Brookfield

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March 6, 2020

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

SUBJECT: West Canada Creek Project (FERC No. 2701-059) ILP Relicensing Initial Study Report

Dear Secretary Bose:

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company, is the Licensee, owner and operator of the West Canada Creek Hydroelectric Project (FERC No. 2701) (Project). The West Canada Creek Project consists of two developments, Prospect and Trenton, and is located on West Canada Creek in Oneida and Herkimer counties, New York. The current license for the West Canada Creek Project expires on February 28, 2023.

Erie is pursuing a new license for the Project using the Commission's Integrated Licensing Process (ILP) pursuant to 18 C.F.R. Part 5 of the Commission's regulations. On December 11, 2018, Erie filed a Revised Study Plan (RSP), and on March 7, 2019, FERC issued the Study Plan Determination (SPD) approving the RSP with modifications. Pursuant to 18 C.F.R. §5.15(b) and as identified in its RSP, Erie filed with FERC the first and second ILP Relicensing Studies Progress Reports for the West Canada Creek Project on July 29, 2019, and October 31, 2019, respectively. On October 31, 2019, Erie requested a revision of the Process Plan and Schedule to change the 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.

In accordance with 18 C.F.R § 5.15(c), Erie encloses for filing the attached Initial Study Report (ISR). The ISR and supporting report documents provide the results of the field studies conducted in 2019 pursuant to the Commissions SPD. Erie has completed eight of the nine resource studies which include:

- Aquatic Mesohabitat Assessment Study;
- Macroinvertebrate and Freshwater Mussel Survey;
- Impoundment Shoreline Characterization Study;
- Fish Assemblage Assessment;
- Fish Entrainment and Turbine Passage Survival Assessment;
- Water Quality Study:
- Recreation Use, Needs and Access Study; and
- Aesthetic Flow Assessment Study.

This ISR filing also provides a study progress report for the Whitewater Boating Flow and Access Study. Additional field study will be conducted for this study during the 2020 field season as described in the progress report. The results of the 2020 study season assessment will be provided in the Updated Study Report.

West Canada Creek Project (FERC No. 2701) ILP Initial Study Report March 6, 2020 Page 2 of 2

A supplement to the Aesthetic Flow Assessment Study will be provided in the Updated Study Report to provide photographs of the leakage/flow conditions at the Key Observation Point locations. In addition, Erie will conduct a desktop evaluation of existing available data regarding the timing and volume of flow events within the past 5 years and provide this summary in the forthcoming Updated Study Report.

Pursuant to 18 C.F.R. § 5.15(c)(2), Erie will hold an ISR meeting with interested parties and FERC staff within 15 days of filing the ISR. The ISR meeting will be held on **March 19, 2020** from 10 am to 2 pm, at Trenton Municipal Center, 8520 Old Poland Road, Barneveld, NY 13304. To assist with meeting planning and logistics, Erie requests that all agencies or stakeholders who plan to attend the meeting RSVP by sending an email to Steven Murphy at steven.murphy@brookfieldrenewable.com on or before March 13, 2020

Pursuant to 18 C.F.R. § 5.15(c)(3), Erie will file an ISR meeting summary with the Commission within 15 days of the ISR meeting, on or before April 3, 2020. Within 30 days of the filing of the ISR meeting summary, on or before May 3, 2020, stakeholders may file any disagreements concerning the ISR meeting summary, as well as any recommendations and associated justification for modifications to on-going studies or requests for new studies.

If you have any questions or require any additional information, please contact me at (315) 598-6130 or via email at steven.murphy@brookfieldrenewable.com.

Dr. P. Mungh

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INITIAL STUDY REPORT

WEST CANADA CREEK HYDROELECTRIC PROJECT FERC NO. 2701-NY

Prepared for:

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

Prepared by:



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March 2020

INITIAL STUDY REPORT WEST CANADA CREEK HYDROELECTRIC PROJECT FERC No. 2701

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DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

AW	American Whitewater
Brookfield	Brookfield Renewable
CFR	Code of Federal Regulations
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
Erie or Licensee	Erie Boulevard Hydropower, L.P.
FERC	Federal Energy Regulatory Commission
kV	kilovolts
kW	kilowatts
ISR	Initial Study Report
Interested Parties/ Stakeholders NYTU	The broad group of individuals and entities that have an interest in a proceeding New York Trout Unlimited
NYSDEC	New York State Department of Environmental Conservation
PAD	Pre-Application Document
Project	FERC Project No. 2701, West Canada Creek Project
Relicensing	The process of acquiring a new FERC license for an existing hydroelectric project upon expiration of the existing FERC license Individuals and antitias that are activally participating in a
Relicensing Participants	Individuals and entities that are actively participating in a proceeding
RSP	Revised Study Plan
SPD	Study Plan Determination
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USR	Updated Study Report

1.0 INTRODUCTION

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company (Brookfield), is the Licensee, owner, and operator of the West Canada Creek Hydroelectric Project (FERC Project No. 2701) (Project). The West Canada Creek Project consists of two developments, Prospect and Trenton, and is located on West Canada Creek in Oneida and Herkimer counties, New York. The Federal Energy Regulatory Commission (FERC or Commission) issued the current license for the Project on March 18, 1983, which expires February 28, 2023. Erie is pursuing a new license under FERC's Integrated Licensing Process (ILP) and intends to file an application for a new license with FERC before February 28, 2021.

On December 11, 2018, Erie filed a Revised Study Plan (RSP), and on March 7, 2019, FERC issued the Study Plan Determination (SPD) approving the RSP with modifications. Erie requested a revision of the Process Plan and Schedule to change the Initial Study Report (ISR) filing date to March 7, 2020, and FERC granted this revision on December 5, 2019.

This ISR and associated supporting study documents include the results of the West Canada Creek Project studies conducted during the 2019 season. Studies conducted included:

- Aquatic Mesohabitat Assessment Study
- Macroinvertebrate and Freshwater Mussel Survey
- Impoundment Shoreline Characterization Study
- Fish Assemblage Assessment
- Fish Entrainment and Turbine Passage Survival Assessment
- Water Quality Study
- Recreation Use, Needs and Access Study
- Whitewater Boating Flow and Access Progress Report
- Aesthetic Flow Assessment Study

Section 2.0 of this ISR includes a brief description of the Project facilities. Section 3.0 provides a description of the ILP schedule, including details regarding the ISR meeting date and location. Section 4.0 provides an overview of consultation conducted relative to the studies and description of the study status and remaining study activities. Documentation of consultation is also provided, as appropriate, in the study reports.

2.0 **PROJECT DESCRIPTION**

The West Canada Creek Project is located in the Towns of Trenton and Russia, and Oneida and Herkimer counties, New York. The upstream Prospect Development is located approximately 33 river-miles from the confluence of West Canada Creek with the Mohawk River. The downstream Trenton Falls Development is located approximately 31 river-miles from the confluence of West Canada Creek with the Mohawk River. Additional information pertaining to the Project and Project vicinity is provided in the Pre-Application Document (PAD) (Erie 2018). See Figure 2-2 for Project location.

2.1 PROSPECT DEVELOPMENT

The Prospect Development located at river-mile 33 is comprised of: (1) a 306-foot-long and 52foot-high concrete overflow dam with earthfill dikes at both ends with a spillway crest elevation at 1,146.5 U.S. Geological Survey (USGS), and surmounted by three 15-foot by 27-foot Tainter gates and seven 27-foot wide needle beam bays; (2) a reservoir with a surface area of 176 acres and a storage capacity of 3,250 acre-feet at 1,161.5 normal pool elevation USGS; (3) a canal, approximately 4,500-foot long, extending from the south dike to a concrete intake structure; (4) a 13.5-foot diameter steel penstock, 430-foot long, extending from the intake to the powerhouse; (5) a reinforced-concrete powerhouse containing a generating unit rated at 17,325-kilowatts (kW) at 135 feet of head and a hydraulic capacity of 1,855 cubic feet per second (cfs); (6) 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 (7) appurtenant facilities. See Figures 2-2 and 2-3 for location of Prospect development facilities.

2.2 TRENTON DEVELOPMENT

The Trenton Falls Development located at river-mile 31 is comprised of: (1) a 288-foot-long and 60-foot-high concrete and masonry dam having an overflow section with a crest at USGS elevation 1,017.9 approximately 100-foot-long surmounted by 6-foot-trippable flashboards and a 10-foot by 15-foot sluice gate; (2) a concrete spillway approximately 160-foot-long with a crest elevation at 1,016.2 USGS surmounted by 8-foot-trippable flashboards discharging into a spillway channel excavated into rock around the east abutment of the dam; (3) a reservoir having a surface area of 9 acres and a gross storage capacity of 264 acre-feet at normal pool elevation 1,023.9 USGS; (4) six 5-foot diameter sluice pipes through the dam and two concrete-sealed 5-

foot diameter pipes: (5) a reinforced concrete intake structure having a lift gate and trashracks along the west bank of the reservoir; (6) a 14-foot diameter conduit comprised of: (a) a 1,275-foot-long concrete-lined tunnel section; (b) a 40-foot-long steel-lined tunnel section; and (c) a 2,075-foot-long steel pipe section; (7) a bifurcation; (8) a steel penstock comprised of: (a) a short 12-foot-diameter section connecting to a surge tank and leading to a 125-foot-long, 12-foot-diameter section connecting to a manifold; and (b) three 138-foot-long, 7-foot-diameter sections serving generating units 5, 6, and 7; (9) a 263-foot-long, 7-foot-diameter steel penstock to units 1 through 4; (10) units 1 through 4 in powerhouse No. 1 are retired in-place and the powerhouse (No. 2) contains generating units 5 (7,400-kW), 6 (7,650-kW), and 7 (7,400-kW) - for a total nameplate rating of 22,450-kW at 255 feet of head and hydraulic capacity of 1,425 cfs; (11) 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 (12) appurtenant facilities. See Figures 2-4 and 2-5 for location of Trenton development facilities

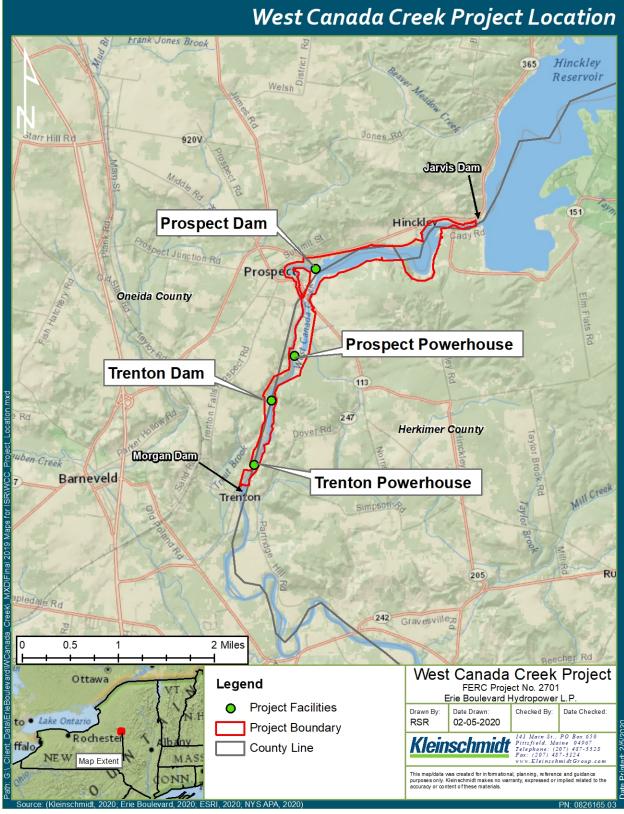


FIGURE 2-1 WEST CANADA CREEK PROJECT LOCATION

Prospect Development Facilities



FIGURE 2-2 PROSPECT DEVELOPMENT PROJECT FACILITIES

Prospect Development Facilities

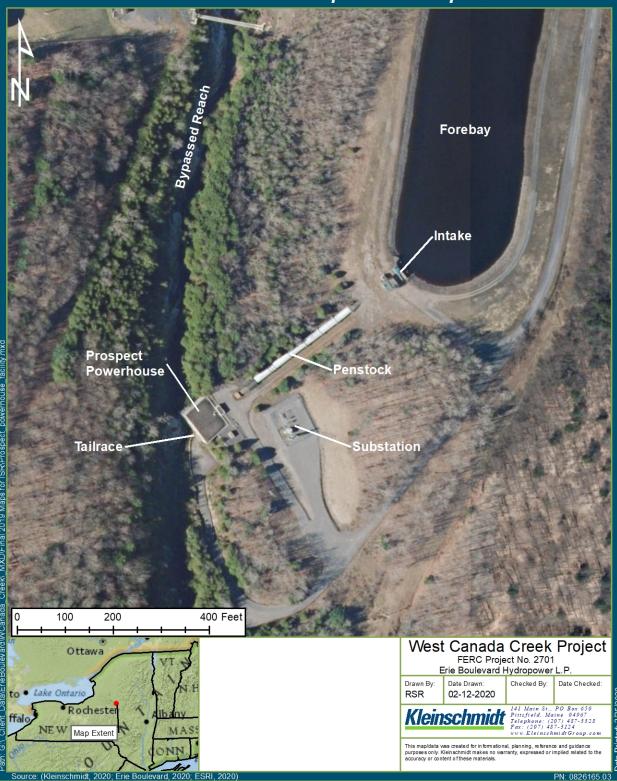


FIGURE 2-3 PROSPECT DEVELOPMENT PROJECT FACILITIES

Trenton Development Facilities



FIGURE 2-4 TRENTON DEVELOPMENT PROJECT FACILITIES

Trenton Development Facilities



FIGURE 2-5 TRENTON DEVELOPMENT PROJECT FACILITIES

3.0 PROCESS AND SCHEDULE

3.1 OVERALL PROCESS PLAN AND SCHEDULE

Table 3-1 provides the updated West Canada Creek Project relicensing ILP schedule. This schedule is founded on the Revised Process Plan issued by FERC on December 5, 2019, and revised accordingly based on the scheduled ISR meeting date.

RESPONSIBLE PARTY	PRE-FILING MILESTONE	DATE	FERC REGULATION
Erie	File Initial Study Report	3/7/2020	5.15(c)(1)
All Stakeholders	Initial Study Report Meeting	3/19/2020	5.15(c)(2)
Erie	File Initial Study Report Meeting Summary	4/3/2020	5.15(c)(3)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	5/3/2020	5.15(c)(4)
All Stakeholders	File Responses to Disagreements/Amendment Requests	6/2/2020	5.15(c)(5)
FERC	Issue Director's Determination on Disagreements/Amendments	7/2/2020	5.15(c)(6)
Erie	Second Study Season	Spring- Fall 2020	5.15(a)
Erie	File Preliminary Licensing Proposal (or Draft License Application)	10/1/2020	5.16(a)-(c)
All Stakeholders	File Comments on Preliminary Licensing Proposal (or Draft License Application)	12/30/2020	5.16(e)
Erie	File Updated Study Report	1/10/2021	5.15(f)
All Stakeholders	Updated Study Report Meeting	1/25/2021	5.15(f)
Erie	File Updated Study Report Meeting Summary	2/9/2021	5.15(f)
Erie	File Final License Application	2/28/2021	5.17
All Stakeholders	File Disagreements/Requests to Amend Study Plan	3/11/2021	5.15(f)
Erie	Issue Public Notice of Final License Application Filing	3/15/2021	5.17(d)(2)
All Stakeholders	File Responses to Disagreements/Amendment Requests	4/10/2021	5.15(f)
FERC	Issue Director's Determination on Disagreements/Amendments	5/10/2021	5.15(f)

 TABLE 3-1
 WEST CANADA CREEK RELICENSING PROCESS PLAN AND SCHEDULE

¹ Activities in shaded areas are not necessary if there are no study disputes.

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

³ Early filings or issuances will not result in changes to these deadlines.

⁴ The schedule is subject to change throughout the relicensing proceeding.

3.2 INITIAL STUDY REPORT MEETING

Pursuant to 18 C.F.R. § 5.15(c)(2), Erie will hold an ISR meeting with interested parties and FERC staff within 15 days of filing the ISR. The ISR meeting will be held on March 19, 2020 from 10 am to 2 pm, at Trenton Municipal Center, 8520 Old Poland Road, Barneveld, NY 13304. To assist with meeting planning and logistics, Erie requests that all agencies or stakeholders who plan to attend the meeting RSVP by sending an email to Steven Murphy at steven.murphy@brookfieldrenewable.com on or before March 13, 2020.

Pursuant to 18 C.F.R. § 5.15(c)(3), Erie will file an ISR meeting summary with the Commission within 15 days of the ISR meeting, on or before April 3, 2020. Within 30 days of the filing of the ISR meeting summary, on or before May 3, 2020, stakeholders may file any disagreements concerning the ISR meeting summary, as well as any recommendations and associated justification for modifications to on-going studies or requests for new studies.

3.3 STUDY PLAN MODIFICATION AND FERC DETERMINATION

Recommendations for modified or new studies must be accompanied by justification in accordance with FERC's regulations (section 5.15(c)(4), and meet the applicable criteria as defined by 18 CFR §5.15(d) and §5.15(e). Erie subsequently has 30 days to file any responses to comments. FERC will then have an additional 30 days to resolve any disagreements and/or modifications to the study plan and to issue a determination regarding any disagreements and/or modifications to the approved study plans.

Following completion of any second year studies, an Updated Study Report (USR) must be filed with FERC no later than January 10, 2021, to provide study results from any second-year studies. Within 15 days following the filing of the USR (or by January 25, 2021), Erie will hold an USR meeting with interested parties and FERC staff to discuss the 2020 study results. Within 15 days following this meeting, the Erie will file a meeting summary with FERC.

3.4 INTENT TO FILE DRAFT LICENSE APPLICATION

In accordance with 18 CFR §5.16(c), Erie plans to file a Draft License Application with the Commission and distribute the Draft License Application to the licensing stakeholders on or before October 1, 2020.

4.1 STUDY CONSULTATION

As stated in Section 1.0, Erie filed the RSP with the Commission on December 11, 2018, and the Commission approved the RSP, with staff-recommended modifications in the SPD issued March 7, 2019. As part of the study implementation and in accordance with FERC's SPD, Erie initiated consultation with agencies regarding aspects of the Project's relicensing studies. Documentation of this consultation was provided in the Study Progress Reports filed with FERC and distributed to the stakeholders on July 29, 2019, and October 31, 2019. Documentation of consultation is also provided, as appropriate, in the study reports.

As part of the study implementation and in accordance with FERC's SPD, Erie initiated consultation with agencies regarding aspects of the Project's relicensing studies. Erie conducted consultation with U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Consultation (NYSDEC) on April 18, 2019, July 16, 2019, and August 9, 2019 regarding the Aquatic Mesohabitat Assessment, Macroinvertebrate and Mussel Surveys, Fish Assemblage Assessment, and Fish Entrainment and Turbine Passage Survival Assessment studies.

Erie also conducted consultation with NYSDEC, the USFWS, American Whitewater (AW), New York State Fish and Wildlife Management Board, New York Trout Unlimited (NYTU), and the Town of Trenton on May 29, 2019, September 9, 2019, and September 12, 2019, regarding the Recreation Use, Needs, And Access Study, Whitewater Boating Flow and Access Study, and Aesthetics Flow Assessment. Attendees on the calls included representatives from the USFWS, NYSDEC, AW and NYTU. Documentation of this consultation was provided in the Study Progress Reports filed with FERC and distributed to the stakeholders on July 29, 2019, and October 31, 2019.

4.2 SUMMARY OF STUDY STATUS

Erie has successfully completed eight of the nine studies, included in the Commission's SPD. Table 4-1 provides a summary of the status of the studies. The results of these studies are provided via separate study report documents as part of this ISR filing.

STUDY REPORT	STATUS
Aquatic Mesohabitat Assessment Study	Complete
(Kleinschmidt 2020a)	
Macroinvertebrate and Freshwater Mussel Survey	Complete
(Kleinschmidt 2020b)	
Impoundment Shoreline Characterization Study	Complete
(Kleinschmidt 2020c)	
Fish Assemblage Assessment	Complete
(Kleinschmidt 2020d)	
Fish Entrainment and Turbine Passage Survival Assessment	Complete
(Kleinschmidt 2020e)	
Water Quality Study	Complete
(Kleinschmidt 2020f)	
Recreation Use, Needs and Access Study	Complete
(Kleinschmidt 2020g)	
Whitewater Boating Flow and Access Study	2020 season/Report in USR
(Kleinschmidt 2020h)	
Aesthetic Flow Assessment Study	Complete/Supplement in USR
(EDR 2020)	

TABLE 4-1 LIST OF STUDIES AND STUDY STATUS

4.3 **REMAINING STUDY ACTIVITIES**

Additional anticipated study activities during the 2020 study season include activities under the Whitewater Boating Flow and Access Study. These activities include the downstream controlled flow assessment anticipated during either May, June or July 2020 depending on flow and field conditions, and further consultation and potential evaluation of the Prospect bypass reach whitewater boating access and safety.

In consultation with AW, the whitewater boating controlled flow study was scheduled for several dates during the 2019 field season, including September 16; October 7/8, October 15/16, October 18/19, and October 25/26. Each occasion was postponed due to field conditions that were not conducive to the controlled flow study (high flow events¹) and participant availability. Due to anticipated higher flows, colder weather, shorter daylight periods and associated safety considerations of the participants, Erie, in consultation with AW, postponed the study until the 2020 study season. See Whitewater Boating Flow and Access Study Progress Report for additional information.

¹ Travel times and downstream tributary inflows were significant obstacles in 2019 scheduling attempts to complete the downstream flow assessment.

The delay of the whitewater boating controlled flow study is a deviation from Erie's RSP. Erie has conducted the required consultation, refined the study methodology and logistics, and made multiple attempts to implement the whitewater boating study as summarized above. Erie will provide the study report as part of the USR.

A supplement to the Aesthetic Flow Assessment Study will be provided in the Updated Study Report to provide photographs of the leakage/flow conditions at the Key Observation Point locations. In addition, Erie will conduct a desktop evaluation of existing available data regarding the timing and volume of flow events within the past 5 years and provide this summary in the forthcoming Updated Study Report.

5.0 **References**

- Environmental Design & Research. (EDR). 2020. West Canada Creek Hydroelectric Project (P-2701) Aesthetic Flow Assessment Report, March 2020.
- Erie Boulevard Hydropower, L.P. (Erie). 2018. West Canada Creek Hydroelectric Project (P-2701) Pre-Application Document, February 28,2018.
- Kleinschmidt Associates. (Kleinschmidt). 2020a. West Canada Creek Hydroelectric Project (P-2701) Aquatic Mesohabitat Assessment Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020b. West Canada Creek Hydroelectric Project (P-2701) Macroinvertebrate and Freshwater Mussel Survey Report, January 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020c. West Canada Creek Hydroelectric Project (P-2701) Impoundment Shoreline Characterization Study Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020d. West Canada Creek Hydroelectric Project (P-2701) Fish Assemblage Assessment Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020e. West Canada Creek Hydroelectric Project (P-2701) Fish Entrainment and Turbine Passage Survival Assessment Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020f. West Canada Creek Hydroelectric Project (P-2701) Water Quality Study Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020g. West Canada Creek Hydroelectric Project (P-2701) Recreation Use, Needs and Access Study Report, March 2020.
- Kleinschmidt Associates. (Kleinschmidt). 2020h. West Canada Creek Hydroelectric Project (P-2701) Whitewater Boating Flow and Access Study Progress Report, March 2020.