daytime warming and decreasing overnight to a minimum in the early morning. The water temperature ranged from approximately 1.4º C in April 2019 to approximately 25.7º C in August 2019. DO exceeded the New York instantaneous state water quality standard (5 mg/L) throughout the entire monitoring period at the upper Prospect bypass reach (Site 1).

At the lower Prospect bypass reach (Site 2), there were five short-term periods (approximately 0.5 hours to 4 hours) where DO decreased below 5 mg/L; during all five occurrences, DO at Prospect tailrace (Site 3) was above 5 mg/L demonstrating that the water was aerated after passing through the powerhouse. DO was above the daily average

[8] Thermal stratification occurs when there is more than a 1 ºC difference in temperature per meter of depth.
[9] New York State standards for DO - minimum daily average not less than 6.0 mg/L, and instantaneous not less than 5.0 mg/L; for pH - not less than 6.5 nor more than 8.5

standard (6 mg/L) throughout the study period at the upper Prospect bypass reach (Site 1). DO was just below the daily average standard (at 5.9 mg/L) on one day at lower Prospect bypass reach (Site 2) (daily average was 5.9 mg/L on July 21, 2019). Conductivity was highest at Site 1 (range 9.1 microsiemens/centimeter [µS/cm] to 363.4 µS/cm) and decreased at site 2. pH was within the range of the water quality standard (6.5 to 8.5) throughout the entire study period at lower Prospect bypass reach (Site 2). pH was also between 6.5 and 8.5 except for infrequent, short excursions at upper site (Site 1) (Kleinschmidt 2020f).

Prospect and Trenton Tailrace

Water quality was monitored at one site in the Prospect tailrace (Site 3) (Figure 3-6), and at one site in the Trenton tailrace (Site 4) (Figure 3-7). The water temperature at the Prospect tailrace sampling location (Site 3) ranged from 7.6 º C in May 2019 to 22.5º C in August 2019. The water temperature at the Trenton tailrace sampling location (Site 4) ranged from 1.4º C in April 2019 to 22.2º C in August 2019. Water temperatures at both tailrace sites displayed the typical diurnal variation of maximum temperatures in the afternoon and the minimum temperature in the morning.

DO exceeded the New York instantaneous state water quality standard (5 mg/L) throughout the entire monitoring period at both Prospect tailrace and Trenton tailrace. DO was above the daily average standard (6 mg/L) in the Prospect tailrace (Site 3). DO was just below the daily average standard on two days at Trenton tailrace (daily average was 5.9 mg/L on August 8 and 9. 2019). pH was within water quality standards for most of the study period except for infrequent, short excursions at Prospect tailrace (Site 3), and Trenton tailrace (Site 4).

At the Prospect tailrace (Site 3), conductivity ranged from 9.2 µS/cm in May 2019 to 176.9 µS/cm in July 2019. pH ranged from 6.4 in July 2019 to 8.6 in July 2019 and was within the range of the water quality standard in late May, June, and August through October 2019. pH was 6.4 and just below the standard for brief periods on July 10-16 and July 21, 2019; pH was 8.6 for one 15-minute interval on July 29, 2019. At Trenton tailrace, conductivity ranged between 9.0 µS/cm in April 2019 and 71.9 µS/cm in August 2019. Conductivity then decreased through mid-September 2019, slightly increased through October 8, 2019 and then began to decrease rapidly. pH was within the state standard except for during an eight day period between April 12 and-20, 2019 when it ranged from 5.9 to 6.3 (Kleinschmidt 2020f).

Figure 3-7 Location of Water Quality and Air Temperature Monitoring Sites at the Trenton Development

Downstream West Canada Creek

Water quality was monitored at six sites in downstream West Canada Creek (Sites 5-10) (Figure 3-8). Water temperatures in West Canada Creek reflect typical seasonal trends of increasing during the spring to maximum levels in July to mid-August followed by decreasing levels in the late summer and fall. Superimposed on the seasonal trend was the diurnal trend of highest temperatures in the afternoon and lowest temperatures in the early morning. Downstream of Nine Mile Creek Feeder Dam (Site 5), the water temperature ranged from 1.4 ºC in April to 22.1 ºC in August. The water temperature at Site 5 was less variable than the other downstream West Canada Creek sampling locations (Sites 6 to 10).

DO was above the instantaneous and daily average water quality standards throughout the study period at Nine Mile Creek Feeder Dam (Site 5), Poland (Site 6), downstream Brown Island (Site 8), and Herkimer (Site 10). At Newport (Site 7), the cause of reduced DO between September 26 and October 2, 2019 is ultimately unknown, but is believed to have resulted from sedimentation of the data logger based on field observation. The data returned to a consistent range at site 7 after a download and cleaning of the data logger, suggesting sedimentation was the cause of low DO readings.

At Kast Bridge (Site 9), DO was above the instantaneous standard except for short periods (15 minutes to 6 hours) on August 24-28, 2019; DO was above the daily average water quality standard except for August 28, 2019 (5.6 mg/L). pH was within the range of the water quality standard (6.5 to 8.5) during the monitoring period at Poland (Site 6), Newport (Site 7), and downstream Brown Island (Site 8). At Nine Mile Creek Feeder Dam (Site 5), Kast Bridge (Site 9), and Herkimer (Site 10), pH was in attainment with the standard except for infrequent, brief excursions. Variability in conductivity at the downstream sites followed precipitation events and corresponded with increased river flow (as measured at Kast Bridge) and was likely the result of elevated runoff into West Canada Creek (Kleinschmidt 2020f).

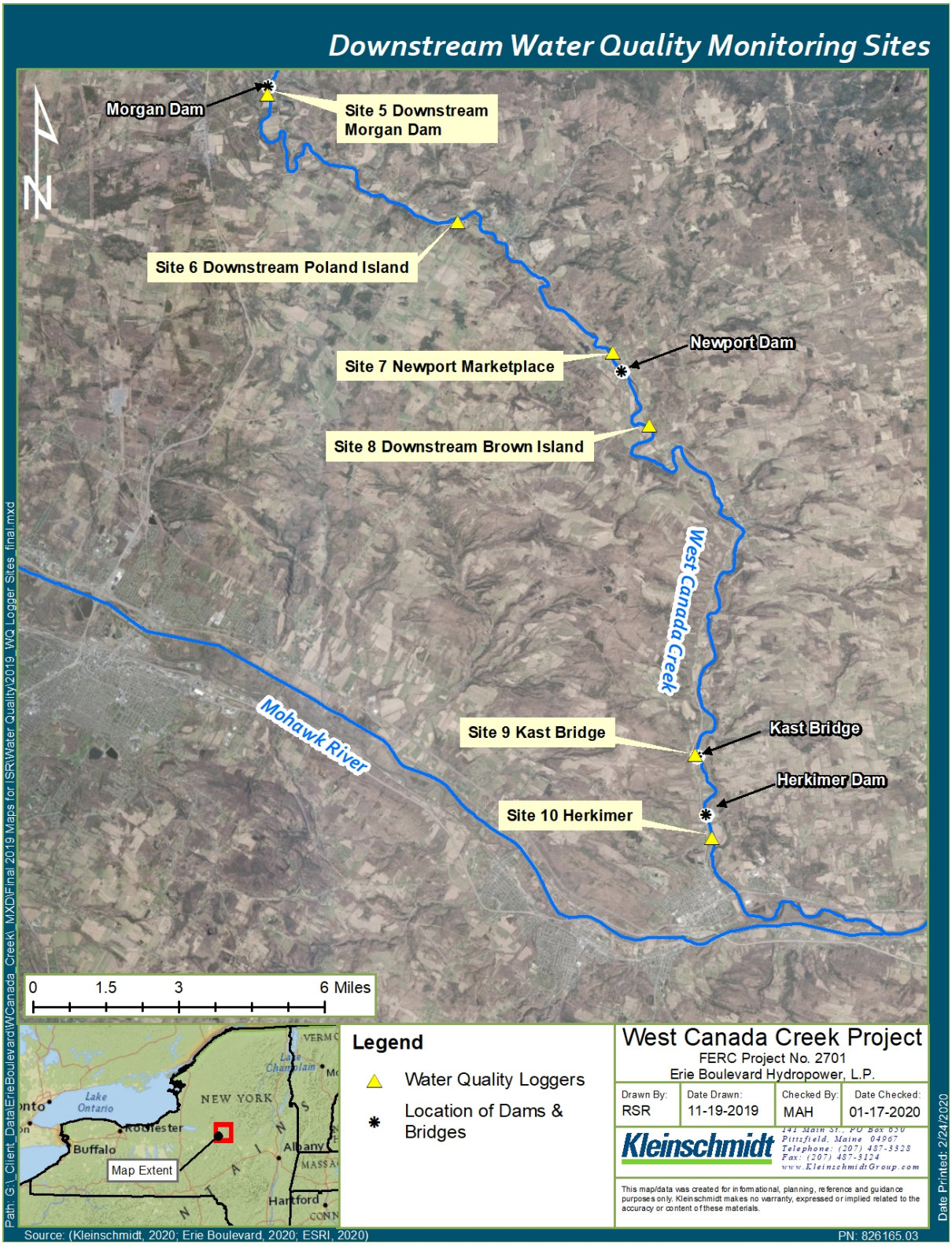


Figure 3-8 Location of Six Water Quality Monitoring Sites between Nine Mile Creek Feeder Dam and the Confluence with the Mohawk River

3.3.2 Environmental Effects

3.3.2.1 Water Quantity

FERC identified in the SD3 (FERC 2020a) the potential issue for environmental analysis related to water resources to include the effects of continued Project operation on water quantity. The Prospect Development impounds waters up to the Jarvis tailrace such that the maximum operating level of the Prospect Pond is at the same elevation as the Jarvis Project tailrace. Accordingly, water to the West Canada Creek Project is supplied from Hinckley Reservoir outflows. Hinckley Reservoir is operated by the NYSCC in accordance with the 2012 Hinckley Reservoir Operating Diagram (NYPA 2020). The Jarvis Hydroelectric Project utilizes the reservoir releases to generate power. Outflows from Hinckley Reservoir and the Jarvis Project discharge directly into the Prospect Reservoir.

The current FERC license for the Jarvis Project allows for peaking operations and requires the NYPA (as licensee for the Jarvis Project) to coordinate with Erie (as licensee for the West Canada Creek Project) and the NYSCC to maintain a continuous base flow of 160 cfs in West Canada Creek, as measured immediately downstream of the NYSCC diversion weir (Nine Mile Creek Feeder Dam). The NYPA Hydrologist communicates with the Erie Water Resource Manager twice weekly to discuss the application of the 2012 Operating Diagram based upon reservoir elevation in relation to the rule curve.

The West Canada Creek Project is typically operated so that daily average inflows from Hinckley Reservoir (as controlled by the NYSCC and the NYPA based upon the 2012 Operating Diagram) into the Project are released from the Prospect and Trenton developments that same day to maintain daily average outflows (i.e., daily average inflows equal daily average outflows). The two developments are typically operated in tandem such that outflow from Prospect Development is followed by similar outflow at the downstream Trenton Development.

Erie proposes to continue the current licensed mode of operation, with the additional proposed PME including aesthetic flow releases and proposed downstream whitewater boating flow releases would be implemented when inflow is available under the existing 2012 Operating Diagram. The downstream whitewater boating releases would be released through target flows being measured at the downstream USGS Kast Bridge gage in consideration of other contributing factors to downstream water quantity, such as downstream tributary inflow (see Section 2.2, *Applicant's Proposed Action*). Therefore,

Erie's proposed action would have no adverse effects on water quantity within the Project and downstream West Canada Creek as compared to existing conditions.

3.3.2.2 Water Quality

FERC identified in the SD3 (FERC 2020a) the potential issue for environmental analysis related to water resources to include the effects of continued Project operation on water quality. Erie conducted a water quality study to provide information pertaining to water quality both within the Project and downstream West Canada Creek (Kleinschmidt 2020f and as summarized in Section 3.3.1). Erie proposes to continue existing Project operations and implementing the PME measures, including continuous year round minimum leakage-type flow (no greater than 3 cfs) within Prospect bypass reach, and to maintain the existing base flow requirement of 160 cfs downstream of Morgan Dam, as described in Section 2.2, *Applicant's Proposed Action*. Erie proposes no construction activities or facility construction under the Proposed Action that would affect sedimentation or other physical or chemical properties of water resources within the Project.

Water quality data collected during the 2019 studies exhibit expected seasonal trends in which the lowest DO values and highest water temperature values occurred during the warm summer months, generally between late July and the end of August. In addition, data reflected the diurnal trend of highest temperatures in the afternoon and lowest temperatures in early morning. During the 2019 study period, DO and pH parameters were measured to be outside of the New York state water quality standard range[10] in the Prospect impoundment during the warm summer months. The lowest measurements of DO in the Prospect impoundment coincided with similarly low DO measured in the tailwater under the Jarvis proceeding studies (NYPA 2019, 2020).

In their Final License Application (NYPA 2020), the NYPA notes that it will "…propose measure(s) to improve stream DO concentration downstream of the Project tailrace when the Project is operating." NYPA's plan to enhance DO of discharge coming out of Hinckley Reservoir should help eliminate excursions in the Prospect impoundment. The magnitude of those trends were not necessarily conveyed downstream as evident by data collected in the Prospect bypass reach, Project tailraces and monitoring locations downstream. The Water Quality Study (Kleinschmidt 2020f) indicated that dissolved oxygen (DO) exceeded

[10] New York State standards for DO - minimum daily average not less than 6.0 mg/L, and instantaneous not less than 5.0 mg/L; for pH - not less than 6.5 nor more than 8.5

the New York instantaneous state water quality standard (5 mg/L) throughout the entire monitoring period at the upper Prospect bypass reach, Prospect tailrace, and Trenton tailrace. At the lower Prospect bypass reach, there were five short term periods (approximately 0.5 - 4 hours) where DO decreased below 5 mg/L; however, during all five occurrences, DO at Prospect tailrace was above 5 mg/L after bypass flows mixed with the more aerated water passing through the powerhouse.

Water conveyed downstream from the Project was generally within the state water quality standards, exhibiting only brief and infrequent excursions. DO levels exceeded the instantaneous and daily average water quality standards throughout the study period at Morgan Dam (Site 5), Poland (Site 6), downstream Brown Island (Site 8), and Herkimer (Site 10). At Newport (Site 7), and Kast Bridge (Site 9), DO was above the instantaneous standard (5 mg/L) throughout the study period except for short periods. pH was within the range of the water quality standard (6.5 to 8.5) at Poland (Site 6), Newport (Site 7), and downstream Brown Island (Site 8). At Morgan Dam (Site 5), Kast Bridge (Site 9), and Herkimer (Site 10), pH was in attainment with the state standard except for infrequent, brief excursions.

Water conveyed downstream from the Project was generally within the state water quality standards, exhibiting only brief and infrequent excursions, and thus is not expected to negatively affect aquatic resources downstream (see also Section 3.4, *Fish and Aquatic Resources*). Other factors unrelated to Project operations, such as tributary inflows, influences associated with downstream dams and non-point source pollution also likely influence the downstream West Canada Creek water quality. Variability in conductivity at the downstream sites followed precipitation events and corresponded with increased river flow (as measured at Kast Bridge) and was likely the result of elevated runoff into West Canada Creek.

3.3.3 Proposed Environmental Measures

Erie proposes to continue the current licensed mode of operation, with the additional proposal of developing and implementing a SWLMP, as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*. The SWLMP would provide measures to monitor impoundment elevations, downstream base flows, and provision for maintaining a leakage flow to the Prospect bypass reach. Erie would implement erosion and sediment control measures, as appropriate, with any Project maintenance or construction activities.

3.3.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on water quantity and water quality resources.

3.4 Fish and Aquatic Resources

3.4.1 Affected Environment

3.4.1.1 Aquatic Habitat

Prospect Impoundment

The Prospect impoundment is approximately 2-miles-long, running east to west, from Hinckley Dam to the entrance of the Prospect power canal (Figure 3-9). The Prospect impoundment covers approximately 162 acres at normal pond elevation (1,161.5 feet), with an additional 14 acres in the power canal and forebay. Prospect impoundment is a slow-moving flowage with a variety of substrates ranging from sparse cover of large boulders to fine sediment.

In 2019, Erie conducted the Impoundment Shoreline Characterization Study (Kleinschmidt 2020c) to characterize the littoral habitat within the Project impoundments, and document wetlands hydraulically influenced by the project and aquatic vegetation. The impoundment study collected imagery around the nearly 6-mile perimeter of the impoundment and canal using an unmanned aerial vehicle (UAV). This imagery was then classified into habitat types which is summarized in Table 3-7. Figure 3-9 depicts the distribution of the six identified habitat categories. Overall, the two most predominant littoral habitat types within the Prospect impoundment included fine sediment substrates of low gradient slope (45 percent) and coarse substrates of high gradient slope (31 percent) (Table 3-7) (Kleinschmidt 2020c).

In general, object cover in the impoundment is of moderate density consists of woody debris and submerged aquatic vegetation (SAV) beds that offers habitat for fish spawning, nursery, and /or foraging. Overhead canopy provides cover predominantly for habitat along the south shore of the Prospect impoundment. Bed slope varies throughout the impoundment, with high gradient slopes most prevalent along the south shore, and lower gradient slopes stretching along the north shoreline. (Kleinschmidt 2020c).

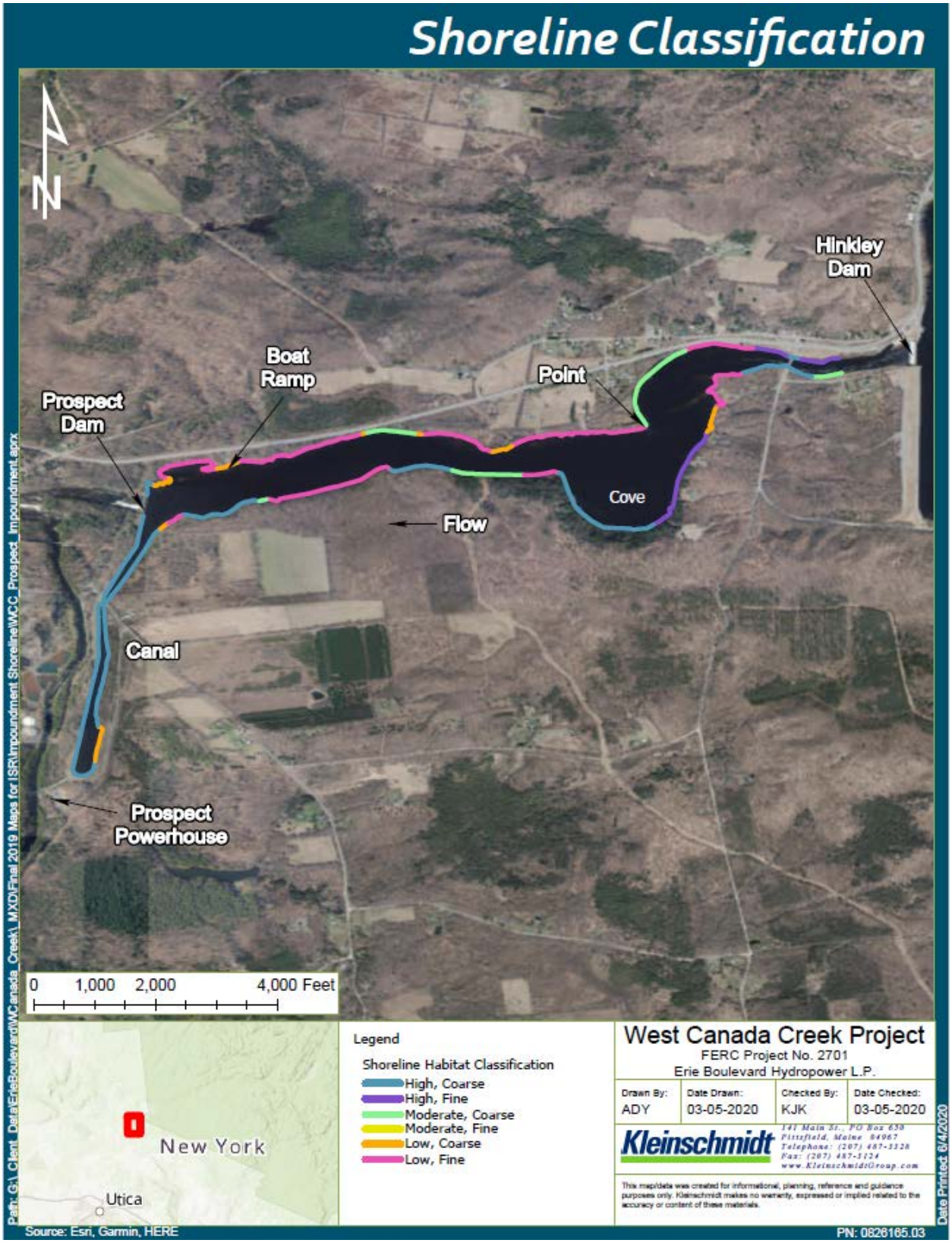


Figure 3-9 Prospect Impoundment Shoreline Characterization

Table 3-7 Prospect Impoundment Shoreline Habitat classifications

Location	Gradient	Substrate	Length (ft)	Length (miles)	Percent
Canal	High	Coarse	6,169	1.2	90.9
Canal	Low	Coarse	615	0.1	9.1
Canal Total			**6,784**	**1.3**	**100**
Impoundment	High	Coarse	7,575	1.4	30.8
Impoundment	High	Fine	519	0.1	2.1
Impoundment	Moderate	Coarse	2,970	0.6	12.1
Impoundment	Moderate	Fine	434	0.1	1.8
Impoundment	Low	Coarse	2,047	0.4	8.3
Impoundment	Low	Fine	11,021	2.1	44.9
Impoundment Total			**24,566**	**4.7**	**100**

Source: Kleinschmidt 2020c.

Prospect Bypass Reach

In 2019, Erie conducted a mesohabitat study of the Prospect bypass reach, the Trenton bypass reach, and downstream West Canada Creek from below the Trenton tailrace to the confluence with the Mohawk River (Kleinschmidt 2020a). The purpose of the Aquatic Mesohabitat Survey was to map the distribution and abundance of aquatic mesohabitat, quantitatively characterize the types of aquatic habitats that occur within the Project study area, and provide a basis for locating level loggers and transects, as well as identify locations for mussel, macroinvertebrate and electrofishing sampling locations.

The Prospect bypass reach is approximately 7,131 feet (1.3 miles) in length and generally consists of a series of pools hydraulically connected by reaches of riffle and run habitat. From the spillway downstream to the Military Road bridge the reach is approximately 200 to 250-feet-wide; the upper 0.3 miles is dominated by a continuous horizontal, smooth bedrock ledge, with pockets of pool and riffle mesohabitat types. There is a substantial waterfall at the downstream end of this ledge, followed by a plunge pool and widened area composed of broken rubble, boulder, cobble, and other alluvial materials eroded from the banks that form a widened channel containing short braids.

At a sharp bend in the river, the channel enters a bedrock-controlled gorge, which includes a deep pool complex including a short riffle that terminates at the Military Road bridge. Below Military Road, the reach runs south in a relatively straight line, and enters a narrow bedrock-controlled channel surrounded by steep or vertical canyon walls, with almost no sloping embankments. Waterfalls along the eastern embankment provide

streams of inflow to the reach (Photo 3-1). Substrates are largely bedrock ledge and scattered deposits of boulder and cobble, with few fines such as silt, sand or small gravel (Kleinschmidt 2020c).

Photo 3-1 Waterfall Inflow to the Lower Prospect Bypass Reach

Trenton Impoundment

The Trenton impoundment is approximately 3,000 feet in length, extending from the Prospect tailrace south to the Trenton Dam, an area of approximately 9 acres at normal pond elevation (Figure 3-10). The upper impoundment is narrow, approximately 50-feet-wide, and starts to widen where it bends westward approximately 1,000 feet downstream of the Prospect Powerhouse. The maximum width of the Trenton impoundment is at the dam where it is approximately 260-feet-wide.

The Trenton impoundment consists of a deep, narrow, bedrock gorge. The habitat is mostly uniform throughout the impoundment, with little to no littoral zone due to the vertical gorge walls (Photo 3-2). In-water cover in the Trenton impoundment is sparse, limited to small sporadic areas of cobble and small boulder, occurring along the margins of the gorge walls (Photo 3-3). Water depth is the most prevalent form of habitat cover. Since the gorge walls extend well past the water line, little habitat is exposed as pond levels fluctuate, and pools are deep enough that little cover is lost (Kleinschmidt 2020c).

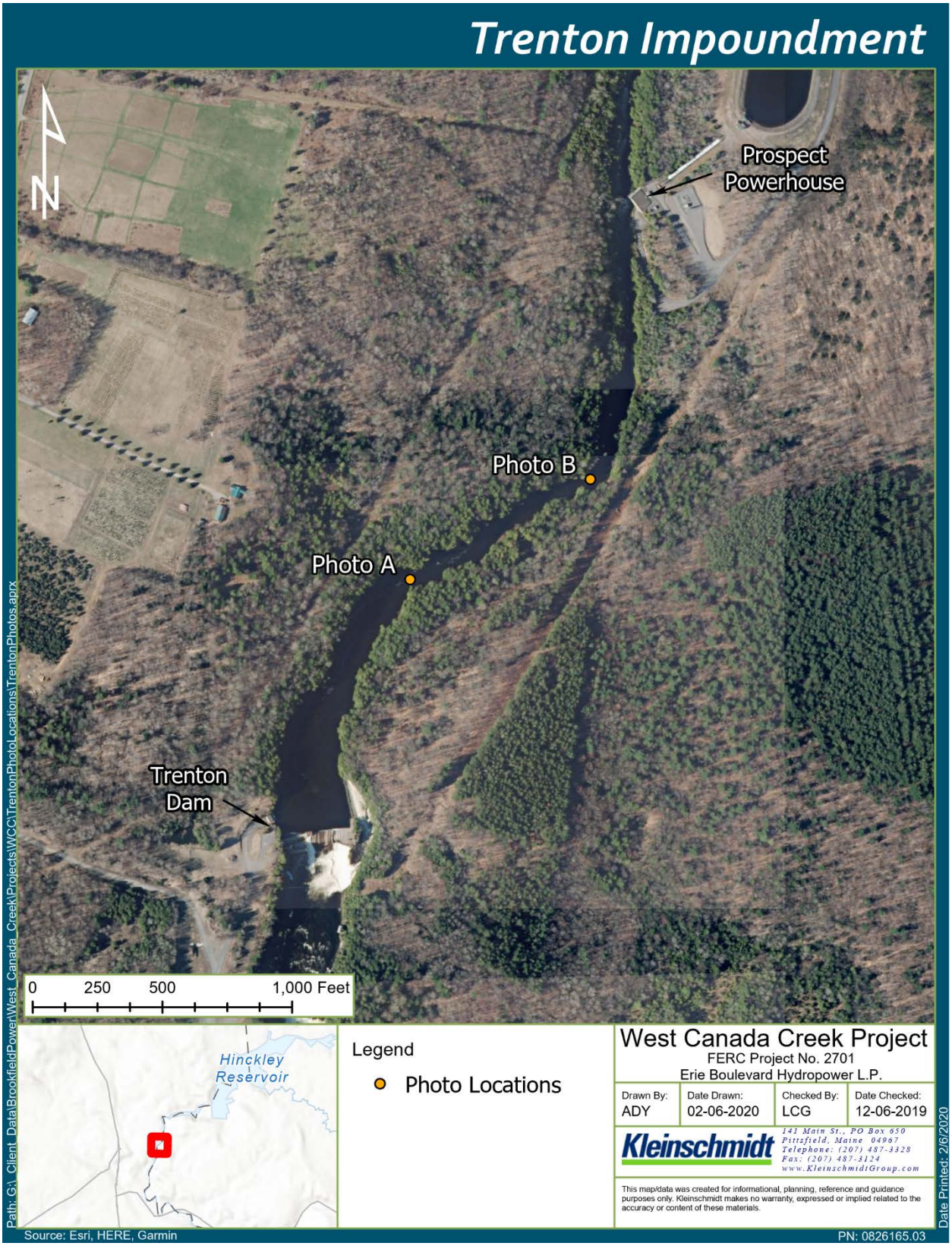


Figure 3-10 Trenton Impoundment and Photo Locations

Photo 3-2 Trenton Impoundment Bedrock Gorge

Note: For Location see Figure 3-10, Photo A.

Photo 3-3 Trenton Impoundment Boulder and Cobble Deposits

Note: For Location see Figure 3-10, Photo B.

Trenton Bypass Reach

The Trenton bypass reach is approximately 3,703 feet (0.7-mile) long. From the spillway downstream, the reach is approximately 200-feet-wide. The substrate is dominated by a continuous near horizontal, smooth ledge, with small pockets of pool and riffle. There are significant waterfalls (Mill Dam Falls, Upper High Falls, Lower High Falls, and Sherman Falls), each followed by a plunge pool (Photo 3-4). Aquatic habitat in this reach is disjunct, as the falls are impediments to fish movement creating three isolated terraced reaches within the bypass. Mesohabitat types primarily consist of alternating pool (37 percent) and riffle (24 percent) and two small runs (9 percent) separated by a short pool. Miscellaneous minority mesohabitat habitat types, such as falls, comprise 30 percent of the reach. Pool types included a deep scour pool at the toe of each fall, and a backwatered pool at the downstream end of the bypass reach, as well as additional small riverine pools scattered throughout the reach. The six pools varied in depth, with three of them providing good quality cover due to depths greater than four feet (Kleinschmidt 2020a).

Photo 3-4 Upper Portion of Trenton Bypass Reach

Downstream West Canada Creek

Downstream Base Flow

The existing West Canada Creek Project FERC license requires a base flow of 160 cfs, or inflow to the Project as measured immediately downstream of the NYSCC diversion weir for the purposes of protecting and enhancing aquatic resources in West Canada Creek. This base flow requirement was assessed in consultation with NYSDEC as part of an instream flow study (Ichthyological Associates, 1981a) and air and water temperature monitoring assessment (Ichthyological Associates, 1981b) conducted during the previous relicensing proceeding.

The instream flow study objective was to assess and determine the changes in amount of usable fish habitat (weighted usable width) for 6 different flows at three different reaches downstream of the NYSCC diversion weir. The study applied the incremental method to quantify the usable habitat available for three life stages (adult, juvenile, fry) of the target species. Target species included brown trout for the upstream reaches (Reaches 1 and 2) and brook trout and smallmouth bass for downstream reach (Reach 3). The study assessed six flow releases from the Trenton Station, including: 160 cfs less the canal diversion flow of approximately 75 cfs; and 160, 200, 250, 300 and 350 cfs). Three study reaches were evaluated downstream of Trenton Station, including: 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. Transect locations were established in consultation with NYSDEC and were located across hydraulic controls (i.e., head of riffle and head of pool) and major habitat types (e.g., riffle, run, pool) (Ichthyological Associates, 1981a).

The instream flow study concluded that the 160 cfs release provided optimal or near optimal flow conditions for all life stages of both brown trout and smallmouth bass. The study found that usable habitat and stream width for adult brown trout remained consistent between 160 cfs and 300 cfs releases. The study found that optimum or near optimum flow was provided for adult, fry and juvenile brown trout at 160 cfs. The study concluded that a base release of 160 cfs provided optimum flow for juvenile bass and near optimum flow for fry and adults (Ichthyological Associates 1981a).

The study also found that establishment of minimal bypass flows at the two Project dams (Prospect and Trenton) would result in little, if any marginal benefit to the existing fishery and would result in substantial generation and economic losses at the Project. The study referred to the limited habitat in the Prospect and Trenton bypass reaches due to exposed bedrock along much of the reaches, as well as the series of falls in Trenton bypass, providing limited fish habitat potential (Ichthyological Associates 1981a). Subsequent to this study, FERC required implementation of the 160 cfs downstream base flow as part of the existing license for West Canada Creek and also for the existing license for the Jarvis Project (P-3211) (see Section 2.1.3, *Existing Project Operations)* for the benefit of downstream aquatic resources.

Downstream Aquatic Mesohabitat

As part of the Aquatic Mesohabitat Assessment (Kleinschmidt 2020a), Erie evaluated the downstream mesohabitat for flows ranging from the current Project base flow of 160 cfs (released at Trenton) up to 1,500 cfs (approximately station capacity[11]). West Canada Creek is dominated by low to moderate gradient slope, and alluvial substrates such as gravel, cobble and boulder. There are a few areas where the channel is controlled by bedrock, but these are infrequent and short in length.

West Canada Creek from Nine Mile Creek Feeder Dam to the Mohawk River confluence is dominated by runs (25 percent), riffles (17 percent) and combinations of the two (30 percent), as well as extensive pool (11 percent) segments where aquatic habitat is less affected by flow changes. Pools in most riverine systems provide refuge for fish when flows rise or fall to an unsuitable range. Most of the fluvial habitat in the downstream reaches of West Canada Creek is typically at least 200-feet-wide and of moderate gradient; however, there are a few sections of higher-gradient rapids with larger substrates. Depths in the rapids, riffles, and runs generally contain areas that are 1 and 2-feet-deep at all flows; however, such depths tended to increase in distribution at Trenton discharge flows of 326 cfs and greater.

Wetted area and depth distributions observed in the flow range studies were affected by channel gradient and cross-sectional morphology characteristic of the various mesohabitats. Rapid mesohabitat in the middle reach of West Canada Creek did not change in wetted area across the flow range. In this case, the channel is fully wetted by

[11] Trenton station maximum hydraulic capacity is approximately 1,425 cfs.

the lowest flow, and with steep embankments there is no additional shoreline areas to wet, nor are there any raised shoals or bars in mid-channel exposed at low flows. Thus, increases in flow in this reach provide a gradual increase in nearshore depths, while at the same time depths in the 1 to 2 foot range (in the thalweg) remain dominant.

The lowermost reach of West Canada Creek, from Kast Bridge to Herkimer, is dominated by low gradient riffle-runs and runs. Generally, wetted area in low gradient mesohabitats of West Canada Creek appears to only change gradually in response to Project operation flows. Runs and run-pools gain depth rather than wetted area (Kleinschmidt 2020a).

3.4.1.2 Fish Assemblage and Management

West Canada Creek is considered one of the most "*renowned trout streams*" in central New York and is known for providing anglers with good fishing opportunities for brown trout (*Salmo trutta*) and brook trout (*Salvelinus fontinalis*) (NYSDEC 2020a). The reaches upstream of the Hinckley Reservoir flow through the Adirondack Park Reserve where the fishery is managed by the NYSDEC for trout, with the occurrence of wild trout streams, ponds and lakes as well as annual brown trout and brook trout stocking in some streams and ponds (HRWG 2008).

Upstream of the Project, within the Hinckley Reservoir, NYSDEC surveys identified a variety of species including golden shiner (*Notemigonus crysoleucas*), fallfish (*Semotilus corporalis*), white sucker (*Castostomus commersonii*), brown bullhead (*Ameiurus nebulosus*), stonecat *Noturus flavus*), chain pickerel (*Esox niger*), brown trout, brook trout, rock bass (*Ambloplites rupestris*), pumpkinseed (*Lepomis gibbosus*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*) and yellow perch (*Perca flavescens*) in the reservoir. Historically, the Hinckley Reservoir has proved to be a poor fishery, with previous stocking failures of walleye (*Sander vitreus*), lake trout (*Salvelinus namaycush*), brook trout, rainbow trout (*Oncorhynchus mykiss*) and tiger muskellunge (*Esox lucius* x *Esox masquinongy*) (HRWG 2008; NYPA 2020). 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).

During the period from 1988 to 2014, NYSDEC conducted several electrofishing surveys in West Canada Creek from Prospect impoundment to the confluence of the Mohawk River (including several tributary sites). Surveys resulted in the identification of 37 fish species, representing 10 different families (NYSDEC Fisheries Surveys 1988-2014, as cited in NYPA 2017, Kleinschmidt 2020d.

Among the fish assemblage documented in the West Canada Creek watershed, American eel (*Anguilla rostrate*) is the only known diadromous species. American eel are reported to have occurred in the Mohawk River basin. Currently, there are no records of American eel within or upstream of the Project area, and none were found in Erie's 2019 fish assemblage survey (Kleinschmidt 2020d). There are no fish passage facilities for American eel or any other fish passage at the downstream Nine Mile Feeder Creek, Newport, or Herkimer dams, or the upstream Jarvis Project.

In 2019, Erie conducted a fish assemblage survey within the Project area and downstream West Canada Creek. Sampling methods included boat electrofishing and gillnetting within the Prospect impoundment, backpack electrofishing and minnow traps within the Prospect bypass reach, georator[12] and backpack electrofishing in downstream West Canada Creek along with two minnow traps at one site, and gill netting within the Trenton impoundment. Figure 3-11 and Figure 3-12 denote the locations and the fish collection methodology used in the survey (Kleinschmidt 2020d).

During the 2019 survey, 29 species were documented, as well as four species not previously documented including; Banded Killifish (*Fundulus diaphanous*), Mimic Shiner (*Notropis volucellus*), Yellow Bullhead (*Ameiurus natalis*), and Pugnose Minnow (*Opsopoeodus emiliae*). Table 3-8 lists the species documented in the Project area and downstream in West Canada Creek during Erie's 2019 sampling efforts, compared to known species in the area from NYSDEC sampling from 1988 to 2010 (NYSDEC Fisheries Surveys 1988-2014, as cited in NYPA 2017, Kleinschmidt 2020d).

[12] A georator is a barged electrofishing system powered by a generator; fish are collected by wading and netting.

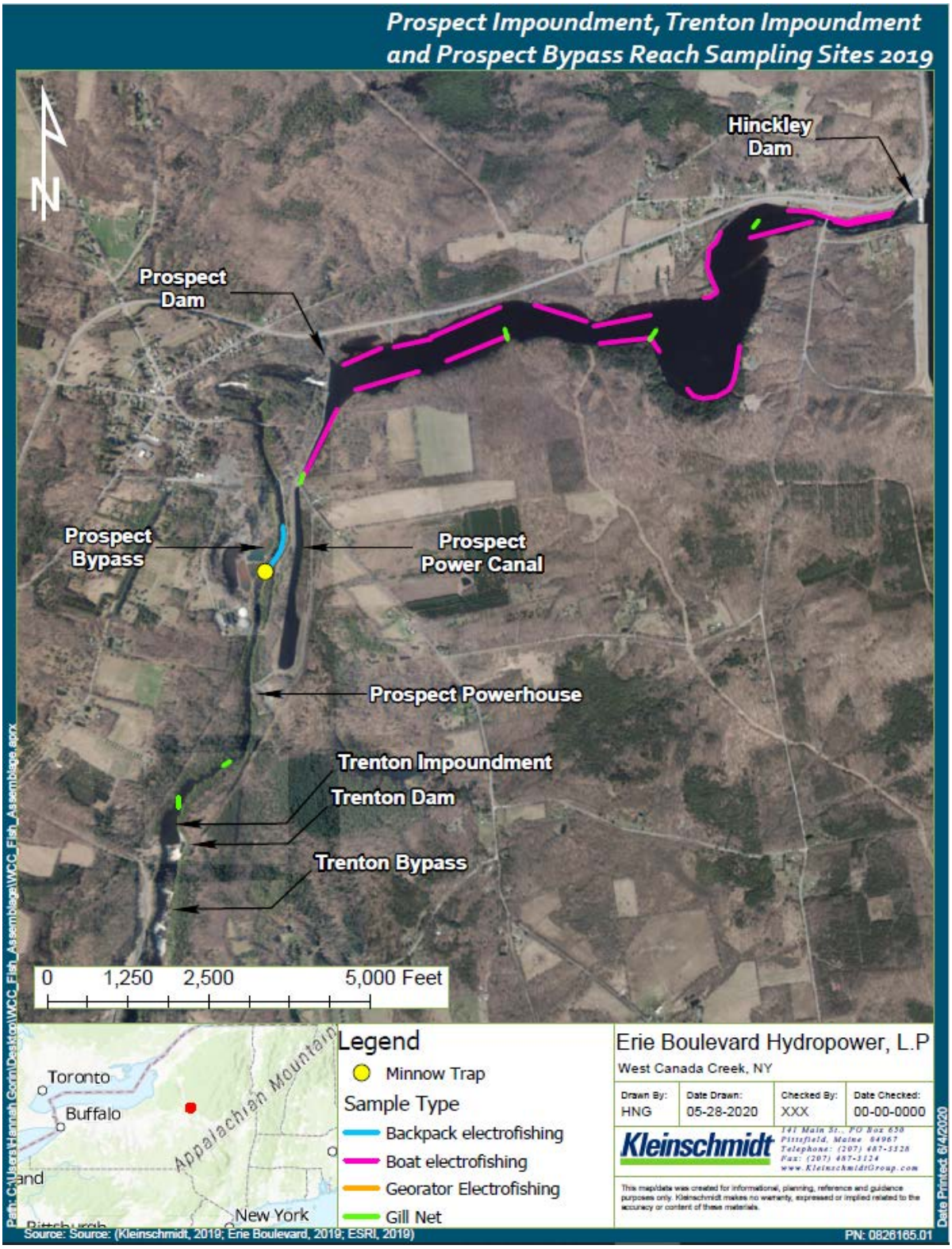


Figure 3-11 Prospect Impoundment, Trenton Impoundment and the Prospect Bypass Reach Sampling Sites

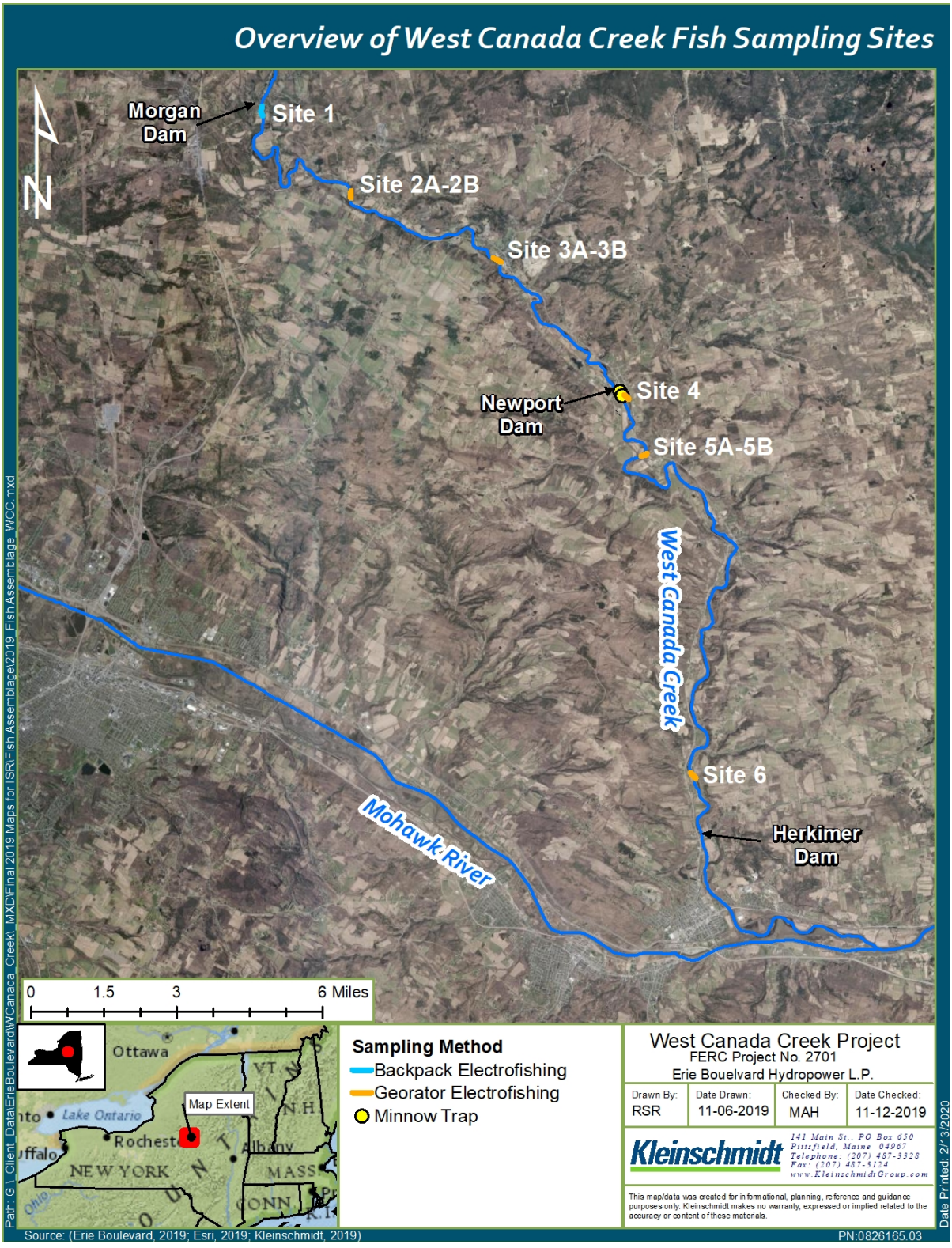


Figure 3-12 West Canada Creek Sampling Sites during 2019 Fish Assemblage Survey

Table 3-8 Comparison of Species Composition of NYSDEC Sampling and 2019 Sampling Efforts in West Canada Creek

Common Name	Genus and Species	NYSDEC Sampling 1988 - 2010	Erie 2019 Survey
American Eel	*Anguilla rostrata*	X	
Banded Killifish	***Fundulus diaphanus***		**X**
Black Crappie	***Pomoxis nigromaculatus***	**X**	
Bluegill	*Lepomis macrochirus*	X	X
Bluntnose Minnow	*Pimephales notatus*	X	X
Brook Stickleback	*Culaea inconstans*	X	X
Brook Trout	*Salvelinus fontinalis*	X	X
Brown Bullhead	*Ameiurus nebulosus*	X	X
Brown Trout	*Salmo trutta*	X	X
Central Stoneroller	***Campostoma anomalum***	**X**	
Chain Pickerel	*Esox niger*	X	X
Common Carp	***Cyprinus carpio***	**X**	
Common Shiner	*Luxilus cornutus*	X	X
Creek Chub	*Semotilus atromaculatus*	X	X
Cutlip Minnow	*Exoglossum maxillingua*	X	X
Eastern Blacknose Dace	*Rhinichthys atratulus*	X	X
Emerald Shiner	***Notropis atherinoides***	**X**	
Fallfish	*Semotilus corporalis*	X	X
Fantail Darter	*Etheostoma flabellare*	X	X
Golden Shiner	*Notemigonus crysoleucas*	X	X
Largemouth Bass	***Micropterus salmoides***	**X**	
Logperch	*Percina caprodes*	X	X
Longnose Dace	*Rhinichthys cataractae*	X	X
Longnose Sucker	***Catostomus***	**X**	
Marginated Madtom	***Noturus insignis***	**X**	
Mimic Shiner	***Notropis volucellus***		**X**
Northern Hogsucker	***Hypentelium nigricans***	**X**	
Pugnose Minnow	***Opsopoeodus emiliae***		**X**
Pumpkinseed	*Lepomis gibbosus*	X	X
Rainbow Trout	***Oncorhynchus mykiss***	**X**	
Rock Bass	*Ambloplites rupestris*	X	X
Rosyface Shiner	***Notropis rubellus***	**X**	
Slimy Sculpin	*Cottus cognatus*	X	X
Smallmouth Bass	*Micropterus dolomieu*	X	X

Common Name	Genus and Species	NYSDEC Sampling 1988 - 2010	Erie 2019 Survey
Spottail Shiner	*Notropis hudsonius*	X	X
Stonecat	***Noturus flavus***	**X**	
Tessellated Darter	*Etheostoma olmstedi*	X	X
Trout-Perch	*Percopsis omiscomaycus*	X	X
White Sucker	*Castostomus commersonii*	X	X
Yellow Bullhead	***Ameiurus natalis***		**X**
Yellow Perch	*Perca flavescens*	X	X

Sources: Kleinschmidt 2020d, NYSDEC Fisheries Surveys 1988-2014 (as cited in NYPA 2017).

Prospect Impoundment

The Prospect impoundment trout fishery is managed as a put and take stocked fishery. The season is year-round, with minimum length restriction of 12 inches and catch limit of 3; ice fishing is permitted. For the remainder of West Canada Creek, trout fishing is allowed April 1 through November 30, and there is a catch limit of 5 with no more than 2 longer than 12 inches (NYSDEC 2020b). Section 3.7 *Recreation Resources*, provides information regarding recreational angling efforts at the Prospect impoundment and in West Canada Creek downstream of the Project.

During the 2019 boat electrofishing and gillnet sampling in the Prospect impoundment, 11 species were caught (Table 3-9). Length class composition data (percentage of catch by species) are provided in Table 3-10. Species that spawn in shallow habitats like chain pickerel, pumpkinseed, smallmouth bass, rock bass, brown bullhead, and yellow perch were all found at various life stages within the impoundment. Yellow perch and pumpkinseed were found in particularly high abundance, representing 61 percent (n =894) and 23 percent (n=331) of the total catch, respectively. No trout were caught during this survey (Kleinschmidt 2020d), despite the Prospect impoundment being stocked with approximately 3,400 brown trout annually by NYSDEC (HRWG, 2008).

Table 3-9 Species found in Prospect Impoundment in 2019 Electrofishing and Gillnetting Survey

Species	Scientific Name	No. of Fish	Proportion of Species (%)
Yellow Perch	*Perca flavescens*	894	60.8
Pumpkinseed	*Lepomis gibbosus*	331	22.5
Golden Shiner	*Notemigonus crysoleucas*	63	4.3
Rock Bass	*Ambloplites rupestris*	57	3.9
Smallmouth Bass	*Micropterus dolomieu*	51	3.5
Chain Pickerel	*Esox niger*	33	2.2
White Sucker	*Catostomus commersonii*	15	1.2
Spottail Shiner	*Notropis hudsonius*	13	0.9
Brown Bullhead	*Ameiurus nebulosus*	9	0.6
Tessellated Darter	*Etheostoma olmstedi*	3	0.2
Banded Killifish	*Fundulus diaphanus*	2	0.1
Total		**1,471**	100.0

Source: Kleinschmidt 2020d.

Prospect Bypass

No fish assemblage surveys have been conducted in the Prospect bypass reach prior to the 2019 study. A total of 120 fish were collected during the survey, representing 9 species, including Blacknose Dace (*Rhinichthys atratulus*), Brown Bullhead, Brook Trout, Brown Trout, Cutlip Minnow (*Exoglossum maxillingua*), Fantail Darter (*Etheostoma flabellare*), Longnose Dace (*Rhinichthys cataractae*), Smallmouth Bass and White Sucker. Longnose Dace was the most abundant species, comprising 67 percent of the catch (Kleinschmidt 2020d).

Table 3-10 Length Class Composition Percentages by Species within the Prospect Impoundment

Length Class (in)	Percentages (%)										
	Brown Bullhead	Banded Killifish*	Chain Pickerel	Pumpkinseed	Rock Bass	Smallmouth Bass	Spottail Shiner*	Tessellated Darter*	White Sucker	Yellow Perch	Golden Shiner
0-2	0	0	0	0	0	0	0	0	0	0	0
2.1-4	0	100	0	99.7	0	0	100	100	0	86.5	0
4.1-6	0	0	42.4	0	80.7	64.7	0	0	0	12.3	98.4
6.1-8	11.1	0	33.3	0.3	17.5	11.8	0	0	0	0.4	0
8.1-10	33.3	0	0	0	1.8	17.6	0	0	0	0.8	1.6
10.1-15	55.6	0	9.2	0	0	5.9	0	0	0	0	0
15.1-20	0	0	12.1	0	0	0	0	0	26.7	0	0
20.1-25	0	0	3.0	0	0	0	0	0	73.3	0	0
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

*Length data not provided in electrofishing data. Average adult standard length for both species ranges from 55-90 mm (approximately 2.2 -3.5 inches) (Jenkins and Burkhead 1993).

Trenton Impoundment

No fish surveys had been completed in the Trenton impoundment prior to 2019. Fish collection relied solely on gill netting methods due to the near absence of shallow littoral habitat. Methods such as boat electrofishing or seining (used for shallower littoral habitats) would not have been effective. A single rock bass measuring 205 millimeters (mm) in total length was collected during a 24-hour net set. The low catch rate may be due to a very limited fish population in the impoundment. Several factors may contribute to the limited fishery such as minimal habitat for spawning and rearing due to the steep bedrock shoreline substrates, the much smaller size (9 acres, 264 acre-feet gross storage) in comparison to the Prospect impoundment (176 acres, 3,250 acre-feet gross storage), and the isolated nature (no tributaries) which would result in little recruitment from other areas (Kleinschmidt 2020d).

Downstream West Canada Creek

The reach of West Canada Creek below Trenton tailrace is recognized as one of the top fishing destinations in New York (Erway 2012). This fishery is maintained through stocking, and special trout fishing regulations apply to the reach from the Dover Road Bridge (approximately 0.3 miles downstream of Trenton Dam) downstream to the first bridge (Combstock Bridge) below the mouth of Cincinnati Creek. Regulations include year-round fishing, catch and release only (no-take), artificial lure only trout fishing.

Twenty-five (25) species were caught during the 2019 backpack and barge electrofishing survey in the lower West Canada Creek, which extended from downstream of the Trenton tailrace to Herkimer (Figure 3-12). Cutlip minnows were the most abundant species (24 percent of total catch) followed by common shiners (12.3 percent of the total catch). Table 3-11 lists all the species caught in the downstream reach of the West Canada Creek and their relative abundance. No pronounced linear spatial distribution pattern among species was observed from Trenton tailrace to Herkimer, although some cold/cool-water species occurred in the mixing zone near the confluence of tributaries. For example, brown and brook trout were collected near several tributary streams, suggesting these tributaries may be important for thermal refuge during the warm season and perhaps are a source of recruitment to the West Canada Creek (Kleinschmidt 2020d).

Table 3-11 Fish Species caught in September 2019 with Backpack and Barge Electrofishing in Lower West Canada Creek

Species	Genus and Species	No. Fish	Proportion of Species (%)
Cutlip Minnow	*Exoglossum maxillingua*	289	24.0
Common Shiner	*Luxilus cornutus*	148	12.3
Fantail Darter	*Etheostoma flabellare*	123	10.2
Tessellated Darter	*Etheostoma olmstedi*	123	10.2
Longnose Dace	*Rhinichthys cataractae*	93	7.7
White Sucker	*Castostomus commersonii*	86	7.1
Blacknose Dace	*Rhinichthys atratulus*	71	5.9
Bluntnose Minnow	*Pimephales notatus*	63	5.2
Smallmouth Bass	*Micropterus dolomieu*	59	4.9
Yellow Bullhead	*Ameiurus natalis*	30	2.5
Fallfish	*Semotilus corporalis*	29	2.4
Creek Chub	*Semotilus atromaculatus*	15	1.2
Slimy Sculpin	*Cottus cognatus*	15	1.2
Brown Bullhead	*Ameiurus nebulosus*	13	1.1
Brown Trout	*Salmo trutta*	12	1.0
Mimic Shiner	*Notropis volucellus*	9	0.7
Trout Perch	*Percopsis omiscomaycus*	8	0.7
Rock Bass	*Ambloplites rupestris*	6	0.5
Brook Stickleback	*Culaea inconstans*	3	0.2
Bluegill	*Lepomis macrochirus*	2	0.2
Brook Trout	*Salvelinus fontinalis*	2	0.2
Pugnose Minnow	*Opsopoeodus emiliae*	2	0.2
Yellow Perch	*Perca flavescens*	2	0.2
Log Perch	*Percina caprodes*	1	0.1
Spottail Shiner	*Notropis hudsonius*	1	0.1
Total	*Exoglossum maxillingua*	**1,205**	**100**

Source: Kleinschmidt 2020d.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act requires that the EFH be identified for specific actions for conservation and enhancement by eight regional fishery management councils. No designated EFH was identified on the West Canada Creek and no species identified by the Middle Atlantic Fishery Management Council were present in the West Canada Creek fish assemblage (Kleinschmidt 2020d).

Stocked Fishery

NYSDEC stocks the West Canada Creek with brook trout and brown trout (stocked as yearlings and two-year old's). During 2011 to 2018 for West Canada Creek the average annual stocking was 9,830 brook trout and 44,546 brown trout. During this period brook trout were stocked in April (17 percent) and May (83 percent), brown trout were stocked in April (41 percent), May (45 percent) and June (14 percent).[13] The average length of spring stocked brook trout and brown trout was 9.3 inches and 9.6 inches, respectively (NYSDEC 2020c).

In the past, Prospect impoundment has been stocked with approximately 3,400 brown trout annually by NYSDEC (HRWG 2008, NYSDEC 2020c). The number of fish stocked between 2017 and 2019 is provided in Table 3-12 (Jana Lantry, NYSDEC personal communication January 7, 2020). The trout fishery within the Prospect impoundment is the result of the NYSDEC stocking program and does not represent a natural population. In addition to brown trout, Prospect has historically supported a fishery for rainbow trout and chain pickerel (HOCCP 1989).

Table 3-12 NYSDEC Brown Trout Stocking in Prospect Impoundment

Year	Species	Total
2019	Brown Trout	3010
2018	Brown Trout	2960
2017	Brown Trout	2800

Source: Jana Lantry, NYSDEC personal communication January 7, 2020.

The NYSDEC reported that approximately 52,190 trout were stocked within West Canada Creek during 2016. More recently, between 2017 and 2019, stocking occurred in both West Canada Creek and Cincinnati Creek, a major tributary to West Canada Creek

[13] NYSDEC conducted two fall stocking events in 2012 and 2014 for brown trout in Oneida county.

(Table 3-13). Fish stocked during this time ranged in length between 7.5 to 13 inches and were released between Nine Mile Creek Feeder Dam and Herkimer from March through June (Jana Lantry, NYSDEC personal communication January 7, 2020).

Table 3-13 NYSDEC Stocking Numbers for West Canada Creek and Cincinnati Creek

Year	Stocking Location	Brook Trout	Brown Trout	Total
2019	West Canada Creek	12,500	42,590	55,090
	Cincinnati Creek	0	3490	3490
	Total	**12,500**	**46,080**	**58,580**
2018	West Canada Creek	10,500	37,390	47,890
	Cincinnati Creek	0	3440	3440
	Total	**10,500**	**40,830**	**51,330**
2017	West Canada Creek	10500	29810	47,890
	Cincinnati Creek	0	3260	3260
	Total	**10,500**	**33,070**	**51,150**

Source: Jana Lantry, NYSDEC personal communication January 7, 2020.

3.4.1.3 Fish Entrainment

Erie conducted a desktop study including a literature review of species of interest, identified site specific data (intake depth, location and velocities, and generating unit characteristics and hydraulic capacities), and conducted an estimate of entrainment (numbers of fish passing through the turbines) and turbine passage mortality (number of fish killed annually due to entrainment) (Kleinschmidt 2020e). The estimates of annual entrainment and turbine mortality were developed using available data and are intended to provide a reasonable order-of-magnitude estimate of potential fish entrainment and turbine mortality at the Project.

Species composition parameters applied to both developments originated from the Prospect impoundment fish assemblage survey (see Section 3.4.1.2); however, the relatively small impoundment, lack of littoral habitat, and negligible sources of recruitment to the Trenton impoundment likely resulted in substantial overestimate the species diversity, age structure/length classes, particularly young of year, and abundance of fishes that are susceptible to entrainment losses at Trenton Falls.

Project specific parameters were used to calculate the approach velocity of water (feet per second or fps) at the intakes; velocity was then compared to swimming speeds of fish that

could potentially encounter the intakes. The calculated approach velocity at the maximum station hydraulic capacity was compared to the calculated swim speed of fish for each length class. Fish swim speeds were calculated using an assumed minimum sustained swim speed of 3 body lengths/second (USFWS 1989), and an assumed burst speed of two times sustained speed (USFWS 2019) (see Table 3-14). For Prospect the calculated approach velocity at the maximum station hydraulic capacity was estimated at 2.1 fps, and for Trenton the calculated approach velocity at the maximum station hydraulic capacity was estimated at 2.9 fps (Kleinschmidt 2020e).

Table 3-14 Fish Swim Speeds by Length

Fish Length (in)	Sustained Swim Speed (fps)	Burst Swim Speed (fps)
1.0	0.3	0.5
2.0	0.5	1.0
3.0	0.8	1.5
4.0	1.0	2.0
5.0	1.3	2.5
6.0	1.5	3.0
7.0	1.8	3.5
8.0	2.0	4.0
9.0	2.3	4.5
10.0	2.6	5.0
12.5	3.1	6.3
15.0	3.8	7.5
17.5	4.4	8.8
20.0	5.0	10.0
22.5	5.6	11.3
25.0	6.3	12.5
27.5	6.9	13.8
30.0	7.6	15.0

The Prospect Development entrainment mortality estimates range from approximately 1,056 to 2,117 fish per year when calculated using sustained swim speeds and from 748 to 1,498 fish per year for burst speeds. Over 75 percent of the estimated number of fish potentially entrained and lost to turbine mortality are yellow perch and pumpkinseed, both of which have high fecundity and can produce thousands of offspring per individual female each season (Jenkins and Burkhead 1993). Additionally, length-frequency data suggests that most fish that may potentially be entrained are juveniles and young-of-year,

which have high natural mortality rates due to environmental and ecological factors (Kleinschmidt 2020e).

Based on the analysis of sustained swim speeds, the majority of the NYSDEC stocked trout within Prospect impoundment are greater than 8 inches in length, and therefore, these sized fish can escape flow entering the Prospect intake at maximum generation. The 8-inch fish, the smallest size class stocked by the NYSDEC, would potentially have a short window of time initially after stocking where they have the potential to be susceptible to entrainment. These fish would have sustained swim speeds that are nominally less than the maximum Prospect intake approach velocity (2.1 fps), although burst speeds for these fish would still be far greater than approach velocities. Additionally, trout are stocked in the Prospect impoundment as part of a put-and-take fishery that assumes 100 percent annual angling mortality and is not a naturally occurring population. Thus, the extent of annual recruitment of trout to the Prospect impoundment is a function of stocking activities and not natural production (Kleinschmidt 2020e).

The Trenton Development entrainment mortality estimates range from approximately 1,663 to 3,329 fish per year when calculated using sustained swim speeds and from 1,533 to 3,076 fish per year for burst speeds. However, the fish assemblage estimates used for this assessment were imported from the Prospect impoundment where lithophilic spawning species such as yellow perch and sunfish have abundant littoral zone habitat in which to breed. The Trenton impoundment lacks a littoral zone where spawning for these species is extremely limited. Therefore, recruitment of entrainable fish in the Trenton impoundment is extremely limited and use of data from Prospect likely overestimates entrainment. It is, therefore, likely that there are far fewer fish species and fewer still young of year and juveniles available for entrainment at the Trenton Development, than the study conservatively estimates (Kleinschmidt 2020e).

3.4.1.4 Benthic Macroinvertebrates

Benthic macroinvertebrate surveys are commonly used to assess stream health or water quality. In the Mohawk River Basin, and at several sites in the West Canada Creek, Rotating Integrated 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 not impacted, reflecting good water quality and a diverse macroinvertebrate community.

Since 1972, the NYSDEC Division of Water has conducted statewide water quality analyses using benthic macroinvertebrate communities to monitor and assess water quality of New York streams. The NYSDEC habitat integrity/water quality impact categories and representative Biological Assessment Profile (BAP)[14] scores include: optimal/non-impact -range of 10-7.5, suboptimal/slight impact - range of 7.5-5, marginal/moderate impact - range of 5-2.5, and poor/severe impact - range of 2.5-0 (NYSDEC 2019). Monitoring in the year 2000, included sampling sites upstream of Hinckley Reservoir and downstream of the Trenton Powerhouse at Poland with all sites listed as non-impacted based on assessment of macroinvertebrate communities. These non-impacted segments reflected good water quality as indicated by the presence of abundant mayflies, stoneflies and caddisflies. The macroinvertebrate community was characterized as diverse with at least 27 species in riffle habitats (Bode et al 2004).

As part of the relicensing studies, Erie conducted a macroinvertebrate study and consulted with USFWS and NYSDEC regarding the sampling locations for the surveys. Erie collected 2 kick net samples within the Prospect bypass reach (Figure 3-13), deployed macroinvertebrate sampling traps at 2 locations in the Trenton bypass reach (Figure 3-14), and conducted kick net sampling at 8 locations in the downstream reach at approximately 4-mile intervals (Figure 3-15) (Kleinschmidt 2020b).

The macroinvertebrate indices throughout the study area suggested good water quality. A total of 46 families were identified, with *Ephemeroptera Siphlonuridae* being the most common taxa. The upper Prospect bypass reach (Site 1), exhibited one of the highest BAP values of all sampled sites, with a BAP value of 7.6, suggesting optimal habitat integrity. The lower Prospect bypass reach Site 2 BAP value was 4.9, suggesting marginal habitat integrity that has been moderately impacted. This site was located approximately 750 feet downstream of discharge from MVWA WTP stilling ponds, which may affect the water quality and benthic communities within this reach. The Trenton bypass reach reflected low BAP scores with a BAP value of 2.9 in the upper bypass reach, and BAP of 0 in the lower bypass reach. The shallow bedrock habitat within the Trenton bypass is not optimal for benthic communities and is likely the reason for the low density (Kleinschmidt 2020b).

[14] BAP is a combination of metrics converted to common 0-10 scale, with 1 being poor water quality and 10 being optimal water quality. Once metrics are converted to a common scale, they are averaged to assign the overall BAP value to represent the severity of water quality impact. Specific conversion and calculation methods for BAP can be found in the NYSDEC Division of Water Standard Operating Procedure for Biological Monitoring of Surface Waters in New York State (2018).

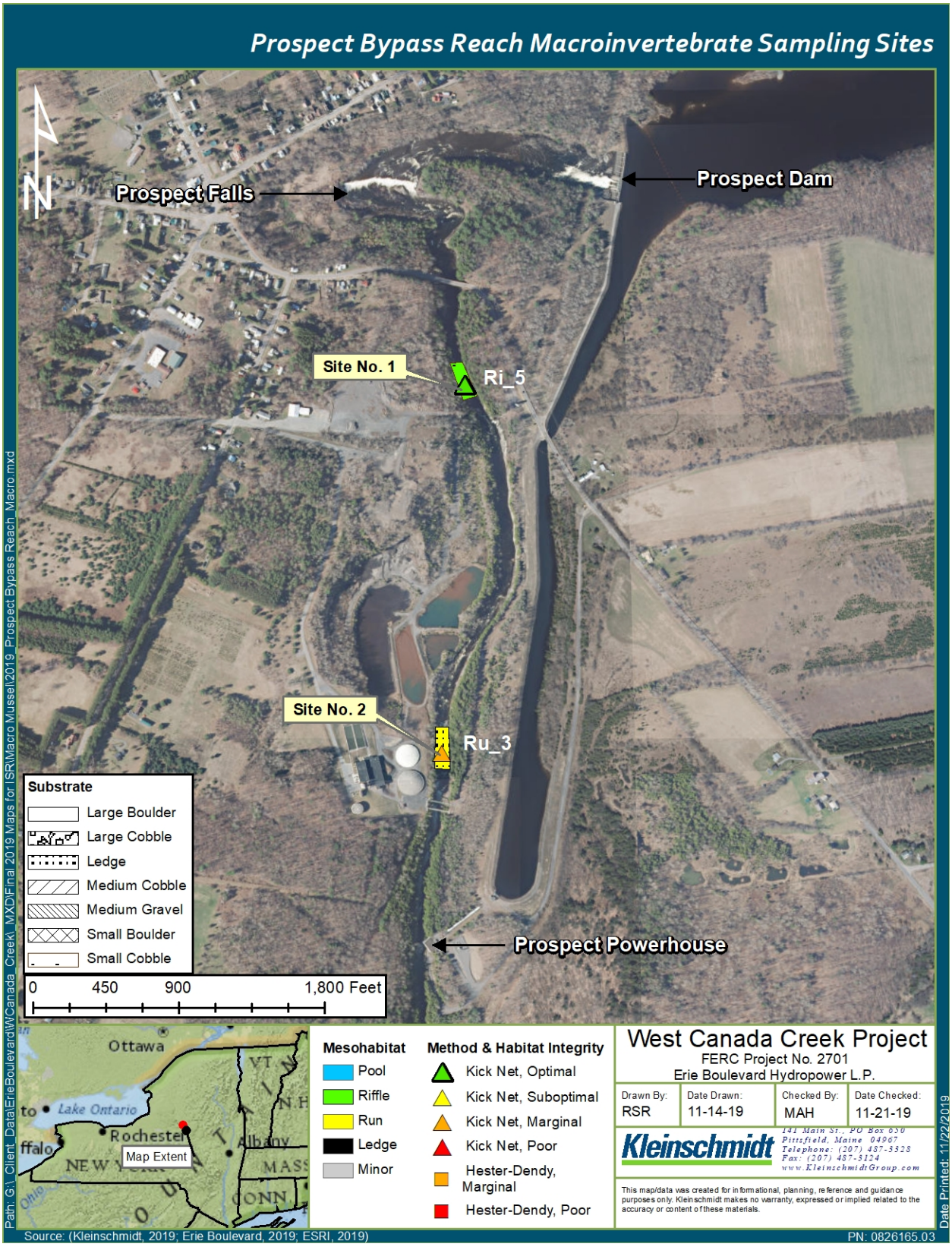


Figure 3-13 Macroinvertebrate Sampling Sites within the Prospect Bypass Reach

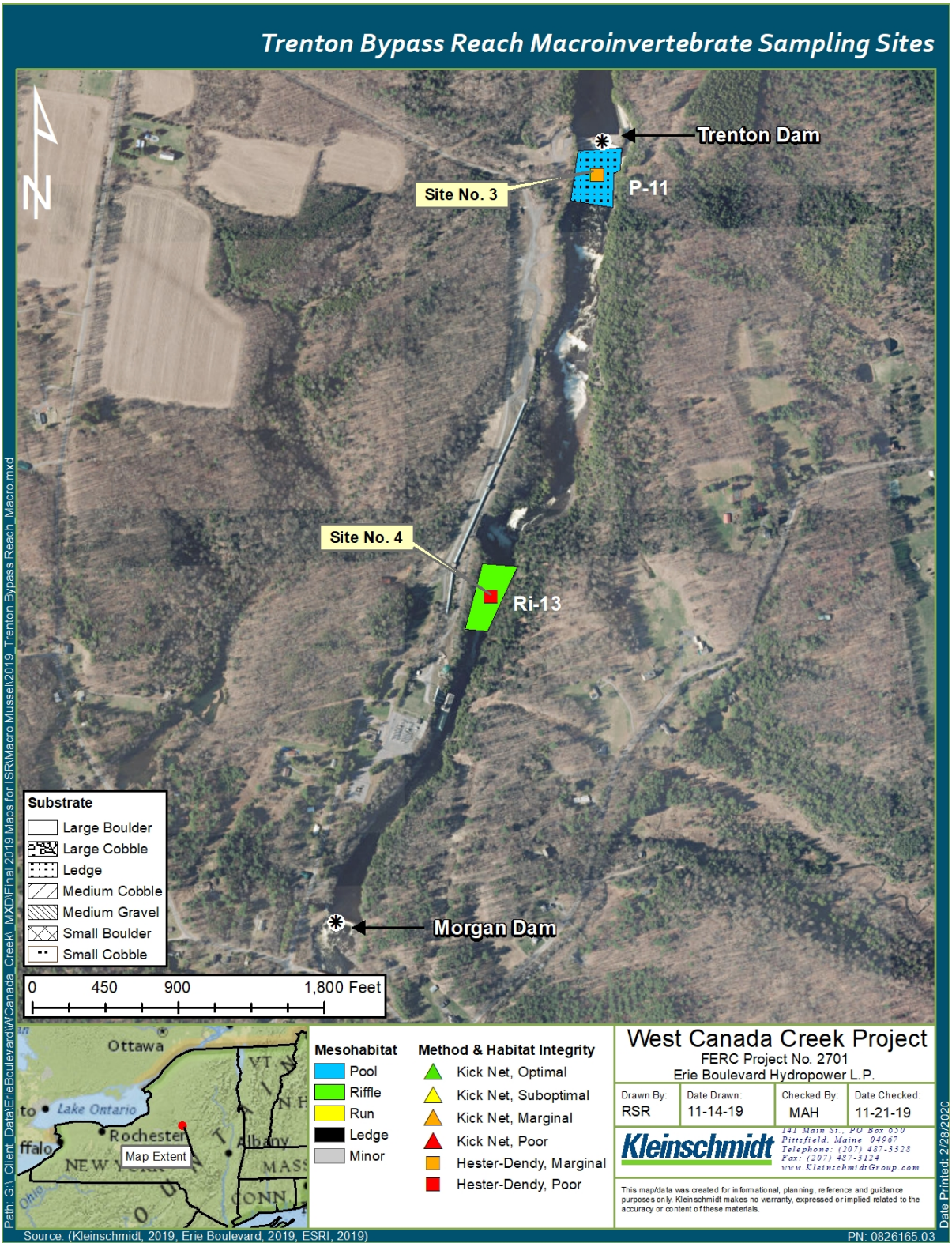


Figure 3-14 Macroinvertebrate Sampling Sites within the Trenton Bypass Reach

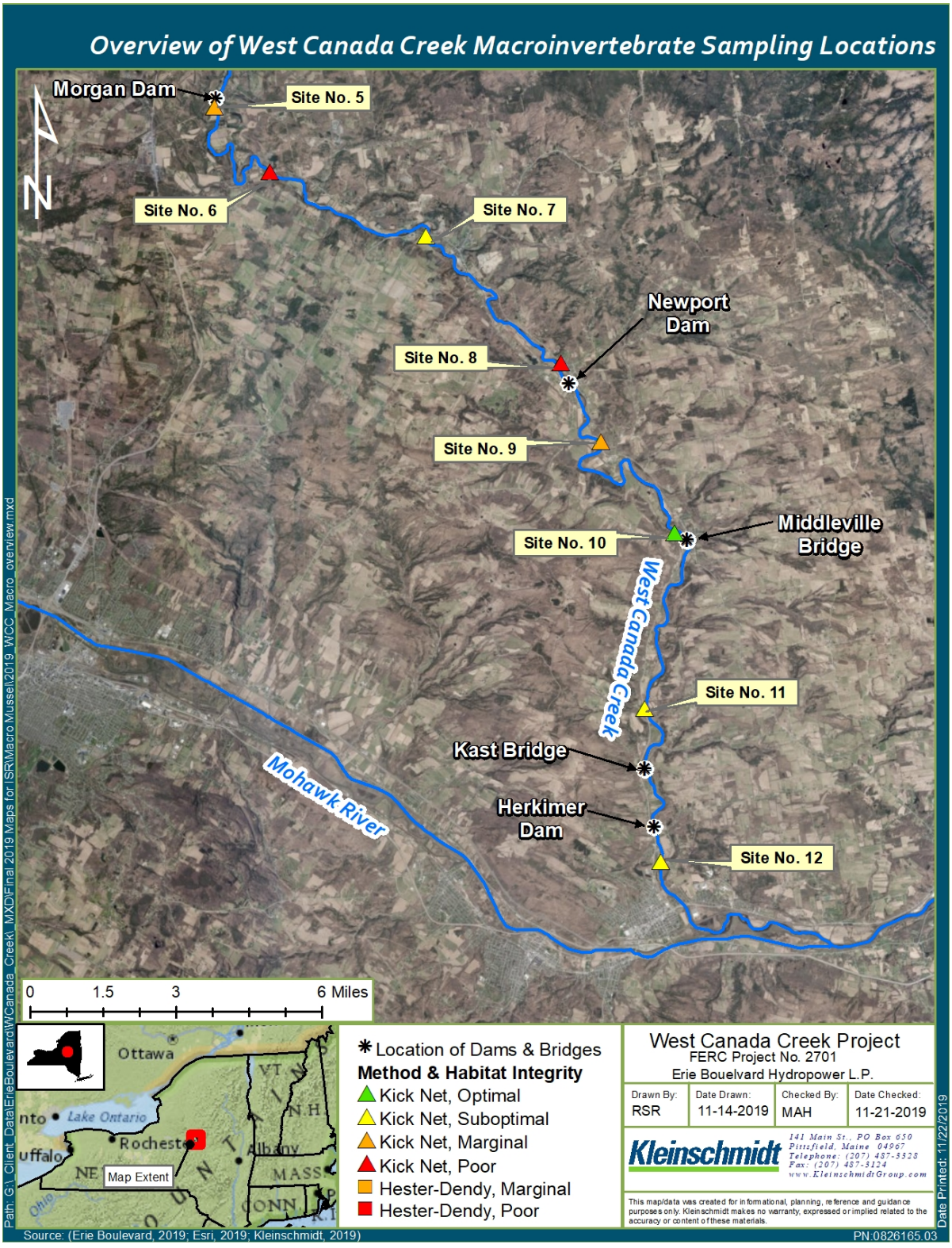


Figure 3-15 Macroinvertebrate Sampling Sites Downstream West Canada Creek

The downstream reach, downstream of Morgan Dam to the Mohawk River confluence, was sampled at approximately 4 mile intervals for a total of 8 samples. The downstream West Canada Creek had a wide range of BAP scores (range of 2.8 to 8.2), but had predominately good/suboptimal water quality (median BAP 6.5). Within this study reach, the sample from Site 10 at the Middleville dam contained the most specimens (367), representing 22 macroinvertebrate families, predominantly *Ephemeroptera Heptageniidae* (70) . Conversely, Site 6, where Route 28 crosses the West Canada Creek near Gravesville, exhibited the lowest BAP score (2.8) and contained 10 specimens, representing 5 families (Kleinschmidt 2020b).

3.4.1.5 Freshwater Mussels

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 2020d), there are no known records of any freshwater mussel species in the West Canada Creek drainage basin.

As part of the relicensing studies, Erie conducted a presence/absence mussel survey and consulted with USFWS and NYSDEC regarding the sampling locations for the surveys. Erie conducted the mussel surveys within representative habitats of: the littoral zone within the existing Project boundary of the Prospect impoundment (Figure 3-16); the Prospect bypass reach within the existing Project boundary (Figure 3-17), and West Canada Creek downstream from the Trenton station tailrace to the confluence of the Mohawk River (Figure 3-18).

During the 2019 survey (Kleinschmidt 2020b), Lake floater (*Pyganodon lacustris*) were observed within the Prospect impoundment. Live mussels were observed in all ten survey cells within the Prospect impoundment (Figure 3-16). The average mussel density within the impoundment was 0.6 mussels per square meter (meters^2), or one mussel for each 1.7 meters^2. No other freshwater mussel species were observed within the impoundment. All mussels observed appeared to be healthy, and several juvenile mussels were found over the course of the surveys, indicating successful reproduction within the population. The dominant substrate observed within the impoundment survey cells was soft organic muck, ranging in depth from 3 inches to over 2 feet and occurring in all ten cells. In seven of the ten cells, sand, gravel, clay, and/or tree roots were observed, but were always far less prevalent than organic muck. No mussels or shells were found within the Prospect bypass reach (Kleinschmidt 2020b).

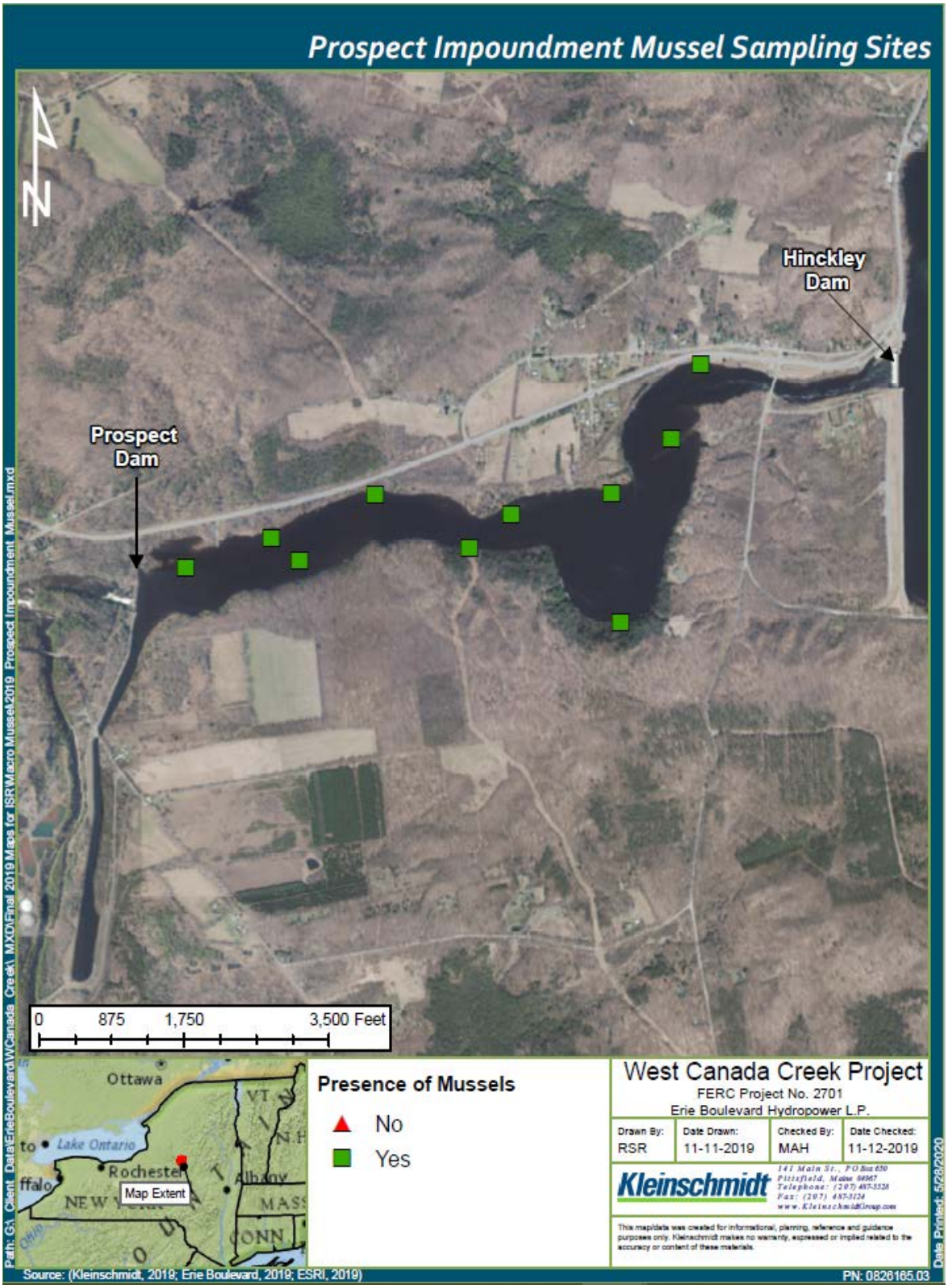


Figure 3-16 Mussel Sampling Sites within Prospect Impoundment

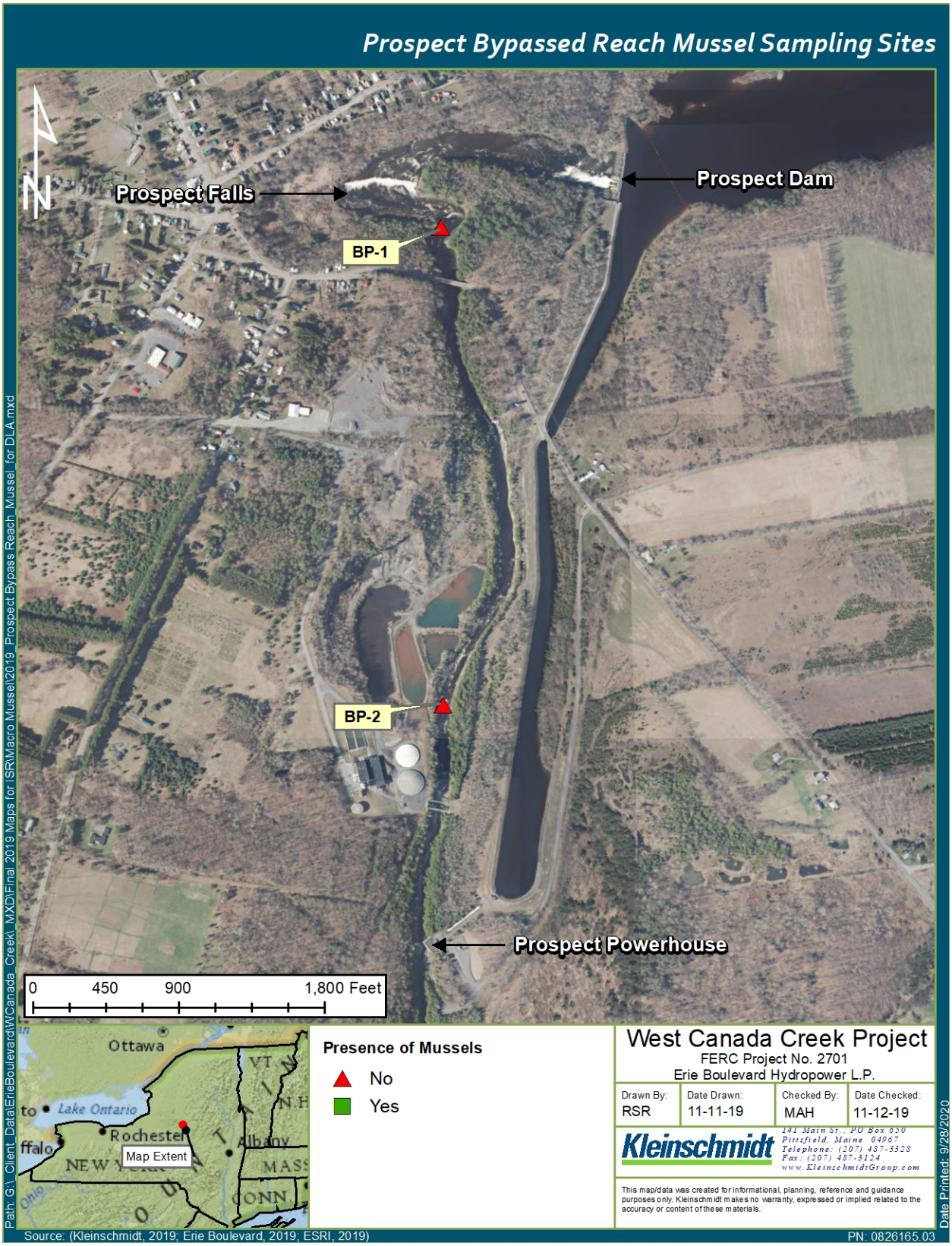


Figure 3-17 Mussel Sampling Sites within the Prospect Bypass Reach

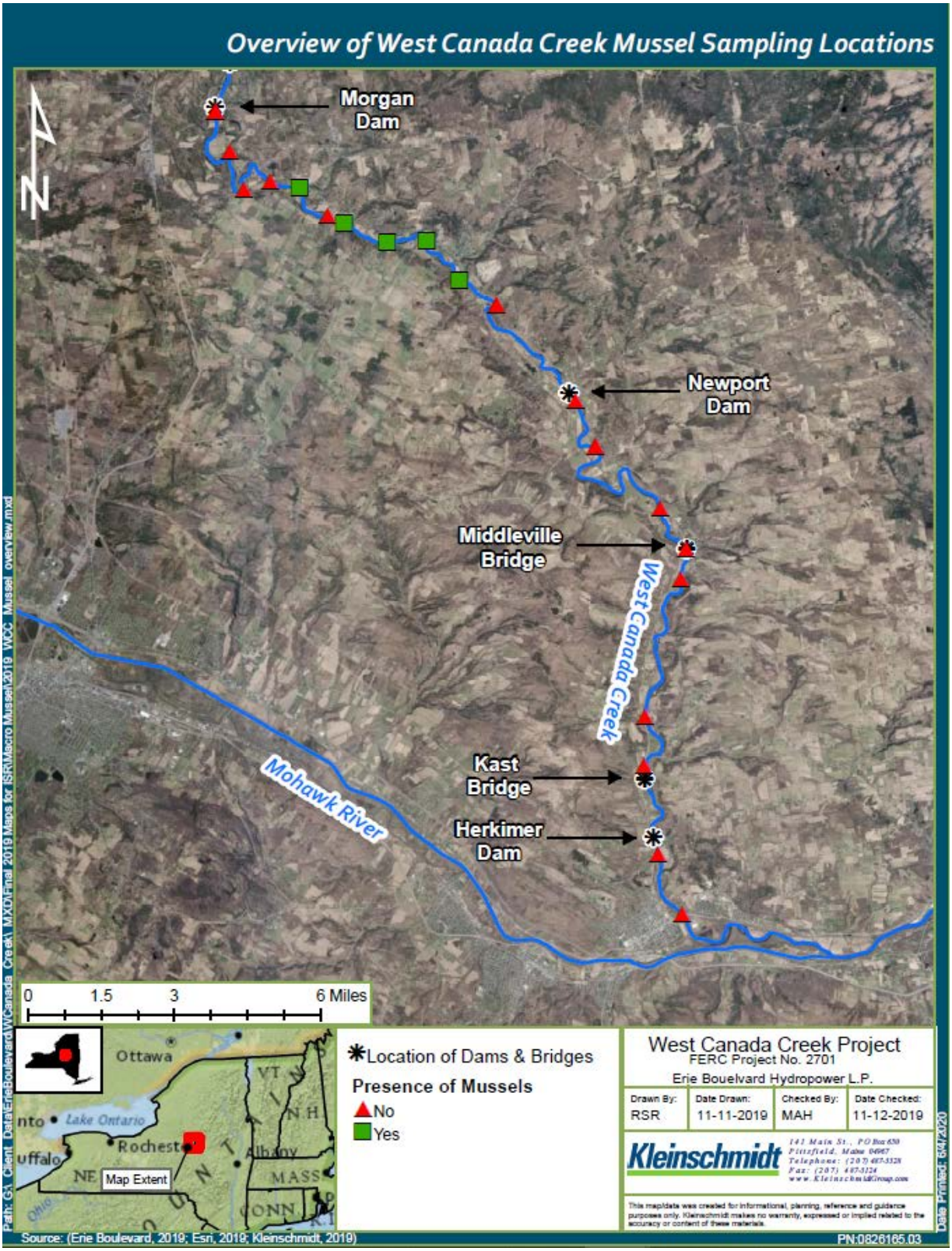


Figure 3-18 Mussel Sampling Sites within downstream West Canada Creek

In West Canada Creek, downstream of the Project, eastern elliptio (*Elliptio complanata*) and eastern pearlshell (*Margaritifera margaritifera*) were observed. Water depths where mussels were observed ranged from 0.5 feet to 2.5 feet with a mixed substrate of sand, gravel, and cobble. Shell wear was minimal for all observed pearlshell (n=6), suggesting that the population was in good health. The two observed live elliptio individuals exhibited severe shell wear. Shells from both species were observed at all five sites with live mussels (Kleinschmidt 2020b).

3.4.2 Environmental Effects

In the SD3 (FERC 2020a), FERC identified issues for environmental analysis related to aquatic resources to include: (1) the effects of water level fluctuations in the Prospect and Trenton impoundments on fish habitat; and (2) the effects of continued project operation and maintenance, including flows in the bypass reaches and minimum flows downstream of the project, on fish and aquatic habitat. During 2019, Erie conducted multiple studies related to fish and aquatic resources, including the following studies: Aquatic Mesohabitat Assessment (Kleinschmidt 2020a), Macroinvertebrate and Freshwater Mussel Survey (Kleinschmidt 2020b), Impoundment Shoreline Characterization Study (Kleinschmidt 2020c), Fish Assemblage Assessment (Kleinschmidt 2020d) and Fish Entrainment and Turbine Passage Survival Assessment (Kleinschmidt 2020e), and as summarized in Section 3.4, *Fish and Aquatic Resources*.

3.4.2.1 Aquatic Habitat

Erie proposes to continue the current licensed mode of operation, with the additional proposed PME measures, including development and implementation of a SWLMP that would provide measures to monitor downstream aquatic base flows (160 cfs) and to maintain leakage flow in the Prospect bypass reach, as described in Section 2.2, *Applicant's Proposed Action*. Erie proposes no construction activities or facility construction under the Proposed Action.

Water surface fluctuation in the Prospect impoundment exposes littoral habitat dominated by fine organic substrates; however, the majority of the shoreline exhibits relatively steep slopes and as such the exposure of submerged habitat is minimal. There are areas within the impoundment with lower gradients where exposure is more prominent during low-pond surface water elevation events. The duration of exposure is generally short, and submergent and emergent flora occur within the fluctuation zone

suggesting that the currently licensed fluctuation does not result in any undue adverse effects to the littoral habitat.

There is currently no minimum flow requirement in the Prospect bypass reach, however, discharge to the bypass reach from the dam occurs via leakage or when inflow to the Project exceeds Project hydraulic capacity. However, the bypass channel remains wetted and flowing, augmented by year-round waterfalls along the eastern embankment that provide streams of groundwater inflow (see Photo 3-1 in Section 3.4.1.1, *Aquatic Habitat*) and from leakage at the dam. Erie's proposed SWLMP would provide the measures to help ensure existing leakage conditions are maintained within the Prospect bypass reach over the term of a new license.

Monitoring in the Prospect bypass reach revealed that water quality parameters were similar to those measured in the impoundment and were generally within New York state standards for Class B waters (Kleinschmidt 2020f). The bypass reach is relatively high gradient and flanked by steep bedrock banks where high flows are largely channelized, substrates are course and consistent with those found in high energy environment (Kleinschmidt 2020a). The bypass is well scoured, and fine substrates are nearly absent from the reach. Inflow to the bypass reach is generally not sufficient to provide bank full wetted condition; however, year-round inflow within the thalweg hydraulically connects several large pools within bypass reach sustaining good water quality and providing deep-water refuge for aquatic resources occurring in the reach. The presence of brook trout and longnose dace in the bypass reach is indicative of chronic good water quality, as these species are intolerant of stressed water quality such as warm summer temperatures and low DO.

Trenton impoundment is a backwatered gorge, with steep, nearly vertical walls of bedrock that contains little littoral habitat. Deep water habitat is abundant but other habitats and in-water cover are nearly absent. Surface water fluctuation in the impoundment has little impact on the amount of wetted habitat due to the impoundment geometry. Substrates are largely coarse, consisting of bedrock, boulder, cobble and a small amount of gravel and in-water cover. The lack of spawning habitat and isolated nature (no tributaries) of this section of the river results in little recruitment from spawning or other areas. Therefore, existing project operations likely result in little to no adverse effects on aquatics and fisheries and associated habitat in the Trenton impoundment.

Trenton bypass reach is comprised of highly scoured bedrock substrates with scattered deposits of boulder and cobble, with no fines such as silt, and or small gravel. The stream channel is dominated by terraces of horizontal expanses of bedrock separated by a series of impassable falls. These falls disconnect instream aquatic habitat and create fish movement barriers.

The lower West Canada Creek from the Project downstream to the Mohawk River consists of both riverine and impounded reaches. Habitat in the riverine reaches are dominated by riffle and run mesohabitat or a combination of the two (Kleinschmidt 2020a). The currently licensed base flow (160 cfs) maintains adequate water quality and suitable habitat for most aquatic resources that occur in West Canada Creek. Erie's proposed continued downstream base flow of 160 cfs would maintain and connect the mesohabitats and associated water quality that supports the current aquatic resources. Therefore, continued Project operations is not is not expected to adversely affect the aquatic resources occurring in the West Canada Creek.

3.4.2.2 Fish Assemblage

Aquatic fauna in the Prospect impoundment offers habitats for spawning, nursery, and /or foraging for many warm-water species. Habitat use will vary according to species and life stage (Smith 1985; Werner 1980). Fish requiring flowing waters for life history requirements are not expected to reproduce in the this reach due to the lack of access to fluvial habitat. Object cover such as boulders, woody debris and vegetation is abundant in the impoundment providing opportunity for ambush predators such as chain pickerel. The fish assemblage survey revealed that young of year (YOY) and other forage fish are abundant, provide a food base for piscivorous predators.

Impoundment surface water fluctuation has the potential to adversely affect aquatic species particularly in the shallow littoral habitat along the impoundment shoreline should nest building fish and mussels be affected by fluctuating water levels. However, mussel surveys revealed that mussels are abundant and widespread having been found at all ten survey sites in the impoundment. Multiple year classes of fish, including YOY, are present in the fish assemblage, which demonstrates reproductive success and is indicative of a healthy predominately warmwater fish assemblage that is not unduly affected by the current Project operation. Exposure of aquatic habitats necessary for spawning during impoundment drawdown within the currently licensed fluctuation is minimal.

For example, the dominance of yellow perch and sunfishes (two lithophilic spawners) in the Prospect impoundment suggests the adverse effects to these populations is absent. Yellow perch rely on emergent vegetation stalks as a spawning substrate in shallows, and sunfishes build redds in shallow nearshore sand and gravel areas. It is evident that the abundance of these species that rely on shallow water habitats for reproduction is not adversely affected by the existing range of impoundment fluctuations (Kleinschmidt 2020c).

Prospect bypass reach backpack electrofishing sampling yielded a total of 120 fishes representing 9 species dominated by longnose dace which represented 67 percent of the total catch. Longnose dace tend to thrive in streams in which large predatory fishes are not abundant and prefer cool (less than 65 ˚F) swift, free-flowing waters (Jacobs and O'Donnell 2009). This reach is not actively managed as a sport fishery, lacks safe public access, and offers few refugia for game fish. The lack of species diversity is likely due to poor recruitment from contiguous stream reaches other than incidental spill over the Prospect Dam spillway. Seasonally-occurring high flow events are also likely a habitat limiting factor for the bypass reach as fish washed into the reach during these high flow events likely transiently occupy the reach, rather than maintain self-sustaining resident populations, and may also be flushed out of this reach during high flow events.

The Trenton impoundment fish survey collected a single rock bass captured via gill net. The fish assemblage is likely very limited in numbers and diversity as it lacks habitat diversity and in-water cover. The Trenton impoundment provides minimal habitat for spawning and rearing due to the steep bedrock shoreline substrates rather than a littoral zone, which also reduces photic activity. The isolated nature (no tributaries) of this section of the river would result in little recruitment from contiguous stream reaches other than displaced individuals from the Prospect bypass reach.

The lower West Canada Creek contains a wider variety of fish compared to Project impoundments and bypass reaches. This reach is much larger and varied in habitat and a more diverse fish assemblage is to be expected. Erie proposes to continue to provide 160 cfs base flows for aquatic resources in the downstream West Canada Creek, as under the existing operations (see Section 2.2, *Applicant's Proposed Action*). This flow regime in the downstream West Canada Creek provides suitable habitat and refuge for the species and life stages occurring there, including a popular trout fishery in West Canada Creek below

Trenton. The lower reach is largely dominated by warmwater species but cold/cool water species occur near tributaries.

3.4.2.3 Fish Entrainment

As summarized in the fish entrainment study (Kleinschmidt 2020e), at Prospect Development, the sustained swim speed calculations show that fish greater than 8 inches in length and larger than 4 inches when considering burst swim speeds would likely be able to escape flow entering the Project intake and avoid entrainment. At Prospect Development, over 75 percent of the estimated number of fish potentially entrained and lost to turbine mortality are yellow perch and pumpkinseed, both of which are highly fecund species that produce thousands of offspring per individual female each season (Jenkins and Burkhead 1993). Additionally, length-frequency data suggests that most fish that may be entrained are juveniles and young-of-year, which experience high natural mortality rates due to numerous environmental factors that greatly exceed entrainment mortality rates.

At Trenton Development, the sustained swim speed calculations show that fish greater than 11 inches in length, and larger than 6 inches when considering burst swim speeds would likely be able to escape flow entering the Project intake and avoid entrainment. The Trenton Development entrainment risk is overestimated because the assessment relies on Prospect fish assemblage data, and fish density data sourced from much more productive impoundments. The Trenton impoundment provides limited habitat with little to no littoral zone due to the vertical gorge walls. The lack of suitable habitat and reduced trophic productivity reduces the potential production of species such as yellow perch and sunfish, and thus reliance on entrainment data from relatively more productive impoundment overestimates the density of potentially entrainable fishes at risk at Trenton.

Given the results of the entrainment analysis (Kleinschmidt 2020e), it is reasonable to conclude the operation of the Project will have little effect on the health of reservoir fishery resources at either the Prospect or Trenton Developments.

3.4.2.4 Benthic Macroinvertebrates

West Canada Creek generally contains a diverse benthic macroinvertebrate community indicating good water quality, which suggests that the current operations of the Project

are not having negative effects on macroinvertebrate assemblage or water quality. For Prospect, the upper site demonstrated optimal habitat integrity (BAP of 7.6) and the lower site BAP score (4.9) indicated habitat integrity at the highest range of moderate impact (2.5 - 5 BAP, while sub-optimal is 5-7.5 BAP). The lower site could be influenced by factors other than Project operations, as it is located downstream of the MVWA WTP settling ponds and area of discharge into the bypass reach.

The low BAP score in the Trenton bypass reach is most likely due to the lack of suitable habitat with poor substrates of mostly bedrock and not necessarily degraded water quality conditions. The bypass reach is comprised of highly scoured bedrock substrates with scattered deposits of boulder and cobble, with no fines such as silt, and or small gravel. Therefore, any additional flows would likely result in minimal benefits for aquatic habitat within this reach.

Macroinvertebrate sampling yielded a range of BAP scores throughout the downstream reach (8 Sites) of West Canada Creek. A single site had an optimal habitat integrity score (BAP>7.5) associated with non-impacted water quality, 5 sites scored in the at sub-optimal range (5.0-7.5) or slightly impacted water quality, and 2 sites scored at marginal habitat integrity (2.5-5.0) associated moderate water quality impact (Kleinschmidt 2020b). Downstream sample sites extended many miles from the Project and are subject to many factors that can affect BAP scores that are unrelated to Project operations, such as tributary inflows; influences of backwater at downstream dams, i.e., Newport impoundment (Site 8); varying mesohabitats; and/or sites subject to nonpoint-source pollution, such as run-off from nearby roadways.

3.4.2.5 Freshwater Mussels

The 2019 Mussel Survey found Lake Floater mussels to be abundant and widespread in the Prospect impoundment. Observations of multiple size classes and good shell condition suggests that the population is healthy and thriving and Project operations are not adversely affecting mussels resources in the Prospect impoundment (Kleinschmidt 2020d). While the Lake Floater was the only species documented during the survey of the Prospect impoundment; it is not an uncommon occurrence for impounded sections of rivers to be dominated by a population of mussels that has evolved to thrive in lacustrine environments, such as the Lake Floater. Transition habitat from lotic to lacustrine are the prime drivers for such changes in a mussel assemblage and not Project operation.

Lake Floater mussels were observed as shallow as 3 foot in depth, within the currently licensed fluctuation zone of the Project. Their presence in such shallow waters suggests that the current operating mode does not prevent mussels from inhabiting the shallow littoral habitat of the Prospect impoundment. The low-level impoundment surface water elevations are generally short in duration and it is likely that slow-moving organisms, such as mussels, would survive exposure. Further, the survey revealed that mussels occur in the greatest densities at elevations that are below the currently licensed minimum pond elevation. Additionally, deeper water habitat is abundant, providing ample refuge throughout the impoundment (Kleinschmidt 2020e).

No mussels were found within the Prospect bypass reach, this result was not unexpected as the bypass is heavily scoured by high flows and lacks suitable mussel habitat (Kleinschmidt 2020d). The Prospect bypass is a narrow high gradient reach of the West Canada Creek and subject to a wide range of flows, from leakage to freshet. Seasonally high flows, in the spring and fall, as well as storm related flow events regularly result in extremely high energy discharges into the bypass reach as a result of its geomorphology. These high energy flows scour and mobilize substrates creating conditions that are not suitable to support mussel populations.

Two species of mussels were found in low abundance within the lower reach of West Canada Creek from the Project downstream to the confluence with the Mohawk River. The six pearlshell mussels were observed and appeared to be in good condition; and two elliptio mussels were observed exhibiting severe shell wear (Kleinschmidt 2020d). Many anthropogenic and natural factors have the potential to influence mussel populations and their distribution in West Canada Creek, many of which are unrelated to Project operations, such as tributary inflows, influences associated with downstream dams and non-point source pollution. There is no evidence that Project operations are impacting the diversity and densities of freshwater mussels in the downstream reach, with site locations that extend to more than 20 miles downstream, with many other influencing factors.

3.4.3 Proposed Environmental Measures

Erie proposes to continue the current licensed mode of operation, with the additional proposal of developing and implementing a SWLMP, as described in Section 2.2, *Applicant's Proposed Action*. The SWLMP would provide measures to monitor impoundment elevations, downstream base flows, and provision for maintaining leakage

flows to the Prospect bypass reach. Erie would implement erosion and sediment control measures, as appropriate, with any Project maintenance or construction activities.

3.4.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on fish and aquatic resources.

3.5 Wildlife and Botanical Resources

3.5.1 Affected Environment

3.5.1.1 Botanical Resources

The northern extent of the Project area around Prospect impoundment is dominated by northern hardwood and conifer macrogroups (Ferree and Anderson 2013). The area is categorized as a matrix forest with embedded upland and wetland systems. Moving south through the Project area there is a transition from forests to a mix of agricultural land and developed land. Along these transitions, there are small areas of shrubland and grassland surrounding the West Canada Creek as well as some northern hardwood swamp and forested swamp habitats. These areas are typically dominated by white cedar and a mix of conifers and deciduous trees such as red maple (*Acer rubrum*) with wetlands associated with limestone or calcareous substrates (The Nature Conservancy 2020).

Intermittent along the West Canada Creek going downstream are macrohabitats of large river floodplains characterized by complex floodplain forests of silver maple (*Acer saccharinum)*, sycamore (*Platanus occidentalis)*, box elder (*Acer negundo)*, and cottonwood (*Populus deltoide*) mixed with herbaceous sloughs, shrub wetlands, ice scours, riverside prairies, and woodlands (The Nature Conservancy 2020).

3.5.1.2 Wetland, Riparian and Littoral Habitats

In 2019, Erie conducted the Impoundment Shoreline Characterization Study (Kleinschmidt 2020c) to characterize the littoral habitat within the Project impoundments, and document encounters with wetlands hydraulically influenced by the Project. Wetlands within the Prospect impoundment boundary were mapped from the National Wetlands Inventory (NWI) and NYSDEC wetland data and verified by drone imagery (Figure 3-19).

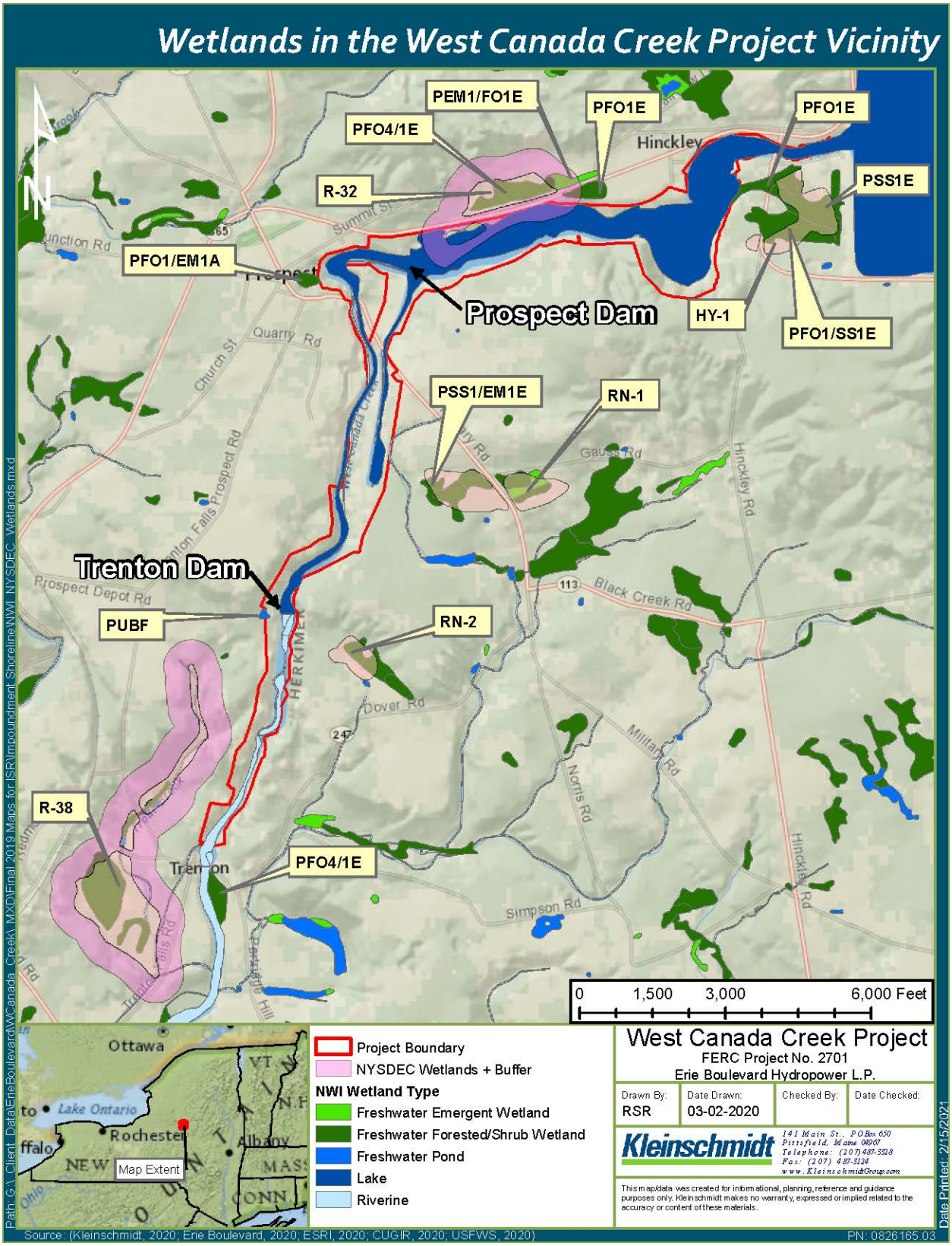


Figure 3-19 Wetlands within the Project Vicinity

Within the Project boundary, the majority of wetlands are riverine and lacustrine (Table 3-15). NWI-mapped palustrine wetlands encompass less than 0.3 acres with approximately 0.09 acres of freshwater forested/shrub wetlands and a freshwater pond (0.2 acres) which occurs in an area that appears to be hydrologically separated from the impoundment (USFWS 2020a). No NYSDEC wetlands were identified within the Project boundary. No palustrine wetlands were identified along the Trenton impoundment due to the steeply sloped, rock gorge shoreline characteristics providing limited habitat for both aquatic and terrestrial species (Kleinschmidt 2020c).

Table 3-15 Inventory of NWI Wetlands Within the Project Boundary

Wetland Type	NWI Classification	Total Wetland Area (Acres)
Freshwater Forested/Shrub Wetland	PFO1E/EM1A	0.09
Freshwater Pond	PUBF	0.20
Riverine	R3USA/R5UBH/R3UBH	18.32
Lake	L1UBHh	198.37

Source: USFWS 2020a.

Riparian areas within the Project boundary of the Prospect impoundment are predominantly forested with small areas of development. The riparian area along the south shore of the Prospect impoundment is extremely steep and transitions into a high gradient littoral zone. The littoral zone within these areas contains course substrate and little to no aquatic vegetation, likely due to the minimal area occurring within the photic zone and poor rooting substrate. The riparian areas along the north shore of the Prospect impoundment, overall, have a low gradient with areas of flat, marshy habitat, except for a stretch of high gradient fine substrate habitat extending from Hinckley Dam to approximately 2,000-feet-downstream. The littoral zones are predominantly low to moderate gradient with fine substrates and patches of aquatic vegetation (Kleinschmidt 2020c).

The area below the Prospect tailrace to below the Trenton Project tailrace does not provide much habitat within the riparian areas, as the substrates and shorelines are dominated by steep limestone cliffs and gorges with several drops in elevation from Prospect to Trenton Falls. Littoral zones within this area consists of broad faced limestone ledges which typically provide limited habitat for both aquatic and terrestrial species (Kleinschmidt 2020c).

3.5.1.3 Wildlife Resources

Mammals

Mammals in northern hardwood and conifer forests habitats can include the black bear, fisher, gray fox, northern flying squirrel, porcupine, smoky shrew, southern flying squirrel, white footed mouse, and the woodland jumping mouse. Mammals in the conifer and hardwood swamps macrohabitats can include the masked shew, mink, red-backed vole and the short-tailed shrew. Mammals common to these river floodplain habitats floodplains include big brown bats, eastern pipistrelle, little brown myotis, long-tailed weasel, mink, white-tailed deer, northern short-tailed shrew, raccoon, red bat, river otter, silver-haired bat and Virginia possum (The Nature Conservancy 2020).

Birds

Within the northern extent of the Project area amongst the northern hardwood and conifer forests, associated bird species include the black and white warbler, blackburnian warbler, black throated blue warbler, black throated green warbler, eastern wood pewee, hermit thrush, northern saw whet owl, ovenbird, pine warbler, ruffed grouse, scarlet tanager, veery and the wood thrush. Associated bird species within the conifer and hardwood swamps macrohabitats include the black-backed woodpecker, Canada warbler, golden crowned kinglet, gray jay, northern waterthrush, palm warbler, red-shouldered hawk, American three-toed woodpecker, veery, white-throated sparrow, wood duck and the yellow-bellied flycatcher. Additionally, bird species such as the alder flycatcher, bald eagle, cerulean warbler, northern waterthrush, warbling vireo, willow flycatcher, wood duck, yellow warbler and the yellow-throated vireo can be found within the large river floodplain macrohabitat (The Nature Conservancy 2020).

Herptiles and Insects

Herptiles in the northern hardwood and conifer forests habitats can include the northern red-bellied snake, smooth green snake and the spring salamander. Conifer and hardwood swamps and river floodplains in the Project vicinity make suitable habitat for a number of herptile species (NYSDEC 2020f).

Invasive Species

Invasive species are organisms (plants and animals) that are not native to the aquatic ecosystems and can threaten aquatic ecology, economy, and human health. The Partnerships for Regional Invasive Species Management (PRISMs) are regional partnerships between federal and state agencies, resource managers, NGOs, industry and interested citizens, which develop and implement regional invasive species management programs. PRISMS within the Project region include the Saint Lawrence and Eastern Lake Ontario (SLELO) PRISM (includes Oneida County), and the Capital Mohawk PRISM (includes Herkimer County) (NYSDEC 2020g).

The New York Heritage Program maintain databases and a mapping system for information regarding the type and location of species within the region. A review of this database and mapping system indicated that no terrestrial or aquatic invasive species have previously been identified within the Project area (NYNHP 2020). Upstream of the Project area, common reed (*Phragmites australis*), Japanese knotweed (*Polygonum cuspidatum*), purple loosestrife (*Lythrum salicaria*), garlic mustard (*Alliaria petiolata*), and giant hogweed (*Heracleum mantegazzianum*), were identified, primarily along Route 365 along north of Hinckley Reservoir (NYNHP 2020, NYPA 2020).

Erie maintains signage at the Prospect boat launch area to provide public information about prevention measures for the spread of invasive species. The signage identifies prevention measures including: remove any visible mud, plants, fish, or animals before transporting equipment; eliminate water from equipment before transporting, clean, and dry anything that comes into contact with water (e.g., boats, trailers, waders, equipment, and never release plants, fish, or animals into body of water unless they came from that body of water.

3.5.2 Environmental Effects

In the SD3 (FERC 2020a), FERC identified issues for environmental analysis related to terrestrial resources to include: (1) effects of continued Project operation, including impoundment fluctuations, on riparian and wetland habitat and associated wildlife; (2) effects of continued Project operation and maintenance on upland wildlife habitat and associated wildlife such as bald eagles; and (3) effects of continued Project operation and maintenance on invasive plant species. During 2019, Erie conducted studies related to

terrestrial resources, including Impoundment Shoreline Characterization Study (Kleinschmidt 2020c), and as summarized in Section 3.5.1.

Erie proposes to continue the current licensed mode of operation, with the additional proposed PME measures as described in Section 2.2, *Applicant's Proposed Action*. At the Prospect impoundment, the existing wetland communities are established and adapted to the minimal fluctuations that occur in impoundment water levels. The Trenton impoundment is comprised of a deep, narrow, bedrock gorge with little to no littoral zone and associated vegetation due to the vertical gorge walls which extend well past the water line.

There are currently no known issues regarding wildlife and botanical resources within the Project area or associated with the Project facilities or operations. Erie proposes no construction activities or facility construction under the Proposed Action, including any that would have the potential to impact botanical, wetlands, or wildlife resources. Erie plans to maintain the existing informational signage about prevention measures for the spread of invasive species at the Prospect boat launch. There are no unique plant communities or rare plant occurrences within the Project area, and so none are affected by operation of the Project. There are no known unique or critical wildlife habitats or species located on any of the lands (see also Section 3.6). The continued operation of the Project, as proposed, is anticipated to have no adverse impacts on botanical, invasive species, wetlands, or wildlife resources.

3.5.3 Proposed Environmental Measures

Erie proposes to continue the current licensed mode of operation, with the additional proposal of developing and implementing a SWLMP, as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*. The SWLMP would provide measures to monitor impoundment elevations, downstream base flows, and provision to maintain leakage flows to the Prospect bypass reach. Erie would implement erosion and sediment control measures, as appropriate, with any Project maintenance or construction activities.

3.5.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to result in unavoidable adverse effects to wildlife and botanical resources, or to adversely affect wetlands, riparian, or littoral resources.

3.6 Threatened, Endangered, and Special Status Species

3.6.1 Affected Environment

The ESA of 1973, as amended (16 USC 1531–1544) requires the U.S. Department of the Interior to identify species as endangered or threatened for the purpose to protect and recover imperiled species and the ecosystems upon which they depend. Under the ESA, species may be listed as either endangered or threatened and essential areas for survival of species can be listed as critical habitat. In 2019, a variety of surveys were completed in West Canada Creek and the Project area, no new state or federally listed aquatic species were discovered during the Macroinvertebrates and Mussel Surveys (Kleinschmidt 2020b), Impoundment Shoreline Characterization Study (Kleinschmidt 2020c) or the Fish Assemblage Assessment (Kleinschmidt 2020d).

3.6.1.1 Threatened and Endangered Species: State and Federally Listed Species

The USFWS Information for Planning and Consultation Resource List (IPaC) database and the USFWS New York Ecological Services Field Office Species List were reviewed to identify threatened and endangered species, and species of concern within Oneida and Herkimer counties in New York. Additionally, the consultation identified critical habitat that may occur within the Project boundary and/or may be affect by the Project (USFWS 2018a, 2018b).

In 2018, the USFWS identified the northern long-eared Bat (*Myotis septentrionalis*) as a federally threatened species that could potentially be affected by activities in the region, but no critical habitat for these bats were identified within the Project area (USFWS 2018a, 2018b). Due to the period of time that has lapsed from the 2018 Species List, pursuant to 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, an updated species list was requested on September 18, 2020. Since the 2018 species list the USFWS has updated the list of threatened and endangered species and species of concern. The 2020 species list, results show no listed species or critical habitat identified within the Project area (USFWS 2020b, USFWS 2020c); therefore, the Project is outside of any conservation buffers associated with the northern long-eared bat (see Appendix A).

A review of the NYSDEC list of endangered, threatened and special concern fish species of New York (NYSDEC 2020h), the New York Natural Heritage Program (NYNHP) Rare Animal Status List (NYNHP 2017), and the NYSDEC Environmental Resource Mapper

(NYSDEC 2020e) indicate that no state-listed endangered or any species of special concern are known to occupy the Project area. However, one state threatened species, the bald eagle, has been identified (NYSDEC 2020i); this species is further discussed in the Migratory Birds section.

3.6.1.2 Migratory Birds

The protection of birds is regulated by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the USFWS (50 CFR Sec. 10.12 and 16 USC Sec. 668(a)).

The 2020 USFWS IPaC consultation (USFWS 2020b) identifies six migratory birds of concern with the potential of occurring in the Project area, including: Bald Eagle, Black-billed Cuckoo, Canada Warbler, Eastern Whip-poor-will, Semipalmated Sandpiper, and Wood Thrush. Based on the breeding seasons of the species, most would have a probability of presence between May and October (USFWS 2020b). The bald eagle can be present year-round.

Bald eagles are no longer listed under the ESA but maintain federal protection under the Bald and Golden Eagle Protection Act. Additionally, bald eagles are listed as a New York state threatened species. The NYSDEC stated reports of a bald eagle nest on the hill south of the Prospect impoundment. However, the NYSDEC stated that it does not have any concerns about the impacts to the eagles by the Project at this time (correspondence from Todd Philips, NYSDEC, see Appendix A). Erie believes that this nest location is located outside of the Project boundary.

Bald eagles typically nest within 0.25 mile to 1 mile of large bodies of open water, such as lakes and large rivers. Eagles nest in large, super-canopy trees or snags often in late-successional forest. They prefer a nest site at the edge of the forest, near foraging areas, with unobstructed views, and with little human disturbance. Most eagles forage primarily on fish, with lesser quantities of waterfowl, carrion, and small mammals. The bald eagle often winters along large interior or coastal bodies of water that remain free of ice (Cornell Lab 2019).

3.6.1.3 Critical Habitats

A search within USFWS's Environmental Conservation Online System (USFWS 2020d) was conducted to identify proposed and final designated critical habitat, that may occur within the Project boundary and/or may be affected by the Project. The USFWS identified no federally listed critical habitats within the Project area (USFWS 2020d).

3.6.2 Environmental Effects

FERC identified in the SD3 (FERC 2020a) issues for environmental analysis related to threatened and endangered species to include the effects of continued project operation and maintenance on the federally listed threatened northern long-eared bat. As stated in the Affected Environment (Section 3.6.1), the USFWS updated the list of threatened and endangered species and species of concern in 2020, and the Project is located outside of any conservation buffers associated with the northern long-eared bat. Therefore, northern long-eared bats are no longer considered to be present within the Project area, thus the Project will not affect this federally endangered species.

Erie proposes to continue existing Project operations and implementing the existing PME measures as described in Section 2.2, *Applicant's Proposed Action*. There is known bald eagle activity within the Project vicinity. During the course of the 2019 and 2020 field seasons, Erie did not observe any bald eagle nests within or adjacent to the project boundary. NYSDEC stated that there is a known bald eagle nest on the hill south of the Prospect impoundment; however, had no concerns about potential impacts to the eagles by the Project at this time (personal communication with Todd Phillips, NYSDEC, 2020, see Appendix A).

Erie is not proposing any changes to the Project or any changes in the operation of the Project. Erie is not proposing the construction of any new Project facilities or recreation facilities, or ground disturbing activities that have the potential to impact federally threatened and endangered or species of special concern. The known bald eagle nest is located outside of the Project boundary and would not be affected by Project operations or management. Therefore, continued operation of the Project is not anticipated to have an adverse effect on the bald eagle or federally threatened and endangered or species of special concern.

3.6.3 Proposed Environmental Measures

As indicated in Section 3.6.2, the updated (2020) species list results show no listed species or critical habitat identified within the Project and the northern long-eared Bat is no longer listed as considered to be present within the Project area. Continued operation of the Project is anticipated to result in no adverse effects on RTE species; and Erie is proposing no PME measures associated with RTE resources.

3.6.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on identified rare, threatened and endangered species.

3.7 Recreation Resources

3.7.1 Affected Environment

3.7.1.1 Regional Recreation Resources

Regional Parks and Forests

New York's Adirondack Region offers over 2,000 miles of hiking trails and is home to 42 of the 46 Adirondack High Peaks, including Mount Marcy, the highest Adirondack Peak at 5,344 feet (Adirondack.net 2020). In addition to Adirondack Park, the upstream Hinckley Reservoir offers recreationalists the opportunity to fish, boat, swim, camp, and partake in assorted beach and picnic related activities. Public recreation access sites at Hinckley Reservoir include the Hinckley Reservoir Picnic Area (NYSDEC Day Use Area); a seasonal, day use boat launch; and several campground facilities, such as the Trails End Campground and Camp Northwood (NYPA 2020, NYSDEC 2020k).

State forests within the Project vicinity include the Black River Wild Forest and the Hinckley State Forest. The 127,135-acre Black River Wild Forest abuts the Hinckley Reservoir and offers a broad spectrum of seasonal recreational opportunities (NYSDEC 2017a). The Hinckley State Forest is located just over 1-mile due east of Prospect Dam and outside of Adirondack Park. The 1,590-acre forest is open year-round and offers 6.5 miles of hiking trails, primitive camping, hunting and trapping, and snowmobiling (NYSDEC 2017b).

Public recreation areas in close proximity to the Project, but located outside of the Project boundary, include the Hamlet of Prospect Park and Overlook, the town of Trenton

Fernwood Trail, and recreational trail near the Nine Mile Creek Feeder Dam. The Prospect Village Park includes a small park and picnic area with an overlook platform for viewing the Prospect Falls area (Erie 2018).

Regional Whitewater and Flatwater Boating Opportunities

Multiple lakes within the Project region offer flatwater boating opportunities, and rivers and creeks offer whitewater boating opportunities. North of the Project, the Northern Forest Canoe Trail (NFCT), a 740-mile long water trail extends from Old Forge, New York and to Fort Ken, Maine. The NFCT extends through 23 rivers and streams, and 59 lakes and ponds, and provides both flatwater and whitewater (Class I to Class IV+)[15] boating opportunities (NFCT 2020). Table 3-16 provides a summary of the identified whitewater boating opportunities, including class designation and approximate run length, that are located within approximately 60 miles of the Project based on additional data provided by Riverfacts (2020). These reaches provide almost 500 river miles of whitewater boating opportunities within close vicinity to the West Canada Creek Project. This includes about 205 river miles with whitewater boating opportunities for Class I-III intermediate ability levels, about 207 river miles with ranges from Class I-V, and about 75 river miles for Class IV-V+ expert level capabilities.

Table 3-16 Summary of Whitewater Boating Opportunities within Approximately 60 Miles of the West Canada Creek Project

River Name	Reach Description	Whitewater Boating Class	Approx. Length (River Miles)
Black River	Route 3 Wave	Class II	1
Moose River - South Branch	Silver Run to Bridge at Plains	Class II	6
Ninemile Creek	Feeder Canal to Stittville	Class II	6
North Sandy Creek	Rodman to Route 3	Class II	17
Sacandaga River	East Branch to Hope	Class II	13
West Canada Creek - South Branch	Fayle Road to Nobleboro	Class II(IV)	5
Indian River	Natural Bridge to Antwerp	Class II,	20
Moose River	McKeever to Rock Island	Class III	3
West Canada Creek	Big Brook to Route 8	Class III	3.5
West Canada Creek	Ohio Gorge	Class III	1.5

[15] International Scale of River Difficulty, American Whitewater 2005.

River Name	Reach Description	Whitewater Boating Class	Approx. Length (River Miles)
Caroga Creek	Ephratah to Route 5	Class I-III	9.5
Cobleskill Creek	Warnerville to Sidney Corners	Class I-III	13
East Canada Creek	Dolgeville to Route 5	Class I-III	8
Salmon River	Route 2A to Black Hole through Pulaski	Class I-III	3.9
Schoharie Creek	Esperance to Fort Hunter	Class I-III	21
West Creek	Bridge Close to Hyndsville to Route 7	Class I-III	5
Black River	Enos to Route 72	Class II-III	6
Black River	Hawkinsville to Norton Road	Class II-III	6
Black Creek	Sterlingville to Philadelphia	Class II-III	5
Deer River	New Boston to High Falls Dam	Class II-III	12.4
Little River	Aldrich to Oswegatchie	Class II-III	6.2
Mohawk River	West Branch to Hillside	Class II-III	7
Piseco Outlet	Route 10 to West Branch Sacandaga	Class II-III	4
Raquette River	Forked Lake Campground to Deerland	Class II-III	4.5
Sacandaga River - West Branch	Whitehouse to Sacandaga Campsite	Class II-III	7.3
West Stony Creek	Pinnacle to Route 30	Class II-III	10.5
Doig Creek	Pumpkin Hollow Road to Sacandaga River	Class III+(IV)	3
Sprite Creek	Stewart Landing to Youker Road	Class III+(V)	4.55
Beaver River	Taylorville Section	Class III-IV	2
East Stony Creek	Harrisburg Road to Tenant Creek	Class III-IV	6
Indian River	Brooktrout Lake to South Branch Moose	Class III-IV	13
South Sandy Creek	Route 95 to Route 11	Class III-IV	12
Black River	Hawkinsville to Port Leyden	Class III-IV+	2.7
Black River	Watertown to Brownville	Class III-V	8
Holmes Lake Outlet	Route 125 to West Stony Creek	Class III-V	1

River Name	Reach Description	Whitewater Boating Class	Approx. Length (River Miles)
Otter Creek	Partridgeville Road to Pine Grove Road	Class III-V	10.4
Woodhull Creek	Chub Pond to Horton Road	Class III-V	10
Black River - South Branch	South Lake to Black River	Class II-IV	8
East Canada Creek	Powley Place to Stratford	Class II-IV	12
Fish Creek - East Branch	Point Rock to Taberg	Class II-IV	9.4
Moose River - South Branch	Rock Dam to McKeever	Class II-IV	20
Oswegatchie River - East Branch	Inlet to Wanakena	Class II-IV	2.2
Sacandaga River	Christine Falls to East Branch	Class III-V+	7.5
Cedar River	Wakeley Dam to Spraque Brook	Class II-V	8
East Stony Creek	Tenant Creek to Old State Highway	Class II-V	8
Little Black Creek	Hughes Road to Black River	Class II-V	5.5
Rock River	Lake Durant to Cedar River	Class II-V	5
Black River	North Lake to Farr Road	Class I-IV	6
Independence River	Bradish Road to Old Pine Grove Road	Class II-V+	2.6
Oswegatchie River - Middle Branch	Long Pond Road to Bryants Bridge	Class II-V+	22
Spruce Creek	Salisbury to Dolgeville	Class II-V+	6.5
Black River	Farr Road to Enos	Class I-V	8
Oswegatchie River - Middle Branch	Bryants Bridge to Fish Creek	Class I-V(V+)	4
Moose River	Rock Island to Fowlersville	Class IV	9
Beaver River	Moshier Section	Class IV-V	3
Mad River	Road from Castor Hill to North Branch	Class IV-V	8
Round Lake Outlet	Round Lake to Bog River	Class IV-V	8.5
Jenny Creek	Jayville Road to Pitcairn	Class IV-V+	5
Negro Brook	Boshart Road to East Road	Class IV-V+	1
Sacandaga River - West Branch	Arietta - Piseco to Whitehouse	Class IV-V+	9.2
Beaver River	Eagle Section	Class V	1

River Name	Reach Description	Whitewater Boating Class	Approx. Length (River Miles)
Cincinnati Creek	Remsen to Barneveld	Class V	4.5
Mill Creek	West Lowville to Lowville	Class V	4
Moose River	Fowlersville to Lyons Falls	Class V	5
Sacandaga River - Middle Branch	Speculator to Old Route 30 Road Bridge	Class V	2.5
Sacandaga River - Middle Branch	Old Route 30 Bridge to Route 8/30 Jct Bridge	Class V	6.8
Oswegatchie River - West Branch	Bisha Falls to Jerden Falls	Class V+	7

Source: Riverfacts 2020.

Figure 3-20 denotes whitewater boating opportunity locations (general put-in locations) within approximately a 60-mile radius of the West Canada Creek Project. Whitewater boating opportunities range from Class I to Class IV+ reaches. Figure 3-20 data and paddler ability level are based on an AW map information and denotes locations by paddler ability levels (I through V), including approximately 1 location within Class I, 15 Class II, 30 Class III, 36 Class IV, and 19 Class V for a total of 101 locations within 60 miles of the Project vicinity (AW 2020a).

3.7.1.2 Project Recreational Resources

In 2019, Erie conducted the Recreation Use, Needs and Access Study (Kleinschmidt 2020g) to gather information regarding existing recreation facilities, use, public safety, and access at the West Canada Creek Project. As part of the Recreation Study, Erie collected 209 survey responses (178 online), and 443 surveys associated with Trenton Trail Days, and spot count data to gather information pertaining to recreation use at the Project and downstream West Canada Creek (see Kleinschmidt 2020g for additional information). Recreation opportunities at the Project include hiking/walking, boating, kayaking, canoeing, fishing, visiting historic sites, sightseeing, and picnicking. The Project includes two public recreation sites: a formal developed boat launch at the Prospect impoundment, and the Trenton Falls Scenic Trail, open to the public during special weekend event periods.

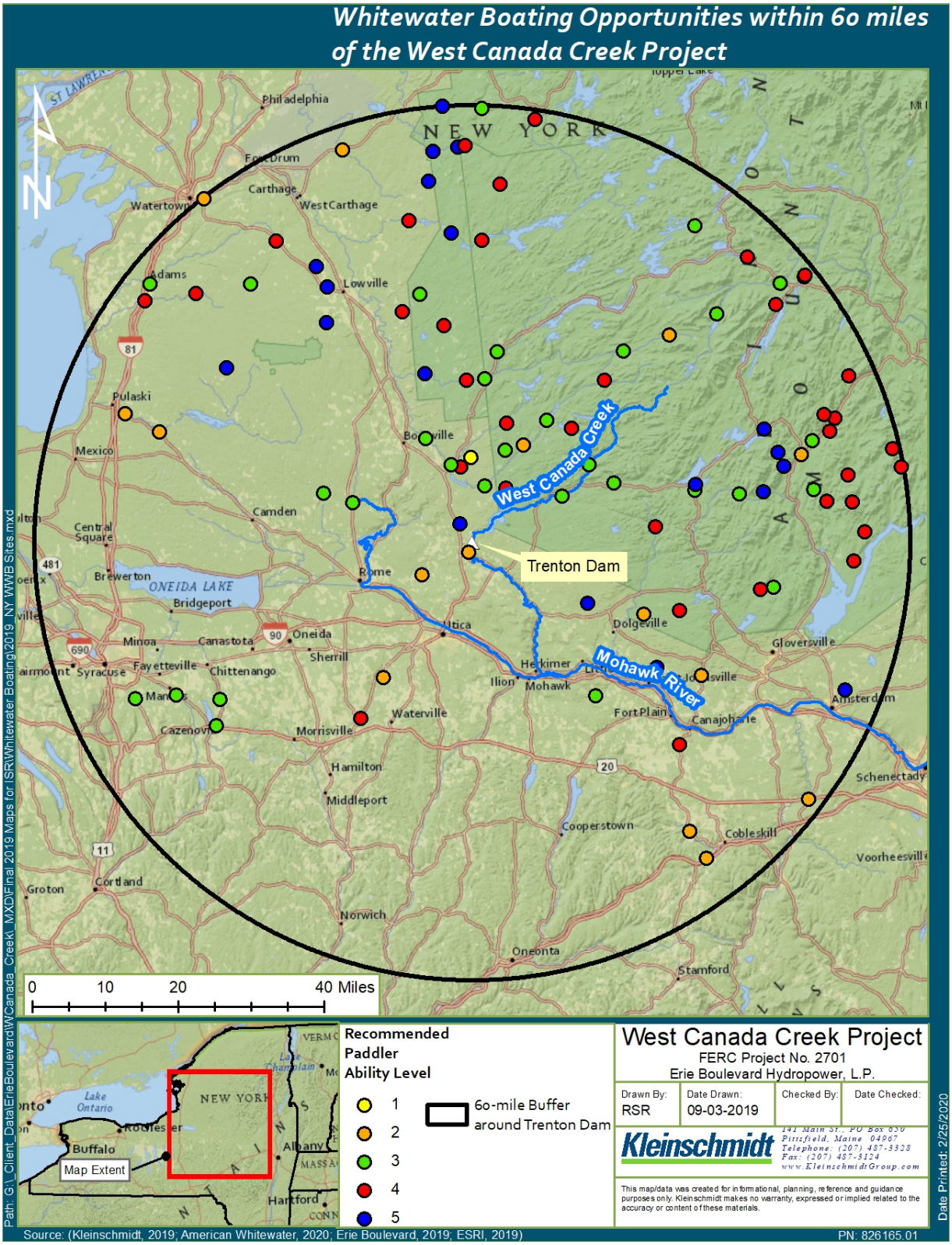


Figure 3-20 Whitewater Boating Opportunities Within 60 Miles of the Project

Source: AW 2020b.

Prospect Development

Prospect Impoundment

The Prospect impoundment recreation opportunities include canoeing, kayaking, motor boating, fishing, sightseeing, and nature study. Approximately 50 percent of the Prospect impoundment is accessible from State Route 365 and Church Street; the remainder of the impoundment along the south shore is inaccessible due to rough terrain. The Prospect boat launch and parking area is located on the north side of the Prospect impoundment, approximately 1,000-feet upstream from Prospect Dam and is accessible from State Route 365 (Figure 3-21, Photo 3-5 and Photo 3-6). The site is unstaffed and open from approximately Memorial Day to Labor Day. The Prospect parking area is approximately 5,000-square-feet and can accommodate approximately 15 vehicles, with parking overflow areas available on the adjacent grass areas. The single entrance to the parking area is paved and then turns to an open gravel parking area, with a turnaround drive for the gravel boat launch area to assist vehicles with trailers.

Photo 3-5 Aerial View of Prospect Boat Launch

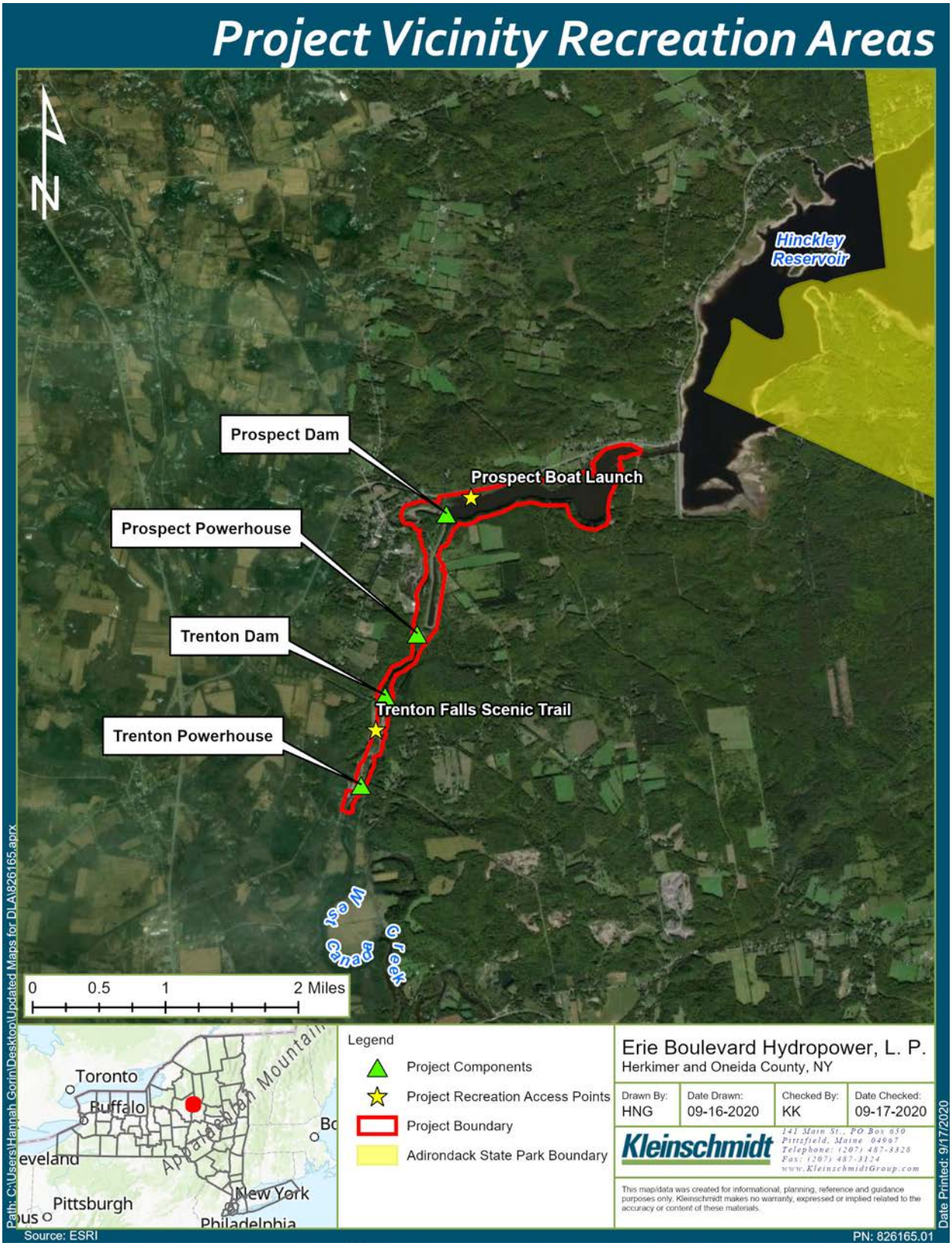


Figure 3-21 Project Recreation Facilities

Photo 3-6 Parking Area and Turn Around at the Prospect Boat Launch

The Prospect boat launch provides recreational boating access for motorized (restricted to 10 horsepower and no jet skis) and carry-in boats. The boat barrier on the north shore of the Prospect impoundment is approximately 200-feet-upstream from the dam and is oriented southeast to the south shore to restrict access to the dam and the power canal. Other restrictions at the site, indicated by signage, include no swimming, no camping, and no dumping trash. The Prospect boat launch site does not have any dedicated ADA accessible parking spaces, ADA signage, or ADA accessible facilities for access to the shoreline (Kleinschmidt 2020g).

No formal access to the bypass reach between the Prospect dam and the powerhouse is available due to the steep nature of the stream banks and private ownership of the adjacent lands. The very steep embankments and presence of the Project facilities necessitate public access restrictions near the powerhouse and associated civil works. Erie restricts from public access such portions of the project waters, adjacent lands and project facilities necessary for the protection of life, health and property. Erie follows FERC's guidelines for public safety, including FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016). See also Section 3.8, *Land Use and Aesthetic Resources*.

Prospect Bypass Reach

Erie conducted consultation with USFWS, NYSDEC and AW (September 12, 2019) to review additional information pertaining to the Prospect bypass reach assessment of whitewater boating opportunities, including: adjacent land ownership; general topography and characterization of the adjacent shoreline embankment; opportunities and limitations for ingress and egress locations; and potential whitewater boating features, including length of potential boating run and anticipated whitewater features. Erie and representatives from AW and USFWS conducted an in-field review of the Prospect bypass reach on September 24, 2019, to review potential put-in and take-out locations.

The Prospect bypass reach is within a gorge-like setting with almost 100 percent of the eastern shoreline comprised of steep cliff and provides no access or egress, and approximately 70 percent of the western shoreline comprised of steep/cliff, with the remaining shoreline predominantly comprised of loose rock with difficult access to the stream channel. Adjacent land ownership includes private, Town of Trenton, MVWA, and a small portion of Erie lands near the Prospect Powerhouse. The MVWA facility is a regional water supply treatment plant that includes water treatment infrastructure facilities and settling pond areas (Kleinschmidt 2021).

Erie conducted the Prospect bypass reach whitewater boating controlled flow assessment on September 23, 2020, which included a single-flow (approximately 600 cfs) assessment of the Prospect bypass reach by four Class V expert whitewater boaters from below Prospect Falls downstream to the take-out at Trenton impoundment (near Trenton Dam) (Kleinschmidt 2021). Participants indicated whitewater boating features included: a play spot for surfing waves (Class II-III) below Military Road Bridge, the final rapids above Prospect tailrace (Class IV - IV+, with potentially one area of low Class V), and series of rapids (4 distinct areas) with multiple eddies. One participant stated preference for no change in the flow level, and three participants stated they would prefer a higher flow level compared to the target flow level (600 cfs). All study boaters responded that they would choose to participate in the same activity on the Prospect bypass reach at the same flow level if given the opportunity (Kleinschmidt 2021).

All participants rated navigability, aesthetic quality, and overall quality of the target flow as excellent. All participants rated safety due to flow levels as good. Mixed responses were provided for wadeability of the flow (2 responded as poor, 1 as good, 1 as excellent). Ratings ranged between neutral and excellent for water depth, availability of play areas,

rate of travel, and exposure of rocks and sand/gravel bars. Ratings were good or excellent for availability of rapids, eddies, force of water, speed of water/current, and safety (due to debris or other hazards) (Kleinschmidt 2021). In terms of potential hazards, participants indicated that the most difficult section was the last two ledges/rapids above Prospect tailrace. This rapid was also noted to have a large hole that could be hazardous to less experienced boaters but that could be scouted and avoided. One boater that "swam" and lost the boat in the rapid (the boat was later retrieved in the Trenton impoundment). The participant was able to self-rescue and move to river right and reach the shoreline without harm. Participants stated that boaters could scout and set up or may opt to portage this series of rapids (Kleinschmidt 2021).

The participants discussed rescue options and indicated that due to nature of the gorge rescue would likely involve litter carry out. One of the participants who teaches swift-water training for the New York Department of Homeland and Emergency Services indicated that local fire/police departments are likely not trained for technical/vertical rescue, so rescue services would need to be called in from other locations. Participants felt that the reach would be a large regional area draw, particularly if coordinated with other releases in the region, and provided a good "skill builder" reach. Participants indicated that the scenery, multiple skill level challenges, and potential to complete multiple (2) runs would be potential draws for boaters (Kleinschmidt 2021).

Trenton Development

The Trenton impoundment is located within the vertical rock-walled Trenton Falls Gorge. Erie, in partnership with the town of Trenton, provides controlled public access to view the scenic Trenton Falls Gorge during the Trenton Falls Scenic Trails Event, held for 1 or 2 weekends in the spring and 1 or 2 weekends in the fall annually since 2004[16]. During the existing license term, Erie voluntarily (outside of any current license requirements) developed and implemented the Trenton Trail Scenic Trail system and associated special event in coordination with the Town of Trenton to enhance public recreation opportunities in a safe and controlled manner at Trenton Falls (Figure 3-22). On these special event weekends, the trails are open from 9 am to 5 pm. Local volunteers assist at the event and local community groups provide historic and natural history information and sell refreshments.

[16] The Trenton Scenic Trails event was cancelled during 2020 due to COVID safety considerations.

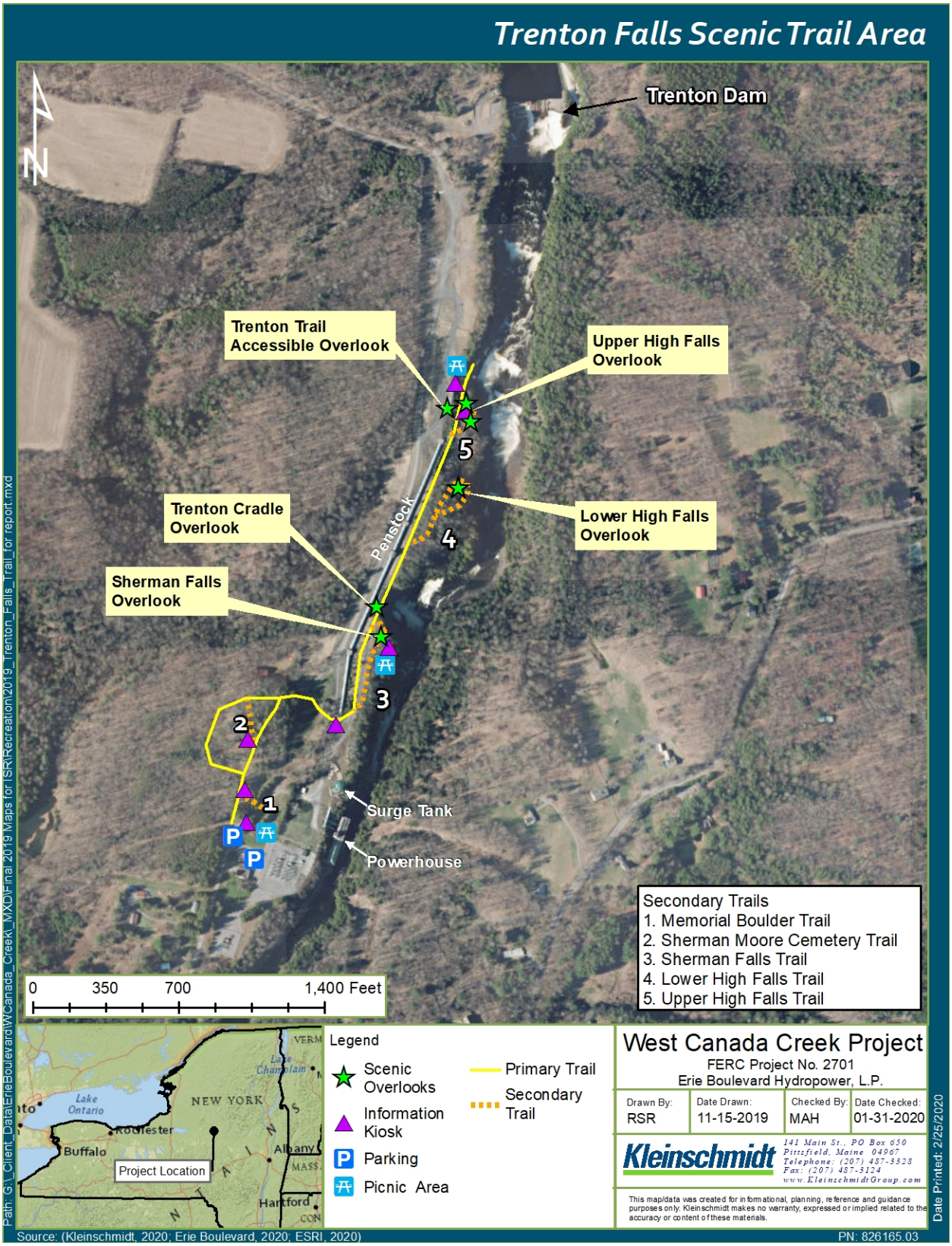


Figure 3-22 Trenton Falls Scenic Trail Area

A picnic area is located adjacent to the parking area at the start of the Memorial Boulder Trail. The primary 0.5-mile-long gravel and stone dust trail extends from the parking area and takes visitors from the parking area (Photo 3-7), traverses along the penstock and old penstock cradle, to scenic overlooks (Photo 3-8). The scenic overlooks include the Sherman Falls Overlook, Trenton Cradle Overlook, Lower High Falls Overlook, Upper High Falls Overlook (includes 2 separate overlooks), and the ADA Accessible Overlook. Erie provides interpretive signage along the trail and at the overlook areas with information regarding the scenic area, historic events, the hydroelectric facility, High Falls, Sherman Falls, the Sherman Moore Cemetery, and geology of the gorge.

During the Trenton Falls Trail event, Erie provides parking areas near the entrance to the scenic area including a parking area located at the upper end of the primary trail at the ADA Accessible Overlook which provides scenic views of the Upper High Falls (Photo 3-9, Figure 3-23). The ADA accessible parking area provides parking for 10 vehicles. The ADA accessible overlook also provides a picnic table, bench, and a trash receptacle. In addition, Erie provides porta potties, trash receptacles, and benches along the trail during the Trenton trail event (Kleinschmidt 2020g).

Photo 3-7 Trenton Trail and Information Kiosk

Photo 3-8 Trenton Falls Trail Cradle Overlook Area

Photo 3-9 ADA Parking Area and Overlook

Due to the type and steep rock walls of the gorge area, loose falling rocks can occur along the trail. Accordingly, Erie conducts safety inspections of the trail prior to allowing public access to these viewing events. If sections of the trail are considered dangerous due to safety concerns, those sections may be restricted from public access (Kleinschmidt 2020g). For the remainder of the year, Erie maintains fencing at key access points to restrict public access along the Trenton Falls Gorge and to Project facilities due to public safety considerations. Erie additionally works with local law enforcement and first responders to restrict access due to hazards and difficulties with rescue (Kleinschmidt 2020g). Erie restricts from public access such portions of the project waters, adjacent lands and project facilities necessary for the protection of life, health and property. Erie follows FERC's guidelines for public safety, including FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016). See also Section 3.8, *Land Use and Aesthetic Resources*.

3.7.1.3 Project Recreation Visitation

Prospect Development

During the 2019 study season (May 25, 2019 through September 2, 2019), total visitation at the Prospect boat launch was estimated at 2,880 visitors. Based on the traffic count data, approximately 52 percent of the use occurred on weekdays; 34 percent on weekends; and 14 percent on holidays. The highest number of vehicles observed at the Prospect boat launch during the spot counts was 13 vehicles, and the highest total vehicles per hour based on the traffic counter data was 14 vehicles, both recorded on the July 4, 2019, holiday weekend (Kleinschmidt 2020g).

The highest visitation at the Prospect boat launch occurred during the month of July (37 percent). The highest number of people observed was 11 people (holiday), and the average number of people observed based on all of the spot counts conducted was 8.8 on holidays, 7.0 on weekends, and 0.7 on weekdays. The average number of visits to the Prospect impoundment per year was 18 with a median of 12 and a range of 1 to 120. The median length of visit to the Prospect impoundment was 3 hours, with a range of 0.5 hours to one adjacent landowner individual specifying a 3-day visit (72 hours). The median group size was 2 with a range of 1 to 30 (Kleinschmidt 2020g).

In terms of recreation activities observed, most people were canoeing or kayaking. Other activities people were observed participating in were fishing, walking the dog, scenic

viewing, stand-up paddle boarding, and although restricted, swimming. Popular recreation activities on the Prospect impoundment are kayaking (19 percent), and scenic viewing (12 percent), followed by bank fishing, photography, boat fishing, and hiking/walking at 8 to 9 percent each. (Kleinschmidt 2020g).

The majority of visitors to the Prospect boat launch rate their satisfaction with the water level between neutral and satisfied, and over half of recreationists have not had any difficulty launching or retrieving their watercraft. Seventy-nine percent of survey respondents rate the overall condition of the boat launch as satisfactory, good, or excellent. Two-thirds of survey participants felt safe or very safe at the Prospect boat launch (Kleinschmidt 2020g).

Trenton Development

During the 2019 Trenton Trail Scenic Trail event, total visitation during the May weekend event (May 18 and 19) was 2,317 visitors, and during the September weekend event (September 14 and 15) was 2,650 visitors, for a total of 4,967 visitors and an average daily visitation of 1,242 for the 2019 season. Visitation during the 2018 season was approximately half of the visitation in 2019, with a total visitation of 2,654 and average daily visitation of 664 (Kleinschmidt 2020g).

The average group size was 3 people and ranged from one to an organized group of 16. The most common type of group was families (73 percent), followed by friends (16 percent) and individuals (8 percent). Groups generally traveled in one vehicle to the event and drove an average of 21 miles (range <1 to 200 miles). Over half (58 percent) of the visitors to the event had been before while it was the first time coming to the event for 42 percent of the visitors. On average, visitors had visited the site approximately 4 times before. The length of visit ranged from 0.5 hours to 4 hours with an average of 1.2 hours (Kleinschmidt 2020g).

All respondents participated in scenic viewing (23 percent) and hiking/walking (23 percent) at the Trenton Falls Scenic Trail event. Other activities participated in were photography, nature study, visiting historic sites, and picnicking. Scenic viewing was the primary activity of most respondents (49 percent); hiking/walking was the primary activity of 44 percent of respondents. Other primary activities included spending time with family, exercise, and enjoying the outdoors (Kleinschmidt 2020g).

Recreation Demand

Estimated population projection data for Herkimer and Oneida counties are projected to decrease by approximately 3.6 percent and 6.3 percent, respectively, through 2040 (CPAD 2018). On average, the population in the area surrounding the Project is projected to decrease by five percent. A five percent decrease was applied to the total recreation days to estimate the total recreation days in 2040 at the West Canada Creek Project. Accordingly, estimated visitation was approximately 2,736 at the Prospect Boat Launch Area and 4,719 at the Trenton Falls Scenic Trail Event for a total estimated 7,455 recreation days in 2040 at the Project (Kleinschmidt 2020g).

3.7.1.4 Downstream West Canada Creek

Recreation Resources

Recreation opportunities along West Canada Creek downstream of the Trenton Development include angling, whitewater boating, tubing, picnicking, hiking/walking, sightseeing, and camping. West Canada Creek is a renowned trout stream in central New York. For fishing access, the NYSDEC identifies approximately 26 miles of accessible stream frontage and numerous access areas that provide easy access to West Canada Creek (NYSDEC 2020a). The reach from West Canada Creek from Trenton Dam downstream to the first bridge (Comstock Bridge) below the mouth of Cincinnati Creek is a catch and release zone known as the Trophy Section (Figure 3-23). This Trophy Section has special regulations established by NYSDEC where no kill restrictions, use of artificial lures, and extended fishing seasons are used to help produce trophy fish (NYSDEC 2020a).

Just north of the Village of Poland, the West Canada Creek Campsites provide campground facilities as well as tubing and whitewater boating (kayak and canoe) rentals and shuttle services for boating sections of the West Canada Creek between the Cincinnati Creek confluence and the takeout near the campground (West Canada Creek Campsites 2019) (Figure 3-23). The Herkimer Kampground of America (KOA) Resort and Campground, located south of Middleville, includes both the Herkimer Diamond Mine and the campground. The KOA campground is located adjacent to West Canada Creek (Figure 3-23), and facilities includes cabins and lodges as well as tent and recreational vehicle (RV) hook-up sites. The Herkimer Diamond Mine, located across the street from the KOA campground, is a tourist attraction that provides shops, provides tours, mining for quartz crystals, shopping and dining opportunities (Herkimer Diamond Mines 2019).

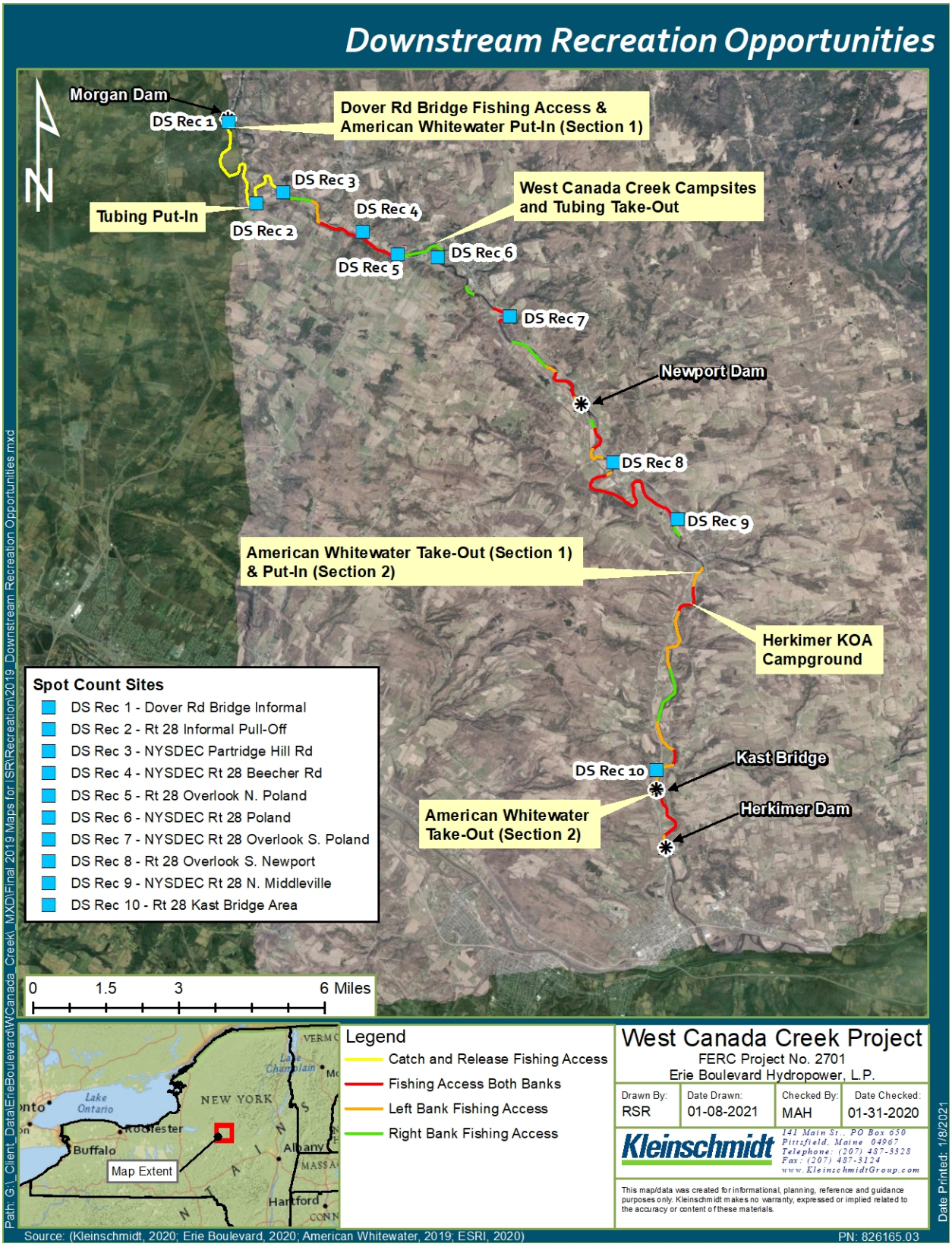


Figure 3-23 Recreation Opportunities Downstream of the Project

AW identifies a Level II (beginner/intermediate) 28-mile long whitewater boating run beginning at the Dover Road Bridge and extending to Herkimer. AW identifies two runs along this stretch with Section 1 extending from Dover Road to Route 29 in Middleville, and Section 2 from Route 29 in Middleville to Route 7 at Kast Bridge north of Herkimer (Figure 3-23). Section 1 is described as Class I-II with one portage near the Newport Dam, and Section 2 is described as Class II-II+ (AW 2020c).

Recreation Use

West Canada Creek Campsites provided rental information, shuttle use, and camping data for 2014-2018 (Table 3-17) (personal communication with West Canada Creek Campground 2019). Canoe/kayak rentals is the total number of boat rentals. Shuttles is the number of transports of individuals and their float (e.g., canoe, kayak or tube) upstream to put-in locations.

According to the West Canada Creek Tubing website, flows of less than 300 cfs are considered poor floating conditions and no canoe/kayak rentals are available; flows of 301 cfs to 900 cfs are considered good floating conditions and all rentals (canoe/kayak and tubing) are available; flows of 900 cfs to 1,750 cfs are considered fast floating conditions and all rentals are available; and at flows of over 1,750 cfs, no rentals are available (West Canada Creek Tubing 2019).

Table 3-17 Summary of West Canada Creek Campground Rental Counts

Item	2014	2015	2016	2017	2018
Canoe/Kayak Rentals	135	65	22	85	71
Tube Rentals	-	156	354	583	928
Shuttles	647	813	592	686	1,360
Camping Nights	8,309	7,306	9,202	9,363	9,538

Source: Personal communication with West Canada Creek Campground 2019.

Based on the spot counts conducted during the 2019 Recreation Study, the total number of vehicles observed during the study season at all of the downstream sites was 336 vehicles, with an overall average of 3.1 vehicles per spot count visit. The estimated overall visitation of the 10 downstream sites during the study period was approximately 14,144 visitors, with DS Rec 2, 3 and 5 sites receiving the greatest amount of visitors (Figure 3-23) (Kleinschmidt 2020g).

Respondents recreate on West Canada Creek all year, but the majority participate in recreation activities in the summer. The most popular recreation activity was fly/wade fishing (15 percent), followed by kayaking (11 percent), bank fishing (11 percent), and tubing (10 percent). Fishing was the primary activity participated in by over half (53 percent) of respondents. Tubing and kayaking were the primary activities of 20 and 10 percent of survey participants, respectively (Kleinschmidt 2020g).

On average, survey participants visited their primary recreation site on West Canada Creek 19 times per year and stayed for 4 hours. The average group size was 3.7 people, and the average number of vehicles used to visit the primary site was 1.5 vehicles. The most popular recreation activity was fly/wade fishing (15 percent), followed by kayaking (11 percent), bank fishing (11 percent), and tubing (10 percent). Fishing was the primary activity participated in by over half (53 percent) of respondents. Tubing and kayaking were the primary activities of 20 and 10 percent of survey participants, respectively (Kleinschmidt 2020g).

A component of the 2019 visitor recreation survey was to gather current information on angler use and experiences on the Prospect impoundment and West Canada Creek. Nearly half of survey participants (51 percent) fish on West Canada Creek, 22 percent of the respondents fish on the Prospect impoundment, and the remaining respondents indicated either that they did not fish or provided no response. Based on all of the responses, the preferred angling technique was fly fishing (30 percent), followed by wade fishing (19 percent), bank fishing (15 percent), artificial lures (15 percent), boat fishing (11 percent), and bait fishing (9 percent). Bait fishing was the most popular technique used at the Prospect impoundment (30 percent), and fly fishing was most popular on West Canada Creek (38 percent). In terms of bait types, of those anglers that responded, approximately 16 percent fished via bait, 57 percent fished via fly fishing, and 27 percent fished via artificial lures. Approximately 41 percent of the respondents indicated wade fishing, 34 percent of the respondents indicated bank fishing, and 25 percent indicated boat fishing (Kleinschmidt 2020g).

Whitewater Boating Controlled Flow Assessment

Erie, with the assistance of AW and whitewater boating participants, conducted 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 study area. The controlled flow study was conducted on November 6, 2020 (6 participants)

and November 7, 2020 (11 participants). The study participants included Class II-IV boaters, and five of the participants boated on both days (Kleinschmidt 2021).

The study reach extended from the Middleville (DS Rec 9) access area to the take-out at the Kast Bridge site (see Figure 3-23). Target flows were 1,000 and 1,400 cfs and recorded flows were within the range of approximately 970 to 1,140 cfs. Estimated flow travel time from Trenton tailrace down to Kast Bridge is approximately 6 to 8 hours depending on flow levels. Tributaries in the downstream reach, such as Cincinnati Creek, Cold Brook and Mill Creek, can contribute significantly to overall flow in the downstream reaches during a significant rain event, in addition to flow releases from Hinckley Reservoir. Even with careful planning and no significant precipitation immediately prior or during the field study, target flows were difficult to obtain and hold over an extended period.

Participants noted the reach serves as a good teaching and beginners learning reach, with progressive difficulty from the upstream put-in location to the downstream Kast Bridge take-out. Participants indicated the desire for availability of known controlled flow releases to enable scheduling of group boating outings or teaching classes. Participants noted that the whitewater boating demand would likely be regional, unless scheduled for special slalom event or in tandem with other regional whitewater boating events.

Participants noted that boatable flows were within the range on the low end of approximately 700 to 800 cfs up to the high flow end of approximately 3,000 to 5,000 cfs, and that a range of flows could provide a range of boating experiences and opportunities. Participants indicated that sufficient flow data information was available through Kast Bridge USGS gage (located near the take-out location), SafeWaters website, AW's app and website, and NOAA's water prediction levels/NOAA river forecast (Kleinschmidt 2021).

Erie provides information regarding flow releases at the Trenton Powerhouse via SafeWaters, a publicly accessible website and toll-free phone line (SafeWaters 2020). SafeWaters is updated daily based on river gauge information, approximate forecasts, and estimated flows. The actual flows can vary and change quickly at any time. The SafeWaters information should be used as an additional source of information of potential flow ranges. Users are encouraged to always be alert and wear an approved flotation device and to never go in or near the water until the user knows and accepts the risks in the area (SafeWaters 2020).

3.7.2 Environmental Effects

FERC identified in the SD3 (FERC 2020a) issues for environmental analysis related to recreation resources to include: (1) the adequacy of public access and recreation facilities to meet current and future recreation demand; and (2) the effects of project operation and maintenance on recreational opportunities and river access within the project area. During 2019, Erie conducted studies related to recreation and whitewater boating resources within the Project region, including the Recreation Use, Needs and Access Study (Kleinschmidt 2020g) and the Whitewater Boating Flow and Access Study (Kleinschmidt 2021), and as summarized in Section 3.7.1.

3.7.2.1 Prospect Development

Prospect Impoundment

The majority of visitors to the Prospect impoundment use the Prospect boat launch (67 percent) to access the impoundment. The majority (79 percent) of survey respondents rated the overall condition of the boat launch as satisfactory, good, or excellent, and the majority (all but two respondents) felt safe at the Prospect boat launch. Over half of recreationists have not had any difficulty launching or retrieving their watercraft. On average, the Prospect boat launch parking area was well below capacity (approximately 15 vehicles). The highest number of vehicles observed at the Prospect boat launch during the spot counts was 13 vehicles, and the highest total vehicles per hour based on the traffic counter data was 14 vehicles, both recorded on the July 4, 2019, holiday weekend. Therefore, during the peak recreation use period, the gravel parking area was near capacity. However, areas for overflow parking are available adjacent to the gravel parking area to accommodate peak use occurrences. Recreational use is projected to decline slightly over the next 40 year period, and therefore, the existing recreation access and facilities, provide sufficient access to the Prospect impoundment and associated recreation activities to meet future demand.

Erie proposes to maintain existing public access and facilities at the Prospect boat launch, including informational signage about prevention measures for the spread of invasive species, over the term of a new license. In addition, as part of Erie's proposed Recreation Management Plan, Erie proposes to assess and implement, as appropriate, universally accessible features, consistent with ADA guidelines and standards for the parking and shoreline/launch access at the existing Prospect Boat Launch (see Section 2.2, *Applicant's*

Proposed Action). These measures would maintain public recreational access to the Prospect impoundment over the term of a new license.

Prospect Bypass Reach

During the Prospect controlled whitewater boating study, boaters identified potential take-out options; however, options were related to installation of near vertical steel stairways that would provide costly construction implementation and maintenance costs, operational considerations including impoundment fluctuations, ice and debris), and would not alleviate safety concerns with boaters in the bypass reach or facilitate first responder rescue opportunities. In addition, focus group participants discussed egress options of a potential take-out near the Trenton Dam, which would involve take-out near the intake area and significant safety concerns associated with public access near the Project intake and release structures (dam spillway sections and flood gate).

Participants indicated that the Prospect bypass reach had high scenic value and was comparable or better that the Ausable Chasm gorge whitewater boating run. This regionally available whitewater boating reach is within 3 hours of the Project and provides a 3.4-mile-long run, with a challenging 1-mile portion within the first mile of the reach, with flows available throughout the year (AW 2020d). Accordingly, the Ausable Chasm whitewater boating resource is available to meet potential regional demand for whitewater boating experience within a gorge-like setting and provides a longer and more diverse whitewater boating run than what would occur at Prospect bypass.

Erie has stated on numerous consultation meetings and maintains significant safety concerns of providing public access to the bypass reach given the difficult access for potential swiftwater rescues once in the reach and difficult egress due to proximity to Project facilities and gorge-like banks with high cliffs or unstable rock outcroppings along the Prospect bypass reach riverbanks. Erie has stated concerns regarding the narrow gorge-like channel, turbulent discharges from the Prospect Powerhouse and close proximity of the undercut ledges adjacent to the Prospect tailrace area.

Per 18 CFR 2.7, licensees are expected to develop suitable recreation facilities upon Project lands and waters and make provisions for adequate public access, to the extent that such development is not inconsistent with the primary purpose of the project (FERC 2015). As stated in FERC policy Recreation Development at Licensed Hydropower Projects (FERC 1996): "The licensee needs to consider public safety when providing public access to its

project. Often the most dangerous features of a project are those that are the most attractive to the recreating public"….."In addition to installation of safety devices, other safety measures may include preventing recreational activities in hazardous areas." In accordance the terms and conditions set forth in Form L-4 (Standard Article 18) of the license, Erie restricts from public access such portions of the project waters, adjacent lands and project facilities necessary for the protection of life, health and property. Erie follows FERC's guidelines for public safety, including FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

Each Project is unique and assessed individually for recreation resources, project safety, logistics (ingress and egress), and potential demand, including other regional opportunities to meet that demand. Accordingly, not all Projects are required to provide whitewater boating flow releases and access. The Whitewater Boating Access Study (Kleinschmidt 2021), and Section 3.7.1.1, *Regional Recreation Resources*, provides a summary of existing available whitewater boating reaches within a 60 mile radius of the Project that provide close to 500 miles of whitewater boating opportunities within close vicinity to the Project, with approximately 205 miles with Class I-III range, and approximately 75 river miles for Class IV-V+ expert level capabilities. In addition, the Ausable Chasm, located approximately 3 hours northeast of the Project, provides a 3.4-mile-long Ausable River reach at Ausable Chasm as a Class IV/IV+ reach with the first mile within a vertical walled canyon that offers 6 to 8 high quality Class IV rapids (AW 2020d).

These regional whitewater boating reaches would provide opportunities to meet regional demand for whitewater boating. However, as a proposed enhancement measure, Erie is proposing to provide scheduled whitewater boating flow releases for downstream West Canada Creek as described in Exhibit E, Section 2.2, *Applicant's Proposed Action,* and discussed in Section 3.7.3, *Downstream West Canada Creek*.

3.7.2.2 Trenton Development

Erie is proposing to continue the Trenton Trail event, and provide controlled public access to the Trenton Falls Scenic Trail during one or two weekends in the spring and one or two weekends fall to view the Trenton Falls Gorge. In addition, as part of Erie's proposed Recreation Management Plan, Erie proposes to assess and implement, as appropriate, universally accessible features, consistent with ADA guidelines and standards for the appropriate railing dimensions and proper toe clearance of the existing overlook railing

at Trenton Falls Scenic Trail accessible overlook (see Section 2.2, *Applicant's Proposed Action)*.

Erie voluntarily developed and implemented the trail system and special event in cooperation with the Town of Trenton during the existing license term, outside of the existing FERC license requirements. The event has taken place since 2004[17] and has become a special community event, with local groups and volunteers participating in the event. The special event includes interpretive displays and stations with information about the local area history, natural history, and hydropower operations, as well as fundraising opportunities for local non-profit organizations through food concessions during the events.

The Trenton Falls Scenic Trail events provide the pubic the opportunity to view the scenic falls and provide safe access in a controlled manner to areas adjacent to the Trenton falls gorge and surrounding the Project facilities (i.e., along the Trenton penstock). Overall, visitors to the Trenton Falls Scenic area rated the condition of the trails as excellent, felt very safe at the site, and were satisfied with the number and type of available recreation facilities. In addition, most survey respondents rated the scenic views along the trail and of the overlooks as excellent or good.

This controlled access allows visitors to enjoy the recreation activities and views of Trenton Gorge in a safe and festive environment event. Providing uncontrolled public access to the Trenton Falls gorge area would pose significant safety and security risks to the public due to the steep gorge and waterfall areas, unexpected water discharges, limited egress opportunities, limited rescue options, and uncontrolled access to adjacent Project facilities and infrastructure. The Trenton Trail event allows public access in a controlled manner that is consistent with FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

3.7.3 Downstream West Canada Creek

The downstream West Canada Creek, which extends over 30 miles and is located outside of the Project boundary, provides recreation opportunities for multiple recreation user groups, including fishing, tubing, whitewater boating, scenic viewing. Various existing public (NYSDEC and informal roadside access) and private (campground) access areas are

[17] The Trenton Scenic Trails event was cancelled during 2020 due to COVID safety considerations.

available at multiple locations along the downstream reach. As summarized in Section 3.7.1, existing public access areas are available via the New York State Department of Transportation (NYSDOT) and roadside pull-offs, commercial operations (West Canada Creek and KOA campgrounds), and NYSDEC access sites along various locations of downstream West Canada Creek. These access areas are all located outside of the existing Project boundary and are not associated with Project facilities or access.

Multiple factors influence flow in downstream West Canada Creek. Inflow to the West Canada Creek that would be available for downstream flow releases would be dependent on inflow releases from Hinckley Reservoir. Estimated[18] flow travel time from Trenton tailrace down to Kast Bridge is approximately 6 to 8 hours depending on flow levels. Tributaries in the downstream reach, such as Cincinnati Creek, Cold Brook and Mill Creek, can contribute significantly to overall flow and "flashiness" in the downstream reaches during a significant rain event.

As described in Section 2.2, *Applicant's Proposed Action,* Erie proposes to provide scheduled Project flow releases to downstream West Canada Creek to supplement downstream tributary flows, if sufficient inflow is available from Hinckley Reservoir, in order to provide tubing and whitewater opportunities along the 28-mile stretch of the West Canada Creek below Trenton. This proposal also gives consideration of release timing of these scheduled flows in relation to wade fishing opportunities in the Trophy Section of the West Canada Creek. Erie would provide these releases to obtain flows within the targeted range of 800 cfs to 1,200 cfs as measured at the USGS Kast Bridge Gage (No. 01346000) with a targeted 4-hour duration on 10 weekdays and 10 weekend days annually.

Erie will implement these targeted flow releases during May through September, on the second and third Wednesday each month and second and third Saturday of each month within the 8:00 am to 12:00 pm period. Releasing of these flow within this time period would allow for wade fishing opportunities in the Trophy Section during early morning and late evening hours, and provide downstream flows in the late morning and afternoon for tubing and whitewater boating opportunities due to the 8- hour travel time to Kast Bridge and furthest take-out location for whitewater boating. In the event inflow from Hinckley Reservoir is actual or forecasted to be less than or greater than the supplemental

[18] Based on level logger data and in-field experience obtained during the 2019 studies, and input from AW and boating participants from the local area with previous experience boating the downstream reach.

Project flows needed to achieve the downstream targeted releases or if Project maintenance or construction activities or outages limit Erie's ability to provide the releases, Erie will not be required to reschedule and provide any additional flow releases to compensate.

Erie proposes to continue to provide information regarding flow releases at the Trenton Powerhouse as well as additional measures to post proposed whitewater boating flow release schedules via SafeWaters, a publicly accessible website and toll-free phone line, or a comparable system. The flow information would provide anglers, tubers, and boaters information regarding flow releases within West Canada Creek, as well as information provided via the USGS Kast Bridge gage. Erie's proposed flow releases and flow information system would provide enhanced fishing, tubing, whitewater boating opportunities in the downstream West Canada Creek.

3.7.4 Proposed Environmental Measures

As described in Section 2.2, *Applicant's Proposed Action,* Erie proposes to develop and implement a Recreation Management Plan that will include description of the existing Project recreation facilities (i.e., Prospect boat launch and Trenton Falls Scenic Trail); a description of the operation and maintenance of the Project recreational facilities; and measures to assess and implement, as appropriate, universally accessible features at the existing Prospect Boat Launch, and appropriate railing dimensions at the existing overlook railing at Trenton Falls Scenic Trail accessible overlook.

Erie proposes to maintain existing public access and facilities at the Prospect boat launch and to continue to implement the Trenton Falls Scenic Trail special event in coordination with the Town of Trenton to provide controlled public access to the Trenton Falls Scenic Trail annually during one or two weekends in the spring and one or two weekends in the fall, to be scheduled in consultation with the Town of Trenton.

Erie proposes to provide Project flow releases to downstream West Canada Creek to supplement downstream tributary flows, if sufficient inflow is available from Hinckley Reservoir, in order to provide scheduled whitewater boating and tubing flows in the downstream West Canada Creek reaches, as described in Section 2.2, *Applicant's Proposed Action*.

Erie proposes to continue to provide information regarding flow releases at the Trenton Powerhouse as well as additional measures to post proposed whitewater boating flow release schedules via SafeWaters, a publicly accessible website and toll-free phone line, or a comparable system.

3.7.5 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on recreation resources.

3.8 Land Use and Aesthetic Resources

3.8.1 Affected Environment

3.8.1.1 Land Use

The West Canada Creek drainage basin, beginning in the Adirondack Mountains and ending at the Mohawk River just east of the village of Herkimer, is approximately 77 percent forested, with sparse rural residential uses in the upper basin, agricultural uses in the lower basin, and residential and commercial land uses in towns and villages along West Canada Creek (Milone & MacBroom 2014). Vegetation within the watershed is dominated by northern hardwood forest (62 percent) followed by mixed evergreen-deciduous forest and woodland (7.6 percent) and pasture/hay agricultural lands (7.2 percent) (MRLC 2011).

The West Canada Creek provides recreational opportunities and is one of the most renowned trout streams in central New York. The reach from Dover Road Bridge (immediately below Nine Mile Creek Feeder Dam), approximately 2.5 miles downstream to the confluence of Cincinnati Creek, is a NYSDEC-stocked catch and release zone, known as the Trophy Section, where year-round fishing is permitted (see Section 3.7, *Recreation Resources*). Lands adjacent to the Project are generally wooded, but several farm fields are scattered in the area. A majority of this land is privately owned and consists of private year-round or vacation residences and rural vacant land. Lands within the Project boundary are primarily wooded and used for the operation and maintenance of the Project.

The Project does not include any lands of the United States within the existing Project boundary. The Project resides in the towns of Trenton in Oneida County, and Russia in

Herkimer County. Both towns are considered rural gateway communities to Adirondack Park as they are situated in a transition area between the populated Mohawk Valley region and the sparsely settled woodlands of the lower Adirondacks (Town of Russia 2005). Lands within the Project boundary are subject to the Town of Trenton and the Town of Russia zoning rules and regulations. Town of Trenton lands within 300 feet of the West Canada Creek shoreline are managed as a Special Land Conservation District and lands beyond the 300-feet designation are managed as either residential rural, medium density residential, or residential agriculture (Town of Trenton 2011). Town of Russia lands within 150 feet of the West Canada Creek shoreline are managed as a Shoreline District and the rest of the lands beyond the 150-feet designation are managed as a low-density residential district (Town of Russia 2005).

Erie has developed, according to FERC's Guidelines for Public Safety at Hydropower Projects, Public Safety Plans for the West Canada Creek Project, which is revised on a regular basis as conditions warrant. These plans (and revisions) are reviewed and accepted by the FERC New York Regional Office. Erie operates the Project consistent with its commitment to public and employee safety. In accordance the terms and conditions set forth in Form L-4 (Standard Article 18) of the license, Erie restricts from public access such portions of the project waters, adjacent lands and project facilities necessary for the protection of life, health and property. Erie follows FERC's guidelines for public safety, including FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

Prospect Development

The Prospect impoundment is primarily undeveloped with vegetated and wooded shorelines, and one area of limited residential development along the upper eastern shoreline outside of the existing Project boundary. Public access sites along the northern shoreline include the existing Prospect boat launch (a Project recreation site), the informal access near Hinckley Road bridge, and the Jarvis Project tailrace informal access area.

The Prospect bypass reach extends approximately 1.2 miles, including approximately 0.4 miles above Military Bridge, and 0.8 miles below Military Bridge. Lands adjacent to both sides of the Prospect bypass reach above Military Road Bridge are owned by Erie. Downstream of Military Bridge adjacent lands are owned by Erie along the eastern shoreline, with one small parcel owned by the MVWA which is in close proximity to, but not adjacent to the Prospect bypass reach. Adjacent lands along the western shoreline

downstream of Military Bridge are owned by a private landowner, the Town of Trenton, and MVWA (Figure 3-24) (Herkimer County 2020, Oneida County 2020). The MVWA facility is a regional water supply treatment plant that supplies drinking water for approximately 128,000 residents within the MVWA service area, including the City of Utica (MVWA 2020). The MVWA plant includes infrastructure facilities and settling pond areas.

Trenton Development

Both the eastern and western impoundment shorelines are wooded with steep vertical bedrock ledges along the narrow and gorge-like configuration. The Trenton bypass reach traverses through the Trenton Falls gorge, which due to the steep gorge and wooded adjacent shoreline, is primarily undeveloped with limited and restricted access. Land ownership adjacent to the Project boundary along the western bypass reach shoreline is primarily owned by Erie. Along the eastern bypass reach shoreline, adjacent lands to the Project boundary are owned by Erie in the upper portion, and along the lower portion of the bypass reach, the adjacent lands to the Project boundary are privately owned (Figure 3-25) (Herkimer County 2020, Oneida County 2020).

The Trenton bypass reach is restricted from public access due to public safety risks associated with a steeply walled gorge which contain a series of waterfalls, with elevation drops of up to 100 feet at the waterfalls, unexpected water discharges, and adjacent Project facilities. Erie maintains fencing and signage along the western shoreline from the Trenton dam to the Trenton Powerhouse; the Project dam and powerhouse facilities are gated and locked. Erie restricts these portions of the Project land and facilities from public access for public safety and for Project security purposes (Kleinschmidt 2020g).

3.8.1.2 Aesthetics

Visual Character of Project Lands and Waters

Prospect impoundment is approximately 2 miles long and is relatively narrow. Steep stream banks surround the Prospect bypass reach, powerhouse, and tailrace. Approximately 50 percent of the Prospect impoundment is accessible from State Route 365 where views of the impoundment can be seen from the road or formal/informal access points. Below Prospect impoundment, the 1.2-mile long Prospect bypass reach includes Prospect Falls, a rounded bedrock ledge that spans the creek channel and has a vertical drop of approximately 35-40 feet (Northern New York Waterfalls 2020).

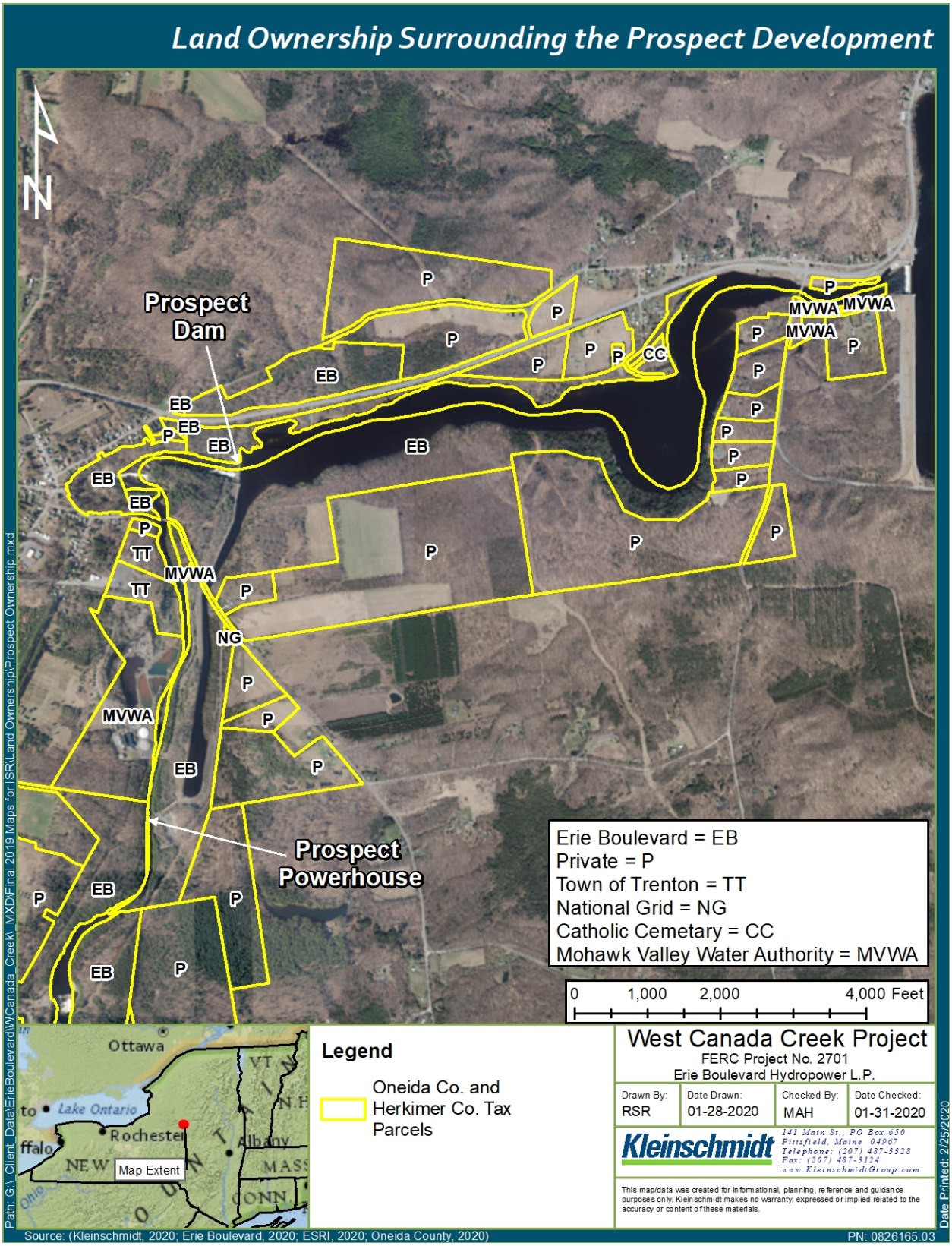


Figure 3-24 Adjacent Land Ownership Prospect Development

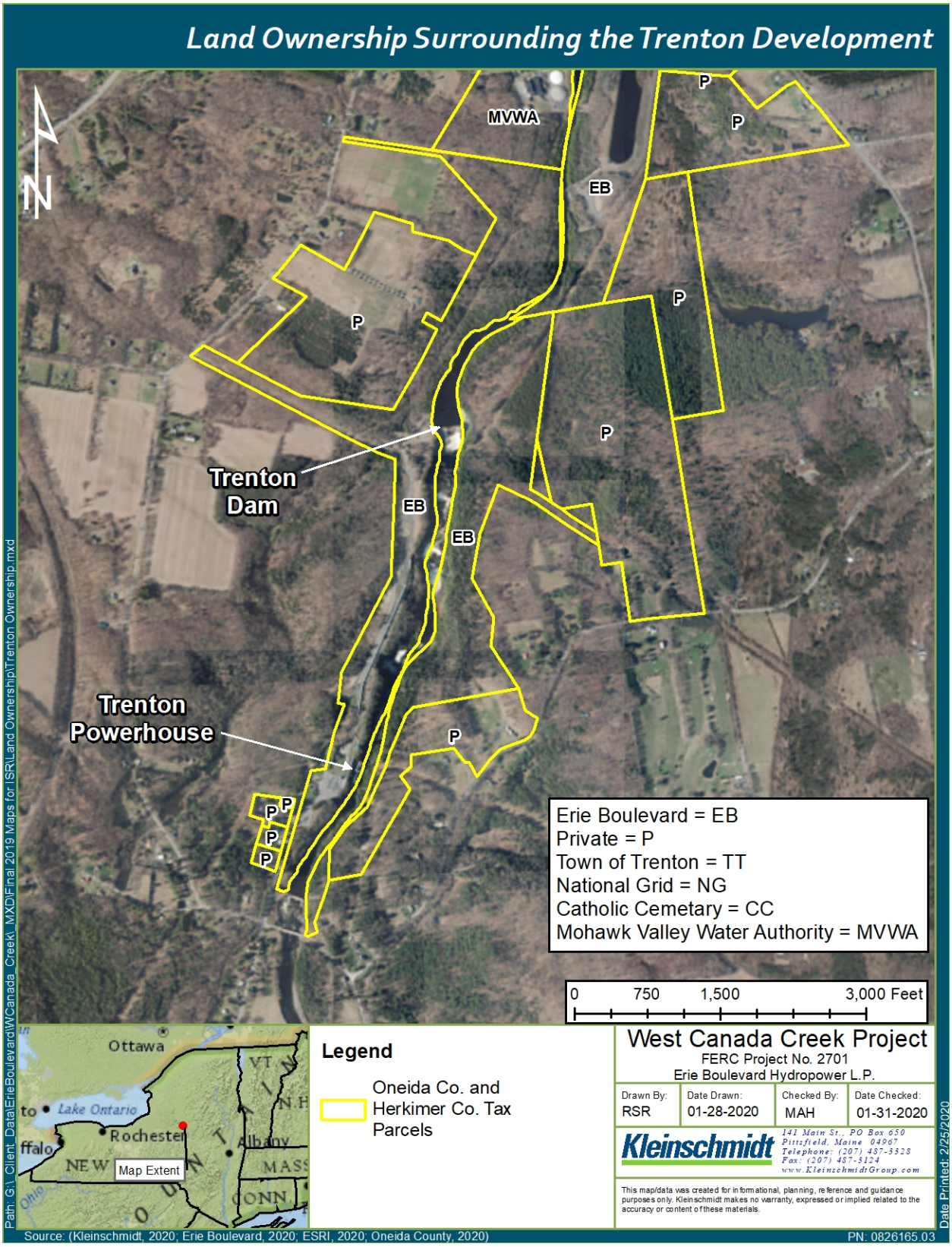


Figure 3-25 Adjacent Land Ownership Trenton Development

The Prospect bypass reach is bordered by primarily steep cliffs, a solidly wooded shoreline and adjacent forest. Public overlooks are available from a small park with a wooden deck, and a formalized roadside overlook (both located outside of the Project boundary in the hamlet of Prospect), and from the Military Road bridge downstream of the falls. Views from the hamlet have been made available by Erie through the periodic clearing of trees to create open viewing corridors between the two overlooks and Prospect Falls. These views feature the falls in the distance, surrounded by forest (EDR 2020).

From the Prospect tailrace, West Canada Creek enters the Trenton impoundment. The Trenton impoundment is approximately 0.5-mile in length and resides within the narrow, steep rock-walled gorge. The Trenton bypass reach flows through a steeply walled gorge, with and steep cliffs and primarily forested wooded slopes along the adjacent shoreline. The Trenton bypass reach includes four waterfalls: Mill Dam Falls (approximately 14-foot drop), Upper High Falls (approximately 40-foot drop), Lower High Falls (approximately 100-foot drop), and Sherman Falls (approximately 33-foot drop). With the exception of Mill Dam Falls, all of these waterfalls consist of vertical ledges of exposed bedrock with deep plunge pools at the base of the falls (EDR 2020).

Erie, in partnership with the Town of Trenton, provides controlled public access to the Trenton Falls Scenic Trails for 1 to 2 weekends in the spring and 1 to 2 weekends in the fall. This provides residents and tourists opportunities to view and experience the scenic vistas of Trenton Falls Gorge and the waterfall during these periods. Prospect Village additionally provides an overlook platform, outside of the Project boundary, in the center of town for viewing the Prospect Falls area (see Section 3.7, *Recreation Resources*).

All facilities at the Prospect Development were constructed between 1956 and 1959, and facilities at the Trenton Development were constructed between 1899 and 1918; both developments highlight designs from their respective eras of construction. The original Trenton Powerhouse (Powerhouse No. 1) built in 1901 is constructed of native stone building material and a second 1918 powerhouse (Powerhouse No. 2) abuts Powerhouse No. 1 on the upstream side and is made of steel-framed concrete. The Trenton Development steel surge tank is painted green to have a similar color as the surrounding environment.

Aesthetic Flow Study

Erie conducted the Aesthetic Flow Assessment (EDR 2020), which investigated the aesthetic effects of various controlled releases through the Prospect and Trenton Falls bypass reaches. The goal of this study was to gather information on the existing aesthetic character and potential aesthetic flow viewing opportunities within the Project bypass reaches. The study involved identification and documentation of existing conditions at key observation points (KOPs) associated with the Project's bypass reaches, development of an aesthetic flow survey form, determination of the range of targeted flow volumes to be used for the aesthetic flow evaluation, a controlled flow assessment field evaluation of the viewing characteristics from selected KOP locations, and analysis of the results of the controlled flow evaluation (EDR 2020).

The Aesthetic Flow Assessment study area included the Prospect and Trenton Falls bypass reaches on West Canada Creek. Five KOPs were chosen as locations for analysis of various flows. These include two sites with views of the Prospect bypass reach (KOPs 1b and 2) and three sites with views of the Trenton Falls bypass reach (KOPs 4, 5 and 7) (Figure 3-26). Targeted flows included 100, 200, and 300 cfs for the aesthetic controlled flow study at Prospect bypass and 100, 200, and 400 cfs for the study at Trenton. Table 3-18 provides a summary of flow ranges during the flow assessment.

Table 3-18 Summary of Flow Ranges during the Aesthetic Flow Assessment

Development	Target Flow (cfs)	Gate Opening (ft)	Average Pond Elevation (ft msl USGS)	Engineering Calculated Discharge Range (cfs)[1]
Prospect bypass reach	100	0.20	1159.0	99-107
	200	0.40	1159.1	198-214
	300	0.60	1159.1	296-319
Trenton bypass reach	100	0.65	1021.2	124-134
	200	1.25	1019.9	209-227
	400	1.85	1019.8	298-323

[1]Estimated flow release range based on engineering calculations of gate releases for the Prospect and Trenton bypass reaches during the September 24, 2019 aesthetic controlled flow release study.

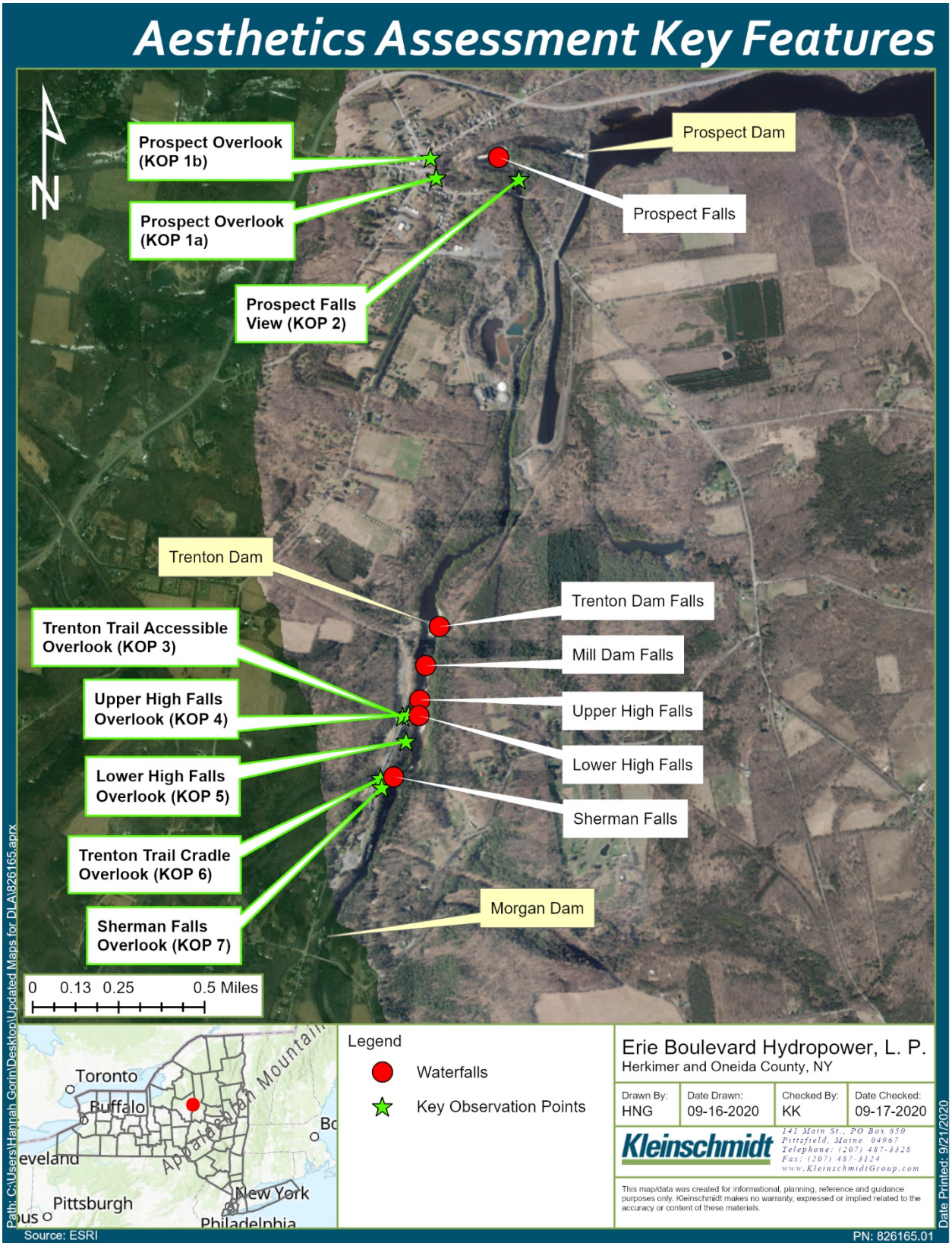


Figure 3-26 West Canada Creek Aesthetic Assessment Study Area with KOP Locations

Aside from the benefit of going from leakage flow to 100 cfs, the focus group participants identified the greatest incremental benefit in both bypass reaches in going from flows of 100 cfs to flows 200 cfs. The average overall aesthetic rating scores increased by an average of 27.2 percent by going from 100 cfs to 200 cfs in the Prospect bypass reach, and by 24.7 percent by going from 100 cfs to 200 cfs in the Trenton Falls bypass reach. By contrast, the same scores increased by 10.1 percent when going from 200 cfs to 300 cfs in the Prospect bypass reach, and only 3.6 percent when going from 200 cfs to 400 cfs in the Trenton Falls bypass reach. At flows of 200 cfs, the majority of the focus group participants assigned scores in the range of 4.0 (3.6-4.2) for overall aesthetic quality at all of the KOPs evaluated in both the Prospect and Trenton Falls bypass reaches, indicating that at this flow aesthetic conditions were generally considered appealing at all of the sites evaluated within the study area. Additional information pertaining to the aesthetics controlled flow assessment is provided in the Aesthetics Flow Assessment Study report (EDR 2020).

At Trenton Falls, intercept surveys of visitors during the 2019 Trenton Falls trail days indicated that flows released on these days (within the range of 200 to 325 cfs) were widely viewed as aesthetically appealing by the public. For the overall scenic quality, 94 percent of the respondents collectively (total across all days) rated the scenic quality as excellent (69 percent) or good (25 percent). The average rating for the overall scenic views was 4.6, on a scale from 1 to 5, with 1 being poor and 5 excellent additional discussion on the intercept surveys can be found in the Recreation Use, Needs and Access Study Report (Kleinschmidt 2020g).

Bypass flows typically occur during periods where inflow exceeds the station's hydraulic capacity (Prospect Development at 1,855 cfs and Trenton Development at approximately 1,425). In addition, bypass flows can occur when inflow is below the station's minimum hydraulic capacity for prolonged periods and during periods when there are planned or unplanned station outages, such as construction or maintenance activities and transmission line outages. Station outflow and spill data in hourly intervals for the Prospect and Trenton Developments were obtained from Erie operation records for the period of January 1, 2015, to December 31, 2019. Hourly data was used for the time series analysis and daily average data was used for the flow exceedance analysis.

On an annual basis, Prospect bypass flows (spill) of 100 cfs, 200 cfs, 300 cfs are available approximately 16 percent, 13 percent, and 10 percent of the time, respectively. Prospect

bypass flows (spill) of 100 cfs to 300 cfs are available most frequently in April (approximately 37 to 38 percent of the time). During the main recreation season, Prospect bypass flows (spill) of 100 cfs to 300 cfs are available approximately 17 to 20 percent of the time in May, 2 to 7 percent in June, 8 to 14 percent in July, 6 to 22 percent in August, and 10 to 20 percent in September[19] (Table 3-19).

Table 3-19 Prospect Bypass Reach Frequency of Targeted Aesthetic Study Flow Ranges (2015-2019)

Month	Percent of time Flow Equaled or Exceeded			
	100 cfs	200 cfs	300 cfs	400 cfs
January	5	3	2	2
February	11	2	1	0
March	16	6	5	4
April	38	37	37	35
May	20	17	17	15
June	7	5	2	2
July[3]	14	12	8	7
August[3]	22	20	6	1
September[3]	20	19	10	5
October[3]	25	25	25	24
November[3]	15	11	9	9
December	3	2	2	1
Annual	**16**	**13**	**10**	**9**

[1] Data for period January 1, 2015-December 31, 2019, based on daily average data.
[2] 2019 data reflect 99-year flood of record on November 1, 2019.
[3] Includes spill that occurred during station outage period from late July 2015- November 2015 due to maintenance activities.

At the Trenton Development, annually, spill rates of 100 cfs, 200 cfs, 300 cfs, and 400 cfs occur approximately 18 percent, 16 percent, 14 percent, and 12 percent of the time, respectively. Flows (spill) of 100 cfs to 400 cfs are available most frequently in April (approximately 44 to 52 percent of the time). During the main recreation season, flows (spill) of 100 cfs to 400 cfs are available approximately 16 to 28 percent of the time in May, 6 to 17 percent in June, 2 to 8 percent in July, 0 percent in August, and less than 2 percent in September (Table 3-20).

[19] Includes spill that occurred during station outage period from late July 2015- November 2015 due to maintenance activities

Table 3-20 Trenton Bypass Frequency of Targeted Aesthetic Study Flow Ranges

Month	Percent of time Flow Equaled or Exceeded			
	100 cfs	200 cfs	300 cfs	400 cfs
January	29	28	28	22
February	27	25	22	18
March	17	15	10	6
April	52	49	46	44
May	28	23	21	16
June	17	12	8	6
July	8	6	4	2
August	0	0	0	0
September	2	1	1	<1
October	7	6	5	5
November	19	17	16	15
December	14	12	11	10
Annual	**18**	**16**	**14**	**12**

[1] Data for period January 1, 2015-December 31, 2019, based on daily average data.
[2] 2019 data reflect 99-year flood of record on November 1, 2019.

3.8.2 Environmental Effects

3.8.2.1 Land Use

In the SD3 (FERC 2020a), FERC identified issues for environmental analysis related to land use resources to include the effects of project operation and maintenance on land use resources within the Project area. Erie is not proposing any changes to the Project or any changes in the operation of the Project. Erie is not proposing the construction of any new Project facilities or recreation facilities or ground disturbing activities that have the potential to impact current land use in the Project boundary. Erie is proposing to modify the existing Project boundary to remove the existing substations, which are no longer owned by Erie and are not a Project component. Erie's proposed Project boundary modification and continued Project operations would not adversely affect land use resources within the Project area.

The Prospect bypass eastern shoreline downstream of Military Bridge is a steep cliff (almost 100 percent of the shoreline) and provides no safe access or egress. Approximately 70 percent of the Prospect bypass western shoreline is steep/cliff. The remaining area predominantly has loose rock and provides difficult access to the stream

channel, and this area is adjacent to the MVWA parcel and associated infrastructure. The Trenton impoundment and bypass reach traverses through the Trenton Falls gorge, which due to the steep gorge and wooded adjacent shoreline, is primarily undeveloped with limited and restricted access. The Trenton bypass reach traverses through a steeply walled gorge which contain a series of waterfalls, with elevation drops of up to 100 feet at the falls, unexpected water discharges, and adjacent Project facilities.

Erie has restricted access to the Prospect bypass, Trenton impoundment and bypass reach for safety reasons, including unexpected water discharges, limited egress opportunities, and limited rescue options. Erie restricts public access to this area through signage and fencing for both public safety and Project security purposes. Erie follows FERC's guidelines for public safety, including developing and implementing Public Safety Plans for the Project, according to FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

Erie provides public access to the Prospect impoundment and during controlled public events at Trenton Falls Scenic Trail event for viewing of the Trenton Falls Gorge. During the Trenton Falls event, visitors are provided access to areas adjacent to Project facilities (i.e., penstock) and behind Project facility secured locked fencing. This controlled event access provides Erie the ability to monitor Project facilities to limit any potential vandalism and manage public safety when the public is afforded access to these areas. Accordingly, Erie provides public recreation opportunities and access at the Project and in accordance to the terms and conditions set forth in Form L-4 (Standard Article 18) of the license, restricts public access from portions of the project waters, adjacent lands and project facilities as necessary for the protection of life, health and property.

3.8.2.2 Aesthetics

In the SD3 (FERC 2020a), FERC identified issues for environmental analysis related to land use resources to include the effects of project operation and maintenance on aesthetic resources within the project area. Erie is not proposing any changes to the Project or any changes in the operation of the Project. Erie is not proposing the construction of any new Project facilities or recreation facilities or ground disturbing activities that have the potential to impact current land use in the Project boundary.

As described in Section 2.2, *Applicant's Proposed Action and* Section 3.8.3, Erie is proposing aesthetic flow releases with a target flow of 300 cfs in the Prospect bypass reach for a

targeted 4-hour duration for up to 2 spring special event days, to be scheduled in consultation with the Town of Trenton, and to provide aesthetic flow releases with a target flow of 300 cfs in the Trenton bypass reach for a targeted 8-hour duration for up to 2 scheduled Trenton Falls Scenic Trail special events, to be scheduled in consultation with the Town of Trenton. In addition, Erie has historically conducted periodic clearing of vegetation to maintain public viewing opportunities of both leakage and natural flow exceedance events at both Prospect Falls (via the Prospect Park and Overlook,) and Trenton Falls (via the scheduled Trail events).

Erie incorporated questions related to the recreation visitor's perceptions of aesthetic resources at Trenton Trail as part of the recreation intercept survey conducted as part of the Recreation Use, Needs and Access Study (Kleinschmidt 2020g) (see also Section 3.7, *Recreation Resources)*. For the overall scenic quality, 94 percent of the respondents rated the scenic quality as excellent (69 percent) or good (25 percent), and the average rating for the overall scenic views was 4.6, on a scale from 1 to 5, with 1 being poor and 5 excellent. At Trenton Falls, intercept surveys of visitors during the 2019 Trenton Falls trail days indicated that flows on these days (within the range of 200 to 325 cfs) were widely viewed as aesthetically appealing by the public.

The Trenton Trail event provides the opportunity for visitors to view the scenic gorge during the spring high flow period, and during the fall leaf-season, typically lower flow period. The public can view the falls during periods of higher flows, and during periods where the geology of the gorge is more exposed, providing the public a diversity of aesthetic viewing opportunities. Erie proposes to continue the Trenton Trail event under the Proposed Action, and therefore, these aesthetic viewing opportunities would remain available for public viewing in a safe and controlled manner (see also Section 3.7.2, *Recreation Resources*).

Erie proposes enhancement measures that includes provisions of aesthetic flows in the Trenton and Prospect bypass reaches as described in Section 2.2, *Applicant's Proposed Action* and Section 3.8.3. These scheduled releases would provide enhanced aesthetic viewing opportunities to visitors during the Trenton Trail day events and during special event days at Prospect developed in consultation with the Town of Trenton. Therefore, Erie's continued Project operation and associated PME measures, would not result in adverse effects to aesthetic resources, and would continue to provide beneficial special event aesthetic viewing opportunities to the public.

3.8.3 Proposed Environmental Measures

Erie proposes the following aesthetic flows in the Project bypass reaches, if sufficient inflow is available from Hinckley Reservoir to sustain minimum generation and the targeted aesthetic flows:

- Prospect bypass reach - Provide aesthetic flow releases with a target flow of 300 cfs in the Prospect bypass reach for a targeted 4-hour duration for up to 2 spring special event days to be scheduled in consultation with the Town of Trenton.
- Trenton bypass reach- Provide aesthetic flow releases with a target flow of 300 cfs in the Trenton bypass reach for a targeted 8-hour duration for up to 2 scheduled Trenton Falls Scenic Trail special events to be scheduled in consultation with the Town of Trenton.

In the event that sufficient inflow from Hinckley Reservoir is not available to achieve these target releases, or if Project maintenance or construction activities limit Erie's ability to provide the targeted number of proposed releases annually, Erie will not be required to reschedule and provide any additional flow releases to compensate. Additionally, Erie proposes to post via SafeWaters, or a comparable system, proposed scheduled aesthetic flow events and unscheduled spill events within the Prospect bypass reach.

3.8.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on land use and aesthetic resources.

3.9 Cultural and Tribal Resources

3.9.1 Affected Environment

Beginning in the late 1700s, the area along West Canada Creek in the vicinity of the Project began to be settled and populated. By the early 1800s, improved transportation led to the development of limestone quarries on either side of the gorge, as well as two sawmills and a gristmill. Improved transportation also led to the rise of tourism, with Trenton Falls drawing visitors. By the late 1800s, industry in nearby Utica was booming after new transportation improvements resulted in an economic shift from tourism to a concentration of textile plants, including steam-powered cotton and woolen mills. Several power companies began considering the Trenton gorge for power development, and ultimately merged to raise enough capital to construct the Trenton Hydroelectric Project.

Planning began in the late 1890s, following the opening of the first powerhouse at Niagara. The Niagara powerhouse design strongly influenced construction of the first powerhouse at Trenton from 1899 to 1901, but in 1917, technology had improved to the point where it was reasonable to design and construct a second powerhouse at Trenton (HAER 1993a, 1993b).

3.9.1.1 Historic Properties

The New York SHPO and the Division for Historic Preservation within the New York Office of Parks, Recreation, and Historic Preservation (NYOPRHP) maintains the New York State Cultural Resource Information System (CRIS). CRIS contains a comprehensive inventory of archeological sites, State and NRHP properties, properties determined eligible for the NRHP, and previous cultural resource surveys (NYOPRHP 2018). In addition, the Trenton Powerhouse Historic American Engineering Record (HAER) documentation was reviewed for additional information regarding cultural and historic resources at the Project (HAER 1993a, 1993b). An examination of the CRIS indicated there was one property located adjacent to the Project (New York State Barge Canal Historic District) that is listed on the NRHP. In addition, the Trenton Powerhouse is eligible for listing on the NRHP. The New York State Barge Canal Historic District and Trenton Powerhouse are summarized in the following sections.

New York State Barge Canal Historic District

The New York State Barge Canal is a nationally significant work of early twentieth century engineering and construction that affected transportation and maritime commerce across the eastern third of the continent for nearly half a century. The New York State Barge Canal System's four main branches, the Erie, Champlain, Oswego, and Cayuga-Seneca canals, are much enlarged versions of waterways that were initially constructed during the 1820s. The Erie Canal, first opened in 1825, was America's most successful and influential manmade waterway, facilitating and shaping the course of settlement in the Northeast, Midwest, and Great Plains; connecting the Atlantic seaboard with territories west of the Appalachian Mountains, and establishing New York City as the nation's premiere seaport and commercial center. The Hinckley Dam, Hinckley Reservoir, and Nine Mile Creek Feeder Dam, all located outside of the Project boundary, are all considered discontiguous contributing properties to the New York State Barge Canal Historic District (NRHP No. 14000860) (the Jarvis Project is considered a noncontributing property) (NPS 2017). The Project and lands within the Project boundary are not contributing properties of the New

York State Barge Canal Historic District; and therefore, are located outside of this designated historic district.

Project Facilities

Prospect Powerhouse

Project facilities at the Prospect Development were constructed between 1956 and 1959 and commercial operation began in 1959. As summarized in the timeline in Exhibit C, rehabilitation and construction of a new substation was completed in the 1990s. No NRHP evaluation has been requested or conducted of the Prospect Powerhouse or facilities.

Trenton Powerhouse

The original power station (Powerhouse 1) at Trenton Falls was constructed in 1901. At the time of its construction, the facility was the highest head plant in the United States to use turbines rather than impulse or Pelton water wheels. It was also the first to use high head turbines designed and constructed in America. In 1918, technology had improved to the point that a second powerhouse (Powerhouse 2) was constructed as an integral extension of the original. The rapid redevelopment of the Trenton Powerhouse is indicative of the rapidly changing industry at that time (HAER 1993a, 1993b).

The Trenton Powerhouse 1 is eligible for listing on the NRHP. The previous owner (Niagara Mohawk Power Company) proposed station modifications in the 1970s. As a result, the Project was reviewed by the Advisory Council on Historic Preservation, the New York SHPO, and FERC. As required by Article 35 of the existing FERC License, before modifications to the Project, Niagara Mohawk Power Company conducted a HAER documentation of the Trenton Powerhouse (HAER 1993a, 1993b). FERC requested and Erie provided additional information including the HAER documentation for the Trenton Development (November 13, 2018).

3.9.1.2 Archeological Resources

The Trenton area is known to be rich with fossils of the extinct arthropods, trilobites. They are regularly discovered as well-preserved samples in the layers of limestone along the gorge and in the surrounding area (Brett and Caudill 2004). Generally, areas within New York were occupied in the Paleoindian stage following the end of the Wisconsin glaciation, around 8,000 B.C., however, no indications of use of this land by the expected

nomadic, big-game hunters (such as discovery of fluted projectile points), have been identified in either Oneida or Herkimer county (Ritchie and Funk, 1973, as cited in Pratt and Pratt Archeological Consultants 1978).

As required by Article 35 of the existing FERC License, if any previously unrecorded archeological sites are discovered during the course of construction or development of project facilities, construction activity in the vicinity must be halted, a qualified archeologist must be consulted to determine the significance of the sites, and Erie must consult with the SHPO to develop a mitigation plan for the protection of significant archeological resources.

3.9.1.3 Area of Potential Effect

FERC requested in its comments on the PAD, that Erie conduct a search of the New York CRIS for the area along and adjacent to the Trenton Falls Scenic Trail to identify whether there are any archeological sites, New York State and NRHP-listed properties, properties determined eligible for the NRHP, and/or previous cultural resources surveys identified in this area. FERC staff recommended that the Trenton Falls trail be considered to be within any APE that will be defined since it provides public access to the Project. The APE, defined under Section 106 of the NHPA [36 CFR Part 800.16(d)], includes land within the existing Project boundary.

Erie initiated consultation with the New York SHPO on December 7, 2018, for the Project. New York SHPO responded that the Project would not affect historic properties including archaeological and/or historic resources. However, after reviewing the Project location in the CRIS, Erie noticed that the system did not have the correct location for the Project. Therefore, Erie resubmitted Project documents, including the PAD with the project boundary and Project location maps to the CRIS on April 3, 2020, and requested that the documents be reviewed by the New York SHPO.

The New York SHPO reviewed the Project in accordance with Section 106 of the NHPA, and the SHPO stated that it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking (letter dated April 17, 2020). Erie also consulted with the New York SHPO regarding the proposed APE for the proposed action (letter dated November 16, 2020). The New York SHPO (letter dated December 1, 2020) stated no concerns with the proposed APE for this Project (see Appendix A).

3.9.1.4 Tribal Resources

There are no Native American lands, known Native American TCPs or religious properties, or NRHP-eligible or -listed sites associated with Native American Nations within the Project boundary or which would likely be affected by the Project relicensing. The Oneida Indian Nation, Oneida Tribe of Indians of Wisconsin, and the St. Regis Mohawk Tribe have been consulted by Erie (via distribution of the NOI, PAD, ILP filings, and DLA) and by FERC (letters dated March 9, 2018). The Oneida Indian Nation responded via email (April 4, 2018) that the Nation had no comments or concerns regarding the Project relicensing (see Appendix A). No additional responses were received.

3.9.2 Environmental Effects

In the SD3 (FERC 2020a), FERC identified issues for environmental analysis associated with cultural resources to include: (1) the effects of project operation and maintenance on historic properties and archeological resources that are included in, eligible for listing in, or potentially eligible for inclusion in the NRHP; and (2) the effects of project operation and maintenance on any previously unidentified historic or archeological resources or traditional cultural properties that may be eligible for inclusion in the NRHP. Erie proposes to continue the current licensed mode of operation implementing and implementing the existing PME measures as described in Section 2.2, *Applicant's Proposed Action*. Erie is not proposing any changes to the Project or any changes in the operation of the Project. Erie is not proposing the construction of any new Project facilities or recreation facilities or ground disturbing activities that have the potential to impact eligible cultural resources. In addition, based on the New York SHPO April 17, 2020 letter (NYOPRHP 2020, Appendix A) there are no historic properties, including archaeological and/or historic resources, that will be affected by this undertaking.

As stated in Section 2.2, *Applicant's Proposed Action*, if any previously unrecorded archeological sites are discovered during the course of construction or development of any Project works or other facilities at the Project, Erie will stop construction activity, consult with a qualified archeologist, and if necessary, consult with the New York SHPO to develop a mitigation plan for the protection of significant archeological resources. Therefore, continued Project operation are not anticipated to result in adverse effects to archeological or historic properties within the Project's APE.

3.9.3 Proposed Environmental Measures

As stated in Section 2.2, *Applicant's Proposed Action*, if any previously unrecorded archeological sites are discovered during the course of construction or development of any Project works or other facilities at the Project, Erie will stop construction activity, consult with a qualified archeologist, and if necessary, consult with the New York SHPO to develop a mitigation plan for the protection of significant archeological resources.

3.9.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on cultural and tribal resources.

3.10 Socioeconomic Resources

3.10.1 Affected Environment

The Project is located in the towns of Trenton and Russia, within the counties of Oneida and Herkimer, New York, respectively. Oneida and Herkimer counties are located in the central portion of New York, east of Syracuse and west of Albany, and are considered gateways to the Adirondacks. Herkimer County is 1,412 square miles and consists of 30 municipalities (10 villages, 19 towns, 1 city) and Oneida County is of similar size at 1,213 square miles and consists of 48 municipalities (19 villages, 26 towns, 3 cities) (Oneida County 2017; New York State 2017a, 2017b). Historically the towns of Trenton and Russia were agricultural centers, with a small tourist industry related to Hinkley Reservoir and Adirondack Park. Today the towns serve as "bedroom communities for those employed in nearby cities such as Utica, Rome, city of Little Falls, and the villages of Herkimer and Mohawk (Town of Russia 2005).

Based on the U.S. Census Bureau (Census Bureau) Population Estimates Program, the populations of Herkimer and Oneida counties are decreasing by 4.9 and 2.6 percent respectively (Census Bureau 2019b). The estimated population in 2019 was 61,319 in Herkimer County, and 228,671 in Oneida County (Census Bureau 2019a). According to the 2010 census, Herkimer County has 45.7 persons per square mile, with 48 percent of residences in urban areas. Oneida County has 193.7 persons per square mile, with 67 percent of residences in urban areas (Census Bureau 2010).

The towns closest to the Project (Trenton, Remsen, Russia, and Ohio) are all considered 100 percent rural, with population densities ranging from 3 to 131 persons per square mile (Census Bureau 2010). Table 3-21 summarizes the estimated population in 2019 for towns located within the Project area. Table 3-22 summarizes the population density and place of residence for these areas during the 2010 census.

Table 3-21 Population in Towns Surrounding the Project Area

Location		Population Estimates		Percent Change
		2010	2019	
New York State		19,378,110	19,453,561	0.4%
Counties	Herkimer	64,468	61,319	-4.9%
	Oneida	234,889	228,671	-2.6%
Towns	Trenton	4,498	4,485	-1.1%
	Russia	2,587	2,497	-0.7%
	Remsen	1,929	1,877	-2.2%
	Ohio	1,002	997	0.1%

Source: Census Bureau 2019a, 2019b.

Table 3-22 Place of Residence and Density, 2010

Item	Oneida Co.	Town of Remsen	Town of Trenton	Herkimer Co.	Town of Ohio	Town of Russia	NY State
Place of residence: Urban	67%	0%	0%	48%	0%	0%	86%
Place of residence: Rural	33%	100%	100%	52%	100%	100%	14%
Persons per square mile	193.7	54.4	130.7	45.7	3.3	45.4	411.2

Source: Census Bureau 2010.

The 2014-2018, estimated median household income for Herkimer County and Oneida County was $51,862 (in 2018 dollars) and $23,844 (in 2018 dollars), respectively (Census Bureau 2019b). The poverty rate in Herkimer County is 13.5 percent, Oneida County is 14.8 percent, and New York state is in between the two at 13.6 percent (Census Bureau 2019b). Both counties have high percentages of high school graduates for the years 2014-

2018 at 89.9 percent (Herkimer County) and 88.6 percent (Oneida County) (Census Bureau 2019b).

Herkimer and Oneida counties are located in the Mohawk Valley region, for which the New York State Department of Labor identifies significant industries. Significant industries are identified based on the number of jobs, wages, and job growth. The 2019 Significant Industries Report identified the top five industries (both public and private sector) within the Mohawk Valley area, which includes: 1) educational services; 2) food services and drinking places; 3) hospitals; 4) nursing and residential care facilities; 5) social assistance (New York State Department of Labor 2019). Table 3-23 summarizes the estimated number of jobs and average annual salary within the significant industries in the Mohawk Valley Region in 2018. In Herkimer and Oneida counties, the most common employment sectors are healthcare and social assistance, retail trade, manufacturing (Herkimer County), and educational services (Oneida County) (Data USA 2017).

Table 3-23 Significant Industries in Mohawk Valley Region (2019)

Industry Name	2018 Job Count[1]	Average Annual Wage 2018
Specialty trade contractors	3,000	$50,700
Food manufacturing	2,600	$47,900
Primary metal manufacturing	2,700	$61,600
Warehousing and storage	4,300	$42,900
Educational services	22,700	$46,700
Ambulatory health care services	8,700	$51,900
Hospitals	11,800	$63,900
Nursing and residential care facilities	10,900	$34,200
Social assistance	10,900	$24,600
Accommodation	6,500	$33,500
Food services and drinking places	12,900	$17,800

[1] Represents both public and private sector jobs.
Source: New York State Department of Labor 2019.

The elevated number of educational service jobs is a result of the high number of higher education institutions located within the region. Twelve public and private colleges and

universities reside in the Mohawk Valley, and six reside within Herkimer and Oneida counties (Call Mohawk Valley Home 2017; Oneida County 2017). Table 3-24 lists the higher education institutions located within Herkimer and Oneida counties.

Utilities are considered one of the highest paying industries in Herkimer and Oneida counties, with median earnings of $66,250 and $65,250 respectively (Data USA 2017). The Project also has an impact on the surrounding economy. Erie directly employs 5 full-time employees at the Project, and numerous contractors routinely provide services at the Project.

Table 3-24 Herkimer and Oneida Counties Higher Education Institutions

Name	Location	Public/ Private	Type	Approximate Enrollment
Hamilton College	Clinton	Private	4-Year	1,700
Herkimer County Community College	Herkimer	Public	2-Year	2,500
Mohawk Valley Community College	Utica/Rome	Public	2-Year	5.000
State University of New York-Institute of Technology	Marcy	Public	4-Year	2,500
Utica College	Utica	Private	4-Year	2,500
Utica School of Commerce	Utica	Private	2-Year	350

Source: Oneida County 2017.

3.10.2 Environmental Effects

In the SD3 (FERC 2020a), FERC did not identify any specific resource issues related to socioeconomic resources. Agencies and stakeholders did not express concern, provide comments, or submit study plan requests with respect to socioeconomic resources during the scoping and study phases of the relicensing process. Erie is not proposing any changes to the Project or to operations. Erie will continue to employ staff to operate the facilities as well as contract work for service and maintenance at the Project. Continued operations of the Project will continue to provide clean and reliable renewable energy for consumers in the area for the term of the license.

3.10.3 Proposed Environmental Measures

Erie is proposing to continue the current licensed mode of operations and no specific resource issues were identified related to socioeconomic resources. Erie is not proposing any measures associated with socioeconomic resources.

3.10.4 Unavoidable Adverse Effects

Continued operation and relicensing of the Project as proposed is not expected to have unavoidable adverse effects on socioeconomic resources.

4.0 ECONOMIC ANALYSIS

4.1 Cost and Value of Operating and Maintaining the License

Erie is proposing no changes to the Project facilities. The overall cost and value of the licensed Project is presented in Exhibit D to this FLA.

4.2 Costs of Proposed Protection, Mitigation and Enhancement Measures

Table 4-1 provides a summary of estimated costs of Erie's proposed PME measures, including estimated capital cost, estimated annual operation and maintenance costs, and estimated lost generation (kilowatt-hours[kWh]). The PME measures proposed in this application will result in approximately $787,000 capital costs, increase the annual cost of operations and maintenance of the Project by approximately $86,500 annually, and result in approximately 9,126,000 kWhs of lost generation annually.

Table 4-1 West Canada Creek Project Estimated Costs for PME Measures

Proposed PME Measure	Capital Cost ($2021)	Annual Operations and Maintenance Costs ($2021)	Annual Estimated Lost Generation (kWh)[1]
Provide a continuous base flow of 160 cfs or inflow from the Project, whichever is less, as immediately measured downstream of the NYSCC diversion weir.	N/A	N/A	9,010,000
Maintain Prospect launch to provide public access to the Prospect impoundment.	N/A	$6,000	N/A
Voluntary implementation of Trenton Falls Scenic Trail under the existing license term; continue to provide controlled public access to the Trenton Falls Scenic Trail during one or two weekends in the spring and one or two weekends in the fall over the term of a new license.	$500,000[2]	$56,000	N/A
Develop and implement a Streamflow and Water Level Monitoring Plan that includes measures to maintain leakage flows to Prospect bypass reach.	$20,000	$10,000	N/A

Proposed PME Measure	Capital Cost ($2021)	Annual Operations and Maintenance Costs ($2021)	Annual Estimated Lost Generation (kWh)[1]
Develop and Implement a Recreation Management Plan that includes measures for targeted assessment of universally accessible features at existing Project facilities.	$40,000	$1,000	N/A
Provide Project flow releases to downstream West Canada Creek for target flows within the range of 800 cfs to 1,200 cfs as measured at the USGS Kast Bridge Gage for a targeted 4-hour duration on 10 weekdays and 10 weekend days during the May through September period annually.	$5,000	$1,000	Variable[3]
Provide public information regarding Project flow releases below Trenton Powerhouse via SafeWaters website, or a comparable system.	$6,000[2]	$5,500	N/A
Provide public information regarding aesthetic flow release viewing opportunities within the Prospect bypass reach via SafeWaters website, or a comparable system.	$6,000	$3,000	N/A
Provide aesthetic flow releases with a target flow of 300 cfs in the Prospect bypass reach for a targeted 4-hour duration for up to 2 spring special event days to be scheduled in consultation with the Town of Trenton.	$5,000	$2,000	24,000
Provide aesthetic flow releases with a target flow of 300 cfs in the Trenton bypass reach for a targeted 8-hour duration for up to 2 scheduled Trenton Falls Scenic Trail special events to be scheduled in consultation with the Town of Trenton.	$5,000	$2,000	92,000

Proposed PME Measure	Capital Cost ($2021)	Annual Operations and Maintenance Costs ($2021)	Annual Estimated Lost Generation (kWh)[1]
Voluntary installation of automated base flow release valve under existing license term; continue to operate and maintain the base flow release valve over the term of a new license.	$200,000[2]	N/A	N/A

[1] Represents estimated lost annual generation opportunities associated with spill and/or unit efficiency losses. This does not include energy value and demand associated with a shift from on-peak to off-peak operations.

[2] Includes costs voluntarily incurred during the existing license.

[3] Annual estimated lost generation associated with this proposal is highly variable and difficult to quantify lost generation opportunities given several influencing factors. These factors including tributary inflows below the Project that would directly influence the supplemental project flows needed to meet this requirement, the timing and volume of inflows to the Project, and unit efficiency losses based on timing and volume of supplemental flow that would be required to meet this proposal. An additional consideration would also include the energy value and demand associated with a shift from on-peak to off-peak operations.

5.0 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 USC Section 803 (a)(2)(A), requires FERC to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. On April 27, 1988, FERC issued Order No. 481-A, revising Order No. 481, issued October 26, 1987, establishing that FERC will accord FPA Section 10(a)(2)(A) comprehensive plan status to any federal or state plan that: (1) is a comprehensive study of one or more of the beneficial uses of a waterway or waterways; (2) specifies the standards, the data, and the methodology used; and (3) is filed with the Secretary of FERC. FERC currently lists 49 comprehensive plans for the state of New York (FERC 2020b). Of those, the following six comprehensive plans are identified as pertaining to waters in the vicinity of the Project:

- Adirondack Park Agency. n.d. New York State Wild, Scenic, and Recreational Rivers System Field Investigation Summaries. Albany, New York.
- National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.
- New York Department of Environmental Conservation. 1985. New York State Wild, Scenic, and Recreational River System Act. Albany, New York. March 1985.
- New York State Office of Parks, Recreation, and Historic Preservation. New York Statewide Comprehensive Outdoor Recreation Plan: 2003-2007[20.] Albany, New York. January 2003.
- U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American Waterfowl Management Plan. Department of the Interior. Environment Canada. May 1986.
- U.S. Fish and Wildlife Service. n.d. Fisheries USA: the Recreational Fisheries Policy of the U.S. Fish and Wildlife Service. Washington, D.C.

Based on a review of these plans, Erie has determined that current and proposed operations of Project facilities are consistent with these plans.

[20] An updated version dated 2020-2025 is available at https://parks.ny.gov/documents/inside-our-agency/20202025StatewideComprehensiveOutdoorRecreationPlan.pdf

6.0 REFERENCES

Adirondack.net 2020. Adirondack Park. Available at: https://www.adirondack.net/about/adirondack-park/.

American Whitewater (AW). 2005. International Scale of River Difficulty. Available: https://www.americanwhitewater.org/content/Wiki/safety:start?#vi.

AW. 2020a. New York U. S. River List. Available:https://www.americanwhitewater.org/content/River/state-summary/?state=NY.

AW. 2020b. American Whitewater New York Google Map, created by Alex Barham. Available at: https://www.google.com/maps/d/viewer?mid=1KH1qIJCWFfli5ZaRXfKxGZMas_A&ll=43.27818910490517%2C-74.94161962020871&z=10.

AW. 2020c. West Canada Creek – Trenton Falls to Herkimer. Available: https://www.americanwhitewater.org/content/River/detail/id/1453.

AW. 2020d. Ausable Chasm. Available: https://www.americanwhitewater.org/content/River/view/river-detail/1236/main

Bestplaces.net. 2020. Climate in Oneida County and Herkimer County New York. Available: https://www.bestplaces.net/find/county.aspx?st=new.

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.

Brett, C. E., and F.R. Caudill. 2004. Fossil Fauna of the Trenton Group, Phylum Arthropoda. Available: http://www.mcz.harvard.edu/Departments/InvertPaleo/Trenton/Intro/PaleoPage/TrentonFauna/TrentonFauna.htm.

Call Mohawk Valley Home. 2017. Education. Sponsored by Oneida County Industrial Development Agency. Available: http://www.callmohawkvalleyhome.org/listing.asp?categoryID=4.

Cornell Lab. 2019. All about Birds: Bald Eagle. [Online] https://www.allaboutbirds.org/guide/Bald_Eagle/overview.

Cornell Program on Applied Demographics (CPAD). 2018. County Projections Explorer. Available at: https://pad.human.cornell.edu/counties/projections.cfm.

Data USA. 2017. Herkimer County, NY. Available: https://datausa.io/profile/geo/herkimer-county-ny/.

Environmental Design & Research. (EDR). 2020. West Canada Creek Hydroelectric Project (P-2701) Aesthetic Flow Assessment Study, March 2020.

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

Erie. 2020a. West Canada Creek Hydroelectric Project (P-2701) Initial Study Report, March 2020.

Erie. 2020b. West Canada Creek Hydroelectric Project (P-2701) Draft License Application, October 1, 2020.

Erie. 2021. West Canada Creek Hydroelectric Project (P-2701) Updated Study Report, January 2021.

Erway, W.D. 2012. West Canada Creek Creel Survey 2007. NYSDEC, Region 6, Bureau of Fisheries, 207 Genesee St, Utica, NY, February 2012.

Federal Energy Regulatory Commission (FERC). 1996. Recreation Development at Licensed Hydropower Projects. Available at: https://www.ferc.gov/industries/hydropower/gen-info/guidelines/recreat-dev-hydro-licen.pdf

FERC. 2011. Guidelines for Public Safety at Hydropower Projects, March 1992, updated November 29, 2011. Available at: https://www.ferc.gov/sites/default/files/2020-04/public-safety_0.pdf.

FERC. 2015. Division of Hydropower Administration and Compliance. Compliance Handbook. Available at: https://www.ferc.gov/industries/hydropower/gen-info/handbooks/compliance_handbook.pdf

FERC. 2016. Security Program for Hydropower Projects, March 20, 2016. Available at: https://www.ferc.gov/sites/default/files/2020-04/security.pdf.

FERC. 2020a. Scoping Document 3 for the West Canada Creek Hydroelectric Project, P-2701-059, issued December 21, 2020.

FERC. 2020b. List of Comprehensive Plans, July 2020. Available: https://www.ferc.gov/sites/default/files/2020-07/ListofComprehensivePlans.pdf

Ferree, C and M. G. Anderson. 2013. A Map of Terrestrial Habitats of the Northeastern United States: Methods and Approach. The Nature Conservancy, Eastern Conservation Science, Eastern Regional Office. Boston, MA. Available: https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/habitatmap/Pages/default.aspx.

Herkimer County. 2020. GIS map. Available at: https://sdg.giscloud.com/map/225030/herkimer

Herkimer Diamond Mines. 2019. Herkimer Diamond Mines and KOA Resort. Available at: https://herkimerdiamond.com/.

Herkimer- Oneida Counties Comprehensive Planning Program (HOCCP). 1989. Hinckley Reservoir Study. Prepared for the Towns of Russia, Ohio and Remsen, Prepared by the Herkimer- Oneida Counties Comprehensive Planning Program, Utica New York, May 1989.

Hinckley Reservoir Working Group (HRWG). 2008. Report to the Governor: Available: https://www.health.ny.gov/environmental/investigations/hinckley_reservoir/.

Historic American Engineering Record (HAER). 1993a. HAER NY-155, Trenton Falls Hydroelectric Station, Oneida County, New York, 1993.

HAER. 1993b. HAER NY-155, Trenton Falls Hydroelectric Station, Oneida County, New York, 1993.

Ichthyological Associates Inc. 1981a. Fish Habitat-Flow Relationship at Six Study Releases Below Trenton Hydroelectric Station on West Canada Creek, New York, During August and September 1980, Prepared by Ichthyological Associates Inc., for Niagara Mohawk Power Corporation, February 1981.

Ichthyological Associates Inc. 1981b. Temperature Monitoring, West Canada Creek, Oneida and Herkimer Counties, New York, June-September 1980. Prepared by Ichthyological Associates Inc., for Niagara Mohawk Power Corporation, February 1981.

Jacobs, R.P. and O'Donnell, E.B. 2009. Freshwater Fishes of Connecticut. Connecticut Department of Environmental Protection. Hartford, CT.

Jenkins, R. E. and N. M. Burkhead. 1993. Freshwater Fishes of Virginia. American Fisheries Society, Bethesda, Maryland.

Kleinschmidt Associates. (Kleinschmidt). 2020a. West Canada Creek Hydroelectric Project (P-2701) Aquatic Mesohabitat Assessment Study, March 2020.

Kleinschmidt. 2020b. West Canada Creek Hydroelectric Project (P-2701) Macroinvertebrate and Freshwater Mussel Survey , March 2020.

Kleinschmidt. 2020c. West Canada Creek Hydroelectric Project (P-2701) Impoundment Shoreline Characterization Study, March 2020.

Kleinschmidt. 2020d. West Canada Creek Hydroelectric Project (P-2701) Fish Assemblage Assessment, March 2020.

Kleinschmidt. 2020e. West Canada Creek Hydroelectric Project (P-2701) Updated Fish Entrainment and Turbine Passage Survival Assessment, January 2021.

Kleinschmidt. 2020f. West Canada Creek Hydroelectric Project (P-2701) Water Quality Study, March 2020.

Kleinschmidt. 2020g. West Canada Creek Hydroelectric Project (P-2701) Recreation Use, Needs and Access Study, March 2020.

Kleinschmidt. 2021. West Canada Creek Hydroelectric Project (P-2701) Whitewater Boating Flow and Access Study, January 2021.

Miller, W.J. 1908. Highly Folded between Non-Folded Strata at Trenton Falls, N.Y. Available: https://www.jstor.org/stable/pdf/30059776.pdf.

Milone & MacBroom, Inc. 2014. Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives: West Canada Creek, Herkimer County, New York. April 2014. Available: https://wri.cals.cornell.edu/sites/wri.cals.cornell.edu/files/shared/documents/2014_West_Canada_Creek_Assessment.pdf.

Mohawk Valley Water Authority (MVWA). 2020. Mohawk Valley Water Authority. Available: https://www.mvwa.us/.

Multi-Resolution Land Characteristics Consortium (MRLC) 2011. National Landcover Database 2011. Available: https://www.mrlc.gov/finddata.php.

National Park Service (NPS). 2017. National Register of Historic Places. New York State Barge Canal. Available: https://www.nps.gov/nr/feature/places/14000860.htm.

National Weather Service (NWS). 2020a. October 31-November 1, 2019 Record Flooding and High Winds. Available: https://www.weather.gov/aly/Halloween2019Storm [Accessed February 13, 2020].

NWS. 2020b. West Canada Creek at Kast Bridge, National Weather Service, Advanced Hydrologic Prediction Service. Available: https://water.weather.gov/ahps2/hydrograph.php?wfo=aly&gage=kasn6.

NWS. 2020c. USGS 01346000 West Canada Creek at Kast Bridge, National Weather Service. Available: https://waterdata.usgs.gov/nwis/uv?cb_00060=on&cb_00065=on&format=html&site_no=01346000&period=&begin_date=2019-10-30&end_date=2019-11-02.

The Nature Conservancy. 2020 Northeast Habitat Map. Available: http://maps.tnc.org/nehabitatmap/.

New York Independent System Operator (NYISO) 2020. Annual Grid & Markets Report, The Vision for a Greener Grid. Available: https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/dd91ce25-11fe-a14f-52c8-f1a9bd9085c2

New York Natural Heritage Program (NYNHP). 2017. Rare Animal Status List. New York State Department of Environmental Conservation. Available: http://www.dec.ny.gov/docs/wildlife_pdf/rareanimal2017.pdf.

NYNHP. 2020. New York iMapInvasives 2020. Available at: https://www.nyimapinvasives.org/.

New York Office of Parks, Recreation, and Historic Preservation (NYOPRHP). 2018. Cultural Resource Information System (CRIS). Available: https://cris.parks.ny.gov/.

NYOPRHP. 2020. West Canada Creek Hydroelectric Plant Re-licensing Project 18PR07826, FERC No. 2701-059, Consultation Letter. April 17, 2020.

New York State. 2021. Climate Leadership and Community Protection Act. Available at: https://climate.ny.gov/

New York State Canal Corporation (NYSCC). 2020a. Boating on the Canals. Available: http://www.canals.ny.gov/boating/index.html.

NYSCC. 2020b. Hinckley Reservoir Water Levels Data. Available: http://www.canals.ny.gov/wwwapps/waterlevels/hinckley/hinckleywaterlevels.aspx.

New York State Department of Environmental Conservation (NYSDEC). 2010. Mohawk River Basin Waterbody Inventory and Priority Waterbodies List: Middle West Canada Creek Watershed. Bureau of Watershed Assessment and Management. Available: http://www.dec.ny.gov/docs/water_pdf/wimohawklowcanada.pdf.

NYSDEC. 2012. Mohawk River Basin Action Agenda 2012-2016. Available: http://www.dec.ny.gov/docs/water_pdf/mohawkactagenda.pdf.

NYSDEC. 2017a. Black River Wild Forest. Available: http://www.dec.ny.gov/lands/75310.html#Hiking.

NYSDEC. 2017b. Hinckley State Forest. Available: http://www.dec.ny.gov/lands/107746.html.

NYSDEC. 2018a. NYSDEC ENB Region 6 Completed Applications 11/16/2016. Available: http://www.dec.ny.gov/enb/20161116_reg6.html.

NYSDEC. 2018b. NYSDEC State Pollutant Discharge Elimination System (SPDES) Permit Program Available: http://www.dec.ny.gov/permits/6054.html.

NYSDEC. 2019. NYSDEC Division of Water, Standard Operating Procedure: Biological Monitoring of Surface Waters in New York State. March 2019, 187 pp.

NYSDEC. 2020a. Fishing the West Canada Creek. Available: http://www.dec.ny.gov/outdoor/9238.html.

NYSDEC. 2020b. Freshwater Fishing Regulations. Available: http://www.dec.ny.gov/outdoor/7917.html.

NYSDEC. 2020c. Fish Stocking List (Actual) Beginning 2011. Available at: https://data.ny.gov/Recreation/Fish-Stocking-Lists-Actual-Beginning-2011/e52k-ymww.

NYSDEC. 2020d. New York Nature Explorer. Filter: Oneida and Herkimer Counties. Available: http://www.dec.ny.gov/natureexplorer/app/.

NYSDEC. 2020e. Environmental Resource Mapper. Available: http://www.dec.ny.gov/gis/erm.

NYSDEC. 2020f. New York Nature Explorer. Filter: Oneida and Herkimer Counties. Available: http://www.dec.ny.gov/natureexplorer/app/.

NYSDEC. 2020g. Partnerships for Regional Invasive Species Management (PRISM). Available: https://www.dec.ny.gov/animals/47433.html.

NYSDEC. 2020h. List of endangered, threatened and special concern fish and wildlife species of New York State. Available: http://www.dec.ny.gov/animals/7494.html.

NYSDEC. 2020i. Environmental Resource Mapper. Available: http://www.dec.ny.gov/gis/erm.

NYSDEC. 2020j. Fishing the West Canada Creek. Available: http://www.dec.ny.gov/outdoor/9238.html.

NYSDEC. 2020k. Hinckley Reservoir Day Use Area. Available at: https://www.dec.ny.gov/outdoor/113214.html.

NYSDEC. 2021. Reducing Greenhouse Gas Emissions. Available: https://www.dec.ny.gov/energy/99223.html

New York Power Authority (NYPA). 2017. Pre-Application Document Gregory B. Jarvis Project Relicensing (FERC No. 3211), dated June 2017. Available: http://www.jarvis.nypa.gov/Lists/JARVIS%20Relicensing%20Documents/Attachments/125/Jarvis_PAD.pdf.

NYPA. 2019. Initial Study Report, Hinckley (Gregory B. Jarvis) Hydroelectric Project, FERC No. 3211-009.

NYPA. 2020. Final Application for New License For Major Project, Gregory B. Jarvis Project Relicensing FERC No. 3211, July 2020.

New York State. 2020a. Official Compilation of Codes, Rules and Regulations of the State of New York, Title 6. Department of Environmental Conservation, Chapter X. Division of Water Resources, Subchapter B. Classes and Standards of Quality and Purity Assigned to Fresh Surface and Tidal Salt Waters, Article 11. Mohawk River Drainage Basin Series, Part 880. West Canada Creek Drainage Basin. Available: https://govt.westlaw.com/nycrr/Document/I4edf45bacd1711dda432a117e6e0f345?viewType=FullText&transitionType=Default&contextData=(sc.Default).

New York State. 2017a. Central New York: Oneida. Available: http://www.ny.gov/counties/oneida.

New York State. 2017b. Central New York: Herkimer. Available: http://www.ny.gov/counties/herkimer.

New York State. 2020b. Official Compilation of Codes, Rules and Regulations of the State of New York, Title 6 Department of Environmental Conservation Chapter X Division of Water Resources Subchapter A. General Article 2. Classifications and Standards of Quality and Purity Part 701 Classifications--Surface Waters and Groundwaters. Available: https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRe

gulations?guid=I0682f230b5a111dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default).

New York State. 2020c. Official Compilation of Codes, Rules and Regulations of the State of New York, Title 6 Department of Environmental Conservation Chapter X Division of Water Resources Subchapter A. General Article 2. Classifications and Standards of Quality and Purity Part 703. Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations. Available: https://govt.westlaw.com/nycrr/Document/I4ed90412cd1711dda432a117e6e0f345?viewType=FullText&transitionType=Default&contextData=(sc.Default).

New York State Department of Labor. 2019. Mohawk Valley Significant Industries: A Report to the Workforce Development System. Bureau of Labor Market Information Division of Research and Statistics. Available: https://labor.ny.gov/stats/PDFs/Significant-Industries-Mohawk-Valley.pdf.

New York State Department of Transportation (NYSDOT). 2013. Geotechnical Design Manual: Chapter 3, Geology of New York State. Available: https://www.dot.ny.gov/divisions/engineering/technical-services/geotechnical-engineering-bureau/geotech-eng-repository/GDM_Ch-3_Geology_of_NY.pdf.

Northern Forest Canoe Trail (NFCT). 2020. Available: https://www.northernforestcanoetrail.org/.

Northern New York Waterfalls. 2020. Prospect Falls. Available: https://nnywaterfalls.com/westcanadacreek/prospectfalls/.

Oneida County. 2017. Regional Profile – Oneida and Herkimer Counties. Available: http://ocgov.net/oneida/planning/regionalprofile.

Oneida County. 2020. Department of Planning and Herkimer Oneida Comprehensive Planning Program. Geographic Information Systems. Available: https://ocgov.net/planning/gis

Pratt and Pratt Archeological Consultants. 1978. Cultural Resources Survey of the Proposed Trenton Redevelopment Project.

Riverfacts. 2020. Whitewater Paddling Rivers in New York. Riverfacts.com. Available: http://www.riverfacts.com/states/ny.html.

SafeWaters. 2020. Trenton Falls. Available: https://www.safewaters.com/facility/47.

Smith, C.L. 1985. The inland fishes of New York state. NY State Dept. of Env. Cons. Albany, NY.

Town of Russia. 2005. Town of Russia Comprehensive Plan. Revision A, As Adopted March 2005. Available: http://townofrussia.com/content/Generic/View/1:field=documents;/content/Documents/File/9.pdf.

United States Census Bureau (Census Bureau). 2010. Population, Housing Units, Area, and Density: 2010. Available: http:/factfinder2.census.gov.

Census Bureau. 2019a. New York: Annual Estimates of the Resident Population for Minor Civil Divisions, by County: April 1, 2010 to July 1, 2019. Available: https://www2.census.gov/programs-surveys/popest/tables/2010-2019/mcds/totals/SUB-MCD-EST2019-ANNRES-36.xlsx.

Census Bureau. 2019b. Quick Facts, Oneida County and Herkimer County, New York. United States Census Bureau. Available: https://www.census.gov/quickfacts/fact/table/NY,oneidacountynewyork,herkimercountynewyork/PST045217.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). 2018 Web Soil Survey. Available: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

United States Environmental Protection Agency (USEPA). 2020a. Summary of the Clean Water Act. Available: https://www.epa.gov/laws-regulations/summary-clean-water-act.

USEPA. 2020b. Final Rule: Clean Water Act Section 401 Certification Rule. Available: https://www.epa.gov/cwa-401/final-rule-clean-water-act-section-401-certification-rule.

United States Fish and Wildlife Service (USFWS). 1989. Water Velocity Standards at Power Plant Intakes: Traditional and Alternative Rationales. Information Bulletin No. 89-61.

USFWS. 2018a. Environmental Conservation Online System, Information for Planning and Consultation Resource List (IPaC) Trust Resources Report. West Canada Creek Hydroelectric Project Relicensing.

USFWS. 2018b. New York Ecological Services Field Office: Official Species List.

USFWS. 2019. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5. Hadley, Massachusetts.

USFWS. 2020a. United States Fish and Wildlife Service National Wetlands Inventory. Surface waters and wetlands data mapper. Available: https://www.fws.gov/wetlands/data/Mapper.html.

USFWS. 2020b. Environmental Conservation Online System, Information for Planning and Consultation Resource List (IPaC) Trust Resources Report. West Canada Creek Hydroelectric Project Relicensing.

USFWS. 2020c. New York Ecological Services Field Office: Official Species List.

USFWS. 2020d. Environmental Conservation Online System. Available: http://ecos.fws.gov/ecp/.

Werner, R.G. 1980. Freshwater Fishes of New York State, A Field Guide. Syracuse University Press, Syracuse, NY.

West Canada Creek Campsites. 2019. West Canada Creek Campsites Website. Available: http://www.westcanadacreekcampsites.com/index.asp?t=f.

West Canada Creek Tubing. 2019. West Canada Creek Tubing Website. Available: http://www.westcanadacreektubing.com/map.asp.

APPENDIX A

CONSULTATION DOCUMENTATION

CONSULTATION DOCUMENTATION

Following is a summary of key consultation conducted during the West Canada Creek relicensing proceeding. The Distribution List is provided as attachment to the cover letter to the Final License Application (FLA) filing. Consultation documentation is provided as part of the Integrated Licensing Process (ILP) record. Additional consultation (bold font) is provided in Attachment 1 to this Appendix.

Date	From	To	Description
1/11/2018	Kleinschmidt	Distribution List	Letter to inform interested parties of the upcoming West Canada Creek Project licensing proceeding and to solicit any readily available information through a PAD (PAD) Information Questionnaire
1/26/2018	U.S. Department of Interior, Bureau of Indian Affairs (BIA), Harold Peterson	Kleinschmidt	PAD Information Questionnaire response
1/30/2018	American Whitewater (AW), Robert Nasdor	Kleinschmidt	PAD Information Questionnaire response
2/9/2018	Mohawk Valley Water Authority (MVWA), Richard Goodney	Kleinschmidt	PAD Information Questionnaire response
2/12/2018	Adirondack Mountain Club, Paul Sirtoli,	Kleinschmidt	PAD Information Questionnaire response
2/12/2018	Saint Regis Mohawk Tribe, Arnold Printop	Kleinschmidt	PAD Information Questionnaire response
2/12/2018	Dave Corr, Mohawk Valley Trout Unlimited (MVTU)	Kleinschmidt	PAD Information Questionnaire response
2/13/2018	New York State Department of Environmental Services (NYSDEC), Todd Phillips	Kleinschmidt	PAD Information Questionnaire response

Date	From	To	Description
2/20/2018	U.S. Fish and Wildlife Service (USFWS), John Wiley	Kleinschmidt	PAD Information Questionnaire response
2/20/2018	USFWS	Kleinschmidt	List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project
2/26/2018	U.S. U.S. Environmental Protection Agency (EPA), Lingard Knutson	Kleinschmidt	PAD Information Questionnaire response
2/28/2018	Erie Boulevard Hydropower, L.P. (Erie), Steve Murphy	FERC and Distribution List	Letter filing West Canada Creek Project Notice of Intention, Use of ILP, and PAD
3/9/2018	Federal Energy Regulatory Commission (FERC), John Smith	Oneida Nation	Tribal Consultation
3/9/2018	FERC, John Smith	St. Regis Moahwk Tribe	Tribal Consultation
3/9/2018	FERC, John Smith	Oneida Tribe of Indians of Wisconsin	Tribal Consultation
4/4/2018	**Oneida Indian Nation, Jesse Bergevin**	**Kleinschmidt**	**The Nation had no comments or concerns regarding the Project**
4/30/2018	FERC	FERC Docket	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
4/30/2018	FERC	FERC Docket	Issuance of Scoping Document 1
5/29/2018	New York State Senator, 47th District, Joseph Griffo	FERC Docket	Comments regarding the West Canada Creek Project
5/30/2018	FERC	Public Meeting	Public Scoping Meeting
5/31/2018	FERC	FERC Docket	Transcript of 5/30/2018 Scoping Meeting
5/31/2018	FERC	Public Meeting	Public Scoping Meeting
5/31/2018	FERC	FERC Docket	Transcript of 5/31/2018 Scoping Meeting

Date	From	To	Description
5/31/2018	John Garver, Individual	FERC Docket	Comments regarding the West Canada Creek Project
5/31/2018	Individual, Kevin Keeley	FERC Docket	Comments regarding the West Canada Creek Project
6/4/2018	Individual, Robert Carnevale	FERC Docket	Comments regarding the West Canada Creek Project
6/7/2018	New York State Assemblyman, 118th District, Mark Butler	FERC Docket	Comments regarding the West Canada Creek Project
6/7/2018	Individual, Mark Reardon	FERC Docket	Comments regarding the West Canada Creek Project
6/14/2018	MVTU, Ken Ziobro	FERC Docket	Comments regarding the West Canada Creek Project
6/14/2018	Individual, Reed Willis	FERC Docket	Comments regarding the West Canada Creek Project
6/16/2018	New York Trout Unlimited (NYTU), William Wellman	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/21/2018	AW, Robert Nasdor	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/25/2018	Individual, Steven Wheeler	FERC Docket	Comments regarding the West Canada Creek Project
6/26/2018	Town of Trenton, Joseph Smith	FERC Docket	Comments regarding the West Canada Creek Project
6/26/2018	Individual, Justin Waters	FERC Docket	Comments regarding the West Canada Creek Project
6/26/2018	Individual, Patricia Gunio	FERC Docket	Comments and study requests regarding the West Canada Creek Project
6/26/2018	Individual, Thomas Slusarczyk	FERC Docket	Comments regarding the West Canada Creek Project
6/27/2018	West Canada Creek Assn. Inc, Robert Grose	FERC Docket	Comments regarding the West Canada Creek Project
6/27/2018	Individual, Rosemary Darcy	FERC Docket	Comments regarding the West Canada Creek Project
6/28/2018	USFWS, David Stilwell	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/28/2018	FERC, John Smith	Erie, Steve Murphy	Issuance of Additional Information Request (AIR)
6/28/2018	EPA, Grace Musumeci,	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/28/2018	NYSDEC, Todd Phillips	FERC Docket	Comments and requested studies regarding the West Canada Creek Project

Date	From	To	Description
6/28/2018	West Canada Watershed, Alliance (WCWA), Thomas Zembrzuski	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/28/2018	Citizens for Hinckley, Blake Bellinger	FERC Docket	Comments regarding the West Canada Creek Project
6/28/2018	Individual, Robert Carnevale	FERC Docket	Comments regarding the West Canada Creek Project
6/28/2018	Individuals, David and Stephanie Fransman	FERC Docket	Comments and study requests regarding the West Canada Creek Project
6/28/2018	Individual, Katrina Hanna	FERC Docket	Comments regarding the West Canada Creek Project
6/29/2018	Region 6 NYS Fish and Wildlife Management Board (FWMB), Walt Paul	FERC Docket	Comments and requested studies regarding the West Canada Creek Project
6/29/2018	West Canada Watershed Alliance (WCWA), Kathleen Kellogg	FERC Docket	Comments regarding the West Canada Creek Project
6/29/2018	Individual, Salvatore Longo	FERC Docket	Comments and study requests regarding the West Canada Creek Project
7/2/2018	Individual, Stuart Miller	FERC Docket	Comments regarding the West Canada Creek Project
7/2/2018	Individual, George Doolittle	FERC Docket	Comments regarding the West Canada Creek Project
7/6/2018	New York State Senator, 49th District, James Tedisco	FERC Docket	Comments regarding the West Canada Creek Project
7/16/2018	Erie	USFWS and NYSDEC	Consultation call for Aquatic Mesohabitat Survey
8/13/2018	FERC	FERC Docket	Issuance of Scoping Document 2
8/13/2018	Erie, Steve Murphy	FERC and Distribution List	Filing of response to FERC's AIR
8/13/2018	Erie, Steve Murphy	FERC and Distribution List	Filing of Proposed Study Plan (PSP)
9/11/2018	Erie, Steve Murphy	Public Meeting	PSP Meeting
10/29/2018	AW, Bob Nasdor	FERC Docket	PSP comments and study requests
11/9/2018	USFWS, David Stilwell	FERC Docket	PSP comments and study requests

Date	From	To	Description
11/9/2018	New York State Council of Trout Unlimited (NYTU), William Wellman	FERC Docket	PSP comments and study requests
11/9/2018	Citizens of Hinckley Lake, Blake Bellinger	FERC Docket	PSP comments
11/13/2018	Erie, Steve Murphy	FERC and Distribution List	Filing of response to FERC's AIR
11/13/2018	NYSDEC, Todd Phillips	FERC Docket	PSP comments and study requests
11/14/2018	FERC, John Smith,	FERC Docket	PSP comments and study requests
12/11/2018	Erie, Steve Murphy	FERC and Distribution List	Filing of Revised Study Plan (RSP)
12/21/2018	American Whitewater, Bob Nasdor	FERC Docket	RSP comments
12/26/2018	Citizens for Hinckley Lake, Blake Bellinger	FERC Docket	RSP comments
12/26/2018	NYSDEC, Todd Phillips	FERC Docket	RSP comments
2/6/2019	USFWS, David Stilwell	FERC Docket	RSP comments
3/7/2019	FERC	Erie, Steve Murphy	Study Plan Determination and Process Plan and Schedule
4/18/2019	Erie	USFWS and NYSDEC	Consultation call on Aquatic Studies including Mesohabitat Assessment, Macroinvertebrate and Mussels Surveys, Fish Assemblage Assessment, and Fish Entrainment and Turbine Passage Survival Assessment
5/29/2019	Erie	USFWS, NYSDEC and AW	Consultation call for Recreation and Aesthetics Studies
7/29/2019	Erie, Steve Murphy	FERC and Distribution List	ILP Relicensing Studies Progress Report #1
8/9/2019	Erie	NYSDEC and USFWS	Consultation call on preliminary field efforts and data analysis for the Aquatic Mesohabitat Survey, and to review logger and sampling locations for the various studies
9/9/2019	Erie	USFWS, NYSDEC, AW, NYTU	Consultation call for Recreation Use, Needs, And Access Study, Whitewater Boating Flow and Access Study, and Aesthetics Flow Assessment
9/12/2019	Erie	USFWS, NYSDEC, AW	Consultation call for Whitewater Boating Study - Prospect Bypass Reach

Date	From	To	Description
10/31/2019	Erie, Steve Murphy	FERC and Distribution List	Filing of ILP Relicensing Studies Progress Report #2; Request for revision of the Process Plan and Schedule to change the ISR filing date to March 7, 2020
11/15/2019	Erie	AW and Erie	Consultation call to review Prospect bypass reach drone footage and additional information
12/5/2019	FERC	Erie, Steve Murphy	FERC granted Process Plan and Schedule revision
3/6/2020	Erie, Steve Murphy	FERC and Distribution List	Filing of Initial Study Report (ISR)
3/19/2020	Erie, Steve Murphy	Public	ISR Meeting
4/3/2020	Erie, Steve Murphy	FERC and Distribution List	Filing of ISR Meeting Summary
4/3/2020	**Erie, Steve Murphy**	**New York State Historic Preservation Office (NYSPHO) and Cultural Resource Information System (CRIS)**	**NYSHPO and CRIS submittal - Project information submittal and request for correction of Project location in NYSHPO CRIS**
4/17/2020	**NYSHPO, Daniel Mackay**	**Erie, Steve Murphy**	**NYSHPO's opinion that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking**
5/5/2020	AW, Bob Nasdor	FERC Docket	Comments on ISR
5/5/2020	FERC, John Smith	Erie, Steve Murphy	Comments on ISR and meeting summary
5/6/2020	NYSDEC, Kara Paulsen	FERC Docket	Comments on ISR
5/6/2020	USFWS, David Stilwell	FERC Docket	Comments on ISR
5/15/2020	USFWS	Kleinschmidt	Updated list of threatened and endangered species list
5/15/2020	USFWS	Kleinschmidt	Verification letter under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions
6/1/2020	**Kleinschmidt**	**New York State Department of State (NYDOS)**	**Consultation about whether the Project relicensing is within the jurisdiction of the New York State Coastal Management Program**
6/2/2020	**NYDOS, Matthew Maraglio**	**Kleinschmidt**	**Response that the Project is outside of the New York State Coastal Zone Management Area**

Date	From	To	Description
6/5/2020	Erie, Steve Murphy	FERC and Distribution List	Response to ISR comments
7/6/2020	FERC, Terry Turpin	Erie, Steve Murphy	Determination on Requests for Study Modifications
8/27/2020	Erie	AW	Consultation call to review and discuss the assessment of the Prospect bypass reach and the downstream West Canada Creek reach for the Whitewater Boating Flow and Access Study
9/9/2020	Erie	FERC, NYSDEC, AW	Consultation call to provide an updated about the status of the Whitewater Boating Study
9/18/2020	FERC	FERC, AW and Erie	Consultation call to discuss the study area for the Prospect bypassed reach portion of the whitewater boating study
9/18/2020	**USFWS**	**Kleinschmidt**	**Updated list of threatened and endangered species list**
9/23/2020	**USFWS**	**Kleinschmidt**	**IPaC Resource List Documentation**
9/23/2020	**NYSDEC, Todd Phillips**	**Kleinschmidt**	**Location of bald eagle nest and no concerns about project effects on bald eagles**
10/1/2020	Erie	FERC and Distribution List	Filing of Draft License Application (DLA)
11/16/2020	**Erie, Steve Murphy**	**CRIS and NYSHPO**	**NYSHPO and CRIS submittal - Draft License Application and Proposed Area of Potential Effect**
11/30/2020	Erie, Steve Murphy	FERC and distribution list	Filing of ILP Relicensing Studies Progress Report #3
12/1/2020	**NYSHPO, Derek Rohde**	**Erie, Steve Murphy**	**NYSHPO has no concerns with proposed APE**
12/21/2020	FERC	Docket	Issuance of Scoping Document 3
12/28/2020	**AW, Bob Nasdor**	**FERC Docket**	**DLA comments**
12/29/2020	**FERC, John Smith**	**Erie, Steve Murphy**	**DLA comments**
12/30/2020	**NYSDEC, Todd Phillips**	**FERC Docket**	**DLA comments**
1/11/2021	Erie, Steve Murphy	FERC and Distribution List	Filing of Updated Study Report (USR)
1/25/2021	Erie, Steve Murphy	Public Meeting	USR Meeting
2/15/2021	Erie, Steve Murphy	FERC and Distribution List	Filing of USR meeting summary
2/15/2021	Erie, Steve Murphy	CRIS and NYSHPO	NYSHPO and CRIS submittal – Updated Study Report and Updated Study Report Meeting Summary

APPENDIX A

ATTACHMENT A-1

ADDITIONAL CONSULTATION CORRESPONDENCE

Karen Klosowski

From: Teta Jungels
Sent: Wednesday, April 04, 2018 3:42 PM
To: Karen Klosowski
Subject: FW: West Canada Creek Hydroelectric Project (FERC No. 2701) Relicensing

---

From: Jesse Bergevin [mailto:jbergevin@oneida-nation.org]
Sent: Wednesday, April 04, 2018 2:49 PM
To: Teta Jungels <Teta.Jungels@KleinschmidtGroup.com>
Subject: RE: West Canada Creek Hydroelectric Project (FERC No. 2701) Relicensing

Ms. Jungels,

One February 28, 2018, the Oneida Indian Nation (the "Nation") received and email and documentation from regarding the West Canada Creek Hydroelectric Project (FERC No. 2701) Relicensing (the"Project"). The Nation has no comments or concerns regarding the Project.

If you have any questions, please call me at (315) 829-8463.

Thank you,

Jesse Bergevin | Historic Resources Specialist
Oneida Indian Nation | 2037 Dream Catcher Plaza, Oneida, NY 13421-0662
jbergevin@oneida-nation.org | www.oneidaindiannation.com
315.829.8463 Office | 315.829.8473 Fax

From: Teta Jungels [mailto:Teta.Jungels@KleinschmidtGroup.com]
Sent: Wednesday, February 28, 2018 4:01 PM
To: Karen Klosowski
Cc: steven.murphy@brookfieldrenewable.com; jon.elmer@brookfieldrenewable.com; patrick.storms@brookfieldrenewable.com; richard.heysler@brookfieldrenewable.com
Subject: West Canada Creek Hydroelectric Project (FERC No. 2701) Relicensing

West Canada Creek Project Distribution List:

On behalf of Erie Boulevard Hydropower, L.P. (Erie) this email is to inform you that Erie has submitted to the Federal Energy Regulatory Commission (FERC) a Notification of Intent (NOI) and Pre-Application Document (PAD) for the relicensing of the West Canada Creek Hydroelectric Project (FERC No. 2701). 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.

Please see the attached cover letter for NOI and PAD filing that provides additional information. The NOI and PAD 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. Materials can also be downloaded from the Project's relicensing website at: http://www.westcanadacreekproject.com.

If you would like to be removed from this distribution list or have updated contact information, please contact me at karen.klosowski@kleinschmidt.group.com.

If you have questions concerning the NOI or PAD, please contact Steve Murphy, Director, Licensing, Brookfield Renewable at steven.murphy@brookfieldrenewable.com.

Regards,

Teta

Teta Jungels
EAP Coordinator
Kleinschmidt
Office: 207.487.3328 Ext. 1221
www.KleinschmidtGroup.com

Brookfield

Brookfield Renewable
Erie Boulevard Hydropower, L.P.
33 West 1st Street South
Fulton, New York 13069

Tel 315.593.3118
Fax 315.598.4831
www.brookfieldrenewable.com

April 3, 2020

VIA CRIS

New York State Office of Parks,
Recreation & Historic Preservation
Cultural Resource Information System
625 Broadway
Albany NY 12207

New York State Historic Preservation Office
Peebles Island Resource Center
P.O. Box 189
Waterford, NY 12188-0189

West Canada Creek Hydroelectric Project (P-2701) CRIS No. 18PR07826
Information Submittal

Dear New York State Historic Preservation Office:

Erie Boulevard Hydropower, L.P. (Licensee), a Brookfield Renewable company, is herein providing copies of the major filings with the Federal Energy Regulatory Commission (FERC or Commission) for the West Canada Creek Hydroelectric Project (P-2701) (Project) for the New York State Historic Preservation Office's records and requests that the SHPO correct the West Canada Creek Project location in the Cultural Resource Information System (CRIS).

Erie Boulevard Hydropower, L.P. (Erie) is currently going through the relicensing process to receive a new FERC hydroelectric license for the Project, which consists of two developments, Prospect and Trenton, and is located on West Canada Creek in Oneida and Herkimer counties, New York. To comply with Section 106 of the National Historic Preservation Act, Erie has included the New York State Historic Preservation Office (SHPO) in the relicensing process through initial consultation and filings with FERC.

Erie has previously submitted the following documents to the SHPO:

- Pre-Application Questionnaire – January 11, 2018;
- Notice of Intent – February 28, 2018;
- Pre-Application Document – February 28, 2018;
- FERC Additional Information Request – August 13, 2018;
- Proposed Study Plan - August 13, 2019;
- Revised Study Plan - December 11, 2019;
- Study Report Update 1 – July 29, 2019;
- Study Report Update 2 – October 31, 2019; and
- Initial Study Report – March 6, 2020.

Erie reviewed the New York State Office of Parks, Recreation & Historic Preservation's Cultural Resource Information System (CRIS) and the CRIS submission number generated for the Project is 18PR07826.

After reviewing the CRIS, Erie noticed that the system does not show all of the Project documents associated with the relicensing proceeding that have been previously submitted to the SHPO. In addition, the CRIS does not have the correct location for the Project. Therefore, Erie is requesting that the previously submitted relicensing documents (see Attachments) be included in the CRIS under this Project. Erie is also requesting that the Project location be revised within the CRIS to reflect the correct Project location as provided on the attached Project location map.

A copy of this cover letter (excluding the attachments) is being mailed to the addresses in tandem with this submission to alert SHPO of this submission to CRIS.

Thank you for your assistance. If the SHPO has any questions, please contact Kayla Hopkins at (207) 416-1271 or at Kayla.Hopkins@KleinschmidtGroup.com.

Sincerely,

Steven Murphy
Director, US Licensing
Brookfield Renewable

cc: Daniel Bagrow, Division for Historic Preservation

Attachments:

A. Pre-Application Questionnaire
B. Notice of Intent
C. Pre-Application Document
D. Project Location Map
E. Proposed Study Plan
F. Revised Study Plan
G. Study Report Update 1
H. Study Report Update 2
I. Initial Study Report

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

April 17, 2020

Mr. Steven Murphy
Director, Licensing
Brookfield Renewable
33 West 1st St South
Fulton, NY 13069

Re: FERC
West Canada Creek Hydroelectric Plant Re-licensing Project
Norway, Herkimer County, NY
18PR07826
FERC No. 2701-059

Dear Mr. Murphy:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy State Historic Preservation Officer
Division for Historic Preservation

June 1, 2020

VIA ELECTRONIC MAIL

Office of Planning and Development
New York Department of State
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001

West Canada Creek Hydroelectric Project FERC No. 2701
Applicability of Coastal Program

To whom it may concern:

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company, owns and operates the West Canada Creek Hydroelectric Project (Project) located on the West Canada Creek in the Towns of Trenton and Russia, Oneida and Herkimer counties, New York.

The current Federal Energy Regulatory Commission (FERC) license for the Project expires on February 28, 2023. Accordingly, the Erie must file an application for a new license for the Project with the FERC by February 28, 2021. In accordance with the Coastal Zone Management Act (CZMA), Erie must identify whether the Project relicensing is within the jurisdiction of the New York State Coastal Management Program (NYSCMP). Additionally, if the Project were within NYSCMP's jurisdiction, then Erie would need to apply for a CZMA Consistency Certification.

According to the New York State Coastal Boundary Map, which provides an electronic estimation of the State's Coastal Area Boundary, there are three different coastal areas in New York including; the coastal areas on Lake Ontario and Lake Erie; coastal boundary for the Hudson River; and the coastal area for Long Island.

It is our understanding that the Project is not located within any of the identified coastal areas for the State of New York (Attachment A). We, therefore, understand that the Project is not included within the jurisdiction of the NYSCMP and Erie does not need to apply for a CZMA Consistency Certification from your office. We would appreciate receipt of a letter from your office verifying that our understanding as stated above is correct or providing alternative guidance if further action is necessary to comply with NYSCMP.

If you require additional information, please contact me by phone at (207) 416-1271 or by email at kayla.hopkins@kleinschimdtgroup.com.

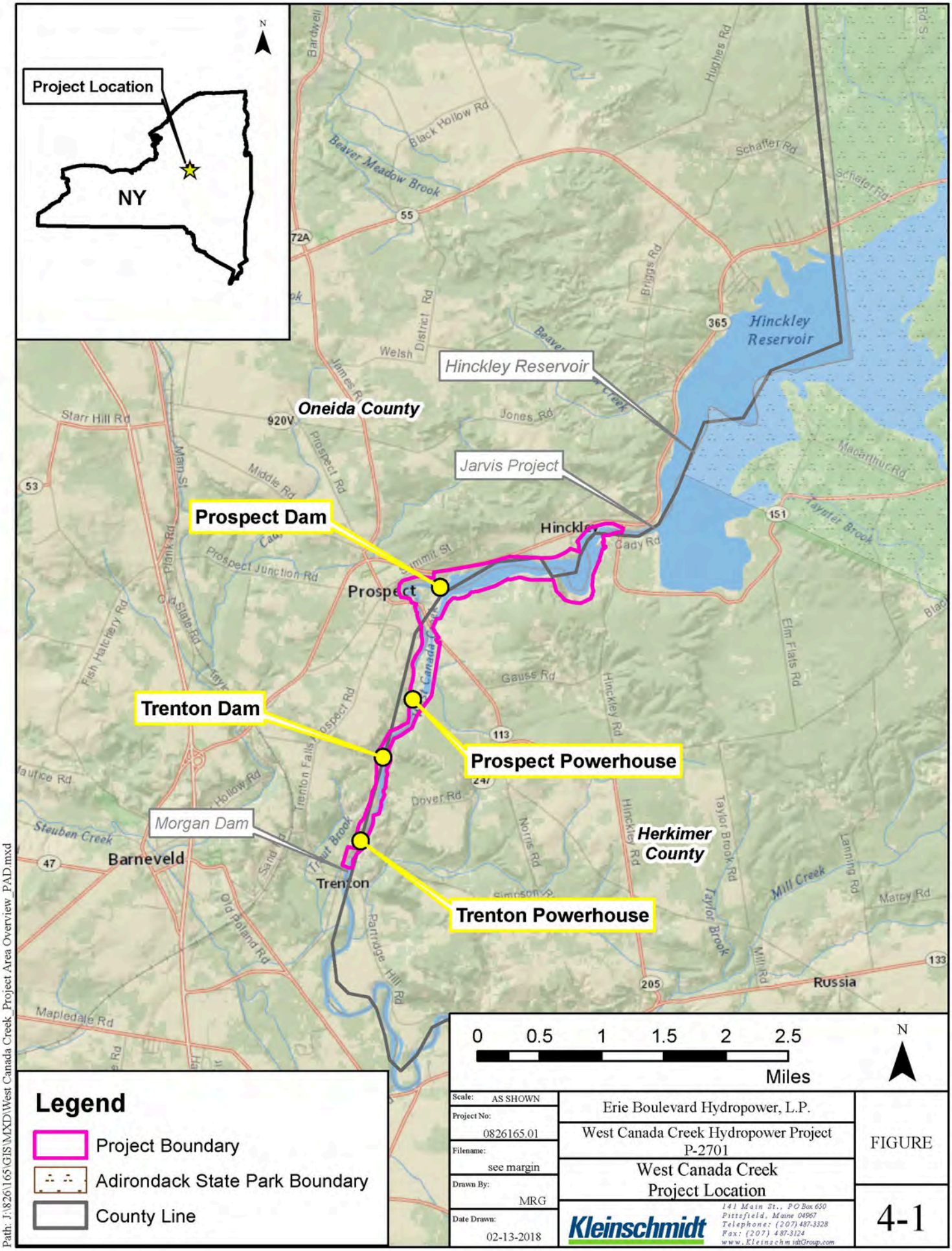
Sincerely,

Kayla A. Hopkins
Regulatory Coordinator
cc: Kleinschmidt; Karen Klosowski
Brookfield; Steve Murphy
Enclosure: Attachment A – Project location Map
Attachment B – NY State Online Coastal Mapper

J:\826\165\Correspondence\Coastal Program\826165_CZMA Letter.docx

ATTACHMENT A

PROJECT LOCATION MAP



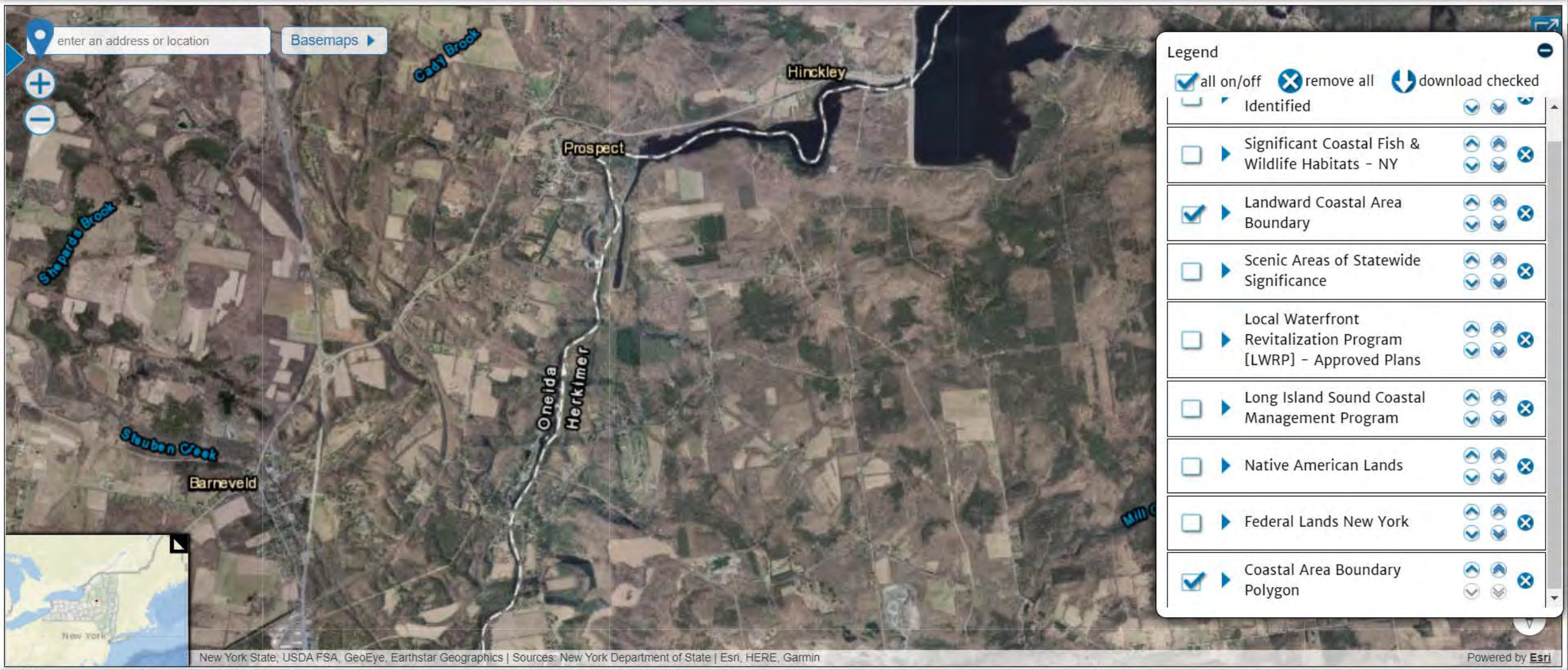
Path: J:\826\165\GIS\MXD\West Canada Creek_Project Area Overview_PAD.mxd

Scale: AS SHOWN	Erie Boulevard Hydropower, L.P.	FIGURE
Project No: 0826165.01	West Canada Creek Hydropower Project P-2701	
Filename: see margin	West Canada Creek Project Location	4-1
Drawn By: MRG		
Date Drawn: 02-13-2018	Kleinschmidt	

141 Main St., PO Box 650
Pittsfield, Maine 04967
Telephone: (207) 487-3328
Fax: (207) 487-3124
www.KleinschmidtGroup.com

ATTACHMENT B

NY STATE ONLINE MAPPER



Legend

all on/off remove all download checked

- Identified
- Significant Coastal Fish & Wildlife Habitats - NY
- Landward Coastal Area Boundary
- Scenic Areas of Statewide Significance
- Local Waterfront Revitalization Program [LWRP] - Approved Plans
- Long Island Sound Coastal Management Program
- Native American Lands
- Federal Lands New York
- Coastal Area Boundary Polygon

From: Maraglio, Matthew (DOS)
To: Kayla Hopkins
Subject: West Canada Creek Hydroelectric Project (FERC No. 2701)
Date: Tuesday, June 02, 2020 8:41:43 AM
Attachments: image001.png
826165_CZMA Letter.pdf

Kayla

Based on the information that you have provided, it appears that the project would be located outside of the New York State Coastal Area. Generally, for federal permitting actions involving actions outside of the coastal area, it is the applicant's responsibility to determine if there will be any effects on coastal uses or resources within the coastal area. Should you determine that there will be effects, please complete a Federal Consistency Assessment Form and submit it along with all necessary data and information to the Department of State concurrently with your submittal to the applicable federal agencies. If you determine that there will be no effects on coastal uses or resources, then no submittal is required unless the Department of State advises you that coastal effects are likely and requests that you submit a certification. At this time, the Department of State does not anticipate that your proposed project will have any effects on coastal uses or resources within the NYS Coastal Area. Please continue to keep the Department of State copied on your submittals.

Matthew Maraglio
Coastal Resources Specialist

New York State Department of State
Office of Planning, Development & Community Infrastructure
99 Washington Avenue, Suite 1010, Albany, NY 12231
(518) 473-3371 | matthew.maraglio@dos.ny.gov
www.dos.ny.gov
Follow us on Twitter/Instagram: @nysdos
Like us on facebook

From: Kayla Hopkins <
Sent: Monday, June 1, 2020 5:28 PM
To: dos.sm.Cstl.OPD <OPD@dos.ny.gov>
Cc: Karen Klosowski <Karen.Klosowski@Kleinschmidtgroup.com>; Murphy, Steven P <Steven.Murphy@brookfieldrenewable.com>
Subject: West Canada Creek

Good afternoon,

In accordance with the Coastal Zone Management Act, Erie Boulevard Hydropower, L.P., a Brookfield Renewable

company, is requesting the New York State Coastal Management Program to verify that the West Canada Creek Hydroelectric Project (FERC No. 2701) is not located within coastal areas of the State of New York. Please see attached letter.

Thank you,

Kayla A. Hopkins
Regulatory Coordinator
Kleinschmidt
Direct: (207) 416-1271
www.KleinschmidtGroup.com
*Providing **practical** solutions for **complex** problems affecting energy, water, and the environment*

United States Department of the Interior

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

In Reply Refer To: September 18, 2020
Consultation Code: 05E1NY00-2018-SLI-1205
Event Code: 05E1NY00-2020-E-13199
Project Name: West Canada Creek Hydroelectric Project (FERC No. 2701)

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/

eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NY00-2018-SLI-1205

Event Code: 05E1NY00-2020-E-13199

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

Project Type: DAM

Project Description: The 39.75 MW West Canada Creek Project consists of two developments located on West Canada Creek in the Towns of Trenton and Russia, Oneida and Herkimer Counties, New York.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.29201002376186N75.1466331431562W

Counties: Herkimer, NY | Oneida, NY

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

Critical habitats

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

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Project information

NAME

West Canada Creek Hydroelectric Project (FERC No. 2701)

LOCATION

Herkimer and Oneida counties, New York

DESCRIPTION

The 39.75 MW West Canada Creek Project consists of two developments located on West Canada Creek in the Towns of Trenton and Russia, Oneida and Herkimer Counties, New York.

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

http://www.fws.gov/northeast/nyfo/es/section7.htm

Endangered species

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

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

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

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

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

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

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

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

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

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative

occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

Eastern Whip-poor-will Antrostomus vociferus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

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

Probability of Presence ( )

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is

the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

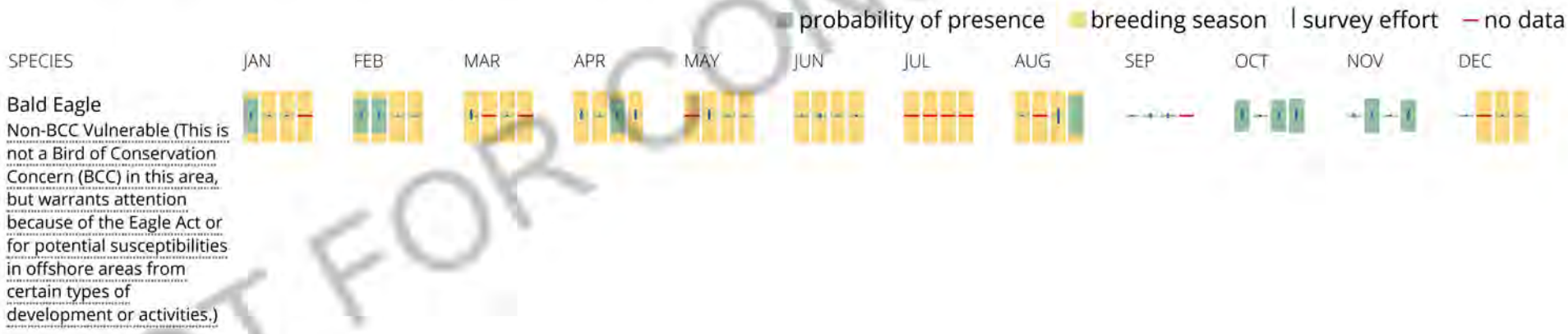
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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



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

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

Eastern Whip-poor-will
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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

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

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

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

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

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

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

PFO1E

FRESHWATER POND

PUBF

LAKE

L1UBHh

RIVERINE

R3UBH
R3USA
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending

to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

From:	Phillips, Todd J (DEC)
To:	Kayla Hopkins
Cc:	Karen Klosowski
Subject:	Re: bald eagles near West Canada Creek Project
Date:	Wednesday, September 23, 2020 8:45:46 AM

Kayla,

The DEC is aware of a bald eagle nest on the hill south of the Prospect Reservoir. The DEC does not have any concerns about impacts to the eagles by the project at this time.

Todd

From: Kayla Hopkins <Kayla.Hopkins@KleinschmidtGroup.com>
Sent: Thursday, September 17, 2020 9:05 AM
To: Phillips, Todd J (DEC) <Todd.Phillips@dec.ny.gov>
Cc: Karen Klosowski <Karen.Klosowski@Kleinschmidtgroup.com>
Subject: bald eagles near West Canada Creek Project

Good morning, Todd,

During field efforts, Erie did not observe any nesting locations, but wanted to double check with NYSDEC to see if there are any documented nesting locations near the West Canada Creek Project Boundary.

Thank you,

Kayla A. Hopkins
Regulatory Coordinator
Kleinschmidt
Direct: (207) 416-1271
www.KleinschmidtGroup.com
*Providing **practical** solutions for **complex** problems affecting energy, water, and the environment*

Brookfield

Brookfield Renewable
Erie Boulevard Hydropower, L.P.
33 West 1st Street South
Fulton, New York 13069

Tel 315.593.3118
Fax 315.598.4831
www.brookfieldrenewable.com

November 16, 2020

VIA E-FILING

New York State Office of Parks,
Recreation & Historic Preservation
Cultural Resource Information System
625 Broadway
Albany NY 12207

New York State Historic Preservation Office
Peebles Island Resource Center
P.O. Box 189
Waterford, NY 12188-0189

West Canada Creek Hydroelectric Project (P-2701) CRIS No. 18PR07826
Information Submittal - Draft License Application

Dear New York State Historic Preservation Office:

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company, is herein submitting a copy of the Draft License Application (DLA) for the West Canada Creek Hydroelectric Project (P-2701) relicensing via the Cultural Resource Information System CRIS) for the New York State Historic Preservation Office's (SHPO) records. The DLA was filed with the Federal Energy Regulatory Commission (FERC or Commission) on October 1, 2020, and distributed to the New York SHPO, agencies and stakeholders. The West Canada Creek Project consists of two developments, Prospect and Trenton, located on West Canada Creek in Oneida and Herkimer counties, New York.

In addition to submitting the DLA, Erie is seeking concurrence from the SHPO on Erie's proposed area of potential effect (APE), as defined under Section 106 of the National Historic Preservation Act [36 CFR Part 800.16(d)], for the proposed action. Erie proposes the APE includes land within the existing West Canada Creek Project Boundary, as designated in the Exhibit G drawing filed with the DLA. The West Canada Creek Project relicensing is subject to Section 106 review under the National Historic Preservation Act (36 CFR Part 800) since any new license for the Project would be issued by the FERC.

Thank you for your attention to this matter. If the New York SHPO has questions on the Project, please contact me at (315) 598-6130 or at steven.murphy@brookfieldrenewable.com.

Sincerely,

Steven Murphy
Director, US Licensing
Brookfield Renewable

cc: Dan Bagrow, New York State Division for Historic Preservation
Attachment: West Canada Creek Hydroelectric Project (P-2701) Draft License Application

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

December 1, 2020

Mr. Steven Murphy
Director, Licensing
Brookfield Renewable
33 West 1st St South
Fulton, NY 13069

Re: FERC
West Canada Creek Hydroelectric Plant Re-licensing Project
Norway, Herkimer County, NY
18PR07826 / FERC No. 2701-059

Dear Mr. Murphy:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include other environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Our office has reviewed the proposed area of potential effect (APE) for the West Canada Creek Hydroelectric Plant re-licensing. Based upon our review of the October 2020 draft license application, our office has no concerns with the proposed APE for this project.

If you have any questions, I can be reached at 518-268-2187.

Sincerely,

Derek Rohde
Historic Site Restoration Coordinator
e-mail: derek.rohde@parks.ny.gov

via e-mail only

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

AMERICAN WHITEWATER COMMENTS IN RESPONSE TO DRAFT LICENSE APPLICATION FOR THE WEST CANADA CREEK HYDROELECTRIC PROJECTS (FERC PROJECT NO. 2701)

American Whitewater (AW) submits the following comments in response to the filing of the Draft License Application by Erie Boulevard Hydropower, L.P. for the West Canada Creek Hydroelectric Project, FERC Project No. P-2701. 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. Flows into the West Canada Creek Hydroelectric Project from the Jarvis Project are controlled by the New York State Canal Corporation based on the 2012 Hinkley Reservoir Operating Diagram. Inflows into the West Canada Creek Hydroelectric Project are impounded by the Prospect Reservoir which fluctuates between 1146.5 and 1161.5 feet msl and has a usable storage capacity of 803 acre-feet. West Canada Hydroelectric Project has a catchment area of 376 square miles.

West Canada Creek Hydroelectric Project's operations alter the natural flow regime both in the Prospect and Trenton bypass reaches as well as the riverine reach between the Trenton powerhouse and the convergence of West Canada Creek with the Mohawk River. The project is required to release a minimum flow below the Trenton powerhouse of 160 cfs, but in practice releases at least 200 cfs to provide additional flows for the Nine Mile Feeder Canal. None of the minimum flow is passed at Prospect Dam or Trenton Dam in order to support aquatic habitat, aesthetics, or recreation.

The project operates in hydropeaking mode with generation flows ranging from the minimum flow of 160 cfs to the project's maximum hydraulic capacity of 1,425 cfs below Trenton. The Draft License Application does not indicate the frequency with which flows are spilled at Prospect Dam and Trenton Dam resulting in flows above the project hydraulic capacity; however, the licensee utilizes project impoundments to minimize spillage by capturing high inflows when possible.

Photo 1: Prospect Falls dewatered.

The Prospect Development diverts all flow from West Canada Creek at Prospect Dam into a 4,500-foot power canal, and 430-foot penstock leading to a 17.3 MW powerhouse with a 135-foot head. The flow diversion dewaters the 1.2-mile natural river reach below the Prospect Dam including the majestic Prospect Falls visible from the adjacent Prospect Village. Rarely, flows are spilled over Prospect Dam, cascading flows over Prospect Falls when inflows exceed 1,855 cfs and the impoundment is at capacity. Dewatered throughout the year except during high flows that are beyond the capacity of the project to store or generate power, the dewatered falls stands as a headstone sitting atop a dead river reach.

Below Prospect Falls, a series of bedrock ledges and steep canyon walls rise on both sides of the riverbed forming a chasm before reaching the Prospect powerhouse and Trenton impoundment. The bypass reach has no required aquatic base flow, aesthetic flow, or recreation flow under the current FERC license. Public access and recreation in the natural river channel are completely prohibited by the Licensee despite the fact that West Canada Creek is a navigable river.

Photo 2: Prospect bypass reach dewatered.

The Trenton Development, located approximately 0.5 river miles below the Prospect powerhouse, again dams and diverts West Canada Creek, dewatering the spectacular Trenton Falls Gorge. The river drops 255 feet over less than a mile before flows are returned to the river below the Trenton powerhouse. The Trenton Falls bypass reach has no minimum flow requirement whatsoever and the public is prohibited from viewing and enjoying the spectacular gorge on all but two weekends annually, each of which regularly draws thousands of visitors.

Photo 3: Trenton Falls dewatered.

Prior to the dewatering of the falls for hydropower, Trenton Falls Gorge was once a major tourist attraction in the region. As early as the 1820s, visitors to the region would vacation at the Rural Resort built by John Sherman (after whom Sherman Falls was named). Trenton Falls became a must-see destination between the East Coast and Niagara Falls. Tourism expanded with the construction of the Trenton Falls Hotel in the 1850s, driven by the grandeur of Trenton Falls. With the construction of the dam at Trenton Falls in 1902 and its expansion around 1920, flows over Trenton Falls were diverted for hydroelectric power. The hotel was demolished in 1945.

Photo 4: Trenton Falls lithograph circa 1856 (Library of Congress).

Impact of Flow Alteration on Recreation and Aesthetics

The West Canada Creek Hydroelectric Project is designed to dam and divert river flow into intake structures, penstocks, and powerhouses before flows are returned to the natural river channel below Trenton. The flow diversion results in the complete dewatering of the natural river channel below Prospect Dam, eliminating boating and angling opportunities in the bypass reach. Under natural flow conditions, the Prospect bypass reach contains the boatable Prospect Falls as well as the Prospect Gorge, which has scenic values exceeding any river reach in the region and is only accessible by boat.

Photo 5: Whitewater boater descending Prospect Falls (date and flow unknown).

The powerhouse diversion at West Canada Creek results in the loss of recreation opportunity as flow into the bypass reach is limited to spill from the dam when inflow exceeds the hydraulic capacity of the turbines. The reach between Prospect Dam and the Trenton impoundment would be boatable whenever flows exceed 600 cfs based on the Level 2 whitewater boating study conducted by the licensee, as discussed below. Average flows from Hinkley Reservoir regularly exceed 600 cfs except during the lowest flow period in most years, and the reach would be boatable most of the year but for the licensee's diversion of river inflows.

According to the DLA, the Prospect Development generates 77,161 MWh annually and has an average annual plant factor at 50.9 percent. Generation between 525-1,855 cfs is within the normal operating range for the development. A release of 600 cfs for four hours into the bypass reach for whitewater boating recreation would account for only .029 percent of the annual generation at the project for each scheduled release.

The lack of in-stream flow destroys most of the suitable aquatic habitat in the project's bypass reach. With no minimum flow requirement, only minimal flow from leakage is present and most of the channel remains dewatered or has water only in hydrologically disconnected pools. The inadequate flow into the bypass reach at West Canada Creek Hydroelectric Project eliminates angling opportunities by degrading water quality and reducing available habitat. In comparison, most other hydroelectric project have a minimum flow requirement, and some utilize the USFWS default Aquatic Base Flow (ABF) formula whereby a project like West Canada Creek with a catchment area of 376 square miles would have a minimum flow requirement of 188 cfs.

The dewatering of Prospect and Trenton bypass reaches degrades the aesthetic view of water flowing over Prospect Falls and Trenton Falls. Recreational opportunities at Prospect are further obstructed by the licensee's fences, NO TRESPASSING signs, and actions that remove recreational users from the reach. While the licensee owns much of the land adjacent to the bypass reaches, West Canada Creek is a navigable river, and the bypass reaches should be open to recreational use. The Prospect reach is easily accessible at Prospect Dam and Military Road, and allowing regular access here would facilitate boating, fishing, and hiking.

Trenton Falls would be easily accessible above the Trenton powerhouse if allowed by the licensee. Hiking along the scenic trail adjacent to the falls is seldom permitted, and the public is denied any opportunity to view water flowing over the falls. Like the Prospect Development, the Trenton Falls Development similarly diverts West Canada Creek at the Trenton Dam into an intake gate, penstock, and powerhouse before flows are returned to the river via the powerhouse tailrace.

The 4000-foot Trenton Falls bypass reach drops 255 feet between the intake and tailrace with a gradient of approximately 340 feet per mile. Trenton Falls consist of a series of impressive drops including Mill Dam Falls, Upper High Falls, Lower High Falls, and Sherman Falls. The licensee's access restrictions have hidden Trenton Falls from public enjoyment for decades, locked behind a barbed wire fence and NO TRESPASSING signs, depriving the public of the opportunity to view the falls for all but a single weekend in the spring and another in the fall. While the licensee has created an interpretive trail alongside the natural river channel, the scenic trail is only open to the public during these two designated weekends annually. Even on the few weekends that the public is permitted to visit, the licensee is not required to spill any flow that would allow the public to view the falls in its natural state.

Flows below the Trenton powerhouse fluctuate from a base flow of 160 or 200 cfs to a peak generation flow of 1,425 cfs. Peaking flows from the project occur when energy prices are highest or when inflows and storage requires and the licensee bids into the day ahead or real time energy markets. Typically, generation will occur during peak demand periods such as late afternoon on weekdays. The licensee uses its impoundments at Prospect, and to a lesser extent, Trenton, in order to shift generation to the most profitable hours, generally during the late afternoon and evening hours. Water travel time between the Trenton Development and the USGS gage at Kast Bridge (USGS-01346000) is approximately 7-8 hours, resulting in peaks around midnight or in the early morning hours at Kast Bridge (Figure 1).

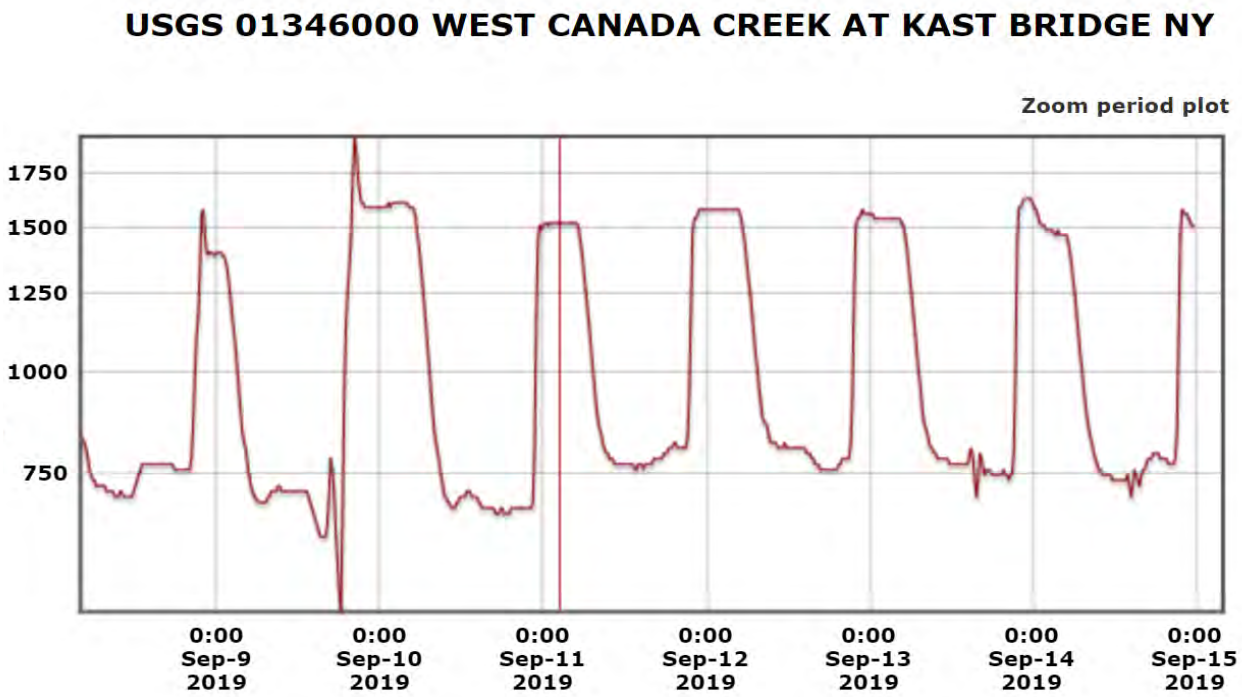


Figure 1: Peaking flow hydrograph for West Canada Creek Sept. 9-15 2019. Note peak flows around midnight. Y-axis is in cfs.

West Canada Creek provides a range of recreation opportunities throughout the reach below the project including boating, angling, and tubing. Popular areas for recreation activity on West Canada Creek include whitewater boating above Kast Bridge, trout fishing in the trophy section catch-and-release area below Trenton, and tubing and recreational boating at various sections in between.

The project's timing of peaking operations has an adverse impact on these recreation activities. Peaking operations eliminate whitewater paddling opportunities in the 8-mile reach between Middleville and Kast Bridge as flows frequently fall below boatable levels except when Cincinnati Creek and other sources below the project provide additional inflows. The project's peaking flows typically arrive well after dark and, therefore, do not support boating. Similarly, boaters and tubers on reaches further upstream are similarly impacted by peaking flows arriving after dark. Anglers utilizing the trophy section below Trenton are impacted by higher flows during the late-afternoon/early-evening hours when the licensee typically generates.

Changes in energy markets over the past two decades have shifted peak energy generation from longer, lower magnitude pulses earlier into the day to shorter, higher pulses in the late afternoon. This shift has over time reduced recreation opportunity downstream. For example, prior to this shift, whitewater boaters in the Kast Bridge section would regularly paddle on Wednesday evenings during the boating season, frequently drawing 30-40 boaters for a late afternoon to early evening paddle (see Photo 6).

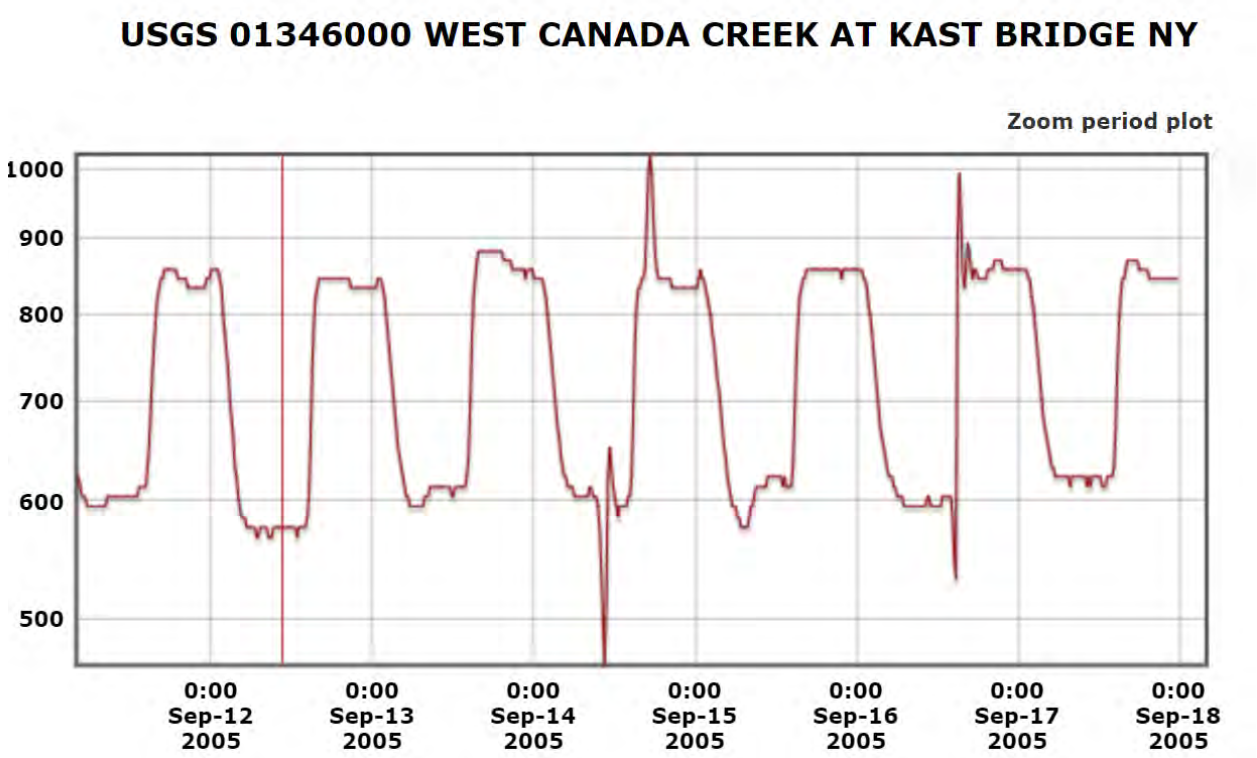


Figure 2: Peaking flow hydrograph for West Canada Creek Sept. 12-18 2005 before generation operations schedules shifted to later in the day. Note peak flows in late afternoon/early evening. Y-axis is in cfs.

Since the shift in energy generation, whitewater boating activity on West Canada Creek at Kast Bridge has vastly diminished as peaking flows are rarely available during daylight boating hours. Boaters no longer meet up on Wednesday evenings or weekends to paddle, and a valuable training reach for less experienced boaters has been lost, resulting in a reduction in the number of whitewater paddlers in the region.

Shifts in generation timing also damaged the outdoor recreation economy in the region. Northern Outfitters, an outdoor equipment specialty retailer with stores located in the Utica and Syracuse areas, ran a kayak instruction program and guide service on West Canada Creek. Prior to the shift in the project's generation timing, 25 to 40 paddlers took part in Northern Outfitter's weekly program on West Canada Creek. After the shift in generation timing and daytime boatable flows took place, Northern Outfitter's whitewater kayak rentals and kayak sales decreased, eventually forcing the business to close in 2008. At its height, the business sold roughly 1,000 boats annually and generated about $2 million in annual revenue.

RECREATION IN THE MOHAWK VALLEY

Local kayakers challenge West Canada

MIDDLEVILLE — Trip co-leader Ed Roberts of Whitesboro was reassuring as we stood on the northeast bank of the West Canada Creek and took in the gorgeous view downstream.

He called this stretch of the West Canada, which starts at the state DEC fishing access just north of Middleville on Rte. 28 and continues eight miles downstream, a Class One river on a scale of six, an "ideal section of the creek for beginners."

Aaron Christiana

"The first four miles (of the eight-mile trip) start out as a nice intro to the white water," said Roberts in a comforting voice. "All you've got to do on this river is keep your boat straight."

That was what I wanted to hear.

The Wednesday evening paddle, organized weekly by Northern Outfitters of New Hartford, would be my first time ever in a kayak, and my first time in or on any water this season, outside of the shower in my apartment.

I've canoed plenty, but have never trusted kayaks. Too small. Too confining.

So, as Andrew Jillings of Clinton, another trip guide who would be "running safety in the back" of the group, helped me don my this-year's-model Perception Axxess (furnished by Northern Outfitters), over in me as I clumsily and ineffectually tried to reverse my direction with the double- determination — to save face in the perceived eyes of the more than 30 kayakers valuable lesson about kayaks. They're wicked responsive, which also

By MICHAEL DOHERTY, Observer-Dispatch

Kayakers crowd the West Canada Creek near Middleville Wednesday. An area group sponsored by Northern Outfitters of New Hartford takes a weekly eight-mile kayak trip down the West Canada.

▸TO GET STARTED

Northern Outfitters orga-

Photo 6: Observer Dispatch article about Northern Outfitters kayak program on West Canada Creek that took place weekly before the project's shift in generation timing that virtually eliminated daytime boatable flows. Publication date unknown circa 2000.

Recreation and Aesthetics Studies

Following scoping, American Whitewater requested that the licensee conduct studies to evaluate project impacts on recreation facilities and use, aesthetics, and whitewater boating in and below the project boundary. Through these study requests, American Whitewater sought to require the licensee to:

1. Assess the adequacy of existing public access and opportunities for enhancement of public access to project lands including project bypass reaches at Prospect and Trenton Falls and in the downstream reach between the project boundary and the convergence of West Canada Creek and the Mohawk River.
2. Determine the minimum acceptable and optimal flows in the bypass reaches at Prospect and Trenton necessary to protect aesthetic values.
3. Determine the minimum acceptable and optimal flow levels in the Prospect bypass reach and in the downstream reach between the project boundary and the convergence of West Canada Creek and the Mohawk River in order to determine the whitewater boating potential of West Canada Creek and the impact of project operations on whitewater boating opportunities.

Understanding the value of recreational resources requires an assessment of flow, demand, and the capacity of the project to provide recreational opportunity. In its Study Plan Determination, FERC required the licensee to follow the flow assessment framework developed by Whittaker, Shelby, and Gangemi in *Flows & Recreation: A Guide to Studies for River Professionals (2005),* a widely adopted methodology for assessing flows on regulated rivers for recreation and aesthetics. The methodology provides a protocol for identifying minimum acceptable and optimal flows for boating, angling, and aesthetic viewing through a multiple flow assessment. Both the aesthetic and whitewater boating studies conducted by the licensee in this relicensing followed the Whittaker protocols.

- Aesthetic Flow Study

The licensee conducted a controlled flow study in which it released three aesthetic flows into both the Prospect and Trenton Falls bypass reaches. The flows were evaluated by a study group including stakeholders, resource agencies, and local government. Following the Whittaker protocols, the study group evaluated each flow from key observation points and completed single flow and comparative flow assessments. Based on the flow assessments, the study report determined that all flows evaluated, ranging from 100-300 cfs, vastly improved project aesthetics compared to the current dewatered state of both falls under current license requirements. The study report determined that the flow of approximately 300 cfs had the highest aesthetic value at both Prospect Falls and Trenton Falls.

The aesthetics flow study also included data collected on each of the two weekends when the public was permitted to view the falls from the access trail at Trenton Falls. These public access weekends, called "Trail Days," provide the public with infrequent opportunities to view the dewatered Trenton Falls from the interpretative trail along the penstock above the Trenton powerhouse. These weekends typically draw thousands of visitors.
As part of the aesthetic flow study report, the licensee collected user intercept surveys from visitors during two "Trail Days" weekends in 2019. Rather than the usual dewatered condition that visitors typically view the falls during these special events, the licensee spilled flows ranging from 200-325 cfs. No data was collected from Trail Days visitors observing the falls under its typical dewatered condition. Comparing visitor responses across various flows, visitor satisfaction appears to correlate to flow for the most part – the higher the flow, the higher the satisfaction at most key observation points. For example, visitors rating their satisfaction as excellent at Sherman Falls increased between 35 and 48 percent comparing a flow of 200 cfs to a flow of 325 cfs. User intercept surveys and common sense strongly suggest that visitor satisfaction of the aesthetic view of the falls in its typical dewatered state would be significantly lower.

Photo 7: Top row - Prospect Falls dewatered (top left) and with flows restored (top right); Bottom row – Trenton Falls dewatered (bottom left) and with flows restored (bottom right).

- Whitewater Boating Study

Due to COVID-19 delays, the licensee was unable to complete the Whitewater Boating Study Report prior to the filing of the Draft License Application. The licensee was, however, able to complete a land-based assessment of Prospect Falls, an on-water assessment of a single flow between Prospect Falls and the Trenton impoundment, and an on-water assessment of two flows released below the project boundary on the reach between Middleville and Kast Bridge.

In the Prospect bypass reach, a panel of advanced-expert level boaters were selected to participate in the assessment of the whitewater boating potential based on a Level 2 single-flow assessment of 600 cfs released from the Prospect Dam. Study participants first viewed the dewatered bypass reach in order to evaluate: 1) the suitability of access at Prospect Dam; 2) bedrock structure immediately above and below Prospect Falls to identify potential hazards and boating lines; and 3) potential hazards at Prospect powerhouse tailrace.

Based on this land-based assessment of the dewatered bypass reach, study participants determined the following:

- The Prospect bypass reach can be safely accessed from the Prospect Dam via the Licensee's dam access road on river left.
- Land-based assessment of Prospect Falls from above (accessed via Military Road on river left under dewatered flow conditions) and from below (accessed via Military Road on river right at 600 cfs) determined that Prospect Falls is a valuable boating feature suitable for advanced level boaters at a flow of 600 cfs or greater.
- Water-based assessment of the reach determined that the Prospect bypass reach from Prospect Falls to Trenton impoundment is a highly valuable boating resource containing a series of bedrock ledges that create hydraulic features suitable for river running and playboating by intermediate/advanced level boaters. The section above the Prospect powerhouse narrows and creates powerful Class IV hydraulic features. The reach has exceptional scenic values that exceed those of any other reach in the region including that of the Ausable Chasm.

Photo 8: Prospect Falls at 600 cfs.

Photo 9: Whitewater kayakers below Prospect Falls (both images).

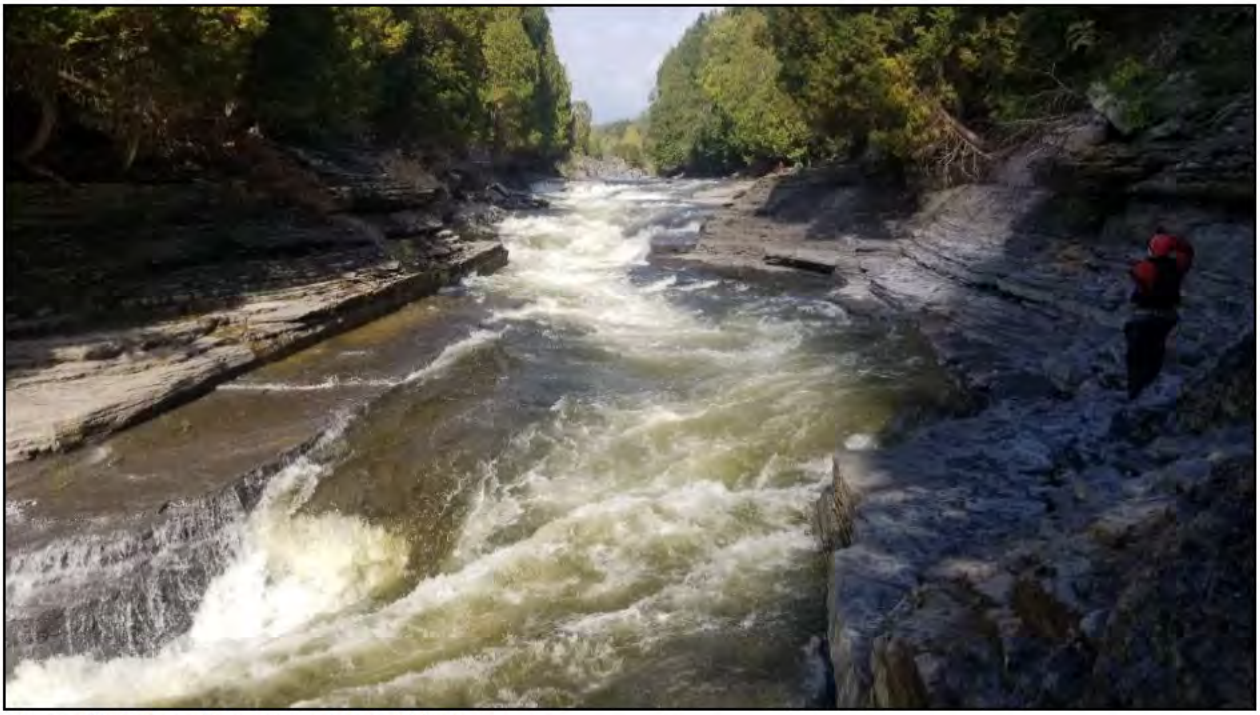


Photo 10: Prospect bypass reach at 600 cfs.

Photo 11: Prospect bypass reach at 600 cfs.

While we recognize that boater access in the Trenton impoundment presents some challenges that would require creating new access, many other hydropower projects have addressed similar challenges and currently provide meaningful recreation opportunities. The licensee should evaluate options for providing boater access in the Trenton impoundment in order to provide FERC with information to evaluate appropriate PM&E measures under a new FERC license.

Once the licensee files its Whitewater Boating Study Report prior to the Updated Study Report meeting in February, we anticipate filing a study modification request seeking a multiple flow Level 3 assessment of the Prospect bypass reach including an on-water assessment of Prospect Falls based on the results of the Level 2 study. In addition, we intend to make an Additional Information Request seeking an evaluation of feasibility of access in the Trenton Falls impoundment as a boating take-out.

Photo 12: Deerfield No.5 river access (MA) constructed by the FERC licensee to provide river access in an area with steep banks. A similar solution may be used to provide access to the Trenton impoundment.

In addition to the Level 2 assessment of the Prospect bypass reach, the licensee conducted a Level 3 on-water assessment of the reach between Middleville and Kast Bridge at target flows of 1,000 cfs and 1,400 cfs.[1] Study participants ranged from lower-intermediate to expert level kayakers and a canoeist. The on-water assessment determined the following:

[1] Actual flows were higher than target flows due to higher-than-expected inflows.

- The study reach provides whitewater boaters of varying levels of experience and craft with a high-quality boating experience over a range of flows that includes both target flows evaluated.
- Study participants were able to identify minimum acceptable and optimal flow ranges that are within the minimum and maximum hydraulic capacity of the project.
- Many study participants who have paddled the Kast Bridge reach for decades described the reach as being an important training reach for less experienced paddlers that would attract scores of paddlers on evenings and weekends.
- Changes in generating patterns have drastically reduced whitewater boating opportunities on the Kast Bridge reach.

Photo 13: Middleville to Kast Bridge whitewater boating reach @1 000 cfs target flow

The Kast Bridge section of West Canada Creek can be best compared to the Fife Brook section of the Deerfield River (FERC Project No. P-2669) that draws tens of thousands of whitewater boaters annually and supports the outdoor recreation economy in the central and western Massachusetts regions. The Deerfield River is located three hours from West Canada Creek. Brookfield's current FERC license for the Bear Swamp Project on the Deerfield River requires it to provide 106 scheduled releases from generation annually from the Fife Brook Development. By contrast, Brookfield's current FERC license for West Canada Creek has no requirement for scheduled recreation releases.

<u>Licensee's Proposed Protection, Mitigation & Enhancement (PM&E) Measures</u>

A central purpose of the relicensing process is to evaluate the impact of the project on a range of resources identified in the scoping document and to evaluate alternatives to the current mode of operation in order to protect, mitigate and enhance environmental values. 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 the authority to set conditions 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 legitimate project purposes by the Commission.

Brookfield's Draft License Application contains no proposed PM&E measures to mitigate impacts from project operations. Given the lack of information in the DLA describing the licensee's proposed PM&E measures, it is unclear whether the licensee is proposing any changes to mitigate project impacts on aquatic habitat, recreation, aesthetics, or other impacted resources. This lack of information in the DLA deprives stakeholders of any meaningful opportunity to comment on the DLA. Notwithstanding the paucity of information in the DLA, we are able to state that the required studies demonstrate that the project has an adverse impact on several resource areas and that those impacts have not been sufficiently protected, mitigated and enhanced under the current project license.

1. Whitewater Boating

Determining the most appropriate PM&E measures protective of recreational resources requires an assessment of the value of the resource, the demand for recreational opportunity, the capacity of the project, and the impact on other resources. West Canada Creek is approximately a 1-hour drive from Syracuse and a 1-½ to 2-hour drive from Albany. The boating reach is easily within driving distance for thousands of whitewater boaters in the area. The region also benefits from recreational tourism from the wider northeast region with whitewater boaters frequently traveling to the Adirondacks from distant areas including Vermont, Massachusetts, NYC, and beyond.

Field work for the Level 2 study for the Prospect bypass reach demonstrates that the reach contains whitewater boating features including a boatable falls, play features, and exceptional scenic values that can only be viewed by boat as the river narrows into a chasm above the powerhouse. While we plan to file a study modification request to complete an on-water assessment of Prospect Falls and more precisely identify boatable flow ranges, the information gathered to date is sufficient to warrant recreational flows into the bypass reach. In addition to recreational flow restoration, the licensee should be required to develop a proposal to provide recreational access to the bypass reach that provides access at Prospect Dam, improved access at Military Road, and access in the Trenton impoundment. With the restoration of boatable flows and the creation of new access in the Trenton impoundment, the Prospect bypass reach contains a complete, high-quality boating resource.

Assessing the frequency with which a resource should be made available in order to meet the expected demand requires and consideration of additional information including the accessibility of the resource to the recreating public, willingness of the recreating public to travel, the uniqueness of the recreational resource, and the expected frequency with which the recreational resource would be utilized by individual recreation users. Due to the challenging nature of the whitewater boating resource, it is likely that the Prospect bypass reach would be an attraction for advanced whitewater boaters who are also drawn to scheduled releases on the Moose, Beaver, Raquette, and Black Rivers.

In most years, 500-700 boaters travel to the region for Moose Fest Weekend and Beaver Rendezvous Weekend to enjoy the challenging whitewater that the region offers. The level of participation in these annual weekend events demonstrates strong interest in whitewater boating in the region by advanced and expert level paddlers and their willingness to travel distances of up to 600 miles for the opportunity to boat on these iconic river reaches. Existing FERC licenses with Brookfield on these rivers result in requirements for scheduled recreation releases as follows: Moose (20 days), Raquette (6 days), Beaver -Taylorville (5 days), Eagle (5 days), and Moshier (1 day). The current number of required scheduled releases on these rivers does not sufficiently meet the demand for whitewater boating opportunity in the region, and additional scheduled releases would likely attract a significant number of paddlers traveling to the region.

Regarding the reach below Trenton at Kast Bridge, historical use demonstrates strong boater demand. The reach provides a training opportunity for developing paddlers that was well utilized prior to changes in generation timing. Experienced paddlers as well as a commercial outfitter offered guided instructional trips. In addition, a group of up to 40 boaters would regularly paddle the reach on Wednesday evenings. With the change in generating schedules, there was a decline in recreational use of the river by whitewater paddlers and the outfitter was forced to discontinue operations. The lack of a comparable river for developing paddlers also led to a reduction in whitewater paddling in the area.

There are no comparable river reaches nearby inasmuch as the Sacandaga is a 2-hour drive and the Deerfield is a 3-hour drive from Kast Bridge. Given the popularity of both of those river reaches, we would anticipate significant interest if scheduled releases on weekday evenings as well as weekends were provided on West Canada Creek. We would expect that boaters would travel up to two hours for the opportunity to boat on this river reach. While the Kast Bridge section would be less of a regional draw than the Prospect reach, there is a much larger group of beginning and intermediate paddlers who would take advantage of scheduled boating opportunities at Kast Bridge.

The capacity of the West Canada Creek Hydroelectric Project to provide scheduled recreation releases depends on the release of sufficient inflow from Hinkley and the storage capacity of project reservoirs at Prospect and Trenton. We recognize that in a drought year like 2020 when inflows from Hinkley were reduced to a level barely sufficient to meet downstream minimum flows, the project had limited capacity to spill during the peak of the boating season. In typical years, however, the licensee has the capacity to restore flows to the Prospect bypass reach throughout the boating season by curtailing generation and utilizing its impoundment to provide recreation opportunity. Given the total annual generation at Prospect, periodically restoring flow

to the bypass reach for whitewater boating would have a negligible impact on annual generation at the project.

Regarding the downstream reach, our analysis of the Kast Bridge USGS gage data shows the number of "boatable days" when flows from generation and inflow exceed 1,000 cfs at some point during the day during the months of April to October. On average, the data show that there were 106 boatable days annually at Kast Bridge (Table 1). While the overall number of boatable days annually fluctuated 10 percent over these three water years shown, the monthly distribution of these dates fluctuated widely from wet to dry months in different water years.

Table 1
Number of Days with Maximum Flow >1,000 cfs at Kast Bridge

	2017	2018	2019	Average
Apr	30	30	30	30
May	25	26	31	27
Jun	12	1	30	14
Jul	22	0	7	10
Aug	13	1	7	7
Sep	4	5	11	7
Oct	2	30	0	11
Total	108	93	116	106

Similar fluctuations are evident from the Historical Gross Monthly Generation (MWh) at the Trenton Falls Development 2011-2019 shown in Table 2.[2]

Table 2
Historical Gross Monthly Generation (MWh) at the Trenton Falls Development 2011-2019

Month	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
January	12,136	15,495	12,416	17,436	17,919	11,466	-	14,648	17,179	13,188
February	7,363	15,206	12,466	12,372	8,032	11,967	9,742	15,858	18,571	12,397
March	13,695	15,859	9,818	5,951	3,326	20,631	20,600	18,986	15,116	13,776
April	18,593	12,138	15,418	16,695	16,128	19,941	20,146	17,967	18,714	17,304
May	17,689	14,779	13,878	20,400	14,010	10,929	16,092	16,310	20,242	16,037
June	9,784	9,630	16,267	13,238	13,365	5,261	12,729	6,854	16,388	11,502
July	7,614	6,882	15,500	12,395	13,910	6,807	12,607	4,502	8,098	9,813
August	6,950	6,155	6,216	10,409	4,767	7,695	10,381	5,052	6,974	7,178
September	12,023	4,882	6,775	11,082	3,542	7,749	8,874	7,252	9,453	7,959
October	15,138	9,997	5,549	10,759	9,409	7,482	7,260	13,301	14,906	10,422
November	13,580	10,715	15,139	11,994	9,957	11,496	18,913	16,866	14,085	13,638
December	15,107	9,938	18,461	12,571	10,750	9,473	13,843	16,095	16,781	13,669
Annual Total	149,671	131,676	147,903	155,302	125,114	130,895	151,185	153,691	176,506	146,883

The data show that the project frequently has the capacity to shift daily generation to times when the recreating public can utilize generation flows for recreational boating. The licensee should

[2] Table 2 is copied from the DLA where it is presented as Table 5.

perform operations model runs to calculate the impact on generation from shifting its generation timing to provide scheduled whitewater boating opportunity. Given the 7-hour estimated travel time between Trenton and Kast Bridge, providing weekday late-afternoon/early evening releases would shift peak generation timing from late afternoon/early evening to late morning hours. Scheduled weekend recreation releases would shift generation to off-peak hours.

Providing scheduled whitewater boating opportunities at the project would be unlikely to have an adverse impact on other resources. In the Prospect bypass reach, providing periodic whitewater boating releases of a magnitude of 600-1,000 cfs are well within the naturally occurring hydraulic range of the river. Given the bedrock ledge character of much of the bypass reach and the steep rock embankment walls, recreation releases of this magnitude are unlikely to affect channel geomorphology. Additionally, the lack of a minimum flow sufficient to cover the entire stream bed results in limited aquatic habitat that is unlikely to be affected by flows of this magnitude.

Regarding Trenton, the range of boatable flows evaluated in the whitewater boating study on the Kast Bridge section are within the minimum and maximum turbine capacity of the Trenton powerhouse. As a result, aquatic impacts from scheduled recreation release are identical to those under the current FERC license. Greater predictability in generation timing will benefit a range of recreational uses as boaters, tubers, and anglers will know when they can expect that flows will be in an optimal range.

2. Aesthetics

The DLA proposes no mitigation for project impacts on aesthetics notwithstanding the clear results from the aesthetics study. Restoring aesthetic views of Prospect Falls would require the periodic release of 200-300 cfs from the Prospect Dam in order to provide an aesthetic view of Prospect Falls from the key observation points on Military Road and through project lands. Providing periodic scheduled weekend whitewater boating releases in the Prospect bypass reach would also have aesthetic benefits. While we recognize that the ability of the licensee to provide aesthetic flows may be limited by inflows and storage at times, providing periodic aesthetic flows over Prospect Falls needs to be addressed in the Final License Application.

At the Trenton Falls Development, protecting the substantial aesthetic value of Trenton Falls requires open public access to the Trenton Falls scenic trail. Visitor attendance during the two annual “Trail Days” events demonstrates strong public demand for recreation opportunities at the project. While these annual events are scheduled in coordination with the town of Trenton who provides interpretive guides, regular open public access should be allowed independent of the ability of the town to provide this service. In addition to providing visitor access during spring and fall Trail Days events, the licensee should allow the public to visit and enjoy the scenic view of the Trenton Falls Gorge at any time. Numerous hydropower projects permit public access for the purpose of aesthetic viewing of natural falls in project boundaries, and similar access should be provided here.

In addition to providing access for aesthetic viewing of Trenton Falls, the licensee needs to provide optimal flows into the Trenton Falls Gorge from the Trenton Falls Dam. The Aesthetic

Flow Study identified a flow of at least 300-325 cfs as providing optimal aesthetic views of the falls, and this aesthetic flow range is consistent with information collected in user intercept surveys. These flows need to be provided during all scheduled events and at other times when the public is provided access. Providing access at Trenton Falls is particularly valuable given the historical importance of the falls to the region.

American Whitewater's Requested PM&E Measures

Project facilities and operations have dewatered the Prospect and Trenton natural river bypass reaches, eliminated all boating and angling opportunities in the Prospect bypass reach, eliminated nearly all opportunity to enjoy aesthetic views of Prospect Falls and Trenton Falls, dramatically reduced boating opportunities below the project through the licensee's hydropeaking operations, and damaged the recreation economy of the region.

Mitigating project impacts on recreation and aesthetic values negatively impacted by project operations requires that the licensee:

1. Provide scheduled whitewater boating releases from Prospect Dam
2. Provide open public access to the Prospect bypass reach to for boating, angling, hiking, and aesthetic viewing
3. Provide aesthetic flows at Prospect Falls and Trenton Falls
4. Provide open public access to Trenton Falls for hiking and aesthetic viewing
5. Provide weekday and weekend scheduled recreation releases from Trenton powerhouse for whitewater boating between Middleville and Kast Bridge
6. Secure put-in and take-out access locations for whitewater boaters at Middleville and Kast Bridge.

Based on our analysis of historical recreation use, hydrological data, the impact of project operations on recreational opportunity, and the licensee's Draft License Application, American Whitewater recommends that the Licensee adopt the following specific PM&E measures at the Trenton Falls Hydroelectric Project:

Reach 1: Prospect Bypassed Reach

1. *Provide Recreation and Aesthetic Flows to Prospect Bypassed Reach*

The licensee should provide no fewer than 20 scheduled whitewater boating releases annually, consistent with scheduled releases at other rivers including the Moose River (20 days), Cheoah River (20 days), and Deerfield No. 5 (32 days). Providing 20 scheduled releases at Prospect Falls is warranted based on the high quality of the boating reach as shown by the whitewater boating study and the significant demand as shown by participation in scheduled releases on other rivers in the region including the Moose, Beaver, Black, Racquette, and Ausable. Providing sufficient boating opportunity is necessary in order to avoid overcrowding.

But for the licensee's flow diversion and dewatering of the Prospect bypass reach, inflows into the Prospect impoundment from Hinkley Reservoir would be sufficient to provide boatable flows

into Prospect bypass reach approximately 80-90 percent of the time based on the annual flow duration curve provided in Appendix B-1 of the DLA. Providing 20 scheduled boating releases into the Prospect Falls boating reach would result in the loss of less than one percent of the generating capacity of the Prospect Development. The Prospect Development currently provides no mitigation for project impacts on recreation in the bypass reach. Consequently, the licensee should be required to provide no fewer than 20 scheduled releases from Prospect Dam in order to provide whitewater boating opportunities in Prospect bypass reach from Prospect Dam to Trenton impoundment. The magnitude of each release should be approximately 600-1,000 cfs (to be determined by the relevant ongoing study) and should last four hours or more in duration. Scheduled releases will also provide periodic aesthetic views of Prospect Falls.

2. *Provide Recreation Access to Prospect Bypass Reach*

The licensee should provide the recreating public with year-round free public access to the Prospect bypass reach at Prospect Dam, Military Road, and the Trenton impoundment. Providing open public access at these locations would allow for whitewater boating during scheduled releases and other spill events and provide the public with the opportunity to hike and view Prospect Falls. Access at Prospect Dam would allow easy access to the entire Prospect bypass reach for whitewater boating (Map 1). Access at Military Road would provide a whitewater boating put-in for the bypass reach from Prospect Falls to Trenton impoundment. Providing access at this location would also allow the public to hike to Prospect Falls for an aesthetic view of the falls. In addition, access at Military Road would provide whitewater boating park-and-play opportunities at Military Road and provide access for anglers if aquatic habitat is restored. The licensee should construct gravel parking areas to facilitate safe access to Prospect Falls.

Map 1: Upper Prospect bypass reach access with approximate locations of parking areas access trails and put-in and scouting locations.

The licensee should also provide new access in the Trenton impoundment to be used as a whitewater boating take-out for the Prospect Falls boating reach (Map 2). Additionally, the licensee should construct an access trail from the parking area near the gate house to the newly constructed access.

Map 2: Lower Prospect bypass reach access above Trenton Falls with approximate locations of parking area access trail and take-out.

3. *Whitewater & Aesthetic Flow Information*

The licensee should provide the public with information on its *Safe Waters* website and make this information publicly available through an application programming interface (API) to inform the public when flows are scheduled or spilled into the Prospect bypass reach. The information should include the release schedule and the projected magnitude, duration, and timing of spill events. Providing this information would inform whitewater boaters of both scheduled and unscheduled boating opportunities in the Prospect bypass reach. In addition, providing the public with advanced notice of scheduled releases would provide the public with aesthetic viewing opportunities of Prospect Falls.

Prospect Bypassed Reach Mitigation			
Location	Interest	Current	AW Proposed
Prospect Dam	Whitewater boating access	Access prohibited	Provide public access to bypass reach at Prospect Dam for whitewater boaters during releases and spill
Military Road	Whitewater boating access	Access prohibited	Provide public access to bypass reach at Prospect Falls for whitewater boaters during releases and spill
Trenton Impoundment	Recreation access	None	Construct stairs for use as a whitewater boating take-out in Trenton impoundment
Prospect Dam	Whitewater boating & aesthetic flow	None	Provide 20 5-hour scheduled recreation releases in bypass reach at 600-1,000 cfs (TBD)
Prospect Dam	Recreation & aesthetic flow information	None	Provide spill forecast in bypass reach

Reach 2: Trenton Bypassed Reach

1. *Provide Aesthetic Flows to Trenton Bypass Reach*

The licensee should provide an aesthetic flow of 325 cfs into the Trenton bypass reach. Aesthetic flows should be provided on four weekend days each month between April and October and last for a duration of four hours or more. Providing aesthetic flows will provide the public with opportunities to view Trenton Falls with flows restored.

2. *Provide Recreation Access to Trenton Bypass Reach*

The licensee should provide open public access to Trenton Falls to allow the public to access the Trenton Falls Scenic Trail and view the Trenton Falls Gorge. Providing open public access to Trenton Falls Gorge would restore aesthetic viewing opportunities that existed historically, provide regular access to the scenic trail, and support the recreation economy in the region. The crowding of thousands of visitors on the trail during infrequent public viewing opportunities demonstrates the need for open public access. While the licensee should be credited for creating the scenic trail and installing interpretive signage, the public needs to be allowed open public

access. Additionally, the licensee should be required to maintain the scenic trail throughout the term of the project license.

3. Whitewater & Aesthetic Flow Information

Like the Prospect bypass reach, the licensee should provide the public with information on its *Safe Waters* website and make this information publicly available through an API to inform the public when flows are scheduled or spilled into the Trenotin bypass reach. The information should include the release schedule and the projected magnitude, duration, and timing of the spill event. Providing this information would inform the public of both scheduled and unscheduled opportunities to view water flowing over Trenton Falls in the Trenton bypass reach in order to provide the public with aesthetic viewing opportunities at Trenton Falls.

Trenton Falls Bypassed Reach Mitigation			
Location	Interest	Current	AW Proposed
Trenton Impoundment	Recreation access	Access prohibited	Provide public access to Trenton impoundment for whitewater boaters
Trenton Falls Scenic Trail	Recreation and aesthetic viewing access	2 weekends annually	Provide daily open public access to scenic trail in bypass reach
Trenton Falls Dam	Aesthetic flow	None	Provide 300 cfs aesthetic flow in bypass reach during 4 weekend days monthly April-October
Trenton Falls Dam	Aesthetic flow information	None	Provide spill forecast in bypass reach

Reach 3: West Canada Creek Below Trenton

1. Provide Recreation Flows Below Trenton

The licensee's peaking operations are timed such that they eliminate whitewater boating opportunities in the Middleville to Kast Bridge section, particularly during the summer and early fall months except when natural inflows are present. To mitigate these impacts, the licensee should provide at least 40 annual scheduled whitewater boating releases (20 weekday, 20 weekend) from Trenton powerhouse in order to provide whitewater boating opportunity between Middleville and Kast Bridge, a number of scheduled releases that is well below required scheduled releases on other rivers including the Deerfield (106 days), Nantahala (214 days), and Tuckasegee (106 days). Providing two weekly scheduled releases (e.g. Wed/Sun) over a 10-week period would substantially reduce the project's impacts on whitewater boating opportunities.

Providing at least 20 weekday and 20 weekend scheduled releases below Trenton Falls to allow whitewater boating in the Kast Bridge section is warranted based on the high quality of the boating reach as shown by the whitewater boating study, historical whitewater use when more predictable generation allowed, and the significant demand as shown by participation in scheduled releases on other rivers such as the Deerfield River. Flow from Trenton powerhouse should be timed to provide optimal flow at Middleville beginning at 3 p.m. on weekdays and 10 a.m on weekends. The magnitude of each release should be approximately 1,000-1,400 cfs based on the results from the whitewater boating study and should last 4 hours or more in duration on weekdays and five hours or more on weekends.

2. *Secure Whitewater Boating Access*

The licensee should secure access for whitewater boaters at Middleville and Kast Bridge. Current restrictions at DEC fishing access locations threaten the ability of whitewater boaters to access the river at these locations. The licensee should secure access for whitewater boaters at these locations through DEC or through acquiring access rights for recreational users at other proximate locations. The licensee should make improvements to the takeout location at Kast Bridge to provide access for paddlers with limited mobility.

3. *Whitewater & Aesthetic Flow Information*

The licensee should provide the public with information on its *Safe Waters* website to inform the public of scheduled releases and planned generation from Trenton powerhouse. The information should include the release schedule and the projected magnitude, duration, and timing of generation. Providing this information would inform the public of both scheduled and unscheduled boating in the whitewater boating reach and on other sections of West Canada Creek between Trenton and the Mohawk River.

West Canada Creek Below Trenton			
Location	Interest	Current	AW Proposed
Middleville to Kast Bridge	Whitewater boating	None	Provide 20 4-hour scheduled recreation releases at Kast Bridge on weekdays from 3-7 pm below powerhouse at 1,000-1,400 cfs (TBD)
Middleville to Kast Bridge	Whitewater boating	None	Provide 20 5-hour scheduled recreation releases at Kast Bridge on weekends from 10 am- 3 pm below powerhouse at 1,000-1,400 cfs (TBD)
Middleville	Recreation access	Restricted	Secure legal access
Kast Bridge	Recreation access	Restricted	Secure legal access
Trenton Powerhouse	Recreation flow information	None	Provide generation forecast below Trenton

Conclusion

For the foregoing reasons, American Whitewater respectfully requests that the License revise its Draft License Application based on the foregoing comments in order to adequately mitigate the adverse impact of its hydropower operation on recreation use and aesthetics on West Canada Creek.

Very truly yours,

Bob Nasdor
Northeast Stewardship & Legal Director
American Whitewater
65 Blueberry Hill Lane
Sudbury MA 01776
bob@americanwhitewater.org

Certificate of Service

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, 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 28th day of December 2020.

Scott Harding
Stewardship Associate
American Whitewater
PO Box 34
Forks of Salmon, CA 96031
541-840-1662

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
December 29, 2020

OFFICE OF ENERGY PROJECTS

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

VIA Electronic Mail

Mr. Steven Murphy,
Director of Licensing
Brookfield Renewable
Steven.murphy@brookfieldrenewable.com

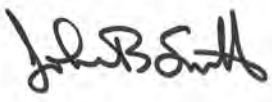
Reference: Comments on Draft License Application

Dear Mr. Murphy:

Pursuant to 18 CFR § 5.16(c), this letter contains Commission staff's comments on Erie Boulevard Hydropower, LP's (Erie's) October 1, 2020 draft license application (DLA) for the West Canada Creek Hydroelectric Project. Our specific comments on the DLA are outlined in Appendix A. Please incorporate your response to comments on the DLA in the final license application (FLA). We may request additional information at a later date regarding this project.

If you have any questions, please contact Emily Carter at (202) 502-6512, or via e-mail at emily.carter@ferc.gov.

Sincerely,



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

Attachment: Appendix A – Comments on the Draft License Application

APPENDIX A
Comments on the Draft License Application

Exhibit B

1. In the description of dependable capacities, page B-8 states that "Prospect's dependable capacity amount was 6.3 megawatts (MW) for the summer period and 13.1 MW for the winter period, and Trenton Development's dependable capacity amount was 14.2 MW for the summer period and 2,323.1 MW for the winter period." Trenton Development's dependable capacity for the winter period seems too high compared to the summer period. In the final license application, please verify this number and provide the Trenton Development's correct dependable capacity for the winter period.

Exhibit E

Aquatic Resources

2. In the description of the Prospect dam, page A-7 in Exhibit A states that "there are two 42-inch pipes in the dam that serve as intakes for future water supply for the City of Utica." Additional information about these potential withdrawals from Prospect reservoir would benefit staff's analysis of water uses in the project area. In the final license application, please provide, to the best of your knowledge, a description of any planned or proposed drinking water withdrawals from the Prospect reservoir.

3. Pages B-7 to B-8 in Exhibit B, pages E-3-13 to E-3-14 of Exhibit E, and Appendix B provide streamflow statistics and flow duration curves at the Prospect and Trenton developments based on prorations of streamflow at the USGS No. 01346000 gage at Kast Bridge, Herkimer, New York. To assist staff in its environmental analysis, please provide the proration factors used to estimate streamflow at each development in the final license application.

Terrestrial Resources and Threatened and Endangered Species

4. Page E-3-63 states that there are 209.1 acres of New York State Department of Environmental Conservation regulated wetlands in the general project vicinity. The draft license application, however, does not specify how many of those wetlands are located within the project boundary. In the final license application, please clarify how many acres of wetland are within the project boundary. Please also specify how many acres of each of the following National Wetland Inventory wetland types is located within the project boundary: freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine.

Cultural Resources

5. Page E-3-99 states that the Trenton powerhouse is eligible for listing on the National Register of Historic Places (National Register); however, the Prospect powerhouse, which was built in 1959, is not mentioned. Has the Prospect powerhouse been evaluated to determine whether it is eligible for listing in the National Register? To assist staff in complying with section 106 of the National Historic Preservation Act, in the final license application, please provide a description of the history of the Prospect powerhouse and whether it has been evaluated for listing in the National Register.

Exhibit F

6. Section 4.61(e) of the Commission's regulations requires that an application includes an Exhibit F consisting of general design drawings of the principal project works and supporting information used as the basis of design. The draft license application provides the drawings of the principal project works and only summaries for the supporting design report. Although Erie recently filed the Part 12 Safety Inspection Report and the Supporting Technical Information Document, please provide the supporting design report in the final license application.

Exhibit G

7. Section 4.39(a) of the Commission's regulations requires that all Exhibit G maps must be stamped by a registered land surveyor. For all four of the Exhibit G drawings, there are no registered land surveyor's stamps on the maps. In the final license application, please ensure all Exhibit G maps are stamped by a registered land surveyor.

8. Section 4.41(h)(2)(i) of the Commission's regulations requires that the project boundary around a project impoundment must be described by one of the following: (1) contour lines, including the contour elevation (preferred method); (2) specified courses and distance; (3) if the project lands are covered by a public land survey, lines upon or parallel to the lines of the surveyor; or (4) any combination of the above methods. The description of the project impoundment on the Exhibit G drawings filed with the draft license application does not follow the Commission's requirements. In the final license application, please provide revised Exhibit G drawings that comply with the Commission's regulations.

9. Section 4.41(h)(2)(iii) of the Commission's regulations requires that the boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following: (1) contour lines; (2) specified courses and distance; (3) if the project lands are covered by a public land survey, lines upon or parallel to the lines of the surveyor; or (4) any combination of the above methods. The Exhibit G drawings filed with the draft license application do not follow the Commission's

requirements. In the final license application, please provide revised Exhibit G drawings that comply with the Commission's regulations.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 6
207 Genesee Street, Utica, NY 13501-2885
P: (315)793-2554 F: (315) 793-2748
www.dec.ny.gov

December 30, 2020

Filed electronically

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

Re: West Canada Creek Project (P-2701-059)
Comments on Draft License Application

Dear Secretary Bose:

The New York State Department of Environmental Conservation (DEC) has reviewed the October 1, 2020 Draft License Application (DLA) 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). The following provides DEC's comments on the DLA.

Exhibit B

2.1 Project Hydrology

Data represented in Table 1- Hinckley Reservoir Daily Outflows and in Table 2- Project Development Monthly Average Flows of this section, should be revised and split to reflect the difference in flow values for the original Operating Diagram versus the currently used, 2012 Operating Diagram. Data included in each of these tables could be skewed and not reflect the discharges associated with current operations under the 2012 Operating Diagram.

Exhibit E – Environmental Report

Existing Project Facilities Recommendations

Section 2.1.1 demonstrates that the current trashracks do not meet the recommended specifications of 1-inch-clear-spaced trashracks on the intake structure that have been shown to be effective on many hydroelectric projects throughout New York State. Currently, the intake trashracks at the Prospect Development only provide 3 5/8-inch clear spacing and the trashracks at the Trenton Development only provide 2-inch clear spacing. 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.

2.1.3 Existing Project Operations

Recommendations

The existing Project operations with daily fluctuations of up to 5 feet in the Prospect Reservoir and up to 12 feet in the Trenton Reservoir create an unstable flow regime that acts as a pulse moving through the West Canada Creek System. In the bypass reaches of this Project there is no established minimum flow, which creates a nearly dewatered stretch of the former West Canada Creek streambed. Several biological indicators produced by this altered hydrologic regime have been noted in the various studies undertaken in the current relicensing effort with the most notable being demonstrated in the freshwater macroinvertebrates and mussel communities.

As reported on page 16 in the study results of the Macroinvertebrate and Freshwater Mussel Survey Report for this Project a Biological Assessment Profile (BAP) score of 0 to 2.5 indicates poor water quality, a BAP score of 2.5 to 5.0 indicates marginal water quality, a BAP score of 5.0 to 7.5 indicates good/suboptimal water quality and a BAP score of 7.5 to 10.0 indicates optimal water quality. The results presented in Table 3-2 (Biological Metrics for Each Sample Site Sampled for Macroinvertebrates) on page 19 of the Macroinvertebrate and Freshwater Mussel Survey Report clearly show a decreasing trend throughout the bypass reaches of this Project with the Upper Prospect Bypass Reach having the highest BAP of 7.56 and the Lower Trenton Bypass Reach having a BAP score of 0 indicating that the water quality may start out as optimal but then decreases to poor. Likewise, Figure 2-3 on page 6 and Table 3-1 on page 17 of the Macroinvertebrate and Freshwater Mussel Survey, demonstrated that 7 out of the 8 sites sampled in the downstream section of West Canada Creek had suboptimal or less BAP scores indicating that a majority of this section is experiencing impacts form slight to severe and only one site (Site 10) was scored as optimal.

The diversity and densities of freshwater mussels are also impacted by this altered hydrologic regime as reported in both the DLA and the Macroinvertebrate and Freshwater Mussel Survey Report. Only one freshwater mussel species was documented in Prospect Reservoir, the lake floater (*Pyganodon lacustris*) with a reported density of 0.6 mussels per meter^2, and only two freshwater mussel species were reported in the downstream section of West Canada Creek, six eastern pearlshell (*Margaritifera margaritifera*) and two live eastern elliptio (*Elliptio complanata*) were observed in five sites with a reported density of 0.008 mussels per meter^2.

Current Project operations also profoundly impact the habitat within the Prospect Reservoir. As presented on page 29 in the Impoundment Shoreline Characterization Study, the range of linear habitat dewatering of the littoral zone was from 10 feet to as much as 129 feet dependent on bed slope profiles.

Fluctuations should be limited in both reservoirs and a minimum base flow should be established in the Project's bypass reaches. To modify this altered hydrologic regime, the Project should be operated as a Run-of-River or modified/dampened peaking operation, where inflow would equal

outflow thereby mimicking the natural hydrologic regime present within the West Canada Creek system. This would benefit water quality, macroinvertebrate, mussel, and fish habitat, and reduce bank and shoreline erosion. The DEC routinely receives comments and phone calls from anglers regarding the rapid changes in flow downstream of the Project. Angler safety downstream of the Project would also benefit from a Run-of-River/modified/dampened peaking operation.

A flow monitoring station should be installed immediately downstream of the NYSCC feeder canal. This gauge would provide real time flow measurements with a predetermined frequency enough to notify downstream anglers and other recreational activities of the forthcoming flow. The data would be made available to the public on the internet. Not only would the data notify the recreational public, but it would also be essential to ensure compliance with the current downstream minimum flow (160 cfs) or any new downstream flow requirement. This is particularly important when the watershed is in drought conditions. The Kast Bridge station (USGS Gage No. 01346000), located approximately 16-miles downstream, is not sufficient to monitor downstream flow. Erie should notify the DEC when flow is <250 cfs (currently only when <160cfs).

2.1.4 Existing Environmental Measures

Recommendations

The continuous minimum flow requirement of 160 cfs or inflow from the Project, whichever is less, as immediately measured downstream of the NYSCC diversion weir should, at a minimum, be provided throughout both Project's bypass reaches. However, the Applicant should provide a minimum flow requirement of 250 cfs, or inflow from the Project, whichever is less, throughout both Project's bypass reaches and downstream section of West Canada Creek. This is supported by observations made during the Aesthetic Flow Assessment Study and demonstrated in the 1980 Ichthyological Associates study, which 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.

The existing formal boat launch at the Prospect Reservoir currently has no Americans with Disabilities Act (ADA) compliant Accessible Features. The Applicant should determine the feasibility, costs, and a timeline for implementation of providing Universal Accessibility by developing Accessible Features at the Prospect Reservoir Boat Launch.

The DEC concurs with the Applicants existing environmental measure regarding the discovery of any previously unrecorded archeological sites.

3.4 Water Resources

Water Quantity and Water Quality Recommendations

Under the current license and in this relicensing, the Applicant proposes to maintain the existing downstream minimum flow requirement of 160 cfs as measured immediately downstream of the NYSCC diversion weir (Nine Mile Creek Feeder Dam). The Applicant does not address the lack of flow in both the Prospect and Trenton Bypass Reaches. It is recommended that a 250 cfs minimum flow be required throughout the Project including both bypass reaches in order to

alleviate some, or possibly all, of the instances of the Project operations falling below the New York State water quality standards as documented in the March 2020 Water Quality Study and presented in this DLA. Observations made during the Aesthetics Flow Assessment Study and demonstrated in the 1980 Ichthyological Associates study support establishing a minimum flow of 250 cfs throughout the Project and to the downstream section of West Canada Creek.

Data represented in Table 3-2 Hinckley Reservoir Daily Outflows (cfs), Table 3-3 Prospect Development Daily outflows (cfs), and in Table 3-4 Trenton Development Daily Outflows (cfs) within section 3.4.1.1, should be revised and split into two tables for each data set to correctly represent data based on which operating diagram was in use, either the original operating Diagram or the 2012 Operating Diagram.

3.5 Fish and Aquatic Resources

On page E-3-37 in Section 3.5.1.2 (Fish Assemblage and Management), the DLA states that American eel (Anguilla rostrate) is a documented part of the fish assemblage for West Canada Creek but none have been found recently or during the 2019 fish assemblage survey. This section also states that there are no fish passage facilities for American Eel or any other fish passage at the downstream Nine Mile Creek Feeder, Newport, or Herkimer dams or at the upstream Jarvis Hydroelectric Project.

In Section 3.5.1.2 (Fish Assemblage and Management) on page E-3-41 the DLA states that yellow perch (*Perca flavescens*) and pumpkinseed (*Lepomis gibbosus*) were found in particularly high abundance relative to the overall catch in the Prospect impoundment representing 61% and 23% respectively.

On page E-3-42 in Section 3.5.1.2 (Fish Assemblage and Management) the DLA states that a total of 120 fish were collected during the backpack electrofishing sampling within the Prospect Bypass reach. It was reported that nine species were sampled which included brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*).

In Section 3.5.1.2 (Fish Assemblage and Management) on page E-3-43 the DLA demonstrated that some cold/coolwater species were predominately located in the mixing zone near the confluence of tributaries. Brook Trout and Brown Trout were collected near several tributary streams suggesting these tributaries may be important for thermal refuge during the warm season and could potentially be a source of recruitment to the West Canada Creek.

On page E-3-46, in Section 3.5.1.2 (Fish Assemblage and Management), Table 3-12 (NYSDEC Stocking Numbers for West Canada Creek and Cincinnati Creek) the DLA shows that over 50,000 trout are stocked annually in order to maintain the West Canada Creek system as one of the top fishing destinations in New York State.

In Section 3.5.1.3 (Fish Entrainment) on page E-3-47 the DLA states that the species composition used for the desktop analysis of fish entrainment was developed only from the Prospect impoundment fish assemblage survey conducted by the Applicant. On pages E-3-47 through E-3-48 the DLA states that the Applicant is currently reviewing the entrainment analysis to provide

additional information regarding potential trout entrainment as part of the Updated Study Report filing and in the Final License Application (FLA).

On page E-3-48 in Section 3.5.1.4 (Benthic Macroinvertebrates) the DLA states that the Lower West Canada Creek, downstream of the Nine Mile Creek Feeder Dam to the confluence with the Mohawk River, had a range of NYSDEC BAP scores from 2.8 to 8.2 with a median BAP score of 6.5. The DLA also reported that Median BAP values for all 12 sample sites was 6.1, indicating good water quality with a healthy macroinvertebrate community. However, Figure 2-3 on page 6 and Table 3-1 on page 17 of the Macroinvertebrate and Freshwater Mussel Survey demonstrated that 7 out of the 8 sites sampled in the this section of West Canada Creek had suboptimal or less BAP scores indicating that a majority of this section is experiencing impacts form slight to severe and only one site (Site 10) was scored as optimal.

Reporting the Median BAP score is misleading as it was reported in Section 3.1 (Benthic Macroinvertebrate Sampling) on page 19 of the Macroinvertebrate and Freshwater Mussel Survey (MFMS), Table 3-2 (Biological Metrics for Each Site Sampled for Macroinvertebrates) indicates that the diversity, habitat, and water quality scores associated with macroinvertebrates decreases throughout the Project's bypass reaches. The Upper Prospect Bypass Reach had the highest BAP of 7.56 and the Lower Trenton Bypass Reach had a BAP score of 0. These results confirm DEC's Waterbody Inventory/Priority Waterbodies List (WI/WPL) information concerning assessments for impairments to aquatic life and for habitat/hydrology in this section of West Canada Creek that was last revised in 2010 and is found at the following URL:

https://www.dec.ny.gov/chemical/36739.html. (Revised 01/29/2010)

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.

In Section 3.5.1.5 (Freshwater Mussels) on page E-3-52 the DLA states that only one freshwater mussel species, lake floater, was observed within the Prospect impoundment and no freshwater mussels or shells were found within the Prospect Bypass reach.

On page E-3-55 in Section 3.5.1.5 (Freshwater Mussels) the DLA states that six eastern pearlshell and two live eastern elliptio were observed in five sites in West Canada Creek downstream of the Project. However, in Section 3.2.3 (Lower West Canada Creek), on pages 21 – 22, the Macroinvertebrate and Freshwater Mussel Survey report stated that no live mussels or shells were observed at any of the other survey sites within a 4.6 mile section of West Canada Creek between the NYS Route 28 Bridge in Gravesville and ending above the Herkimer County Route 200 Bridge

in Poland. The estimated average densities of mussels within this section of West Canada Creek were reported to be 0.008 mussels per meter^2 as opposed to the average mussel density 0.6 mussels per meter^2 reported for the Prospect impoundment. Shell wear was observed to be minimal on the six eastern pearlshell mussels but observed to be severe on the two live eastern elliptio mussels.

Recommendations

The results from the Macroinvertebrate and Freshwater Mussel Survey clearly document and support the findings of the DEC's WI/WPL information concerning assessments for impairments to aquatic life and for habitat/hydrology. The Aquatic Mesohabitat Assessment Study indicated that leakage only provides 1 – 3 cfs and documented limited wetted areas in the bypass reaches. This study also reported decreasing diversity, habitat, and water quality scores associated with macroinvertebrates in the bypass reaches and documented 7 out of 8 sites surveyed in the Lower West Canada Creek had suboptimal or below BAP scores. The Fish Assemblage Assessment documented a limited number of fish species present within the Project's Bypass reaches. The combined results from these studies clearly indicate that West Canada Creek has impairments to aquatic life and habitat based on its current hydrologic regime.

Under the current license and as proposed by the Applicant in this relicensing, the existing downstream minimum flow requirement of 160 cfs as measured immediately downstream of the NYSCC diversion weir (Nine Mile Creek Feeder Dam) and continued peaking mode of operations will be maintained. The Applicant does not address the lack of flow in both the Prospect and Trenton Bypass Reaches where aquatic habitat and resources have been demonstrated to be limited. It is recommended that a minimum flow of 250 cfs be required throughout the Project, including both bypass reaches, in order to ameliorate some of the limited habitat conditions and aquatic resources experienced at this Project. It is also recommended that the Applicant install 1-inch clear spaced trashracks on the Prospect and Trenton facility intakes or seasonal overlays to exclude most of the adult fish from possible entrainment at these facilities.

Furthermore, on pages 47 – 48, in Section 4.3 (Prospect Bypass Reach) the Fish Assemblage Assessment (FAA) presented in the Initial Study Report stated that a single brook trout and a single brown trout were captured within the Prospect bypass reach. The FFA also postulated that the capture of trout in the bypass reach could be escapees from the stocking efforts upstream in the Prospect impoundment and passed downstream during a spill event at the dam. The capture of trout and the water quality data collected in the bypass reach indicates that trout can survive in the bypass reach. The Prospect bypass reach could provide additional fishing opportunities for the public if a minimum flow of 250 cfs was established and safe public access was provided. The establishment of a trout stocking policy could then be implemented, which would also enhance fishing and recreational opportunities.

3.8 Recreation Resources

Prospect Development

On page E-3-78, the DLA states that the Prospect boat launch site does not have any dedicated ADA accessible parking spaces, ADA signage, or ADA Accessible facilities for access to the reservoir. The DLA also states on this page that there is no formal access to the Prospect bypass reach between the Prospect Dam and the powerhouse.

Trenton Development

Page E-3-80 of the DLA indicates that the Trenton Falls Scenic Trail Area has an ADA Accessible Overlook. On page E-3-81 of the DLA, the Applicant presents a photograph of the ADA Parking Area and Overlook (Photo 3-9).

During a site visit for the Aesthetics Flow Assessment study conducted on 24 Sep 2019, it appeared that the metal railing on the Accessible Overlook located adjacent to the parking area did not provide proper toe-clearance as stated in 2010 ADA Standards for Accessible Design. Section 306.2 Toe Clearance of the 2010 ADA Standards states under Section 306.2.1 (General) that the space under an element between the finish floor or ground and 9 inches (230 mm) above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.

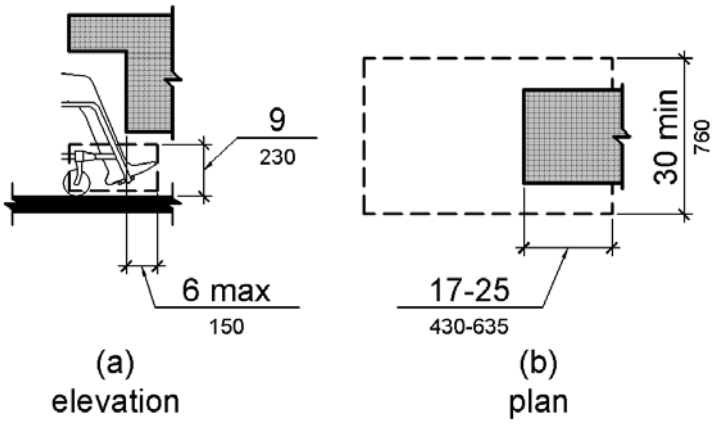


Figure 306.2 Toe Clearance

Potential improvements to the existing viewing platform should be conducted for appropriate toe clearance and railing dimensions, found in Section 1005 of the 2010 ADA Standards for Accessible Designs, Section 1005.3.2 Extended Ground or Deck Surface. The ground or deck surface should extend 12 inches (305 mm) minimum beyond the inside face of the railing. Toe clearance should be provided and shall be 30 inches (760 mm) wide minimum and 9 inches (230 mm) minimum above the ground or deck surface beyond the railing. There may not be adequate toe clearance on the existing Accessible Overlook along the Trenton Falls Scenic Trail Area of the Project.

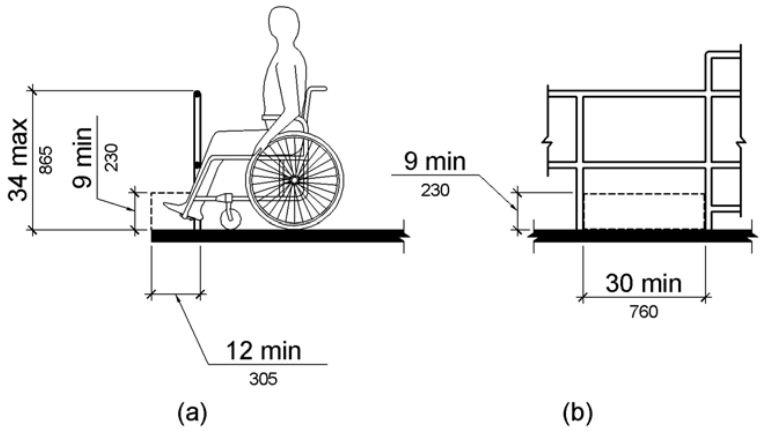


Figure 1005.3.2 Extended Ground or Deck Surface at Fishing Piers and Platforms

Photo 1. Trenton Trails Accessible Overlook Railing – 24 Sep 2019

Recreation Resources Recommendations

It is highly recommended that the Applicant review all its Accessible Elements associated with the Trenton Falls Scenic Trails for compliance with the 2010 ADA Standards with respect to appropriate railings dimensions and proper toe clearance. The Applicant should reference Section 703 of the 2010 ADA Standards for information regarding signs being placed at Accessible locations and the recommended height above the ground surface. For example, the Applicant

could install ADA compliant Accessible Parking, Access Route (from the parking to the launch), and an Accessible Beach Launch for canoes/kayaks/car-top boats similar to facilities found at the DEC's Cranberry Lake Boat Launch Site, Thirteenth Lake, and Tooley Pond Fishing Access Site. For more information regarding the current standards and guidelines regarding Universal Accessibility can be found on the United States Access Board web-site at the following URL: https://www.access-board.gov/.

Information regarding the DEC's Accessible Recreation Destinations can be found at the following URL: https://www.dec.ny.gov/outdoor/34038.html.

Photo 2. Cranberry Lake Accessible Beach Launch

Photo 3. Thirteenth Lake Accessible Beach Launch

Photo 3. Tooley Pond Accessible Beach/Hand Launch

It was also stated during the site visit for the Aesthetics Flow Assessment Study conducted on September 24, 2019, that additional opportunities should be held at the Trenton Falls Scenic Trails location to provide increased recreational access for the public to this unique area. The DEC recommends adding additional opportunities for the public to view this unique area.

Figure 3-21 Recreation Opportunities Downstream of the Project

For clarification purposes, the limits of the Catch and Release portion of the West Canada Creek is incorrectly identified in the DLA as between Trenton Falls and the Cincinnati Creek, Figure 3-21 Recreation Opportunities Downstream of the Project. Per the DEC's Regulation Guide, the site description for the Catch and Release portion of the West Canada Creek continues past the mouth of the Cincinnati Creek. The description should be revised as follows: "West Canada Creek from Trenton Falls Dam downstream to the first bridge (Comstock Bridge) below the mouth of Cincinnati Creek." The downstream end point is near DS Rec 3 on figure 3-21.

The DEC recommends development of a recreational guide for anglers that shows fishing access sites downstream of the Project, increasing the potential for recreational use of passing waters.

****

Thank you for the opportunity to comment on the DLA during the relicensing and Clean Water Act § 401 Water Quality Certification process. The DEC continues to stress the importance of FERC concurrently and comprehensively reviewing independent and joint impacts to West Canada Creek by this project (P-2701) and the New York Power Authority's Jarvis project (P-3211). Please be advised that DEC reserves its right to provide additional comments in the future. If you have any questions or desire additional information, please contact me at (315) 793-2740 or todd.phillips@dec.ny.gov .

Sincerely,

Todd J. Phillips
Environmental Analyst
DEC-Division of Environmental Permits

ecc: File
John Wiley, USFWS
Bob Nasdor, American Whitewater
Thomas Voss, NYSDEC
Jana Lantry, NYSDEC
David Erway, NYSDEC
Steve Case, NYSDEC
Steven Murphy, Erie
Bill Wellman, Trout Unlimited
Kara Paulsen, NYSDEC
Terry Tyoe, NYSDEC
Dick McDonald, NYSDEC
Christopher Balk, NYSDEC
Nicole Cain, NYSDEC

APPENDIX B

RESPONSES TO DRAFT LICENSE APPLICATION COMMENTS

Entity	Comment	Response
FERC-1	In the final license application, please verify the 2,323.1 MW for the winter period dependable capacity for Trenton Development stated on page B-8 and provide correct dependable capacity for the winter period.	Exhibit B had a typographical error and has been corrected. The winter period dependable capacity for Trenton Development is 23.12 MW.
FERC-2	In the final license application, please provide, to the best of your knowledge, a description of any planned or proposed drinking water withdrawals from the Prospect reservoir. This would relate to the two 42-inch pipes in the dam that serve as intakes for future water supply for the City of Utica (page A-7 of Exhibit A).	Erie is not aware of any planned or proposed water withdrawals from the Prospect Reservoir, at this time. The 42-inch pipes were installed during dam construction with reservation for future water main connectors by the City of Utica now Mohawk Valley Water Authority (MVWA). The MVWA is currently in the process of upgrading the existing water pipe transfer system associated with withdrawals from Hinckley Reservoir. This project does not currently include connection to the pipes in the Prospect dam or withdraw from the Prospect impoundment. As stated in the Jarvis Project (P-3211) Final License Application (NYPA 2020), under existing legal agreements, under certain conditions MVWA may withdraw up to 75 cfs from the Hinckley Reservoir for water supply for the greater Utica area.
FERC-3	Provide the proration factors used to estimate streamflow at each development in the final license application (Pages B-7 to B-8 in Exhibit B, pages E-3-13 to E-3-14 of Exhibit E, and Appendix B provide streamflow statistics and flow duration curves at the Prospect and Trenton developments based on prorations of streamflow at the USGS No. 01346000 gage at Kast Bridge.	The Prospect Development proration factor was 0.726. The Trenton Development proration factor was 0.727.
FERC-4	In the final license application, please clarify how many acres of wetland are within the project boundary. Please also specify how many acres of each of the following National Wetland Inventory wetland types is located within the project boundary: freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine (Page E-3-63).	The requested information has been provided in Section 3.6.1.2, *Wetland, Riparian and Littoral Habitats*, of Exhibit E.

Entity	Comment	Response
FERC-5	In the final license application, please provide a description of the history of the Prospect powerhouse and whether it has been evaluated for listing in the National Register (Page E-3-99).	Project facilities at the Prospect Development were constructed between 1956 and 1959 and commercial operation began in 1959. As summarized in the timeline in Exhibit C, rehabilitation and construction of a new substation was completed in the 1990s. No evaluation has been requested or conducted of the Powerhouse. The New York SHPO (April 17, 2020) following review of the proposed Project, responded that based on the review of the Project information and Project location, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this Project. In addition, New York SHPO in letter dated December 1, 2020 concurred with the Area of Potential Effect of the existing Project boundary, as proposed by Erie. Documentation of this consultation is provided in Exhibit E, Appendix A of the FLA.
FERC-6	Please provide the supporting design report in the final license application (following Section 4.16(e) of the Commission's regulations).	Erie prepared a supporting design report, which is provided in Exhibit F of the FLA.
FERC-7	In the final license application, please ensure all Exhibit G maps are stamped by a registered land surveyor (Section 4.39(a) of the Commission's regulations).	The Exhibit G drawings have been stamped by a registered land surveyor and are provided in the FLA filing.
FERC-8	In the final license application, please provide revised Exhibit G drawings that comply with the Commission's regulations (Section 4.41(h)(2)(i) of the Commission's regulations requires that the project boundary around a project impoundment must be described by one of the following: (1) contour lines, including the contour elevation (preferred method); (2) specified courses and distance; (3) if the project lands are covered by a public land survey, lines upon or parallel to the lines of the surveyor; or (4) any combination of the above methods).	The Exhibit G drawings are updated to include the requested information and are provided in the FLA filing.

Entity	Comment	Response
FERC-9	In the final license application, please provide revised Exhibit G drawings that comply with the Commission's regulations (Section 4.41(h)(2)(iii) of the Commission's regulations requires that the boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following: (1) contour lines; (2) specified courses and distance; (3) if the project lands are covered by a public land survey, lines upon or parallel to the lines of the surveyor; or (4) any combination of the above methods).	The Exhibit G drawings are updated to include the requested information and are provided in the FLA filing.
NYSDEC-1	Data included in tables (Table 1- Hinckley Reservoir Daily Outflows and in Table 2- Project Development Monthly Average Flows) could be skewed and not reflect the discharges associated with current operations under the 2012 Operating Diagram. Tables should be revised and split to reflect the difference in flow values for the original Operating Diagram versus the currently used, 2012 Operating Diagram.	Table 1-Hinckley Reservoir Outflow in Exhibits B and E is from outflow data provided from the Jarvis Project (P-3211) Final License Application (NYPA 2020) which included data from July 2001 - December 2019) and did not split out between data since implementation of the 2012 Operating Diagram. See additional discussion following this summary table relative to Trenton outflow data per NYSDEC's request.

Entity	Comment	Response
NYSDEC- 2	Currently, the intake trashracks at the Prospect Development only provide 3 5/8-inch clear spacing and the trashracks at the Trenton Development only provide 2-inch clear spacing. 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.	Given the results of the entrainment analysis and the conservatively and relatively low estimated mortality rates, it is reasonable to conclude the operation of the Project will have little effect on the health of the reservoir fishery at either the Prospect or Trenton Developments (Kleinschmidt 2020e). In addition, over 75 percent of the estimated number of fish species potentially entrained and lost to turbine mortality are highly fecund and are juveniles and young-of-year, which have high natural mortality rates due to numerous environmental factors. Therefore, Erie is not proposing any modifications to the existing trashracks, and does not see justification for any mitigation measures associated with fish entrainment or impingement and the potential costly implementation and associated energy losses associated with new 1 inch trashracks at the Project developments. See also Exhibit E, Section 3.5.

NYSDEC-3	Fluctuations should be limited in both reservoirs and a minimum base flow should be established in the Project's bypass reaches. To modify this altered hydrologic regime, the Project should be operated as a Run-of-River or modified/dampened peaking operation, where inflow would equal outflow thereby mimicking the natural hydrologic regime present within the West Canada Creek system.	Studies conducted during the relicensing proceeding, demonstrated a healthy fishery and mussel population in Prospect impoundment. During the fish assemblage sampling period, boat electrofishing captured 1,471 fish, representing 11 species within Prospect impoundment. Species that spawn in shallow habitats like Chain Pickerel, Pumpkinseed, Smallmouth Bass, Rock Bass, Brown Bullhead and Yellow Perch were all found at young-of-year, juvenile and adult life stages within the impoundment, suggesting that operations that lower the pond are not negatively impacting spawning success. In addition, the mussel survey found close to 600 lake floater *(Pyganodon lacustris*) widely distributed within the impoundment having been found at all ten sample sites. All mussels observed appeared to be healthy, and included a number of juvenile mussels, indicating successful reproduction within the population. Trenton impoundment is a backwatered gorge, with steep, nearly vertical walls of bedrock that contains little littoral habitat. Substrates are largely coarse, consisting of bedrock, boulder, cobble and a small amount of gravel and in-water cover. The lack of spawning habitat and isolated nature (no tributaries) of this section of the river results in little recruitment from spawning or other areas. Therefore, existing project operations likely result in little to no adverse effects on aquatics and fisheries and associated habitat in the Trenton impoundment. See also Aquatic Mesohabitat Assessment Study (Kleinschmidt 2020a), Macroinvertebrate and Freshwater Mussel Survey (Kleinschmidt 2020b), Impoundment Shoreline Characterization Study (Kleinschmidt 2020c), Fish Assemblage Assessment (Kleinschmidt 2020d), and Exhibit E, Sections 3.5 and 3.6. Relative to the importance of the Project peaking capabilities as compared to Run-of-River or modified/dampened peaking operation, hydropower generation plants that have peaking ability provide a reliable source of renewable energy to the grid to help maintain the balance between electricity supply and demand. The flexibility and storage capacity of hydropower peaking plants also support continued development of intermittent renewable energy sources, such as solar or wind, by providing quick response to changes in output. The electrical output from the Project is sold to the New York wholesale electricity market administered by the New York Independent System Operator (NYISO). The

		Project generates emission-free, renewable power and provides peaking and variable output generation of value to the grid. The New York State Climate Leadership and Community Protection Act (CLCPA) sets forth a goal to obtain 70 percent of New York State's electric generation from renewable energy sources by 2030. The CLCPA also sets forth a goal for an 85 percent statewide reduction in greenhouse gas emissions by 2050 (New York State 2021, NYSDEC 2021). If issued a new license, the power from the Project would help meet the renewable energy goal of the state, reduce reliance on natural gas to meet sudden changes in demand, and facilitate adoption of other intermittent renewable energy sources. According to the NYISO recent report, *Annual Grid & Markets Report, The Vision for a Greener Grid* (NYISO 2020), "*To the extent that the CLCPA leads to the elimination of all fossil fuel-based resources supplying the grid, the carbon-free resources supplying the grid will need to offer comparable dispatchable capabilities to meet electricity demand currently provided by the fossil fuel resources. Fossil fuel plants can typically be dispatched to a rated output level for extended periods while also offering a level of flexibility to ramp up or down as needed to continuously balance load and supply. Outside of hydro generation, renewable resources tend to be intermittent and, by definition, unable to follow dispatch signals from the grid operator to increase production in the same manner as fossil fuel resources*." This report details many expected and potential issues that the NYISO must be prepared to address in the coming years in order to meet reliability standards while integrating more renewables to the grid. Maintaining ability to balance load and generation with high levels of intermittent generation is expected to be a major challenge (NYISO 2020). If peaking capabilities were limited or curtailed at the West Canada Creek Project, the NYISO would need to rely more heavily on natural gas burning facilities to meet peak power demands now and into the foreseeable future. Issuing a new license for the West Canada Creek Project would allow Erie to continue to generate renewable electricity at the Project for the term of a new license, helping support state and federal goals for renewable energy production and helping facilitate the development of other renewable sources of energy.

NYSDEC-4	The continuous minimum flow requirement of 160 cfs or inflow from the Project, whichever is less, as immediately measured downstream of the NYSCC diversion weir should, at a minimum, be provided throughout both Project's bypass reaches. However, the Applicant should provide a minimum flow requirement of 250 cfs, or inflow from the Project, whichever is less, throughout both Project's bypass reaches and downstream section of West Canada Creek.	Erie is not aware of any scientific data that indicates that the 250 cfs proposed by NYSDEC is an appropriate flow to support aquatic resources in the Prospect and Trenton bypass reaches. For the downstream reach, as discussed in Section 3.4. *Fish and Aquatic Resources*, the instream flow study concluded during the previous relicensing proceeding found that the 160 cfs release provided optimal or near optimal flow conditions for all life stages of both brown trout and smallmouth bass (Ichthyological Associates, 1981a, 1981b) The study also found that establishment of minimal bypass flows at the two Project dams (Prospect and Trenton) would result in little, if any marginal benefit to the existing fishery and would result in substantial generation and economic losses at the Project. The study referred to the limited habitat in the Prospect and Trenton bypass reaches due to exposed bedrock along much of the reaches, as well as the series of falls in Trenton bypass, providing limited fish habitat potential (Ichthyological Associates 1981a). Subsequent to this study, FERC required implementation of the 160 cfs downstream base flow as part of the existing license for West Canada Creek and also for the existing license for the Jarvis Project (P-3211). Erie proposes PME measures to maintain a continuous year round minimum leakage-type flow (no greater than 3 cfs) within Prospect bypass to help retain habitat connectivity and water quality, and to maintain the existing base flow requirement of 160 cfs downstream of Morgan Dam as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*. The Water Quality Study (Kleinschmidt 2020f) shows that dissolved oxygen (DO) exceeded the New York instantaneous state water quality standard (5 mg/L) throughout the entire monitoring period at the upper Prospect bypass reach, Prospect tailrace, and Trenton tailrace. At the lower Prospect bypass reach (below the MVWA SPDES discharge point), there were five short term periods (approximately 0.5 - 4 hours) where DO decreased below 5 mg/L; however, during all five occurrences, DO at Prospect tailrace was above 5 mg/L demonstrating that the water was aerated after passing through the powerhouse. The upper Prospect bypass reach (from the Prospect dam downstream to Prospect Falls) is dominated by relatively smooth horizontal bedrock substrate with little object cover or variation in mesohabitat. For the lower bypass reach (below Prospect Falls to the Prospect tailrace), electrofishing sampling resulted in a catch of 120 fish, comprised of 9 species (see Fish Assemblage Assessment,

Entity	Comment	Response
		Kleinschmidt 2020d). Seasonally-occurring high flow events are likely a habitat limiting factor for the bypass reach. Fishes are washed into the reach during these high flow events and are likely transiently occupying the reach, rather than constituting a self-sustaining resident fish populations. Fishes may also be flushed out of this reach during high flow event. Trenton bypass reach is comprised of highly scoured bedrock substrates with scattered deposits of boulder and cobble, with no fines such as silt, and or small gravel. The stream channel is dominated by terraces of horizontal expanses of bedrock separated by a series of impassable falls. These falls disconnect instream habitat and create fish movement barriers.
NYSDEC-5	A flow monitoring station should be installed immediately downstream of the NYSCC feeder canal. This gauge would provide real time flow measurements with a predetermined frequency enough to notify downstream anglers and other recreational activities of the forthcoming flow. Erie should notify the DEC when flow is <250 cfs (currently only when <160 cfs).	Erie is proposing both the continuation of SafeWaters (or comparable system) to provide the public with flow release information below Trenton Powerhouse and to develop and implement a Streamflow and Water Level Monitoring Plan that includes provisions for a binary staff gage below downstream of Morgan Dam. Further described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA.
NYSDEC-6	The DEC concurs with the Applicants existing environmental measure regarding the discovery of any previously unrecorded archeological sites.	Comment noted.

Entity	Comment	Response
NYSDEC-7	The results presented in Table 3-2 (Biological Metrics for Each Sample Site Sampled for Macroinvertebrates) on page 19 of the Macroinvertebrate and Freshwater Mussel Survey Report clearly show a decreasing trend throughout the bypass reaches of this Project with the Upper Prospect Bypass Reach having the highest BAP of 7.56 and the Lower Trenton Bypass Reach having a BAP score of 0 indicating that the water quality may start out as optimal but then decreases to poor.	For Prospect, the upper bypass reach site demonstrated optimal habitat integrity and the lower site BAP score (4.9) indicated habitat integrity at the highest range of moderate impact (2.5 - 5 BAP, while sub-optimal is 5-7.5 BAP). The lower site could be influenced by factors other than Project operations, as it is located downstream of the Mohawk Valley Water Authority (MVWA) settling ponds and area of discharge into the bypass reach. The low BAP score in the Trenton bypass reach is most likely due to the lack of suitable habitat with poor substrates of mostly bedrock and not necessarily degraded water quality conditions. The bypass reach is comprised of highly scoured bedrock substrates with scattered deposits of boulder and cobble, with no fines such as silt, and or small gravel. Therefore, any additional flows would likely result in minimal benefits for aquatic habitat within this reach. See also Macroinvertebrate and Freshwater Mussel Survey (Kleinschmidt 2020b) and response to comment NYSDEC-4.

Entity	Comment	Response
NYSDEC-8	Figure 2-3 on page 6 and Table 3-1 on page 17 of the Macroinvertebrate and Freshwater Mussel Survey, demonstrated that 7 out of the 8 sites sampled in the downstream section of West Canada Creek had suboptimal or less BAP scores indicating that a majority of this section is experiencing impacts form slight to severe and only one site (Site 10) was scored as optimal.	Macroinvertebrate sampling yielded a range of BAP scores throughout the downstream reach (8 Sites) of West Canada Creek. A single site had an optimal habitat integrity score (BAP>7.5) associated with non-impacted water quality , 5 sites scored in the at sub-optimal range (5.0-7.5) or slightly impacted water quality, and 2 sites scored at marginal habitat integrity (2.5-5.0) associated moderate water quality impact (see Macroinvertebrate and Freshwater Mussel Survey, Kleinschmidt 2020b). Downstream sample sites extended many miles from the Project and are subject to many factors that can affect BAP scores that are unrelated to Project operations, such as tributary inflows, influences of backwater at downstream dams, i.e., Newport impoundment (site 8), varying mesohabitats, and/or sites subject to nonpoint-source pollution, such as run-off from nearby roadways. In addition, concurrent water quality studies revealed that state standards were generally maintained throughout the study period (spring – fall) with a few brief exceptions (see Water Quality Study, Kleinschmidt 2020f). Dissolved oxygen levels exceeded the instantaneous and daily average water quality standards throughout the study period at Morgan Dam (Site 5), Poland (Site 6), downstream Brown Island (Site 8), and Herkimer (Site 10). At Newport (Site 7), and Kast Bridge (Site 9), DO was above the instantaneous standard (5 mg/L) throughout the study period except for short periods. pH was within the range of the water quality standard (6.5 to 8.5) at Poland (Site 6), Newport (Site 7), and downstream Brown Island (Site 8). At Morgan Dam (Site 5), Kast Bridge (Site 9), and Herkimer (Site 10), pH was in attainment with the state standard except for infrequent, brief excursions. The results suggest that Project operation does not adversely affect the macroinvertebrate assemblage and water quality in the West Canada Creek.

Entity	Comment	Response
NYSDEC-9	In Section 3.5.1.5 (Freshwater Mussels) on page E-3-52 the DLA states that only one freshwater mussel species, lake floater, was observed within the Prospect impoundment and no freshwater mussels or shells were found within the Prospect Bypass reach. The diversity and densities of freshwater mussels are also impacted by this altered hydrologic regime as reported in both the DLA and the Macroinvertebrate and Freshwater Mussel Survey Report. Only one freshwater mussel species was documented in Prospect Reservoir, the lake floater (*Pyganodon lacustris*) with a reported density of 0.6 mussels per meter, and only two freshwater mussel species were reported in the downstream section of West Canada Creek, six eastern pearlshell (*Margaritifera margaritifera*) and two live eastern elliptio (*Elliptio complanata*) were observed in five sites with a reported density of 0.008 mussels per meter.	Study results show that the Prospect impoundment supports a healthy population of Lake Floater at a moderate density (0.6 mussels/meter) that is distributed throughout the impoundment (see Macroinvertebrate and Freshwater Mussel Survey, Kleinschmidt 2020b). These results suggest that Project operation is not adversely affecting mussels inhabiting the impoundment. The lake Floater was the only species documented during the survey of the impoundment; however, it is not an uncommon occurrence for impounded sections of rivers to be dominated by a population of mussels that has evolved to thrive in lacustrine environments, such as the Lake Floater. Transition habit from lotic to lacustrine are the prime drivers for such changes in a mussel assemblage and not Project operation. The Prospect bypass is a narrow high gradient reach of the West Canada Creek and subject to a wide range of flows, from leakage to freshet. Seasonally high flows, in the spring and fall, as well as storm related flow events regularly result in extremely high energy discharges into the bypass reach as a result of its geomorphology. These high energy flows scour and mobilize substrates which are highly disruptive, creating conditions that are not suitable to support mussel populations. Many anthropogenic and natural factors have the potential to influence mussel populations and their distribution in West Canada Creek, many of which are unrelated to Project operations, such as tributary inflows, influences associated with downstream dams and non-point source pollution. The freshwater mussel survey revealed that mussels were not widespread in the lower West Canada Creek despite the presence of protective flows and widespread suitable substrates and habitats (see Aquatic Mesohabitat Assessment Study, Kleinschmidt 2020a). The reason(s) for the depauperate mussel assemblage occurring in the lower West Canada Creek are unclear but there is no evidence to suggest that it results from Project operations, nor does the NYSDEC provide documentation or supporting evidence that Project operations are impacting the diversity and densities of freshwater mussels in the downstream reach, with site locations that extend to more than 20+ miles downstream, with many other influencing factors. See also response to comment NYSDEC-8.

Entity	Comment	Response
NYSDEC-10	Current Project operations also profoundly impact the habitat within the Prospect Reservoir. As presented on page 29 in the Impoundment Shoreline Characterization Study, the range of linear habitat dewatering of the littoral zone was from 10 feet to as much as 129 feet dependent on bed slope profiles.	The amount of habitat affected by Project operation depends on the impoundment water surface elevation (WSEL) and the shoreline bed slope where shorelines of less slope exhibit greater changes in dewater habitat than those shorelines with greater slopes as the WSEL decreases. As discussed in the response to comment NYSDEC- 3, impoundment fluctuation does not appear to adversely affect the natural resource of the Prospect impoundment. Studies conducted during the relicensing proceeding, demonstrated a healthy fishery and mussel population. Mussels were observed occupying substrates within the current fluctuation zone and nest building and other fishes that rely on shallow littoral habitat for various life stages (spawning, egg incubation, rearing, and forage) were well represented in the fish assemblage. See also response to comment NYSDEC-3.
NYSDEC-11	The Prospect bypass reach could provide additional fishing opportunities for the public if a minimum flow of 250 cfs was established and safe public access was provided. The establishment of a trout stocking policy could then be implemented, which would also enhance fishing and recreational opportunities.	Erie has repeatedly stated safety concerns (limited egress opportunities, unexpected flow changes, limited rescue opportunities) with providing public access to Prospect bypass reach due to the narrow gorge-like channels with high cliffs or unstable rock outcroppings along the bypass reach riverbank. Flows of 250 cfs in the bypass reach are likely to result in water velocities too high for safe angling opportunities (given the narrow gorge-like channels with high cliffs and limited shoreline, fishermen would be limited to wade fishing under substantial velocities) and unsuitable for most lifestages of sport fishes. In addition, other NYSDEC-managed trout stocked fisheries are established nearby in the Prospect impoundment and immediately downstream of Trenton in the "*trophy section*" of West Canada Creek per NYSDEC "*one of the most renowned trout streams in central New York*," (see Exhibit E, Section 3.8.2). Also see response to comment NYSDEC-4.
NYSDEC-12	The existing formal boat launch at the Prospect Reservoir currently has no Americans with Disabilities Act (ADA) compliant Accessible Features. The Applicant should determine the feasibility, costs, and a timeline for implementation of providing Universal Accessibility by developing Accessible Features at the Prospect Reservoir Boat Launch.	Erie proposes to develop and implement a Recreation Management Plan (RMP) as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA. Erie proposes to include in the RMP provisions to assess and implement, as appropriate, universally accessible features, including parking and shoreline/launch access, at the existing Prospect Boat Launch consistent with Americans with Disabilities Act (ADA) guidelines and standards (see Exhibit E, Section 2.2, *Applicant's Proposed Action*).

Entity	Comment	Response
NYSDEC-13	The limits of the Catch and Release portion should be revised as follows: "West Canada Creek from Trenton Falls Dam downstream to the first bridge (Comstock Bridge) below the mouth of Cincinnati Creek." The downstream end point is near DS Rec 3.	The FLA Exhibit E description and associated figure are updated to reflect the catch and release section as stated by NYSDEC.
NYSDEC-14	Review all accessible elements associated with the Trenton Falls Scenic Trails for compliance with the 2010 ADA Standards with respect to appropriate railing dimensions and proper toe clearance.	A dedicated ADA access site was developed at the Trenton Falls Scenic Trail prior to the 2010 ADA guidelines. Erie will assess as part of the proposed RMP appropriate railing dimensions and proper toe clearance of the existing overlook railing with respect to the ADA guidelines (see Exhibit E, Section 2.2, *Applicant's Proposed Action*).
NYSDEC-15	Provide additional recreational access opportunities of Trenton Falls Scenic Trails.	Erie voluntarily implemented the Trenton Falls Scenic Trails facilities during the existing license term, outside of any license requirements. This capital recreation improvement was implemented in 2004-2006 at estimated cost of $500,000 ($2021). The event has taken place since 2004 and has become a special community event in coordination with the Town of Trenton, with local groups and volunteers participating in the event. The special event includes interpretive displays and stations with information about the local area history, natural history, and hydropower operations, as well as fundraising opportunities for local non-profit organizations through food concessions during the events. Erie proposes to continue this special event in coordination with the Town of Trenton to provide controlled public access to the Trenton Falls Scenic Trail during one or two weekends in the spring and one or two fall weekends to view the Trenton Falls Gorge (see Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA). The Trenton Falls Scenic Trail event provides the pubic the opportunity to view the scenic falls and provide safe access in a controlled manner to areas adjacent to the Trenton falls gorge and surrounding the Project facilities (i.e., along the Trenton penstock). The Trenton Trail event allows public access in a controlled manner that is consistent with FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

Entity	Comment	Response
NYSDEC-16	The DEC recommends development of a recreational guide for anglers that shows fishing access sites downstream of the Project, increasing the potential for recreational use of passing waters.	The downstream NYSDEC fishing access sites are all located well outside the existing Project boundary and are not associated with Project recreational facilities and access. Therefore, Erie is not proposing to develop a recreational guide as requested by NYSDEC.
AW-1	The Trenton Falls bypass reach has no minimum flow requirement whatsoever and the public is prohibited from viewing and enjoying the spectacular gorge on all but two weekends annually, each of which regularly draws thousands of visitors.	See response to comment NYSDEC-15.
AW-2	The lack of instream flow destroys most of the suitable aquatic habitat in the project 's bypass reach. With no minimum flow requirement, only minimal flow from leakage is present and most of the channel remains dewatered or has water only in hydrologically disconnected pools. The inadequate flow into the bypass reach at West Canada Creek Hydroelectric Project eliminates angling opportunities by degrading water quality and reducing available habitat.	See comment NYSDEC-4, NYSDEC-7, and NYSDEC-11.
AW-3	Other hydroelectric projects have a minimum flow requirement, and some utilize the USFWS default Aquatic Base Flow (ABF) formula whereby a project like West Canada Creek with a catchment area of 376 square miles would have a minimum flow requirement of 188 cfs.	See NYSDEC-4. The ABF method was developed as a general guideline and default method for New England stream flow in the absence of site specific study information. The USFWS explicitly states that site specific data should be used if available (Lang 1999). Furthermore, it is based on hydrologic data from states in New England rather than the hydrology and climate of New York. Erie conducted multiple studies that provide specific Project-related information and rejects the idea of substituting a generic guideline intended for a different region. See FLA, Exhibit E, Section 3.4, *Water Resources*, and Section 3.5, *Fish and Aquatic Resources*.

Entity	Comment	Response
AW-4	The project's timing of peaking operations has an adverse impact on these recreation activities. Peaking operations eliminate whitewater paddling opportunities in the 8-mile reach between Middleville and Kast Bridge as flows frequently fall below boatable levels except when Cincinnati Creek and other sources below the project provide additional inflows. The project's peaking flows typically arrive well after dark and, therefore, do not support boating. Similarly, boaters and tubers on reaches further upstream are similarly impacted by peaking flows arriving after dark. Anglers utilizing the trophy section below Trenton are impacted by higher flows during the late-afternoon/early-evening hours when the licensee typically generates. Changes in energy markets over the past two decades have shifted peak energy generation from longer, lower magnitude pulses earlier into the day to shorter, higher pulses in the late afternoon. This shift has over time reduced recreation opportunity downstream. For example, prior to this shift, whitewater boaters in the Kast Bridge section would regularly paddle on Wednesday evenings during the boating season, frequently drawing 30-40 boaters for a late afternoon to early evening paddle.	Multiple factors influence flow in downstream West Canada Creek. Inflow to the West Canada Creek that would be available for downstream flow releases would be dependent on inflow releases from Hinckley Reservoir. Estimated flow travel time from Trenton tailrace down to Kast Bridge is approximately 6 to 8 hours depending on flow levels. Tributaries in the downstream reach, such as Cincinnati Creek, Cold Brook and Mill Creek, can contribute significantly to overall flow and "flashiness" in the downstream reaches during a significant rain event. In response to the two selective periods AW provided in its comments, Erie did not evaluate the changes in energy markets over the last two decades related to peaking operations. AW incorrectly characterizes that current Project operations eliminate whitewater boating opportunities in the downstream reach. As indicated by AW (Table 1), there were annually roughly 100 days during the years 2017-2019 with flows of over 1,000 cfs. Additional boatable days would also be available if the assessment included boatable flows within range of 800-1,000 cfs (the Whitewater Boating Study identified boatable flows as 800-1,400+ cfs). However, in addition to the regularly occurring boatable days, as a proposed enhancement measure, Erie is proposing to provide scheduled downstream flow releases for whitewater boating as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA.

Entity	Comment	Response
AW-5	Based on the flow assessments, the study report determined that all flows evaluated, ranging from 100-300 cfs, vastly improved project aesthetics compared to the current dewatered state of both falls under current license requirements. The study report determined that the flow of approximately 300 cfs had the highest aesthetic value at both Prospect Falls and Trenton Falls. As part of the aesthetic flow study report, the licensee collected user intercept surveys from visitors during two "Trail Days" weekends in 2019. Rather than the usual dewatered condition that visitors typically view the falls during these special events, the licensee spilled flows ranging from 200-325 cfs. No data was collected from Trail Days visitors observing the falls under its typical dewatered condition. Comparing visitor responses across various flows, visitor satisfaction appears to correlate to flow for the most part – the higher the flow, the higher the satisfaction at most key observation points. For example, visitors rating their satisfaction as excellent at Sherman Falls increased between 35 and 48 percent comparing a flow of 200 cfs to a flow of 325 cfs. User intercept surveys and common sense strongly suggest that visitor satisfaction of the aesthetic view of the falls in its typical dewatered state would be significantly lower.	As presented in Aesthetic Flow Assessment Study (EDR 2020) and the Recreation Use, Needs and Access Study (Kleinschmidt 2020g), the focus group and visitors to the Trenton Falls Scenic Trail indicated scenic value at multiple flow levels, not just 300 cfs flows. See also Exhibit E, Section 3.9, *Land Use and Aesthetic Resources*. Erie proposes enhancement measures that includes provisions of aesthetic flows in the bypass reach as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA. These scheduled releases would provide enhanced aesthetic viewing opportunities to visitors during specific Trenton Trail day events and during special event days at Prospect developed in consultation with the Town of Trenton Supervisor.

Entity	Comment	Response
AW-6	While we recognize that boater access in the Trenton impoundment presents some challenges that would require creating new access, many other hydropower projects have addressed similar challenges and currently provide meaningful recreation opportunities. The licensee should evaluate options for providing boater access in the Trenton impoundment in order to provide FERC with information to evaluate appropriate PM&E measures under a new FERC license.	As stated in numerous relicensing consultation calls, reports and filings, Erie maintains significant safety concerns of providing public access to the Prospect bypass reach and Trenton impoundment given the difficult egress due to proximity to Project facilities (Prospect tailrace and Trenton dam and intake), gorge-like banks with high cliffs or unstable rock outcroppings along the riverbanks , and difficult access for any type of rescues. In addition, multiple regional opportunities are available to meet potential future demand. See additional information regarding access and safety considerations in the Whitewater Boating Access Study (Kleinschmidt 2020h), the Recreation Use, Needs and Access Study (Kleinschmidt 2020g), and additional discussion in Exhibit E, Section 3.8, *Recreation Resources*. Per 18 CFR 2.7, licensees are expected to develop suitable recreation facilities upon Project lands and waters and make provisions for adequate public access, to the extent that such development is not inconsistent with the primary purpose of the project (FERC 2015). As stated in FERC policy Recreation Development at Licensed Hydropower Projects (FERC 1996): "The licensee needs to consider public safety when providing public access to its project. Often the most dangerous features of a project are those that are the most attractive to the recreating public"….."In addition to installation of safety devices, other safety measures may include preventing recreational activities in hazardous areas." In accordance the terms and conditions set forth in Form L-4 (Standard Article 18) of the license, Erie restricts from public access such portions of the project waters, adjacent lands and project facilities necessary for the protection of life, health and property. Erie follows FERC's guidelines for public safety, including FERC's Guidelines for Public Safety at Hydropower Projects (FERC 2011), and Security Program for Hydropower Projects (FERC 2016).

Entity	Comment	Response
AW-7	The Kast Bridge section of West Canada Creek can be best compared to the Fife Brook section of the Deerfield River (FERC Project No. P-2669) that draws tens of thousands of whitewater boaters annually and supports the outdoor recreation economy in the central and western Massachusetts regions. The Deerfield River is located three hours from West Canada Creek. Brookfield's current FERC license for the Bear Swamp Project on the Deerfield River requires it to provide 106 scheduled releases from generation annually from the Fife Brook Development. By contrast, Brookfield's current FERC license for West Canada Creek has no requirement for scheduled recreation releases.	Erie notes AW acknowledgement of the existing whitewater boating flows within the region (including releases provided by Erie on other Projects). Each Project is unique and assessed individually for recreation resources, project safety, logistics (ingress and egress), and potential demand, including other regional opportunities to meet that demand. Accordingly, not all Projects are required to provide whitewater boating flow releases and access. The Whitewater Boating Access Study (Kleinschmidt 2020h), and Exhibit E, Section 3.8 *Recreation Resources,* provide a summary of existing available whitewater boating reaches within a 60 mile radius of the Project that provide close to 500 miles of whitewater boating opportunities within close vicinity to the Project, with approximately 205 miles with Class I-III range, and approximately 75 river miles for Class IV-V+ expert level capabilities. In addition, the Ausable Chasm, located approximately 3 hours northeast of the Project, provides a 3.3-mile-long Ausable River reach at Ausable Chasm as a Class IV/IV+ reach with the first mile within a vertical walled canyon that offers 6 to 8 high quality Class IV rapids (AW 2020c). However, as a proposed enhancement measure, Erie is proposing to provide downstream flow releases for whitewater boating as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA.

Entity	Comment	Response
AW-8	Brookfield's Draft License Application contains no proposed PM&E measures to mitigate impacts from project operations. Given the lack of information in the DLA describing the licensee's proposed PM&E measures, it is unclear whether the licensee is proposing any changes to mitigate project impacts on aquatic habitat, recreation, aesthetics, or other impacted resources. This lack of information in the DLA deprives stakeholders of any meaningful opportunity to comment on the DLA. Notwithstanding the paucity of information in the DLA, we are able to state that the required studies demonstrate that the project has an adverse impact on several resource areas and that those impacts have not been sufficiently protected, mitigated and enhanced under the current project license.	Erie proposes protection, mitigation and enhancement measures in the FLA as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA. Section 10(a) of the Federal Power Act requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and use of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

Entity	Comment	Response
AW-9	Field work for the Level 2 study for the Prospect bypass reach demonstrates that the reach contains whitewater boating features including a boatable falls, play features, and exceptional scenic values that can only be viewed by boat as the river narrows into a chasm above the powerhouse. While we plan to file a study modification request to complete an on-water assessment of Prospect Falls and more precisely identify boatable flow ranges, the information gathered to date is sufficient to warrant recreational flows into the bypass reach. In addition to recreational flow restoration, the licensee should be required to develop a proposal to provide recreational access to the bypass reach that provides access at Prospect Dam, improved access at Military Road, and access in the Trenton impoundment. With the restoration of boatable flows and the creation of new access in the Trenton impoundment, the Prospect bypass reach contains a complete, high-quality boating resource.	See responses to comments AW-6 and AW-7.

Entity	Comment	Response
AW-10	Existing FERC licenses with Brookfield on these rivers result in requirements for scheduled recreation releases as follows: Moose (20 days), Raquette (6 days), Beaver - Taylorville (5 days), Eagle (5 days), and Moshier (1 day). The current number of required scheduled releases on these rivers does not sufficiently meet the demand for whitewater boating opportunity in the region, and additional scheduled releases would likely attract a significant number of paddlers traveling to the region.	See response to comment AW-7.
AW-11	Providing scheduled whitewater boating opportunities at the project would be unlikely to have an adverse impact on other resources. In the Prospect bypass reach, providing periodic whitewater boating releases of a magnitude of 600-1,000 cfs are well within the naturally occurring hydraulic range of the river. Given the bedrock ledge character of much of the bypass reach and the steep rock embankment walls, recreation releases of this magnitude are unlikely to affect channel geomorphology. Additionally, the lack of a minimum flow sufficient to cover the entire stream bed results in limited aquatic habitat that is unlikely to be affected by flows of this magnitude.	See response to comment NYSDEC-4.
AW-12	Study modification request seeking a multiple flow Level 3 assessment of the Prospect bypass reach including an on-water assessment of Prospect Falls.	Comment is related to Updated Study Report.

Entity	Comment	Response
AW-13	Perform operations model runs to calculate the impact on generation from shifting its generation timing to provide scheduled whitewater boating opportunity.	Comment is related to Updated Study Report.
AW-14	Provide 20, 5-hour scheduled recreation releases in Prospect bypass reach at 600-1,000 cfs.	See responses to comments AW-6 and AW-7.
AW-15	Provide year-round free public access to the Prospect bypass reach at Prospect Dam, Military Road, and the Trenton impoundment, including constructing gravel parking area and access trails (provides figure). Construct stairs for use as a whitewater boating take-out in Trenton Impoundment.	See responses to comments AW-6 and AW-7.
AW-16	Provide 20, 4-hour scheduled releases on weekdays from 3-7 pm below the Trenton powerhouse at 1,000-1,400 cfs; Provide 20, 5-hour scheduled releases on weekends from 10 am- 3 pm below the Trenton powerhouse at 1,000-1,400 cfs.	See responses to comments AW-4 and AW-7.
AW-17	Secure access for whitewater boaters at Middleville and Kast Bridge; Make improvements to the takeout location at Kast Bridge to provide access for paddlers with limited mobility.	AW's proposed access improvements are at locations 20+ miles downstream of the Project and not associated with Project facilities or access. In addition, other existing public access areas are available via the NYSDOT and roadside pull-offs, commercial operations (West Candad Creek and KOA campgrounds), and NYSDEC access sites along various locations of downstream West Canada Creek.
AW-18	Provide via SafeWaters and an application programming interface information to inform public of flow releases, including release schedule and the projected magnitude, duration, and timing of generation and spill events for Prospect bypass, Trenton bypass and downstream West Canada Creek.	Project flow discharge information is provided via Erie's existing SafeWaters site, and downstream flow information is also available via USGS gage at Kast Bridge. Boaters also indicated flow information was obtained via Aw's site and NOAA's water prediction levels/ NOAA river forecast. Erie proposes to continue to provide flow data via SafeWaters as described in Exhibit E, Section 2.2, *Applicant's Proposed Action*, of the FLA.

Entity	Comment	Response
AW-19	Provide 300 cfs (also states 325 cfs) aesthetic flow in the Trenton bypass reach during 4 weekend days monthly April-October.	See response to comment AW-5.
AW-20	Provide daily open public access to Trenton Falls for hiking/aesthetic viewing; maintain the scenic trail throughout the term of the project license.	See responses to comments NYSDEC-15 and AW-6.

Additional response to NYSDEC-1 Comment:

For Table's 2 and 3 in Exhibit B and E, data is prorated from Kast Bridge USGS Gage (No. 01346000) [1]for the period of 1999-2019. Per NYSDEC's request, Erie reviewed data for the period January 1, 1999, through March 31, 2013, prior to implementation of the 2012 Hinckley Reservoir Operating Diagram,[2] and for the period post-implementation of the Operating Diagram, from April 1, 2013, through December 31, 2019. Erie provides daily average, minimum, and maximum flow data for the Trenton Development for these periods (Table 1 and Table 2). Table 3 provides a summary of the difference between these outflows comparing the period before the Operating Diagram was implemented to the period post implementation. As indicated in Table 3, post-implementation of the Operating Diagram, minimum flows were generally within similar ranges compared to pre-Operating Diagram conditions, with slightly lower minimum flows during February through June period and slightly higher flow during the remaining months. Maximum flows were lower during most months. Monthly average daily flows differed by less than 359 cfs between the two periods, with slightly higher average daily flows during all months with the exception of March, August, September and October.

Table 1 **Trenton Average Daily Outflow (January 1, 1999 to March 31, 2013)**

Month	Min	Max	Avg
January	375	6,006	1,127
February	422	3,665	980
March	468	4,341	1,392
April	484	14,033	2,232
May	321	7,925	1,284
June	241	13,815	870
July	206	3,686	605
August	197	2,792	618
September	146	5,831	614
October	127	4,901	1,003
November	396	6,231	1,133
December	444	4,261	1,205

[1] See Kast Bridge USGS Gage (No. 01346000) at https://waterdata.usgs.gov/nwis/uv?site_no=01346000.
[2] See Hinckley Reservoir at https://www.canals.ny.gov/waterlevels/hinckley/index.html.

Table 2 Trenton Average Daily Outflow (April 1, 2013 to Dec 31, 2019)

Month	Min	Max	Avg
January	434	3,512	1,234
February	234	3,868	1,185
March	285	4,472	1,215
April	396	10,107	2,249
May	319	4,515	1,390
June	185	6,064	1,056
July	237	8,362	964
August	206	1,549	534
September	209	1,505	564
October	289	4,850	854
November	540	12,797	1,441
December	756	3,388	1,297

Table 3 Difference Between Periods of Pre- and Post-Operating Diagram Implementation

Month	Min	Max	Avg
January	59	-2,494	107
February	-188	203	205
March	-183	131	-177
April	-88	-3,926	17
May	-2	-3,410	106
June	-56	-7,751	186
July	31	4,676	359
August	9	-1,243	-84
September	63	-4,326	-50
October	162	-51	-149
November	144	6,566	308
December	312	-873	92