

July 29, 2019

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 Studies Progress Report #1

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 February 28, 2018, Erie filed a Notification of Intent (NOI) and Pre-Application Document (PAD) with the Federal Energy Commission (FERC or Commission) to initiate the ILP. Erie submitted a Proposed Study Plan (PSP) on August 13, 2018, and held a Study Plan meeting on September 11, 2018. Following receipt of comments, Erie submitted a Revised Study Plan (RSP) on December 11, 2018. On March 7, 2019, the Commission issued a Study Plan Determination (SPD) for the Project in accordance with 18 C.F.R. § 5.13(c).

Pursuant to 18 C.F.R. §5.15(b) and as identified in its RSP, Erie herein files with FERC the first ILP Relicensing Studies Progress Report for the West Canada Creek Project. This report summarizes activities conducted since the Commission's issuance of the SPD and anticipated activities to be conducted until the next progress report, which will be submitted in October 2019. All relicensing studies listed below are, unless otherwise described, being conducted in accordance with the approved RSP and the Commission's SPD.

As part of the study implementation and in accordance with the SPD, Erie initiated consultation with agencies regarding aspects of the studies. FERC identified specific topics for consultation with the U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC) regarding the Aquatic Mesohabitat Assessment, Macroinvertebrate and Mussel Surveys, Fish Assemblage Assessment, and Fish Entrainment and Turbine Passage Survival Assessment studies. Accordingly, Erie conducted a consultation call with USFWS and NYSDEC on April 18, 2019 and on July 16, 2019. Attachment A provides a memo summarizing key components of the call, including Erie's presentation, and documentation of associated consultation to address FERC's SPD consultation requirements.

In addition, Erie reached out to USFWS, NYSDEC, American Whitewater (AW), New York State Fish and Wildlife Management Board (FWMB), New York Trout Unlimited (NYTU), and the Town of Trenton to conduct a consultation call regarding various components of the recreation and aesthetics related studies (i.e., Recreation Use, Needs, And Access Study, Whitewater Boating Flow and Access Study, and Aesthetics Flow Assessment) and to establish a consultation working group for these studies. Erie conducted the consultation call on May 29, 2019 with USFWS, NYSDEC, and AW (no response was received from FWMB, NYTU or the Town of Trenton). Attachment B provides a memo summarizing key components of the call, including Erie's presentation.

Aquatic Mesohabitat Assessment Study

- As specified in FERC's SPD, Erie is required to deploy water level loggers from July 1 through September 30. Erie deployed level loggers in the Prospect bypass reach and the downstream reaches (West Canada Creek from Trenton to confluence with Mohawk River) at the locations indicated for the water quality data loggers (as reviewed during the April 18, 2019 consultation call, see Attachment A). Erie consulted with USFWS and NYSDEC (April 18, 2019) regarding the location and number of level loggers, and participants agreed that the final location of the level loggers would be determined following consultation and review of the initial mesohabitat mapping field assessment information.
- Erie consulted with USFWS and NYSDEC (April 18, 2019) regarding field survey methods, including methods to verify drone survey results. Erie stated that the drone survey would be conducted for the upstream reaches (bypass reaches) and the downstream reaches will be covered primarily via traditional methodology (float trip) rather than drone (see Attachment A).
- Erie conducted drone surveys of the Project bypass reaches the week of May 22, 2019, and the downstream reaches (West Canada Creek from Trenton to confluence with Mohawk River) via traditional methodology (float trip) July 9 through 11, 2019, when river flow reached acceptable levels suitable for surveying mesohabitats.
- As agreed to on the consultation call (April 18, 2019), field conditions for the lower reaches likely required flows less than approximately 500 to 700 cubic feet per second (cfs) to provide the ability to identify breaks in habitats in these downstream reaches. Due to high levels of rain precipitation and spring flows, the downstream reach assessment was conducted at the earliest opportunity (July 9 through 11, 2019) when flows had subsided to within this range.
- Per FERC's SPD, Erie's proposed 12.5-mile assessment downstream from Trenton to Newport Impoundment was to be reallocated for a total survey length of 12.5 miles between Trenton to the confluence with Mohawk River. As agreed, to during the agency April 18, 2019 consultation call, Erie focused the detailed assessment at representative locations and those that include unique features (the location of these areas were identified as part of the consultation discussions) and then conducted general characterization of mesohabitat types for the other sections of the reaches.

- Erie provided a technical memo to the USFWS and NYSDEC on July 3, 2019, summarizing the Aquatic Mesohabitat Survey field efforts, methodology, and preliminary results for the Prospect and Trenton bypass reaches. Erie consulted with USFWS and NYSDEC on July 16, 2019 to review the preliminary results and discuss placement of water level loggers. Attachment A provides the technical memo and summary of the consultation discussion.
- The field assessment for the downstream reaches (West Canada Creek from Trenton to confluence with Mohawk River) will be summarized in a separate technical memo. Erie will consult with USFWS and NYSDEC regarding the preliminary results and discuss adjustment of the water level loggers locations (if necessary) for these reaches.

Macroinvertebrate and Freshwater Mussel Surveys

- Erie consulted with USFWS and NYSDEC (April 18, 2019) regarding general locations for macroinvertebrate and mussel survey sampling. Erie will collect two macroinvertebrate samples in each of the Project bypass reaches to the extent that safe access is attainable. Downstream of Trenton, sampling will be evenly distributed at approximately 4-mile intervals, depending on river access, to the confluence of the Mohawk for a total of approximately 8 samples (see Attachment A). Erie will provide recommended sampling locations for both the Project bypass reaches and downstream reaches following the mesohabitat assessment as part of the forthcoming technical memo to the USFWS and NYSDEC for the Aquatic Mesohabitat downstream reach assessment. Erie anticipates conducting the field efforts for the macroinvertebrate during late summer (August or September).
- Information from the mesohabitat assessment will be reviewed to identify representative areas of suitable substrate for mussels. Trenton and Prospect impoundments and bypass reaches will include up to 10 cells each if suitable habitat is present, as proposed in the RSP, and to the extent that safe access is attainable. As specified in FERC's SPD, the identified survey areas within the Project impoundments will include the littoral zone to 6 feet below the lowest operational elevation in each impoundment. Downstream of Trenton, 20 sampling locations will be randomly selected from habitats containing suitable substrates for mussels. Erie will provide recommended mussel sampling locations following the mesohabitat assessment as part of the technical memo for review and input by USFWS and NYSDEC. Erie anticipates conducting the mussel sampling during the month of September 2019.

Impoundment Shoreline Characterization Study

- Erie anticipates conducting the impoundment shoreline characterization drone survey component and field assessment during early and mid-August 2019 timeframe.

Fish Assemblage Assessment

- Erie consulted with USFWS and NYSDEC (April 18, 2019) regarding the locations and timing of the backpack electrofishing surveys, the mesh size and configuration of the gill nets, and the minnow trap methods (if needed).
- Regarding electrofishing methods used during the survey, boat electrofishing methods will be employed in the impoundments whereas backpack methods will be used for the Prospect bypass reach and riverine reaches downstream of Trenton as consistent with the RSP and FERC SPD. Erie plans to conduct the surveys in late summer/early fall, preferably mid-September through October when water temperatures are generally between 15° C - 23° C (59° F – 73° F) as described in the NYSDEC Protocols¹.
- Per consultation with USFWS and NYSDEC, Erie will utilize gill nets consistent with NYSDEC standards² for standard experimental gill net characteristics:
 - net type - monofilament, 6-panel, sinking, Panel sizes - 7.6 m (25 ft) long × 1.8 m (6 ft) deep;
 - mesh sizes- 38, 51, 64, 76, 89, and 102 mm (1.5, 2.0, 2.5, 3.0, 3.5, and 4-in);
 - monofilament diameters - 0.28 – 0.40 mm (0.011 – 0.016 in), corresponding to mesh sizes; and
 - hanging ratio 0.5 (50 ft of stretched netting per 25 ft of net)
- If pool depth or other features prevent effective electrofishing, Erie will use minnow traps in deeper waters (pools) in representative habitats as recommended in the SPD and that up to 4 traps will be deployed and will be baited and fished overnight. USFWS and NYSDEC stated that either seine or minnow traps would be appropriate depending which was best suited based on the habitat type and location.

¹ Holst, L. and Loukmas, J. 2013. Lake and Pond Fish Community Survey Protocols. New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources Bureau of Fisheries Albany, NY 12233

² Holst, L. and Loukmas, J. 2013. Lake and Pond Fish Community Survey Protocols. New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources Bureau of Fisheries Albany, NY 12233

Fish Entrainment and Turbine Passage Survival Assessment

- Erie consulted with USFWS and NYSDEC (April 18, 2019) regarding goals and methods for collecting site-specific data for the fish entrainment study. The study will be a desk-top study and site-specific specific parameters will be obtained for each of the intakes to calculate approach velocity, defined as the water flow velocity approximately 30 cm upstream, normal to trashracks or screens (see slide 16 in Attachment 1). Maximum water velocity based on hydraulic capacity and design criteria of each development will determine the maximum velocity fish must overcome to avoid being impinged against the screens of the intake structures. Approach velocities will be calculated based on intake flow volume to coordinate which species may be susceptible to impingement throughout the operational range over the course of a typical year. Various burst speeds for fish present in West Canada Creek (as determined by the fish assemblage study) will be determined using a literature review of relevant data. Fish impingement or avoidance will be determined by direct comparison of maximum operational water velocity, compared to species specific burst swimming speeds. Erie is currently conducting the desktop study and obtaining site specific data as specified for this analysis.

Water Quality Study

- Erie installed water quality loggers during week of April 10 through 12 and reviewed the location of the water quality loggers with USFWS and NYSDEC during the April 18, 2019 consultation call. As indicated on the call, to the extent possible (e.g., whenever a candidate level logger site coincides with a water quality monitoring site), level loggers and water quality loggers will be co-located in the same general vicinity.
- Erie installed a total of 10 loggers, including: two loggers within the Prospect bypass reach, one within the Prospect tailrace, one within the Trenton tailrace, one logger below Morgan dam, two loggers between Morgan dam and the Newport impoundment, and three loggers between the Newport dam tailwater and the confluence with the Mohawk River (see Attachment A).
- High flows associated with the spring freshet destroyed or displaced level loggers in the lower Prospect bypass reach, the Prospect tailwater, and the Trenton tailwater. Replacement occurred on May 2 and May 30, 2019.
- Erie has conducted 4 downloads of water quality data from the loggers, collecting data approximately every 2 weeks since installation.
- Erie has collected 3 vertical water quality profiles (2 foot increments) from the Prospect impoundment, on May 2, June 20 and July 10, 2019. Erie also collected spot water quality sampling at 6 locations within the Prospect bypass reach on July 10, 2019. Spot measurements were collected at locations upstream and within inflows to the Prospect bypass reach to document water influences by tributaries.

Recreation Use, Need and Access Study

- Erie reached out to the USFWS, NYSDEC, AW, FWMB, NYTU, and the Town of Trenton to establish Working Groups, initiate consultation and conducted a consultation call on May 29, 2019. Attendees included USFWS, NYSDEC and AW and the parties on the call agreed to serve as key contacts for the consultation working group to distribute materials related to the recreation and aesthetic studies and coordinate as necessary within their agencies/stakeholder group(s): NYSDEC – Todd Phillips, USFWS – John Wiley, and AW – Bob Nasdor.
- Downstream Spot Counts - Per the FERC's SPD, Erie extended the study area for the Recreation Study to include the access areas that serve the two downstream boating reaches of West Canada Creek (i.e., Dover Road to Newport impoundment and Middletown to Kast Bridge) to the study recreation facility inventory and recreation use spot counts. Erie conducted an online review of identified West Canada Creek public fishing access locations along these reaches, as well as review of the 2007 Creel Survey fishing access site locations, which resulted in a total of 10 downstream access sites being selected for the spot count locations. Erie reviewed these spot count locations with USFWS, NYSDEC and AW during the May 29, 2019 consultation call (see Attachment B).
- Trenton Trail Days - The spring Trenton Trail Days were held on May 18 and 19, 2019 and Trenton Trail Days surveys were implemented (see Attachment B). There were approximately 2,300 visitors and Erie conducted approximately 200 intercept surveys. The fall Trenton Trail Days will be held on September 14 and 15, 2019
- Recreation Visitor Online Survey - the online survey is available online via SurveyMonkey from Memorial Day weekend (May 24, 2019) through the end of Labor Day weekend. The survey was structured to capture information regarding recreation visitor use and perceptions at the Prospect impoundment and boat launch area, and West Canada Creek below Trenton tailrace downstream to Kast Bridge. Per review of the 2017 NYSDEC angler survey, Erie added questions related to angler activities (see Attachment B, online survey, Questions 38 through 45). In addition, per consultation with the USFWS, NYSDEC and AW (May 29, 2019), Erie added questions to obtain flow-related safety information from the survey respondents (see Attachment B, Questions 29 through 32).
- Online Survey Notification - Erie notified the public of the online survey through a notification flyer (see Attachment B) via the West Canada Creek relicensing website, at the Prospect boat launch, at five NYSDEC fishing angler sites (where spot counts are being conducted), at the West Canada Creek Campground, by informing visitors during the Trenton Field Days event, and requested several local entities to post a link on their Facebook pages, including requests to Trenton Chamber of Commerce, West Canada Creek Campsites, KOA Herkimer Diamond Resort, West Canada Creek Tubing, West Canada Creek Watershed Alliance, NYTU and Trout Power. In addition, AW posted a link to the survey on the Facebook page for the New York Whitewater Paddlers.

- Prospect boat launch - Prior to Memorial Day weekend, Erie installed a drop box and is providing hard-copies of the online survey at the Prospect boat launch area. Erie also placed a traffic counter to collect visitor vehicle count data at the launch site from Memorial Day weekend through Labor Day weekend.
- Spot Counts - Erie is conducting instantaneous spot counts on a total of 8 occasions and is noting the number of vehicles, origin of vehicle, number of visitors, and type of recreation activity per a spot count form. Erie is conducting spot counts at the 10 downstream locations and at the Prospect boat launch (see Attachment B). To date, Erie has conducted several additional counts than originally targeted, and has conducted a total of 7 spot counts to date, including three weekend (including Memorial Day and Fourth of July weekend) and 4 weekday counts.

Whitewater Boating Flow and Access Study

- Erie consulted with USFWS, NYSDEC and AW (May 29, 2019) regarding the status and approach to the Whitewater Boating study. Erie is reviewing and characterizing historic records of minimum, maximum, and average flow rates and seasonal variations for the previous 5-year period to extent information is available. Erie is also conducting a literature review of regional whitewater boating within 1 hour of the Project and preparing a project safety plan for Phase 2 and 3 of the study.
- Phase 2 assessment will include the establishment of an expert panel to conduct a land-based assessment of the Prospect bypass reach. The group discussed having AW representation, USFWS (John Wiley), and NYSDEC (2 staff with Todd Phillips as lead contact). The land-based assessment will include a preliminary reconnaissance to identify potential whitewater features, potential limitations to navigation and safe paddling, potential ingress and egress locations, and safety considerations.
- The Phase 2 efforts will determine if the next Phase 3 efforts (instream flow assessment) are implemented, and if so appropriate flows for assessment will need to be determined prior to that assessment. If the on-land assessment justifies a controlled flow assessment for the Prospect bypass reach, Erie will consult with the Expert Panel to determine controlled flow levels to be studied during Phase 3 study efforts.
- During consultation (May 29, 2019), Erie stated concerns again with safety given the difficult access and gorge-like banks with high cliffs or unstable rock outcroppings along the Prospect bypass reach riverbanks. Erie has a specific safety program and rules that need to be followed. If descending into the bypassed reaches, there will need to be a lock-out tag-out and training for all participants. The working group discussed potential approaches, including walking the reach during leakage flows and whether drone footage could be reviewed first to identify specific areas for additional review and where safe access may be possible.
- During consultation (May 29, 2019), the working group discussed logistics given that the target flows would be difficult to assess over the entire approximately 30 mile reach included in the revised study area, and agreed to identify potentially 2 study reaches for

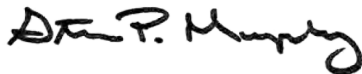
the controlled flow assessment that would include a representative section of the upper reach and representative section of the lower reach (for more experienced boaters). The working group targeted scheduling the controlled flow assessment within August to September 2019 timeframe in order to have flows available within the anticipated targeted flow ranges.

Aesthetics Flow Assessment Study

- Erie consulted with USFWS, NYSDEC and AW (May 29, 2019) regarding the status and approach to the aesthetic assessment. Erie identified 7 KOP locations (see Attachment B) and conducted leaf-off documentation of these locations on May 6, 2019. Erie will also conduct KOP documentation during the leaf-on period.
- Per discussion during the May 29, 2019 consultation call, the working group would like to have additional consultation regarding the KOP locations and selection of the controlled flow releases. Erie anticipates conducting additional consultation with the working group to refine (if necessary) the KOP locations, consult further regarding selected flow levels for the controlled flow release assessment, and to schedule the controlled flow release field assessment date. Erie anticipates scheduling the controlled flow release component of the study within the month of September 2019 in order to have flows available within the anticipated targeted flow ranges.

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.

Sincerely,



Steven Murphy
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Attachments: Attachment A - Consultation Regarding Aquatic Studies
Attachment B - Consultation Regarding Recreation and Aesthetic Studies

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West Canada Creek Hydroelectric Project (P-2701)

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PROGRESS REPORT 1

ATTACHMENT A

AQUATICS AND FISHERIES STUDIES CONSULTATION

- A1 - Memo Summarizing April 18, 2019 Consultation Call and Presentation
- A2- Email regarding follow-up for Gill Net Types
- A3- Memo Summarizing July 16, 2019 Consultation Call for Aquatic Mesohabitat Study and Aquatic Mesohabitat Study Preliminary Results Technical Memo

A1 - Memo Summarizing April 18, 2019 Consultation Call and Presentation

Karen Klosowski

From: Karen Klosowski
Sent: Tuesday, May 14, 2019 1:59 PM
To: Todd Phillips (todd.phillips@dec.ny.gov); Wiley, John
Cc: Steven Murphy (steven.murphy@brookfieldrenewable.com); Brandon Kulik; Bryan Apell (Bryan.Apell@KleinschmidtGroup.com); Kayla Easler
Subject: West Canada Creek Project (P-2701) Aquatics Study 04/18/2019 Conference Call Memo
Attachments: WCC Agency Consultation Meeting_04182019.pdf; 2019_WCC_Mesoabitat_EFish.pdf

Todd and John

Attached is a memo summarizing the discussion during our call held on April 18, 2019 to review outstanding topics that were identified in the Federal Energy Regulatory Commission's (FERC) Study Plan Determination (SPD) for consultation with U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC) for the following studies:

- Aquatic Mesohabitat Assessment
 - Location of study reaches and key habitat types for assessment
 - Number and location of level loggers
 - Supplemental field survey methods to verify drone survey results
- Macroinvertebrate and Mussel Surveys
 - Sampling Locations for macro and mussel surveys
- Fish Assemblage Assessment
 - Locations and timing of backpack electrofishing surveys
 - Gill net mesh size and configuration
 - Minnow trap methods (if needed) for Prospect bypass and reaches downstream of Trenton
- Fish Entrainment and Turbine Passage Survival Assessment
 - Methodology for site-specific data collection (e.g., intake velocity).

The presentation reviewed during the conference call is provided as Attachment 1 to the memo. Attachment 2 includes the updated water quality logger locations map, and Attachment 3 includes the pictures of the Trenton bypass reach substrate, both which were presented during our call.

The memo includes a list of action items. Pursuant to one of the action items, Erie is providing the attached figure which denotes the targeted mesohabitat assessment locations (more detailed assessment) and the targeted locations of electrofishing target areas. Please note there are several NYSDEC action items, discussed during our call. Erie appreciates NYSDEC's efforts to provide this information to assist Erie in successful implementation of field study efforts that meet the study plan requirements.

Flows permitting, Erie is planning to conduct the initial field efforts for the mesohabitat assessment during May 21-24, to include the drone assessment of the Project's bypass reaches, and if time allows, continue with the downstream field efforts. The field efforts are highly dependent on flow conditions and associated safety considerations and often the location and timing of the field study may shift depending on field conditions. As discussed during the call, if the USFWS or NYSDEC plan to observe any field efforts, Erie will need advanced notification of any participation so that safety planning measures, and communication of any changes to the schedule and location can be coordinated prior to the field study.

As we had discussed, we are sending this email to both of you to distribute internally within your respective agencies as necessary. If you have any questions, please contact me at Karen.Klosowski@KleinschmidtGroup.com or 315-409-7198 or Steve Murphy at steven.murphy@brookfieldrenewable.com or (315) 598-6130.

Thank you for your time and assistance moving forward with these studies.

Karen Klosowski

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MEETING/CALL SUMMARY

WEST CANADA CREEK PROJECT (P-2701)

AGENCY CONSULTATION MEETING FOR AQUATIC STUDIES

Conference Call

ATTENDEES: Todd Phillips - NYSDEC
Dave Erway - NYSDEC
Matthew Walter - NYSDEC
Nicole Cain - NYSDEC
John Wiley - USFWS
Steve Murphy, Brookfield
Karen Klosowski – Kleinschmidt
Bryan Apell – Kleinschmidt
Brandon Kulik – Kleinschmidt
Kayla Easler – Kleinschmidt

DATE: April 18, 2019

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company (Brookfield) is currently undergoing relicensing for the West Canada Creek Hydroelectric Project (FERC Project No. 2701) (Project) under the Federal Energy Regulatory Commission (FERC) Integrated Relicensing Process (ILP). Erie conducted an agency consultation call with the U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC) to review specific consultation topics as identified in FERC's Study Plan Determination (SPD) related to the aquatic and fisheries studies. Following is a summary of key topics discussed during this consultation call. The meeting presentation is provided in Attachment 1.

INTRODUCTIONS AND PURPOSE OF CALL

Steve Murphy (Erie) welcomed participants and provided an overview of the agenda. The purpose of the call was to review specific topics as identified in FERC's SPD for additional consultation for the aquatic and fisheries related studies. FERC identified specific topics for consultation with USFWS and NYSDEC for the following studies:

- Aquatic Mesohabitat Assessment,
- Macroinvertebrate and Mussel Surveys,
- Fish Assemblage Assessment, and
- Fish Entrainment and Turbine Passage Survival Assessment.

A separate consultation call will be conducted for the recreation and aesthetic related studies. Field study efforts were initiated the previous week (April 10-12) for the installation of the water quality loggers. The Aquatic Mesohabitat Assessment is scheduled to begin the week of May 20.

Karen Klosowski (Kleinschmidt) provided a review of the key milestones related to study plan development conducted to date under the Project's relicensing process. Erie submitted a Proposed Study Plan (PSP) on August 13, 2018 and held a Study Plan meeting on September 11, 2018. Following receipt of comments, Erie submitted a Revised Study Plan on December 11, 2018. Comments on the Revised Study Plan (RSP) were received from USFWS, NYSDEC,

American Whitewater (AW), and Citizens for Hinckley Lake. FERC issued the Study Plan Determination (SPD) on March 7, 2019. Based on this study consultation and FERC's SPD, Erie will be conducting nine studies during the 2019 field season for the West Canada Creek Project relicensing. These studies include: Aquatic Mesohabitat Assessment Study; Macroinvertebrate and Freshwater Mussel Surveys; 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 Study; and Aesthetics Flow Assessment Study (see Slides 2 and 3 in Attachment 1).

Ms. Klosowski reviewed the specific consultation topics for the aquatics and fisheries studies to be covered during this call, as identified in FERC's SPD (see slides 4 and 5 in Attachment 1):

- Aquatic Mesohabitat Assessment:
 - Location of study reaches and key habitat types for assessment.
 - Number and location of level loggers.
 - Supplemental field survey methods to verify drone survey results.
- Macroinvertebrate and Mussel Surveys:
 - Sampling locations for macroinvertebrate and mussel surveys.
- Fish Assemblage Assessment:
 - Locations and timing of bypass and downstream reach backpack electrofishing surveys.
 - Gill net mesh size and configuration.
 - Minnow trap methods (if needed) for Prospect bypass and reaches downstream of Trenton.
- Fish Entrainment and Turbine Passage Survival Assessment:
 - Methodology for site-specific data collection.

Erie facilitated this consultation call to communicate and consult with USFWS and NYSDEC on Erie's proposed approach to resolve these topics. The topics were discussed by study, as summarized in the following sections.

AQUATIC MESOHABITAT ASSESSMENT

Topic – Location of study reaches and key habitat types for assessment

Brandon Kulik (Kleinschmidt) stated that the Aquatic Mesohabitat Assessment study area originally included the reaches from below Trenton Station downstream to the Newport impoundment. FERC recommended that Erie include additional study reaches downstream of Newport dam, with at least one reach downstream of Middleville, New York. FERC indicated that the total survey length of 12.5 miles was adequate to characterize habitat, and to offset the extended downstream areas, by reducing the length of the survey between Trenton and Newport (see slide 6 in Attachment 1).

Based on FERC's SPD, Erie revised the study to extend the study reach downstream to the confluence with the Mohawk River. Specifically, the revised study area for the Aquatic Mesohabitat Assessment includes:

1. Prospect bypass reach - extends from the toe of Prospect dam downstream to Trenton impoundment.

2. Trenton bypass reach - extends from the toe of Trenton dam downstream to Trenton tailrace.
3. West Canada Creek Trenton to Newport - extends from the Trenton tailrace downstream to the Newport Project impoundment.
4. West Canada Creek downstream of Newport - extends from the Newport project tailwater downstream to the confluence with the Mohawk River.

Mr. Kulik stated that the major aquatic mesohabitat types (i.e., riffle, run, glide, pool, etc.) will be documented using georeferenced imagery collected via drone flight or field verification. The drone will be used to document each of the bypass reaches as allowed by suitable field conditions. Based on the suitability of the drone use in certain areas (i.e., distance, vegetation) on the ground assessment may also be implemented. The drone flights will provide video and photographs that will be assessed to identify the location and type of the aquatic mesohabitat present in the study reaches.

Based on the initial site visits, many places in the reaches downstream of Morgan Dam are likely not suitable for drone flight and assessment. Therefore, Erie intends to minimize drone assessment for these reaches and conduct a more traditional assessment approach (i.e., float trips via boat) for data collection efforts. Mr. Kulik stated that the downstream reach will be floated and generally characterized. However, the field efforts will employ gathering more detailed data for the upstream reaches (below Trenton to Newport impoundment), and downstream field efforts (Newport impoundment to confluence with the Mohawk River) will focus on primarily documenting dominant substrates and unique features encountered.

Topic -Number and location of level loggers

Mr. Kulik stated that the exact number and distribution of level loggers will be determined during initial mesohabitat mapping, based on the following guidelines:

- Areas of representative fluvial mesohabitat.
- Areas of representative channel geometry and slope.
- Spatial distribution relative to proximity to project discharge (i.e., nearfield vs. farfield) to portray time of travel and attenuation of varying discharges.
- Ability to collect transect data at logger locations to estimate changes in wetted area.
- To the extent possible (e.g., whenever a candidate level logger site coincides with a water quality monitoring site), level loggers and water quality loggers will be co-located in the same general vicinity (see slide 7 Attachment 1).

Mr. Kulik stated that the intent was to place the level loggers within each of the study reaches in areas of representative habitat (e.g., riffles, runs) to document water level changes in a given transect location. Slide 8 of the presentation (Attachment 1) denotes the anticipated deployment locations for the level loggers. FERC recommended placing both the water quality and level loggers in the same places whenever possible, however, it is possible that the locations of interest for collecting the data will not always match up for the water quality and level loggers. For the level loggers, given they will be placed in areas of representative mesohabitat, the placement locations will not be identified until the mesohabitat assessment is completed. Following the mesohabitat mapping, Erie will provide updated information via a technical memo to USFWS and NYSDEC providing more detail on the proposed locations for loggers based on the field assessment information.

Bryan Appel (Kleinschmidt) noted that the previous week (week of April 10, after the presentation memo was distributed to the agencies) the water quality loggers were deployed. Based on assessment of the field conditions and accessible locations (where landowner permission could be granted), the deployed locations were close to the anticipated locations, but not all in the same exact location, as depicted on Slide 8. Attachment 2 provides an updated figure of the locations where the water quality loggers were deployed. John Wiley (USFWS) questioned whether a water quality logger was placed in the Newport impoundment based on review of the figure. Mr. Appel stated that the water quality logger is not in the Newport impoundment, and is located upstream of the confluence above the impoundment in a free flowing section.

Topic -Supplemental field survey methods to verify drone survey results

Mr. Kulik reviewed supplemental field survey methods for verifying drone survey results (see slide 9 in Attachment 1). A field crew will conduct an on-the-ground visit to randomly selected representative habitat type segments (i.e., riffle, pool, runs) within each study reach (to the extent that safe access is attainable) to independently verify that the substrate classification and cover type and quality is consistent with drone observations. The exact number and location of verification site visits will be determined in the field based on both review of initial information, as well as safety and access logistics. The on-the-ground survey will include: qualitative habitat assessments, GPS mapping of these areas, substrate characterization, photographs, and cover type and density characterization. The data will be compared to the drone data to confirm that the drone data is consistent with that obtained in the more traditional on-ground field data collection method. In addition, any areas that are not drone friendly (e.g., to variables like distance, light, wind, weather conditions) will be assessed via the traditional on ground assessment approach. Again, the lower sections will be primarily assessed through traditional methods (i.e., float trip), rather than drone assessment.

Ms. Klosowski summarized the approach stating that the drone survey would be conducted for the upstream reaches (bypass reaches) and the downstream reaches will be covered primarily via traditional methodology (float trip) rather than drone. Following the mesohabitat assessment a technical memo will be provided to the agencies for review which will include a description of the proposed locations for the deployment of the level loggers. Based on FERC's SPD, the level loggers need to be in the water by July through September time frame. Erie anticipates a follow-up call with the agencies following distribution of the technical memo to consult on the placement locations.

Mr. Murphy summarized that FERC expanded the study reach down to the Mohawk River and required no additional level of effort but recommended shifting the number of locations further downstream. FERC suggested that the 12.5 mile stretch be distributed over the 31 mile length, in effect resulting in gaps of data collected in the study reaches. Erie assumed that a fragmented approach (i.e., just covering various sections downstream) was not ideal, so proposes characterizing the entire study reaches. However, to maintain the current level of effort, Erie intends to provide more detailed assessment to the upstream reach (i.e., Trenton to Newport impoundment), with less focus on the lower reaches.

Mr. Wiley questioned how the effort would change for the downstream reach. Mr. Kulik indicated that the upstream section would include granular data such as cover density, cover type, substrate composition, and document conditions that spatially influence where fish may be located under different flow conditions. For the reaches below Newport, the effort will primarily focus on dominant substrates (upstream and downstream boundaries of mesohabitat types), so at least some information is documented; however, the downstream reach assessment will not include details on cover, density on the substrate composition. If unusual or unique features (e.g. steep rapids) are encountered in the lower reaches, details will be collected for those features.

Mr. Wiley and Todd Phillips (NYSDEC) requested that Erie consider focusing the detailed assessment at representative locations and those that include unique features (both upstream and downstream of Newport) and then general characterization of mesohabitat type for the other sections of the reaches. Mr. Wiley stated that it would be helpful if the technical memo could identify areas where higher level of detail will be obtained within the reaches. Mr. Kulik requested that the agencies, being familiar with the reaches, provide input on locations where they recommend that more detailed data be collected. Mr. Wiley indicated the following areas for more detailed assessment: below Trenton (catch and release area), above Newport impoundment, one site below Newport, area near the Middleville bridge, the reach just downstream of the Middleville where there is a stretch of rapids and islands, area just above the Herkimer impoundment, and near bend with rapids and island by parking (near Kast bridge).

Mr. Murphy summarized that Erie will generally characterize both the upper and lower reaches with areas of focused detail in both upstream and downstream locations. Mr. Murphy requested that NYSDEC and USFWS provide input via a map on suggested areas for focused assessment. Mr. Wiley and Mr. Phillips suggested that Erie will be able to identify areas for focused assessment based on field reconnaissance and can summarize proposed locations in the technical memo for review by the agencies. There was discussion and agreement that Erie would provide a figure or KMZ file to USFWS and NYSDEC that denotes the locations where the more detailed assessment would be targeted for review and verification of the key locations before the field crews go out in the field for the mesohabitat assessment.

Mr. Kulik discussed that the week of May 20th was targeted for the start of the Aquatic Mesohabitat Assessment and that higher flows may still be an issue during that period. He asked for agency input regarding the higher range of flows the agencies felt would still be suitable for the assessment. Mr. Wiley indicated that flows within range of 300 cfs would be suitable for wadeable conditions. Mr. Murphy indicated that flows within the range of 300 cfs would likely not be achievable given spring conditions and flow regulation from Hinckley Reservoir. Mr. Phillips and Mr. Wiley indicated that flows higher than 300 cfs would be acceptable and that flows of up to 500 cfs could also be acceptable depending on conditions, however, that additional verification may then be necessary during a lower flow period. Mr. Apell noted the ability to identify breaks in habitats during field conditions the previous week at flows within the range of approximately 500 cfs.

Mr. Wiley raised the question about the location and type of transects. Mr. Kulik stated that following the mesohabitats assessment, areas of representative habitats will be identified for the transects and level logger locations. The focus will be on areas of rapids and riffles rather than deep pools. The transects will include a head pin and tail pin located on the crest of the bank. Measurements will be made across the river either with measuring tape or use of RTK. Vertical stations along the transect will be located at points where there are shifts in channel geometry

slope or substrates. From this a bed and substrate composition profile will be surveyed at the same location as the level logger datum. The survey cross-section data and surface water elevation data from the level loggers elevations can then be assessed to look at changes in wetted width and provide stage-discharge data.

Mr. Wiley requested that Erie share the schedule for field efforts in case agency staff wished to observe. Mr. Murphy indicated that most of this study effort would be via boat. The group discussed the need to adhere to Brookfield's safety protocols. Erie will share schedule dates for mesohabitat study field efforts, and USFWS and NYSDEC will provide notification to Erie if staff plan to observe field study efforts.

MACROINVERTEBRATE SURVEYS

Topic - Sampling locations for macroinvertebrate surveys

Mr. Apell reviewed the approach for macroinvertebrate sampling locations (see slide 10 in Attachment 1). Erie had proposed the study area to include the bypass reaches and reach downstream to the Newport impoundment. In the SPD, FERC recommended that Erie extend the study area downstream to the confluence with the Mohawk River, but that the sampling effort for both the macroinvertebrate and mussel surveys would be adequate and that some of the proposed sample locations could be shifted downstream of Newport dam.

Mr. Apell stated that two mesohabitat samples would be collected in each of the Project bypass reaches to the extent that safe access is attainable. Downstream of Trenton, sampling will be evenly distributed at approximately 4-mile intervals, depending on river access, to the confluence of the Mohawk for a total of approximately 8 samples. Sample collection will target representative mesohabitats (riffle and run) with flowing waters in the littoral zone of the Project's bypass reaches and downstream of the Trenton tailwater to the confluence with the Mohawk River. Sampling is proposed on hard bottom substrate composed of rock, rubble, gravel, and sand; in flowing waters (velocity ≥ 40 cm/sec) less than 1 m deep.

Mr. Apell raised the question whether the sampling locations within the Trenton bypass reach could be moved to a downstream reach due to the challenges and safety concerns for access to the Trenton bypass and the limited potential habitat due to the predominantly bedrock substrate. Pictures (Attachment 2) were shared to illustrate the typical substrate characteristics within the Trenton bypass reach. USFWS and NYSDEC stated that they could not agree to shifting the sampling locations to a different location at this time. It was discussed the Erie would provide recommended sampling locations following the mesohabitat assessment as part of the technical memo to the USFWS and NYSDEC.

Mr. Wiley suggested that sampling locations could use the proposed approach of evenly distributed as depicted for the 4-mile intervals, or alternatively could coincide with free-flowing areas where the more detailed assessment will be conducted for the mesohabitat assessment. Both USFWS and Erie felt merit in either approach. There was also discussion that the schedule for conducting the macroinvertebrate study would be best suited for the late July time-frame. In order to have the mesohabitat information for better informed discussion, Erie will provide recommended mesohabitat sampling locations as part of the technical memo for review and input by USFWS and NYSDEC.

Topic - Sampling locations for freshwater mussel surveys

Mr. Apell stated that FERC recommended a similar approach for the study area for the mussel surveys as the macroinvertebrate sampling (see slide 11 in Attachment 1). Mr. Appel stated that Erie's approach to this component of the study has not changed, only the geographic extent beyond Newport to the confluence with the Mohawk River. Information from the mesohabitat assessment will be reviewed to identify representative areas of suitable substrate for mussels. Trenton and Prospect impoundments and bypass reaches will include up to 10 cells each if suitable habitat is present, as proposed in the RSP, and to the extent that safe access is attainable. Downstream of Trenton 20 sampling locations will be randomly selected from these identified habitats. The sampling effort has remained the same, 20 cells, but the sampling locations will be distributed downstream to the confluence of the Mohawk River at locations randomly selected from where the proper substrate is present. USFWS and NYSDEC agreed with the approach. Mr. Apell also noted that for the impoundment areas, FERC recommended in the SPD that Erie conduct sampling at areas 6 feet below operating level. Erie will provide recommended mussel sampling locations following the mesohabitat assessment as part of the technical memo for review and input by USFWS and NYSDEC.

FISH ASSEMBLAGE ASSESSMENT

Topic - Locations and timing of bypass and downstream reach backpack electrofishing surveys

Mr. Apell reviewed the locations and timing of electrofishing surveys (see slide 12 in Attachment 1). Fish surveys will occur in the late summer or fall when water temperatures are equal to or less than 68° F and flows are seasonally low. Fish collection is expected to consist of backpack electrofishing methods in shallow areas (< 3 ft) and minnow traps (four traps, baited and set for 24 hours each) in deeper waters in representative habitats. Erie will attempt to sample a diversity of habitats including riffles, pools, snags, and undercut banks. Per the FERC SPD, the four sample locations include: one survey location in the Prospect bypassed reach, two survey locations between Morgan dam and Newport, and one survey location downstream of Newport dam (see slide 13 in Attachment 1). Information from the aquatic mesohabitat survey will be used to select survey sites that are representative of the study reach habitat.

Mr. Apell indicated the potential use of a Georadar system, a land-based generator system (used for large bodies of water) for sampling some of the wider sections of the river. There was discussion of the potential schedule for the sampling efforts (i.e., August through October) and whether NYSDEC sampling protocols required period of low flows and temperatures equal to or less than 68° F. NYSDEC indicated that exact temperature ranges were not typically adhered to, but NYSDEC will review and follow-up with Erie to provide a range of times and temperatures suitable for the sampling period.

Mr. Wiley questioned why no locations below Middleville. Mr. Apell stated that consistent with SPD, one site was located below Newport dam, so that site could be changed to a different location. Mr. Wiley stated that FERC's recommendation was a minimum, not only requirement, and additional downstream sites would be beneficial. NYSDEC was also looking at additional locations in the downstream reaches.

NYSDEC and USFWS provided input on target locations for sampling efforts, including:

- downstream Morgan dam (bridge) (site 2);
- downstream of Newport dam (move a little closer to dam than current site 4); and
- areas upstream of the West Canada Creek high school, at locations of confluence of Mill Creek and White Creek (how fish seek out habitat in low flows and summer), and Cold Brook near Poland; recommend confluence of the streams but still in the main stem of the West Canada Creek.
- sampling over at least one of the unique mesohabitat types may be helpful.

NYSDEC stated the focus was to identify spots that were narrower to help facilitate full pass of the width of the stream. Mr. Kulik questioned the full pass approach in that it was related more to a depletion study of actual population of targeted species, where the survey intent for this study is to obtain a species composition survey. NYSDEC stated concerns of missing escaped fish during the sampling effort. Mr. Apell stated that the approach was consistent with NYSDEC standard protocols, with use of block nets downstream and to target narrower reaches to attempt bank to bank coverage, but if not feasible, stick to one shoreline.

Mr. Apell questioned if USFWS and NYSDEC were seeking information at sites that target coldwater species (i.e., at confluences) and within the mainstem to capture distribution of warmwater species. He questioned if two sites were added, if one should target confluence and one target a mainstem location. NYSDEC generally agreed but stated that White Creek can have warmer temperatures. Mr. Wiley questioned if water temperature data would be collected at the sampling locations. Mr. Apell stated water quality measurements will be collected for each sampling site, and for those area at confluences, typically targeting flow coming out of the tributary, in the mainstem, and in the mixing zone area.

Mr. Murphy questioned about the number of recommended sampling locations. He stated that USFWS originally recommended 6 locations. NYSDEC did not have specific number of locations. USFWS and NYSDEC stated that an additional 5 were not necessarily needed. Mr. Murphy indicated that Erie was not opposed to discussing additional locations but did not want to double the size of the study efforts. Erie will provide recommended locations for these sample sites as part of the technical memo.

Topic - Gill net mesh size and configuration

Mr. Apell reviewed the gill net equipment types for the sampling in the Project impoundments and within the Prospect power canal (see slide 14 in Attachment 1). Experimental gill nets will be employed with each net panel consisting of a single mesh size as recommended by the NYSDEC in their comments to the RSP (i.e., nets will be 6-foot high by 80-foot in length and will be constructed of 8 panels of increasing mesh size (e.g., 1-1/2", 2-1/4", 1", 1-3/4", 3/4", 2-1/2", 1-1/4", 2" inch stretched mesh). Mr. Apell stated that the NYSDEC requested the addition of a small mesh size for smaller fishes, and that the proposed adding a 9th panel with 0.75-inch mesh, is included in the 8 panels, so a separate panel would not be needed. NYSDEC stated that Erie's proposed mesh sizes are different than the NYSDEC standard net and mesh sizes for lake/pond surveys. NYSDEC stated that the NYSDEC standards include: 6 ft high, 6 panels 25 feet each (150 long total) and mesh size of 1.5, 2, 2.5, 3, 3.5 and 4 inches. NYSDEC typically starts with 1.5 inches and typically go half inch increments. NYSDEC will confirm and follow-up with Erie to confirm gill net mesh sizes.

Topic - Minnow trap methods (if needed) for the Prospect bypass and reaches downstream of Trenton

Mr. Apell reviewed the approach for minnow trap methods (see slide 15 in Attachment 1). In the SPD, FERC stated that for the Prospect bypass and reaches downstream of Trenton, if pool depth or other features prevent effective electrofishing, Erie should deploy minnow traps within these habitats and determine specific minnow trap methods in consultation with NYSDEC. Mr. Apell stated that minnow traps will be used in deeper waters (pools) in representative habitats as recommended in the SPD and that up to 4 traps will be deployed and will be baited and fished overnight. USFWS and NYSDEC stated that either seine or minnow traps would be appropriate depending which was best suited based on the habitat type and location.

FISH ENTRAINMENT AND TURBINE PASSAGE SURVIVAL ASSESSMENT

Topic -Methodology for site-specific data collection

Mr. Apell stated the fish entrainment and passage assessment would be desk-top study and that site-specific specific parameters will be obtained for each of the intakes to calculate approach velocity, defined as the water flow velocity approximately 30 cm upstream, normal to trashracks or screens (see slide 16 in Attachment 1). Maximum water velocity based on hydraulic capacity and design criteria of each development will determine the maximum velocity fish must overcome to avoid being impinged against the screens of the intake structures. Approach velocities will be calculated based on intake flow volume to coordinate which species may be susceptible to impingement throughout the operational range over the course of a typical year. Various burst speeds for fish present in West Canada Creek (as determined by the fish assemblage study) will be determined using a literature review of relevant data. Fish impingement or avoidance will be determined by direct comparison of maximum operational water velocity, compared to species specific burst swimming speeds. Mr. Wiley stated that a desk top assessment that includes impingement assessment as proposed was appropriate. Mr. Wiley questioned whether the fish assemblage study would provide adequate representation of species present in the Trenton impoundment, and questioned Erie's approach to this study if only one or two species were caught. Mr. Apell and Mr. Kulik stated that in the event data from the fish assemblage study is limited, Erie would review potential upstream species based on publicly available information for consideration in this study.

SCHEDULE

Ms. Klosowski reviewed the overall relicensing schedule and next key steps (see slide 17 in Attachment 1). She indicated again that field study has started for the 2019 season. She also indicated that even though there was a delay in FERC's issuance of the SPD, that the Initial Study Report is still due on January 10, 2020.

NYSDEC STUDY DISPUTE RESPONSE LETTER

Mr. Phillips indicated that NYSDEC will be filing a letter (4/18/2019) to inform FERC that NYSDEC will not be participating in the study dispute resolution, but that NYSDEC may be requiring additional studies in order to issue the 401 Water Quality Certification (WQC). Mr. Phillips said that one of those study items may be collecting data during the minimum flow

conditions (160 cfs) during the summer period. Ms. Klosowski questioned whether these study requests include new or additional studies as compared to those proposed earlier in the ILP study plan process. Mr. Phillips stated that the required studies include studies that have been included in the FERC record under the ILP, but that were not adopted by FERC in the SPD.

Mr. Murphy questioned why NYSDEC was not pursuing the FERC study dispute resolution process. Mr. Phillips stated that the information was needed for the state to conduct 401 WQC process. Mr. Wiley indicated that the dispute resolution process was a lot of effort for the NYSDEC to pursue, provided unknown results, and that the state was exercising its authority under the 401 WQC process. Mr. Phillips stated that this is not the first instance of the state requiring additional study outside of the FERC SPD, and that FERC provides a statement that the state has authority to require additional studies under the WQC process. Mr. Wiley indicated that NYSDEC is taking a similar approach on the Mongaup Hydroelectric Project in New York state.

Mr. Phillips stated that the intent was to inform Erie about the additional study needs during the period when the field effort was being conducted, rather than come back in 2 years at time of WQC application and require this additional study at that time. Ms. Klosowski questioned whether there would be specific details about the additional study requests and the timing of the requests given that the study season has already started. Mr. Phillips stated that the filing with FERC does not include specific study details, but that NYSDEC would provide that information to Erie for consideration in the 2019 field efforts.

ACTION ITEMS

- NYSDEC will review and follow-up with a range of times and temperatures for the backpack electrofishing surveys.
- NYSDEC to confirm mesh sizes for gill net mesh size of 6 ft high, 6 panels 25 feet each (150 long total) and 1.5, 2, 2.5, 3, 3.5 and 4 inches.
- NYSDEC to provide Erie with additional details for the study requests referenced in the April 18, 2019 letter to FERC for consideration for the 2019 field study efforts.
- Erie to provide a summary of the conference call, including the presentation, and supplemental materials (water quality logger location map and Trenton bypassed reach pictures).
- Erie to provide a figure or KMZ file to USFWS and NYSDEC that denotes the locations where the more detailed mesohabitat assessment would be targeted for USFWS and NYSDEC review and verification of the targeted key locations
- Erie to provide USFWS and NYSDEC with notification of field survey efforts for the mesohabitat assessment; agencies to notify Erie if agency staff plan to observe field study efforts.
- Erie to provide a technical memo following the mesohabitat field efforts that will identify:
 - preliminary results of the mesohabitat characterization (i.e., figure denoting key habitat locations);
 - updated proposed locations for level loggers;
 - updated proposed locations for macroinvertebrate and mussel sampling; and
 - updated proposed locations for electrofishing sampling locations.
- Following issuance of the technical memo, Erie to set up follow-up conference call with USFWS, NYSDEC to review technical memo and key items.

Attachment 1

West Canada Creek Project (P-2701)
Study Plan Additional Consultation
April 18, 2019 Consultation Call Presentation



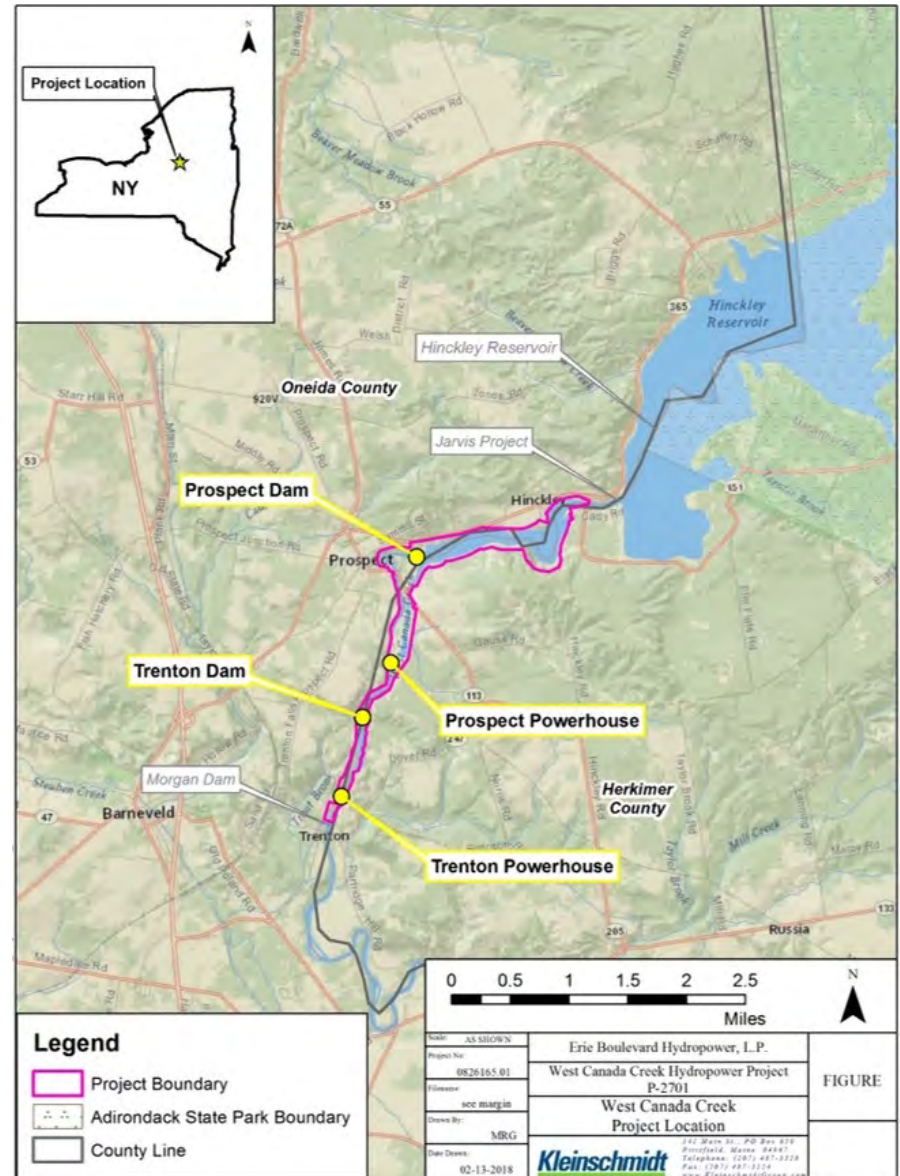
West Canada Creek Hydroelectric Project (FERC No. 2701)

Study Plan Additional Consultation

April 18, 2019

West Canada Creek Project Study Plan Summary

- West Canada Creek Hydroelectric Project (Project No. 2701) (Project) consists of two developments, Prospect and Trenton, located on West Canada Creek in Oneida and Herkimer counties, New York.
- Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield company, is currently undergoing relicensing the Federal Energy Regulatory Commission (FERC) Integrated Relicensing Process (ILP) for the Project.
- Erie submitted a Proposed Study Plan (PSP) on August 13, 2018, and held a Study Plan meeting on September 11, 2018. Following receipt of comments, Erie submitted a Revised Study Plan on December 11, 2018.
- Comments on the Revised Study Plan (RSP) were received from U.S. Fish and Wildlife (USFWS), New York Department of Environmental Conservation (NYSDEC), American Whitewater (AW), and Citizens for Hinckley Lake.
- FERC issued the Study Plan Determination (SPD) on March 7, 2019.



- Based on this study consultation and FERC's SPD, Erie will be conducting nine studies during the 2019 field season for the West Canada Creek Project relicensing.
- These studies include:
 1. Aquatic Mesohabitat Assessment Study;
 2. Macroinvertebrate and Freshwater Mussel Surveys;
 3. Impoundment Shoreline Characterization Study;
 4. Fish Assemblage Assessment
 5. Fish Entrainment and Turbine Passage Survival Assessment;
 6. Water Quality Study;
 7. Recreation Use, Needs and Access Study;
 8. Whitewater Boating Flow and Access Study; and
 9. Aesthetics Flow Assessment Study.

- The purpose of this call is to review specific topics as identified in FERC's SPD for additional consultation for the aquatic and fisheries related studies.
- FERC identified specific topics for consultation with USFWS and NYSDEC for the following studies:
 - Aquatic Mesohabitat Assessment
 - Macroinvertebrate and Mussel Surveys
 - Fish Assemblage Assessment
 - Fish Entrainment and Turbine Passage Survival Assessment
- A separate consultation call will be conducted for the recreation and aesthetic related studies.
- The schedule is tight due to unforeseen circumstances – partial government shutdown and delay in SPD issuance.
- Erie is facilitating this consultation call to communicate and consult with USFWS and NYSDEC on Erie's proposed approach to resolve these topics in order to commence field studies this month.
- Study season to begin in mid-April with the Water Quality Study.

Specific consultation topics for these studies, as identified in FERC's SPD include the following:

- Aquatic Mesohabitat Assessment:
 - Location of study reaches and key habitat types for assessment.
 - Number and location of level loggers.
 - Supplemental field survey methods to verify drone survey results.
- Macroinvertebrate and Mussel Surveys:
 - Sampling locations for macroinvertebrate and mussel surveys.
- Fish Assemblage Assessment:
 - Locations and timing of bypass and downstream reach backpack electrofishing surveys.
 - Gill net mesh size and configuration.
 - Minnow trap methods (if needed) for Prospect bypass and reaches downstream of Trenton.
- Fish Entrainment and Turbine Passage Survival Assessment:
 - Methodology for site-specific data collection.

Aquatic Mesohabitat Assessment

Topic - Location of study reaches and key habitat types for assessment

FERC: Identify study reaches to include key habitats for fish and other representative habitats.

Approach:

- For the Aquatic Mesohabitat Assessment, the study area will be divided into four study reaches:
 1. Prospect bypass reach - extends from the toe of Prospect dam downstream to Trenton impoundment.
 2. Trenton bypass reach – extends from the toe of Trenton dam downstream to Trenton tailrace.
 3. West Canada Creek Trenton to Newport - extends from the Trenton tailrace downstream to the Newport Project impoundment.
 4. West Canada Creek downstream of Newport - extends from the Newport project tailwater downstream to the confluence with the Mohawk River.
- Major aquatic mesohabitat types (i.e., riffle, run, glide, pool, etc.) will be documented using georeferenced imagery collected via drone flight or field verification.

Aquatic Mesohabitat Assessment

Topic - Number and location of level loggers

FERC: Consult with USFWS and NYSDEC on number and locations of level loggers.

Approach:

- The exact number and distribution of level loggers will be determined during initial mapping, based on the following guidelines:
 - Areas of representative fluvial mesohabitat.
 - Areas of representative channel geometry and slope.
 - Spatial distribution relative to proximity to project discharge (i.e., nearfield vs. farfield) to portray time of travel and attenuation of varying discharges.
 - Ability to collect transect data at logger locations to estimate changes in wetted area.
- To the extent possible (e.g., whenever a candidate level logger site coincides with a water quality monitoring site), level loggers and water quality loggers will be co-located in the same general vicinity.
- Following mesohabitat mapping, Erie will provide updated information to USFWS and NYSDEC about proposed locations for loggers based on field survey information.

Aquatic Mesohabitat Assessment

Level Logger Approximate Locations

- Level loggers will be placed within each of the study reaches, including:
 1. Prospect bypass reach: one logger at Prospect tailwater, two loggers in the Prospect bypass reach.
 2. Trenton bypass reach – no loggers.
 3. West Canada Creek Trenton to Newport: one logger in Trenton tailrace, one logger below Morgan dam, and two loggers farther downstream.
 4. West Canada Creek downstream of Newport: three level loggers in the downstream reach.
- Water quality loggers will be placed in general reach locations as indicated on the figure.



Aquatic Mesohabitat Assessment

Topic - Supplemental field survey methods to verify drone survey results

FERC: Identify supplemental field survey methods (e.g., qualitative habitat assessments, GPS mapping, substrate characterization, transects, wetland ground-truthing, photographs, etc.) and level of effort for verifying drone survey results and mapping aquatic mesohabitat.

Approach:

- A field crew will conduct an on-the-ground visit to randomly selected segments within each study reach (to the extent that safe access is attainable) to independently verify that the substrate classification and cover type and quality is consistent with drone observations.
- The exact number and location of verification site visits will be determined in the field based on both review of initial information, as well as safety and access logistics. The on-the-ground survey will include: qualitative habitat assessments, GPS mapping of these areas, substrate characterization, photographs, and cover type and density characterization.

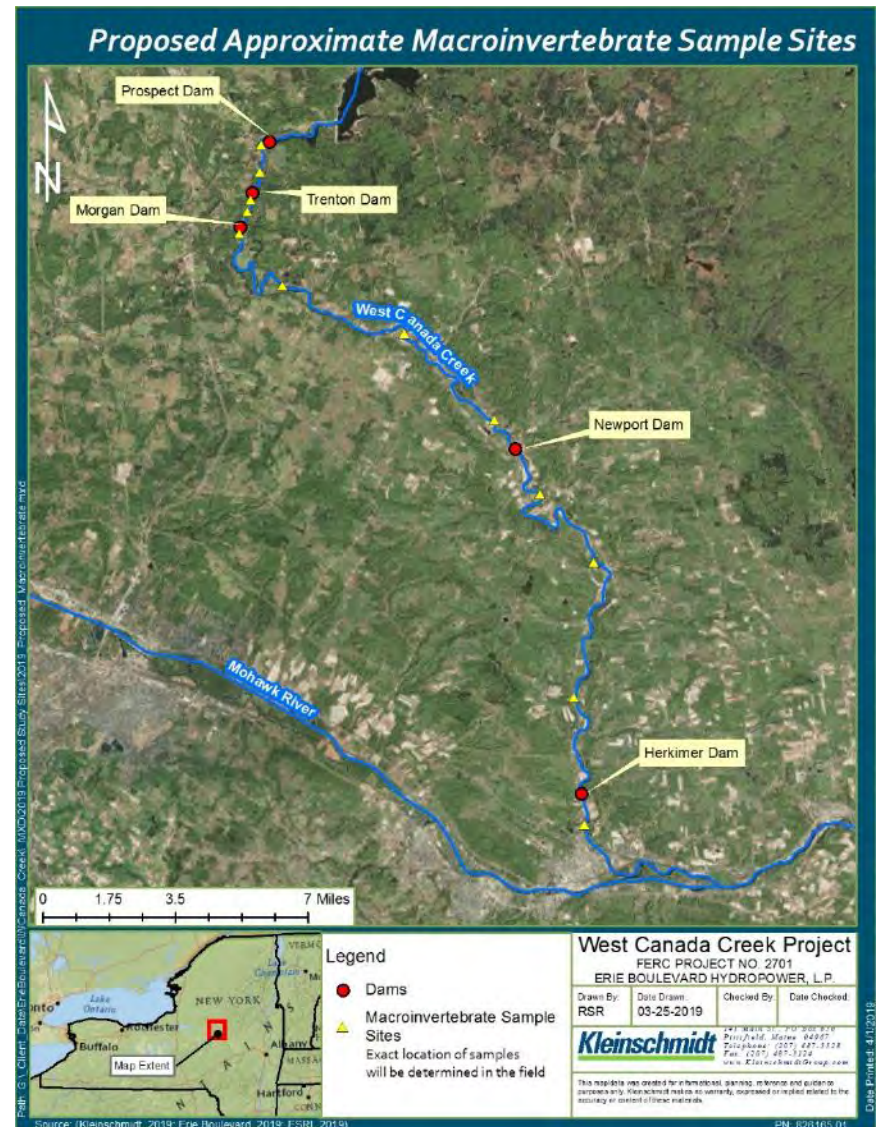
Macroinvertebrate Surveys

Topic - Sampling locations for macroinvertebrate surveys

FERC: Identify locations for macro and mussel survey; sampling effort is adequate but shift some of the sample locations to downstream of Newport dam.

Approach:

- Two samples will be collected in the each of the Project bypass reaches to the extent that safe access is attainable.
- Downstream of Trenton, sampling will be evenly distributed at approximately 4-mile intervals, depending on river access, to the confluence of the Mohawk for a total of approximately 8 samples.
- Sample collection will target representative mesohabitats (riffle and run) with flowing waters in the littoral zone of the Project's bypass reaches and downstream of the Trenton tailwater to the confluence with the Mohawk River.
- Sampling is proposed on hard bottom substrate composed of rock, rubble, gravel, and sand; in flowing waters (velocity ≥ 40 cm/sec) less than 1m deep.



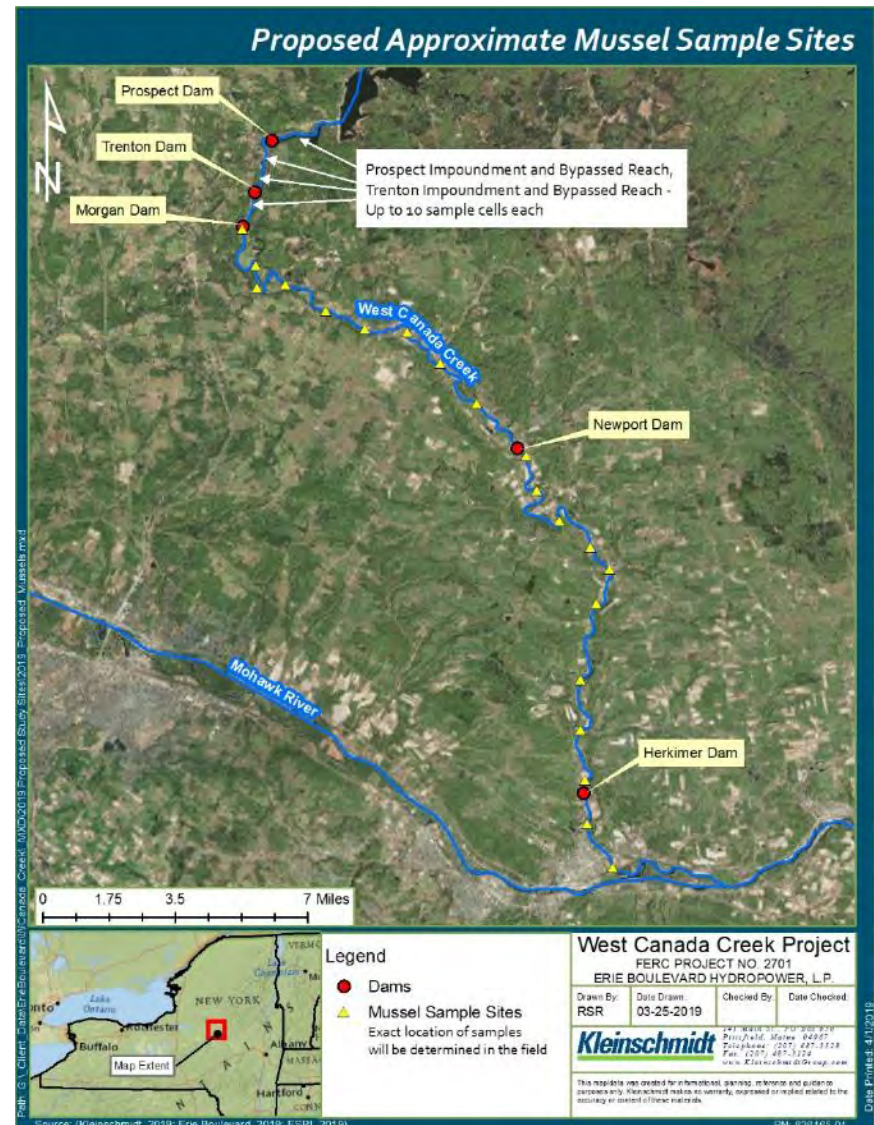
Mussel Surveys

Topic - Sampling locations for freshwater mussel surveys

FERC: Identify locations for macro and mussel survey; sampling effort is adequate but shift some of the sample locations to downstream of Newport dam.

Approach:

- Erie's approach to this component of the study has not changed, only the geographic extent beyond Newport to the confluence with the Mohawk River.
- Information from the mesohabitat assessment will be reviewed to identify representative areas of suitable substrate for mussels.
- Downstream of Trenton 20 sampling locations will be randomly selected from these identified habitats.
- Trenton and Prospect impoundments and bypass reaches will include up to 10 cells each if suitable habitat is present, as proposed in the RSP, and to the extent that safe access is attainable.



Fish Assemblage Assessment

Topic - Locations and timing of bypass and downstream reach backpack electrofishing surveys

FERC: Consult with USFWS and NYSDEC to help determine specific locations and timing of the backpack electrofishing surveys.

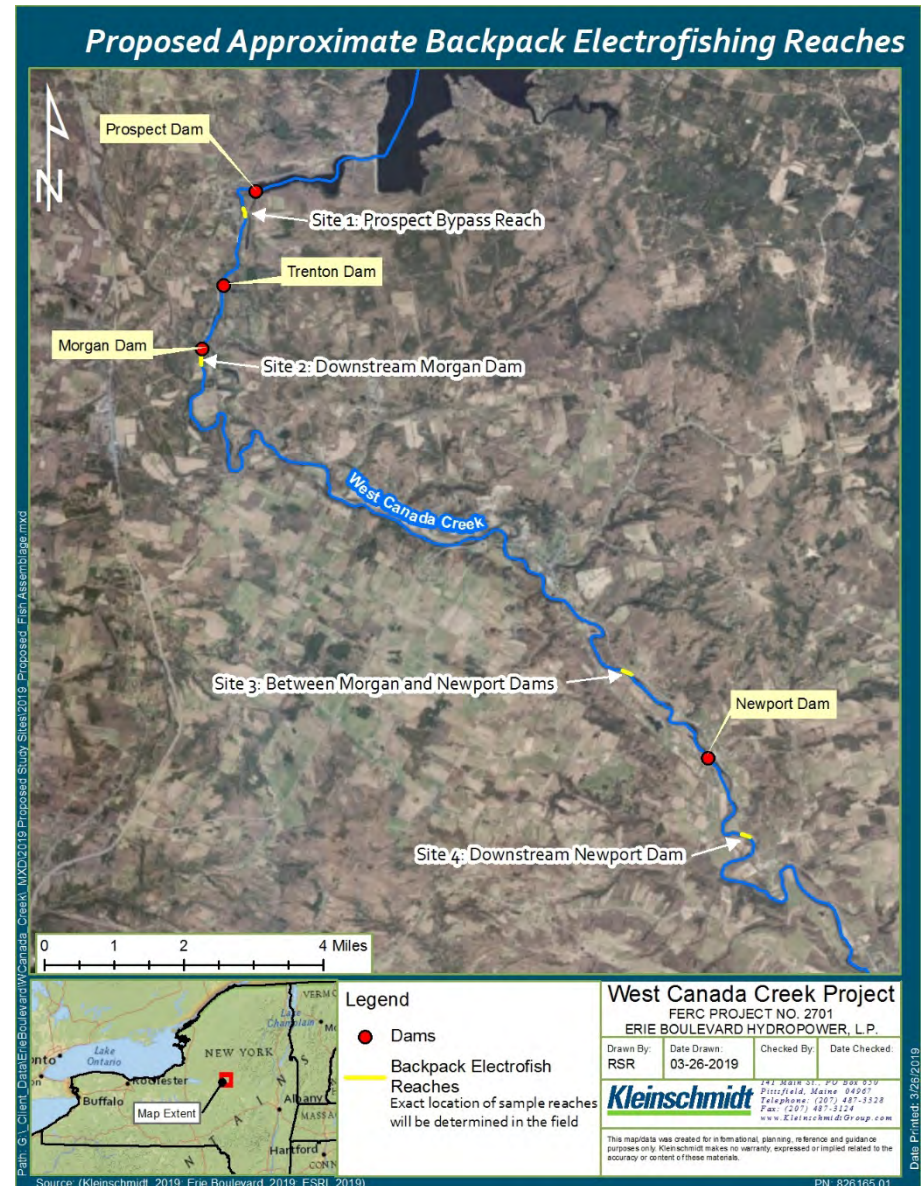
Approach:

- Fish surveys will occur in the late summer or fall when water temperatures are equal to or less than 68° F and flows are seasonally low.
- Fish collection is expected to consist of backpack electrofishing methods in shallow areas (< 3 ft) and minnow traps (four traps, baited and set for 24 hours each) in deeper waters in representative habitats.
- An attempt will be made to sample a diversity of habitats including riffles, pools, snags, and undercut banks.

Fish Assemblage Assessment

Approximate locations of bypass and downstream reach backpack electrofishing surveys

- Per the FERC SPD, the four sample locations include: one survey location in the Prospect bypassed reach, two survey locations between Morgan dam and Newport, and one survey location downstream of Newport dam.
- Information from the aquatic mesohabitat survey will be used to select survey sites that are representative of the study reach habitat.



Fish Assemblage Assessment

Topic - Gill net mesh size and configuration

FERC: Consult with the NYSDEC to help determine the mesh size and configuration of the gill nets.

Approach:

- Gill netting will be conducted in the Project impoundments and within the Prospect power canal.
- Experimental gill nets will be employed with each net panel consisting of a single mesh size as recommended by the NYSDEC in their comments to the RSP (i.e., nets will be 6-foot high by 80-foot in length and will be constructed of 8 panels of increasing mesh size (e.g., 1-1/2", 2-1/4", 1", 1-3/4", 3/4", 2-1/2", 1-1/4", 2" inch stretched mesh).
- We understand that the NYSDEC has requested the addition of a small mesh size for smaller fishes, we propose adding a 9th panel with 0.75-inch mesh.

Fish Assemblage Assessment

Topic - Minnow trap methods (if needed) for the Prospect bypass and reaches downstream of Trenton

FERC: For the Prospect bypass and reaches downstream of Trenton, if pool depth or other features prevent effective electrofishing, deploy minnow traps within these habitats and determine specific minnow trap methods in consultation with NYSDEC.

Approach: Minnow traps will be used in deeper waters (pools) in representative habitats as recommended in the SPD. Up to 4 traps will be deployed and will be baited and fished overnight.

Fish Entrainment and Turbine Passage Survival Assessment

Topic - Methodology for site-specific data collection

FERC: Describe goals and methods for collecting site-specific data (e.g., intake velocity) and provide this information to USFWS and NYSDEC so that the agencies may provide comments and recommendations prior to conducting the study.

Approach:

- Site specific parameters will be obtained for each of the intakes to calculate approach velocity, defined as the water flow velocity approximately 30 cm upstream, normal to trashracks or screens (Odeh and Orvis 1998).
- Maximum water velocity, based on hydraulic capacity and design criteria of each development will determine the maximum velocity fish must overcome to avoid being impinged against the screens of the intake structures.
- Approach velocities will be calculated based on intake flow volume to coordinate which species may be susceptible to impingement throughout the operational range over the course of a typical year.
- Various burst speeds for fish present in West Canada Creek (as determined by the fish assemblage study) will be determined using a literature review of citing relevant data.
- Fish impingement or avoidance will be determined by direct comparison of maximum operational water velocity, compared to species specific burst swimming speeds.

West Canada Creek Project Study Report and Meeting Schedule

Responsible Party	Pre-Filing Milestone	Date
FERC	Issue Director's Study Plan Determination	3/7/2019
Erie	First Study Season	Spring- Fall 2019
Erie	File Initial Study Report	1/10/2020
All Stakeholders	Initial Study Report Meeting	1/25/2020
Erie	File Initial Study Report Meeting Summary	2/9/2020
Erie	Second Study Season	Spring- Fall 2020
Erie	File Preliminary Licensing Proposal (or Draft License Application)	10/1//20
All Stakeholders	File Comments on Preliminary Licensing Proposal (or Draft License Application)	12/30/2020
Erie	File Updated Study Report	1/10/2021
All Stakeholders	Updated Study Report Meeting	1/25/2021
Erie	File Updated Study Report Meeting Summary	2/9/2021
Erie	File Final License Application	2/28/2021
Erie	Issue Public Notice of Final License Application Filing	3/15/2021



West Canada Creek Project Relicensing Website

<http://www.westcanadacreekproject.com>

Steven P. Murphy

Director, U.S. Licensing

Brookfield

33 West 1st Street South, Fulton, New York 13069

Phone: (315) 598-6130

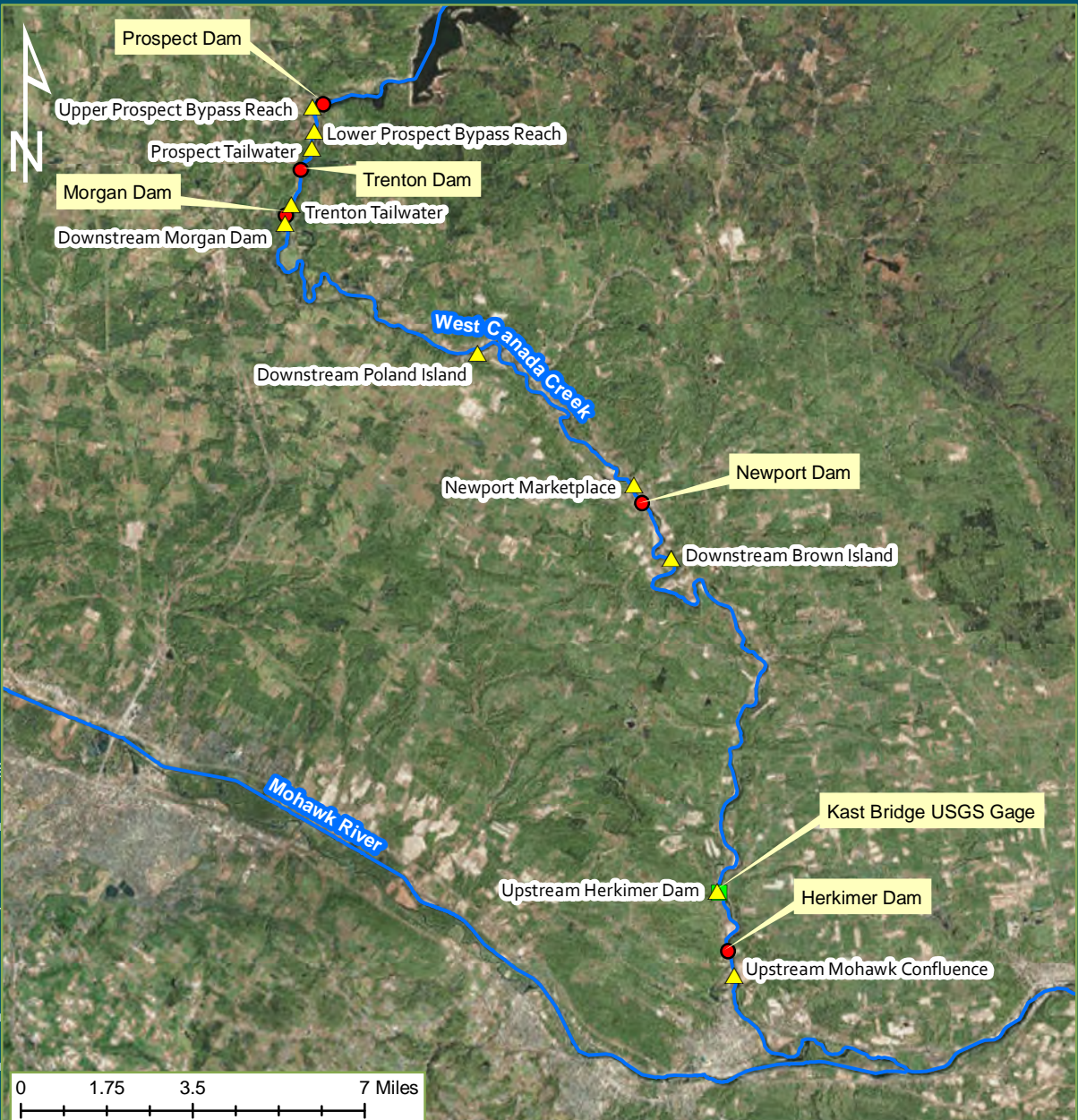
steven.murphy@brookfieldrenewable.com

www.brookfieldrenewable.com

Attachment 2

West Canada Creek Project (P-2701) Deployed Water Quality Logger Locations

Water Quality Logger Sites



Legend

- ▲ Water Quality Loggers
- Dams
- Kast Bridge USGS Gage

West Canada Creek Project

FERC PROJECT NO. 2701

ERIE BOULEVARD HYDROPOWER, L.P.

Drawn By:

RSR

Date Drawn:

04-17-2019

Checked By:

Date Checked:

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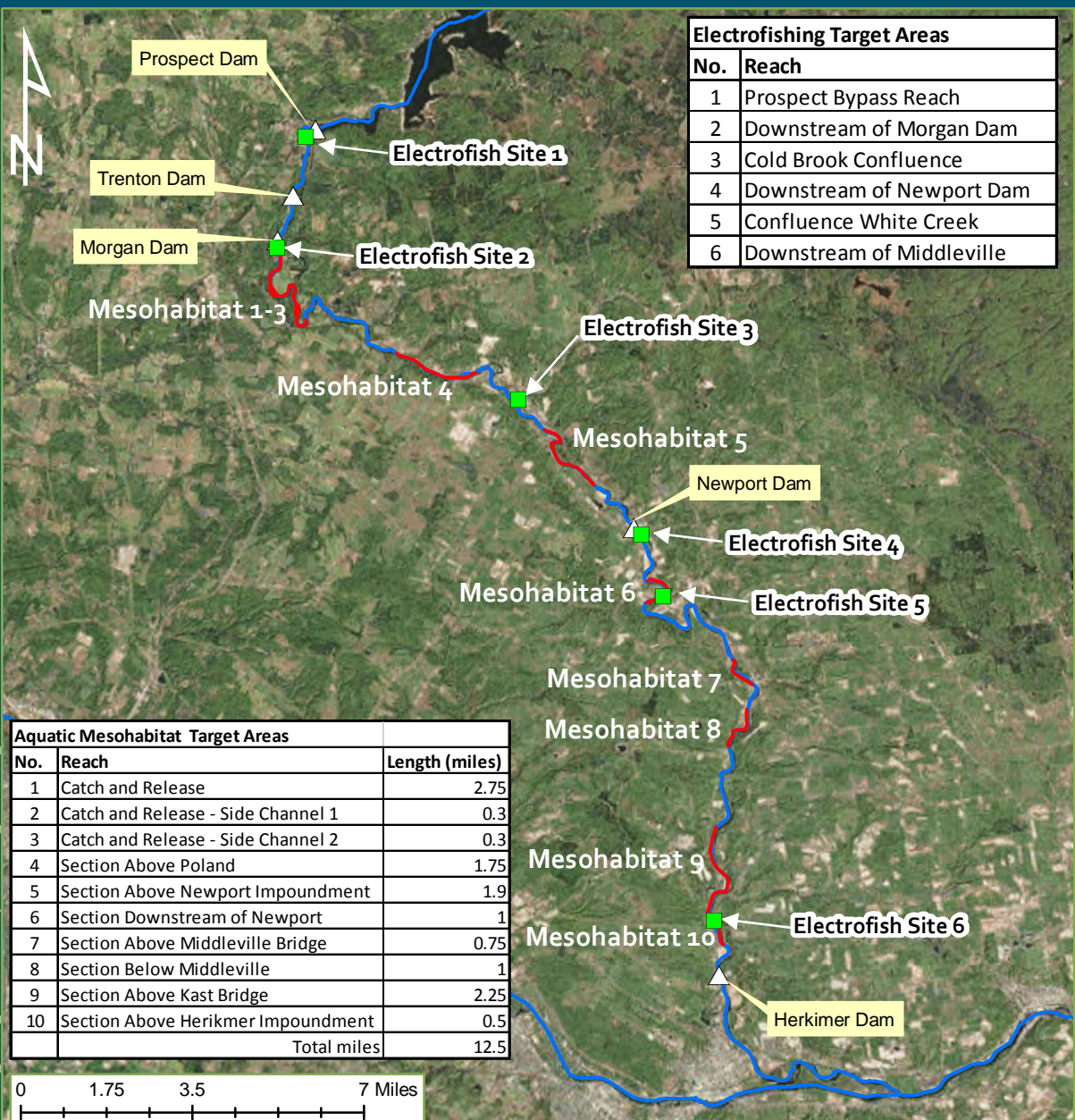
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Attachment 3

West Canada Creek Project (P-2701) Pictures of Trenton Bypass Reach Substrate



Approximate Mesohabitat Focus Areas & Electrofishing Sites



Legend

- Electrofish Site
- Mesohabitat Focus Area

West Canada Creek Project

FERC PROJECT NO. 2701

ERIE BOULEVARD HYDROPOWER, L.P.

Drawn By: RSR	Date Drawn: 05-14-2019	Checked By:	Date Checked:
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A2- Email regarding follow-up for Gill Net Types

Karen Klosowski

From: Bryan Apell
Sent: Tuesday, May 28, 2019 7:46 AM
To: Phillips, Todd J (DEC)
Cc: Wiley, John; Steven Murphy (steven.murphy@brookfieldrenewable.com); Karen Klosowski
Subject: WCC Fish Assemblage Sampling - Gill Nets and Electrofishing

Good Morning Todd

Per our discussion regarding gill net gear types during the call held on April 18, 2019, Erie plans to use experimental gill nets that are consistent with the NYSDEC standard as described in Table 4 of the *Lake and Pond Fish Community Survey Protocols* (2013).

We intend to order the nets Friday (5/31).

Table 4. Standard experimental gill net characteristics.

Feature	Description
Net type	Monofilament, 6-panel, sinking
Panel sizes	7.6 m (25 ft) long × 1.8 m (6 ft) deep
Mesh sizes*	38, 51, 64, 76, 89, and 102 mm (1.5, 2.0, 2.5, 3.0, 3.5, and 4-in)
Monofilament diameters	0.28 – 0.40 mm (0.011 – 0.016 in), corresponding to mesh sizes
Hanging ratio	0.5 (50 ft of stretched netting per 25 ft of net)

*Larger sized mesh can be used for larger fish/species, but these should be fished separately.

Regarding electrofishing methods used during the survey, boat electrofishing methods will be employed in the impoundments whereas backpack methods will be used for the bypass reach and riverine reaches downstream of Trenton as consistent with the RSP and FERC SPD. During our call there was some discussion about the timing of the survey and appropriate water temperatures to target. Erie plans to conduct the surveys in late summer/early fall, preferably mid-September through October when water temperatures are generally between 15°C - 23°C (59°F – 73°F) as described in the NYSDEC Protocol (Holst, L. and Loukmas, J. 2013. *Lake and Pond Fish Community Survey Protocols*. New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources Bureau of Fisheries Albany, NY 12233).

Cheers
Bryan

Bryan Apell
Senior Project Manager/Fisheries and Aquatic Ecologist

≤*{{{^}}}<

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Providing **practical** solutions for **complex** problems

**A3- Memo Summarizing July 16, 2019 Consultation Call for Aquatic Mesohabitat Study
and Aquatic Mesohabitat Study Preliminary Results Technical Memo**

Karen Klosowski

From: Karen Klosowski
Sent: Wednesday, July 03, 2019 4:16 PM
To: Todd Phillips (todd.phillips@dec.ny.gov); Wiley, John
Cc: Steven Murphy (steven.murphy@brookfieldrenewable.com); Brandon Kulik; Bryan Apell
Subject: West Canada Creek Project - Aquatic Mesohabitat Survey - Preliminary Summary of Field Efforts and Data Analysis for the Project Bypass Reaches
Attachments: Attachments.html

Todd and John

Below please see the download link for the Technical Memo regarding the Aquatic Mesohabitat Survey preliminary field efforts and data analysis for the West Canada Creek Project Prospect and Trenton bypass reaches.

Erie would like to set up a call to review the Technical Memo and placement of the level loggers in the Prospect bypass reach.

Please let us know which of the following times would work to schedule a call - either Tuesday, July 16, 2019 from 1:00 pm to 2:30 pm or Thursday, July 18 from 10:30 am to 12:00 pm.

Due to the weather conditions resulting in high flows, the field study for the lower reaches of West Canada Creek (from Trenton tailrace downstream to confluence with Mohawk river) has been delayed until flows are less than approximately 700 cfs (target range as discussed during our April 18, 2019 conference call). Erie anticipates conditions will be favorable for the week of July 8 to conduct field efforts for the downstream reaches.

As indicated in the memo, level loggers have been placed at the locations of the water quality data loggers in order to meet the FERC SPD deadline of placement of loggers by July 1. Erie will consult with the USFWS and NYSDEC about potential adjustment of this placement in the downstream reaches following the field study and downstream reach assessment.

Thank you and looking forward to our continued discussion

Citrix Attachments

Expires December 30, 2019

826165 WCC Mesohabitat Memo 07032019.pdf

6.7 MB

Download Attachments

Karen Klosowski uses Citrix Files to share documents securely.

Karen Klosowski
Senior Regulatory Coordinator



Office: 315-409-7198

Mobile: 315-283-5066

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Karen.Klosowski@KleinschmidtGroup.com

Karen Klosowski

From: Karen Klosowski
Sent: Tuesday, July 23, 2019 10:16 AM
To: 'Richard McDonald'; Erway, David B (DEC); Lantry, Jana R (DEC); Balk, Christopher J (DEC)
Cc: 'Todd Phillips'; Steven Murphy (steven.murphy@brookfieldrenewable.com); Brandon Kulik; Wiley, John
Subject: FW: West Canada Creek Aquatic Mesohabitat Survey 07162019 Consultation Call Memo
Attachments: WCC Agency consult meso 07162018.pdf

Dick, Dave, Jana and Chris

As we had discussed during our first consultation call, all NYSDEC coordination for the West Canada Creek consultation efforts are to go through Todd and then he coordinates amongst NYSDEC staff.

We received an automated notice that Todd is out of the office until August 12, so I am forwarding the email to you to make sure you receive it in a timely manner.

In terms of coordinating for the downstream reach technical memo, I will send to Dick to coordinate internally with the appropriate NYSDEC for the review and to schedule the consultation call for that technical memo.

Dick, please confirm that this approach is OK with you.

Thanks for your assistance.

Karen Klosowski
Senior Regulatory Coordinator

Office: 315-409-7198
Mobile: 315-283-5066
www.KleinschmidtGroup.com
Karen.Klosowski@KleinschmidtGroup.com

From: Karen Klosowski
Sent: Tuesday, July 23, 2019 9:28 AM
To: 'Todd Phillips (todd.phillips@dec.ny.gov)' <todd.phillips@dec.ny.gov>; Wiley, John <john_wiley@fws.gov>
Cc: Steven Murphy (steven.murphy@brookfieldrenewable.com) <steven.murphy@brookfieldrenewable.com>; Brandon Kulik <Brandon.Kulik@KleinschmidtGroup.com>; Bryan Apell <Bryan.Apell@KleinschmidtGroup.com>
Subject: West Canada Creek Aquatic Mesohabitat Survey 07162019 Consultation Call Memo

Todd and John

Attached is a memo summarizing the discussion during our call held on July 16, 2019 to review the Technical Memo regarding the Aquatic Mesohabitat Survey preliminary field efforts and data analysis for the West Canada Creek Project Prospect and Trenton bypass reaches.

As discussed during the call, we are preparing a comparable Technical Memo for the downstream reaches (West Canada Creek from Trenton to confluence with Mohawk River). Erie will provide the technical memo and coordinate with you both to schedule a consultation call to review the preliminary results of the downstream reach field efforts.

Thank you for your time and input

Karen

WEST CANADA CREEK PROJECT (P-2701)
AQUATIC MESOHABITAT SURVEY PRELIMINARY DATA
PROJECT BYPASS REACHES

To: Todd Phillips, NYSDEC
John Wiley, USFWS

FROM: Brandon Kulik, Kleinschmidt

CC Steve Murphy, Brookfield
Karen Klosowski, Kleinschmidt
Bryan Apell, Kleinschmidt

SUBJECT: Aquatic Mesohabitat Survey - Preliminary Summary of Field Efforts and Data Analysis for the Project Bypass Reaches

DATE: July 3, 2019

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company (Brookfield) is currently undergoing relicensing for the West Canada Creek Hydroelectric Project (FERC Project No. 2701) (Project) under the Federal Energy Regulatory Commission (FERC) Integrated Relicensing Process (ILP). As part of this relicensing process, Erie is conducting nine studies during the 2019 study season. This memo summarizes the Aquatic Mesohabitat Survey field efforts, methodology, and preliminary results for the Prospect and Trenton bypass reaches. The field assessment for the downstream reaches will be conducted during a separate field effort and summarized in a separate technical memo.

The purpose of the Aquatic Mesohabitat Survey is 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.

The study area includes:

1. .Prospect bypass reach - extends from the toe of Prospect dam downstream to Trenton impoundment.
2. Trenton bypass reach - extends from the toe of Trenton dam downstream to Trenton tailrace.
3. West Canada Creek Trenton to Newport - extends from the Trenton tailrace downstream to the Newport Project impoundment.
4. West Canada Creek downstream of Newport - extends from the Newport project tailwater downstream to the confluence with the Mohawk River.

As discussed during the April 18, 2019 agency consultation call with the U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC), the approach for field data collection and assessment includes drone survey for the upstream reaches (bypass reaches) and traditional methodology (float trip) for the downstream reaches. Field conditions for the lower reaches (West Canada Creek from Trenton to confluence with

Mohawk River) will likely require field conditions of flows less than approximately 500 to 700 cubic feet per second (cfs) to provide the ability to identify breaks in habitats in these downstream reaches.

Due to the weather conditions of rain precipitation and high flows, the threshold for these lower flows in the downstream reach has still not been achievable during the spring study season. Therefore, field efforts for the lower reaches will not be achievable to inform placement of level loggers for the downstream reaches by the July 1 deadline identified by the FERC SPD. Erie continues to monitor flows and will deploy field teams for the assessment of the lower reaches at the time that field conditions are suitable (i.e., flows less than approximately 700 cfs). Erie anticipates a subsequent technical memorandum and consultation call with USFWS and NYSDEC following these field efforts and preliminary data assessment for the downstream reaches. In the interim, Erie will deploy level loggers in the downstream reaches at the locations indicated for the water quality data loggers, and will consult with the USFWS and NYSDEC about potential adjustment of this placement following the downstream reach assessment.

FIELD DATA COLLECTION FOR PROSPECT AND TRENTON BYPASS REACHES

For the Prospect and Trenton bypass reaches, data were collected via an aerial drone survey, on May 29 and 30, 2019, with flow in the bypass reaches held to leakage to allow stream channel features to be clearly visible. Both lighting and water clarity quality were suitable for viewing. A DJI model Phantom 4 Real Time Kinematic (RTK) (DJI 2019) was deployed, equipped with a high-resolution camera (1 inch CMOS sensor; 20 megapixels; Lens: 84-degree field of view) and both global positioning system (GPS) and RTK geo-positioning systems to provide sub-meter spatial accuracy (Photo 1).

A Federal Aviation Administration (FAA)-certified (FAA 2019) drone pilot operated the aircraft assisted by a spotter to maintain line-of-sight drone contact. An experienced aquatic biologist recorded mesohabitat types, boundaries, cover quality and substrate. The drone was flown in a continuous downstream direction to the limit of visibility, after which the drone returned to home and was taken to the next consecutive downstream launch location. Four launch locations were required to cover the Prospect bypass reach and two launch locations to cover the Trenton bypass reach. Figure 1 shows representative flight paths for a portion of the Prospect bypass reach.

Prior to a flight, the drone was stationed over an object with a known elevation (such as a Project spillway, or decking) to calibrate altitude relative to the ground. The drone was generally flown at a height above ground of 30 to 50 feet, unless navigation temporarily required otherwise. This altitude provided good overall channel coverage and excellent image clarity for purposes of defining substrate particle size and cover quality. The drone was operated from upstream to downstream at a slow rate of speed, with the camera looking downward. The drone was hovered immediately above each mesohabitat boundary so that a photo could be taken to geo-locate the boundary. The photo also captured relevant substrate and cover information and recorded latitude/longitude, and altitude metadata. At least one additional photo was taken from that position looking downstream at an oblique angle to characterize the entire mesohabitat segment.



PHOTO 1 RTK GEO-POSITIONING SYSTEM (*left*) AND DRONE DEPLOYMENT (*right*).



Note: View looking east, the power house is located immediately to right of the lower right corner.

FIGURE 1 EXAMPLE FLIGHTS FOR THE LOWER PROSPECT BYPASS REACH.

The pilot and the biologist monitored the controller video screen view as the drone moved slowly downstream. The photo and geolocation process was repeated each time a significant change in dominant substrate, cover type and quality, or the boundary with the next mesohabitat type was encountered. For each section the pilot and biologist noted the mesohabitat types, dominant substrates, cover types, and cover quality based on direct observation and professional judgement.

Mesohabitat substrate types were classified as:

- Pool – placid, slow flowing, well-defined hydraulic control;
- Riffle – fast flowing, broken or turbulent water surface, no hydraulic control;
- Run – moderate flowing, unbroken, shallow (less than 3 foot deep), hydraulic control;
- Glide – fast/moderate flowing, deep, hydraulic control;
- Minor – these included waterfalls, pools backwatered by tailwaters, and other features; that were small in area or uncommon features;
- Ledge – areas of expansive horizontal bedrock; and
- Drop – small, sharp vertical wall that is too small to be classified as a waterfalls.

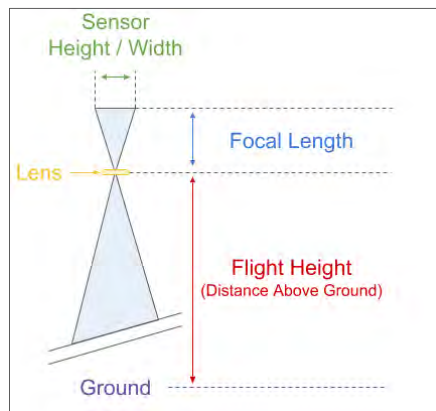
Dominant substrates were classified as: bedrock, boulder (small, medium or large), rubble (small, medium large), cobble (small, medium, large), and drop using the Brusven scale (Bovee, 1982)¹. Cover types included: object cover (included boulders, logs, snags, etc.); turbulence/foam; depth; and/or overhead (included tree canopy, undercut bank, overhangs). Cover quality was qualitatively classified as: high quality cover (typically dense boulders, logs, pool depth greater than 4 feet, and/or tree canopy); low -nonexistent cover (exposed ledge, scattered or small boulders and cobbles, and pools less than 1 foot deep); and medium cover (intermediate between the other two categories).

A handwritten data sheet was used to record each individual photo, and summarize the relevant mesohabitat type, substrate and cover as observed during the flight. Data were downloaded to a laptop computer for detailed review at the end of each day's survey; and latitude and longitude of each photo was entered in ArcMap and viewed to independently verify spatial accuracy.

PRELIMINARY DATA ANALYSIS FOR PROSPECT AND TRENTON BYPASS REACHES

When the drone collects images, metadata is written to each image file, including but not limited to the drone's location (latitude, longitude, altitude) in World Geodetic System 1984 (WGS84). These metadata were used to georeference the photographic images by calculating the ground sampling distance (GSD) of each pixel in the image (Propeller Aero 2019). The GSD is the distance between the center points of each sample on the ground, where each sample is a pixel in the image (Figure 2).

¹ The Brusven scale (Bovee, 1982) is a modification of the originally-proposed Wolman scale (Wolman 1954) that classifies gravels and cobbles into subcategories compatible with most Habitat Suitability Indices used in instream flow studies.



Source: Propeller Aero 2019

FIGURE 2 RELEVANT FACTORS FOR CALCULATING GSD

The GSD for both the height (GSD_h) and width (GSD_w) of each cell were calculated and the larger value of the two is the value used to scale the image. The GSD for pixel height and width is given with:

$$GSD_h = \frac{a * h_s}{l * h_i}$$

and

$$GSD_w = \frac{a * w_s}{l * w_i}$$

respectfully, where a is height above ground in meters, h_s is the height of the (drone) sensor in millimeters, h_i is the height of the image in pixels, l is the focal length of the sensor in millimeters, w_s is the sensor width in millimeters and w_i is the width of the image in pixels (Propeller Aero 2019).

Table 1 summarizes the drone parameters were used in the calculations based on the metadata for the collected images.

TABLE 1 DRONE PARAMETERS USED IN GSD CALCULATIONS

PARAMETER	VALUE	UNITS
Image width (w_i)	5472	Pixels
Image height (h_i)	3078	Pixels
Sensor Width	13.2	mm
Sensor Height	8	mm
Focal Length	9	mm

Although each image's metadata lists a value for altitude, this value is not the flight height (distance above ground) value that is needed for the GSD calculation. To calculate the flight height (a), height above ellipsoid in WGS84 was converted to an orthometric derived geoid height in North American Vertical Datum of 1988 (NAVD88) using a geoid height calculator (Unacvo 2019).

Once altitude was converted into NAVD88, flight height (a) was calculated by subtracting the ground elevation from altitude at each location to calculate GSD for each image. A digital elevation model was created for the area using New York FEMA 2017 LiDAR (NYS GIS Clearinghouse 2019), and the resulting elevation values were extracted from the raster beneath each image's centroid or center location using the latitude and longitude values from its metadata.

Coordinates were then used to georeference the center of each image and GSD values to rescale each image within ArcGIS Pro (2019). The images were then reviewed by both a GIS technician and the biologist who collected the data. based on field data sheets, original photographs, and professional judgement to transcribe (via polygon) the boundaries of the identified mesohabitat areas on these images for further assessment of the sediment particle size.

At least 30 individual sediment grains (e.g., cobble, gravel, boulder) of observed dominant substrate were measured in each high-resolution photograph within each predefined mesohabitat area to calculate the range, mean and modal particle diameter, and classify the particles. Based on these calculations, dominant substrates in each habitat type were classified using the Brusven substrate scale (Bovee 1982), as follows:

- Fines – sand and smaller;
- Small gravel – particles 4-25 millimeters (mm) across;
- Medium gravel – particles 25-50 mm across;
- Large gravel – particles 50-75 mm across;
- Small cobble – particles 75-150 mm across;
- Medium cobble – particles 150-225 mm across;
- Large cobble – particles 225-300 mm across;
- Small boulder – particles 300-600 mm across; and
- Large boulder – particles > 600 mm across.

In some cases with heterogenous substrates, the two most-predominant substrate classes were assigned a relative percent dominance within an individual mesohabitat unit.

PRELIMINARY RESULTS FOR THE PROSPECT BYPASS REACH

The Prospect bypass reach is approximately 7,131 feet (1.3 miles) long. From the spillway downstream to the Military Road bridge the reach is approximately 200-250 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 widened area composed of broken rubble, boulder cobble and other alluvial materials eroded from the banks that form a widened channel containing short braids. This area appears to be in dynamic disequilibrium, i.e., the bed materials and profile appear to have shifted periodically in response to hydraulic energy from the waterfall during periods of high flow. 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 (Photo 2).

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. Waterfalls along the eastern embankment provide streams of groundwater inflow to the reach (Photos 3 and 4). Substrates are largely bedrock ledge and scattered deposits of boulder and cobble, with few fines such as silt, sand or small gravel. Mesohabitat in this segment is predominantly alternating pools and short riffles composed of alluvial boulder and cobble/gravel overlaying bedrock substrate. The downstream 0.2 mile of this reach is a long, narrow pool that is backwatered from the powerhouse tailrace (Photo 5).



PHOTO 2 DOWNSTREAM TERMINATION OF UPPER REACH SMOOTH LEDGE AT WATERFALL IN PROSPECT BYPASS REACH, PLUNGE POOL AND ALLUVIAL EROSION



PHOTO 3 GROUNDWATER WATERFALL INFLOWS TO LOWER PROSPECT BYPASS REACH



PHOTO 4 GROUNDWATER WATERFALL INFLOWS TO LOWER PROSPECT BYPASS REACH



**PHOTO 5 POOL THAT IS BACKWATERED FROM THE PROSPECT POWERHOUSE TAILRACE;
VIEW LOOKING DOWNSTREAM**

Of a total of 7,131 feet (1.3 miles) of bypass reach, pool and riffle comprised approximately 68 percent of the reach mesohabitat types. Minor mesohabitats such as the fall (Prospect Falls), and eroded stream below the fall, and backwatered pool above the tailrace, collectively comprise approximately 20 percent of the reach. Both run mesohabitat and the smooth horizontal ledge above the falls each occupy approximately 6 percent of the reach (Table 2). Pool types include a deep scour pool at the toe of the falls, and a backwatered pool at the downstream end of the bypass reach, as well as additional riverine pools scattered throughout the reach (Figure 3). Overview photographs of each mesohabitat unit are presented in Attachment A.

TABLE 2 RELATIVE ABUNDANCE OF MESOHABITAT UNITS IN THE PROSPECT BYPASS REACH

MESOHABITAT	LENGTH (FT)	PERCENT OF TOTAL
Pool	2,702	38%
Riffle	2,137	30%
Minor (<i>falls, drops, etc.</i>)	1,441	20%
Run	446	6%
Horizontal Ledge	405	6%
Total	7,131	100%

The 10 riverine pools are generally basin-like with vertical walls and bedrock substrate, and varied in depth, with three of them providing high quality cover due to depths greater than four feet, and three providing moderate cover quality. The 10 riffles are generally underlain with bedrock substrate strewn with cobble and boulder. Two riffles provide high quality cover due to relatively high density of large object cover such as boulders, and one provides moderate cover quality with less dense and smaller object cover such as cobble. The remaining seven riffles lack concentrations of object cover and therefore were classified as low cover quality (Figure 3).

Substrates in the bypass reach are well scoured, reflecting the hydraulic energy of seasonal high flows; fines such as sand, silt and small gravel are not present in large quantities, ledge and bedrock comprise 58 percent of the dominant substrates found among all mesohabitat units (Table 3; Figure 4). The next most common dominant substrate was small boulder (18 percent).

TABLE 3 RELATIVE ABUNDANCE OF DOMINANT SUBSTRATES IN THE PROSPECT BYPASS REACH

SUBSTRATE	LENGTH (FT)	PERCENT OF TOTAL
Bedrock	4,159	58%
Small Boulder	1,278	18%
Medium Cobble	500	7%
Small Cobble	443	6%
Medium Gravel	357	5%
Large Cobble	304	4%
Large Boulder	89	1%
Total	7,131	100%

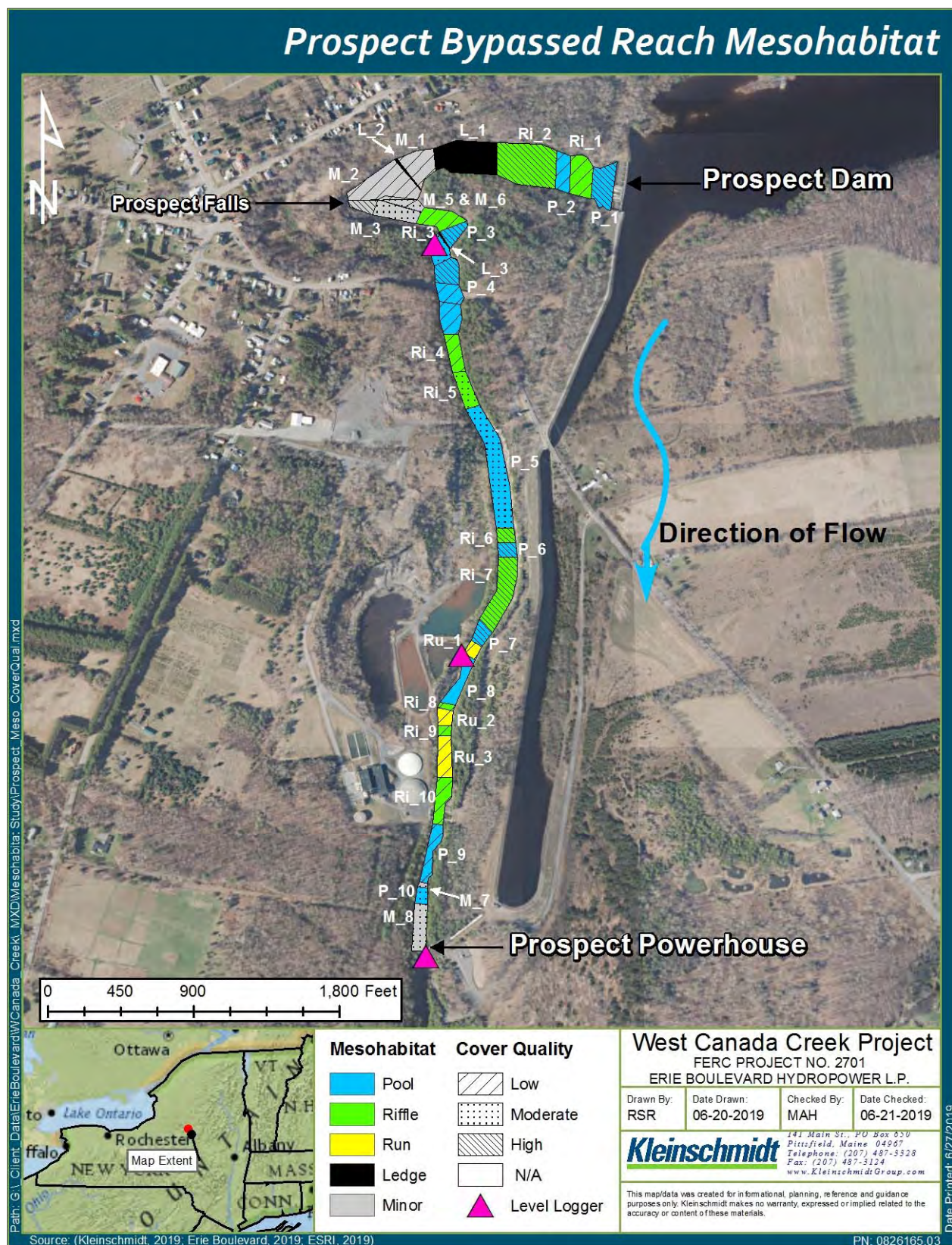


FIGURE 3 DISTRIBUTION OF MESOHABITAT UNITS AND COVER QUALITY IN THE PROSPECT BYPASS REACH

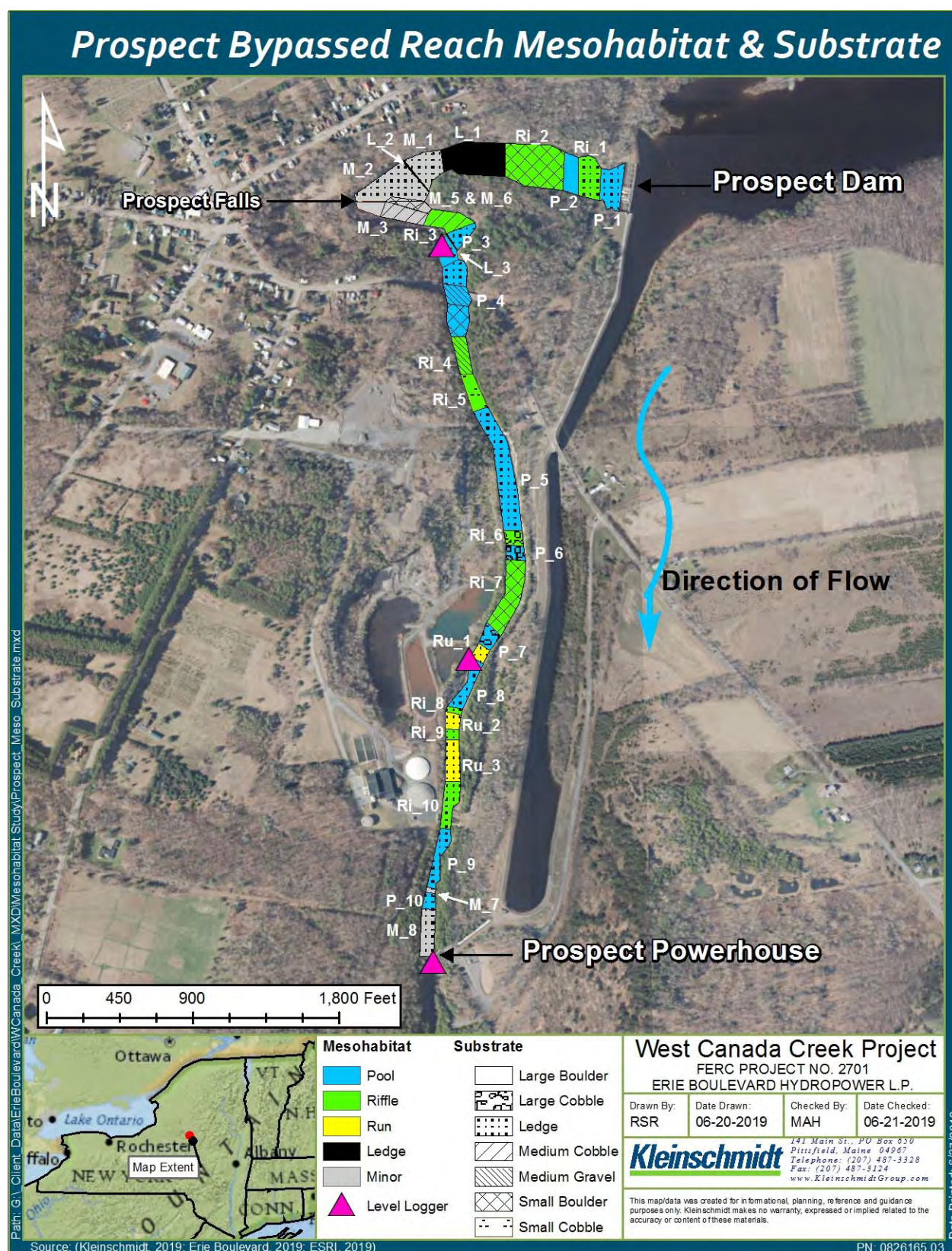


FIGURE 4 DISTRIBUTION OF MESOHABITAT UNITS AND DOMINANT SUBSTRATES IN THE PROSPECT BYPASS REACH

PRELIMINARY RESULTS FOR THE TRENTON BYPASS REACH

The Trenton bypass reach is approximately 3,265 feet (0.6-miles) long. From the spillway downstream, the reach is approximately 200-feet-wide. The substrate is dominated by a continuous 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 6). These falls disconnect the instream habitat as they create three terraced reaches that are fish movement barriers.

The bedrock-controlled reach runs southerly in a relatively straight line in a deep bedrock-controlled vertical-walled canyon, with no sloping embankments. Substrates are ledge and highly scoured, scattered deposits of boulder and cobble, with no fines such as silt, sand or small gravel. Mesohabitat in this segment is predominantly alternating pools separated by short, shallow riffles (Photo 7). The downstream 0.2 mile of this reach consists of a narrower channel with two deep riverine pools separated by a short riffle. The lower pool is somewhat backwatered from the powerhouse tailrace (Photo 8).



Note: View is looking upstream. Terraced horizontal bedrock and vertical falls.

PHOTO 6 UPPER PORTION OF TRENTON BYPASS REACH



Note: View is looking upstream.

PHOTO 7 LOWER PORTION OF TRENTON BYPASS REACH, SHOWING POOL AND RIFFLE COMPLEX



Note: View is looking downstream.

PHOTO 8 LOWER PORTION OF TRENTON BYPASS REACH, SHOWING POOL BACKWATERED BY TAILRACE

Mesohabitat types primarily consist of alternating pool (42 percent) and riffle (27 percent) and two small runs (11 percent) separated by a short pool (Table 34). Miscellaneous minority mesohabitat habitat types, such as falls, comprise 20 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 (Figure 5).

TABLE 4 RELATIVE ABUNDANCE OF MESOHABITAT UNITS THE TRENTON BYPASS REACH

Mesohabitat	Length (ft)	Percent of Total
Pool	1,388	42%
Riffle	872	27%
Minor	1098	30%
Run	345	9%
Total	3,265	100%

Substrates in the bypass reach are well scoured, reflecting the hydraulic energy of seasonal high flows; fines such as sand, silt and small gravel are not present, Ledge and bedrock comprise 85 percent of the dominant substrates found among all mesohabitat units, with the balance comprised of large and small boulders (Table 5; Figure 6). Overview photographs of each mesohabitat unit are presented in Attachment B.

TABLE 5 RELATIVE ABUNDANCE OF DOMINANT SUBSTRATES IN THE TRENTON BYPASS REACH

Substrate	Length (ft)	Percent of Total
Ledge	3,136	85%
Large Boulder	433	12%
Small Boulder	135	4%
Total	3,265	100%

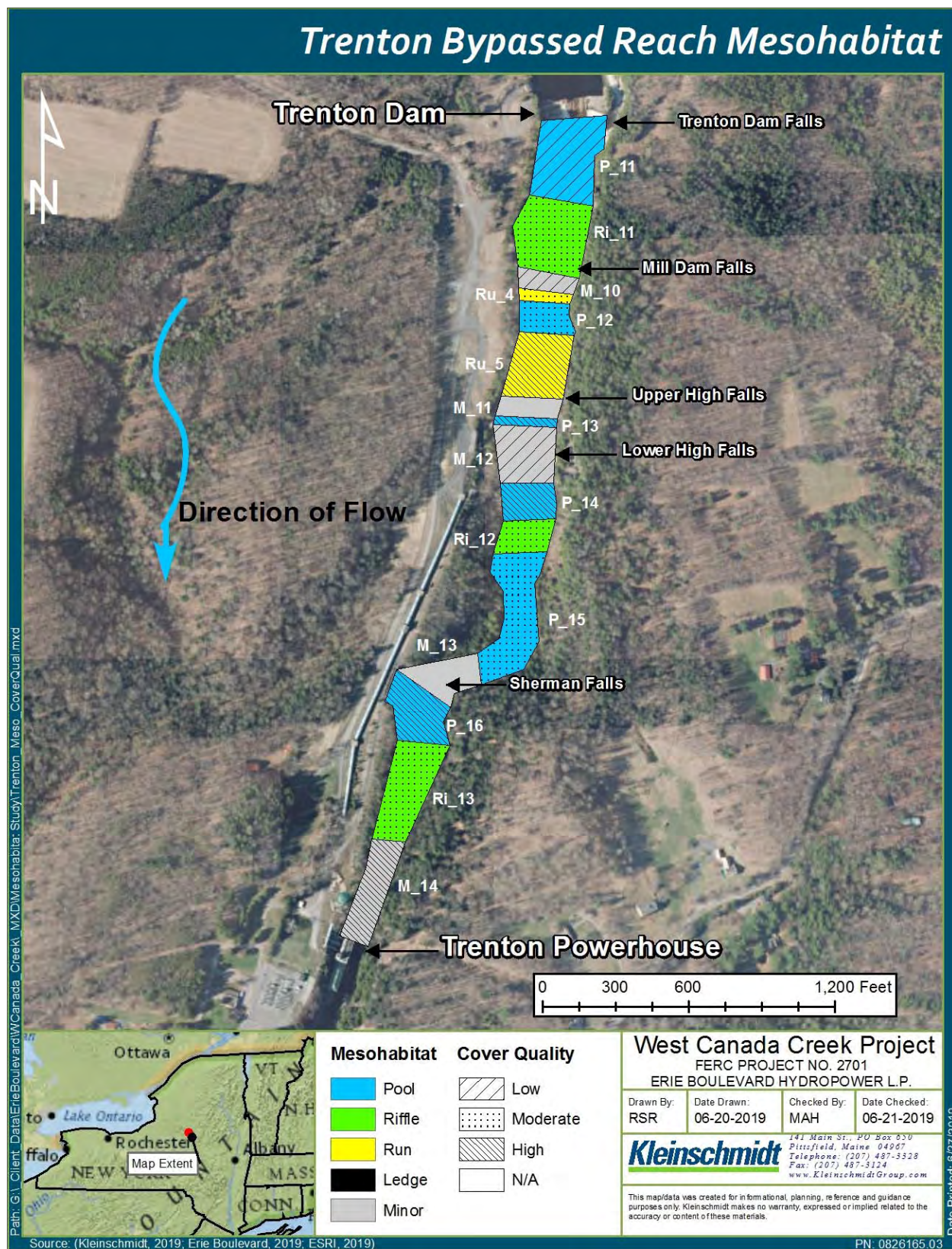


FIGURE 5 DISTRIBUTION OF MESOHABITAT UNITS AND COVER QUALITY IN THE TRENTON BYPASS REACH

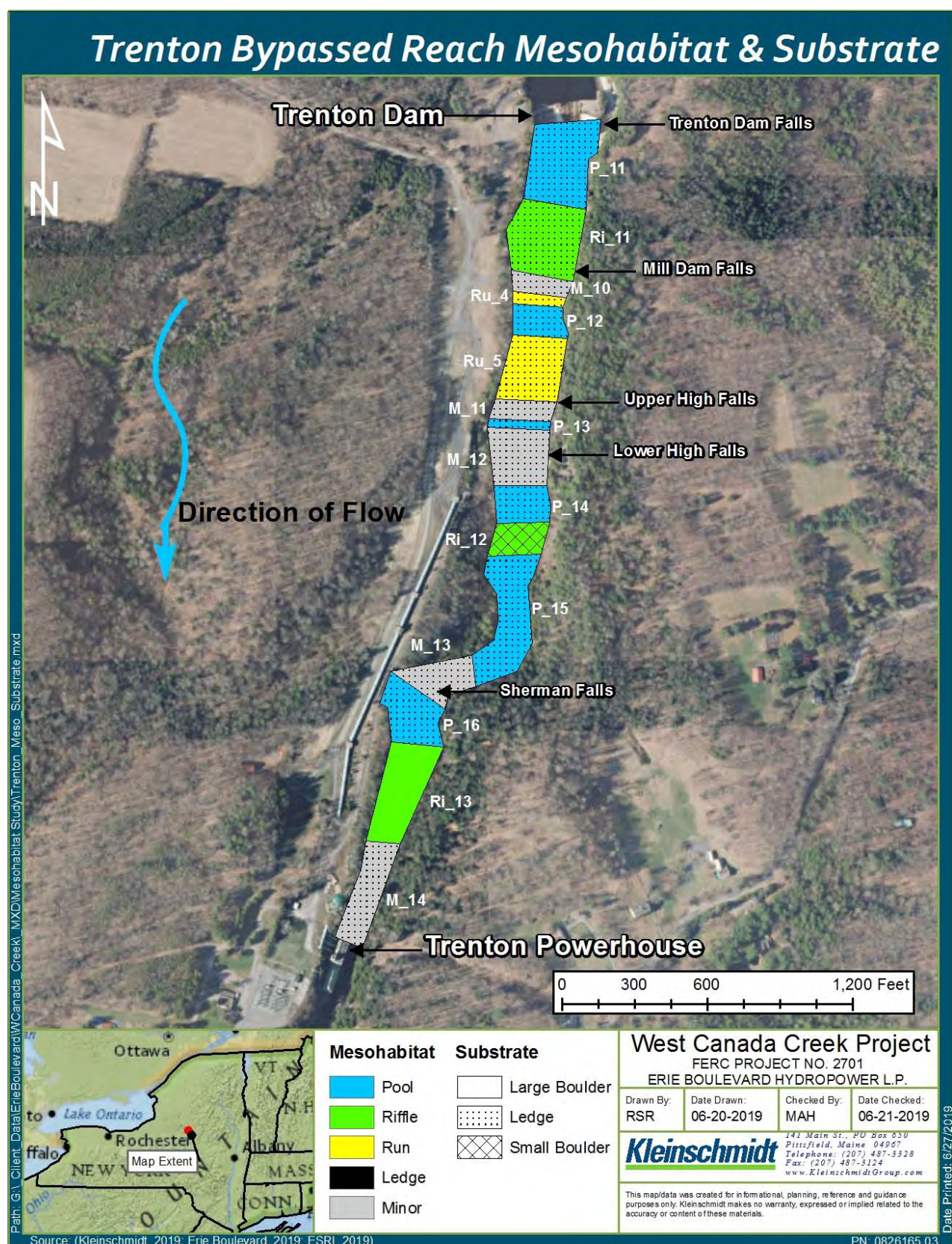


FIGURE 6 DISTRIBUTION OF MESOHABITAT UNITS AND DOMINANT SUBSTRATE IN THE TRENTON BYPASS REACH

LOGGER/TRANSECT LOCATIONS

For the Project's bypass reaches, as proposed in Erie's Revised Study Plan, Erie will deploy level loggers at 2 locations in the Prospect bypass reach². The targeted locations of the level loggers, including those located in the Project tailraces and downstream, were reviewed and discussed during the April 18, 2019 consultation call with USFWS and NYSDEC.

Onset model HOBO Water Level (13 feet) - U20L level loggers were deployed at two locations in the Prospect bypass reach between April 10 and April 12, 2019. These are provisional locations, pending consultation with the USFWS and NYSDEC. Deployment included encasing the logger in a perforated PVC stilling basin which was affixed to a concrete cinderblock in a vertical orientation. Each cinderblock was secured to the shoreline using a ¼ inch steel cable (Photo 9). Deployment sites with natural features in the river that provide protection from high flows and debris, (e.g., downstream from a large boulder or shoreline escarpment) were selected to avoid gear loss or damage.



PHOTO 9 LEVEL LOGGER DEPLOYMENT IN WEST CANADA CREEK

These level loggers are intended to record stage-discharge data in representative habitat in near proximity to where habitat transect data will be subsequently gathered. Because there are two distinct geomorphic characters to this reach, one logger was placed in the upper reach and another in the lower reach. For purposes of this study the Military Road crossing was used as a landmark to define the boundary between the two reaches because the two geomorphic conditions intersect near this road crossing.

² As discussed during the April 18, 2019 consultation call, Erie will deploy level loggers at 2 locations in the Prospect bypass reach, one at Prospect tailrace, one at Trenton tailrace, and 6 downstream of Trenton.

As documented above, the upper portion of the Prospect bypass reach is comprised of flat, horizontal ledge that terminates at a falls. The area below the falls is composed of alluvial glacial till and fractured ledge material scoured, eroded and distributed in a widened channel area immediately below the falls. Exiting this area, the reach has steeply sloping forested banks that form a stable channel with a width more consistent with the remainder of the bypass reach. The upper reach level logger was placed at the intersection of the riffle and pool complex above the bridge (Photo 10; Figure 4).

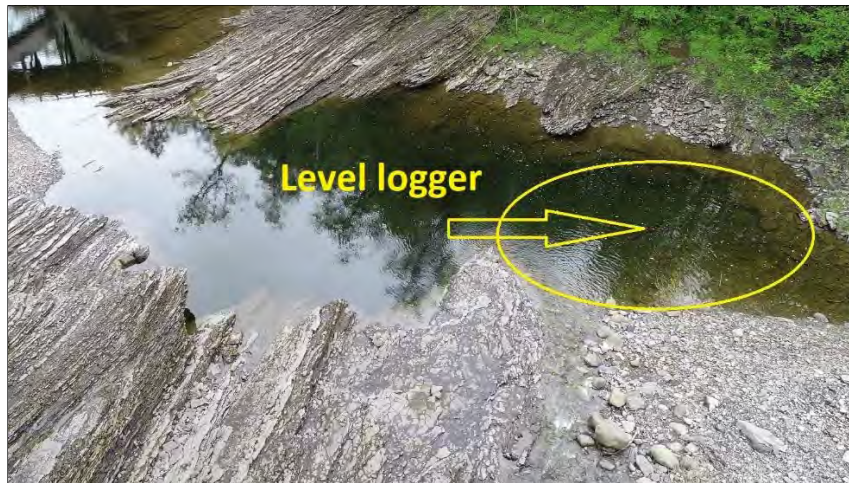


PHOTO 10 LEVEL LOGGER DEPLOYMENT IN WEST CANADA CREEK

The lower reach of the Prospect bypass reach has a relatively consistent channel ranging in width from approximately 25 to 50 feet. As discussed above it is generally dominated by ledge pools and ledge-controlled riffles comprised of deposits of boulder and cobble passing through a vertical-walled canyon. Gradient is relatively low other than an occasional short ledge drop. The lower reach level logger is currently placed at the intersection of a ledge drop and riverine pool (Photo 11; Figure 4).



PHOTO 11 LEVEL LOGGER DEPLOYMENT IN WEST CANADA CREEK

LITERATURE CITED

- ArcGIS Pro. 2019. ARC GIS Pro Rescale. Available at: <https://pro.arcgis.com/en/pro-app/tool-reference/data-management/rescale.htm>. Accessed June 18, 2019.
- Bovee, K. 1982. A guide to habitat analysis using the instream flow incremental methodology. Instream flow information paper No. 12. USDI Fish and Wildlife Service, Office of Biological Service. FWS/OBS-82/26. 248 pp.
- DJI. 2019. Phantom 4 RTK. Available at: <https://www.dji.com/phantom-4-rtk> Accessed June 21, 2019.
- Federal Aviation Administration (FAA). 2019. Certificated Remote Pilots including Commercial Operators. Available at: https://www.faa.gov/uas/commercial_operators/. Accessed June 18, 2019.
- NYS GIS Clearinghouse. 2019. New York FEMA 2017 LiDAR; Classified Point Cloud. Available at: <https://gis.ny.gov/elevation/metadata/NY-FEMA-R2-2017-ClassifiedPointCloud.xml>. Accessed June 18, 2019.
- Propeller Aero. 2019. What is Ground Sample Distance (GSD) and How Does it Affect Your Drone Data? Available: <https://www.propelleraero.com/blog/ground-sample-distance-gsd-calculate-drone-data/>. Accessed June 18, 2019.
- Unavco. 2019. Geoid Height Calculator. Available: <https://www.unavco.org/software/geodetic-utilities/geoid-height-calculator/geoid-height-calculator.html>. Accessed June 18, 2019.
- Wolman, M.G., 1954. A Method of Sampling Coarse River-Bed Materials. Trans. Am. Geophys. Union, 35: 951-956.

WEST CANADA CREEK PROJECT (P-2701)

**AQUATIC MESOHABITAT MAPPING SURVEY
Attachment A**

**PHOTOGRAPHS OF MESOHABITAT UNITS
PROSPECT BYPASS REACH**

*View orientation is downstream unless otherwise noted
Mesohabitat unit numbering corresponds to Figure 3 and 4 in report*



Plunge pool (P 1) at toe of dam, and horizontal bedrock substrate



Riffle 1 (Ri 1)



Horizontal bedrock Ledge (L-1)



Falls, scour pool and braided channel (M-1, 2, 3 and Ri-3) (*looking across*)



Detail of scour pool (M-1)



Riffle and riverine pool below falls (Ri-3 and P-3)



Riverine pool complex (P-3) upstream from Military Road



Pool (P-4) at Military Road bridge. Steep vertical canyon walls begin at this point and continue to the downstream end of the bypass reach.



Pool/riffle/pool complex (P-4, Ri-4) downstream from Military Road bridge



Pool/waterfall/riffle (P-4, Ri-4) below Military Road bridge



R -5



P-5



P-5 (*looking upstream toward Ri 5*). Note waterfall inflow



P-5 (*mid-section, looking downstream*)



P-5 (*lower-section, looking downstream*)



Ri-7



Ru -1



P – 8, including drop



P-8; Ri-8



Ru-9 and Ri-9



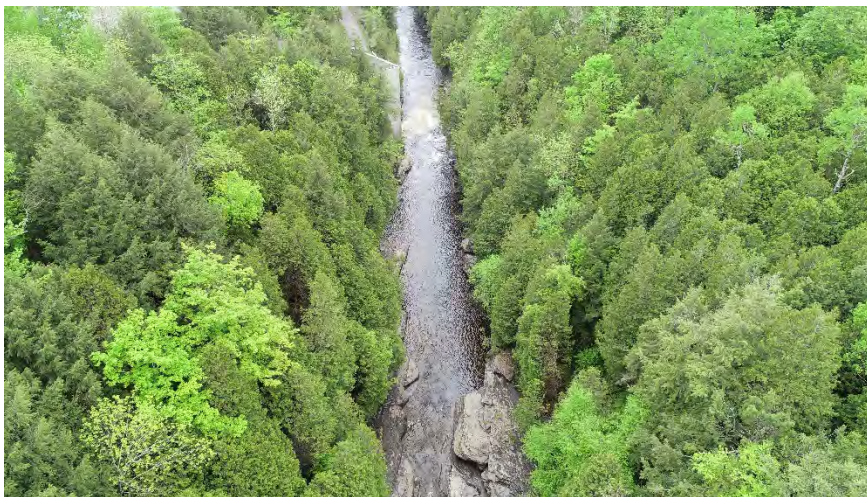
Ri-10 at MVWD pipe bridge



Pool/drop/pool (P-9) downstream from pipe bridge



Detail of ledge drop between pools P-9 and P-10



Pool (P-10) backwatered from tailrace

WEST CANADA CREEK PROJECT (P-2701)

**AQUATIC MESOHABITAT MAPPING SURVEY
Attachment B**

**PHOTOGRAPHS OF MESOHABITAT UNITS
TRENTON BYPASS REACH**

*View orientation is downstream unless otherwise noted
Mesohabitat unit numbering corresponds to Figure 5 and 6 in report*



P-11 at toe of Trenton dam



Ri-11



M-10 (*Mill Dam Falls*)



P-12 *upper part of complex*



P-12 and Ru-5



Ru-5



M-11 (*Upper High Falls*)



P-13 *below Upper High Falls*



M-12 (*Lower High Falls*) and **Plunge pool (P-14)** and **Ri-12**



Ri-12 and P-15



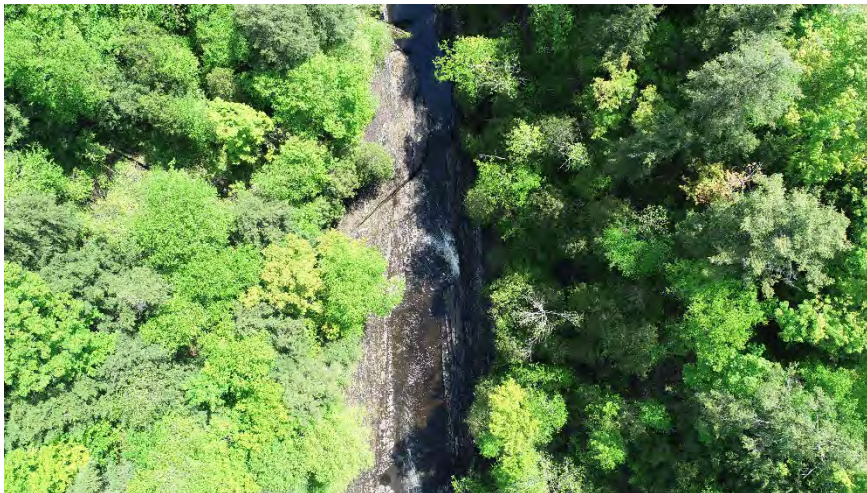
M-13 (*Sherman Falls*)



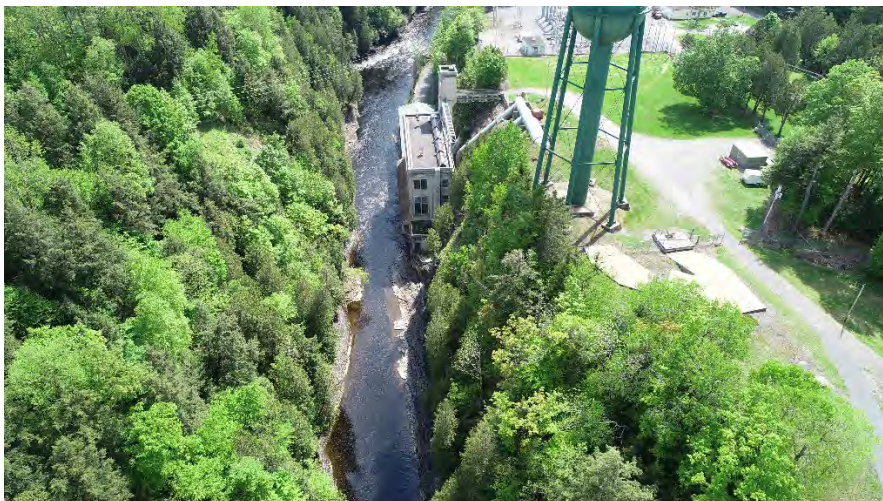
P-16



R-13 (*upper segment*)



R-13 entering backwatered pool (*lower segment*)



Pool backwatered by tailwater (M-14)

PROGRESS REPORT 1

ATTACHMENT B

RECREATION AND AESTHETICS STUDIES CONSULTATION

B1 - Memo Summarizing May 29, 2019 Consultation Call and Presentation

B1 - Memo Summarizing May 29, 2019 Consultation Call and Presentation

Karen Klosowski

From: Karen Klosowski
Sent: Wednesday, May 22, 2019 5:01 PM
To: stephen_patch@fws.gov; 'Wiley, John'; Todd Phillips (todd.phillips@dec.ny.gov); 'walt paul@twc.com'; 'supervisor@town.trenton.ny.us'; 'wellman1985@charter.net'; Bob Nasdor (bob@americanwhitewater.org)
Cc: Steven Murphy (steven.murphy@brookfieldrenewable.com); Kayla Easler (Kayla.Easler@KleinschmidtGroup.com); Rachel Russo
Subject: West Canada Creek Project (P-2701) Recreation and Aesthetics Studies Consultation
Attachments: WCC SPD Rec Consult_05222019.pdf

Good Afternoon

We are reaching out to set up a conference call to discuss specific topics identified in FERC's Study Plan Determination (SPD) for the West Canada Creek Project (P-2701) related to the recreation and aesthetics studies.

We are starting field efforts this month and would like to have a conference call to review the status and provide an update of the methodology to be implemented for these studies. Please note that last week we conducted the recreation site inventory and the Trenton Trail Days event was held this past Saturday, 5/18 and Sunday 5/19. Accordingly, we have developed and administered the Trenton Trail Days Recreation Visitor Survey.

For the call, we are targeting **May 29, 2019 from 10:00 am-11:30 am**, and will send out an invite with call-in details.

We plan to cover outstanding topics identified in the FERC SPD for consultation with U.S. Fish and Wildlife Service (USFWS), New York State Department of Environmental Conservation (NYSDEC), New York State Fish and Wildlife Management Board (FWMB), American Whitewater (AW), New York Trout Unlimited (NYTU), and the Town of Trenton for the following studies:

- Recreation Use, Needs, And Access Study Methodology
 - Facility Inventory and Spot Counts
 - Visitor Surveys
 - Trenton Trail Days Recreation Visitor Survey
 - West Canada Creek Project Recreation Visitor Online Survey
- Whitewater Boating Flow and Access Study Methodology
 - Phase 1 - Study Planning and Desk-Top Analysis
 - Phase 2 - Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges
 - Phase 3 - On-Water Controlled Flow Assessment
- Aesthetics Flow Assessment Methodology
 - Phase 1 – Characterization of Aesthetic Features
 - Phase 2 – Documentation and Assessment of Controlled Flow Releases

Attached is additional information for our discussion.

Thank you and looking forward to our discussion.

Karen Klosowski
Senior Regulatory Coordinator

Office: 315-409-7198

Karen Klosowski

From: Karen Klosowski
Sent: Thursday, July 11, 2019 9:19 AM
To: Todd Phillips (todd.phillips@dec.ny.gov); stephen_patch@fws.gov; Wiley, John; waltpaul@twc.com; supervisor@town.trenton.ny.us; wellman1985@charter.net; Bob Nasdor (bob@americanwhitewater.org)
Cc: Steven Murphy (steven.murphy@brookfieldrenewable.com); Kayla Easler; Rachel Russo
Subject: West Canada Creek Project (P-2701) Recreation and Aesthetic Studies Consultation Memo
Attachments: WCC Rec 05292019 Consult Call Memo.pdf

Good Morning

Attached is a memo summarizing the discussion during our call held on May 29, 2019 to review specific topics identified in FERC's Study Plan Determination (SPD) for the West Canada Creek Project (P-2701) related to the recreation and aesthetics studies, including:

- Recreation Use, Needs, And Access Study Methodology
 - Facility Inventory and Spot Counts.
 - Visitor Surveys
 - Trenton Trail Days Recreation Visitor Survey.
 - West Canada Creek Project Recreation Visitor Online Survey.
- Whitewater Boating Flow and Access Study Methodology
 - Phase 1 - Study Planning and Desk-Top Analysis.
 - Phase 2 - Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges.
 - Phase 3 - On-Water Controlled Flow Assessment.
- Aesthetics Flow Assessment Methodology
 - Phase 1 – Characterization of Aesthetic Features.
 - Phase 2 – Documentation and Assessment of Controlled Flow Releases.

Provided as attachments to the memo are the presentation reviewed during the conference call, the updated online Recreation Survey, and the updated online survey notification form. The memo includes a list of action items and notes several activities conducted by Erie subsequent to this consultation call. Erie is preparing and will provide via separate email proposed next steps for study implementation for the Whitewater Boating and Aesthetics Flow Assessment studies, as well as proposed schedule.

If you have any questions, please contact me at Karen.Klosowski@KleinschmidtGroup.com or 315-409-7198, or Steve Murphy at steven.murphy@brookfieldrenewable.com or (315) 598-6130.

Thank you for your time and assistance moving forward with these studies.

Karen Klosowski
Senior Regulatory Coordinator

The logo for Kleinschmidt, featuring the word "Kleinschmidt" in a stylized blue font with a green underline.

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MEETING/CALL SUMMARY

WEST CANADA CREEK PROJECT (P-2701)

RECREATION AND AESTHETICS STUDIES CONSULTATION

Conference Call

ATTENDEES: Todd Phillips, NYSDEC
Dick McDonald, NYSDEC
Jana Lantry, NYSDEC
Christopher Balk, NYSDEC
John Wiley, USFWS
Bob Nasdor, AW
Steve Murphy, Brookfield
Rachel Russo, Kleinschmidt
Karen Klosowski, Kleinschmidt
Kayla Easler, Kleinschmidt

DATE: May 29, 2019

Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield Renewable company (Brookfield) is currently undergoing relicensing for the West Canada Creek Hydroelectric Project (FERC Project No. 2701) (Project) under the Federal Energy Regulatory Commission (FERC) Integrated Relicensing Process (ILP). Erie conducted an agency consultation call with the U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC), and American Whitewater (AW)¹ to review specific consultation topics as identified in FERC's Study Plan Determination (SPD) related to the recreation and aesthetics studies. Following is a summary of key topics discussed during this consultation call. The meeting presentation is provided in Attachment A.

INTRODUCTIONS AND PURPOSE OF CALL

Steve Murphy (Erie) welcomed participants and provided an overview of the agenda. The purpose of the call was to review specific topics as identified in FERC's SPD for additional consultation for the recreation and aesthetics related studies². These studies include: Recreation Use, Needs and Access Study; Whitewater Boating Flow and Access Study; and Aesthetics Flow Assessment Study.

Karen Klosowski (Kleinschmidt) provided a review of the key milestones related to study plan development conducted to date under the Project's relicensing process. Erie submitted a Proposed Study Plan (PSP) on August 13, 2018 and held a Study Plan meeting on September 11, 2018. Following receipt of comments, Erie submitted a Revised Study Plan on December 11,

¹ Erie reached out to USFWS, NYSDEC, New York State Fish and Wildlife Management Board (FWMB), American Whitewater (AW), New York Trout Unlimited (NYTU), and the Town of Trenton for participation in call via email and consultation call Outlook invitation. No response was received from FWMB, NYTU or Town of Trenton.

² A separate consultation call was held with USFWS and NYSDEC related to the aquatics and fisheries studies (Aquatic Mesohabitat Assessment, Macroinvertebrate and Mussel Surveys, Fish Assemblage Assessment, and Fish Entrainment and Turbine Passage Survival Assessment) on April 18, 2019.

2018. Comments on the Revised Study Plan (RSP) were received from USFWS, NYSDEC, AW, and Citizens for Hinckley Lake. FERC issued the Study Plan Determination (SPD) on March 7, 2019. Based on this study consultation and FERC's SPD, Erie will be conducting nine studies during the 2019 field season for the West Canada Creek Project relicensing. These studies include: Aquatic Mesohabitat Assessment Study; Macroinvertebrate and Freshwater Mussel Surveys; 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 Study; and Aesthetics Flow Assessment Study (see pages 2 and 3 in Attachment A).

Ms. Klosowski reviewed the specific consultation topics for the recreation and aesthetic studies to be covered during this call, to include:

- Establish consultation Working Group
- Recreation Use, Needs, And Access Study Methodology
 - Facility Inventory and Spot Counts
 - Visitor Surveys
 - Trenton Trail Days Recreation Visitor Survey
 - West Canada Creek Project Recreation Visitor Online Survey
- Whitewater Boating Flow and Access Study Methodology
 - Phase 1 - Study Planning and Desk-Top Analysis
 - Phase 2 - Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges
 - Phase 3 - On-Water Controlled Flow Assessment
- Aesthetics Flow Assessment Methodology
 - Phase 1 – Characterization of Aesthetic Features
 - Phase 2 – Documentation and Assessment of Controlled Flow Releases

Ms. Klosowski provided an overview of current status of the Recreation Use, Needs and Access Study, stating that the recreation facility inventory was conducted on May 17, 2019, and that Trenton Trail Days intercept survey was conducted on May 18, 2019 and May 19, 2019. Spot counts will begin Memorial Day weekend, and the online Recreation Visitor Survey is targeted to start Memorial Day weekend (May 24, 2019) (see page 4 and 5 in Attachment A).

Recreation Studies Working Group

Ms. Klosowski summarized that FERC and agencies asked for the establishment of working groups for the recreation and aesthetics studies. Erie reached out to the USFWS, NYSDEC, AW, New York State Fish and Wildlife Management Board (FWMB), New York Trout Unlimited (NYTU), and the Town of Trenton to establish Working Group and consultation (attendees invited to this consultation call). Ms. Klosowski stated that the intent is to establish a Working Group of representatives from these agencies and stakeholders, with an Expert Panel to be established for the White-Water Boating Flow and Access Study, and a Focus Group to be established for the Aesthetics Flow Assessment (see page 6 in Attachment A).

Ms. Klosowski stated that it would be helpful to have a lead contact to coordinate with from each agency/stakeholder group. The parties on the call agreed to the following as key contacts to distribute materials related to this consultation and coordinate as necessary within their agencies/stakeholder group: NYSDEC – Todd Phillips, USFWS – John Wiley, and AW – Bob Nasdor. Ms. Klosowski noted that Erie did not have any response from NYTU, the Town of

Trenton, or FWMB relative to this consultation outreach. Kleinschmidt agreed to reach out to these entities to confirm that they are not interested in participating in the recreation studies consultation working group.

There was discussion regarding the downstream tubing and boating groups and any information available from the West Canada Creek Campground and Herkimer KOA Campground.

Kleinschmidt will follow-up to ask these entities if they have any recreation data they would be willing to share and if they would be willing to post the notification for the online survey at their facilities.³ A question was raised whether these entities and Trout Power were on the West Canada Creek Project relicensing distribution list. Trout Power is included on the current distribution list, but the West Canada Creek and Herkimer KOA are not on current distribution list. Kleinschmidt will follow-up to see if these entities wish to be added to the relicensing distribution list.

Recreation Use, Needs, and Access Study Methodology

Downstream Spot Counts

FERC, as part of the SPD, extended the study area for the Recreation Study to include the access areas that serve the two downstream boating reaches of West Canada Creek (i.e., Dover Road to Newport impoundment and Middleville to Kast Bridge) for the study recreation facility inventory and recreation use spot counts. Erie conducted an online review of NYSDEC and NYSDOT identified West Canada Creek public fishing access locations along these reaches, as well as review of the 2007 Creel Survey fishing access site locations, which resulted in a total of 10 downstream access sites being selected for the spot count locations. Erie then conducted field verification of site selection and facility inventories of these sites on May 17 and 18, 2019. In addition, Erie characterized the downstream reaches to align with the access reach designations identified in the 2007 NYSDEC West Canada Creek Creel survey for questions developed in the online survey (see pages 7 and 8 in Attachment A).

Erie will conduct instantaneous spot counts on a total of 8 occasions (as summarized on page 9 of Attachment A), and will note the number of vehicles, origin of vehicle, number of visitors, and type of recreation activity per a spot count form, and that use data will be online through the online survey (i.e., no intercept surveys are being conducted for the spot count locations). A traffic counter was also placed at the Prospect Boat launch access site to collect visitor vehicle count data.

Trenton Trail Days

The spring Trenton Trail days were held on May 18 and 19, 2019 and Trenton Trail Days surveys were implemented (see page 10 and Attachment 1, Trenton Trail Days Survey Form, in Attachment A). The fall Trenton Trail Days will be held on September 14 and 15, 2019. For the May 18 and 19, 2019 trail days there were approximately 2,300 visitors and Erie conducted approximately 200 intercept surveys. These intercept surveys captured responses from both individuals and small groups as they exited the trails, providing a good representation of the visitor perceptions during this event. The survey administrators also provided information about

³ Subsequent to this call Erie contacted both West Canada Creek Campground and Herkimer KOA. West Canada Creek Campground provided rental data and agreed to post the online survey notification flyer.

online survey to those respondents that stated they recreated in the downstream reaches. NYSDEC questioned whether the data analysis for the Trenton Trail days survey and the online survey would be conducted separately or combined. Kleinschmidt stated that the surveys will be assessed separately as the questions are typically different between the two survey instruments and will allow assessment of information specific to the recreation visitor use for the study area (i.e., Prospect Pond, Trenton Trails and downstream reaches).

Recreation Visitor Online Survey

Kleinschmidt reviewed the status of the online survey, stating that the survey will be available online via SurveyMonkey from Memorial Day weekend (May 24, 2019) through the end of Labor Day weekend (see page 11 and Attachment 2, Online Survey Form, in Attachment A). The survey will also be available in hard copy at the Prospect boat launch via a drop box, as well as information regarding the availability of the survey online. The survey was structured to capture information regarding recreation visitor use and perceptions at the Prospect impoundment and boat launch area, and West Canada Creek below Trenton tailrace downstream to Kast Bridge.

NYSDEC recommended changing the wording of Question 20 to address American with Disabilities Act (ADA) requirements. Ms. Klosowski stated that the wording would be revised.⁴ NYSDEC questioned whether surveys could be monitored and revised in the event there was a question that respondents did not understand. There was discussion that revisions to questions were not recommended as this could affect the analysis of the results. Kleinschmidt noted that SurveyMonkey provided a format in which monitoring and download of completed surveys can be conducted during the survey period.

Kleinschmidt reviewed survey questions to address FERC's SPD comment of providing questions pertaining to angling use on West Canada Creek, stating Questions 38 through 45 were related to angler activities. AW stated that the online survey does not directly ask information about downstream user groups such as boating and tubing. It was discussed that visitor use flow information would be obtained as part of the whitewater boating study and that there was a balance of trying to obtain relevant and sufficient information, while also controlling the length of the survey. NYSDEC and USFWS recommended adding some additional angler safety questions related to flow conditions. AW stated these flow related questions should pertain to all user groups. Kleinschmidt will develop additional questions to be added to the survey in order to obtain flow-related safety information from the survey respondents.⁵

NYSDEC, USFWS and AW questioned how the public would be notified about the availability of the survey. Kleinschmidt indicated the intent to post notification for the online survey at the NYSDEC and possibly the NYSDOT access sites. NYSDEC (Jana Lantry) stated that for the NYSDEC sites that this would require a NYSDEC temporary revocable permit which she would provide to Kleinschmidt. The permit will allow posting of the online survey notification at the NYSDEC fishing access sites (the four NYSDEC sites identified for spot counts).⁶

⁴ Question 20 of the survey has been revised to: "Does anyone in your group require reasonable accommodations as defined by the Americans with Disability Act (ADA)?" See Attachment B.

⁵ See Attachment B - Questions 29-32 for questions developed subsequent to this call and added to the survey.

⁶ Subsequent to this call, Kleinschmidt completed and submitted the required forms and once permission is received, will post the online survey notification flyer at these sites.

Kleinschmidt stated that a link to the survey was also posted on the West Canada Creek relicensing website, and that permission to post the survey at the West Canada Creek and Herkimer KOA campgrounds would also be pursued. NYSDEC, USFWS, and AW commented on trying to distribute the information via several local organized groups and Facebook pages, such as: West Canada Creek Watershed Alliance; Friends of Hinckley Lake; Town of Trenton, NY; local white water boating groups; New York Trout Unlimited; and Trout Power. Bob Nasdor (AW) stated he could help distribute to whitewater boating groups. NYSDEC recommended adding a QR code to the online notification flyer, stating that the QR code could be helpful to place on the notification for folks to scan and bring up the survey on their mobile devices. Kleinschmidt stated that a QR code would be added.⁷

Jarvis Project (P-3211) Tailwater Informal Access Site

NYSDEC and USFWS commented about discussion during the Initial Study Report Meeting (ISR) for the Jarvis Project relicensing related to Jarvis Project Recreation Study and recreation access below Hinkley Dam. They stated that a tailwater access site was not included in the Jarvis Recreation Study, the New York Power Authority (NYPA, Jarvis Project licensee) stated that the informal access site was on land owned by Erie. Erie will review the Jarvis ISR report and check about informal recreation access, land ownership and location of the project boundaries for both the West Canada Creek and Jarvis Projects in the reach directly below the Jarvis dam.

Whitewater Boating Flow and Access Study Methodology

Kleinschmidt reviewed the status and approach to the Whitewater Boating study; the study is at the early stage (Phase 1) (see page 12 of Attachment A). The initial stage is to identify interested expert whitewater boaters affiliated with AW and or local paddling clubs to participate in the study, as well as provide opportunity for participation by USFWS and NYSDEC. Currently, Erie is reviewing and characterizing historic records of minimum, maximum, and average flow rates and seasonal variations for the previous 5-year period to extent information is available. Erie will also conduct a literature review of regional whitewater boating within 1 hour of the Project and prepare a project safety plan for the Phase 2 and 3 of the study. The general timeframe for Phase 1 efforts will be during the June -July 2019 period.

Phase 2 assessment will include the establishment of an expert panel to conduct a land-based assessment of the Prospect bypass reach. The group discussed having AW representation, USFWS (John Wiley), and NYSDEC (2 staff with Todd Phillips as lead contact). The land-based assessment will include a preliminary reconnaissance to identify potential whitewater features, potential limitations to navigation and safe paddling, potential ingress and egress locations, and safety considerations. The Phase 2 efforts will determine if the next Phase 3 efforts (instream flow assessment) are implemented, and if so appropriate flows for assessment will need to be determined prior to that assessment. If the on-land assessment justifies a controlled flow assessment for the Prospect bypass reach, Erie will consult with the Expert Panel to determine controlled flow levels to be studied during Phase 3 study efforts (see page 13 of Attachment A).

Erie stated concerns again with safety given the difficult access and gorge-like banks with high cliffs or unstable rock outcroppings along the Prospect bypass reach riverbanks. Brookfield has a

⁷ Subsequent to this call, Kleinschmidt updated the online survey notification flyer with a QR code. See Attachment C.

specific safety program and rules that need to be followed. If descending into the bypassed reaches, there will need to be a lock-out tag-out and training for all participants. The group discussed potential approaches, including walking the reach during leakage flows and whether drone footage could be reviewed first to identify specific areas for additional review and where safe access may be possible. Kleinschmidt pointed out that there was existing drone footage and forthcoming drone footage as part of the Aquatic Mesohabitat Survey that could be reviewed by the Working Group.

The Phase 2 effort will also need to determine the target flow levels for the Phase 3 assessment of the downstream reach. As required in FERC's SPD, the study area includes two whitewater boating reaches downstream of the Trenton Development, from Dover Road to the Newport impoundment, and from Middletown to Kast Bridge. Erie will consult with Expert Panel to determine flow levels for the Phase 3 controlled flow study to identify controlled flow levels that provide a minimum and optimal whitewater boating experience downstream of Trenton Development. As stated in the RSP, Erie proposed the targeted flow assessment releases for the downstream reach of 1,000 cfs and 1,400 cfs (see page 14 of Attachment A). Erie also stated that, as summarized in the PAD, the West Canada Creek campground has information on flows for use flows 450 to 900 cfs for all rentals, and at flows over 1400 cfs they do not rent. AW (Bob Nasdor) stated that AW was likely looking for three flow releases, such as 600 cfs, 1,000 cfs, and 1,400 cfs for the controlled flow assessment.

The group discussed logistics given that the target flows would be difficult to assess over the entire approximately 30 mile reach included in the revised study area. There was discussion that flow travel time from the Trenton tailrace to the downstream gage at Kast Bridge was approximately 6 hours. The group agreed to identify potentially 2 study reaches for the controlled flow assessment and would include a representative section of the upper reach and representative section of the lower reach (for more experienced boaters). Erie also raised caution of keeping the expert boating group to a small number for both safety and logistical purposes. AW will help to identify expert boaters for the assessment and reaches for the assessment.

The group discussed the general timeframe for the controlled flow assessment, stating that for availability of flows for the targeted flow ranges, the timing would need to be either in spring or fall period, such as September or October. NYSDEC raised issue of fish spawning period during October 1 through May 15. The group also discussed that October would likely not be warm enough for tubers. Therefore, the group concurred that the flow assessment will need to likely target the September timeframe if flows are available.

Aesthetics Flow Assessment

Kleinschmidt reviewed the approach to the aesthetic assessment, stating currently in early stages, Phase 1 of the study. Erie will review and characterize the timing and flow ranges of historic flow exceedance events within the past 5 years to extent information is available. Erie will also document and assess the KOPs (photographic and video) locations for existing aesthetic characteristics during both leaf-off and leaf-on periods. Erie will consult with Focus Group to confirm representative KOP locations and range of controlled flows for assessment during the Phase 2 efforts. As stated in the RSP, Erie proposes the targeted aesthetic flow assessment releases of 100 and 200 cfs for the Prospect bypass reach and 250 and 500 cfs for the Trenton bypass reach. Erie will develop an evaluation form to include questions pertaining to the evaluation of the aesthetic conditions under each of the targeted flow ranges (see page 16 of

Attachment A). The group discussed establishing a Focus Group for the controlled flow evaluation and discussed that Bob Nasdor will coordinate for AW, and Todd Phillips will coordinate for NYSDEC.

Kleinschmidt reviewed the identified Key Observation Points (KOP) including a total of 7 KOPs at established representative primary existing public access viewing locations of the Project bypass reaches. These include: KOP 1 – Prospect Overlook; KOP 2 - Prospect Falls View; KOP 3 - Trenton Trail Accessible Overlook; KOP 4 - Upper High Falls Overlook; KOP 5 - Lower High Falls Overlook; KOP 6 - Trenton Trail Cradle Overlook; KOP 7 - Sherman Falls Overlook (see page 17 Attachment A). Kleinschmidt summarized that leaf off documentation of the identified KOPs has been completed by subconsultant EDR and that documentation will also be conducted during leaf on period.

Erie reviewed the Phase 2 approach that would include on-site controlled flow aesthetic assessment of the Project bypass reaches with Focus Group. Documentation of aesthetic conditions at selected KOP locations during controlled flow conditions, to include both photographic and video documentation. Prior to the field evaluation, the Focus Group will attend an orientation meeting that will provide instructions for the assessment form and present information on the selected KOPs and controlled releases. During the field assessment, the Focus Group will assess and complete an assessment form at the selected KOP locations of the bypass reaches during pre-release conditions, and during each of the identified controlled flow releases, and participate in a post-assessment meeting to discuss observations and conclusions (see page 18 of Attachment A).

John Wiley (USFWS) questioned about public access to view the upper section that has been closed for last couple years based on previous comments during scoping regarding public access. Erie reviewed that the upper trail had been closed off for safety purposes due fallen rock and unstable conditions of the rock ledges above the trail. The group also questioned about having a KOP location at a closer proximity to Prospect Falls than the currently selected KOPs. The group indicated they would like further discussion and on-ground review of the KOP locations. AW also questioned how the flow ranges would be determined and if Erie had captured any photographs of various flow levels over the falls during the spring-runoff period. NYSDEC, USFWS, and AW indicated that additional discussion regarding the selected flow levels for the controlled flow release assessment would be needed. Erie will discuss internally the next steps to address requests, and come back with a proposed approach to the Focus Group.

Action Items

Recreation Studies Working Group

- Kleinschmidt will follow up with these stakeholders to confirm if AW, FWMB and NYTU are not interested in participating in recreation and aesthetic study consultation.

Recreation Study

- Kleinschmidt to update online survey to include revised ADA language and additional survey questions related to flow related safety questions (see Attachment B for revised survey).
- Kleinschmidt will reach out to the West Canada Creek Campground and Herkimer KOA Campground to see if they have any recreation data they would be willing to provide and

ask them to post the notification for the online survey at their locations. Kleinschmidt will also check to see if they would like to be included on the distribution list.

(Subsequent to this call, Kleinschmidt conducted outreach and received data from West Canada Creek Campground and agreement to post online survey notification flyer.)

- Kleinschmidt to follow-up with NYSDEC to obtain a temporary revocable permit for notification flyer will be filled out for posting at NYSDEC West Canada Creek fishing access sites where spot counts are being conducted. (Subsequent to this call, Kleinschmidt submitted and received the temporary permit application and posted online survey flyers at the five NYSDEC sites where spot counts are being conducted).
- Kleinschmidt will add a QR code to the online survey notification flyer (Subsequent to this call, Kleinschmidt updated the notification flyer, see Attachment C for the revised flyer).
- Kleinschmidt will check with local campgrounds and several local organized groups about posting online survey notification flyer.
- American Whitewater (Bob Nasdor) to distribute survey notification flyer to local boating groups.
- Erie to look at the property next to Jarvis and assess if an informal spot count is needed.

Whitewater Boating Study

- AW to help identify reaches and expert boaters for the downstream controlled flow assessment.
- Kleinschmidt to review existing drone footage for Prospect bypass reach for potential information for the Prospect bypass reach land-based assessment.

Aesthetics Flow Assessment

- Erie to follow-up with Aesthetics Focus Group to review KOP locations and approach for controlled flow assessment ranges.
- Kleinschmidt will review photo documentation of flows at the sites to share with the groups
- Kleinschmidt to provide schedule to identify future dates for next calls related to the recreation and aesthetic studies.

ATTACHMENT A

RECREATION AND AESTHETICS STUDIES

MAY 29, 2019 CONSULTATION CALL PRESENTATION

Brookfield



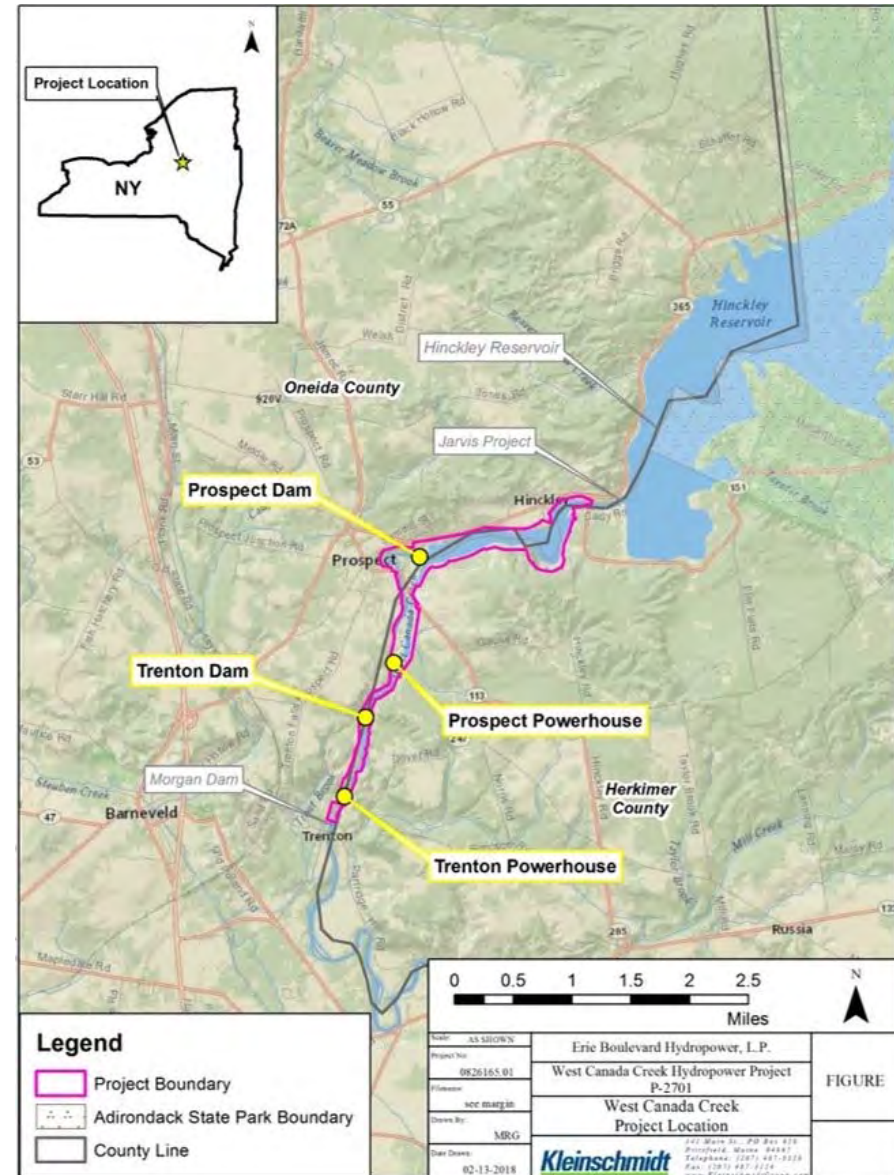
West Canada Creek Hydroelectric Project (FERC No. 2701) Study Plan Additional Consultation

May 2019

West Canada Creek Project Study Plan Summary

Brookfield 2

- West Canada Creek Hydroelectric Project (Project No. 2701) (Project) consists of two developments, Prospect and Trenton, located on West Canada Creek in Oneida and Herkimer counties, New York.
- Erie Boulevard Hydropower, L.P. (Erie or Licensee), a Brookfield company, is currently undergoing relicensing using the Federal Energy Regulatory Commission (FERC) Integrated Relicensing Process (ILP) for the Project.
- Erie submitted a Proposed Study Plan (PSP) on August 13, 2018, and held a Study Plan meeting on September 11, 2018. Following receipt of comments, Erie submitted a Revised Study Plan (RPS) on December 11, 2018.
- Comments on the RSP were received from U.S. Fish and Wildlife (USFWS), New York Department of Environmental Conservation (NYSDEC), American Whitewater (AW), and Citizens for Hinckley Lake.
- FERC issued the Study Plan Determination (SPD) on March 7, 2019.



- Based on this study consultation and FERC's SPD, Erie will be conducting nine studies during the 2019 field season for the West Canada Creek Project relicensing.
- These studies include:
 1. Aquatic Mesohabitat Assessment Study
 2. Macroinvertebrate and Freshwater Mussel Surveys
 3. Impoundment Shoreline Characterization Study
 4. Fish Assemblage Assessment
 5. Fish Entrainment and Turbine Passage Survival Assessment
 6. Water Quality Study
 7. Recreation Use, Needs and Access Study
 8. Whitewater Boating Flow and Access Study
 9. Aesthetics Flow Assessment Study

- The purpose of this call is to review specific topics as identified in FERC's SPD for additional consultation for the recreation and aesthetics related studies:
 - Recreation Use, Needs and Access Study;
 - Whitewater Boating Flow and Access Study; and
 - Aesthetics Flow Assessment Study.
- Erie is facilitating this consultation call to communicate and consult with the stakeholders on Erie's proposed approach to resolve these topics in order to advance field studies this month.
- The schedule is tight due to unforeseen circumstances – partial government shutdown and delay in SPD issuance.
- Recreation Use, Needs and Access Study has been initiated with start dates of:
 - Recreation facility inventory conducted 5/17/2019.
 - Spot counts begin Memorial Day weekend.
 - Trenton Trail Days intercept survey conducted 5/18/2019 and 5/19/2019.
 - Online Recreation Visitor Survey targeted to start Memorial Day weekend (5/24/2019).

Consultation topics for these studies include the following:

- Establish consultation Working Group
- Recreation Use, Needs, And Access Study Methodology
 - Facility Inventory and Spot Counts.
 - Visitor Surveys
 - Trenton Trail Days Recreation Visitor Survey.
 - West Canada Creek Project Recreation Visitor Online Survey.
- Whitewater Boating Flow and Access Study Methodology
 - Phase 1 - Study Planning and Desk-Top Analysis.
 - Phase 2 - Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges.
 - Phase 3 - On-Water Controlled Flow Assessment.
- Aesthetics Flow Assessment Methodology
 - Phase 1 – Characterization of Aesthetic Features.
 - Phase 2 – Documentation and Assessment of Controlled Flow Releases.

Recreation Studies Working Group

FERC:

- Recommends that Erie establish a working group comprised of interested stakeholders for consultation on the recreation and aesthetics related studies.
- Recommends that NYSDEC and USFWS be included in the working group in order to provide expertise in the formulation of pertinent angling questions for the visitor survey.
- Recommends that Erie invite a representative from each mandatory conditioning agency to be present during the reconnaissance assessment and on-water controlled flow assessments for the Whitewater Boating Flow and Access Study.
- Recommends addition of second NYSDEC staff member to working group for the Aesthetics Flow Assessment Study.

Approach:

- Erie reached out to the USFWS, NYSDEC, AW, New York State Fish and Wildlife Management Board (FWMB), New York Trout Unlimited (NYTU), and the Town of Trenton to establish Working Group.
- Intent is to establish a Working Group of representatives from these agencies and stakeholders
 - Specific expert panel will be established for the White Water Boating Flow and Access Study
 - Specific Focus Group will be established for the Aesthetics Flow Assessment.

Recreation Use, Needs, And Access Study Methodology

Facility Inventory and Spot Counts - Locations

FERC: Erie should include access areas that serve the two downstream boating reaches of West Canada Creek in its facility inventory and recreation use counts.

Approach:

- Erie conducted an online review of NYSDEC and NYSDOT identified West Canada Creek public fishing access locations.
- References reviewed included:
 - NYSDEC West Canada Creek fishing access locations (NYSDEC <https://www.dec.ny.gov/outdoor/9238.html>);
 - NYSDEC State Lands Interactive Mapper (NYSDEC <https://www.dec.ny.gov/outdoor/45415.html>);
 - NYSDEC West Canada Creek Creel Survey (NYSDEC 2007); and
 - NYSDOT fishing access sites (<https://www.dot.ny.gov/divisions/engineering/environmental-analysis/environmental-initiative/fishing-access-sites>).
- Access sites were identified by selecting public access locations along the various reaches of West Canada Creek from Morgan dam downstream to Herkimer (Kast Bridge).
- Conducted field verification of site selection and facility inventory on 05/17/2019 and 05/18/2019

Recreation Use, Needs, And Access Study Methodology

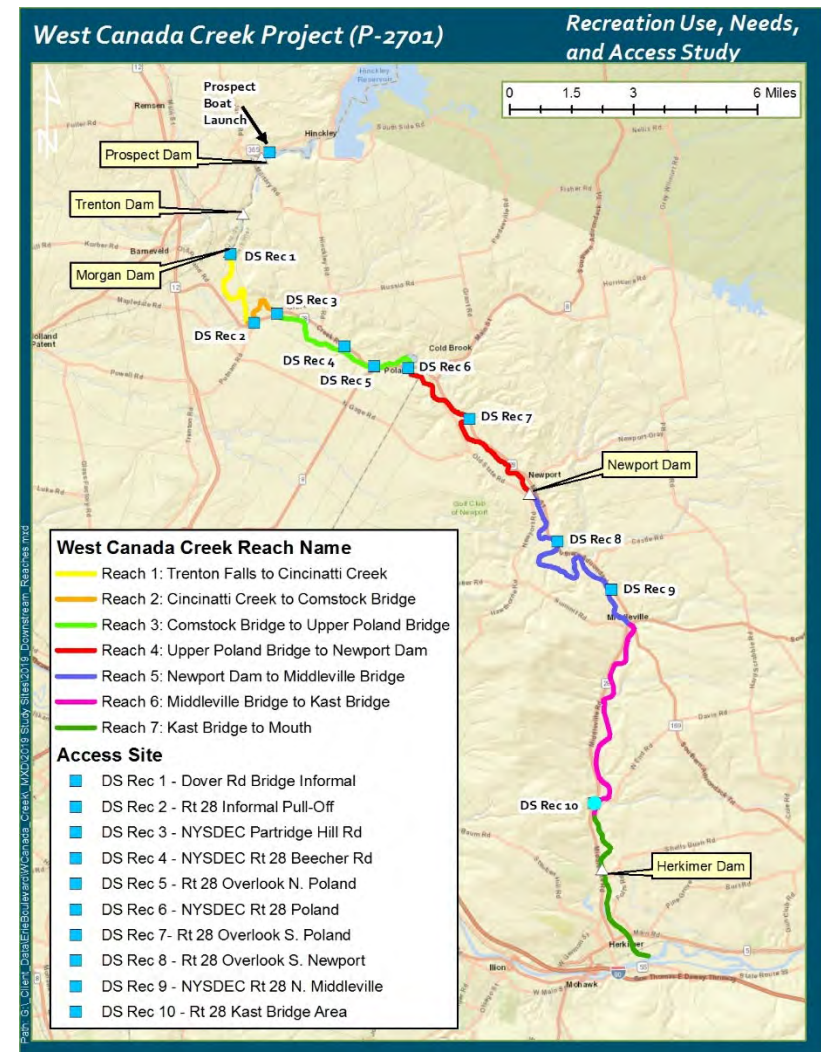
Facility Inventory and Spot Counts - Locations

Approach:

- A total of 10 downstream access sites were selected.

Rec Site Name	2007 Creel Survey Site No.	NYSDEC Identified Fishing Access	NYSDEC Site/Signage	NYSDEC	SLIM Access Site
DS Rec 1 - Dover Rd Bridge Informal	1-1	Yes	No		No
DS Rec 2 - Rt 28 Informal Pull-off	2-1	Yes	No		No
DS Rec 3 - NYSDEC Partridge Hill Rd	2-3	Yes	Yes		No
DS Rec 4 - NYSDEC Rt 28 Beecher Rd	Stocking only	Yes	Yes		Yes
DS Rec 5 - Rt 28 Overlook N. Poland	3-3	Yes	No	Yes?	No
DS Rec 6 - NYSDEC Rt 28 Poland	4-1	Yes	Yes		Yes
DS Rec 7 - Rt 28 Overlook S. Poland	4-4	Yes	No	Yes?	Yes
DS Rec 8 - Rt 28 Overlook S. Newport	5-2	Yes	No	Yes?	No
DS Rec 9 - NYSDEC Rt 28 N. Middleville	Stocking only	Yes	Yes		Yes
DS Rec 10 - Rt 28 Kast Bridge Area	6-4	Yes	No	Yes?	No

- In addition, Erie characterized the downstream reaches to align with the access reach designations identified in the 2007 NYSDEC West Canada Creek Creel survey for questions developed in the online visitor survey.



Recreation Use, Needs, And Access Study Methodology

Facility Inventory and Spot Counts - Schedule

FERC: Conduct facility inventory and recreation use counts of boating access areas along the downstream boating reaches.

Approach:

- Spot counts and site facility inventories will be conducted at the Prospect boat launch and the 10 identified downstream West Canada Creek recreation access sites.
- A traffic counter will be installed at Prospect boat launch from Memorial Day weekend through Labor Day to capture information pertaining to vehicular traffic at this site.
- Spot counts will be conducted during the period from Memorial Day weekend through Labor Day to include a total of 8 counts at each site (see targeted dates in the following schedule).

One Day in Target Period	AM/PM	Day of Week	Weekday	Weekend	AM	PM
Memorial Day Weekend	PM	Weekend		1		1
June 10-14	AM	Weekday	1		1	
June 22-23	AM	Weekend		1	1	
July 4 - 5	PM	Weekday	1			1
July 27 -28	AM	Weekend		1	1	
August 12-16	PM	Weekday	1			1
August 24-25	AM	Weekend		1	1	
Labor Day Weekend	PM	Weekend		1		1
Total			3	5	4	4

Recreation Use, Needs, and Access Study Methodology

Trenton Trail Days Recreation Visitor Survey

Approach:

- 2019 Trenton Trail Days were held on Saturday 5/18 and Sunday 5/19; and will also be held on Saturday 9/14 and Sunday 9/15.
- Total number of visitors will be counted for each day of the Trenton Trail Day event.
- Intercept surveys will be conducted during each of the Trenton Trail Day event.
- Attachment 1 provides the West Canada Creek Trenton Trail Days Recreation Visitor Survey.



Recreation Use, Needs, And Access Study Methodology

West Canada Creek Project Recreation Visitor Online Survey

FERC:

- Recommend that the working group for this study review NYSDEC's 2007 angler survey to incorporate relevant questions regarding angling at the project and in the downstream fishery of West Canada Creek.
- Provide notification of visitor survey at public access parking areas downstream of the project from the Trenton tailrace to the confluence of the Mohawk River.

Approach:

- Both the 2007 West Canada Creek Creel Survey Report (NYSDEC 2012) and the New York Statewide Angler Survey 2007 Report (NYSDEC 2009) were reviewed to develop questions pertaining to angler activities (see Attachment 4 Q38 - Q45).
- Notification of the online survey will be posted at the Prospect boat launch and 10 access site locations to extent allowed and will be publicly announced in the local area newspaper (e.g., Time Telegram and Observer-Dispatch).
- Attachment 2 provides the West Canada Creek Recreation Visitor Survey (Online Survey) that incorporates angler survey questions.

Study Results

- Information collected from the facility inventory, spot and visitor counts and surveys will be analyzed and summarized in the Recreation Use, Needs, and Access Study Report.

Whitewater Boating Flow and Access Study Methodology

Phase 1 – Study Planning and Desk-Top Analysis

FERC: Recommends a representative from each mandatory conditioning agency, to the extent they are willing to participate, to be present during the reconnaissance assessment and on-water controlled flow assessments.

Approach:

- Identify interested expert whitewater boaters affiliated with AW and/or local paddling clubs to form a small whitewater boating Expert Panel (no more than 5 total representatives). USFWS and NYSDEC participation as observers if interested.
- Review and characterize historic records of minimum, maximum, and average flow rates and seasonal variations for the previous 5-year period to extent information is available.
- Conduct literature review of regional whitewater boating within 1 hour of the Project.
- Prepare Project Safety Plan approach for Phase 2 and Phase 3 field efforts.
- Prepare assessment forms for:
 - Phase 2 - Prospect bypass land-based assessment.
 - Phase 3 - Pre- and post-flow assessment of whitewater boating reaches.
 - Post-evaluation form to document characteristics of the reaches including trip length, river features, and appropriate flow levels.

Whitewater Boating Flow and Access Study Methodology

Phase 2 – Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges

Prospect Bypass Reach

FERC: If Phase 2 on land assessment justifies the Prospect bypassed reach controlled flow assessment, consult with the whitewater boating expert panel prior to Phase 3 to determine the flow levels to be studied.

Approach:

- Expert Panel to conduct a land-based assessment of Prospect bypass reach during leakage flows, including assessment form and focus group discussion.
- Assessment to include a preliminary reconnaissance to identify potential whitewater features, potential limitations to navigation and safe paddling, potential ingress and egress locations, and safety considerations.
- If the on-land assessment justifies a controlled flow assessment for the Prospect bypass reach, Erie will consult with the Expert Panel to determine controlled flow levels to be studied during Phase 3 study.
- As stated in the RSP, if the Prospect bypass reach controlled flow assessment is conducted, Erie proposed the targeted flow assessment releases of 100 and 200 cfs.

Whitewater Boating Flow and Access Study Methodology

Phase 2 – Land-Based Reconnaissance Assessment /Identify Controlled Flow Ranges

Downstream Reach

FERC:

- Extend the geographic scope of the Phase 3 portion of this study to include both reaches downstream of the Trenton Development, from Dover Road to the Newport impoundment and Middleville to Kast Bridge
- Collaborate with the expert panel to determine the flow levels that are likely to provide a minimally acceptable and optimal whitewater boating experience downstream of the Trenton Development.

Approach:

- Extended downstream reach to include both whitewater boating reaches downstream of the Trenton Development, from Dover Road to the Newport impoundment and Middleville to Kast Bridge.
- Consult with Expert Panel to determine flow levels for the Phase 3 controlled flow study.
- Identify controlled flow levels that provide a minimum and optimal whitewater boating experience downstream of Trenton Development.
- As stated in the RSP, Erie proposed the targeted flow assessment releases for the downstream reach of 1,000 cfs and 1,400 cfs.

Whitewater Boating Flow and Access Study Methodology

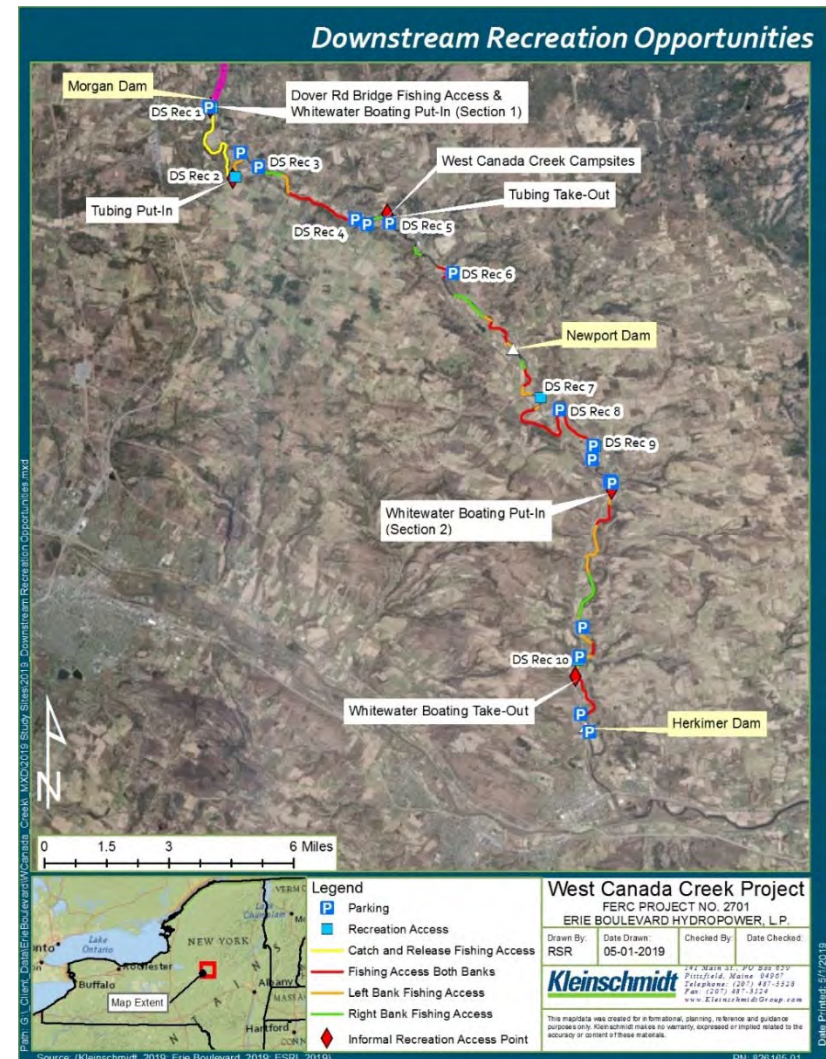
Phase 3 – Controlled Flow Assessment

Approach:

- Prospect Bypass Reach
 - Phase 2 efforts will determine if proceed to conduct Phase 3 controlled flow assessment for the Prospect bypass reach.
- Downstream Reach
 - Conduct an on-water controlled flow assessment to evaluate the suitability for whitewater boating opportunities and to assess the type of experience flows provide for the downstream reach.

Study Results

- Information collected from the Phase 1, 2 and 3 assessments will be summarized in the Whitewater Boating Flow and Access Study Report.



Aesthetics Flow Assessment Methodology

Phase 1 – Characterization of Aesthetic Features

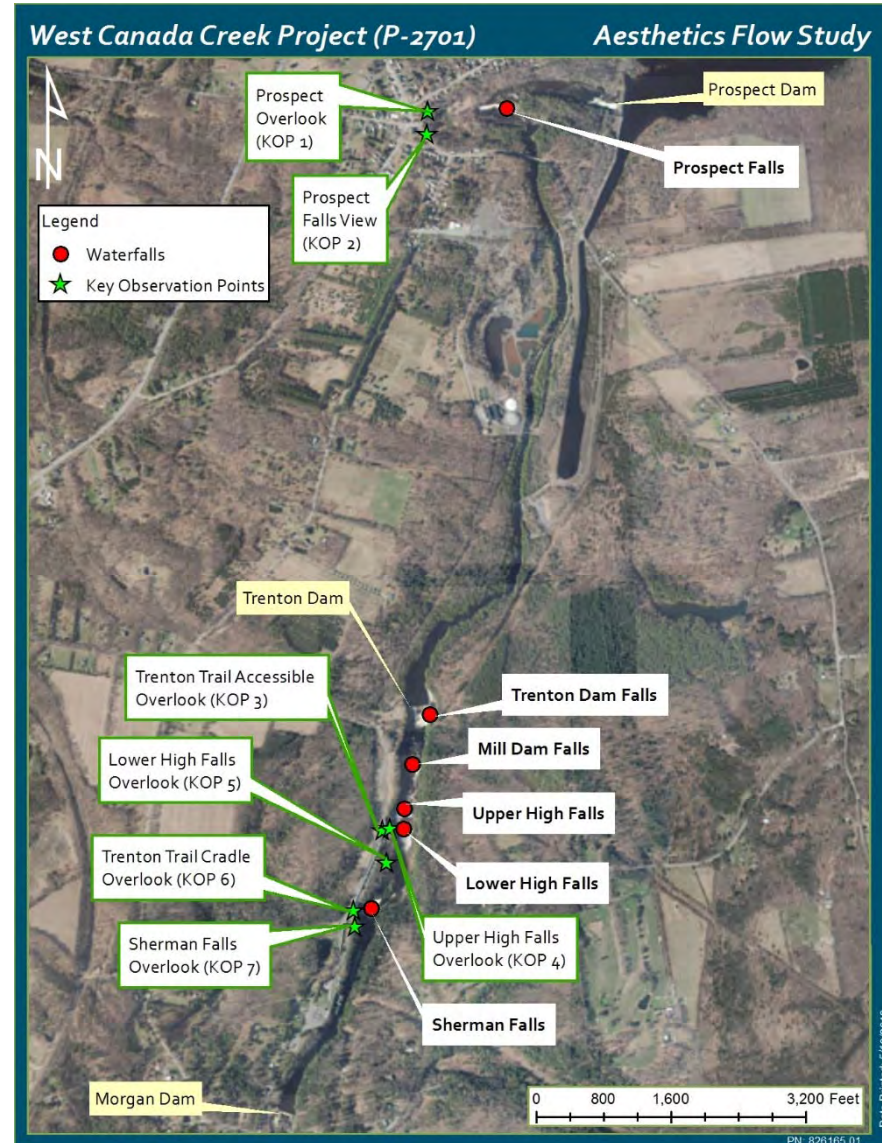
Approach:

- Review and characterize the timing and flow ranges of historic flow exceedance events within the past 5 years to extent information is available.
- Document and assess the KOPs (photographic and video) locations for existing aesthetic characteristics during both leaf-off and leaf-on periods.
- Identify stakeholders to form a Focus Group for the Aesthetic Flow Assessment release evaluation (to include representatives, as interested, from NYSDEC (2 representatives), USFWS, AW, NYSFWMG and Town of Trenton).
- Consult with Focus Group to confirm representative KOP locations and range of controlled flows for assessment during the Phase 2 efforts.
- As stated in the RSP, Erie proposes the targeted aesthetic flow assessment releases of
 - Prospect bypass reach - 100 and 200 cfs.
 - Trenton bypass reach - 250 and 500 cfs.
- Develop an evaluation form to include questions pertaining to the evaluation of the aesthetic conditions under each of the targeted flow ranges.

Aesthetics Flow Assessment Methodology

Key Observation Points (KOPs)

- The KOPs include key viewing locations of the falls within the bypass reaches of the Project.
- A total of 7 KOPs were identified:
 - KOP 1 – Prospect Overlook
 - KOP 2 - Prospect Falls View
 - KOP 3 - Trenton Trail Accessible Overlook
 - KOP 4 - Upper High Falls Overlook
 - KOP 5 - Lower High Falls Overlook
 - KOP 6 - Trenton Trail Cradle Overlook
 - KOP 7 - Sherman Falls Overlook
- KOPs 1 and 2 include viewing locations of Prospect falls.
- KOPs 3-7 provide viewing locations of falls within the Trenton bypass reach.



Aesthetics Flow Assessment Methodology

Phase 2 – Documentation and Assessment of Controlled Flow Releases

Approach:

- Schedule and conduct on-site controlled flow aesthetic assessment of the Project bypass reaches with Focus Group.
- Documentation of aesthetic conditions at selected KOP locations during controlled flow conditions, to include both photographic and video documentation.
- Prior to the field evaluation, the Focus Group will attend an orientation meeting that will provide instructions for the assessment form and present information on the selected KOPs and controlled releases.
- During the field assessment, the Focus Group will:
 - Assess and complete an assessment form at the selected KOP locations of the bypass reaches during pre-release conditions, and during each of the identified controlled flow releases.
 - Participate in a post-assessment meeting to discuss observations and conclusions.

Study Results

- Results of the KOP documentation and controlled flow assessment will be summarized in the Aesthetics Flow Assessment Study report.

West Canada Creek Project Study Report and Meeting Schedule

Responsible Party	Pre-Filing Milestone	Date
FERC	Issue Director's Study Plan Determination	3/7/2019
Erie	First Study Season	Spring- Fall 2019
Erie	File Initial Study Report	1/10/2020
All Stakeholders	Initial Study Report Meeting	1/25/2020
Erie	File Initial Study Report Meeting Summary	2/9/2020
Erie	Second Study Season	Spring- Fall 2020
Erie	File Preliminary Licensing Proposal (or Draft License Application)	10/1//20
All Stakeholders	File Comments on Preliminary Licensing Proposal (or Draft License Application)	12/30/2020
Erie	File Updated Study Report	1/10/2021
All Stakeholders	Updated Study Report Meeting	1/25/2021
Erie	File Updated Study Report Meeting Summary	2/9/2021
Erie	File Final License Application	2/28/2021
Erie	Issue Public Notice of Final License Application Filing	3/15/2021



West Canada Creek Project Relicensing Website

<http://www.westcanadacreekproject.com>

Steven P. Murphy

Director, U.S. Licensing

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Attachment 1

West Canada Creek Project Trenton Trail Days Recreation Visitor Survey

Survey Number: _____ Interviewer: _____ Date _____ Time: _____ am/pm

Weather: ☐ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Light Rain ☐ Heavy Rain Temperature: _____

Site Location: _____ Declined Survey: _____ Reason: _____

Introduction: Good Morning/Afternoon. My name is _____ and I am conducting a recreation use survey of visitors to the Trenton Falls Day at the West Canada Creek Project for Erie Boulevard Hydropower. The information collected will assist Erie in understanding more about recreation use in the area. Responses from the survey will remain anonymous. Would you mind responding to the survey?

1. How many people are in your group today, including yourself? _____ people
2. Which of the following best describes your group?
 - ☐ Alone ☐ Family ☐ Organized Group
 - ☐ Other (*Please specify*): _____
3. How many vehicles did your group use to come here on this trip? _____ vehicles
4. What distance do you travel to the site? (*Please estimate*) _____ miles
5. Have you been to the Trenton Falls event before?
 - ☐ Yes ☐ No (*Skip to Q6*)
 - If yes, approximately, how many times have you come to the event? _____
6. Are you satisfied with the number of days the Trenton Trails are open each year?
 - ☐ Yes (*Skip to Q7*) ☐ No
 - If no, how often would you like the trails to be open? _____
7. How did you hear about the event? (*Select all that apply*)
 - ☐ Website ☐ Word of Mouth ☐ Flyer
 - ☐ Newspaper ☐ Other (*Please specify*): _____
8. Please indicate which of the following activities you participated in while at the Trenton Falls trail? (*Select all that apply*)
 - ☐ Scenic Viewing ☐ Hiking/Walking ☐ Nature Study
 - ☐ Picnicking ☐ Viewing Historic Sites ☐ Photography
 - ☐ Other (*Please specify*): _____
9. What is the primary recreation activity you participated in today? (*Please provide only one answer*) _____
10. How long do you plan to visit the site today? _____ hours
11. Which trails did you hike? (*Select all that apply*) (*Show map*)
 - ☐ Primary (Falls Trails) ☐ Secondary ☐ Both Trails ☐ Did not Hike

12. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness at this event today? (*Circle one number*)

1	2	3	4	5
Light	Somewhat Light	Moderate	Somewhat Heavy	Heavy

13. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of the Trenton Falls trails today? (*Circle one number*)

1	2	3	4	5
Poor	Fair	Satisfactory	Good	Excellent

14. On a scale from 1 to 5 where 1 is very unsafe and 5 is very safe, how would you rate how safe you felt at the site today? (*Circle one number*)

1	2	3	4	5
Very Unsafe	Unsafe	Neutral	Safe	Very Safe

If you felt unsafe, please explain why _____

15. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall scenic views of the Trenton Falls trail today? (*Circle one number*)

1	2	3	4	5
Poor	Fair	Satisfactory	Good	Excellent

16. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the scenic views of the following viewing locations along the Trenton Falls trail today? (*Circle one number for each site*)

(a) Trenton Trail Accessible Overlook (KOP 3)	Did not view	1	2	3	4	5
(b) Upper High Falls Overlook (KOP 4)	Did not view	1	2	3	4	5
(c) Lower High Falls Overlook (KOP 5)	Did not view	1	2	3	4	5
(d) Trenton Trail Cradle Overlook (KOP 6)	Did not view	1	2	3	4	5
(e) Sherman Falls Overlook (KOP 7)	Did not view	1	2	3	4	5

17. In general, would you prefer flows that are higher, lower, about same as today, or does not matter? (*Circle one*)

☐ Higher ☐ Lower ☐ Same ☐ Does not matter

18. On a scale from 1 to 5, with 1 being very dissatisfied and 5 very satisfied, overall how satisfied are you with the available number and type of recreation facilities? (*Circle one number*)

1	2	3	4	5
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied

If dissatisfied, please explain why _____

19. Are there any recreation facility or access enhancements that you would recommend for the West Canada Creek Project?

☐ Yes ☐ No (*Skip to Q20*)

If yes, what do you recommend? _____

20. Does anyone in your group have a disability? ☐ Yes ☐ No (*Skip to Q21*)

If yes, are there sufficiently accessible facilities at this site for your activity?

☐ Yes ☐ No If no, please explain _____

21. Do you visit other recreation sites along West Canada Creek?

☐ Yes ☐ No (*Skip to Q24*)

If yes, what other sites do you visit? _____

22. What recreation activities do you participate in at these sites along West Canada Creek?

(*Select all that apply*)

- | | | |
|---|--|---|
| <input type="checkbox"/> Boating (motor) | <input type="checkbox"/> Bank Fishing | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Canoeing | <input type="checkbox"/> Boat Fishing | <input type="checkbox"/> Hunting |
| <input type="checkbox"/> Kayaking | <input type="checkbox"/> Wade Fishing | <input type="checkbox"/> Scenic Viewing |
| <input type="checkbox"/> Tubing | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Photography |
| <input type="checkbox"/> Whitewater Boating | <input type="checkbox"/> Nature Study | <input type="checkbox"/> Visiting Historic Site |
| <input type="checkbox"/> Hiking/Walking | <input type="checkbox"/> Other (<i>Please specify</i>) _____ | |

23. Of the activities listed above, what is the **primary** recreation activity you participate in along West Canada Creek? (*Select one*) _____

24. What is your home zip code? _____

25. Gender of Respondent: ☐ Male ☐ Female ☐ Prefer not to answer

26. Age of Respondent: _____ years ☐ Prefer not to answer

27. Do you have any additional comments? _____

THANK YOU FOR YOUR TIME TODAY

Attachment 2

West Canada Creek Project Recreation Visitor Online Survey

Thank you for your participation in the online survey for the West Canada Creek Hydroelectric Project 2019 Recreation Use, Needs and Access Study. This survey is being conducted as part of the Project's relicensing process to gather information pertaining to existing recreation use and access at the Project and downstream along the West Canada Creek, as well as visitor perceptions regarding recreation access conditions and needs. Please complete the following questions via the Survey Monkey form. Your participation is voluntary and the responses from the survey will remain anonymous. Please only provide one completed survey per individual. Additional information pertaining to the Project's relicensing process can be found at: <http://www.westcanadacreekproject.com>. Thank you again for your participation.

1. Today's Date: _____
2. What is your home zip code? _____
3. What is your gender? ☐ Male ☐ Female ☐ Prefer not to answer
4. What is your age? _____ years ☐ Prefer not to answer
5. Which of the following areas do you visit? (*Select all that apply*)

<input type="checkbox"/> Prospect Impoundment	<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Skip to Q22</i>)
<input type="checkbox"/> Trenton Trail	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> West Canada Creek downstream of Trenton	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> No Response		

THIS SECTION (Q 6-21) ASKS ABOUT YOUR EXPERIENCES AT THE PROSPECT IMPOUNDMENT AND PROSPECT BOAT LAUNCH ACCESS SITE

6. What is the primary site you use to access the **Prospect impoundment**?

<input type="checkbox"/> Prospect Boat Launch	<input type="checkbox"/> Private shoreline (i.e., adjacent homeowner)
<input type="checkbox"/> Informal Access Area	<input type="checkbox"/> Other (<i>Please specify location</i>) _____
<input type="checkbox"/> No Response	
7. What recreation activities do you participate in at the **Prospect impoundment**? (*Select all that apply*)

<input type="checkbox"/> Boating (motor)	<input type="checkbox"/> Bank Fishing	<input type="checkbox"/> Camping
<input type="checkbox"/> Canoeing	<input type="checkbox"/> Boat Fishing	<input type="checkbox"/> Hunting
<input type="checkbox"/> Kayaking	<input type="checkbox"/> Wade Fishing	<input type="checkbox"/> Scenic Viewing
<input type="checkbox"/> Tubing	<input type="checkbox"/> Picnicking	<input type="checkbox"/> Photography
<input type="checkbox"/> Hiking/Walking	<input type="checkbox"/> Nature Study	<input type="checkbox"/> No Response
<input type="checkbox"/> Other (<i>please specify</i>): _____		
8. Of the activities listed above, what is the **primary** recreation activity you participate in while visiting **Prospect impoundment**? (*Select one*) _____
9. During what month(s) do you typically participate in recreation activities on the Prospect impoundment? (*Select all that apply*)

<input type="checkbox"/> January	<input type="checkbox"/> April	<input type="checkbox"/> July	<input type="checkbox"/> October
<input type="checkbox"/> February	<input type="checkbox"/> May	<input type="checkbox"/> August	<input type="checkbox"/> November
<input type="checkbox"/> March	<input type="checkbox"/> June	<input type="checkbox"/> September	<input type="checkbox"/> December
<input type="checkbox"/> No Response			

10. Please estimate how many times you visit the **Prospect impoundment** per year _____
11. How long do you typically visit the **Prospect impoundment** in hours? _____
12. How many people are typically in your group when you visit **Prospect impoundment**, including yourself? _____
13. How many vehicles do you typically use to visit the **Prospect impoundment**? _____
14. How many miles do you typically travel to the **Prospect impoundment**? (*Please estimate*) _____
15. On a scale from 1 to 5, with 1 being very dissatisfied and 5 being very satisfied, how satisfied are you with the water level in the **Prospect impoundment**? (*Select one number*)

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why _____

16. If you use a boat (all types of watercraft) on the **Prospect impoundment**, have you experienced any difficulty launching or retrieving your boat?

☐ Yes ☐ No ☐ No Response

If yes, please explain: _____

17. On a scale from 1 to 5, with 1 being light and 5 being heavy, what is your general perception of the amount of use occurring at the **Prospect boat launch during a typical visit**? (*Select one number*)

1	2	3	4	5	N/A
Light	Somewhat Light	Neutral	Somewhat Heavy	Heavy	No Response

18. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of the **Prospect boat launch**? (*Select one number*)

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why: _____

19. Are there any additional facilities needed at the **Prospect boat launch**?

☐ Yes ☐ No ☐ No Response

If yes, what do you recommend? _____

20. Does anyone in your group have a disability?

☐ Yes ☐ No (*Skip to Q22*) ☐ No Response

21. If yes, are there sufficiently accessible facilities at the **Prospect boat launch** for your activity?

☐ Yes ☐ No If no, please explain _____
☐ No Response

22. On a scale from 1 to 5, where 1 is very unsafe and 5 is very safe, how would you rate how safe you feel at the **Prospect boat launch** during a typical visit? (*Select one number*)

1	2	3	4	5	N/A
Very Unsafe	Unsafe	Neutral	Safe	Very Safe	No Response

If you felt unsafe, please explain why _____

THIS SECTION (Q 23-34) ASKS ABOUT YOUR EXPERIENCES IN THE REACHES OF WEST CANADA CREEK FROM TRENTON STATION DOWNSTREAM TO HERKIMER DAM. IF YOU DO NOT RECREATE AT WEST CANADA CREEK DOWNSTREAM OF TRENTON DAM, PLEASE SKIP TO QUESTION 41.

23. Which reaches of West Canada Creek do you typically visit? (*Please see the attached figure for site locations and select all that apply*)

- ☐ R1-Trenton Falls to Cincinnati Creek
 ☐ R-5 Newport Dam to Middleville Bridge
☐ R2-Cincinnati Creek to Comstock Bridge
 ☐ R-6 Middleville Bridge to Kast Bridge
☐ R3-Comstock Bridge to Upper Poland Bridge
 ☐ R-7 Kast Bridge to Mouth of West Canada Creek
☐ R-4 Upper Poland Bridge to Newport Dam
☐ No Response

Which reach do you visit most often? (*Select one*) _____

24. Do you schedule your recreation trips on the West Canada Creek based on power generation flows?

- ☐ Yes
 ☐ No
 ☐ No Response

25. Do you typically access flow information prior to visiting West Canada Creek?

- ☐ Yes
 ☐ No
 ☐ No Response

26. If yes, which of the following sources do you typically review? (*Select all that apply*)

- ☐ Safewaters website (<https://www.safewaters.com/river-system/17>)
☐ Safewaters phone line (1-844-430-FLOW (3569))
☐ USGS gage (please specify gage location) _____
☐ Other (if other, please specify) _____
☐ No Response

27. Overall, on a scale of 1 to 5, with 1 being very dissatisfied and 5 being very satisfied, how satisfied are you with the water level in West Canada Creek during your visits? (*Select one number*)

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why _____

28. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the effectiveness of the flow warning system (siren and light) immediately downstream of Trenton Station? (*Select one number*)

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why _____

29. During what month(s) do you typically participate in recreation activities on West Canada Creek? (*Select all that apply*)

- ☐ January ☐ April ☐ July ☐ October
☐ February ☐ May ☐ August ☐ November
☐ March ☐ June ☐ September ☐ December
☐ No Response

30. What recreation activities do you participate in at these sites along West Canada Creek? (*Select all that apply*)

- ☐ Boating (motor) ☐ Bank Fishing ☐ Camping
☐ Canoeing ☐ Fly/Wade Fishing ☐ Scenic Viewing
☐ Tubing ☐ Picnicking ☐ Photography
☐ Whitewater Boating ☐ Nature Study ☐ Visiting Historic Site
☐ Hiking/Walking ☐ Other (*Please specify*): _____
☐ No Response

31. Of the activities listed above, what is the **primary** recreation activity you participate in along West Canada Creek? (*Please select only one*) _____

32. If you use a boat (all types of watercraft) on West Canada Creek, have you experienced any difficulty launching or retrieving your boat?

- ☐ Yes ☐ No ☐ No Response

If yes, please explain _____

33. Which site(s) do you typically use to access West Canada Creek?

(*Please see Figure for site locations and select all that apply*)

- ☐ DS Rec 1 - Dover Rd Bridge Informal ☐ DS Rec 6 - NYSDEC Rt 28 Poland
☐ DS Rec 2 - Rt 28 Informal Pull-off ☐ DS Rec 7 - Rt 28 Overlook S. Poland
☐ DS Rec 3 - NYSDEC Partridge Hill Rd ☐ DS Rec 8 - Rt 28 Overlook S. Newport
☐ DS Rec 4 - NYSDEC Rt 28 Beecher Rd ☐ DS Rec 9 - NYSDEC Rt 28 N. Middleville
☐ DS Rec 5 - Rt 28 Overlook N. Poland ☐ DS Rec 10 - Rt 28 Kast Bridge Area
☐ Other (*Please specify location*) _____
☐ No Response

34. Which site is the **primary** site you use most often? (*Please select only one*) _____

THIS SECTION (Q 35-40) ASKS ABOUT YOUR EXPERIENCE AT THE PRIMARY SITE YOU VISIT MOST FREQUENTLY (YOUR RESPONSE TO QUESTION 34)

35. Please estimate how many times you visit the **primary** site per year ____
36. How long do you typically visit the **primary** site in hours? ____
37. How many people do you typically visit the **primary** site with, including yourself? ____
38. How many vehicles do you typically use to visit the **primary** site? ____
39. How many miles do you typically travel to the **primary** site? *(Please estimate)* ____
40. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of the **primary** site? *(Select one number)*

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why: _____

THIS SECTION (Q 41-49) ASKS ABOUT YOUR EXPERIENCES FISHING ON PROSPECT IMPOUNDMENT OR WEST CANADA CREEK

41. Do you participate in fishing activities on Prospect Impoundment/West Canada Creek?
- ☐ Yes - Prospect Impoundment ☐ Yes - West Canada Creek
- ☐ Do not fish at either location *(Skip to Q50)*
- ☐ No Response
42. What is your preferred angling technique? *(Select all that apply)*
- ☐ Bait Fishing ☐ Fly Fishing ☐ Artificial Lures
- ☐ Bank Fishing ☐ Boat Fishing ☐ Wade fishing
- ☐ No Response
43. On a scale from 1 to 5, with 1 being very dissatisfied and 5 very satisfied, what is your level of satisfaction with your typical fishing experience? *(Select one number)*

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Satisfied	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why: _____

44. For an individual fishing trip, how many hours do you typically spend fishing? ____
45. For a typical fishing trip, how many fish do you typically catch per hour? ____

46. Please specify the species you are typically targeting for fishing (*Select all that apply*)

- | | |
|--|---|
| <input type="checkbox"/> Brown trout | <input type="checkbox"/> Largemouth bass |
| <input type="checkbox"/> Brook trout | <input type="checkbox"/> Smallmouth bass |
| <input type="checkbox"/> Rainbow trout | <input type="checkbox"/> Chain pickerel |
| <input type="checkbox"/> Yellow perch | <input type="checkbox"/> Other (<i>Please specify</i>)_____ |
| <input type="checkbox"/> No Response | |

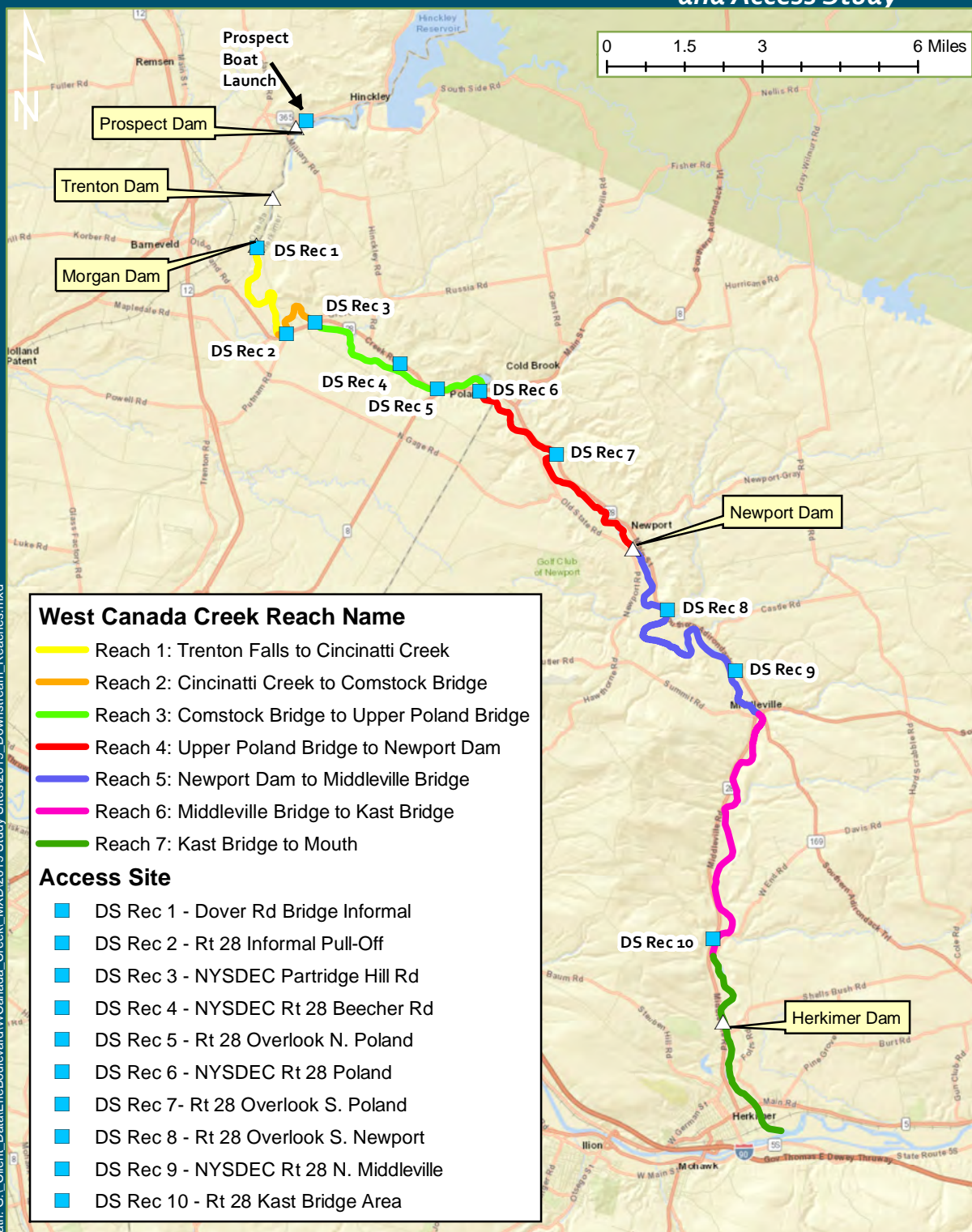
47. Please specify the primary species you typically target (*Select one*) _____

48. Please specify the number of fish you **harvest** on a typical fishing trip _____

49. Please specify the number of fish you **release** on a typical fishing trip _____

50. Do you have any additional comments? _____

THANK YOU FOR YOUR TIME TODAY



ATTACHMENT B

UPDATED ONLINE SURVEY FORM

Thank you for your participation in the online survey for the West Canada Creek Hydroelectric Project 2019 Recreation Use, Needs and Access Study. This survey is being conducted as part of the Project's relicensing process to gather information pertaining to existing recreation use and access at the Project and downstream along the West Canada Creek, as well as visitor perceptions regarding recreation access conditions and needs. Please complete the following questions via the Survey Monkey form. Your participation is voluntary and the responses from the survey will remain anonymous. Please only provide one completed survey per individual. Additional information pertaining to the Project's relicensing process can be found at: <http://www.westcanadacreekproject.com>. Thank you again for your participation.

1. Today's Date: _____
2. What is your home zip code? _____
3. What is your gender? ☐ Male ☐ Female ☐ Prefer not to answer
4. What is your age? _____ years ☐ Prefer not to answer
5. Which of the following areas do you visit? (*Select all that apply*)

<input type="checkbox"/> Prospect Impoundment	<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Skip to Q23</i>)
<input type="checkbox"/> Trenton Trail	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> West Canada Creek downstream of Trenton	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> No Response		

THIS SECTION (Q 6-22) ASKS ABOUT YOUR EXPERIENCES AT THE PROSPECT IMPOUNDMENT AND PROSPECT BOAT LAUNCH ACCESS SITE

6. What is the primary site you use to access the **Prospect impoundment**?

<input type="checkbox"/> Prospect Boat Launch	<input type="checkbox"/> Private shoreline (i.e., adjacent homeowner)
<input type="checkbox"/> Informal Access Area	<input type="checkbox"/> Other (<i>Please specify location</i>) _____
<input type="checkbox"/> No Response	
7. What recreation activities do you participate in at the **Prospect impoundment**? (*Select all that apply*)

<input type="checkbox"/> Boating (motor)	<input type="checkbox"/> Bank Fishing	<input type="checkbox"/> Camping
<input type="checkbox"/> Canoeing	<input type="checkbox"/> Boat Fishing	<input type="checkbox"/> Hunting
<input type="checkbox"/> Kayaking	<input type="checkbox"/> Wade Fishing	<input type="checkbox"/> Scenic Viewing
<input type="checkbox"/> Tubing	<input type="checkbox"/> Picnicking	<input type="checkbox"/> Photography
<input type="checkbox"/> Hiking/Walking	<input type="checkbox"/> Nature Study	<input type="checkbox"/> No Response
<input type="checkbox"/> Other (<i>please specify</i>): _____		
8. Of the activities listed above, what is the **primary** recreation activity you participate in while visiting **Prospect impoundment**? (*Select one*) _____
9. During what month(s) do you typically participate in recreation activities on the Prospect impoundment? (*Select all that apply*)

<input type="checkbox"/> January	<input type="checkbox"/> April	<input type="checkbox"/> July	<input type="checkbox"/> October
<input type="checkbox"/> February	<input type="checkbox"/> May	<input type="checkbox"/> August	<input type="checkbox"/> November
<input type="checkbox"/> March	<input type="checkbox"/> June	<input type="checkbox"/> September	<input type="checkbox"/> December
<input type="checkbox"/> No Response			

10. Please estimate how many times you visit the **Prospect impoundment** per year _____
11. How long do you typically visit the **Prospect impoundment** in hours? _____
12. How many people are typically in your group when you visit **Prospect impoundment**, including yourself? _____
13. How many vehicles do you typically use to visit the **Prospect impoundment**? _____
14. How many miles do you typically travel to the **Prospect impoundment**? (*Please estimate*) _____
15. On a scale from 1 to 5, with 1 being very dissatisfied and 5 being very satisfied, how satisfied are you with the water level in the **Prospect impoundment**? (*Select one number*)

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why _____

16. If you use a boat (all types of watercraft) on the **Prospect impoundment**, have you experienced any difficulty launching or retrieving your boat?

☐ Yes ☐ No ☐ No Response

If yes, please explain: _____

17. On a scale from 1 to 5, with 1 being light and 5 being heavy, what is your general perception of the amount of use occurring at the **Prospect boat launch during a typical visit**? (*Select one number*)

1	2	3	4	5	N/A
Light	Somewhat Light	Neutral	Somewhat Heavy	Heavy	No Response

18. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of the **Prospect boat launch**? (*Select one number*)

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why: _____

19. Are there any additional facilities needed at the **Prospect boat launch**?

☐ Yes ☐ No ☐ No Response

If yes, what do you recommend? _____

20. Does anyone in your group require reasonable accommodations as defined by the Americans with Disability Act (ADA)?

☐ Yes ☐ No (*Skip to Q22*) ☐ No Response

21. If yes, are there sufficiently accessible facilities at the **Prospect boat launch** for your activity?

☐ Yes ☐ No If no, please explain _____

☐ No Response

22. On a scale from 1 to 5, where 1 is very unsafe and 5 is very safe, how would you rate how safe you feel at the **Prospect boat launch** during a typical visit? (*Select one number*)

1	2	3	4	5	N/A
Very Unsafe	Unsafe	Neutral	Safe	Very Safe	No Response

If you felt unsafe, please explain why _____

THIS SECTION (Q 23-44) ASKS ABOUT YOUR EXPERIENCES IN THE REACHES OF WEST CANADA CREEK FROM TRENTON STATION DOWNSTREAM TO HERKIMER DAM. IF YOU DO NOT RECREATE AT WEST CANADA CREEK DOWNSTREAM OF TRENTON DAM, PLEASE SKIP TO QUESTION 45.

23. Which reaches of West Canada Creek do you typically visit? (*Please see the attached figure for site locations and select all that apply*)

- ☐ R1-Trenton Falls to Cincinnati Creek
 ☐ R-5 Newport Dam to Middleville Bridge
☐ R2-Cincinnati Creek to Comstock Bridge
 ☐ R-6 Middleville Bridge to Kast Bridge
☐ R3-Comstock Bridge to Upper Poland Bridge
 ☐ R-7 Kast Bridge to Mouth of West Canada Creek
☐ R-4 Upper Poland Bridge to Newport Dam
☐ No Response

Which reach do you visit most often? (*Select one*) _____

24. Do you schedule your recreation trips on the West Canada Creek based on power generation flows?

- ☐ Yes
 ☐ No
 ☐ No Response

25. Do you typically access flow information prior to visiting West Canada Creek?

- ☐ Yes
 ☐ No
 ☐ No Response

26. If yes, which of the following sources do you typically review? (*Select all that apply*)

- ☐ Safewaters website (<https://www.safewaters.com/river-system/17>)
☐ Safewaters phone line (1-844-430-FLOW (3569))
☐ USGS gage (please specify gage location) _____
☐ Other (if other, please specify) _____
☐ No Response

27. Overall, on a scale of 1 to 5, with 1 being very dissatisfied and 5 being very satisfied, how satisfied are you with the water level in West Canada Creek during your visits? (*Select one number*)

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why _____

28. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the effectiveness of the flow warning system (siren and light) immediately downstream of Trenton Station? (*Select one number*)

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why _____

29. Have fluctuations in water levels ever affected your ability to participate in recreation activities on West Canada Creek?

☐ Yes ☐ No (Skip to Question 33) ☐ No Response

30. If you answered Yes to Question 29, what recreation activity was affected?

- ☐ Boating (motor) ☐ Bank Fishing
☐ Canoeing ☐ Fly/Wade Fishing
☐ Tubing ☐ Whitewater Boating
☐ Other (Please specify): _____
☐ No Response

31. If you answered Yes to Question 29, please select how the fluctuations in water level affected your activity. (*Select all that apply*)

- ☐ Decided not to participate in activity
☐ Adjusted timing of visit to participate when flows were suitable for recreation activity
☐ Participated in a different activity on West Canada Creek
☐ Moved to a different location on West Canada Creek
☐ Avoided a specific area on West Canada Creek
☐ Other, please explain _____
☐ No Response

32. How frequently do water level fluctuations affect your ability to participate in recreation activities on West Canada Creek in a typical year?

- ☐ 0 (water level fluctuations have no affect)
☐ 1-2 times per year
☐ 3-4 times per year
☐ 5-9 times per year
☐ 10-20 times per year
☐ >20 times per year
☐ Other, please explain _____
☐ No Response

33. During what month(s) do you typically participate in recreation activities on West Canada Creek?
(Select all that apply)

- | | | | |
|--------------------------------------|--------------------------------|------------------------------------|-----------------------------------|
| <input type="checkbox"/> January | <input type="checkbox"/> April | <input type="checkbox"/> July | <input type="checkbox"/> October |
| <input type="checkbox"/> February | <input type="checkbox"/> May | <input type="checkbox"/> August | <input type="checkbox"/> November |
| <input type="checkbox"/> March | <input type="checkbox"/> June | <input type="checkbox"/> September | <input type="checkbox"/> December |
| <input type="checkbox"/> No Response | | | |

34. What recreation activities do you participate in at these sites along West Canada Creek?
(Select all that apply)

- | | | |
|---|--|---|
| <input type="checkbox"/> Boating (motor) | <input type="checkbox"/> Bank Fishing | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Canoeing | <input type="checkbox"/> Fly/Wade Fishing | <input type="checkbox"/> Scenic Viewing |
| <input type="checkbox"/> Tubing | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Photography |
| <input type="checkbox"/> Whitewater Boating | <input type="checkbox"/> Nature Study | <input type="checkbox"/> Visiting Historic Site |
| <input type="checkbox"/> Hiking/Walking | <input type="checkbox"/> Other (Please specify): _____ | |
| <input type="checkbox"/> No Response | | |

35. Of the activities listed above, what is the **primary** recreation activity you participate in along West Canada Creek? (Please select only one) _____

36. If you use a boat (all types of watercraft) on West Canada Creek, have you experienced any difficulty launching or retrieving your boat?

- ☐ Yes ☐ No ☐ No Response

If yes, please explain _____

37. Which site(s) do you typically use to access West Canada Creek?

(Please see Figure for site locations and select all that apply)

- | | |
|--|---|
| <input type="checkbox"/> DS Rec 1 - Dover Rd Bridge Informal | <input type="checkbox"/> DS Rec 6 - NYSDEC Rt 28 Poland |
| <input type="checkbox"/> DS Rec 2 - Rt 28 Informal Pull-off | <input type="checkbox"/> DS Rec 7 - Rt 28 Overlook S. Poland |
| <input type="checkbox"/> DS Rec 3 - NYSDEC Partridge Hill Rd | <input type="checkbox"/> DS Rec 8 - Rt 28 Overlook S. Newport |
| <input type="checkbox"/> DS Rec 4 - NYSDEC Rt 28 Beecher Rd | <input type="checkbox"/> DS Rec 9 - NYSDEC Rt 28 N. Middleville |
| <input type="checkbox"/> DS Rec 5 - Rt 28 Overlook N. Poland | <input type="checkbox"/> DS Rec 10 - Rt 28 Kast Bridge Area |
| <input type="checkbox"/> Other (Please specify location) _____ | |
| <input type="checkbox"/> No Response | |

38. Which site is the **primary** site you use most often? (Please select only one) _____

THIS SECTION (Q 39-44) ASKS ABOUT YOUR EXPERIENCE AT THE PRIMARY SITE YOU VISIT MOST FREQUENTLY (YOUR RESPONSE TO QUESTION 38)

39. Please estimate how many times you visit the **primary** site per year ____

40. How long do you typically visit the **primary** site in hours? ____

41. How many people do you typically visit the **primary** site with, including yourself? ____

42. How many vehicles do you typically use to visit the **primary** site? _____
43. How many miles do you typically travel to the **primary** site? (*Please estimate*) _____
44. On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of the **primary** site? (*Select one number*)

1	2	3	4	5	N/A
Poor	Fair	Satisfactory	Good	Excellent	No Response

If less than satisfactory, please explain why: _____

THIS SECTION (Q 45-53) ASKS ABOUT YOUR EXPERIENCES FISHING ON PROSPECT IMPOUNDMENT OR WEST CANADA CREEK

45. Do you participate in fishing activities on Prospect Impoundment/West Canada Creek?
- ☐ Yes - Prospect Impoundment ☐ Yes - West Canada Creek
- ☐ Do not fish at either location (*Skip to Q54*)
- ☐ No Response
46. What is your preferred angling technique? (*Select all that apply*)
- ☐ Bait Fishing ☐ Fly Fishing ☐ Artificial Lures
- ☐ Bank Fishing ☐ Boat Fishing ☐ Wade fishing
- ☐ No Response
47. On a scale from 1 to 5, with 1 being very dissatisfied and 5 very satisfied, what is your level of satisfaction with your typical fishing experience? (*Select one number*)

1	2	3	4	5	N/A
Very Dissatisfied	Dissatisfied	Satisfied	Satisfied	Very Satisfied	No Response

If dissatisfied, please explain why: _____

48. For an individual fishing trip, how many hours do you typically spend fishing? _____
49. For a typical fishing trip, how many fish do you typically catch per hour? _____
50. Please specify the species you are typically targeting for fishing (*Select all that apply*)
- ☐ Brown trout ☐ Largemouth bass
- ☐ Brook trout ☐ Smallmouth bass
- ☐ Rainbow trout ☐ Chain pickerel
- ☐ Yellow perch ☐ Other (*Please specify*) _____
- ☐ No Response
51. Please specify the primary species you typically target (*Select one*) _____

52. Please specify the number of fish you **harvest** on a typical fishing trip _____

53. Please specify the number of fish you **release** on a typical fishing trip _____

54. Do you have any additional comments? _____

THANK YOU FOR YOUR TIME TODAY

ATTACHMENT C

UPDATED ONLINE SURVEY NOTIFICATION FLYER

West Canada Creek Project (P-2701) Recreation Visitor Online Survey

Erie Boulevard Hydropower, L.P., a Brookfield Renewable company, is relicensing the West Canada Creek Hydroelectric Project. The Project has two developments, Prospect and Trenton.

As part of the relicensing, Erie is conducting a Recreation Use, Needs and Access Study in 2019.

The study includes an online survey to gather information about existing recreation use, access and needs at the Prospect Pond and downstream along the West Canada Creek.

Participation is voluntary and responses will remain anonymous. Please only provide one completed survey per individual.

The Online Survey can be accessed at:

<https://www.surveymonkey.com/r/WCCrecsurvey>

The on-line survey will be available from Memorial Day weekend (start 5/24/2019) through Labor Day weekend (end 9/2/2019).

Thank you in advance for your participation!

