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Bell Canada Codroy Valley Fibre Cable Project

Environmental Assessment Registration

Prepared for:

Environmental Assessment Division
Newfoundland and Labrador
Department of Environment and
Climate Change



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List of Acronyms and Abbreviations

°C	degrees Celsius
ATV	All-terrain vehicle
CACs	criteria air contaminants
centimetres	cm
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CSD	Census Subdivision
CWCS	Canadian Wetland Classification System
DFO	Fisheries and Oceans Canada

EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
GHGs	greenhouse gases
GWP	global warming potential
ha	hectares
HFCs	hydrofluorocarbons
IBA	Important Bird Area
KI	Key Indicator
km	kilometre
km/h	kilometres per hour
m	metres
MASL	meters above sea level
MFN	Miawpukek First Nation
millimetres	mm
MOU	Memorandum of Understanding
N ₂ O	nitrous oxide
NAPS	National Air Pollution Surveillance
NH ₃	ammonia
NL	Newfoundland and Labrador
NL ECCC	NL Department of Environment, Conservation, and Climate Change
NL ESA	NL Endangered Species Act
NL FAL	NL Department of Forestry, Agriculture, and Lands
NL WD	NL Wildlife Division
NO	nitric oxide
NO ₂	nitrogen dioxide
NOC	National Occupational Classification
NOx	nitrogen oxides
NWWG	National Wetlands Working Group
O ₃	ozone
PFCs	perfluorocarbons
PM	particulate matter
PM ₁₀	PM less than or equal to 10 microns
PM _{2.5}	PM less than or equal to 2.5 microns
PPWSA	Protected Public Water Supply Area
QFN	Qalipu Mi'kmaq First Nation
ROW	Right-of-way
SAR	Species at Risk
SARA	Species at Risk Act
SF ₆	sulfur hexafluoride
SO ₂	sulfur dioxide
SOx	sulfur oxides

SSAC	Species Status Advisory Committee
TCH	Trans-Canada Highway
UBF	Universal Broadband Fund
VC	Valued Component

List of Definitions

Clearance	The minimum safe distance between communications cables and powerlines to prevent electrical hazards.
Lashed	Secured to existing strand and communication bundle via continuous spiral wraps of stainless-steel lashing wire.
Span	The horizontal distance between two consecutive support structures (e.g., poles). Approximately 50 m per span.

1.0 Introduction

Bell Canada (the 'Proponent') is proposing the installation of new fibre cables throughout the Codroy Valley and South Branch region of insular Newfoundland. Before this installation, Newfoundland Power will complete an associated make-ready project on the DOY-01 feeder to facilitate the safe attachment of fibre cables for Bell Canada. Although Bell Canada and Newfoundland Power coordinate closely, each maintains a distinct work scope: Newfoundland Power will complete all make-ready work, after which Bell Canada will proceed with fibre installation and associated hardware placement. Together, these two activities will comprise the 'Undertaking' (also referred to as the Project). The Undertaking will utilize existing infrastructure and will not require Bell Canada or Newfoundland Power to develop or occupy any new land within the Area of the Undertaking (Figure 2.1-1 in Section 2.1). The activities that will comprise the Scope of Work include pole replacement (n=139) and associated line work, lowering communication cables on 100 existing poles, brush clearing (~18 km), tree trimming, installation of 168 km of new fibre cable, and creating communication splices (n=76). These activities may interact with various elements in the environment, including wetlands, Species at Risk (SAR) and their habitats, salmon rivers, and others. Therefore, Bell Canada is submitting this comprehensive Registration Document to the Environmental Assessment Division to describe the potential interactions of the Undertaking with the environment.

1.1 Name of Undertaking

Bell Canada Codroy Valley Fibre Cable Project

1.2 Proponent

Name of Corporate Body:	Bell Canada
Corporate Address:	332 O'Connell Dr Corner Brook A2H 7E5
Chief Executive Officer:	Mr. Mirko Bibic Chief Executive Officer
Principal Contact Person for this EA Registration	Steve Gullage VP, Environment and Climate Change, SEM Ltd. steve.gullage@sem ltd.ca

1.3 Rationale for the Undertaking

The installation of new fibre cables by Bell Canada is a necessary undertaking to enhance telecommunications infrastructure in the Codroy Valley and support growing demand for reliable, high-speed internet and communication services. Existing network systems in rural areas, such as the Codroy Valley, often face limitations in bandwidth, speed, and service stability, which can inhibit economic growth, educational opportunities, healthcare access, and overall community connectivity. Upgrading to modern fibre-optic technology will provide residents and businesses with improved data transmission capabilities, future-proof the network against increasing digital demands, and align with Bell Canada's broader initiatives to expand broadband coverage across underserved communities. Essentially, this Undertaking will ensure long-term network resilience and contribute to regional development and digital inclusion. This Undertaking is being partially funded by the federal government under the Universal Broadband Fund (UBF) program, which aims to support the provision of high-speed internet to rural and remote communities. This program includes a deadline to provide services by the end of 2026.

1.4 Agreements Between Bell Canada and Newfoundland Power

Bell Canada and Newfoundland Power do not have a project-specific agreement or Memorandum of Understanding (MOU) for this Undertaking. Instead, joint projects between these companies are governed by two long-standing corporate agreements: the Shared Services Agreement (active in various forms since at least 1979, most recently revised in August 2025) and the Joint Use Agreement (most recently revised in January 2022). These agreements outline the process for requesting work, the terms and conditions of joint use, and the respective responsibilities of each party. Under these agreements, the typical process for fibre-installation projects on joint-use infrastructure is as follows:

1. **Engineering and Request to Attach:** Bell Canada submits a request to Newfoundland Power identifying the poles where new telecommunications cables will be attached and specifying cable diameters.
2. **Assessment by Newfoundland Power:** Newfoundland Power evaluates structure loading, conducts a field review, and identifies any required make-ready work, including pole replacements, tree trimming, clearance adjustments, and correction of deteriorated or overloaded structures.
3. **Make-Ready Work:** Newfoundland Power provides Bell Canada with a make-ready cost estimate. Upon Bell Canada's approval, Newfoundland Power completes the necessary work to ensure the pole line is safe and compliant for future cable installation.

4. **Permission to Attach:** After completing make-ready work, Newfoundland Power grants Bell Canada permission to attach telecommunications materials. For large-scale builds, partial permission may be issued in segments where make-ready work is fully complete.

1.4.1 Roles and Responsibilities

Newfoundland Power is responsible for the make-ready of the existing utility line, including all pre-work necessary to make the utility line safe for the attachment of new fibre cables. This includes pole line engineering, tree trimming along the existing pole lines, pole replacements (in the event of either deteriorated poles or poles that would become overloaded due to the new fibre cable attachments), and existing attachment adjustments (including raises or lowers of telecommunication lines, secondary power lines, or re-sagging of primary or secondary power lines).

Bell Canada is responsible for the installation of new fibre cable and associated hardware. This includes lashing new fibre cables to existing Bell Canada telecommunication strand in the area, placing new strand and associated down-guys in areas where Bell Canada strand does not yet exist, placement of central splitting point boxes on poles, splicing of cables together, and hardware upgrades within the local Bell Canada central office to accommodate fibre to the home services.

1.4.1.1 Provincial Legislative Requirements

Both parties are responsible for meeting all provincial legislative requirements related to their scope of work. Due to the nature of make-ready work, Newfoundland Power will be responsible for most of the environmentally disruptive activities (e.g., tree trimming). However, Bell Canada is still wholly responsible for complying with all applicable provincial legislation related to the fibre installation work.

1.4.1.2 Permits, Approvals, and Licences

Both parties are responsible for acquiring the required permits, approvals, and licenses for their respective core responsibilities. Due to the nature of the make-ready work, most of the permits, approvals, and licences will be obtained by Newfoundland Power. If any Bell Canada work requires permits, approvals, or licences, Bell Canada will be responsible for obtaining them.

1.4.1.3 Waste Disposal and Material Handling

Both parties will be responsible for the waste disposal and material handling required by their respective core responsibilities. Newfoundland Power is responsible for the disposal of old poles, and biomass associated with tree trimming and brush cutting. Further information on Newfoundland Power's standard waste disposal practices is available in Section 4.3.

Bell Canada is responsible for the material storage, management, and disposal of any waste related specifically to fibre cables and equipment. This includes empty cable reels, cardboard packaging, and plastic wrap garbage. Further information on Bell Canada's standard waste disposal practices is available in Section 4.3.

2.0 Project Description

The Project Area comprises 398 ha across 135 km of an existing utility pole line right of way (ROW). This pole line services several communities in the Codroy Valley, twinning existing residential roads and the Trans-Canada Highway (TCH). The following sections provide a comprehensive description of the Project. This includes the geographical location, alternatives to the Undertaking, Project components, and the associated construction, operation, and maintenance activities required. Decommissioning is not included as part of this Undertaking.

2.1 Geographical Location

The Project is located in Newfoundland and Labrador (NL) and will occur in southwestern Newfoundland. It will entail the installation of new fibre cables along 135 km of existing utility pole lines in Cape Anguille, Shoal Point, Codroy, Woodville, Millville, Great Codroy, O'Regan's, The Block, Searston, Loc Lomond, Saint Andrew's, Tompkins, Doyles, Upper Ferry, South Branch, and Coal Brook (Figure 2.1-1). Fibre cables will be installed on the utility pole lines between these communities, with the notable exception of the pole lines connecting O'Regan's and Doyles to South Branch. There will be no work on the lines from the main valley and South Branch/Coal Brook, as this section relies on existing cables. The Project Area for the purpose of assessment will include a 15-meter (m) buffer on either side of the utility line's center (30 m). However, the actual width of clearing is anticipated to encompass the space beneath the poles and crossarms, potentially extending 3 m to 5 m beyond the outer edge of the crossarms. The Project will involve existing infrastructure and does not require Bell Canada or Newfoundland Power to occupy new land.



	FIGURE NUMBER: 2.1-1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 21N	PREPARED BY: C. Bursey	DATE: 08/12/2025
	FIGURE TITLE: Project Area	NOTES:	REVIEWED BY:	APPROVED BY:
	PROJECT TITLE: Codroy Valley Fibre Project			

2.2 Alternatives to the Undertaking

Alternatives to the Undertaking would include options that meet telecommunications objectives while minimizing environmental or community impacts. One alternative would be to upgrade existing copper or coaxial infrastructure rather than installing new fibre lines, which would reduce ground disturbance but offer lower long-term capacity. Another alternative could explore the use of satellite technologies to serve remote households where fibre installation would be disruptive or cost-prohibitive. The “do-nothing” alternative, i.e., maintaining current service levels, would avoid construction impacts but fail to deliver the required improvements in connectivity and reliability. Each alternative was evaluated against technical feasibility, cost, environmental effects, and the need for high-speed connectivity.

The selected Undertaking was chosen as it provides the best balance of efficiency, minimal disturbance, and long-term benefit to the Codroy Valley region. Compared to the alternatives, fibre optic cables are the most reliable, future-proof, and high-capacity network option. Unlike copper or coaxial upgrades, fibre delivers virtually unlimited bandwidth and consistent performance regardless of distance or user demand. This is essential for modern services such as remote education, telehealth, and business operations. Re-routing or partial-upgrade options were assessed but found to offer only short-term benefits or require ongoing maintenance, making them less sustainable over time. Satellite technologies were considered but were rejected due to their susceptibility to weather interference, limited data speeds, latency issues, and higher operational costs in rural terrain. Fibre, by contrast, ensures long-term service quality with minimal maintenance and provides the infrastructure base for future expansion. The environmental footprint will be temporary and localized, and the long-term social and economic benefits (i.e., improved connectivity, digital inclusion, and regional competitiveness) far outweigh any short-term impacts.

2.3 Project Components

The Project is comprised of two components, a Newfoundland Power make-ready project and Bell Canada fibre cable installation. The activities to be completed as part of each component are described below.

Newfoundland Power is planning to undertake a make-ready project on the DOY-01 feeder to facilitate the safe attachment of fibre cables for Bell Canada. To complete this work, Newfoundland Power will:

- Replace 139 poles and complete associated line work to transfer;
- Lower communication cables on 100 existing poles to ensure safe clearances;
- Modify Newfoundland Power conductor attachment heights on three (3) existing poles;
- Conduct 14,117 linear m of brush clearing on the existing line/ROW to a maximum width of 5 m beyond the outer edge of the crossarms (brush to be cut and piled);



- Complete 4,148 linear m of brush clearing on the existing line/ROW to a maximum width of 5 m beyond the outer edge of the crossarms (brush to be cut and removed); and
- Conduct 495 spans (approximately 25 linear km) of tree trimming on the existing line/ROW.

To complete the installation of new fibre cables throughout the Codroy Valley and South Branch region, Bell Canada will:

- Install 167.8 km of new fibre cable on 135 km of existing utility pole lines (cables may run concurrently for sections, accounting for the 32.8 km difference). Cables will be primarily lashed to the existing communication strand, with the new strand to be installed only as required.
- Create or enter 76 strand-mounted fibre communication splices; and
- Place 6 pole-mounted central splitting point cabinets on existing utility poles.

2.4 Construction

Project work is scheduled to commence in 2026, following the release of the Project from the Environmental Assessment process, in compliance with any conditions of release. Vegetation clearing, Newfoundland Power make-ready work, and Bell Canada fibre upgrades will occur in sequence.

Vegetation clearing, including trees and shrubs, will be undertaken in advance of site preparation and construction. Surveyors will clearly mark the perimeter of all areas requiring vegetation clearing, as identified in Appendix C. Vegetation clearing will be conducted to a maximum width of 5 m beyond the outer edge of the crossarms. Brush will either be cut and piled or cut and removed. Vegetation clearing will be completed by certified contractors.

After vegetation clearing and site preparation is complete, pole upgrading work and fibre installation will commence. Engineering designs have been prepared by Newfoundland Power and Bell Canada for each region of the Project identifying fibre cable installation (Appendix A), poles requiring replacement (Appendix B), tree trimming and vegetation clearing (Appendix C), and identified clearance issues to be addressed by Newfoundland Power to allow space on the poles for the installation of communication fibre cables (Appendix D). Line crews will remove old poles, set new poles, and transfer lines and other hardware. In areas where poles are to be replaced, Bell Canada will begin the installation of new fibre cable only after the completion of make-ready work by Newfoundland Power and their contractors. New cables will be primarily lashed to existing strand, and various hardware upgrades (e.g., placement of pole-mounted central splitting point cabinets) will take place where identified.

Construction work, including pole removal, pole setting, cable lowering, and fibre installation, will be completed using specialized equipment such as line trucks, excavators, multi-purpose tracked vehicles, augers, and various cable stringing tools, and general equipment such as pickup trucks. The ROW follows existing roads through communities, often allowing for direct access to the site via public roads. In areas where the ROW is not accessible by road, tracked, slow-moving equipment will be required.

2.5 Operations and Maintenance

Fibre optic cables typically have a lifespan of 20-40 years, although they may last much longer. Within this lifespan, cables will be repaired or replaced as necessary (e.g., if damaged by inclement weather). Cable inspection will take place during repairs, but otherwise will not be undertaken on a regular basis. The operation and maintenance of the transmission line will continue to be the responsibility of Newfoundland Power, and is outside the scope of this Undertaking.

2.6 Project Occupations

The Undertaking is anticipated to require up to 67 personnel to complete, including employees from Newfoundland Power, Bell Canada, and certified contractors. The occupations, number of personnel required, and estimated number of workdays per person, along with the National Occupational Classification (NOC) code for each, are provided in Table 2.6-1.

Table 1.6-1 Estimated Occupations.

Occupation	Number of Personnel	NOC Code	Work Days Required
Newfoundland Power - Engineering			
Electrical and electronics engineering technologists and technicians	2	22310	20
Supervisor, electrical trades and telecommunications occupations	1	72011	40
Contractors and supervisors, heavy equipment operator crews	4	72021	75
Vegetation Clearing Contractor			
Heavy equipment operator	2	73400	25
Logging machinery operator	2	83110	25
Supervisors, logging and forestry	1	82010	25
Chain saw and skidder operators	6	84110	25
Construction trades helpers and labourers	2	75110	25
Land Surveying Contractor			
Land surveyor	1	22213	5
Construction Contractor			

Occupation	Number of Personnel	NOC Code	Work Days Required
Construction project manager	1	70010	50
Heavy equipment operator	1	73400	50
Contractors and supervisors, heavy equipment operator crews	1	72021	50
Supervisor, electrical trades and telecommunications occupations	1	72011	50
Heavy-duty equipment mechanic	1	72401	5
Electrical power line and cable workers	2	72203	50
Public and environmental health and safety professionals	1	21120	15
Construction trades helpers and labourers	2	75110	50
Newfoundland Power - Support			
Public and environmental health and safety professionals	1	21120	45
Electrical power line and cable workers	6	72203	30
Bell Canada			
Contractors and supervisors, electrical trades and telecommunications occupations	2	72011	75
Telecommunications equipment installation and cable television service technicians	6	72205	75
Bell Construction Contractor			
Telecommunications equipment installation and cable television service technicians	12	72205	75
Construction trades helpers and labourers	6	75110	75
Contractors and supervisors, electrical trades and telecommunications occupations	3	72011	75

3.0 Existing Environment

The sections below provide an overview of the existing biophysical and socio-economic environments associated with the Project. This overview is based on a thorough desktop research program and includes a description of the following Valued Components (VCs) selected for the Project (defined further in Section 4.1):

- Atmospheric Environment.
- Aquatic Environment.
- Terrestrial Environment.
- Socio-economic Environment.

3.1 Atmospheric Environment

This section examines the regional climate, air quality, noise, and vibration levels associated with the Project Area. Information was sourced from a comprehensive review of existing literature and databases, and was supplemented with expert opinion.

3.1.1 Regional Climate

The Project is located mainly within the Codroy subregion of the Southwestern Newfoundland Ecoregion (Agriculture Canada, 2013). This area experiences one of the warmest climates in NL, with a relatively long growing season and consistently high humidity (Government of NL, 2020). The Project Area ranges in elevation from approximately 7.6 to 61.3 m above sea level (MASL). Climate information for the Codroy Valley area, presented in Table 3.1-1, is based on data recorded from 1981-2010 at the Environment and Climate Change Canada (ECCC) Port aux Basques climate station (ECCC, 2025a). The Project is located approximately 20 km northwest of Port aux Basques, which sits at an elevation of 40 MASL.

Table 3.1-1 Port aux Basques Climate Normals (1981 to 2010).

Month	Temperature			Precipitation			Wind
	Monthly Average (°C)	Extreme Maximum (°C)	Extreme Minimum (°C)	Total (mm)	Rain (mm)	Snow (cm)	Maximum Hourly Speed (km/h)
January	-5.1	9.9	-23.3	151.6	48.7	101.9	116
February	-6.4	8.9	-26.1	125.2	41.8	81.7	120
March	-3.6	11.2	-24.1	107.5	57.6	49.1	109

Month	Temperature			Precipitation			Wind
	Monthly Average (°C)	Extreme Maximum (°C)	Extreme Minimum (°C)	Total (mm)	Rain (mm)	Snow (cm)	Maximum Hourly Speed (km/h)
April	1.4	18.2	-13.3	139.1	118.9	17.4	100
May	5.7	22.2	-6.7	118.6	115.7	2.4	87
June	9.8	25.3	-1.1	127.4	127.4	0	85
July	14	27.8	3.5	112.58	112.5	0	74
August	15.3	27.2	2.8	118.6	118.5	0	74
September	12.1	30	0	125.4	125.4	0	106
October	7.4	25	-4	145.2	143.3	2.2	115
November	2.8	15	-11.3	151.2	127.1	21.8	106
December	-2.1	10.7	-21.2	172.2	92.9	78.6	115
Year	4.3	19.3	-10.4	1594.6	1229.9	355	120

In Port aux Basques, average daily temperatures range from about -6.4°C in January to roughly 15.3°C in August. Temperatures typically fall below freezing in December and stay below zero through April.

The region receives an annual average of about 1,594.6 mm of precipitation, including roughly 1,229.9 mm of rain and 355 cm of snowfall. Monthly precipitation varies from approximately 107.5 mm in March to about 172.2 mm in December. Recorded temperature extremes include a high of 30°C in September 1955, and a low of -26.1°C in February 1915. The greatest single-day rainfall occurred in July 1979, when 111.4 mm fell. Extreme snow depths are generally observed from October through May, with the deepest recorded snowpack reaching 197 cm in March 1982.

This coastal area is also prone to strong wind events. Prevailing winds are mainly from the east, with additional westerly influence during fall and winter. The strongest recorded single-day wind speed was 120 km/h in February 1995.

3.1.2 Air Quality

Under the **Management of Greenhouse Gas Act** (MGGA), emissions are reported as carbon dioxide equivalents (CO₂e), which standardizes different greenhouse gases (GHGs) using their global warming potential (GWP), a measure of how much heat a gas traps compared to carbon dioxide (CO₂). As required by the MGGA, facilities must report their emissions to the NL Department of Environment, Conservation and Climate Change (NL ECCC) if annual operational emissions exceed 15,000 tonnes of CO₂e (MGGA, 2016). The Project will not increase GHG emissions beyond existing baseline levels, thus, the Project is not anticipated to be subject to the MGGA. The Project will implement emissions-reduction measures as part of a suite of environmental mitigation measures (refer to Section 4.3).

3.1.3 Noise and Vibration

Existing ambient noise in the Project Area consists of both natural (e.g., wave action, wind) and anthropogenic (e.g., farming equipment, heavy equipment use, earthworks) inputs. Natural noise tends to be sporadic, while construction and farming operations generate more continuous and notable sound. These activities are largely limited to small-scale development projects and agriculture (i.e., road improvement, cabin construction) and, due to the surrounding topography, have limited influence on broader regional noise conditions. Based on the population density of the region, the area would be expected to be classified as a “quiet rural” community type (Health Canada, 2023).

Existing vibration levels in the Project Area are likely to be low, with vibration occurring only intermittently. Sources of existing vibration in the area would likely be associated with construction activities and the use of heavy machinery for agriculture. Natural vibration sources, including seismic or volcanic activity, would be negligible.

3.2 Aquatic Environment

The content of this section has been developed based on a review of publicly available desktop information, reports, and online data resources. The following subsections provide an overview of the existing waterbodies and watercourses, and the fish and fish habitat present in the Project Area.

3.2.1 Waterbodies and Watercourses

Waterbodies, including watercourses and wetlands, are provincially protected under the **Water Resources Act** (SNL 2002 cW-4.1), administered by the Water Resources Management Division of NL ECCC (NL ECCC, 2001; **Water Resources Act**, 2002). Section 48 of the Act safeguards these waterbodies by requiring permits for any alterations or development-related impacts, whether direct or indirect, on water quantity, water quality, hydrology, or associated terrestrial and aquatic habitats. Such activities are prohibited unless specifically authorized by the Minister of Environment, Conservation, and Climate Change.

The Codroy Valley contains an extensive network of waterbodies and watercourses that drain from the surrounding highlands into several major rivers and coastal estuaries. Two scheduled Atlantic salmon rivers and their tributaries are present in the valley:

- Little Codroy River (136), including Cooper’s Brook, Southern Brook, and Western Brook; and
- Great Codroy River (137), including Broom Brook, Ryan’s Brook, Mullchingnic Brook, the North Branch (Upper Brook, Lower Brook, Crooked Brook), and the South Branch (Bullhouse Brook).

A desktop review of the federal CanVec 1:50,000 Hydrographic Features dataset was completed to identify locations where Project activities may intersect surface water features. This analysis identified 72 potential water crossings (Table 3.2-1; Figure 3.2-1; Appendix E). There are two crossings over the Little Codroy River and one crossing over the Grand Codroy River. All identified crossings occur within the existing transmission line ROW and coincide with existing infrastructure such as public roads, bridges, and culverts. There are no real-time stream flow monitoring stations within watersheds identified in proximity to the Project Area.

Any potential negative effects on waterbodies and watercourses will be mitigated in accordance with relevant federal and provincial legislation, along with standard environmental mitigation measures, as outlined in Section 4.3.

Table 3.2-1 Potential Water Crossings.

Crossing ID	CanVec Feature ID	Easting	Northing	Name
1	5daa23a6a5384001a97abacfc6c9a7e8	353173	5312297	-
2	bfb2cf5c24a34203986f4f39e7f5842d	351032	5310599	-
3	b2451af9b7de47969a17fda616701f2f	349140	5309341	Muisés Brook
4	79af8511f9274bbc98a6014c2a392657	348373	5308906	Johns Brook
5	e4b2a231d7544b328558e070f71e9a52	320646	5307610	-
6	6da294761d994bf382c2a4864e733504	320054	5307514	-
7	32455399783d41a7800fece1d6f6b69c	347150	5307151	Stephens Brook
8	243bd0d6d5cf4949bc1ffaa1b77c094f	320792	5306755	-
9	7bf2cbee9af04d829cfab4c8a72de57e	322586	5304777	-
10	2436138f0b2343d4a900ea35a43fb28a	323051	5304668	-
11	2436138f0b2343d4a900ea35a43fb28a	323000	5304654	-
12	2436138f0b2343d4a900ea35a43fb28a	322751	5304573	-
13	0167e80a00414ad1bab2014ec884a2f6	337087	5304507	-
14	08d462472e8a4887967b715c3a29a3f4	336297	5304139	-
15	4b4677447483492e9e2dc600dd83149d	323170	5303867	-
16	49ef7df384af4caebf12f3b1e9098640	323251	5303712	-
17	6abbceca8fc84d1f86bcc94be0ed6125	335339	5303708	-
18	49ef7df384af4caebf12f3b1e9098640	323586	5303664	-
19	035682d931af4f43b68795cde6d7b4e1	334882	5302981	Muddy Hole Brook
20	2ec6a16ec0dd46b7b9eff54d2df1de5e	333392	5302978	-
21*	0d8b364200874b9685e586d8cb61c8c2	333311	5302972	Ryans Brook
22	649ec41d713f40afb7d9c33ed7497c73	327950	5302963	-
23*	193c162b01d44ba1b5e2a715cb51e641	327977	5302927	Brooms Brook
24	94cc4346be164fd6aa14e83eb1b8b41f	328063	5302807	-
25	90a1a80c03a347b493624a323496476f	328142	5302694	-

Crossing ID	CanVec Feature ID	Easting	Northing	Name
26	7b5831599cd04de9940b467e5078af7a	331912	5302670	-
27	7b5831599cd04de9940b467e5078af7a	331907	5302619	-
28	162c1d071b37449cbce9bdba2134a1f1	327243	5302612	-
29	d072442cb6a648fc8cd367d8eb2b9a49	324678	5302496	Grand Daddys Brook
30	242f586cffa44aa7beb08134e9365524	333654	5302150	Muddy Hole Brook
31*	5a1f8d807b4548af95840057cc0a7193	330225	5301210	Grand Codroy River
32	e7edb8b176304b8ebed84a49c6e5b7d8	330511	5300980	-
33	5b46078d175246f68733d413980bb9d7	332498	5300949	-
34	eab336a2fe66451498ce88bc8d17ef42	329026	5300929	-
35	aa68b72d308b4931adf7e8e58036f09c	328060	5300513	-
36	6b2f827c40bf418e98dd04ebb96f0d3e	335161	5300302	-
37	6b2f827c40bf418e98dd04ebb96f0d3e	335084	5300293	-
38	0a632d3a53d34d10aa3c7aaa0801001e	327532	5300139	-
39	0a632d3a53d34d10aa3c7aaa0801001e	327589	5300050	-
40	013fe5366c844574a743ba1588b52c6d	334073	5299928	-
41	f73859a645a84683ae39e94d8e1c5f71	334663	5299909	-
42	e3d8ef5d3cd04056b50b229a1ef2ad86	326380	5299625	-
43	f73859a645a84683ae39e94d8e1c5f71	334626	5299293	-
44	c5236f61ab744eccaa161ce272098820	335222	5298717	-
45	c5236f61ab744eccaa161ce272098820	335127	5298667	-
46	525cc4185e7747a09359b6eba1f868f9	325821	5298665	-
47	c5236f61ab744eccaa161ce272098820	334939	5298331	-
48	655de78654394c0b8d591dc9ba82a3a9	334642	5297997	-
49	655de78654394c0b8d591dc9ba82a3a9	334506	5297996	-
50	d1749cb9bc554b11bb1360b13ed44338	325808	5297691	-
51	b5bbf4b8e1e141308e935f0c8c30ffbb	334362	5297645	-
52	3bf93ccc6dd14a5e8bdb176cd3dc560e	325750	5297057	-
53	78e8ebb3831448d6b2d285de10aa7e2d	330618	5296958	-
54	bc6c19312bf145d19323ad1f806c1c32	333918	5296346	-
55	bc6c19312bf145d19323ad1f806c1c32	334067	5296320	-
56	e39257d6b3ab4e9fa536d52bfeebff28	333441	5296267	-
57	e39257d6b3ab4e9fa536d52bfeebff28	333052	5296204	-
58	e39257d6b3ab4e9fa536d52bfeebff28	333063	5296184	-
59	806350f19da441679914dd0a20a0ef2c	328872	5296169	-
60	7cbb6403b77e40f89edadbc327d40a51	333863	5295959	-
61*	acdd64a54d934792b80c19e0b9cbd184	333439	5295883	Little Codroy River
62	400d024826b241ceae6c4795913c3c55	333746	5295708	-
63	15db3b24f0134973a05b3d57068163dc	332494	5295458	-
64	5747831f0f214f41b07899bb6dd978a8	333463	5295427	-

Crossing ID	CanVec Feature ID	Easting	Northing	Name
65	15db3b24f0134973a05b3d57068163dc	332489	5295405	-
66	5747831f0f214f41b07899bb6dd978a8	333456	5295221	-
67	4f12b8f9752947798200d0cd7f0c4169	331769	5295031	-
68	da26b0a1e61d49af988ea3d789b0a5ce	331231	5293738	-
69	93d1ede060dc46bb9ae5eef20fd9723c	329156	5293658	-
70	806350f19da441679914dd0a20a0ef2c	327358	5293277	-
71*	5e3be57a0ae6494cb5c011cdf2b53242	329903	5292913	Little Codroy River
72	dd4b54e48b3f40a89e877569c53a4e02	330246	5292662	-
* Denotes potential scheduled Atlantic salmon river crossings				

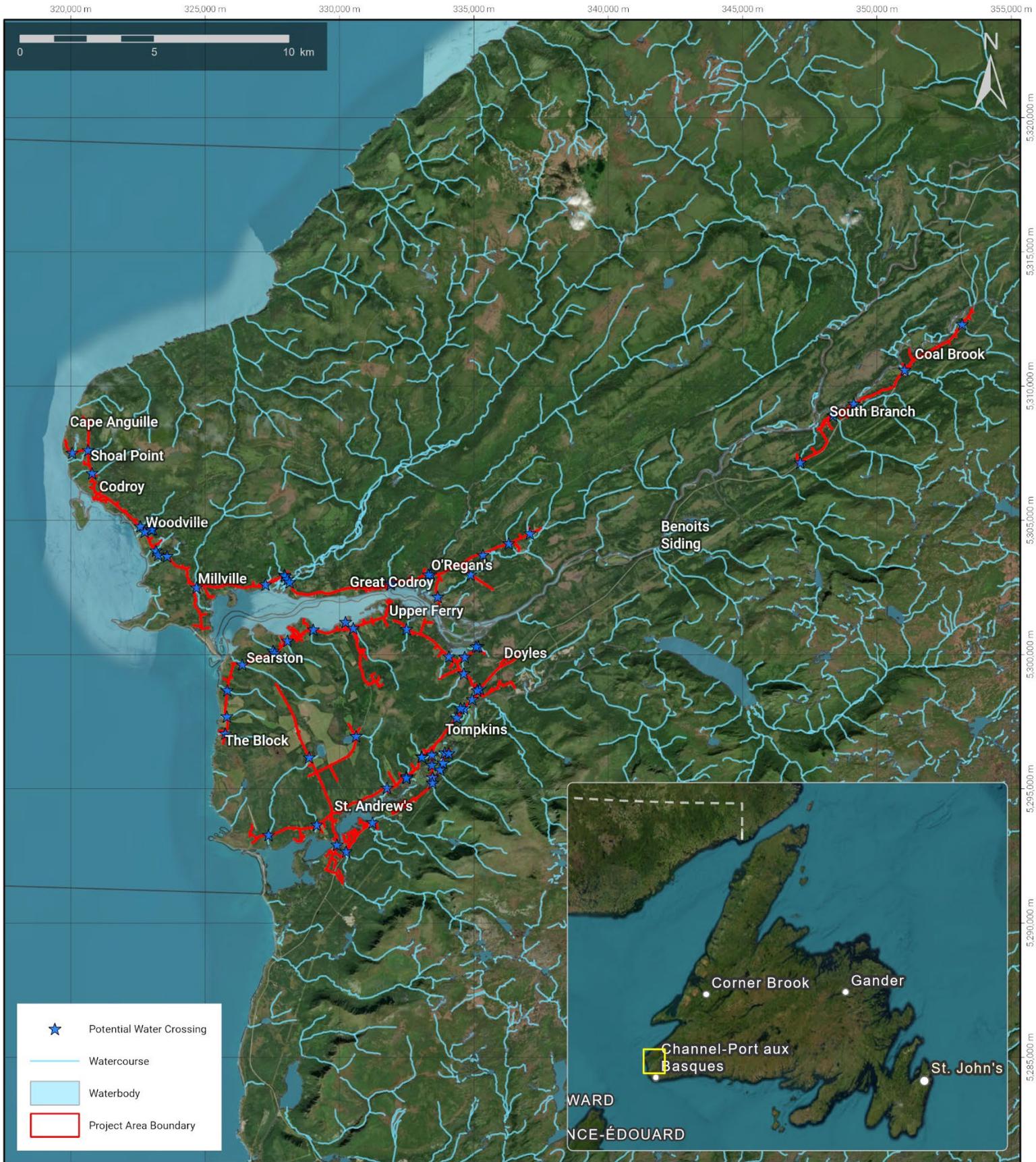


	FIGURE NUMBER: 3.2-1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 21N	PREPARED BY: C. Bursey	DATE: 08/12/2025
	FIGURE TITLE: Potential Water Crossings in the Project Area	NOTES: Watercourse and Waterbody layers sourced from CanVec (National Topographic Service) 1:50k mapping.	REVIEWED BY:	
	PROJECT TITLE: Codroy Valley Fibre Project	APPROVED BY:		

3.2.2 Fish and Fish Habitat

Fish and fish habitat are protected under the federal **Fisheries Act** (R.S.C., 1985, c. F-14), administered by Fisheries and Oceans Canada (DFO). The Act prohibits any work, undertaking, or activity, other than fishing, that causes the death of fish (34.4(1)) or results in the harmful alteration, disruption, or destruction of fish habitat (35(1)). These provisions are applied through permitting, licensing, regulations, habitat restoration measures, marine refuges, and fish stock management.

Fish communities on the Island of Newfoundland include a mix of diadromous species as well as resident freshwater species. Within the Codroy Valley, the most common are brook trout (*Salvelinus fontinalis*), Atlantic salmon (*Salmo salar*), American eel (*Anguilla rostrata*), threespine stickleback (*Gasterosteus aculeatus*), and ninespine stickleback (*Pungitius pungitius*). Other species that may occur include banded killifish (*Fundulus diaphanus*), rainbow smelt (*Osmerus mordax*), Arctic char (*Salvelinus alpinus*), and blackspotted stickleback (*Gasterosteus wheatlandi*).

Any potential negative effects on fish and fish habitat will be mitigated in accordance with relevant federal and provincial legislation, along with standard environmental mitigation measures, as outlined in Section 4.3.

3.2.2.1 Freshwater Conservation Concern

As defined for the scope of this Registration, SAR are species listed under the federal **Species at Risk Act** (SARA) as Endangered, Threatened, or Special Concern, and/or the provincial **Endangered Species Act** (NL ESA) as Endangered, Threatened, or Vulnerable. Species of Conservation Concern (SCC) are those not formally listed as SAR but that are considered to be at elevated risk, including species identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Atlantic Canada Conservation Data Centre (AC CDC). For this Registration, only SAR are discussed further, except for the Atlantic salmon (South NL population), which is being included due to its cultural and socio-economic importance in the region.

To determine which SAR were possible for the Project Area, desktop research was undertaken, including a review of relevant literature, range maps, publicly available databases, and anecdotal evidence. In addition, a data query was submitted to AC CDC to include results within a 25 km buffer from a central point in the Project Area. AC CDC returned records of only one aquatic SAR within the 25 km buffer zone. Table 3.2-2 includes the mummichog and additional SAR not indicated in the AC CDC data but thought to be possible for the area, based on desktop research and expert opinion.

Table 3.2-2 Aquatic Species at Risk and Species of Conservation Concern.

Common Name	Scientific Name	SARA Status	NL ESA Status	S-Rank	AC CDC Record
Atlantic Salmon (South Newfoundland Pop.)	<i>Salmo salar</i>	Not Listed*	Not Listed	S4B, SNRN, SNRM	No
American Eel	<i>Anguilla rostrata</i>	Not Listed*	Vulnerable	S3N	No
Banded Killifish (Newfoundland Pop.)	<i>Fundulus diaphanus</i>	Special Concern	Vulnerable	S3	No
Mummichog	<i>Fundulus heteroclitus</i>	Not Listed	Vulnerable	S3	Yes

Atlantic salmon

Atlantic salmon in Newfoundland occur in both anadromous and landlocked (ouananiche) forms (Smith, 1988). Upstream migration timing is highly variable, ranging from May to October (Porter, 1975; Scruton *et al.*, 1997). Anadromous salmon typically spawn in clean, well-aerated gravel riffles above pools (Scott & Scott, 1988; Smith, 1988; Gibson, 1993; Stanley & Trial, 1995; Scott & Crossman, 1998), usually between mid-October and mid-November (Scruton *et al.*, 1997). Adults may return to sea immediately after spawning or overwinter in freshwater before migrating seaward in spring (Smith, 1988). Eggs incubate over winter (Smith, 1988) for four to five months, with hatching occurring between mid-April and early May (Porter, 1975; Scruton *et al.*, 1997). Downstream migration of overwintering adults occurs in May and June (Porter, 1975). Juveniles may remain buried in substrate for weeks after hatching (Randall, 1982) before moving to other habitats, and smolts migrate downstream in spring (Porter, 1975; Scott & Scott, 1988; Scott & Crossman, 1998). Anadromous salmon overwinter at sea, migrating to feeding grounds off Labrador and western Greenland.

Banded killifish

The banded killifish is a small freshwater fish that plays an important role in Newfoundland's freshwater ecosystems, which generally have low species diversity (COSEWIC, 2014). In Newfoundland, the species has a scattered distribution, primarily along the southwest coast (e.g., Stephenville Crossing, St. Georges), with isolated populations on Ramea Island, the northeast coast, the Burin Peninsula, and in the headwaters of the Exploits River. Although only ten locations are currently documented, recent surveys indicate that additional, undiscovered populations may exist. Banded killifish are usually found in shallow freshwater with slow-moving currents, soft substrates, and abundant aquatic vegetation, but they can also occur in estuarine areas (COSEWIC, 2014).

American Eel

The American eel is a catadromous species that inhabits freshwater and estuarine environments for most of its life before migrating to the ocean to spawn (Scott & Crossman, 1998). In Newfoundland, downstream migration generally occurs from mid-August to mid-October (Scruton et al., 1997), and spawning takes place in the Sargasso Sea during mid-winter (January–March). Elvers migrate upstream from early June to mid-August and depend on soft substrates and sheltered microhabitats such as burrows, vegetation, and debris for movement and protection (Bradbury et al., 1999; Scruton et al., 1997; Grant & Lee, 2004). These habitat requirements suggest that freshwater systems within the Project Area may offer suitable overwintering, feeding, and migratory habitats for American eel.

Mummichog

The mummichog is listed as vulnerable under the NL ESA (NL FAL, n.d.). This euryhaline species are located along the Atlantic coast of Newfoundland, typically found in brackish waters (NL FAL, n.d.; Scott & Crossman, 1973). Generally, Mummichogs start spawning in spring and summer months depending on the temperature as eggs hatch around between 12.8°C to 17.2°C. Eggs are attached to plants, algal mats, empty mussel shells, sand, or mud during high tide. Mummichog's feed on algae, mollusks, crustaceans, and vegetation near the surface of the water. Mummichogs have been located within Codroy Valley and are expected to be present within the Project Area (Sargent et al., 2020).

3.2.2.2 Freshwater Habitats of Conservation Concern

Spawning habitats are important for reproduction and recruitment for salmonid populations. Spawning locations and suitable spawning substrates are considered potentially limiting to fish production. No critical habitats (as defined by SARA or NL ESA) for these species were identified within the Project Area.

3.3 Terrestrial Environment

This section presents the Ecological Land Classification (ELC) completed for the Project Area, including a desktop delineation of the wetlands present, and provides an overview of the avifauna and SAR that may occur throughout. A thorough desktop research program was undertaken to inform this section. This included a review of relevant literature, publicly available databases, and the use of expert opinion.

3.3.1 Ecological Land Classification

The Project Area is located mainly within the Southwestern Newfoundland Ecoregion, with a small portion (along the TCH-1 extending past Tompkins) falling within the Long Range Mountains Ecoregion

(Agriculture Canada, 2013). The area can be categorized further into subregions of each, namely the Codroy Subregion and Southern Long Range Subregion, respectively (NL ECCC, 2007). The area is known for its warm climate and consistently high humidity (Government of NL, 2020). Balsam fir (*Abies balsamea*) is dominant, and shelter provided by the Long Range Mountains allows for favourable growing conditions (Heritage NL, 2002). Elevation is the main factor dividing the area into two separate Ecoregions – the Long Range Mountains Ecoregion includes mountainous areas above the treeline, dominated by arctic-alpine plants (Government of NL, 2020).

A desktop GIS exercise was undertaken to produce an Ecological Land Classification (ELC), which was used to identify the ecotypes (i.e., groupings of biotic and abiotic factors that influence the ecological identity of an area) that exist in the Project Area. This analysis made use of available open-source data, namely the NL FAL Land Cover Dataset (NL FAL, 2025), as well as a review of the general habitat information and geology of the area. The field guide *“Forest site classification manual: A field guide to the Damman forest types of Newfoundland”* by Meades & Moores (1994) was referenced during ecotype identification.

The NL FAL Land Cover Dataset represents the classification and delineation of different landscape features, including forest, non-forest, waterbodies, and other forest inventory data. Forest classes were determined based on the dominant forest species within each area. In addition, polygon representations of the roads within the Project Area were combined with the land cover dataset to produce a separate "Road" land cover class. This additional class was added to reflect the "roadside" nature of the Project, and to create a more accurate and robust representation of the land cover types in the linear Project Area.

Ten ecotypes were identified in the Project Area, representing a total of 398 hectares (ha). The Residential ecotype was the most dominant, accounting for 45% of the total area. Four of the identified ecotypes describe areas modified by anthropogenic land use, including Residential, Road, Agriculture, and Cleared Land. Together, these ecotypes comprise 76% of the total area occupied by the Project. Mature Coniferous Forest is the most dominant natural ecotype throughout, representing 40 ha or 10% of the total area. The ecotype composition of the Project Area is presented in Table 3.3-1. It was not possible to create one ELC map that accurately portrayed the Project Area due to its unique distribution (tracing 135 km of a utility pole line).

Table 3.3-1 Ecotype Composition of the Project Area.

Ecotype	Area (ha)	Percentage Cover (%)
Residential	180.28	45.3%
Road	78.45	19.7%
Mature Coniferous Forest	40.31	10.1%
Agriculture	37.43	9.4%



Ecotype	Area (ha)	Percentage Cover (%)
Mature Mixedwood Forest	23.8	6.0%
Coniferous Scrub	22.3	5.6%
Cleared Land	7.44	1.9%
Bog	3.54	0.9%
Deciduous Scrub	3.4	0.9%
Waterbody	1.14	0.3%

3.3.2 Avifauna

A variety of avifauna (birds) may interact with the Project Area. This includes residents (i.e., species that reside in NL year-round) and migratory species (i.e., species that use the area seasonally, either migrating north to breed or south to overwinter) from the following taxonomic orders:

- Anseriformes (waterfowl);
- Galliformes (gamebirds);
- Gaviiformes (loons);
- Accipitriformes and Falconiformes (raptors);
- Charadriiformes (shorebirds);
- Gruiformes (rails);
- Strigiformes (owls);
- Coraciiformes (kingfishers);
- Piciformes (woodpeckers); and
- Passeriformes (perching birds).

Common birds likely to occur in the Project Area include forest-dwelling passerines such as warblers, chickadees, and sparrows. Waterbodies and watercourses (see section 3.2.1) intersect with the Project Area and may host waterbirds such as ducks and geese. The Project Area runs proximal to the coastline in several areas and may occasionally host seabirds and shorebirds, although due to a lack of suitable habitat, interactions are unlikely. The Codroy Valley is known for hosting a diverse range of birds, including species that are typically uncommonly found in NL (Birds Canada, n.d.).

Birds may use the Project Area for various purposes, such as nesting, foraging, and roosting. Of particular concern to the Project is the potential for birds to nest in work zones, thus endangering them to construction activities. The nesting period for migratory birds on the island of NL is from mid-April to mid-August (ECCC, 2025b). Migratory birds are protected by the federal **Migratory Birds Convention Act** and its associated **Migratory Birds Regulations**. These regulations prevent the capture, kill, take, injury, or

harassment of migratory birds (including all waterfowl species and most passerines) and protect migratory bird nests. In addition, the provincial **Wild Life Act** provides protection for raptors and owls.

The Project will adhere to all applicable federal and provincial legislation. Further information on the effects of the Project on avifauna, including proposed mitigation measures, is provided in Section 4.0.

The Project Area coincides with two Important Bird Areas (IBAs), NF040: Codroy Valley and NF041: Codroy Valley Estuary. The Codroy Valley IBA encompasses a stretch of mixedwood and deciduous forest between the Little Codroy River and Grand Codroy River, designated for its utilization by a variety of forest birds, in particular the Red Crossbill (*Loxia curvirostra percna*) and Ovenbird (*Seiurus aurocapilla furvior*). The Codroy Valley Estuary was designated to reflect the area's importance as a breeding and staging site for various waterfowl species, in particular the Canada Goose (*Branta canadensis*).

There are several water-associated bird colonies near the Project Area such as Herring Gull (*Larus smithsonianus*), Great Black-backed Gull (*Larus marinus*), and Common Tern (*Sterna hirundo*) (ECCC, 2025c). There is no suitable habitat available for these species in the Project Area, thus it is highly unlikely that they will interact with the Project.

3.3.3 Wetlands

Wetlands are semi-aquatic ecosystems that provide vital services such as water storage and runoff delay, flood prevention, water purification, groundwater recharge, and carbon sequestration. Wetlands also provide important habitat for a myriad of species, including various obligate wetland species (i.e., those that require wetland ecosystems for their survival). The ecosystem services provided by wetlands help to support local communities, biodiversity, water management, and climate change management. As per the Canadian Wetland Classification System (CWCS), wetlands can be categorized into the following groups: (i) bog; (ii) fen; (iii) swamp; (iv) marsh; and (v) shallow water wetlands (NWWG, 1997).

The ELC analysis resulted in the identification of nine wetlands in the Project Area, occupying a total area of 3.54 ha. Desktop wetland delineations were conducted with recent satellite imagery, and detailed wetland maps are provided in Appendix E. This initial analysis demonstrated that at least 18 poles are located in wetlands.

Development in and affecting wetlands requires a Section 48 permit under the **Water Resources Act**, administered by NL ECCC. Activities affecting wetlands may be further regulated by the **Environmental Protection Act** under the **Environmental Assessment Regulations**. Also of relevance is the NL ECCC Policy for Development in Wetlands and the federal Policy on Wetland Conservation. Bell Canada, Newfoundland Power, and contractors will adhere to all applicable regulatory and legislative requirements when

undertaking work in or near wetland ecosystems. In addition, any potential negative effects on wetlands will be mitigated through use of standard environmental mitigation measures, as outlined in Section 4.3.

3.3.4 Species at Risk

SAR, as defined for the scope of this Registration, are species listed under the federal SARA as Endangered, Threatened, or Special Concern, and/or the provincial NL ESA as Endangered, Threatened, or Vulnerable. Species are listed under these Acts based on recommendations from the federal COSEWIC. Additional guidance is sought from the provincial Species Status Advisory Committee (SSAC).

To determine which SAR were possible for the Project Area, desktop research was undertaken, including a review of relevant literature, range maps, and publicly available databases. In addition, a data query was submitted to the AC CDC. The AC CDC identifies and ranks the rarity of local species based on provincial data. Their ranking system (S-Ranks) provides context for species rarity within NL. The AC CDC request was submitted to include results within a 25 km buffer from a central point in the Project Area. The AC CDC data contains records of both SAR and SCC. SCC are species considered by AC CDC to be provincially rare. For this Registration, only SAR are discussed further.

The AC CDC data returned records of 23 SAR within the 25 km buffer zone. These results are presented in Table 3.3-2, and maps illustrating the AC CDC results for rare flora and fauna are presented in Figures 3.3-2 and 3.3-3. The table also includes other SAR not indicated in the AC CDC data but thought to be possible for the area, based on the literature review and expert opinion.

Table 3.3-2 SAR Possible for the Project Area.

Common Name	Scientific Name	SARA	NL ESA	S-Rank	AC CDC Record
Avifauna					
Newfoundland Gray-cheeked Thrush	<i>Catharus minimus minimus</i>	Not Listed	Threatened	S2B, SUM	Yes
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Vulnerable	S2B, SUM	Yes
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened	Vulnerable	S3B, SUM	Yes
Bank Swallow	<i>Riparia riparia</i>	Threatened	Threatened	S1S2B, SUM	Yes
Red Knot	<i>Calidris canutus</i>	Endangered	Endangered	S2M	Yes
Piping Plover	<i>Charadrius melodus</i>	Not Listed	Endangered	S1B, SUM	Yes
Piping Plover melodus subspecies	<i>Charadrius melodus melodus</i>	Endangered	Endangered	S1B, SUM	Yes
Common Nighthawk	<i>Chordeiles minor</i>	Threatened	Vulnerable	SNA	Yes
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	Vulnerable	S3S4	Yes
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Threatened	S2S3B	Yes



Common Name	Scientific Name	SARA	NL ESA	S-Rank	AC CDC Record
Red Crossbill	<i>Loxia curvirostra percna</i>	Threatened	Threatened	S1S2	Yes
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Vulnerable	S1B, SUM	Yes
Rusty Blackbird	<i>Euphagus carolinus</i>	Threatened	Vulnerable	S2S3B, SUM	Yes
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Special Concern	Vulnerable	S3S4N	Yes
Harlequin Duck	<i>Histrionicus histrionicus</i>	Special Concern	Vulnerable	S2B, S2N	Yes
Barrow's Goldeneye	<i>Bucephala islandica</i>	Special Concern	Vulnerable	S1B, S2N, SUM	No
Ivory Gull	<i>Pagophila eburnea</i>	Endangered	Endangered	S1N, SUM	No
Fauna					
Newfoundland marten	<i>Martes americana atrata</i>	Not Listed	Vulnerable	S3S4	Yes
Northern myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	S1S3	Yes
Little brown myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	S1S3	Yes
Woodland boreal caribou	<i>Rangifer tarandus</i>	Special Concern	Not Listed	S3S4	No
Arthropods					
Yellow-banded bumble bee	<i>Bombus terricola</i>	Special Concern	Vulnerable	S3S4	No
Transverse lady beetle	<i>Coccinella transversoguttata</i>	Special Concern	Vulnerable	SU	No
Flora and Lichens					
Blue felt lichen	<i>Pectenium plumbea</i>	Special Concern	Vulnerable	S2S3	Yes
Tradescant's aster	<i>Symphyotrichum tradescantii</i>	Not Listed	Threatened	S1	Yes
Wrinkled shingle lichen	<i>Pannaria lurida</i>	Threatened	Threatened	S1	Yes
Feathery false Solomon's seal	<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>	Not Listed	Endangered	S1	Yes
Sharpleaf aster	<i>Oclemena acuminata</i>	Not Listed	Threatened	S1	Yes
Boreal felt lichen	<i>Erioderma pedicellatum</i>	Special Concern	Vulnerable	S3	No

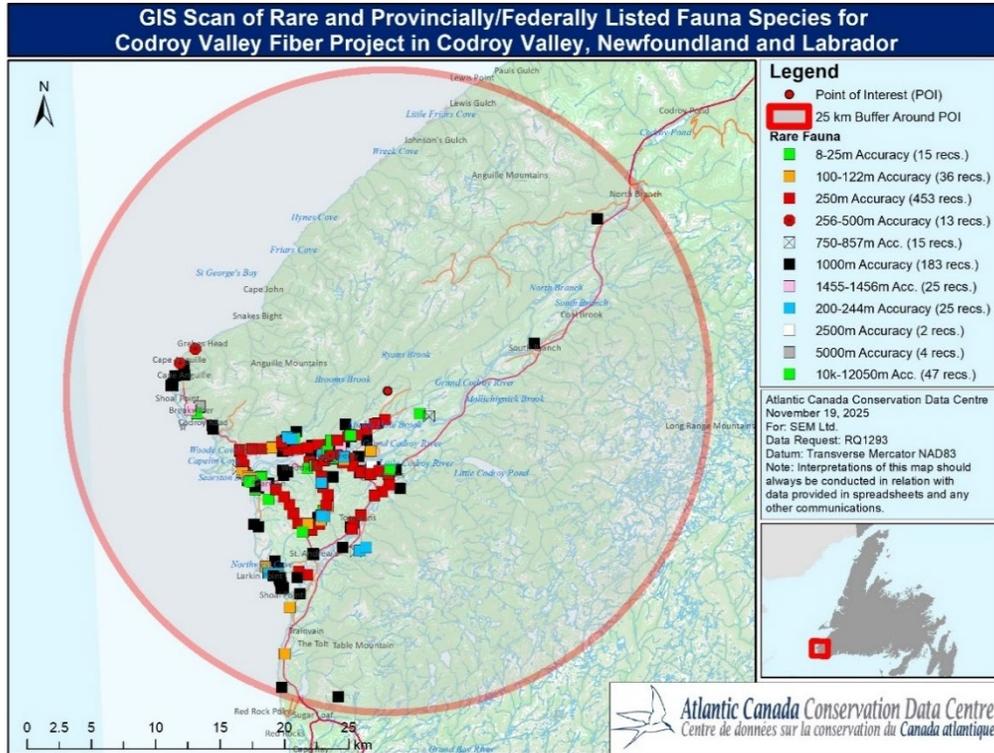


Figure 3.3-1 AC CDC Results – Rare Fauna.

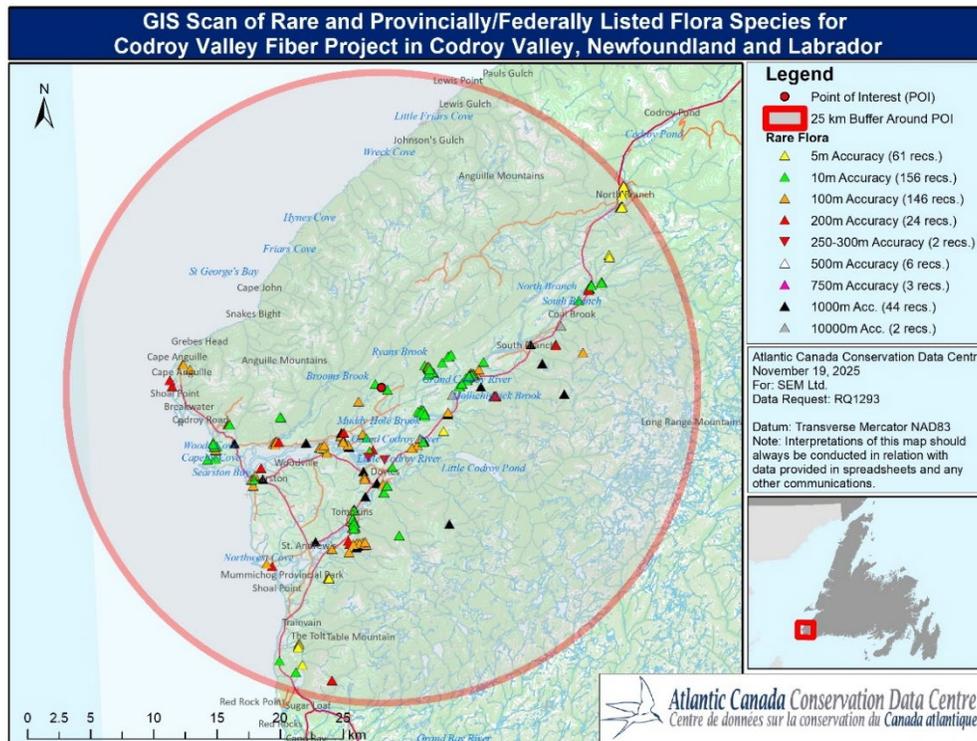


Figure 3.3-2 AC CDC Results – Rare Flora.

Given that the Project Area encompasses an existing utility pole line ROW, there is a lack of suitable habitat present for most of the species indicated above. Desktop research and expert opinion were used to determine which SAR were most likely to be present within the Project Area. The habitat preferences of those species are discussed further below.

3.3.4.1 Barn Swallow

Barn Swallow (*Hirundo rustica*) may nest in both natural environments (e.g., holes, caves, crevices) or anthropogenic structures (e.g., barns, houses, other buildings), although they are mostly found nesting in artificial structures (COSEWIC, 2011). They prefer open habitat for foraging, including grassy fields, agricultural lands, wetlands, and ROWs (COSEWIC, 2011).

3.3.4.2 Olive-sided Flycatcher

Olive-sided Flycatcher (*Contopus cooperi*) is typically associated with open areas that contain tall trees or snags (both natural and anthropogenic), forest edges (coniferous and mixedwood), burned forest, and/or wetlands (COSEWIC, 2007a). However, they are more likely to be found in or near wetlands (COSEWIC, 2007a). These habitats are used for both nesting and foraging.

3.3.4.3 Bank Swallow

Bank Swallow (*Riparia riparia*) prefer to nest in highly sloped (vertical or near-vertical) banks with sandy/silty substrate (COSEWIC, 2013). They have been known to nest in sites such as riverbanks, roadsides, and stockpiles (COSEWIC, 2013). Bank Swallow prefer to forage in open areas such as grasslands, meadows, and wetlands (COSEWIC, 2013).

3.3.4.4 Common Nighthawk

Common Nighthawk (*Chordeiles minor*) may breed in a variety of environments, with a preference for ground devoid of vegetation (e.g., beaches, cleared areas, barrens, peatbogs) (COSEWIC, 2007b). Common Nighthawk are crepuscular, feed primarily on aerial insects, and are known to forage over water and under anthropogenic lights (COSEWIC, 2007b).

3.3.4.5 Evening Grosbeak

Evening Grosbeak (*Hesperiphona vespertina*) is a resident species that prefers mature mixedwood forests with fir and white spruce (COSEWIC, 2016a). Evening Grosbeak populations are thought to correlate with the occurrence of spruce budworm, an insect that they are preferential to for foraging (COSEWIC, 2016a).

3.3.4.6 Short-eared Owl

Short-eared Owl (*Asio flammeus*) typically breed in open habitat of at least 50-100 ha in area (e.g., grasslands) where they can forage on small mammals (COSEWIC, 2021). This species is thought to breed in NL and overwinter further south (COSEWIC, 2021).

3.3.4.7 Red Crossbill (*ssp. percna*)

Red Crossbill *percna* (*Loxia curvirostra percna*) is a resident species whose range is restricted to NL and the surrounding islands (COSEWIC, 2016b). They are dependent on coniferous forests, as they are specially adapted to eat cone-obligate seeds produced by species such as black spruce (*Picea mariana*) (COSEWIC, 2016b).

3.3.4.8 Bobolink

Bobolink (*Dolichonyx oryzivorus*) is known to nest and forage in agricultural areas and grasslands, but may also occur in peatlands, abandoned fields, and other open areas (COSEWIC, 2010). It is not likely to utilize drier habitat with shorter vegetation (COSEWIC, 2010).

3.3.4.9 Rusty Blackbird

Rusty Blackbird (*Euphagus carolinus*) is known to breed in forested areas near wetlands (e.g., treed swamps, bogs, beaver ponds) (COSEWIC, 2017). They typically forage on invertebrates and are known to inhabit coniferous-dominated forests, although they prefer wet woodlands (COSEWIC, 2017).

3.3.4.10 Northern myotis

Northern myotis (*Myotis septentrionalis*) prefers to forage, roost, and form maternity colonies in forested areas, preferably deciduous or mixedwood forest (ECCC, 2018). They prefer mature or dead standing trees for roosting and are more likely to be observed in natural environments than in areas with anthropogenic influence (ECCC, 2018).

3.3.4.11 Little brown myotis

Little brown myotis (*Myotis lucifugus*) is more common in NL than their counterparts (Northern myotis, discussed above). These bats prefer to forage over open areas, such as wetlands and waterbodies, and are preferential to aquatic insects (ECCC, 2018). They roost in a variety of structures, including trees, snags, and buildings (e.g., siding, attics), and are known to readily form maternity colonies in human structures (ECCC, 2018).

3.3.4.12 Woodland boreal caribou

Woodland boreal caribou (*Rangifer tarandus*) in NL are known to use a variety of habitats, including barrens, shrublands, coniferous forest, and wetlands (COSEWIC, 2014). They continuously migrate across the landscape in search of forage, which includes terrestrial lichens, grasses, and shrubs (COSEWIC, 2014).

3.3.4.13 Yellow-banded bumble bee

Yellow-banded bumble bee (*Bombus terricola*) are habitat generalists known to use a wide variety of open spaces, including meadows, grasslands, and agricultural areas (ECCC, 2023). They forage on a variety of plants and nest underground in pre-existing cavities (e.g., rotting logs) (ECCC, 2023).

3.3.4.14 Transverse lady beetle

Transverse lady beetle (*Coccinella transversoguttata*) is known from a wide range of habitats, including forests, gardens, grasslands, and agricultural areas (COSEWIC, 2016c). Their movement patterns are thought to correspond to their preferred prey, consisting of small insects such as aphids (COSEWIC, 2016).

3.3.4.15 Blue felt lichen

Blue felt lichen (*Pectenium plumbeum*) is an epiphytic lichen dependent on tree hosts (phorophytes) for their survival. In NL, blue felt lichen is known to prefer mature deciduous trees such as yellow birch (*Betula alleghaniensis*) (ECCC, 2022). Like other epiphytic lichens, this species is sensitive to air pollution and requires relatively pristine habitat in order to thrive (ECCC, 2022).

3.3.4.16 Wrinkled shingled lichen

Wrinkled shingle lichen (*Pannaria lurida*) is an extremely rare epiphytic lichen known from only two locations in NL, one of which is within the 25 km AC CDC boundary set for the Project Area. This occurrence is unusually located on cliffside coastal white spruce (*Picea glauca*), although they are typically associated with mature deciduous trees (COSEWIC, 2016c).

3.3.4.17 Tradescant's aster

Tradescant's aster (*Symphyotrichum tradescantia*) is a small plant known for inhabiting shoreline areas (NL ECCC, 2015). This plant is extremely rare in NL and is only known from one location on the island, near the head of St. George's Bay (NL ECCC, 2015).

3.3.4.18 Feathery false Solomon's seal

Feathery false Solomon's seal (*Maianthemum racemosum* ssp. *racemosum*) is a perennial plant known to inhabit deciduous forests, although it may also be found in disturbed areas such as roadsides (Flora of North America, 2002).

3.3.4.19 Sharpleaf aster

Sharpleaf aster (*Oclemena acuminata*) is a small plant known for shaded woodland habitats (NL ECCC, 2015). This species has only been discovered at one location in NL, in the J.T. Cheeseman Provincial Park south of the Project Area (NL ECCC, 2015).

3.4 Socio-economic Environment

This section examines the baseline socio-economic context of the Project Area and general region. This includes land and resource use, heritage and cultural resources, and economy and employment. The information presented in this section was sourced from a thorough desktop review of relevant literature and publicly available data.

3.4.1 Land and Resource Use

The utility pole line ROW that comprises the Project Area passes through the unincorporated or unorganized communities of Coal Brook, South Branch, O'Regan's, Upper Ferry, Great Codroy, Codroy, Searston, Tompkins, Saint Andrew's, Millville, and Cape Anguille. Development in this region is managed by The Codroy Valley Area Development Association.

The Project will intersect with both Crown and private land. Crown parcels either abut or intersect the existing ROW. Access to private land will be managed by utilizing existing easements, with new easements obtained only as necessary.

Further information on land and resource use is presented in Sections 3.4.1.1 through 3.4.1.4 below.

3.4.1.1 Recreational and Subsistence Resource Use

Western NL supports a wide range of both recreational (e.g., hiking, camping, kayaking) and subsistence (e.g., hunting, fishing) activities. The Codroy Valley area is rich in natural resources, including highly valued game species such as Atlantic salmon, brook trout, black bear, and moose. Subsistence hunting is culturally significant for local residents, and the region also attracts hunters from abroad during seasonal harvests. The Project Area intersects four outfitter buffer zones, which are established by the

Newfoundland and Labrador Department of Tourism, Culture, Arts, and Recreation (NLDTCAR) to restrict new development, particularly cottage development, within designated areas surrounding licensed outfitting operations. Other subsistence land use activities that may occur in the area include domestic wood harvesting, hunting, fishing, berry picking, snowmobiling, and all-terrain vehicle (ATV) use. The Project does not overlap with any Domestic Harvest Areas.

There are several trails near the Project Area (e.g., the Starlite Trail); however, as the Project falls entirely within an existing ROW, no interactions are anticipated. The access roads and ROW maintained by Newfoundland Power are sometimes used recreationally by local residents for activities such as ATViing, hiking, and sightseeing. Newfoundland Power typically provides public notice prior to undertaking large projects on transmission lines.

3.4.1.2 Indigenous Land Use

Newfoundland is home to Miawpukek Mi'kamaway Mawi'omi, also known as Miawpukek First Nation (MFN), and the Qalipu Mi'kmaq First Nation (QFN). MFN is a First Nation Reserve located in Conne River, more than 250 km east of the Project Area, although its members reside both on and off-reserve. QFN has no official land base and instead represents members from 66 communities across the island. QFN operates a central office in Corner Brook and satellite offices in several locations, including Stephenville and St. George's.

Publicly available census data does not provide detailed Indigenous land use information for the area. However, given that the Project is confined to an existing and long-established ROW, no new interactions with Indigenous land use or cultural resources are anticipated. Continued engagement with relevant Indigenous groups is recommended to verify the absence of concerns and to incorporate any input into Project planning.

3.4.1.3 Parks and Protected Areas

There are three provincial parks near the Project Area: T'Railway Provincial Park, Grand Codroy Provincial Park, and Codroy Valley Provincial Park. The T'Railway Provincial Park is intersected by the Project Area in 14 places where transmission lines already exist to service private residences and businesses. Neither Grand Codroy Provincial Park nor Codroy Valley Provincial Park overlap directly with the Project Area. However, each park has a 1 km buffer zone (Parks Area of Interest), and these overlap with portions of the Project Area.

Within the Project Area, the Newfoundland and Labrador Water Resources Portal (NLWRMD, n.d.) identifies ten unprotected groundwater wellheads on privately managed Crown land for personal use. In addition, the community of St. Andrew's contains four public well water supply areas, all designated as Protected



Groundwater Zone 1, where specific activities are prohibited. These include placing, depositing, or leaving any material that could impair groundwater quality, and undertaking development activities without prior approval from the Minister (Government of Newfoundland and Labrador, 2002, s. 61). There are no public protected surface water supplies near the Project Area.

3.4.1.4 Commercial and Industrial Resource Use

The Project is located within the Codroy Valley Agriculture Development Area. Development Areas are designated by the provincial Department of Forestry, Agriculture and Lands (NL FAL) based on soil surveys to support land-use planning for future agricultural development, while balancing other provincial land-use priorities (e.g., mining, forestry, water supply). As the Project will remain entirely within the existing ROW, no interactions with the Agriculture Development Area are anticipated. The Project Area does not overlap with any commercial forestry reserves.

3.4.2 Heritage and Cultural Resources

Historic resources in NL are governed by the **Historic Resources Act** (1990), and include archaeological materials such as stone tools, ceramics, glass, and metal objects, as well as structural remains (constructed from wood, stone, or other materials) that are at least 50 years old and show evidence of manufacture, alteration, or use by humans. Historic resources may also include burial, cultural, spiritual, and other heritage sites or artifacts dating to the Precontact Period (prior to CE 1500) or the Historic Period (CE 1500–1970), architectural resources (i.e., buildings, structures, or sites of built-heritage importance that are registered with Heritage NL), and paleontological resources (i.e., fossils).

There are no known historic resources within the Project Area, which encompasses an existing utility pole line ROW that has been developed and maintained for several decades. Given the long-standing disturbance associated with the existing infrastructure and ongoing maintenance activities, the presence of previously unrecorded heritage or cultural resources within the Project Area is highly unlikely.

3.4.3 Economy and Employment

The Project is located within Census Subdivision (CSD) Division No. 4, Subd. A (CSD 4A). This area consists of dispersed, unincorporated rural communities with low population densities and limited-service availability. The area reported a population of 1,743 in 2021, a slight increase from 1,530 in 2011 (Newfoundland & Labrador Statistics Agency, 2024).

Communities within CSD 4A rely on regional infrastructure (neighbouring towns and service hubs) for public services, including healthcare, emergency response services, education, and other commercial

services. Electricity is delivered through the existing transmission line corridor, which has been in place for several decades and is an established component of the local landscape.

The economy of CSD 4A is modest and shaped by rural settlement patterns, with employment commonly linked to natural resource sectors, small-scale service industries, and seasonal or part-time work (Newfoundland & Labrador Statistics Agency, 2024).

4.0 Environmental Effects

An environmental effects assessment was undertaken to identify the potential interactions between the Project and the surrounding biophysical and socio-economic environments. This assessment involved the use of desktop research to identify potential interactions between the Project and the environment, and to then identify appropriate measures to mitigate any negative effects that may occur. In consideration of both potential environmental effects and proposed mitigation measures, a calculation of the potential residual effects of the Project was undertaken, the results of which are provided in Section 4.4.

In order to facilitate the effects assessment, Valued Components (VCs) were determined to represent important elements of the biophysical and socio-economic environments within the Project Area. Four VCs were identified, including the Atmospheric Environment, Aquatic Environment, Terrestrial Environment, and Socio-economic Environment. Key Indicators (KIs) were then identified within VCs to represent important, measurable components of each. VCs and their associated KIs are presented in Table 4.1-1. Section 3 presents baseline information for each VC based on a desktop review, and provides the basis for the evaluation of potential interactions. Note that surface water resources (as discussed in Section 3) will be effectively addressed under the Fish and Fish Habitat and Wetlands KIs, thus are not included as a separate KI in this assessment.

Table 4.1-1 Valued Components and Key Indicators.

Valued Component	Key Indicator
Atmospheric Environment	Air Quality
	Noise
Aquatic Environment	Fish and Fish Habitat
Terrestrial Environment	Avifauna
	Wetlands
	Species at Risk
Socioeconomic Environment	Socioeconomic Resources

Interactions between Project activities and the identified KIs may be either direct or indirect. Direct interactions were identified through a review of the planned Project activities outlined in Section 2.3, in relation to the existing biophysical and socio-economic conditions identified in Section 3.0.

Indirect interactions generally require a pathway linking a Project activity to a KI. For example, vegetation clearing and site preparation within the ROW could directly alter wetland habitat. The same activities could also alter local hydrology by reducing infiltration and increasing surface runoff, resulting in indirect effects on surface water quality or quantity. Changes in surface water conditions may, in turn, influence fish and fish habitat, illustrating how a KI can function both as a receptor and a pathway of effect.

Table 4.1-2 presents a summary of the planned Project activities that could interact with elements of the environment.

Table 4.1-2 Project-Environment Interactions.

Phase	Component	Description
Construction	Vegetation Management	<ul style="list-style-type: none"> Vegetation clearing activities, such as brush cutting and tree trimming, to maintain adequate clearance in the ROW. Potential equipment to be used includes chainsaws, chippers, small machinery, and excavators.
Construction	Ground Disturbance & Structure Replacement	<ul style="list-style-type: none"> Excavation, removal, and installation of utility poles, anchors, and related structural components. Potential equipment to be used includes line trucks, excavators, and augers. May require temporary localized access to site along existing roads and trails leading to the ROW.
Construction	Line Installation & Commissioning	<ul style="list-style-type: none"> Installation and activation of new fibre communication cable and adjustments to existing transmission line infrastructure. Activities include lashing new fibre cable to existing communication strand, installing new strand, completing strand-mounted splices, and attaching pole-mounted network components such as central splitting point cabinets. Commissioning includes testing, tensioning, and final system integration to ensure functionality. Potential equipment to be used includes line trucks and various cable stringing tools.
Operation and Maintenance	Maintenance (Repairs)	<ul style="list-style-type: none"> Newfoundland Power is responsible for the maintenance of existing transmission lines, poles, and the ROW. Bell Canada will conduct maintenance (repairs to the fibre lines) as required, as informed by Newfoundland Power or customer outages. Regular maintenance activities will either be unchanged or lessened as a result of the Project. Communications lines in the Project Area will continue to be maintained and inspected as per current practice. Maintenance activities typically occur within the established ROW and use existing access routes where possible. Maintenance activities are short-term and localized.
Construction; Operation and Maintenance	Accidents and Malfunctions	<ul style="list-style-type: none"> Unplanned events that may occur during construction, operation, or maintenance include fuel or hydraulic fluid spills from equipment, equipment failure or overturning, dropped materials, pole collapse, conductor failure, or fibre line damage from severe weather or third-party contact.

Table 4.1-3 provides an overview of which KIs may be affected by the potential project interactions identified above. Potential interactions between the Project and the environment are discussed in detail in the following sections.

Table 4.1-3 Potential Project Interactions with KIs.

Key Indicator	Construction			Operation and Maintenance	Unplanned Events
	Vegetation Management	Ground Disturbance & Structure Replacement	Line Installation & Commissioning	Maintenance (Repairs)	Accidents and Malfunctions
Air Quality	X	X	X	X	X
Noise	X	X	X	X	X
Fish and Fish Habitat	X	X		X	X
Wetlands	X	X	X	X	X
Avifauna	X	X		X	X
Species at Risk	X	X	X	X	X
Socioeconomic Resources	X	X	X	X	X

4.1 Construction Phase

Construction activities, as outlined in Section 2.4, are scheduled to begin in Q2 2026 and will continue until Q4 2026 (see Section 6.0 for the proposed Project schedule). Potential interactions between the Project and each VC during the construction phase is discussed in the following sections.

4.1.1 Atmospheric Environment

Air Quality

The air quality assessment examined substances that may be emitted by the Project and that are regulated under the Newfoundland and Labrador Air Quality Standards in Schedule A of the Air Pollution Control Regulations, 2022, and applicable federal standards. Air pollutant releases are commonly classified as criteria air contaminants (CACs) or greenhouse gases (GHGs). Typical sources of CAC emissions anticipated to be generated by the Project include PM, NO₂, SO₂, CO, and VOCs (operation of mobile equipment, earth moving activities). The six main GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The Project will not increase GHG emissions beyond existing baseline levels, thus the Project is not anticipated to be subject to the MGGA.

Other provincially regulated contaminants (e.g., hydrogen sulphide, metals, asbestos, PCBs, dioxins, furans) are not expected to be released by Project activities and were excluded from further consideration.

Fugitive dust emissions are also expected during the Construction Phase and may be transported by wind into surrounding areas, where they could affect nearby sensitive environments. These emissions can be generated by most construction activities, and the extent of dust dispersion depends on factors such as wind speed and direction, dry ground conditions, and the lack of vegetation or natural cover. Without appropriate controls, fugitive dust can reduce local air quality, create potential health concerns for workers and nearby communities, and lead to particulate deposition on environmentally sensitive areas. Construction-related dust emissions are short-term and limited to the duration of active site work.

All applicable mitigation measures listed in Table 4.3-1 will be implemented as necessary during construction of the Project.

Noise and Vibration

Project construction will generate temporary noise from activities such as equipment operation, structure installation, and limited ground disturbance. Noise emissions will be intermittent and generally limited to typical construction hours (7 a.m. to 7 p.m.), with potential effects confined to nearby receptors. The area is already subject to regular ambient noise due to the operation of farm equipment in the vicinity – noise generated by the Project is not likely to exceed current levels. Vibration within the Project Area is expected to remain generally low and intermittent, primarily associated with heavy equipment operation. All applicable mitigation measures listed in Table 4.3-1 will be implemented as necessary during construction of the Project.

4.1.2 Aquatic Environment

No in-water works are planned for the Project. Transmission line and fibre cable water crossings will be accessed via existing roads and established rights-of-way on either side of the crossing, therefore no fording of rivers will be required during this Project. Potential interactions with surface water during the construction phase are limited to land disturbance near watercourses, which may cause erosion or siltation/sedimentation. No public protected water supply areas interact with Project Area boundaries.

Construction activities such as vegetation clearing, excavation for new poles, road building, and travel along ROWs and gravel roads may affect surface water, as they can increase the extent of exposed soils and alter existing surface runoff pathways. In addition, the Undertaking falls within the Flood Zone Watershed: Codroy Valley (Grand Codroy River). Runoff and sediment mobilization may elevate total suspended solids (TSS) in adjacent watercourses, potentially increasing turbidity. Unplanned events during any Project phase could also result in localized surface water contamination.

Interactions with fish and fish habitat are limited to indirect effects, primarily related to runoff affecting water quality (i.e., increased sedimentation).

All applicable mitigation measures listed in Table 4.3-1 will be implemented as necessary during construction of the Project.

4.1.3 Terrestrial Environment

No new clearing beyond the existing right-of-way is planned for the Project. The fibre optic cable will be installed along the previously cleared transmission corridor, and access will take place using existing roads and established trails. Potential interactions with terrestrial environments during the construction phase are therefore limited to localized ground disturbance within the existing footprint.

During construction, terrestrial effects may arise from equipment movement, minor excavation for pole installation, and travel along secondary roads and ROWs. These activities could temporarily disturb soils and vegetation and potentially increase erosion risk and alter surface runoff patterns. However, because the Project avoids new clearing, habitat loss and fragmentation are expected to be negligible. Wildlife interactions will be limited to short-term sensory disturbance (e.g., machinery, noise, and human activity) during construction. No significant changes to habitat connectivity or availability are anticipated. Wetlands will be avoided as much as practicable, and if not, proper mitigation measures will be implemented for safe crossing of machinery (e.g., fording permits, timber mats).

Potential interactions with terrestrial SAR and avifauna are expected to be minimal. The Project footprint is confined to an existing disturbed corridor, and work will occur outside sensitive breeding periods where feasible. Any residual effects on terrestrial components are expected to be short-term, reversible, and not significant. Unplanned events during any Project phase (e.g., accidental spills) could result in localized soil or vegetation contamination, but these risks will be mitigated through standard contingency measures.

4.1.4 Socioeconomic Environment

All Project activities will occur within the existing transmission line ROW, except where the ROW intersects Crown land leases. Any interactions with private land will be managed primarily through existing easements, with new easements acquired only as necessary.

The T’Railway Provincial Park is intersected by the Project Area in 14 locations, where existing transmission lines service nearby residences and businesses. While the Grand Codroy and Codroy Valley Provincial Parks do not directly overlap with the Project Area, each park has a 1 km buffer zone (Parks Area of Interest), and these overlap with portions of the Project Area. No measurable effects on community

infrastructure or public services are anticipated, as work will remain within the existing corridor. Due to historic disturbance, the likelihood of encountering previously unrecorded heritage or cultural resources is negligible.

Given the confined Project footprint, no new interactions with Indigenous land use or cultural resources are expected. However, continued engagement with relevant Indigenous communities is recommended to confirm the absence of concerns and to ensure that any feedback is incorporated into Project planning.

Short-term economic benefits may arise during construction through local spending on accommodations, food services, fuel, and supplies. While the Project does not generate new long-term employment, upgrades to existing transmission and telecommunications infrastructure will improve system reliability and connectivity, thereby indirectly supporting stable living conditions and long-term economic opportunities. In particular, the availability of reliable ultra-high-speed internet may enable remote work opportunities for local residents, attract remote workers to the area, and increase the attractiveness of the region to businesses that require high-quality telecommunications services.

No long-term adverse socio-economic effects are anticipated, as the Project involves improvements within an existing ROW rather than new land disturbance or major infrastructure expansion. The Project is expected to result in minimal traffic disturbance, limited to short-term lane closures and brief delays during intersecting stringing activities (e.g., road and T’Railway crossings). These potential disruptions will be managed through the traffic management measures outlined in Section 4.3.

4.2 Operation and Maintenance Phase

Following construction, the new fibre cables are expected to be commissioned in Q4 2026. Newfoundland Power is responsible for the operation, maintenance, and inspection of the transmission line, its structural components, and the ROW. Operations and maintenance practices align with existing procedures. Operations and maintenance activities for Bell Canada, including repair work as required, will be consistent with current practices. Potential impacts from future storm events is addressed in Section 4.3.1.

4.3 Mitigation Measures

In addition to meeting regulatory requirements, the Project has incorporated a range of standards, guidelines, and mitigation measures to avoid, minimize, or offset potential adverse effects. This includes typical industry best practices for construction and operations. Table 4.3-1 includes a comprehensive list of mitigation measures, organized by KI.

Table 4.3-1 Mitigation Measures.

Key Indicator	Mitigation
Air Quality	<ul style="list-style-type: none"> • Maintain vehicles and heavy equipment in good working order, including functional mufflers and exhaust systems. • Limit idling; turn off vehicles and equipment when stationary for extended periods. • Use Tier 4 engine mobile equipment where feasible to reduce emissions. • Manage dust using water or approved dust suppressants on access roads, work sites, and unpaved surfaces, where necessary. • Implement speed limits where needed to reduce dust. • Employ physical barriers or other control measures to limit fugitive dust in exposed areas, where necessary. • Implement Newfoundland Power Standard Operating Procedures (SOPs) for transmission line construction.
Noise	<ul style="list-style-type: none"> • Conduct construction activities during standard daytime hours (typically 7:00 am–7:00 pm, consistent with Newfoundland Power construction practices; never later than 10:00 pm unless unavoidable). • Schedule high-noise work (e.g., rock breaking, pole setting) during daytime hours where feasible. • Notify nearby landowners in advance of disruptive activities such as heavy equipment mobilization or night work. • Provide additional notifications for any high-impact events, as required by Newfoundland Power’s Contractor Environmental Responsibilities. • Use properly functioning noise-suppression devices (e.g., mufflers, exhaust silencers) on all vehicles and equipment. • Maintain all equipment in good working order in accordance with manufacturer recommendations and Newfoundland Power maintenance SOPs. • Limit idling of vehicles and equipment to the extent practicable. • Where feasible, use low-noise equipment and only the minimum horsepower required for the task. • Enclose or shield stationary noise sources (e.g., generators, compressors) where practical. • Use temporary noise barriers or shielding at locations close to sensitive receptors if required.
Fish and Fish Habitat	<ul style="list-style-type: none"> • Adhere to an Environmental Protection Plan. • Follow DFO guidance documents, standard mitigation measures, and best management practices. • Respect DFO timing windows for in-water work in Newfoundland and Labrador. • If fording is required, follow DFO’s Temporary Fording Code of Practice. • Develop an Erosion and Sediment Control Plan in consultation with the NL Water Resource Management Division and DFO prior to the commencement of on-site activities. • Implement erosion and sediment control measures (e.g., silt fencing, sediment traps) where necessary. • Direct runoff from construction areas away from watercourses and aquatic habitats. • Maintain vegetation along streambanks and promote natural re-vegetation after disturbance. • Use untreated timber, composite, or steel materials near water; avoid placing poles below the high-water mark. • Conduct refuelling only in designated areas >30 m from watercourses and wetlands.

Key Indicator	Mitigation
	<ul style="list-style-type: none"> • Conduct standard pre-work equipment inspections. • Keep a complete spill kit on site when fuel-powered equipment is in use. • Construct diversion ditches to isolate work areas from nearby watercourses, where necessary. • Limit work along streambanks to the minimum required. • Maintain equipment in good working order to minimize leaks. • Monitor site conditions before, during, and after construction to ensure natural drainage and watercourse conditions are restored. • Monitor runoff and sediment control measures throughout grubbing and material stockpiling.
Wetlands	<ul style="list-style-type: none"> • Maintain undisturbed buffer strips ≥ 30 m around wetlands and waterbodies, except where existing access roads require closer proximity. • Where work occurs within 30 m of a wetland, install and maintain flagging materials to clearly define the work footprint. • Store stockpiled materials at least 30 m away from wetlands. • Perform site and vehicle maintenance and fueling only in designated areas >30 m from wetlands and waterbodies, in adherence with applicable permits. • Utilize untreated or Chromated Copper Arsenate poles in wetlands; consider use of pole saver to reduce leaching in wetlands and near waterbodies. • Avoid brush piling near wetlands or waterbodies, or within 200 m of any scheduled salmon river. • Conduct cutting and clearing in or near wetlands following applicable guidelines, maintaining wetland vegetation where practicable. • Avoid soil disturbance and rutting by limiting machinery use, using swamp mats, and avoiding work during highly saturated conditions. • Implement erosion and sediment control measures prior to and during construction, where necessary. • Report and clean up spills immediately.
Avifauna	<ul style="list-style-type: none"> • Conduct vegetation clearing outside of the breeding bird season (April 15–August 15) where possible. If clearing must occur during breeding season, the following mitigations will be applied: <ul style="list-style-type: none"> ○ A qualified Avian Biologist will conduct pre-clearing nest surveys; ○ Flag and avoid all active nests until fledging; and ○ Establish appropriate buffers around nests, including a minimum 5 m no-clearing buffer. Establish species-specific buffers where necessary in consultation with NL Wildlife Division (NL WD). • Report locations of all raptor nests to NL WD. • Cover and slope stockpiles ($<70^\circ$) during breeding season to prevent nesting. • Educate staff to stay alert for wildlife while driving.
Species at Risk	<ul style="list-style-type: none"> • Minimize the project footprint; use existing roads, trails, and disturbed areas where feasible. • Stop work immediately within 10 m of any SAR observation; resume only after confirmation by a qualified Biologist that the species has left (up to 24 hours). • Report all SAR sightings to NL WD and ECCC-CWS; consult NL WD if a previously unknown SAR is discovered. • Staff will receive training on identifying SAR. • Implement a Wildlife Response Protocol for all wildlife encounters. • Record and report all wildlife interactions and conflicts to the Environmental Coordinator; notify NL FAL when required.

Key Indicator	Mitigation
	<ul style="list-style-type: none"> • Any roosts or hibernacula discovered will be reported to NL WD and avoided. • Clearly flag construction limits before clearing or grubbing. • Conduct bat roost surveys during bat roosting season and establish buffers around any active maternity roosts. • Identify and avoid sensitive habitats. • Keep work areas free of food waste to avoid attracting wildlife. • Remove roadkill promptly to reduce attractants and collision risk. • Personnel must always yield to wildlife, and are prohibited from chasing, following, or disturbing animals. • Dry wood will be removed from site promptly to reduce the risk of forest fire. • Maintain firefighting equipment on-site. • Report and clean spills promptly; dispose of contaminated soils at approved facilities.
Socioeconomic Resources	<ul style="list-style-type: none"> • Contain work within the existing ROW and public roads where possible. • Engage landowners prior to easement registration or vegetation removal, where necessary. • Apply for and obtain all required permits for the Project. • Engage with provincial departments and agencies to understand and meet regulatory requirements. • Maintain contractor compliance with workers' health and safety regulations. • Hire locally or regionally wherever possible. • Procure goods and services locally, regionally, and provincially to the extent available. • Apply diversity, equity, and inclusion (DEI) policies in hiring and procurement. • Adhere to proper management practices and all applicable legislation when working with poles and cross-arms treated with Pentachlorophenol or Chromated Copper Arsenate (see Section 4.3.1). • Work with waste management providers to meet Project needs; where possible, recycle or re-use waste materials generated by the Project. • Promote worker well-being through health and safety initiatives. • Traffic control contractors will implement site-specific traffic control plans in accordance with applicable standards (based on factors such as lane configuration, visible distance, and traffic volume). • Newfoundland Power will undertake regular contractor inspections to verify that traffic management is properly conducted (e.g., copies of traffic control plans are onsite, signage is properly installed, tailboard reviews are completed, etc.).

4.3.1 Potential Impacts of the Environment on the Project

Transmission line infrastructure is vulnerable to the impacts of storm events, flooding, high winds and windthrow, and hydrological changes. These factors may affect pole stability and impede the provision of electricity and telecommunications services. In planning for pole replacement, pole engineering software (i.e., "Quickpole") was used for pole loading assessments to ensure that all structures meet loading requirements. Established engineering standards that consider the impacts of the environment on transmission line infrastructure are being followed, and all replacement poles will be Class 3 or better. In addition, 75% of pole installations are 45' or greater, meaning less replacements will be required due to



clearance/separation in the future. In areas where poles are installed within designated water supply areas, untreated poles will be used in accordance with provincial guidelines. All pole replacements will be installed to match existing natural ground elevations.

4.3.2 Waste Management Plan

A Waste Management Plan will be developed prior to construction to address the handling and disposal of Project-related waste materials, including replaced poles and biomass waste associated with tree trimming and brush clearing activities. The disposal of replaced poles made of treated wood will be undertaken in accordance with the provincial *Treated Wood Waste Disposal Guidelines*.

Newfoundland Power will manage the waste produced by make-ready activities in accordance with established corporate standards and practices. As outlined in Section 18.05 of the Administrative Practices, wooden poles will be reused where feasible, and any treated poles requiring disposal will be sent to landfills permitted to accept this material. Brush clearing will be completed on a cut-and-pile basis, while tree trimming debris will be chipped where required, in compliance with all applicable environmental regulations.

Bell Canada will manage waste generated during fibre cable installation, including empty cable reels, cardboard packaging, and plastic wrap. Cable reels will be returned to the supplier for reuse or recycling; cardboard will be recycled where local facilities exist, or disposed of with general waste; and plastic wrap and other non-recyclable materials will be collected in a dumpster and disposed of at a local waste management facility.

4.3.3 Consultation

A proactive consultation and communication plan will be implemented to keep stakeholders informed and engaged throughout the Project. Construction activities will be scheduled primarily during standard daytime hours to limit disruptions, with any deviation communicated in advance when unavoidable. Nearby landowners and stakeholders will receive prior notice of activities that may generate increased noise, vibration, or traffic, such as heavy equipment movement, or occasional night work. Additional notifications will be issued for high-impact activities, consistent with best practices for contractor communication and environmental responsibility. The Project team will engage with land users to understand their rights, interests, and potential areas of concern, helping to avoid conflicts and maintain positive relationships. Consultation will also occur with landowners prior to activities such as easement registration, vegetation clearing, or other access-related requirements to ensure transparency and foster ongoing trust throughout the Project.

4.4 Residual Effects

The potential for an effect was assessed using the following parameters:

- The location and duration of the interaction;
- Identification of any pathways linking Project activities to the receiving environment;
- Existing literature on comparable interactions and effects, including previous environmental assessments;
- Expert consultations; and
- Monitoring results from similar projects.

To concentrate the assessment on key issues and meaningful environmental effects, interactions with only minimal or incidental potential impacts were excluded. All predictions were accompanied by documentation of any scientific uncertainty in the data or methods used. Predictions assumed the application of mitigation measures that are proven effective in similar contexts and are often standard or mandatory practice. Residual effects refer to those expected to remain even after implementing these measures. Residual effects are assessed using the evaluation criteria in Table 4.4-1.

Table 4.4-1 Residual Effects Evaluation Criteria.

Evaluation Criteria	Rating	Descriptor
Magnitude	1	Negligible – not detectable
	2	Low – within the range of natural variability and affects less than 10% of individuals/receptors in an affected area
	3	Moderate – affects 10 to 25% of individuals/receptors in an affected area
	4	High – affects between 25 and 50% of individuals/receptors in an affected area
	5	Very high – affects greater than 50% of individuals/receptors in an affected area
Frequency	1	Single event – residual effect occurs once
	2	Infrequent, irregular events – residual effects occur rarely but more than once
	3	Multiple irregular events – residual effects occur irregularly but more than once
	4	Multiple regular events – residual effects occur regularly
	5	Continuous – residual effects are continuous
Geographic Extent	1	Spatial extent of residual effect(s) is isolated to anthropogenically altered areas inside the Project Area
	2	Spatial extent of residual effect(s) is limited to the Project Area
	3	Spatial extent of residual effect(s) is limited to the area within 500 m of the Project Area

Evaluation Criteria	Rating	Descriptor
	4	Spatial extent of residual effect(s) is limited to the area within 1 km of the Project Area
	5	Spatial extent of residual effect(s) is beyond 1 km from the Project Area
Duration	1	Effect lasts one day or less
	2	Effect lasts one to seven days
	3	Effect lasts one to four weeks
	4	Effect lasts one to 12 months
	5	Effect lasts more than one year
Reversibility	1	Highly reversible – likely to be reversed following end of Project phase or following Project closure
	2	N/A
	3	Partially reversible following end of Project phase or following Project closure
	4	N/A
	5	Irreversible – likely permanent following end of Project phase or following Project closure
Context	1	Anthropogenically Altered
	2	N/A
	3	Evidence of utilization but with natural features
	4	N/A
	5	Relatively pristine area

Based on the results of the residual effects evaluation criteria, a final rating was assigned to determine the significance of each KI's interaction with the Project components, as listed in Table 4.4-2. The rating system is defined as:

- N - No likely adverse residual environmental effect.
- NS - No significant adverse residual environmental effect.
- S - Significant adverse residual environmental effect.
- P - Positive residual environmental effect.

Table 4.4-2 Residual Effects.

Project Phase	KI	Rating	Effect Criteria					
			Magnitude	Frequency	Geographic Extent	Duration	Reversibility	Context
Construction	Air Quality	NS	3	2	2	2	3	1
	Noise	NS	4	2	2	2	1	1
	Fish and Fish Habitat	NS	2	1	3	3	1	5
	Wetlands	NS	3	2	1	2	1	3
	Avifauna	NS	3	1	1	2	1	1



Project Phase	KI	Rating	Effect Criteria					
			Magnitude	Frequency	Geographic Extent	Duration	Reversibility	Context
	Species at Risk	NS	3	1	1	2	1	1
	Socioeconomic Resources	P	2	3	5	4	1	1
Maintenance (Repairs)	Air Quality	NS	2	2	2	1	3	1
	Noise	NS	2	2	2	5	1	1
	Fish and Fish Habitat	N	1	N/A	N/A	N/A	N/A	5
	Wetlands	NS	3	2	1	2	1	3
	Avifauna	NS	3	1	1	2	1	1
	Species at Risk	NS	3	1	1	2	1	1
	Socioeconomic Resources	P	5	5	4	5	1	1
Accidents and Malfunctions	Air Quality	NS	2	1	2	2	3	1
	Noise	NS	3	1	2	1	1	1
	Fish and Fish Habitat	NS	3	1	3	4	3	5
	Wetlands	NS	3	2	1	2	1	3
	Avifauna	NS	3	1	1	2	1	1
	Species at Risk	NS	3	1	1	2	1	1
	Socioeconomic Resources	S	5	2	5	2	1	1

The residual effects assessment demonstrated that environmental impacts are generally not significant across all project phases, with some positive socioeconomic outcomes.

During construction, residual effects on air quality and noise are rated as non-significant (NS), with moderate magnitude (3–4) and localized geographic extent (2). These effects are short-term and reversible, primarily associated with equipment operation. Fish and fish habitat effects are also NS, with low magnitude (2) and limited extent, provided erosion and sediment control measures are implemented. Effects on wetlands, avifauna, and SAR are minor (magnitude 3) and remain NS because disturbance is confined to the existing ROW and no new clearing is required. Socioeconomic resources show a positive residual effect (P), reflecting improved connectivity and potential economic benefits.

Maintenance activities are infrequent and short in duration. Air quality and noise remain non-significant, while wetlands and wildlife interactions are negligible. Socioeconomic benefits persist with no significant adverse effects anticipated.

Most components remain non-significant under accidental scenarios; however, fish and fish habitat could experience higher magnitude (3) and broader geographic extent (3) in worst-case events, though

reversibility is high. Socioeconomic resources could experience short-term significant (S) effects if service disruptions occur, but these are temporary and manageable through contingency planning.

Using the existing ROW substantially reduces the environmental risks compared to creating a new corridor. Residual effects are generally not significant, short-term, and reversible, with positive socioeconomic outcomes. The greatest potential concern relates to accidental events during construction (i.e., through erosion, sedimentation, etc.) affecting fish habitat, which can be mitigated through proactive planning and emergency response measures. In addition, it is important to note that accidents and malfunction on projects like these have historically been extremely rare, given the relatively minor interactions between Project activities and the environment, and the low impact nature of such activities.

5.0 Approval of the Undertaking

The Project will adhere to all necessary regulatory requirements involved with undertaking the Project. This Registration document has been submitted to NL ECCC pursuant to the **Environmental Protection Act** and its **Environmental Assessment Regulations**. In addition, the Project will be subject to various permits and authorizations. A list of permits, approvals, licences, and authorizations that may be required for the Project is provided in Table 5.0-1.

Table 5.0-1 List of Potential Permit/Approval/Licence/Authorization Requirements for the Project.

Permit / Approval / Licence / Authorization	Legislation / Regulation Reference	Agency
Release of the Undertaking under the Environmental Assessment Regulations	NL Environmental Protection Act	NL ECCC
Permit to Alter a Body of Water (Culvert, Bridge, Dam, Fording, Pipe Crossing/Water Intake, Stream Modification, Infilling/Dredging, Flood Risk Area, Miscellaneous works within 15 m)	Water Resources Act	NL ECCC - Water Resources Management Division
Cutting Permit	Forestry Act	NL FAL
Operating Permit		
Damage or Danger Permit (Migratory Birds)	Migratory Birds Convention Act – Migratory Birds Regulations	Canadian Wildlife Service
Permit Authorizing an Activity Affecting Listed Wildlife Species	Species at Risk Act	ECCC; DFO; Parks Canada

6.0 Schedule

Pending the release of the Project from the Environmental Assessment process and given adherence to any recommendations or conditions of release, Bell Canada has scheduled the Project to be undertaken entirely in 2026. Construction is slated to begin as early as Q1 2026, and commissioning is planned for Q4 2026. Table 6.0-1 summarizes the Project schedule.

Table 6.0-1 Proposed Project Schedule.

Project Activity	Timeline
EA Registration	Q4 2025
EA Release	Q1 2026
Construction Phase	Q2 2026
Commissioning	Q4 2026
Operations/Maintenance	Q1 2027

7.0 Capital Cost and Funding

The total expenditures required for the Undertaking are estimated at \$3.8 million. The federal government is contributing \$1.38 million to the Project, and the remaining \$2.42 million is being provided by Bell Canada directly.

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