Registration Pursuant To The

Environmental Assessment Regulations 2003

under the

Environmental Protection Act

For The Proposed

Installation of Poles within 200 meters of Scheduled Waters for

Distribution Feeder Refurbishments and Upgrades

March 2nd, 2021

EXECUTIVE SUMMARY

Newfoundland Power is proposing refurbishments and upgrades to sections of the GFS-06 Distribution Feeder between Grand Falls – Windsor and Badger, Newfoundland (the Project). Much of the distribution line has deteriorated or does not meet current standards to provide safe and reliable service to customers in the area.

The Project is divided into three sections based on the works required within each section. Section 1 consists of the construction of new distribution feeder line adjacent to the existing line, running parallel with the Trans-Canada Highway (TCH). Section 2 involves rerouting the distribution feeder line to join in with an existing distribution line around Red Cliff and the removal of the existing distribution feeder line, which is located within the Exploits River floodplain. Section 3 will involve the upgrading of equipment and hardware, along with replacement of poles or installation of mid-span poles as necessary. Much of the Project passes within the 200 m of buffer of the Exploits River or its tributaries, which is a scheduled salmon river under the *Fisheries Act*.

An assessment of the sources of pollution and environmental impacts from the Project on the environment was completed. With the implementation of various mitigation measures, the Project is not expected to have any significant impacts on key environmental features.

TABLE OF CONTENTS

page

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Newfoundland Power (the Proponent) proposes refurbishments and upgrades to sections of the GFS-06 Distribution Feeder in central Newfoundland, near Grand Falls – Windsor (the Project). The GFS-06 Distribution Feeder is in need of upgrading, as much of the line does not meet current Newfoundland Power standards to provide safe and reliable service to customers in the area.

The Project requires registration under Section 28 of the *Environmental Assessment Regulations, 2003*, as it passes within 200 m of a scheduled salmon river under the *Fisheries Act*.

1.1 Proponent Information

Newfoundland Power operates an integrated electricity generation, transmission, and distribution system throughout the island portion of Newfoundland and Labrador. As the primary distributor of electricity on the island, they operate 12,500 km of transmission and distribution lines on the island, providing service to over 269,000 customers.

Proponent and consultant contact information is provided in Table 1.1.

Table 1.1. Proponent Information

PROPONENT	
Name	Newfoundland Power Inc A Fortis Company
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Signature	
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PRINCIPAL PROPONENT CONTACT	
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ENVIRONMENTAL CONSULTANT CONTACT		
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1.2 The Undertaking

Name of the Undertaking: GFS-06 Distribution Feeder Refurbishment (the Project)

Location of the Undertaking: Grand Falls-Windsor, Newfoundland

1.3 Description of the Undertaking

The GFS-06 Distribution Feeder is one of five feeders originating from the Grand Falls 25kV Substation and is located along the Trans-Canada Highway (TCH) in the community of Grand Falls – Windsor (Drawing 1, Appendix A). It supplies electricity to approximately 1,900 customers in the communities of Grand Falls – Windsor, Badger and the Badger Lake area. Newfoundland Power is proposing replacing and upgrading sections of the distribution feeder between Grand Falls – Windsor and Badger. The purpose of this project is to prevent customer outages and equipment failures due to aging and deteriorated infrastructure.

GFS-06 was inspected in 2019 and a significant number of deficiencies on the TCH section were identified, including 2-piece insulators and deteriorated poles, crossarms and overhead conductors. Approximately 78% of this section has spans that exceed the company's current standard for maximum length for similar overhead lines. This causes increased pole loading and increased conductor sagging resulting in a public safety hazard. Excessive span lengths also contribute to pole or conductor failure during severe weather events. Additionally, many of the structures have vintage framing arrangements that do not comply with current Newfoundland Power standards. Most of the poles are original 1960s vintage.

The project is divided into three sections based on the works required within each section (Drawing 2, Appendix A). The scope of work consists of the following:

- Section 1: Construction of approximately 10 km of new distribution feeder line, including installation of new poles, anchors, and conductors. The new line will run adjacent to the existing distribution feeder line parallel with the TCH. Once the new line has been energized, the existing line, including conductors and poles, will be removed.

- Section 2: The distribution feeder line will be rerouted to join in with an existing distribution line around Red Cliff. This will require upgrading approximately 2.5 km of the existing distribution line from single phase distribution to three phase distribution, and installing 1 km of new three phase distribution feeder line. Once the rerouted portion of the line is energized, approximately 3.2 km of the existing distribution feeder line along the TCH will be retired and removed. This upgrade will allow for the removal of the existing feeder away from the Exploits River floodplain.
- Section 3: Replace conductors and complete brush cutting on 2 km of existing distribution feeder line next to Grand Falls Golf Course. Although the majority of the poles in this section do not require replacement, the proposed work will require the replacement of some poles which have been degraded or damaged, as well as the installation of additional mid-span poles in certain sections.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The Project will be completed on a 12 km stretch of the GFS-06 feeder in the community of Grand Falls - Windsor running parallel with the TCH. Sections 1 and 3 of the Project will be built adjacent to the existing distribution feeder line, where Section 2 will reroute into the existing distribution line along Red Cliff Road, in Red Cliff (Drawing 1, Appendix A).

2.2 Physical Features

2.2.1 Key Environment Features

Newfoundland is part of the Boreal Shield Ecozone which covers much of Canada. Boreal forests are characterized by stands of Black spruce (*Picea mariana*), White spruce (*Picea glauca*), Jack pine (*Pinus banksiana*), and Balsam fir (*Abies balsamea*) mixed with bogs and other wetlands. As a result of glacial scouring, areas of bare rocky outcrops support lichen and low shrubs. The Project is located within the Central Newfoundland Ecoregion of the Boreal Shield Ecozone. Its forests are dominated by closed, intermediate to low stands of Balsam fir and Black spruce on steep, moist, upland slopes. White birch (*Betula papyrifera*), aspen (*Populus* sp.), and Black spruce are typical of disturbed sites and exposed nutrient poor sites are characterized by Black spruce, ericaceous shrubs, such as Lambkill (*Kalmia angustifolia*), Labrador tea (*Rhododendron groenlandicum*), and lichens. Open stands of dwarfed Black spruce and Eastern larch (*Larix laricina*) with ericaceous shrubs are found on raised dome bogs.

The Project runs adjacent to the TCH, along the edge of mixedwood forest stands and the open clearing for the TCH. The terrain along the distribution feeder line is variable with rises and dips, in which small wetlands or watercourses occur. Due to the ongoing vegetation maintenance in this area, the vegetative habitat is disturbed and vegetation below the feeder consists primarily of shrubs and regenerating tree species.

The Project crosses several areas of wetland and riparian habitat. Wetland types in these areas consist primarily of shrub or treed swamps, and riparian marshes. Two large areas of notable wetland habitat occur along the distribution feeder line. One area of ponded water and wetland habitat is located approximately 350 m east of Thunder Brook. Additionally, a large area of riparian wetland habitat exists near Red Cliff where Wigwam Brook joins the Exploits River.

The Atlantic Canada Conservation Data Centre (ACCDC) has observation records for 7 fauna and 74 flora species of conservational interest (SOCI) within 5 km of the Project area (ACCDC, 2021). These species are listed in Table 2.1.

Table 2.1. Flora and Fauna Species of Conservational Interest within 5 km of the Project

Common Name	Scientific Name	SARA[1]	COSEWIC[2]	NL ESA[3]	General Status[4]	S-Rank[5]
Avifauna						
American Kestrel	*Falco sparverius*	Not Listed	Not Listed	Not Listed	Undetermined	S2B, SUM
Olive-Sided Flycatcher	*Contopus cooperi*	Threatened	Special Concern	Threatened	At risk	S3B, SUM
Peregrine Falcon	*Falco peregrinus subsp. anatum*	Special Concern	Special Concern	Vulnerable	Sensitive	S3M, S2N
Red Crossbill	*Loxia curvirostra*	Endangered	Threatened	Endangered	At Risk	S1S2
Invertebrates						
Cherry-faced Meadowhawk/ Common Skimmer	*Sympetrum internum*	Not Listed	Not Listed	Not Listed	Undetermined	S3
Crimson-ringed Whiteface/ Common Skimmer	*Leucorrhinia glacialis*	Not Listed	Not Listed	Not Listed	Undetermined	S3S4
Saffron-winged Meadowhawk	*Sympetrum costiferum*	Not Listed	Not Listed	Not Listed	Undetermined	S3
Flora						
A Sedge	*Carex houghtoniana*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Alpine Milk-Vetch	*Astragalus alpinus var. brunetianus*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
American Bugleweed	*Lycopus americanus*	Not Listed	Not Listed	Not Listed	Not Listed	S3
American Bur-Reed	*Sparganium americanum*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Apline Sweet-Vetch	*Hedysarum alpinum*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Autumn Willow	*Salix serissima*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Bayonet Rush	*Juncus militaris*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Berchtold's pondweed, slender pondweed	*Potamogeton pusillus subsp. tenuissimus*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Big-Fruit Hawthorn	*Crataegus macrosperma*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Black Holly	*Ilex verticillata*	Not Listed	Not Listed	Not Listed	Not Listed	S3

Common Name	Scientific Name	SARA[1]	COSEWIC[2]	NL ESA[3]	General Status[4]	S-Rank[5]
Bulb-Bearing Water-Hemlock	*Cicuta bulbifera*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Bulrush	*Scirpus hattorianus*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Bushy Naiad	*Najas flexilis*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Chestnut-Colored Sedge	*Carex castanea*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Clasping-Leaf Dogbane	*Apocynum cannabinum*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Cottongrass Bulrush	*Scirpus cyperinus*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Creeping Rush	*Juncus subtilis*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Crowded Sedge	*Carex adusta*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Drummond's Rockcress	*Boechera stricta*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Dry-Spike Sedge	*Carex foenea*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Early Anemone	*Anemone multifida var. multifida*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Farwell's Water-Milfoil	*Myriophyllum farwellii*	Not Listed	Not Listed	Not Listed	Not Listed	S1S2
Few-Flower Spikerush	*Eleocharis quinqueflora*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Field Sedge	*Carex conoidea*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Fineberry Hawthorne	*Crataegus chrysocarpa var. chrysocarpa*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Flatleaf Pondweed	*Potamogeton robbinsii*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Floating Bur-Reed	*Sparganium fluctuans*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Floating-Heart	*Nymphoides cordata*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Fragrant Cliff Wood-Fern	*Dryopteris fragrans*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
fragrant waterlily, water nymph	*Nymphaea odorata subsp. odorata*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Fringed Black-bindweed	*Fallopia cilinodis*	Not Listed	Not Listed	Not Listed	Not Listed	S1
grass-leaf arrowhead; grassy arrowhead;	*Sagittaira graminea*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Greater Purple Bladderwort	*Utricularia purpurea*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Hard-Stemmed Bulrush	*Schoenoplectus acutus var. acutus*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Hemlock Water-parsnip	*Sium suave*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Hidden Sedge	*Carex umbellata*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Hudson Bay Anemone	*Anemone multifida*	Not Listed	Not Listed	Not Listed	Not Listed	S3

Common Name	Scientific Name	SARA[1]	COSEWIC[2]	NL ESA[3]	General Status[4]	S-Rank[5]
Large Purple-Fringed Orchid	*Platanthera grandiflora*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Large-lobed Dandelion	*Taraxacum latilobum*	Not Listed	Not Listed	Not Listed	Not Listed	S3
leafy pondweed	*Potamogeton foliosus subsp. foliosus*	Not Listed	Not Listed	Not Listed	Not Listed	S1S2
Least Spike-Rush	*Eleocharis acicularis*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Little Grapefern	*Botrychium simplex*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Little Yellow-Rattle	*Rhinanthus minor*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Macoun Buttercup	*Ranunculus macounii*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Mad Dog Skullcap	*Scutellaria lateriflora*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Marsh Fern	*Thelypteris palustris var. pubescens*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Marsh Muhly	*Muhlenbergia glomerata*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Narrowleaf Pinweed	*Lechea intermedia*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Necklace Sedge	*Carex projecta*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Northeastern Sedge	*Carex cryptolepis*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Northern Bush-honeysuckle	*Diervilla lonicera*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Northern Shorthusk	*Brachyelytrum aristosum*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Northern Witchgrass	*Dichanthelium boreale*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Ovate Spikerush	*Eleocharis ovata*	Not Listed	Not Listed	Not Listed	Not Listed	S1
Pretty Milk-Vetch	*Astragalus eucosmus*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Purple False Oats	*Graphephorum melicoides*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Rough Cotton-Grass	*Eriophorum tenellum*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Rusty Woodsia	*Woodsia ilvensis*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Self-Heal	*Prunella vulgaris*	Not Listed	Not Listed	Not Listed	Not Listed	S3S5
Shinleaf	*Pyrola elliptica*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Slender Cotton-Grass	*Eriophorum gracile*	Not Listed	Not Listed	Not Listed	Not Listed	S1S2
Small Bur-Reed	*Sparganium natans*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
Spiral Pondweed	*Potamogeton spirillus*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Spreading Dogbane	*Apocynum androsaemifolium*	Not Listed	Not Listed	Not Listed	Not Listed	S3
Three-Way Sedge	*Dulichium arundinaceum*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4

Common Name	Scientific Name	SARA[1]	COSEWIC[2]	NL ESA[3]	General Status[4]	S-Rank[5]
Triangular-valve Dock	*Rumex triangulivalvis*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Water Bulrush	*Schoenoplectus subterminalis*	Not Listed	Not Listed	Not Listed	Not Listed	S3
water smartweed	*Persicaria amphibia*	Not Listed	Not Listed	Not Listed	Not Listed	S2
Western Witchgrass	*Dichanthelium acuminatum var. fasciculatum*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
White Mountain Saxifrage	*Saxifraga paniculata*	Not Listed	Not Listed	Not Listed	Not Listed	S3S4
White-Stem Pondweed	*Potamogeton praelongus*	Not Listed	Not Listed	Not Listed	Not Listed	S2S4
Whorled Water-Milfoil	*Myriophyllum verticillatum*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Wild Calla	*Calla palustris*	Not Listed	Not Listed	Not Listed	Not Listed	S2S3
Woods-Rush	*Juncus subcaudatus*	Not Listed	Not Listed	Not Listed	Not Listed	S1

Source: ACCDC, 2021
[1]*Species at Risk Act*
[2]Committee on the Status of Endangered Wildlife in Canada
[3]Newfoundland and Labrador Endangered Species Act
[4]Provincial General Status
[5]Subnational Rarity Rankings

2.2.1.1 Scheduled Waters Within 200 metres of Project Site

The proposed Project is located within 200 m of the Exploits River and its tributaries, a scheduled salmon bearing river (Schedule 1, *Newfoundland and Labrador Fishery Regulations* SOR/78-443). The Exploits River is one of the largest rivers in Newfoundland and is in Salmon Fishing Area (SFA) 4. It originates in the Long Range Mountains on the West Coast and drains into Notre Dame Bay, with a drainage area of over 12,000 km^2 (ERMA, 2017). The Project runs parallel with the river within its 200 m buffer at several sections as well as crossing the river or its tributaries at the following locations (Drawing 3, Appendix A):

- Aspen Brook
- Pym's Brook
- Langsdown Brook
- Thunder Brook
- Unnamed Tributary
- Unnamed Tributary
- Wigwam Brook (at 2 locations)
- Exploits River
- Rushy Pond Brook

Historically, the Exploits River was used by the Beothuks as a travel route from the interior of Newfoundland to the seacoast. In the early 1900s, the river was used to support the pulp and paper industry, installing numerous dams along the main branch of the Exploits and various tributaries.

Currently, there are three hydro dams along the main stem of the Exploits River: at Bishop's Falls, Grand Falls – Windsor and Red Indian Lake.

Due to the natural obstructions to migration created by Bishop's Falls and Grand Falls, as well as addition of industrial dams, less than 10% of the watershed was accessible to anadromous salmon in the mid-1900s (ERMA, 2017). A fish enhancement program was developed for the mid-Exploits River after a successful program relocating Atlantic salmon from Rattling Brook, in Norris Arm, to Great Rattling Brook, a tributary to the Exploits River in the 1950s, which necessitated the construction of fishways at Bishop's Falls and Great Rattling Brook. From 1986 to 1992, over 50 million salmon fry were relocated to tributaries throughout the Exploits River and fish passage systems were constructed at Grand Falls and Red Indian Lake (ERMA, 2017). Currently, the river has a production of approximately 50,000 adult Atlantic salmon (ERMA, 2017).

2.3 Construction

Construction of each section of the Project will consist of the following:

- Section 1: Construction of new distribution feeder line
    - Brush clearing
    - Installation of new poles, anchors, and conductors along a new line
    - Removal of existing line, including conductors and poles
- Section 2: Rerouting, upgrading, and construction of new distribution feeder line
    - Brush clearing
    - Installation of new poles, anchors, and conductors along a new line
    - Removal of existing line, including conductors, poles, and cribs
- Section 3: Upgrading distribution feeder line
    - Brush clearing
    - Replacement of some poles
    - Installation of some new mid-span poles
    - Installation of new conductors

Construction of the Project will begin in April and continue until December. Construction will involve brush clearing; the installation of poles and anchors; frame structures; string sag, armour, and clip in the new conductor; and installation of vibration dampers. Brush clearing will be completed concurrently with the construction of other Project components. Removal of the existing line in Section 1 and Section 2 will involve the dismantling, removal, and disposal of existing infrastructure, including poles, anchors, insulators, guys, conductors, and hardware. Removal of the existing line will occur after the new lines are connected in each respective section.

Construction will be completed by both Newfoundland Power line truck/pickups and tension stringers. Additionally, the pole contractor will use 75G John Deer Excavator, 313 CAT Excavator, 2007 International Dump Truck, and 2006 International Digger Derrick Truck.

2.3.1 Potential Sources of Pollution

Potential sources of pollutants into environmental features that may result from construction activities include:

- Sedimentation and siltation from soil disturbance;
- Accidental spills from construction equipment; and
- Disturbance to wildlife and vegetation.

Construction activities will involve brush clearing and soil disturbance within the 200 m buffer of the Exploits River and its tributaries. Soil disturbance may occur through general construction activities, brush clearing, the installation of new poles and the removal of existing poles and poses the risk of sediment laden runoff entering sensitive habitats, including wetlands and watercourses. Additionally, disturbed areas along watercourses may cause streambank instability resulting erosion and sedimentation. Sedimentation can have a variety of negative effects on fish and fish habitat, including damaging fish gills, smothering eggs, and infilling important spawning habitat. Construction activities also pose the risk of accidental spills releasing deleterious substances into watercourses and wetlands.

Due to the sensitivity of the watercourses in the vicinity of the Project, there are no in-water works proposed in scheduled salmon rivers, with the exception of three locations where poles are located below the highwater limits of the Exploits river and tributary streams. Section 2 of the Project requires the removal of the existing distribution feeder line from the Exploits River floodplain and contains four poles located on manmade berms within the highwater limits of the Exploits River, three poles within associated riparian wetland habitat, and two poles within the highwater limits of Wigwam Brook (Drawing 3, Appendix A). In order to minimize any impacts to the watercourses and minimize the release of sediment, poles located in sensitive areas will be cut off at the substrate or water surface with the base of the pole remaining in the substrate. In areas of wetland habitat, the pole will be slightly lifted from the substrate prior to cutting so that it can then be pushed below the ground surface. Access to the poles will be achieved from dry land with all work in sensitive areas completed by hand. During construction of the new distribution feeder line, the placement of poles in sensitive areas including wetland habitat will be avoided if possible.

Vegetation clearing and construction activities may also disrupt wildlife within the vicinity of the distribution line. Disruption may occur from vegetation clearing, as well as the noise and activity associated with construction equipment. Vegetative clearing will be avoided during breeding bird season. Any vegetation management during this period will be completed in accordance with the *Migratory Birds Convention Act* (MBCA) and Environment and Climate Change Canada - Canadian Wildlife Services (ECCC-CWS) requirements.

2.3.2 Environmental Management Measures

Newfoundland Power will implement a project specific Erosion and Sedimentation Control Plan (ESCP) and Environmental Protection Plan (EPP) prior to construction, including a wildlife management plan, communication plan, spill prevention plan, and contingency plans (as necessary).

The ESCP will outline erosion and sedimentation control (ESC) measures to prevent sedimentation in watercourses, waterbodies and wetlands. Following the completion of construction activities, the areas adversely affected by this project must be restored to a state that resembles natural conditions.

Any work in wet areas, including wetlands and watercourses, will be timed for periods of low water. Additionally, due to the spawning, incubating, and hatching period of salmonids, no in-water work (i.e., work located within the high-water limits of a watercourse or waterbody) shall be completed between October 1 to May 31. Should it be necessary to do any in-water work during this period, the work shall be done in consultation with DFO. All Project activities will be completed in a manner that complies with the guidelines outlined in the 'Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador' (Gosse et al., 1998). The following mitigation measures will also be completed during work in or near wet areas to minimize environmental effects:

- Implementation of the EPP, including spill prevention plan, and contingency plans (as necessary prior to construction);
- Implementation of the ESCP and all measures outlined within;
- ESC structures will be maintained and inspected regularly with particular emphasis before and after forecasted heavy rain events, and with consideration of the timing and types of activities involved;
- Where necessary, ESC measures will remain in place after work is completed until areas have stabilized and natural re-vegetation occurs;
- In-water works will be timed to not interfere with fish spawning periods;
- The duration of the in-water works will be minimized;
- Substrate or bank material will not be removed from stream or banks;
- Any removal of construction materials, such as old poles, will be carried out by equipment working from dry land;
- Should any equipment be required to enter a waterbody or wetland for any reason, equipment shall be rubber tired and free of leaks of fuel, oil and hydraulic fluids;
- Equipment shall be cleaned prior to use in sensitive habitat;
- Shoreline habitat must be adequately stabilized prior to any work thereupon;
- Disturbed areas within the 200 m buffer must be restored through revegetation and stabilized until vegetation has been re-established;
- All overburden removed during construction activities will be stored according to provincial regulations and best practice guidelines;
- Exposed soils and stockpiles capable of producing sediment laden-runoff will continue to be stabilized and/or will be covered;
- A complete oil spill clean-up kit must be on the site at all times when gasoline or fuel powered equipment is being used or refuelled;
- Refuelling will not be completed within 30 m of a watercourse or waterbody edge.

Additionally, the following mitigative measures will be implemented to minimize the environmental effects of the Project on wildlife and natural habitat include:

- Vegetation clearing will be completed outside of the migratory bird breeding season (April 15 – August 15);
- Any vegetation clearing required during the breeding season will utilized nest searches completed by experience birders in consultation with ECCC-CWS;
- Stockpiles of material will be covered when not in use;
- Any observations of species at risk will be reported to Newfoundland Wildlife Division and ECCC-CWS;
- Ensure all food scraps and garbage are not left at the work site;
- Minimize disturbance to natural habitat beyond what is necessary for the Project;
- Ensure that all vegetation used in landscaping plans are native species only; and
- Work vehicles and/or heavy equipment will be cleaned and inspected prior to use to prevent the introduction of weed/invasive/non-native species.

2.4 Operation

The Project will be constructed with structures and equipment intended for an operating life of 60 years. Work on the Project during operation will consist of emergency repair. Vegetation management below the distribution line will be completed manually, no herbicides will be applied. An annual inspection will be completed by vehicle and a ground survey of the line will be completed every 7 years.

2.4.1 Potential Sources of Pollution

Potential sources of pollutants into environmental features that may result from operation of the Project include:

- Sedimentation and siltation from soil disturbance and vegetation clearing; and
- Accidental spills from construction equipment.

Operation of the Project will have no potential sources of pollutants into the environment on a daily basis. In the event of emergency repairs, activities may result in sources of pollution similar to construction activities, including sedimentation and siltation from soil disturbance and accidental spills from construction equipment. Environmental management measures outlined for construction activities in Section 2.3.2 also apply to operation activities.

2.5 Local Receptors

The Project is located between Badger and Grand Falls-Windsor, running parallel with the Trans-Canada Highway. Although no major traffic stops are anticipated during Project activities, minor stoppages may be required at certain points throughout the Project. Stoppages that require traffic to cease in both lanes along the TCH is expected in only one location where the Project crosses the TCH. This work is expected to consist of three short stoppages within 30 minutes. Traffic stops will be kept as short as possible and managed following all provincial and federal guidelines.

There are a few residential properties along the TCH in addition to the community of Red Cliff through which the Project passes. Additionally, the Project passes adjacent to Riverfront Chalet, Thunderland Amusement Park, the Grand Falls Golf Club, and the Exploits Golf Facility Driving Range. Project activities have the potential to impact these receptors through noise and dust generation during construction activities. Increased traffic as a result of the Project may provide temporary disturbances to residents and patrons.

The nearest protected public water supply areas are the Badger well field located 9.4 km west upstream at Badger and the Northern Arm Lake water supply 10 km north of Grand Falls-Windsor. Within the Project area there are 13 drinking water wells in the community of Red Cliff and 3 wells located along the TCH (AMEC, 2013). Nearby there are 70 drinking water wells located in Grand Falls – Windsor. Additionally, the Exploits River is a popular recreational site for fishing and water sports. Drinking water sources and recreational users along the Exploits River can be impacted by poor water quality as a result of sedimentation during construction or in the event of accidental spills. Mitigation measures to protect water quality are discussed in Section 2.3.2 and correspondingly apply to the protection of water quality for water users supply, recreational, and country foods.

Implementation of the following mitigation measures will minimize the impact of Project activities on local receptors:

- Implementing a Project specific EPP, including detailed identification of impacts to receptors and management plans for noise and air quality;
- A communication plan will be included as part of the EPP and will include details on complaint response procedures and communicating with nearby receptors in the event of accidents and malfunctions;
- Construction activities will be completed during regular daylight working hours;
- Vehicular traffic coming to and from the site will kept at a required minimum;
- All stoppages will be managed in a manner the comply with provincial and federal regulations;
- The duration of traffic stops will be minimized;
- Fuel efficiency will be maximized on all Project equipment;
- Maintain equipment in good working order and properly muffled; and
- Minimize idling of equipment and vehicles.

2.6 Occupations

Construction of the Project will require the following occupations (with NOC code breakdown) from both Newfoundland Power and Contractor staff:

- Engineering Technicians:
    - 2241 Electrical and Electronics Engineering Technologists and Technicians
    - 2254 Land Survey Technologists and Technicians
- Heavy Equipment Operators:
    - 7312 Heavy-Duty Equipment Mechanics

  - 7412 Heavy Equipment Operators
- Line Workers:
  - 7212 Contractors and Supervisors, Electrical Trades and Telecommunications Occupations
  - 7244 Electrical Power Line and Cable Workers
- Ground Workers:
  - 0711 Construction Managers
  - 7217 Contractors and Supervisors, Heavy Construction Equipment Crews
  - 7611 Construction Trades Helpers and Labourers
- Electricians
  - 7242 Industrial Electricians
  - 7243 Power System Electricians
  - 7202 Contractors and Supervisors

Brush cutting and pole and anchor installation and removal will be completed by contractors. Line work will be completed by Newfoundland Power Crews. Construction and operation of the Project will employ a total of 35 employees, including both Newfoundland Power and contractor staff,

3.0 APPROVAL OF THE UNDERTAKING

Other permits and authorization required for the Project are listed in Table 3.1.

Table 3.1. Permits and Authorizations Required for the Project

Permit	Responsible Authority
Release of the Undertaking under the Environmental Assessment Regulations	Department of Environment, Climate Change and Municipalities
Crown Lands Application (for new Right of Way)	Department of Fisheries, Forestry and Agriculture
Wetland Development Permit	Department of Environment, Climate Change and Municipalities

4.0 SCHEDULE

The proposed start date of the Project is April 1, 2021, and has an anticipated end date of December 31, 2021. Construction components will be done simultaneously at locations along the distribution feeder line. Construction of each section may not be done chronologically. Construction of each section will be completed based on environmental restraints and timing windows.

5.0 FUNDING

The Project does not depend on funding.

6.0 REFERENCES

ACCDC. 2021. Atlantic Canada Conservation Data Centre. Data Request RQ0853.

AMEC. 2013. Hydrogeology of Central Newfoundland. TF8312718. Submitted to Water Resources Management Division, Department of Environment and Conservation. February 2013. Retrieved from https://www.gov.nl.ca/eccm/waterres/reports/hydrogeology-centralnl/

ERMA. 2017. Environment Resources Management Association: About Us. Accessed 1/25/2021. Retrieved from: https://www.erma.ca/about-us/index.html

Gosse, M.M., Power, A.S., Hyslop, D.E., and Pierce, S.L. 1998. Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador. Fisheries and Oceans, St. John's, NF. x + 105 pp., 2 appendices.

7.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS

This Report (the "Report") has been prepared by Strum Consulting ("Consultant") for the benefit of Newfoundland Power ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations, and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations")
- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports
- may be based on information provided to Consultant which has not been independently verified
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
- was prepared for the specific purposes described in the Report and the Agreement
- in the case of subsurface, environmental, or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental, or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

The Report is to be treated as confidential and may not be used or relied upon by third parties, except:

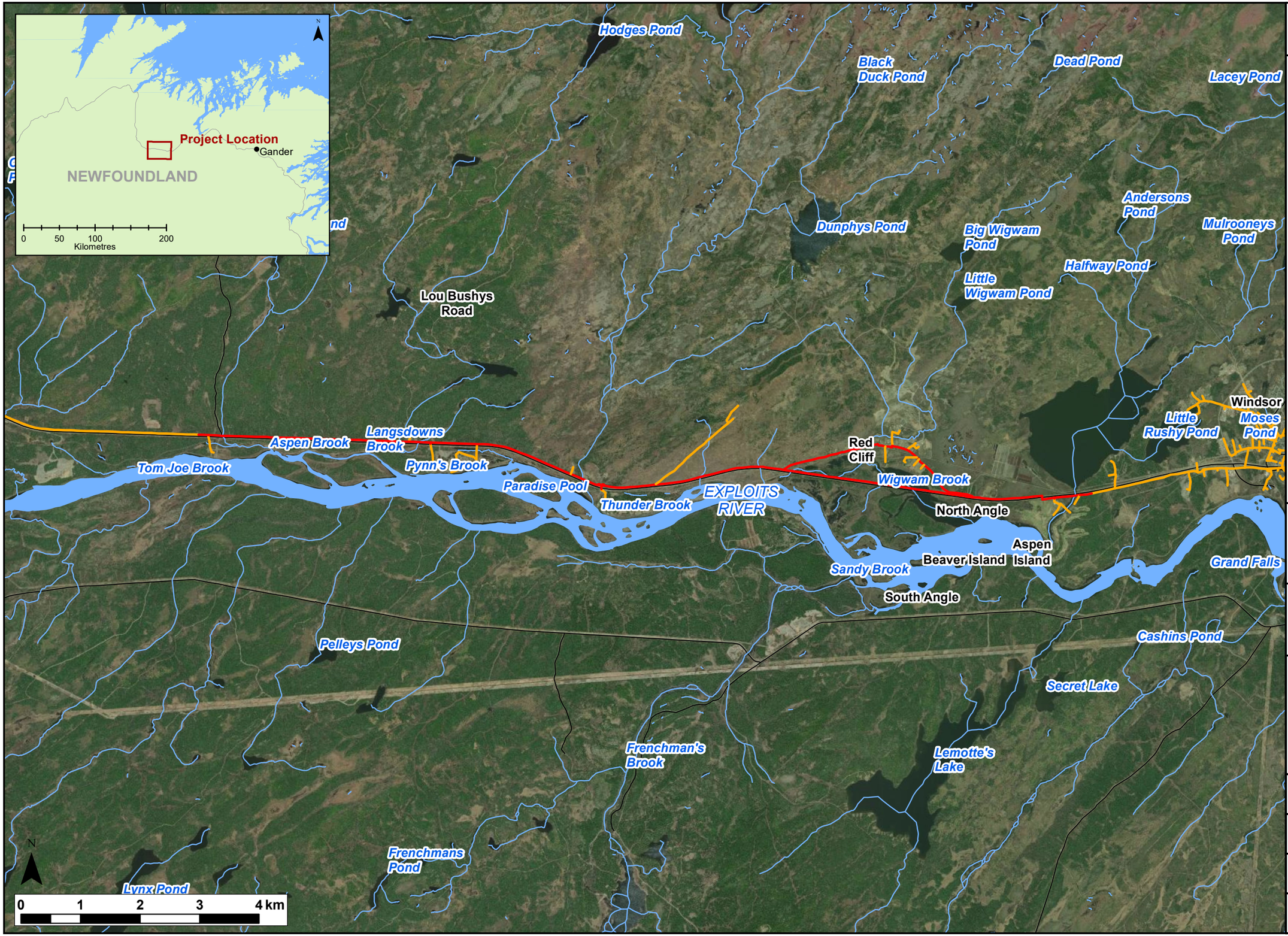
- as agreed in writing by Consultant and Client
- as required by law
- for use by governmental reviewing agencies

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss, or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any damages arising from improper use of the Report or parts thereof shall be borne by the party making such use.

This Statement of Qualifications and Limitations forms part of the Report and any use of the Report is subject to the terms hereof.

Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report.

APPENDIX A
DRAWINGS



Notes:

1. Data Sources: GeoScience Atlas of NFLD
2. Projection: NAD83 UTM Zone 21 North.

Legend:

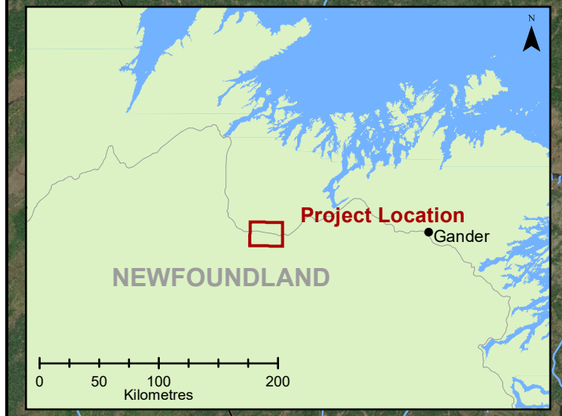
- GFS-06 Project Location
- GFS-06 Other
- Road
- Watercourse
- Lake and Rivers

GFS-06 Distribution Feeder Refurbishment Project Location

NEWFOUNDLAND POWER
A FORTIS COMPANY

Strum CONSULTING
*Engineering * Surveying * Environmental*
*Bedford * Antigonish * Moncton * St. John's*

Feb. 2021	Project #: 21-7748
1:60,000	Drawing #: 1
M. Savelle	
H. Mosher	



SECTION 1 - New distribution line

Reroute the distribution line to join in with existing line. Upgrade from single phase to three phase

Install new three phase distribution line

EXPLOITS RIVER

SECTION 2 - Reroute distribution line, upgrade to triple phase, construct new section, and remove poles from old line

Remove existing distribution line

SECTION 3 - Upgrade conductors and replace poles as necessary

N

0 1 2 3 4 km

Notes:

1. Data Sources: GeoScience Atlas of NFLD
2. Projection: NAD83 UTM Zone 21 North.

Legend:

- Road
- Watercourse
- Lake and Rivers

GFS-06

- Section 1
- Section 2
- Section 2 - Removed Distribution Line
- Section 2 - New Distribution Line
- Section 3
- Other

GFS-06 Distribution Feeder Refurbishment Project Description

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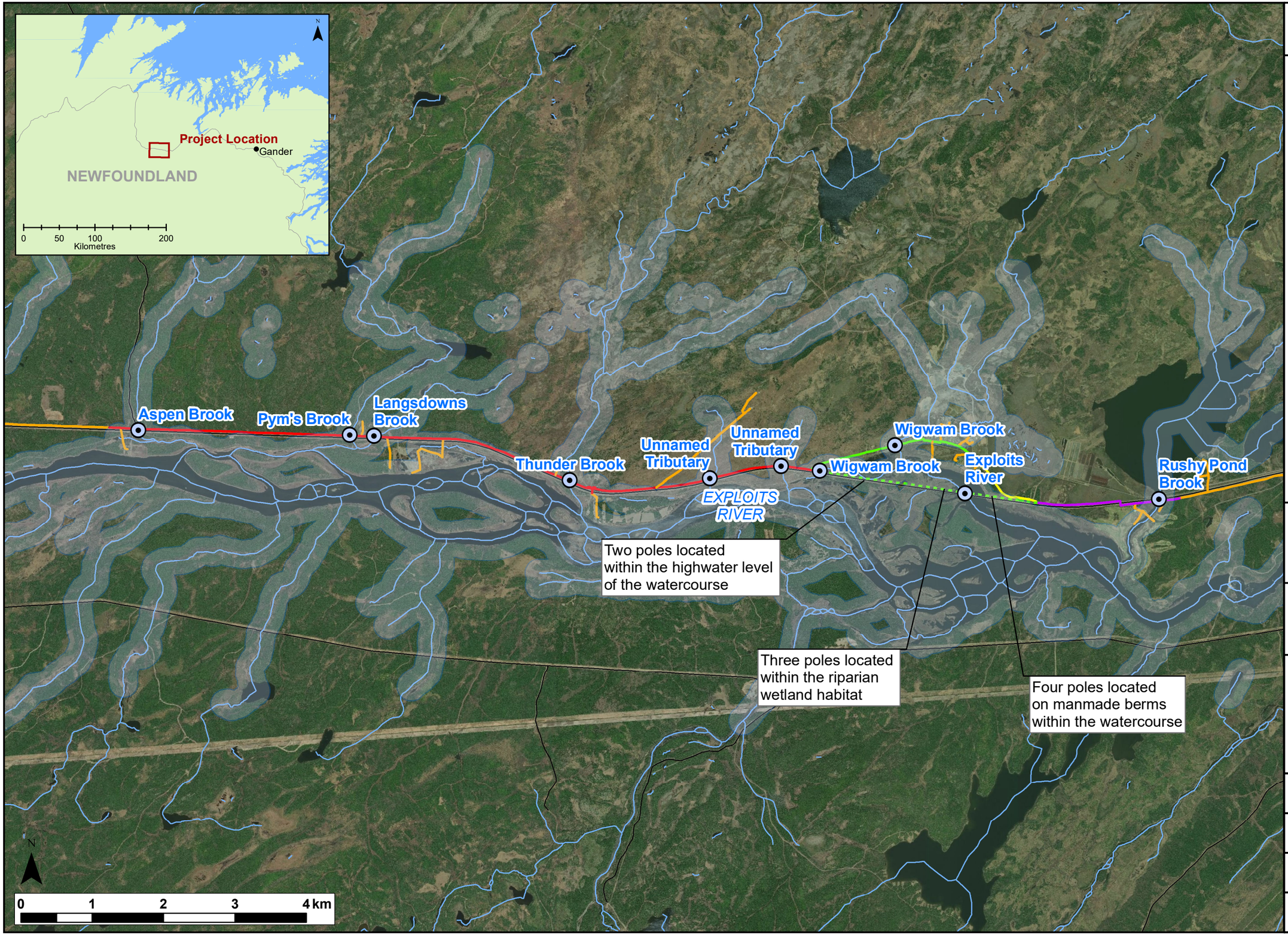
Feb. 2021	Project #: 21-7748
1:50,000	Drawing #: 2
M. Savelle	
H. Mosher	



Notes:

1. Data Sources: GeoScience Atlas of NFLD
2. Projection: NAD83 UTM Zone 21 North.

Legend:

- Watercourse Crossing Location
- Approximate 200 m Buffer Zone from the Exploits River or a Tributary
- Road
- Watercourse

GFS-06

- Section 1
- Section 2
- Section 2 - Removed Distribution Line
- Section 2 - New Distribution Line
- Section 3
- Other

GFS-06 Distribution Feeder Refurbishment Watercourse Crossings

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*Bedford * Antigonish * Moncton * St. John's*

Feb. 2021	Project #: 21-7748
1:50,000	Drawing #: 3
M. Savelle	
H. Mosher	