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Upgrade of Distribution System, Belleoram Quarry, English Harbour West

Prepared for:

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

Environmental Assessment Registration





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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
CWS	Canadian Wildlife Society
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
KI	Key Indicator
km	kilometre
km/h	kilometres per hour
m	metres
MASL	meters above sea level
MFN	Miawpukek First Nation
millimetres	mm
N ₂ O	nitrous oxide
NAPS	National Air Pollution Surveillance
NH ₃	ammonia
NL	Newfoundland and Labrador
NL ECC	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
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
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
SO _x	sulfur oxides



SSAC	Species Status Advisory Committee
TCH	Trans-Canada Highway
VC	Valued Component

1.0 Introduction

Newfoundland and Labrador Hydro (NL Hydro, the Proponent) is proposing to construct a new distribution line from the English Harbour West Distribution System to the Belleoram Rock Quarry near Belleoram, Newfoundland and Labrador (the Project). The Project will include a three-phase line extension approximately 6.3 kilometres (km) in length.

Within Section 34(2) of the NL *Environmental Assessment Regulations (2003)* under the *Environmental Protection Act*, it states “an undertaking that will be engaged in the construction of new electric power transmission lines or the relocation or realignment of existing lines where a portion of a new line will be located more than 500 metres from an existing right of way shall be registered.” Since the Project is applicable to this criterion, the Project must be registered with the Government of Newfoundland and Labrador Department of Environment, Conservation and Climate Change (NL ECC) under the Environmental Assessment (EA) process. This report provides an overview of the proposed Project and supports the EA registration process by describing the Project location, scope, and key considerations.

1.1 Name of Undertaking

Upgrade of Distribution System, Belleoram Quarry, English Harbour West

1.2 Proponent

Name of Corporate Body:	Newfoundland and Labrador Hydro
Corporate Address:	Hydro Place, 500 Columbus Drive P.O. Box 12400 St. John's, NL A1B 4K7
Chief Executive Officer:	Jennifer Williams President and 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

This service installation and associated distribution line extension is being undertaken at the request of a commercial customer to provide electrical service to the proposed Belleoram Crushed Granite Rock Export Quarry project. The work involves construction of a new segment of electrical line designed to connect the customer's facility to the existing English Harbour West Distribution System.

A portion of the proposed line will be located more than 500 metres (m) from an existing right-of-way (RoW). As defined under the *Environmental Assessment Regulations, 2003*, a RoW includes roads, existing transmission or distribution corridors, and other linear infrastructure. Because the project extends beyond this 500-metre threshold, it meets the criterion requiring registration as a designated undertaking under Section 34(2) of the Regulations.

The route of the line has been selected to represent the shortest practicable and most economically viable connection between the existing system and the customer site, while also considering technical feasibility, terrain, and constructability. Although NL Hydro routinely undertakes upgrades and maintenance activities within the regional electrical system, this project constitutes a new line extension to service a specific third-party development rather than routine system maintenance.

2.0 Project Description

The Project involves the construction of a new distribution line, and the Project Area comprises 20.21 hectares (ha) over a length of 6.3 km. This distribution line will service the Belleoram Crushed Granite Rock Export Quarry project. 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 Area is located on the southern coast of Newfoundland and extends approximately 6.3 km from the community of Belleoram, NL, westward (inland) to Route 362 (Figure 1). The Project is located in the South Coast Barrens subregion of the Maritime Barrens Ecoregion (Government of Newfoundland and Labrador, 2020). The Project is located on the Connaigre Peninsula near the coast of Fortune Bay, NL. For the purposes of the assessment, the Project Area includes a 15 m buffer on either side of the utility line centerline, for a total width of 30 m. However, the actual clearing width is expected to be limited to the area beneath the poles and crossarms and may extend up to 9 m beyond the outer edge of the crossarms.

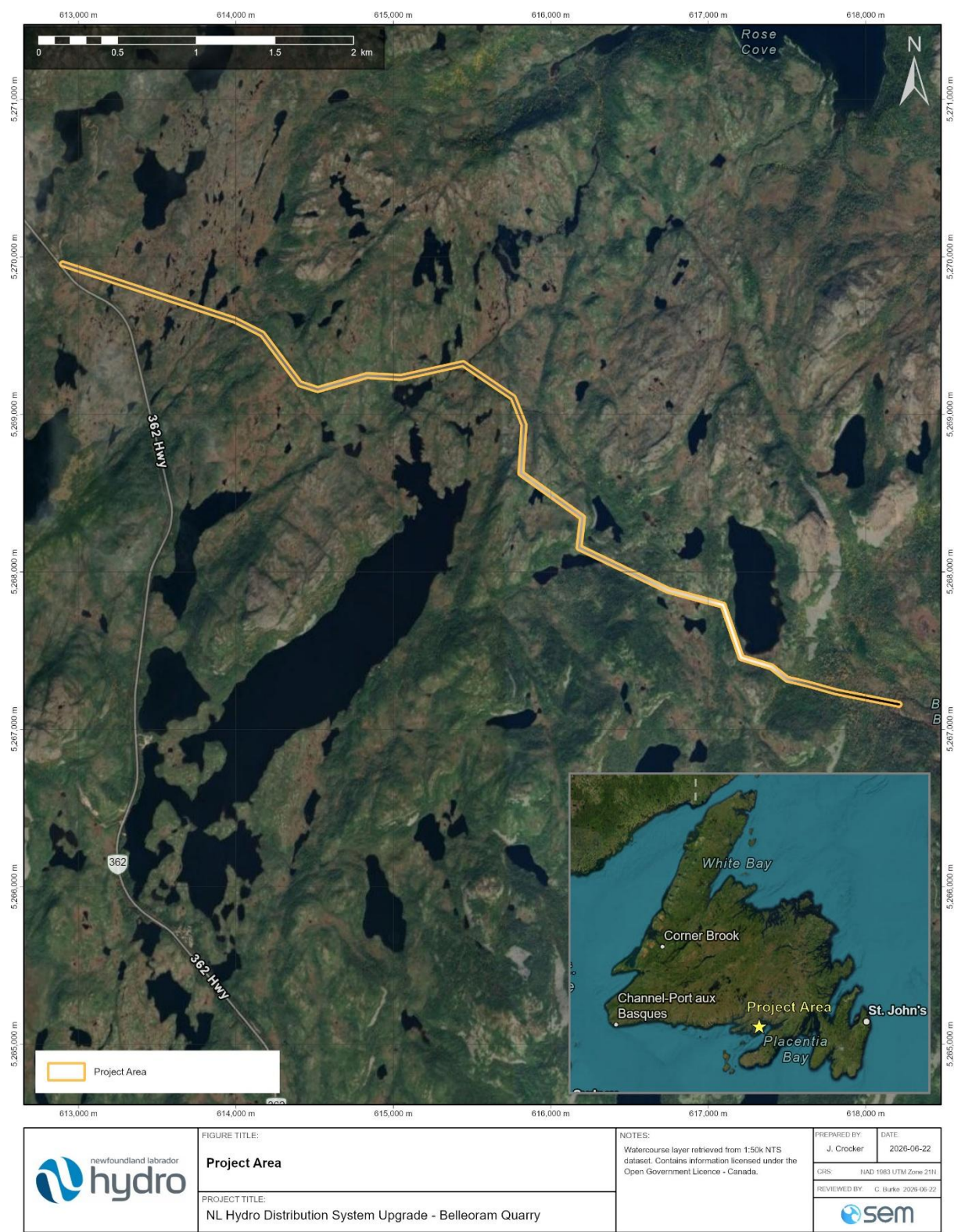


Figure 1 Project Area.

2.2 Alternatives to the Undertaking

An alternative to constructing new overhead infrastructure for the proposed 6.3 km distribution power line is the installation of the line underground. This option was evaluated considering environmental effects, technical feasibility, constructability, system reliability, and economic factors. Underground installation is not considered feasible due to the extent of trenching required and the associated environmental, technical, and cost constraints.

Underground construction would require continuous trenching along most of the 6.3 km route. This would result in a substantially larger and more continuous ground disturbance footprint compared to overhead construction, which is limited primarily to pole locations and access points. Much of the terrain between the two communities is characterized by exposed or shallow bedrock, requiring blasting or mechanical excavation. These activities would be highly disruptive, increase sedimentation risk, and significantly increase construction complexity and cost.

In addition, underground installation would necessitate routing around wetlands, waterbodies, and streams or implementing engineered crossings, introducing further permitting requirements, technical challenges, and potential environmental effects. Collectively, these factors render the underground option impractical and cost-prohibitive relative to overhead construction.

Alternative routing options were also considered; however, the selected alignment represents the shortest practicable route between the existing distribution system and the customer site while avoiding, to the extent feasible, sensitive environmental features and difficult terrain. This route minimizes the overall disturbance footprint and reduces the need for vegetation clearing and ground disturbance.

The preferred option is to construct new overhead distribution infrastructure along this route. This approach minimizes land disturbance relative to underground installation, reduces construction complexity, and ensures the required level of electrical service is delivered in a safe, reliable, and cost-effective manner.

The status quo option of installing the new distribution line on existing poles within the community was also considered. This option is not viable due to structural and reliability limitations associated with additional loading, including conductor weight and seasonal ice accumulation. Existing infrastructure is not designed to accommodate these additional demands while maintaining required safety clearances and reliability standards. Accordingly, new poles and anchors dedicated to the distribution line are proposed to ensure safe, compliant, and reliable operation over the long term.

Overall, the preferred approach represents the most technically feasible and economically viable option, while minimizing environmental disturbance and meeting the Project's service requirements.

2.3 Project Components

The Project will be carried out by NL Hydro, supported by subcontractors as necessary, and will involve several key construction components required to upgrade and connect the local distribution system. Work will include up to 6.3 km of brush clearing along the existing transmission line right-of-way, with vegetation removed to a maximum width of 9 m beyond the outer edge of the crossarms and piled on site. The scope also includes the installation of approximately 122 Class 2 wood poles, all treated with CCA unless environmental assessment results require untreated materials in specific locations. These poles will support a 25 kV distribution line and associated hardware. Given that the terrain is predominantly rock, pole installation will rely on drilling rather than concrete footings or blasting. Once installed, the new structures will be tied into the existing distribution network to complete the system connection. Additional related work in the surrounding area is scheduled to occur in advance of this Project to ensure proper integration and sequencing of construction activities.

2.4 Construction

Construction activities are scheduled to begin in Q3 2026, following the release of the Project from the EA process and in accordance with all conditions of approval. Work will proceed in a staged sequence, beginning with vegetation clearing and followed by site preparation, pole installation, and line construction. Vegetation clearing, including the removal of trees and shrubs, will be completed in advance of construction, with surveyors marking the boundaries of all areas requiring clearing. Clearing will extend up to 9 m beyond the outer edge of the crossarms, and brush will be cut and piled or cut and removed, depending on site requirements. All clearing activities will be carried out by certified contractors. Once vegetation removal and site preparation are complete, construction crews will begin installing poles and completing associated line work in accordance with NL Hydro's engineering designs. Construction will involve the use of specialized equipment such as tracked machinery, excavators, muskox aerial lifts, light trucks, augers, and cable-stringing tools, supported by general equipment including pickup trucks. Related work in the surrounding area that connects to this Project will be completed beforehand to ensure proper sequencing and integration of all construction activities.

2.5 Operation and Maintenance

The proposed distribution line will be built as permanent infrastructure with an expected operating life of approximately 40 years. Once in service, the line will undergo annual ground-based inspections to ensure continued safe and reliable performance. These inspections will typically be completed using all-terrain

vehicles (ATVs) or snowmobiles, depending on seasonal access conditions, allowing maintenance personnel to efficiently travel the right-of-way and assess the condition of poles, hardware, and conductors.

Routine vegetation management will also form an important part of ongoing maintenance. Vegetation within the RoW will be monitored through periodic assessments, and clearing will be carried out as needed to maintain required electrical clearances and system reliability. Based on typical growth rates and system requirements, vegetation control activities are expected to occur every five to ten years. These activities will be planned to minimize disturbance while ensuring the long-term integrity and safe operation of the distribution line.

2.6 Project Occupations

The Undertaking is anticipated to require up to 29 personnel to complete, including employees from NL Hydro 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 1.

Table 1 Estimated Occupations.

Occupation	Number of Personnel	NOC Code	Workdays Required
Engineering			
Electrical and electronics engineering technologists and technicians	1	22310	20
Vegetation Clearing			
Heavy equipment operator	3	73400	35
Supervisors, logging and forestry	1	82010	35
Chain saw and skidder operators	3	84110	35
Construction trades helpers and labourers	3	75110	35
Land Surveying			
Land surveyor	1	22213	15
Construction			
Construction project manager	1	70010	46
Heavy equipment operator	4	73400	46
Construction trades helpers and labourers	12	75110	46

3.0 Existing Environment

The following sections present the existing biophysical and socio-economic environments in the vicinity of the Project Area. This information is based on a thorough desktop review and includes the following Valued Components (VCs) identified for the Project (defined further in Section 4.1):

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

3.1 Atmospheric Environment

This section describes the regional climate, air quality, noise, and vibration conditions in the Project Area. The information is based on a comprehensive review of existing literature and databases, supplemented by expert opinion.

3.1.1 Regional Climate

The South Coast subregion of the Maritime Barrens Ecoregion experiences strong winds, cool summers, mild winters, frequent fog, and shallow snow cover (Protected Areas Association of Newfoundland and Labrador, 2008). The region exhibits substantial variations in elevations; within the Project Area, elevations range from 14 to 192 m above sea level. There is a climate station operated by Environment and Climate Change Canada (ECCC) in Pools Cove, Fortune Bay, located approximately 13 km north of the Project Area (Environment and Climate Change Canada, 2026). Climate Normals for the 1981 to 2010 period are summarized in Table 2.

Table 2 Pools Cove Climate Normals (1981 to 2010).

Month	Temperature			Precipitation		
	Monthly Average (°C)	Extreme Maximum (°C)	Extreme Minimum (°C)	Total (mm)	Rain (mm)	Snow (cm)
January	-6.2	13.5	-25.5	188.1	111.2	76.9
February	-6.3	13	-29.5	176.6	110.8	65.8
March	-3.2	16	-27	143.7	99.4	44.6
April	2.0	18.5	-17.5	141.6	123.5	18.1
May	7.0	22.5	-7.5	116	113.9	2.2
June	10.9	26.5	-2.5	146.2	146.2	0

Month	Temperature			Precipitation		
	Monthly Average (°C)	Extreme Maximum (°C)	Extreme Minimum (°C)	Total (mm)	Rain (mm)	Snow (cm)
July	14.9	29	0	128.7	128.7	0
August	15.3	30	1	110.6	110.6	0
September	11.9	26.5	-3.5	177.3	177.3	0
October	6.5	20	-10	156.1	155.4	0.7
November	1.9	16.5	-15	177.5	158.3	19.2
December	-3.0	13	-23.5	165.8	117.3	48.5
Year	4.3	20.4	-13.4	1828.3	1552.6	275.9

In Pools Cove, average daily temperatures range from -6.3°C in February to about 15.3°C in August. Average temperatures generally drop below freezing in December and remain below 0°C until March.

The area receives an average annual precipitation total of approximately 1,828.3-millimetres (mm), consisting of about 1,552.6 mm of rainfall and 275.9 cm of snowfall. Monthly precipitation ranges from 110.6 mm in August to 188.1 mm in January. Historical temperature extremes include a maximum of 30°C recorded in August 1998 and a minimum of -29.5°C recorded in February 1990. The highest one-day rainfall total was recorded in July 1997, when 144.6 mm of rain fell. Extreme snow depths are generally moderate and typically occur between October and May, with the maximum recorded snow depth of 39.4 cm in January 1995.

3.1.2 Air Quality and Greenhouse Gases

Air pollutant releases are commonly classified as criteria air contaminants (CACs) or greenhouse gases (GHGs). CACs are a group of pollutants associated with smog formation, acid rain, and various health impacts. Such pollutants include particulate matter (PM), sulfur oxides (SO_x, including sulfur dioxide (SO₂)), nitrogen oxides (NO_x, including nitrogen dioxide (NO₂)), carbon monoxide (CO), and ammonia (NH₃).

The Government of Newfoundland and Labrador monitors air quality as part of the National Air Pollution Surveillance (NAPS) program, including 7 stations across the province, 6 of which are located on the Island of Newfoundland. The nearest station to the Project Area is located on the Burin Peninsula (NAPS Station 010901) and monitors the following parameters (*Burin - NAPS Station 010901, n.d.*):

- Particulate Matter less than or equal to 2.5 microns (PM_{2.5})
- Particulate Matter less than or equal to 10 microns (PM₁₀)
- Ozone (O₃)
- Nitric Oxide (NO)

- Nitrogen Dioxide (NO₂)
- Oxides of Nitrogen (NO_x)

For NO_x / NO₂, CO, PM₁₀, and PM_{2.5}, the air quality standards were not exceeded on any occasion in 2025. The 8-hour O₃ air quality standard was exceeded one time in 2025, specifically in April.

Major industrial activities such as mining, oil refining, electricity generation, and offshore petroleum operations are the predominant emitters of GHGs in NL. The six main GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Provincial emissions are largely composed of CO₂, CH₄, and N₂O, while fluorinated gases are emitted in much smaller quantities. Under the *Management of Greenhouse Gas Act* (MGGA), emissions are reported as carbon dioxide equivalents (CO₂e), which standardizes different GHGs using their global warming potential (GWP), a measure of how much heat a gas traps compared to CO₂.

As required by the MGGA, facilities must report their emissions to the NL ECC if annual operational emissions exceed 15,000 tonnes of CO₂e (Government of Newfoundland and Labrador, 2016). The Project will not increase GHG emissions beyond existing baseline levels, thus, the Project is not anticipated to be subject to the MGGA.

3.1.3 Noise and Vibration

Existing ambient noise within the Project Area is generated by a combination of natural (e.g., wave action, wind) and human-related sources (e.g., induced by humans; heavy equipment operation, earthworks). Natural sounds are generally intermittent, whereas human-induced sounds often produce more sustained and noticeable noise. Human-induced noise in the area is primarily associated with small-scale development and agricultural activities, such as road upgrades and cabin construction. Given the surrounding topography, these sources are not expected to substantially affect broader regional noise conditions. Considering the region's population density, the area would likely be characterized as a "quiet rural" community type, consistent with Health Canada (2023).

Existing vibration levels in the Project Area are also expected to be low and intermittent. Current sources of vibration are likely limited to construction-related activities and the use of heavy agricultural machinery. Natural sources of vibration, such as seismic or volcanic activity, are expected to be negligible in the Project Area.

3.2 Aquatic Environment

This section was prepared using a review of publicly available desktop sources, reports, and online data resources. The subsections below summarize the existing waterbodies and watercourses within the Project Area, as well as the fish and fish habitat known or expected to occur there.

3.2.1 Waterbodies and Watercourses

Waterbodies, including watercourses and wetlands, are protected provincially under the *Water Resources Act* (SNL 2002 cW-4.1), which is administered by the Water Resources Management Division of NL ECC (Government of Newfoundland and Labrador, 2002b; NL Department of Environment, Conservation, and Climate Change, 2001). Section 48 of the Act protects these resources by requiring permits for activities that may alter or otherwise affect them, either directly or indirectly. This includes potential impacts to water quantity, water quality, hydrology, and related terrestrial or aquatic habitats. Such activities are not permitted unless they have been authorized by the Minister of Environment, Conservation and Climate Change.

The hills and valleys of the Maritime Barrens contain numerous waterbodies and streams that flow from higher elevations toward the steep coastline. 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 review identified ten (10) potential water crossings (Table 3; Figure 2; Appendix A). The Project Area does not cross any scheduled salmon rivers; the nearest scheduled river is Southwest Brook (113), located approximately 2.3 km north of the Project Area. None of the identified crossings appears to have been disturbed by development. There are no real-time streamflow monitoring stations within the watersheds identified near the Project Area.

Potential adverse effects on waterbodies and watercourses will be managed through the application of applicable federal and provincial regulatory requirements, as well as standard environmental mitigation measures described in Section 4.3.

Table 3 Potential Water Crossings.

Crossing ID	CanVec Feature ID	Easting	Northing	UTM Zone	Name
1	aca63bac5f324bc290c0be54e4e81cfc	618154	5267170	NAD83 Zone 21	-
2	ce72fa97eccd446daf5a172985fec511	616309	5268092	NAD83 Zone 21	-
3	e8ceabe24fd1499bbaaf4e35fb5d9ec5	615794	5269025	NAD83 Zone 21	-
4	e8ceabe24fd1499bbaaf4e35fb5d9ec5	615739	5269122	NAD83 Zone 21	-
5	e007f69c9f3f4b439add7ff959f3f7bf	615488	5269292	NAD83 Zone 21	-
6	e95df46a864f42a5886f7a8b80178465	615360	5269304	NAD83 Zone 21	-
7	8e867f3390a7496dab4a8beb86bffe13	614433	5269186	NAD83 Zone 21	-

Crossing ID	CanVec Feature ID	Easting	Northing	UTM Zone	Name
8	00ca708d726a4316bba85e641bec223	613868	5269640	NAD83 Zone 21	-
9	d3a11b2c5bf144f2ad7c10e7ab66f74b	613754	5269677	NAD83 Zone 21	-
10	d94490b6567e41c78a6952f209d4c233	613680	5269701	NAD83 Zone 21	-

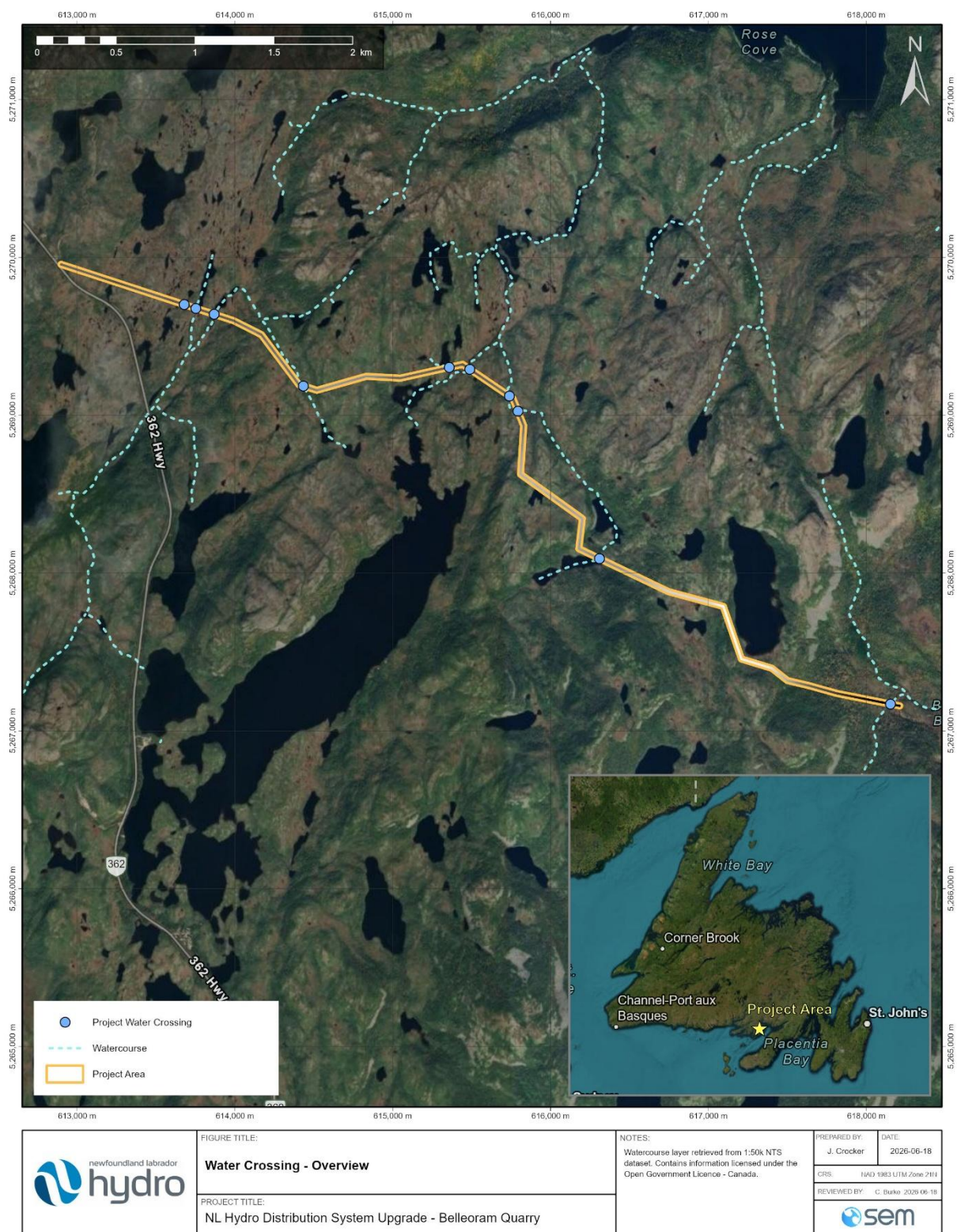


Figure 2 Potential Water Crossings in the Project Area.

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) (Government of Canada, 2024), 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 and resident freshwater species. In the broader region surrounding the Project Area, common species are known to include Brook Trout (*Salvelinus fontinalis*), Atlantic Salmon (*Salmo salar*), American Eel (*Anguilla rostrata*), Threespine Stickleback (*Gasterosteus aculeatus*), and Ninespine Stickleback (*Pungitius pungitius*).

Within the Project Area, the presence of fish and fish habitat is expected to be limited to identified waterbodies and watercourse crossings, if any. The majority of the Project consists of an overhead distribution line, and no in-water works are proposed. As such, the potential for direct interaction with fish or fish habitat is considered low and would be limited to fording of heavy equipment and indirect effects during construction, such as sedimentation or erosion near watercourse crossings. Standard construction mitigation measures, including appropriate buffer zones, erosion and sediment control, and adherence to applicable regulatory requirements, will be implemented to avoid or minimize potential effects on fish and fish habitat. Mitigation measures were described in Section 4.3.

3.2.2.1 Freshwater Conservation Concern

For this assessment, SAR include species listed as Endangered, Threatened, or Special Concern under the federal *Species at Risk Act* (SARA) (Government of Canada, 2002), and/or as Endangered, Threatened, or Vulnerable under the provincial *Endangered Species Act* (NL ESA) (Government of Newfoundland and Labrador, 2001). Species of Conservation Concern (SoCC) include species that are not legally listed as SAR but are considered to have an elevated conservation risk, such as those identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Atlantic Canada Conservation Data Centre (AC CDC). This Registration focuses on SAR, except for Atlantic Salmon (South NL population), which is also considered because of its cultural and socio-economic importance in the region.

Desktop research was conducted to identify which SAR may occur within the Project Area. This included reviewing relevant literature, species range maps, publicly accessible databases, and anecdotal information. A data request was also submitted to AC CDC for records within a 5 km radius of a central point in the Project Area. AC CDC reported no aquatic SAR within this buffer. Based on the desktop review and expert judgment, Table 4 lists the SAR considered potentially present in the area.

Table 4 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

Each of these species has ecological traits that influence how they may interact with project activities. Atlantic Salmon in Newfoundland occur as both anadromous and landlocked ouananiche forms (Smith, 1988). Their migration and spawning cycles span much of the year, with upstream movement occurring from May to October (Porter, 1975; Scruton *et al.*, 1997) and spawning taking place in clean, well-oxygenated gravel riffles during mid-October to mid-November (Gibson, 1993; B. Scott & Scott, 1988; W. Scott & Crossman, 1973; Scruton *et al.*, 1997; Smith, 1988; Stanley & Trial, 1995). Eggs incubate through winter (Smith, 1988), hatching in mid-April to early May (Porter, 1975; Scruton *et al.*, 1997), while juveniles may remain in the substrate for several weeks before dispersing (Randall, 1982). Smolt migration occurs in spring (Porter, 1975; B. Scott & Scott, 1988; W. Scott & Crossman, 1973), and anadromous adults overwinter at sea, travelling to feeding grounds off Labrador and western Greenland.

Banded Killifish, although small-bodied, play an important ecological role in Newfoundland's relatively low-diversity freshwater systems. They function as a forage species for larger fish and birds and may serve as an important trophic link between aquatic invertebrates and higher-level predators. In addition, their association with shallow, vegetated habitats makes them a useful indicator of localized habitat conditions. Their distribution is patchy and still being explored, with only ten locations having been formally documented; most are populations concentrated along the southwest coast and additional isolated groups on Ramea Island, the northeast coast, the Burin Peninsula, and the upper Exploits River. The species typically occupies shallow, slow-moving freshwater habitats with soft substrates and abundant aquatic vegetation (COSEWIC, 2014).

The American Eel, a catadromous species, spends most of its life in freshwater or estuarine environments before migrating to the Sargasso Sea to spawn (W. Scott & Crossman, 1973). In Newfoundland, downstream migration generally occurs from mid-August to mid-October (Scruton *et al.*, 1997), while elvers move upstream from early June to mid-August. During this stage, they rely heavily on soft substrates and sheltered microhabitats, such as burrows, vegetation, and woody debris, for movement and protection (Bradbury *et al.*, 2002; Grant & Lee, 2004; Scruton *et al.*, 1997).

3.2.2.2 Freshwater Habitats of Conservation Concern

Spawning habitats play a key role in salmonid reproduction and population recruitment. The availability of suitable spawning areas and substrates can act as a limiting factor for overall fish productivity. No critical habitat for these species, as defined under SARA or the NL ESA, was identified within the Project Area.

3.3 Terrestrial Environment

This section was prepared from a comprehensive desktop review of relevant literature, publicly available databases, and from expert opinion. The subsections below summarize the Ecological Land Classification (ELC) of the Project Area, and provide an overview of the avifauna and SAR that may occur throughout.

3.3.1 Ecological Land Classification and Wetlands

The Project Area is located in the South Coast subregion, which has a landscape pattern that consists of an assemblage of stunted stands of Balsam Fir (*Abies balsamea*) and extensive open heathland (Government of Newfoundland and Labrador, 2020). The heaths are dominated by Sheep Laurel (*Kalmia angustifolia*) on protected slopes where snow accumulates and by cushions of Crowberry (*Empetrum nigrum*) or Purple Crowberry (*Empetrum eamesii*) on windswept ridges and headlands (Government of Newfoundland and Labrador, 2020). Higher elevations are known to have localized arctic-alpine vegetation and the occurrence of good forest growth including Yellow Birch (*Betula alleghaniensis*) in the protected valleys (Government of Newfoundland and Labrador, 2020).

A coarse resolution ELC was developed using GIS software to compile various open-source land cover datasets that intersect the areas of interest. This product will be further refined by incorporating additional open-source data (e.g., wetland inventory, forest inventory), manual digitization of key land cover features using open-source satellite imagery and integrating field collected project data if/when available.

Eight ecotypes were identified in the Project Area, representing a total of 20.21 ha. None of the ecotypes present are the result of anthropogenic habitat alterations (i.e., roads, agriculture). Wetlands were the most dominant, accounting for 5.57 ha or 27.57% of the total Project Area. The ecotype composition of the Project Area is presented in Table 5. It was not possible to create one ELC map that accurately portrayed the Project Area due to the resolution, therefore segments with a focus on wetland are provided in Appendix B.

Table 5 Ecotype Composition of the Project Area.

Ecotype	Area (ha)	Percentage Cover (%)
Wetland	5.57	27.57
Scrub	4.01	19.84

Ecotype	Area (ha)	Percentage Cover (%)
Mixedwood	3.77	18.63
Open Mixedwood	2.04	10.09
Coniferous	1.65	8.17
Barren	1.65	8.15
Open Coniferous	1.20	5.92
Water	0.33	1.63

Wetlands are semi-aquatic ecosystems that perform a range of essential ecological functions, including storing water, slowing runoff, reducing flood risk, filtering and improving water quality, recharging groundwater, and capturing carbon. They also support a wide variety of wildlife, including species that are entirely dependent on wetland habitats for survival. These ecosystem services contribute significantly to biodiversity, community resilience, water management, and climate regulation. According to the Canadian Wetland Classification System (CWCS), wetlands are grouped into five main classes: bogs, fens, swamps, marshes, and shallow-water wetlands.

Any development occurring within or potentially affecting wetlands requires a Section 48 permit under the *Water Resources Act* (2002b), administered by NL ECC. Additional regulatory oversight may apply under the *Environmental Protection Act* (2002a) and its Environmental Assessment Regulations. The NL ECC Policy for Development in Wetlands and the federal Policy on Wetland Conservation also guide how activities in these environments must be planned and carried out. NL Hydro and its contractors will comply with all applicable legislation, policies, and permitting requirements when working in or near wetland areas. Furthermore, any potential adverse effects on wetlands will be minimized through the implementation of standard environmental protection and mitigation measures, as outlined in Section 4.3.

3.3.2 Avifauna

A wide range of bird species may occur within the Project Area, including both year-round residents and migratory species that use the region seasonally, either moving north to breed or south to overwinter. Species potentially present belong to several taxonomic groups, including Anseriformes (waterfowl), Galliformes (gamebirds), Gaviiformes (loons), Accipitriformes and Falconiformes (raptors), Charadriiformes (shorebirds), Gruiformes (rails), Strigiformes (owls), Coraciiformes (kingfishers), Piciformes (woodpeckers), and Passeriformes (perching birds). The most commonly encountered species are expected to be forest-dwelling passerines such as warblers, thrushes, chickadees, and sparrows, and possibly species that utilize the open heathland for foraging (i.e., raptors). Watercourses and waterbodies intersecting the Project Area (see Section 3.2.1) may also support waterfowl, including ducks and geese. Although the Project Area is situated near the coastline in several locations, the lack of suitable habitat means that seabirds and shorebirds are only expected to occur occasionally.

Birds may use the Project Area for nesting, foraging, and roosting, and a key concern during construction is the potential for active nests to occur within work zones. On the island of Newfoundland, the nesting season for migratory birds extends from mid-April to mid-August (Environment and Climate Change Canada, 2025). Migratory birds are protected under the federal *Migratory Birds Convention Act* (1994) and the Migratory Birds Regulations, which prohibit the disturbance, harm, or destruction of migratory birds and their nests. Additional protections for raptors and owls are provided under the provincial *Wild Life Act* (1990b).

The Project will comply with all relevant federal and provincial legislation. Further details on potential Project-related effects on avifauna, along with proposed mitigation measures, are provided in Section 4.3.

3.3.3 Species at Risk

Species at Risk (SAR), as defined for the scope of this Registration, are species listed under the federal *Species at Risk Act* as Endangered, Threatened, or Special Concern, and/or the provincial NL ESA as Endangered, Threatened, or Vulnerable. Species are listed under SARA based on recommendations from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Provincially, a Species Status Advisory Committee (SSAC) oversees the listing of species for NL.

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 5 km buffer from a central point in the Project Area, which queries all available occurrence data on SAR and SoCC. The AC CDC data returned zero records of SAR within the 5 km buffer zone.

Given the limited availability of region-specific data, this Registration focuses on SAR that may reasonably interact with the Project Area. Based on expert input from the AC CDC and supporting literature, the species most likely to occur within the Project Area include Boreal Felt Lichen (*Erioderma pedicellatum*) and Barrow's Goldeneye (*Bucephala islandica*). Short-eared Owl (*Asio flammeus*) may also be present, although its occurrence in the Project Area is considered unlikely. A broader list of SAR with potential to occur in the surrounding region is provided in Table 6, and their habitat preferences are discussed further below.

No biologically significant sites are known to overlap with, or occur in proximity to, the Project Area.

Table 6 SAR with Possible Regional Occurrence.

Common Name	Scientific Name	SARA	NL ESA	S-Rank	AC CDC Record
Avifauna					
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Vulnerable	S2B, SUM	No
Barrow's Goldeneye	<i>Bucephala islandica</i>	Special Concern	Vulnerable	S1B, S2N, SUM	No
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	Vulnerable	S3S4	No
Newfoundland Gray-cheeked Thrush	<i>Catharus minimus minimus</i>	Not Listed	Threatened	S2B, SUM	No
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened	Vulnerable	S3B, SUM	No
Red Crossbill	<i>Loxia curvirostra percna</i>	Threatened	Threatened	S1S2	No
Rusty Blackbird	<i>Euphagus carolinus</i>	Threatened	Vulnerable	S2S3B, SUM	No
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Threatened	S2S3B	No
Fauna					
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	S1S3	No
Little brown Myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	S1S3	No
Woodland Boreal Caribou	<i>Rangifer tarandus</i>	Special Concern	Not Listed	S3S4	No
Arthropods					
Transverse Lady Beetle	<i>Coccinella transversoguttata</i>	Special Concern	Vulnerable	SU	No
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	Special Concern	Vulnerable	S3S4	No
Flora and Lichens					
Blue Felt Lichen	<i>Pectenaria plumbea</i>	Special Concern	Vulnerable	S2S3	No
Boreal Felt Lichen	<i>Erioderma pedicellatum</i>	Special Concern	Vulnerable	S3	No

3.3.3.1 Avifauna SAR Habitat Preferences

Barn Swallow (*Hirundo rustica*) – Known to 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).

Barrow's Goldeneye (*Bucephala islandica*) – The eastern North American population is discontinuous with the western North American and Icelandic population, and is the smallest population of the three (COSEWIC, 2000). The species is migratory, utilizing coastal areas and freshwater lakes near the coast in throughout Atlantic Canada, including Newfoundland and Labrador for molting and wintering (Schmelzer, 2006).

Evening Grosbeak (*Hesperiphona vespertina*) – 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 prefer for foraging (COSEWIC, 2016a).

Newfoundland Gray-cheeked Thrush (*Catharus minimus minimus*) – This subspecies is a neotropical migrant that breeds throughout Newfoundland, particularly at higher elevations due to predation by the introduced Red Squirrel (*Tamiasciurus hudsonicus*) (COSEWIC, 2023). Breeding habitat consists of dense conifer forests including stunted coastal forests, regenerating scrub, and montane old-growth (COSEWIC, 2023).

Olive-sided Flycatcher (*Contopus cooperi*) – 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, 2007). However, they are more likely to be found in or near wetlands (COSEWIC, 2007). These habitats are used for both nesting and foraging.

Red Crossbill perchna (*Loxia curvirostra perchna*) – A resident species whose range is restricted to NL and the surrounding islands (COSEWIC, 2004). 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, 2004).

Rusty Blackbird (*Euphagus carolinus*) – Known to breed in forested areas near wetlands (e.g., treed swamps, bogs, beaver ponds) (Environment Canada, 2015). They typically forage on invertebrates and are known to inhabit coniferous-dominated forests, although they prefer wet woodlands (Environment Canada, 2015).

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

3.3.3.2 Fauna SAR Habitat Preferences

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).

Little Brown Myotis (*Myotis lucifugus*) – 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).

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

3.3.3.3 Arthropods SAR Habitat Preferences

Yellow-banded Bumble Bee (*Bombus terricola*) – They 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).

Transverse Lady Beetle (*Coccinella transversoguttata*) – Known from a wide range of habitats, including forests, gardens, grasslands, and agricultural areas (COSEWIC, 2016b). Their movement patterns are thought to correspond to their preferred prey, consisting of small insects such as aphids (COSEWIC, 2016b).

3.3.3.4 Flora SAR Habitat Preferences

Blue Felt Lichen (*Pectenota plumbea*) – 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 to thrive (ECCC, 2022).

Boreal Felt Lichen (*Erioderma pedicellatum*) – An epiphytic lichen that prefers Balsam Fir as its main phorophyte; however, in rare instances, it has been found on Black Spruce, White Spruce (*Picea glauca*), Red Maple (*Acer rubrum*), or White Birch (*Betula papyrifera*) (COSEWIC, 2014a). Boreal felt lichen can typically be found in closed mature stands of forest, often on wetland margins, or in humid zones often where upland forested habitat meets lowland moist soils (COSEWIC, 2014a).

3.4 Socio-economic Environment

This section describes the existing socio-economic conditions within the Project Area and the broader region, including land and resource use, cultural and heritage resources, and local economic and employment characteristics. The information presented here is based on a comprehensive desktop review of relevant literature and publicly accessible data sources.

3.4.1 Land and Resource Use

The Project Area begins within the incorporated municipality of Belleoram on the shores of Fortune Bay, NL, and extends through the Town of Belleoram's municipal planning area before continuing inland across Crown Land until reaching the Route 362. Where the Project Area passes through the municipal planning area, the land is zoned Rural, a designation that permits the development of public utility infrastructure (Gov NL Municipal and Community Affairs, 2010). The alignment does not intersect any Crown Land leases or privately owned parcels.

Insular Newfoundland supports an abundance of natural resources, including highly valued game species such as Atlantic Salmon, Brook Trout, Black Bear, and Moose. Subsistence harvesting remains culturally important for local residents, and the region also attracts non-resident hunters during regulated hunting seasons. Other traditional and recreational land-use activities that may occur in the area include domestic wood harvesting, hunting, fishing, berry picking, snowmobiling, and ATV use. The Project Area overlaps with Domestic Harvest Area D07-26 (Belleoram). There are no licensed outfitters operating in the region, and no designated ATV trails occur within or adjacent to the Project Area.

There are no parks, protected areas, or designated public water supply areas located within the Project Area. The alignment does not intersect any conservation lands, ecological reserves, wilderness areas, or municipal water protection zones.

There are no active mineral licenses or staked claims within the Project Area. While commercial fishing occurs in the broader region, no related infrastructure or activities intersect with the Project footprint. Aquaculture operations are present along the coast near Chapel Island; however, these sites are located outside of the Project Area.

Newfoundland is home to Miawpukek Mi'kamawey 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, 37 km northeast 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 do not provide detailed information on Indigenous land use within the Project Area. However, according to census data for the Town of Belleoram, of the 355 respondents, ten (10) individuals identified as having both Indigenous and non-Indigenous ancestry (Statistics Canada, 2022a). This category includes individuals with First Nations (North American Indian), Métis, or Inuit ancestry in combination with non-Indigenous ancestry. Given that the Project Area will create a new RoW,

new interactions with Indigenous land use or cultural resources are possible. Continued engagement with relevant Indigenous groups is recommended to verify the absence of concerns and to incorporate any input into Project planning.

3.4.2 Heritage and Cultural Resources

Historic resources in NL are governed by the *Historic Resources Act* (1990a), 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. However, a recorded European archaeological site is located approximately 10 km to the south (Government of Newfoundland and Labrador, n.d.-a). In 2025, the Provincial Archaeology Office conducted surveys in the community of Belleoram. While 19th- and 20th-century material culture was identified around the harbour, sites further north could not be accessed at the time of the survey (Brydon et al., 2025).

3.4.3 Economy and Employment

The Project is located within Census Subdivision (CSD) Division No. 3, Subd. A (CSD 3A). This area consists of dispersed, unincorporated rural communities with low population densities and limited-service availability. The area reported a population of 45 in 2021, a slight increase from 24 in 2016 (Statistics Canada, 2022b).

The closest community is the incorporated Town of Belleoram, which had a population of 348 in 2021, down from 374 in 2016 (Statistics Canada, 2022a). The economy of Census Subdivision (CSD) 3A is below the provincial average for gross personal income per capita in 2023, with 46.2% of the population considered self-reliant based on their income (Government of Newfoundland and Labrador, n.d.-b). The community reflects typical rural settlement patterns, with employment often associated with natural resource sectors (i.e., fishing and aquaculture), small-scale service industries, and seasonal or part-time work.

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

4.0 Environmental Effects

An environmental effects assessment was conducted to identify potential interactions between the Project and the surrounding biophysical and socio-economic environments. This process involved a desktop review to determine where interactions could occur and to develop appropriate mitigation measures to address any adverse effects. Considering both predicted environmental effects and proposed mitigation strategies, residual effects were evaluated, with the results presented in Section 4.4.

To support the assessment, Valued Components (VCs) were selected to represent key elements of the Project Area's biophysical and socio-economic environments. Four VCs were identified: the Atmospheric, Aquatic, Terrestrial, and Socio-economic environments. Within each VC, Key Indicators (KIs) were defined to represent important and measurable aspects. These VCs and associated KIs are summarized in Table 7. Baseline conditions for each VC, derived from the desktop review, are provided in Section 3 and form the basis for evaluating potential Project interactions.

Table 7 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 occur through direct or indirect pathways. Direct interactions were identified by reviewing the Project activities described in Section 2.3 in relation to the existing biophysical and socio-economic conditions outlined in Section 3.0.

Indirect interactions typically involve a pathway connecting a Project activity to a KI. For instance, vegetation clearing and site preparation within the RoW may directly affect wetland habitat. These activities may also modify local hydrology by decreasing infiltration and increasing surface runoff, leading to indirect effects on surface water quality or quantity. In turn, changes in surface water conditions may affect fish and fish habitat, demonstrating how a KI can act as both a receptor of effects and a pathway through which effects are transmitted.

Table 8 presents a summary of the planned Project activities that could interact with elements of the environment.

Table 8 Project-Environment Interactions.

Phase	Component	Description
Construction	Vegetation Management	Vegetation management activities within the RoW, including brush cutting, tree clearing, and trimming to maintain required electrical clearance limits. Activities may involve the use of chainsaws, chippers, and other small equipment, as well as heavy machinery where necessary to safely complete clearing operations.
Construction	Ground Disturbance & Structure Replacement	- Excavation and installation of utility poles, including pole setting, backfilling, and compaction, as well as installation of anchors, guy wires, and associated structural components. Activities will be completed using standard line construction equipment such as digger derricks, excavators, and line trucks. - Temporary access to the RoW may be required, utilizing existing roads and trails, with localized clearing or minor upgrades where necessary to facilitate safe construction and equipment movement.
Construction	Line Installation & Commissioning	- Installation and energization of a new distribution line on newly installed poles. Activities include pole setting and anchoring, installation of pole hardware and framing, stringing, sagging, and dead-ending of conductors, installation of guys and anchors, completion of line splicing and terminations, and installation of pole-mounted equipment such as transformers, insulators, and associated distribution appurtenances. - Commissioning includes inspection and verification of construction, conductor tensioning and sag checks, phasing and continuity testing, and final system integration and energization to confirm safe and reliable operation of the distribution line. - Potential equipment to be used includes line trucks and various cable stringing tools.
Operation and Maintenance	Maintenance (Repairs)	- NL Hydro is responsible for the operation and maintenance of transmission infrastructure, including transmission lines, poles, and associated RoW. - Ongoing maintenance activities, including repairs to electrical distribution infrastructure, will be conducted as required in response to system needs or outages. Routine maintenance requirements are anticipated to remain unchanged or decrease as a result of the Project. - Infrastructure within the Project Area will continue to be inspected and maintained in accordance with standard utility practices. Maintenance activities are typically confined to the established RoW and utilize existing access routes wherever feasible. These activities are generally short in duration and localized in nature.
Construction; Operation and Maintenance	Accidents and Malfunctions	Unplanned events that may occur during construction, operation, or maintenance activities include releases of fuel or hydraulic fluids from equipment, equipment malfunction or overturning, dropped materials, pole failure or collapse, and conductor failure due to severe weather, environmental conditions, or third-party interference.

Table 9 summarizes the KIs that may be affected by the potential Project interactions identified above. Detailed discussions of these interactions between the Project and the environment are provided in the following sections.

Table 9 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	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 described in Section 2.4 and Table 8, are planned to commence in Q3 2026 and continue through to Q4 2026 (refer to Section 6.0 for the proposed Project schedule). Potential interactions between the Project and each VC during the construction phase are outlined in the sections that follow.

4.1.1 Atmospheric Environment

Air Quality

The air quality assessment evaluated substances that may be emitted by the Project and are regulated under the Newfoundland and Labrador Air Quality Standards (Schedule A of the *Air Pollution Control Regulations, 2022*) and applicable federal requirements. Air emissions are typically categorized as CACs or GHGs. Anticipated sources of CACs associated with the Project include PM, NO₂, SO₂, CO, and volatile organic compounds (VOCs), primarily generated through the operation of mobile equipment and earthworks. Other provincially regulated substances (e.g., hydrogen sulphide, metals, asbestos, PCBs, dioxins, and furans) are not expected to be generated by Project activities and were not considered further.

The principal GHGs include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. The Project is not expected to result in an increase in GHG emissions above existing baseline levels and, therefore, is not anticipated to be subject to reporting as part of the MGGA (Government of Newfoundland and Labrador, 2016).

Fugitive dust emissions may occur during the Construction Phase and can be transported by wind to adjacent areas, potentially affecting sensitive environments. These emissions may arise from most construction-related activities, with dispersion influenced by factors such as wind speed and direction, topography, dry surface conditions, and limited vegetation cover. Without appropriate mitigation, fugitive dust may degrade local air quality, pose health risks to workers and nearby residents, and result in particulate deposition in sensitive areas. However, dust emissions associated with construction are expected to be temporary and limited to periods of active work.

All relevant mitigation measures identified in Table 10 will be implemented as needed during construction.

Noise and Vibration

Construction activities will generate noise from sources such as equipment operation, structure installation, and minor ground disturbance. Noise emissions are expected to be intermittent and generally limited to standard construction hours (7:00 a.m. to 7:00 p.m.), with effects primarily restricted to nearby receptors. Existing ambient noise levels in the area are already influenced by agricultural equipment operations, and Project-related noise is not anticipated to exceed these conditions.

Vibration levels within the Project Area are expected to be low and intermittent, mainly associated with the operation of heavy equipment. All applicable mitigation measures outlined in Table 10 will be applied, as required, during construction.

4.1.2 Aquatic Environment

No in-water works are planned for the Project. Engineering design will seek to avoid watercourse crossings where feasible. Where transmission line crossings are unavoidable, access will be from the existing RoW on either side of the watercourse; as such, in-stream equipment operation and fording will be avoided where possible. If fording cannot be avoided, appropriate permits will be obtained, as required.

Potential interactions with surface water during the construction phase are otherwise limited to land disturbance near watercourses, which could result in erosion or sedimentation. No public protected water supply areas overlap with the Project Area.

Construction activities such as vegetation clearing, pole installation, excavations, road construction, and travel along RoW corridors and gravel roads may influence surface water conditions by increasing exposed

soil areas and altering natural drainage patterns. These changes can promote runoff and sediment transport, potentially increasing total suspended solids (TSS) and turbidity in nearby watercourses. Additionally, accidental events during any phase of the Project could lead to localized contamination of surface water.

Potential effects on fish and fish habitat are expected to be indirect, primarily associated with changes in water quality, such as increased sedimentation.

All applicable mitigation measures outlined in Table 10 will be implemented, as required, during construction.

4.1.3 Terrestrial Environment

Vegetation clearing will be required to establish the new RoW for the Project. As a result, potential interactions with the terrestrial environment during the construction phase will primarily be limited to localized clearing and ground disturbance within the Project footprint.

Construction-related effects may arise from equipment operation, minor excavation for pole installation, and travel along access trails and RoWs. These activities may temporarily disturb soils and vegetation, increase the potential for erosion, and alter surface runoff patterns. Given that the Project involves development of a new RoW through previously undisturbed habitat, some habitat loss and fragmentation are expected and considered moderate. Wildlife interactions are anticipated to be limited to short-term sensory disturbances, such as noise, machinery, and human presence during construction. No substantial effects on habitat availability or connectivity are expected. Wetlands will be avoided to the extent practicable; where avoidance is not feasible, appropriate mitigation measures (e.g., timber mats, permitting for water crossings) will be implemented to enable safe equipment access.

Potential effects on terrestrial SAR and avifauna are expected to be low, as no known SAR occurrences have been identified within 5 km of the Project Area. Construction activities will also be scheduled outside sensitive breeding periods where feasible. Any residual effects on terrestrial components are expected to be short-term, reversible, and not significant. Accidental events (e.g., spills) could result in localized soil or vegetation contamination during any Project phase; however, these risks will be minimized through the implementation of standard contingency and response mitigation measures outlined in Table 10.

4.1.4 Socio-economic Environment

All Project activities will be confined to the new transmission line RoW. As such, no measurable effects on community infrastructure or public services are anticipated, as work will occur outside the nearest community. The potential to encounter previously undocumented heritage or cultural resources is

considered low; however, should any resources be identified during construction, work will cease and appropriate regulatory authorities will be notified.

Due to the limited Project footprint, there remains some potential for interactions with Indigenous land use or cultural resources. Ongoing and continued engagement with relevant Indigenous groups is recommended to confirm any concerns and to incorporate feedback into Project planning, including consideration of traditional land use where applicable.

Short-term economic benefits may occur during construction through local expenditures on accommodations, food services, fuel, and materials. While the Project is not expected to generate direct long-term employment, upgrades to transmission infrastructure will support reliable power supply to the planned Crushed Granite Rock Quarry, thereby indirectly contributing to future economic development opportunities.

No long-term adverse socio-economic effects are anticipated. Temporary increases in traffic volumes and equipment movement during construction are expected to be minimal and will be managed through traffic control measures outlined in Table 10.

4.2 Operation and Maintenance

Following construction, the new distribution line is expected to be commissioned in Q4 2026. NL Hydro is responsible for the operation, maintenance, and inspection of the transmission line, associated structures, and the RoW. Operations and maintenance activities will be conducted in accordance with established utility practices. Potential impacts associated with future storm events are addressed in Section 4.3.1.

4.3 Mitigation Measures

In addition to complying with regulatory requirements, the Project incorporates a range of standards, guidelines, and mitigation measures designed to avoid, minimize, or offset potential adverse effects. These include established industry best practices for both construction and operations. Table 10 provides a comprehensive summary of mitigation measures, organized by KI.

Table 10 Mitigation Measures.

Key Indicator	Mitigation
Air Quality	• Maintain all vehicles and heavy equipment in good working condition, including properly functioning mufflers and exhaust systems. • Minimize equipment idling; shut down vehicles and equipment when not in active use. • Utilize Tier 4-compliant mobile equipment, where feasible, to reduce air emissions.

Key Indicator	Mitigation
	- Control dust through the application of water or approved dust suppressants on access roads, work areas, and other exposed surfaces, as required. - Implement and enforce appropriate speed limits on access routes to reduce dust generation. - Apply additional dust control measures (e.g., physical barriers or surface stabilization) in areas prone to fugitive dust, where necessary. - Conduct all activities in accordance with NL Hydro standard operating procedures (SOPs) for transmission line construction and maintenance.
Noise	- Conduct construction activities during standard daytime hours (typically 07:00 to 19:00), unless otherwise required for safety or operational reasons. - Schedule high-noise activities (e.g., pole setting, rock breaking) during daytime hours, where feasible. - Provide advance notice to nearby land users or residents of potentially disruptive activities, such as heavy equipment mobilization or work outside standard hours. - Issue additional notifications for activities expected to generate elevated noise levels, as appropriate. - Ensure all vehicles and equipment are equipped with properly functioning noise control devices (e.g., mufflers, exhaust silencers). - Maintain all equipment in good working condition in accordance with manufacturer specifications and applicable maintenance procedures. - Minimize idling of vehicles and equipment where practicable. - Utilize low-noise equipment and the minimum required horsepower necessary to safely complete tasks, where feasible. - Enclose or shield stationary noise sources (e.g., generators, compressors) where practicable. - Install temporary noise barriers or shielding in areas close to sensitive receptors, where required.
Fish and Fish Habitat	- Carry out all activities in accordance with an approved Environmental Protection Plan (EPP). - Follow applicable Fisheries and Oceans Canada (DFO) guidance documents, standard mitigation measures, and best management practices. - Adhere to DFO-established timing windows for in-water work in Newfoundland and Labrador. - Obtain all required regulatory approvals and permits prior to conducting watercourse crossings, including permits for temporary fording, where applicable. - Develop and implement an Erosion and Sediment Control Plan in consultation with the NL Water Resources Management Division and DFO prior to initiating site activities. - Install and maintain erosion and sediment control measures (e.g., silt fencing, sediment traps) as required to prevent sediment release to watercourses. - Direct surface runoff away from watercourses and aquatic habitats. - Retain vegetation along watercourse banks where feasible and promote natural re-vegetation following disturbance. - Use suitable materials (e.g., untreated timber, composite, or steel) near water and avoid placing poles within 15 m of the high-water mark. - Conduct refuelling activities a minimum of 30 m from watercourses and wetlands, in designated areas. - Complete pre-work inspections of all equipment to confirm proper working condition. - Maintain appropriate spill response equipment on site whenever fuel-powered equipment is in use.

Key Indicator	Mitigation
	- Construct diversion ditches or other controls to isolate work areas from adjacent watercourses, where required. - Restrict work along streambanks to the minimum area necessary to complete the work safely. - Maintain all equipment in good working condition to minimize the potential for leaks or spills. - Monitor site conditions before, during, and after construction to confirm that natural drainage patterns and watercourse functions are maintained or restored. - Monitor and maintain runoff and sediment control measures throughout vegetation clearing, grubbing, and material stockpiling activities.
Wetlands	- Carry out all activities in accordance with an approved EPP. - Maintain undisturbed buffer zones of a minimum of 30 m around wetlands and waterbodies, except where existing access routes necessitate closer proximity. - Clearly delineate work areas within 30 m of wetlands using appropriate flagging or marking to define the approved construction footprint. - Obtain all required regulatory approvals and permits prior to conducting wetland crossings, including permits for temporary fording, where applicable. - Store all materials and stockpiles a minimum of 30 m from wetlands and waterbodies. - Conduct refuelling and equipment servicing only in designated areas located at least 30 m from wetlands and waterbodies, in accordance with applicable permits and approvals. - Utilize appropriate pole materials for installation in wetlands (e.g., untreated or Chromated Copper Arsenate-treated poles) and consider the use of pole protection measures (e.g., pole savers) to minimize potential leaching near waterbodies. - Avoid the placement of brush piles near wetlands or waterbodies and maintain setbacks of at least 200 m from any scheduled salmon rivers. - Conduct vegetation clearing activities in or adjacent to wetlands in accordance with applicable guidelines and retain wetland vegetation where practicable. - Minimize soil disturbance and rutting by limiting equipment access, using swamp mats or equivalent measures, and avoiding work during periods of saturated ground conditions. - Install and maintain erosion and sediment control measures prior to and during construction, as required. - Immediately report and respond to spills in accordance with established spill response procedures
Avifauna	- Carry out all activities in accordance with an approved EPP. - Conduct vegetation clearing activities outside of the breeding bird period (April 15 to August 15), where feasible. Where clearing during this period cannot be avoided, implement the following mitigation measures: - Have a qualified avian biologist complete pre-clearing nest surveys; - Clearly flag and avoid all active nests until young have fledged; and - Establish and maintain appropriate buffer zones around active nests, including a minimum 5 m no-disturbance buffer, or species-specific setbacks as determined in consultation with the NL Wildlife Division (NL WD) - Report all identified raptor nest locations to the NL Wildlife Division (NL WD). - Cover and stabilize material stockpiles ($\leq 70^\circ$ slope) during the breeding bird period to prevent nesting. - Instruct all personnel to remain vigilant for wildlife during vehicle and equipment operation, and to operate in a manner that avoids wildlife interactions.

Key Indicator	Mitigation
Species at Risk	• Carry out all activities in accordance with an approved EPP. • Minimize the Project footprint and utilize existing roads, trails, and previously disturbed areas, where feasible. • Suspend work within 10 m of any SAR observation and only resume upon confirmation by a qualified biologist that the area is clear (up to 24 hours, if required). • Report all SAR observations to the NL WD and Environment and Climate Change Canada – Canadian Wildlife Service (ECCC–CWS) and consult with NL WD if previously undocumented SAR are identified. • Provide environmental awareness training to all personnel, including identification of SAR and appropriate response procedures. • Implement a Wildlife Response Protocol to address wildlife encounters during all Project phases. • Document and report all wildlife interactions and incidents to the Environmental Coordinator, and notify the NL FFA as required. • Report and avoid any identified roosting or hibernation sites (e.g., bat roosts, hibernacula) in consultation with NL WD. • Clearly delineate construction limits prior to clearing or grubbing activities. • Conduct bat roost surveys during the appropriate season and establish protective buffers around any identified active maternity roosts. • Identify and avoid sensitive wildlife habitats, where practicable. • Keep work areas free of food waste and other attractants to reduce wildlife interactions. • Remove wildlife carcasses (roadkill) in a timely manner to reduce attractants and collision risk. • Require all personnel to yield to wildlife at all times and prohibit chasing, following, or otherwise disturbing animals. • Remove woody debris and slash in a timely manner to reduce potential fire hazards. • Maintain appropriate firefighting equipment on site during construction activities. • Report and respond to spills immediately, and dispose of contaminated materials at approved facilities in accordance with regulatory requirements.
Socioeconomic Resources	• Confine Project activities to the established RoW and existing public roadways, where feasible. • Obtain all required permits and approvals prior to the commencement of Project activities. • Consult and coordinate with applicable provincial departments and regulatory agencies to ensure compliance with all regulatory requirements. • Ensure contractor compliance with applicable occupational health and safety legislation and standards. • Prioritize local and regional hiring, where feasible. • Procure goods and services locally, regionally, and provincially to the extent practicable. • Apply diversity, equity, and inclusion (DEI) principles in hiring and procurement practices, where applicable. • Handle, store, and install treated wood materials (e.g., Pentachlorophenol or Chromated Copper Arsenate-treated poles and cross-arms) in accordance with applicable legislation, standards, and best management practices. • Implement appropriate waste management practices, including coordination with licensed waste service providers, and prioritize waste reduction through reuse and recycling where practicable.

Key Indicator	Mitigation
	- Promote worker health and well-being through the implementation of safety programs and procedures. - Develop and implement site-specific traffic management plans in accordance with applicable standards and guidelines, based on site conditions (e.g., road configuration, sightlines, and traffic volumes). - Conduct regular inspections and monitoring of contractor activities to verify compliance with traffic management plans and associated requirements (e.g., signage installation, documentation availability, and pre-task safety meetings).

4.3.1 Potential Impacts of the Environment on the Project

Transmission line infrastructure is susceptible to environmental stressors, including severe storm events, flooding, high winds, windthrow, and changes in hydrological conditions. These factors have the potential to affect structural integrity and the reliability of electrical service delivery. The Project has been designed in accordance with established engineering standards that account for environmental conditions and associated risks, including consideration of climate-related factors. All poles will be constructed to Class 2 specifications, and installation will maintain existing ground elevations to preserve site stability and natural drainage patterns. Vegetation management within the RoW will be implemented to reduce the risk of windthrow and maintain required clearances. Ongoing inspection and maintenance programs will be conducted to identify and address any issues arising from environmental conditions.

4.3.2 Waste Management Plan

A Waste Management Plan will be developed prior to construction to address the handling, storage, and disposal of all Project-related waste materials, including replaced poles and biomass generated from vegetation clearing and trimming activities. Disposal of treated wood poles will be carried out in accordance with the provincial Treated Wood Waste Disposal Guidelines.

NL Hydro will manage waste generated through make-ready and construction 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. Treated poles requiring disposal will be transported to facilities authorized to accept such materials. Vegetation clearing debris will be managed through cut-and-pile methods, while tree trimming residues will be chipped where appropriate, in compliance with applicable environmental regulations.

Additional construction-related waste streams may include empty cable reels, cardboard packaging, and plastic wrap. Cable reels will be returned to the supplier for reuse or recycling where possible. Cardboard materials will be recycled where facilities are available or otherwise disposed of as general waste. Plastic wrap and other non-recyclable materials will be collected, contained, and disposed of at approved waste management facilities.

NL Hydro will follow its Environmental Emergency Response Plan (Appendix C) for the handling, storage, and disposal of hazardous materials and in response to accidental events or malfunctions.

4.3.3 Consultation

A proactive consultation and communication plan will be implemented to ensure stakeholders are informed and engaged throughout all phases of the Project. Construction activities will generally occur during standard daytime hours to minimize potential disturbances; any work outside these hours will be communicated in advance where practicable.

Adjacent landowners and stakeholders will be notified prior to activities that may result in increased noise, vibration, or traffic, such as heavy equipment mobilization or occasional work outside standard hours. Additional notifications will be provided for activities expected to result in elevated effects, in accordance with established best practices for contractor communication and environmental responsibility.

The Project team will engage with land users to identify rights, interests, and potential concerns, with the objective of avoiding conflicts and maintaining positive working relationships. Engagement with landowners will occur in advance of easement acquisition, vegetation clearing, and other access-related activities, to ensure transparency and support ongoing collaboration throughout Project execution.

4.4 Residual Effects

The evaluation of potential effects was based on the following considerations:

- The location, extent, and duration of Project-related interactions;
- Identification of pathways connecting Project activities to environmental receptors;
- Review of existing literature on similar interactions and effects, including previous environmental assessments;
- Input from subject matter experts; and
- Monitoring data from comparable projects.

To focus the assessment on meaningful environmental effects, interactions with negligible or incidental impact potential were not carried forward. All predictions include consideration of any scientific uncertainty associated with available data or methodologies. Predictions assume the implementation of mitigation measures that have demonstrated effectiveness in similar settings and are commonly standard or regulatory requirements. Residual effects are defined as those persisting after mitigation has been applied and are evaluated using the criteria outlined in Table 11.

Table 11 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
	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 12. 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 12 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
	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 indicates that environmental effects are generally not significant across all phases of the Project, with some positive socio-economic outcomes identified.

During construction, residual effects on air quality and noise are considered 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 and construction activities. Potential effects on fish and fish habitat are also assessed as NS, with low magnitude (2) and limited extent, assuming the implementation of appropriate erosion and sediment control measures. Given that the Project involves the development of a new RoW through previously undisturbed areas, some habitat loss and fragmentation will occur. However, effects on wetlands, avifauna, and SAR are expected to be minor (magnitude 3) and remain non-significant due to the limited footprint, application of mitigation measures, and the absence of known sensitive features within the Project Area. Socio-economic receptors are anticipated to experience positive residual effects (P), associated with improved infrastructure and indirect economic benefits.

Operation and maintenance activities are infrequent, localized, and of short duration. Residual effects on air quality and noise remain non-significant, while interactions with wetlands and wildlife are expected to be negligible. Positive socio-economic effects persist, and no long-term adverse effects are anticipated.

Under accidental or malfunction scenarios, most environmental components are expected to remain non-significant. Potential effects on fish and fish habitat could be of moderate magnitude (3) and broader geographic extent (3) in a worst-case event (e.g., sediment release or spill); however, these effects would be localized, short-term, and reversible with appropriate response measures. Socio-economic receptors could experience short-term significant (S) effects in the event of service disruptions, though these would be temporary and manageable through contingency planning and response procedures.

While the establishment of a new RoW introduces greater potential for terrestrial disturbance compared to projects confined to existing corridors, overall residual effects are expected to be not significant, short-term, and reversible due to the limited Project footprint and application of proven mitigation measures. The primary area of potential concern relates to accidental events during construction, particularly those affecting surface water and fish habitat through erosion or sedimentation; however, these risks can be effectively managed through proactive planning, implementation of erosion and sediment control measures, and adherence to emergency response protocols. Accidents and malfunctions associated with projects of this nature are historically rare, reflecting the limited scope of environmental interaction and the low-impact nature of the activities involved.

5.0 Approval of the Undertaking

The Project will comply with all applicable regulatory requirements associated with its execution. This Registration document has been submitted to NL ECC in accordance with the *Environmental Protection Act* and the *Environmental Assessment Regulations*. In addition, the Project may require a range of permits

and authorizations. A summary of the permits, approvals, licences, and authorizations that may be applicable to the Project is presented in Table 13.

Table 13 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	<i>NL Environmental Protection Act</i>	NL ECC
Crown Lands Lease	<i>Lands Act</i>	NL FAL
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)	<i>Water Resources Act</i>	NL ECC - Water Resources Management Division
Cutting Permit	<i>Forestry Act</i>	NL FAL
Operating Permit		
Damage or Danger Permit (Migratory Birds)	<i>Migratory Birds Convention Act – Migratory Birds Regulations</i>	Canadian Wildlife Service
Permit Authorizing an Activity Affecting Listed Wildlife Species	<i>Species at Risk Act</i>	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, the Proponent has scheduled the Project to be undertaken entirely in 2026. Construction is slated to begin as early as Q3 2026, and commissioning is planned for Q4 2026. Table 14 summarizes the Project schedule.

Table 14 Proposed Project Schedule.

Project Activity	Timeline
EA Registration	Q2 2026
EA Release	Q3 2026
Construction Phase	Q3 2026
Commissioning	Q4 2026
Operations/Maintenance	Q1 2027

7.0 Capital Cost and Funding

The total expenditures required for the Undertaking are estimated at \$3,250,700.00. The customer is contributing an estimated \$1,786,976.44 to the Project, and the remaining \$1,463,723.56 is being provided by the Proponent directly.

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Appendix A

Water Crossings

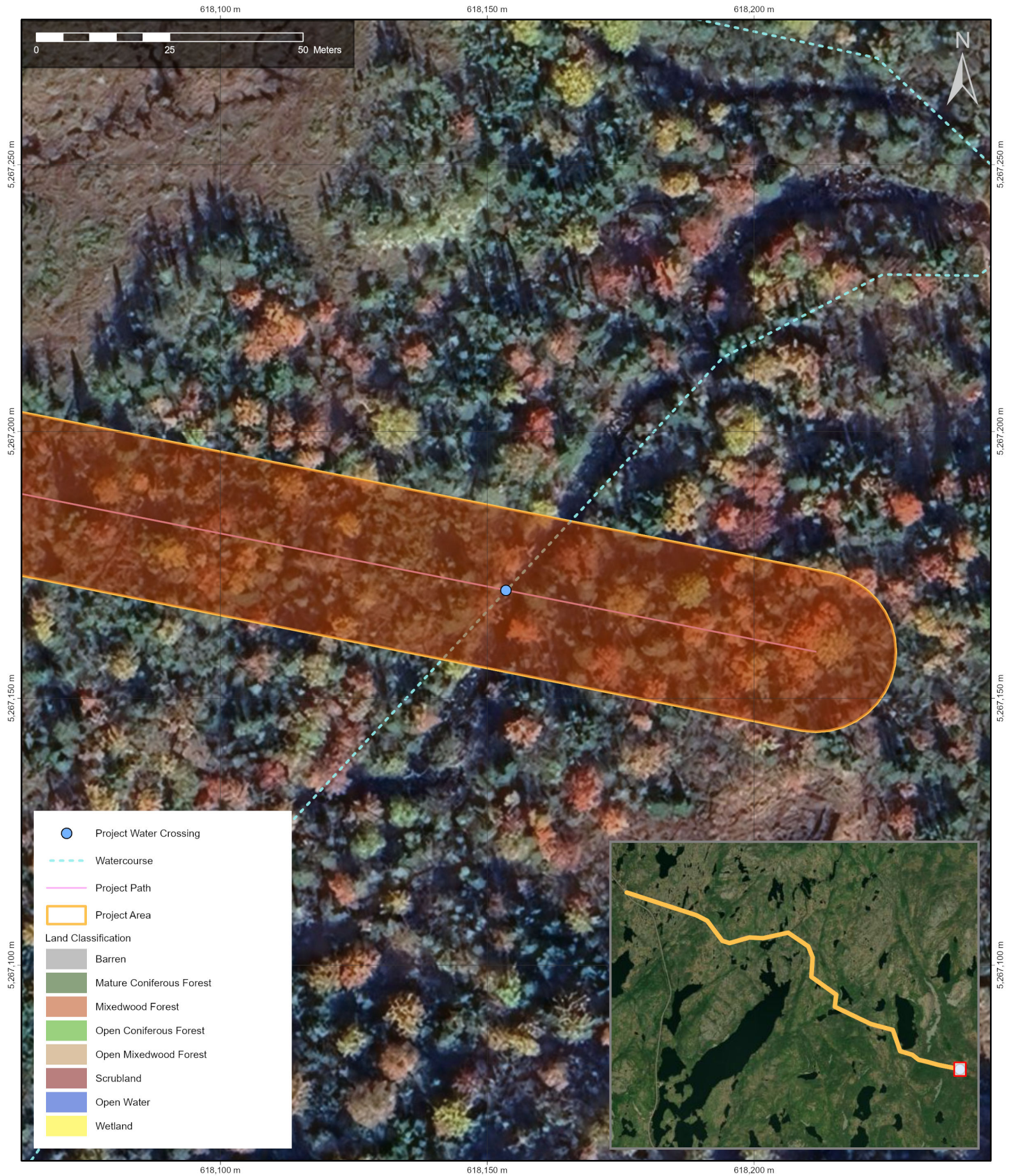
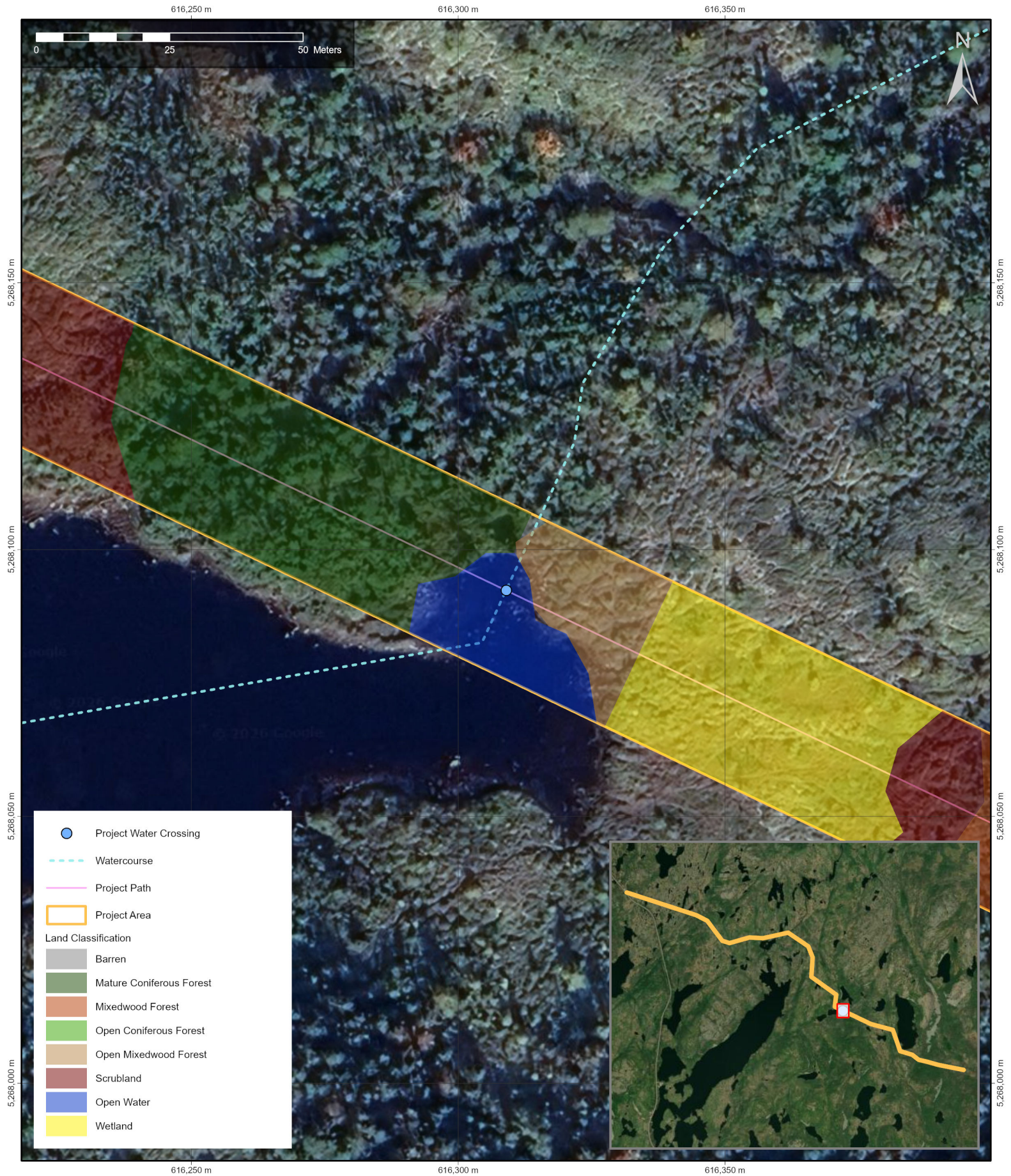
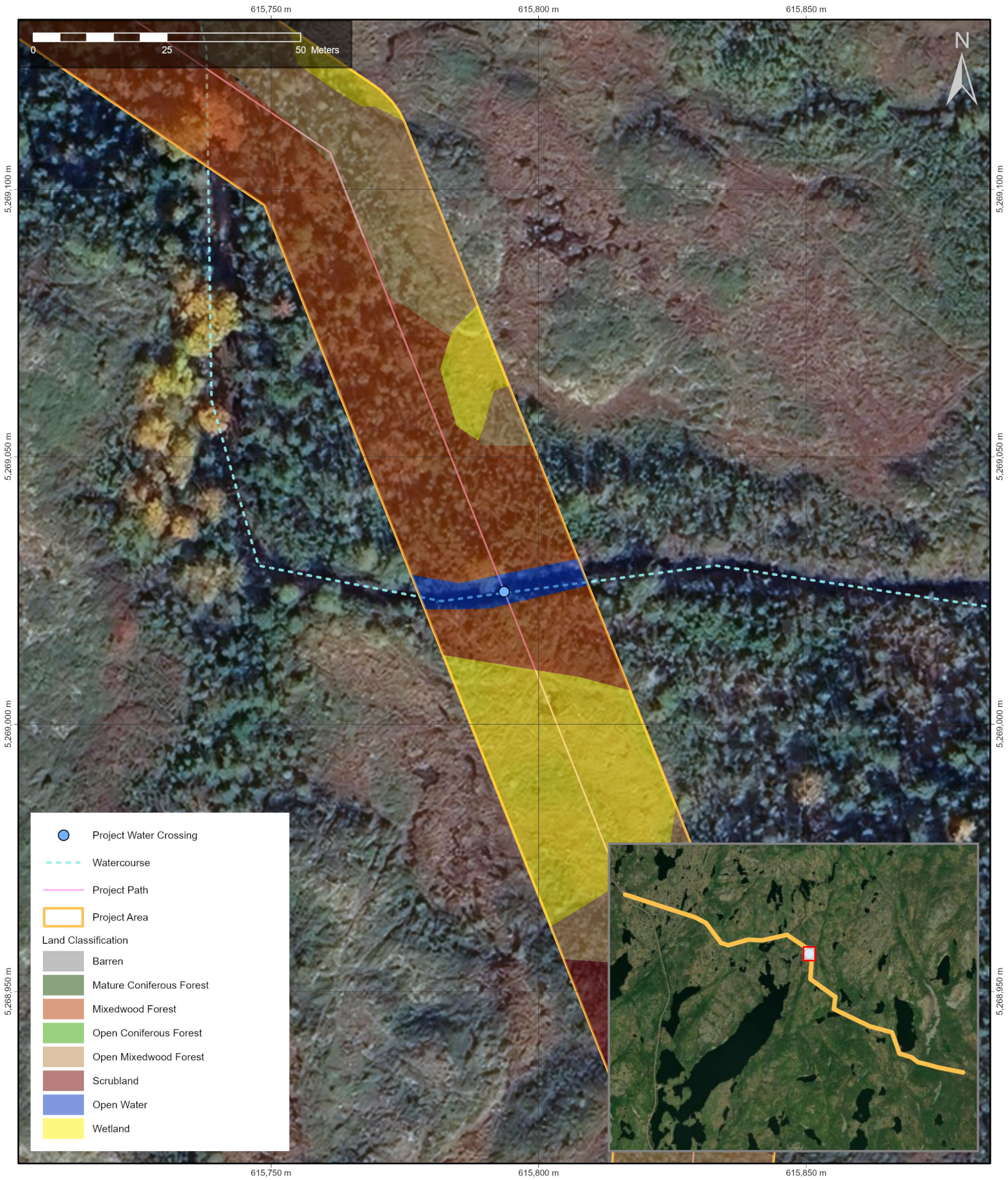


	FIGURE TITLE:		NOTES: Watercourse layer retrieved from 1:50k NTS dataset. Contains information licensed under the Open Government Licence - Canada.	PREPARED BY:	DATE:
	Water Crossing - 1			J. Crocker	2026-06-18
	PROJECT TITLE:			CRS:	IAD 1983 UTM Zone 21N
	NL Hydro Distribution System Upgrade - Belleoram Quarry			REVIEWED BY:	C. Burke 2026-06-18
					





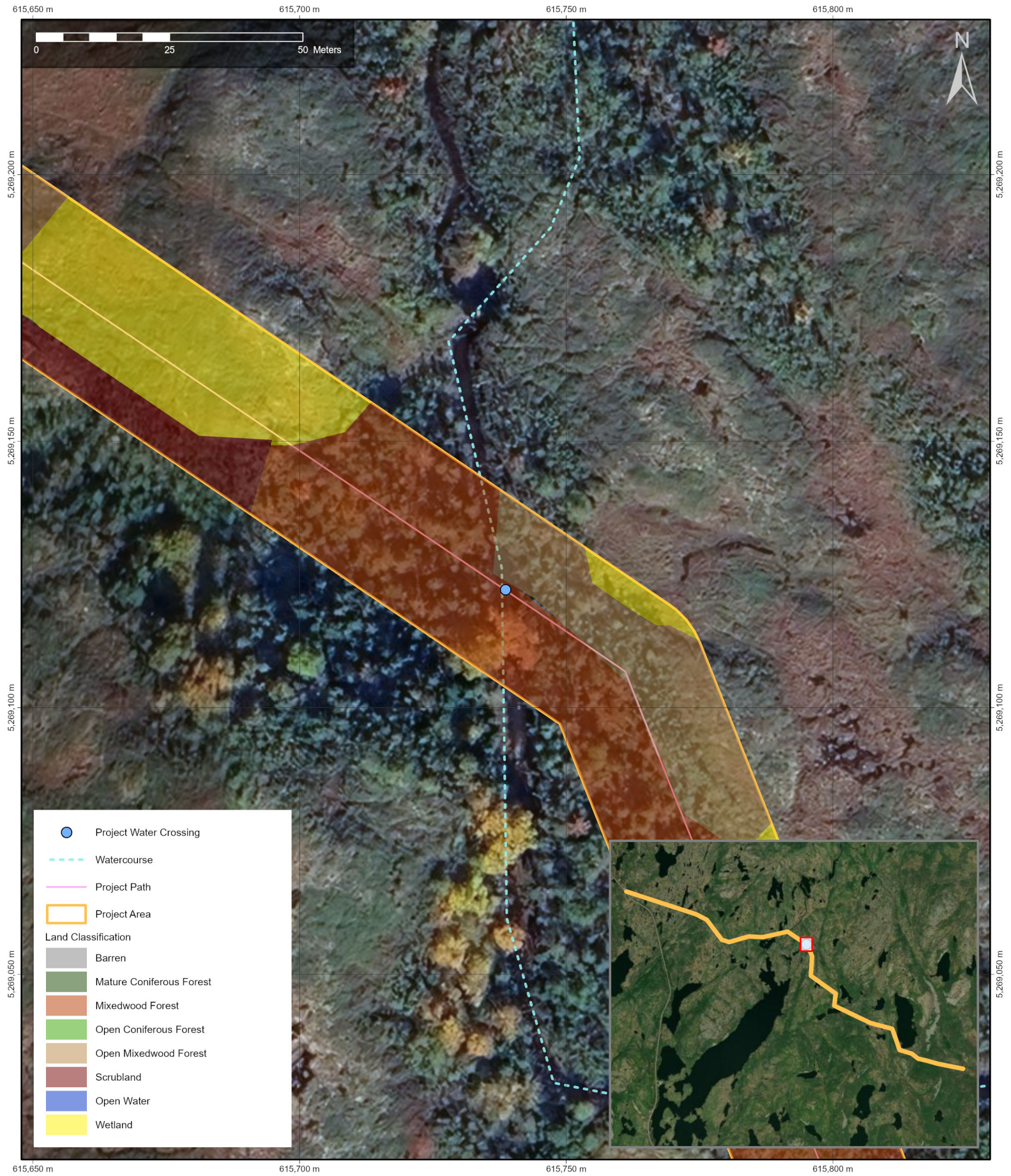


FIGURE TITLE:

Water Crossing - 4

PROJECT TITLE:

NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:

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DATE: 2026-06-18

CRS: IAD 1983 UTM Zone 21N

REVIEWED BY: C. Burke 2026-06-18



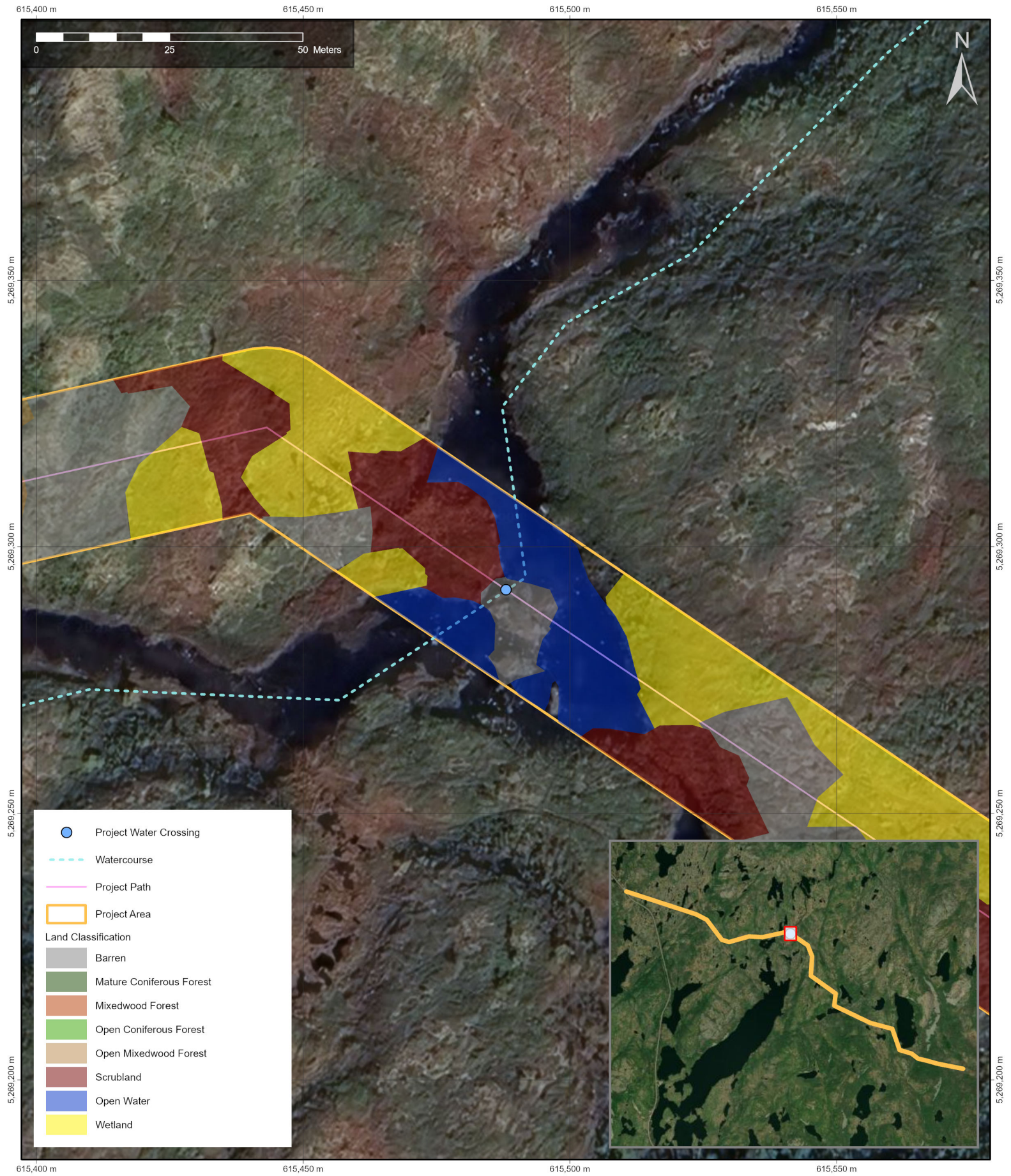
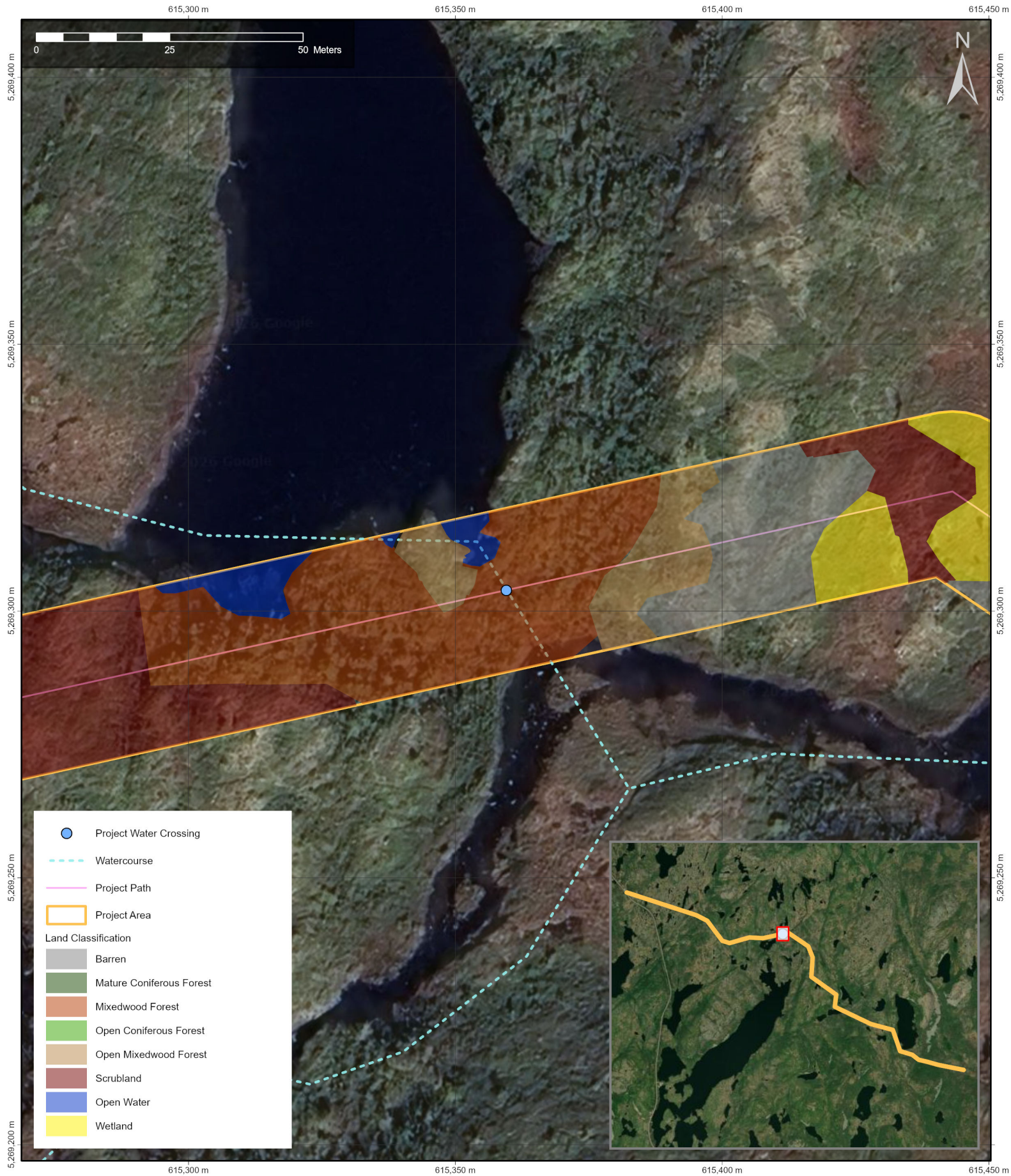


FIGURE TITLE:
Water Crossing - 5

PROJECT TITLE:
 NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:
 Watercourse layer retrieved from 1:50k NTS dataset. Contains information licensed under the Open Government Licence - Canada.

PREPARED BY: J. Crocker	DATE: 2026-06-18
CRS: NAD 1983 UTM Zone 21N	
REVIEWED BY: C. Burke 2026-06-18	



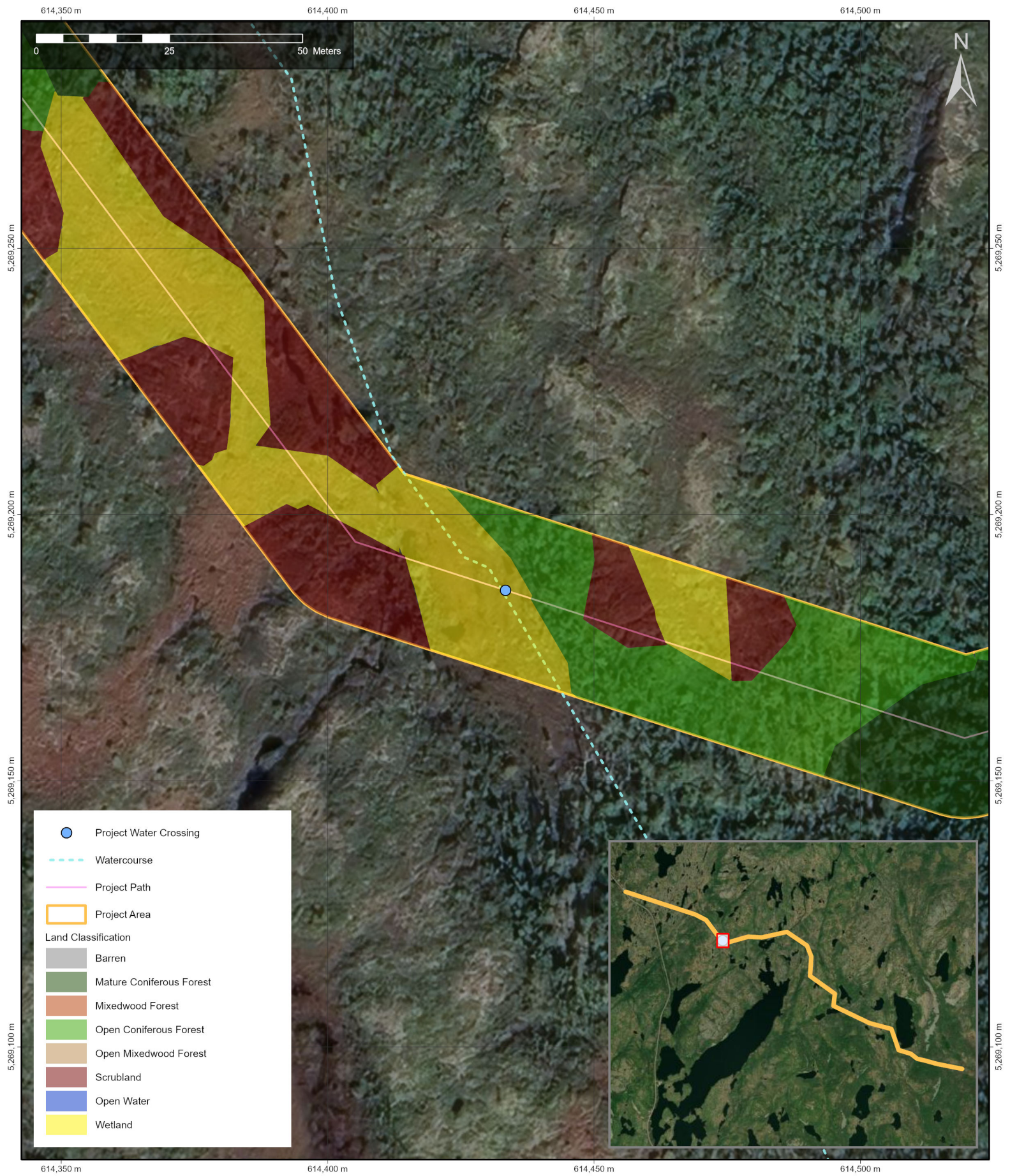
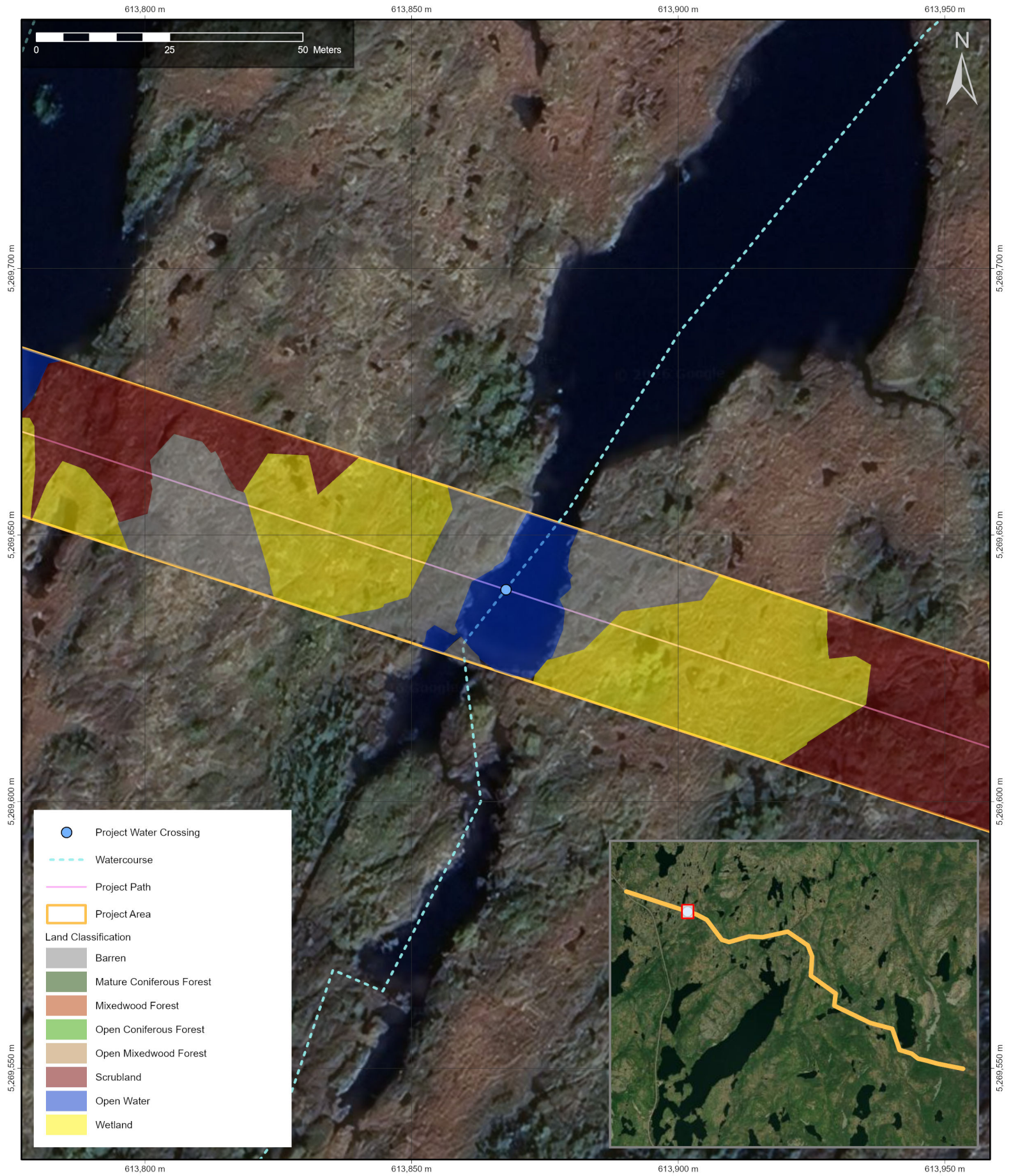
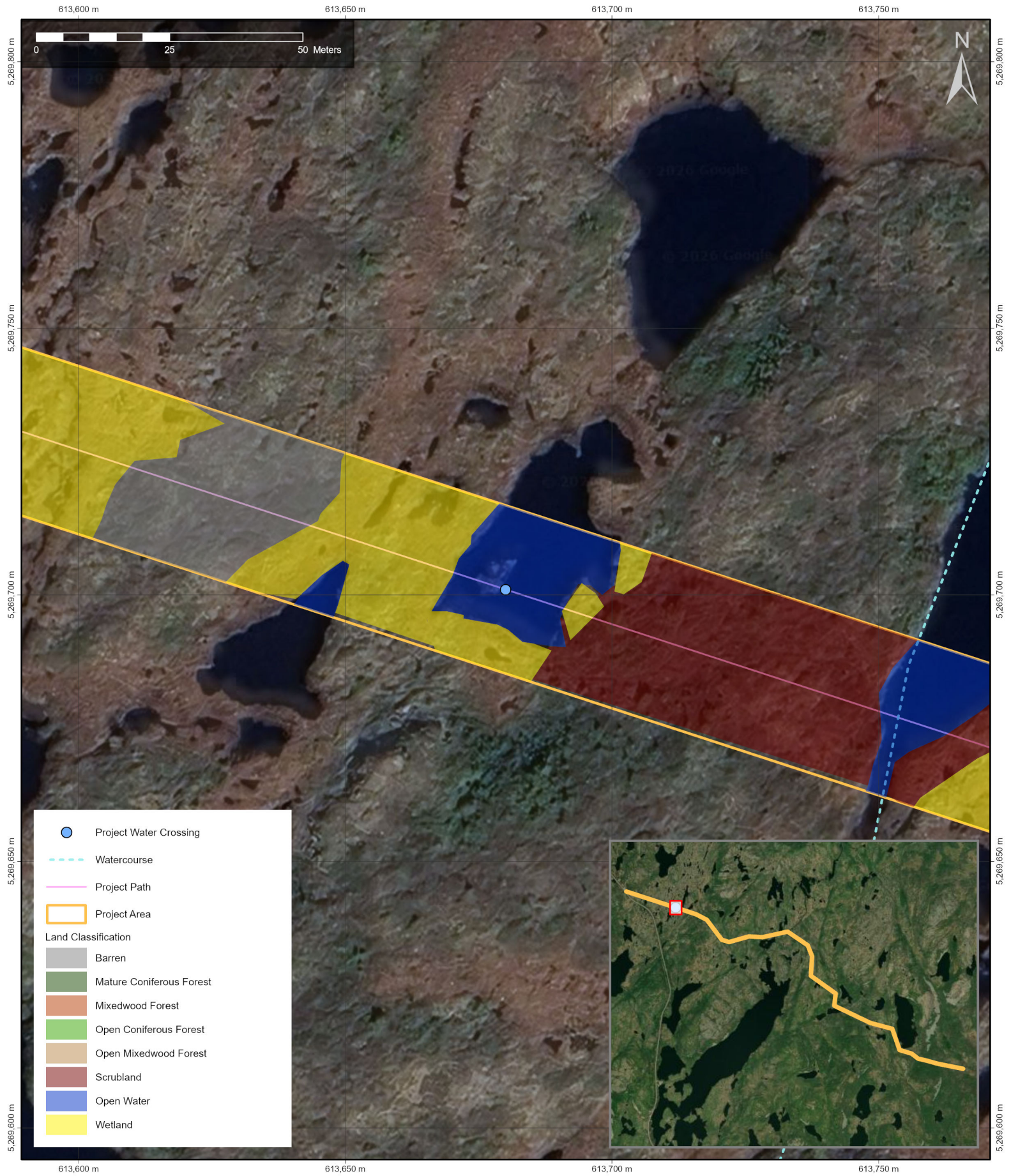


	FIGURE TITLE:		NOTES:		PREPARED BY:	DATE:
	Water Crossing - 7		Watercourse layer retrieved from 1:50k NTS dataset. Contains information licensed under the Open Government Licence - Canada.		J. Crocker	2026-06-18
	PROJECT TITLE:				CRS:	IAD 1983 UTM Zone 21N
	NL Hydro Distribution System Upgrade - Belleoram Quarry				REVIEWED BY:	C. Burke 2026-06-18
						





Appendix B

ELC and Wetlands

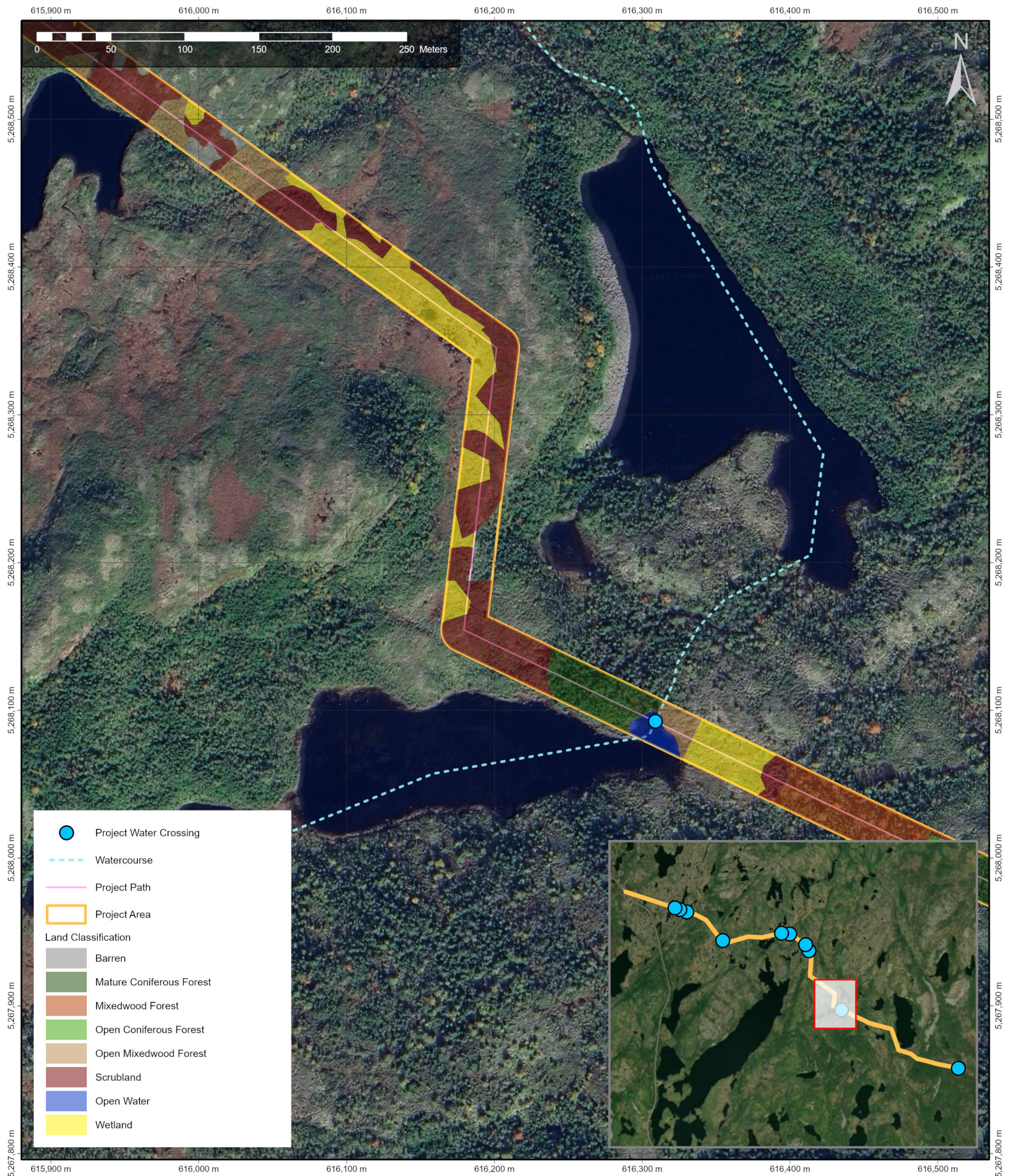


FIGURE TITLE:
Project Area Wetlands - 2

PROJECT TITLE:
 NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:
 Watercourse layer retrieved from 1:50k NTS dataset. Contains information licensed under the Open Government Licence - Canada.

PREPARED BY: J. Crocker	DATE: 2026-06-19
CRS: NAD 1983 UTM Zone 21N	
REVIEWED BY: 	

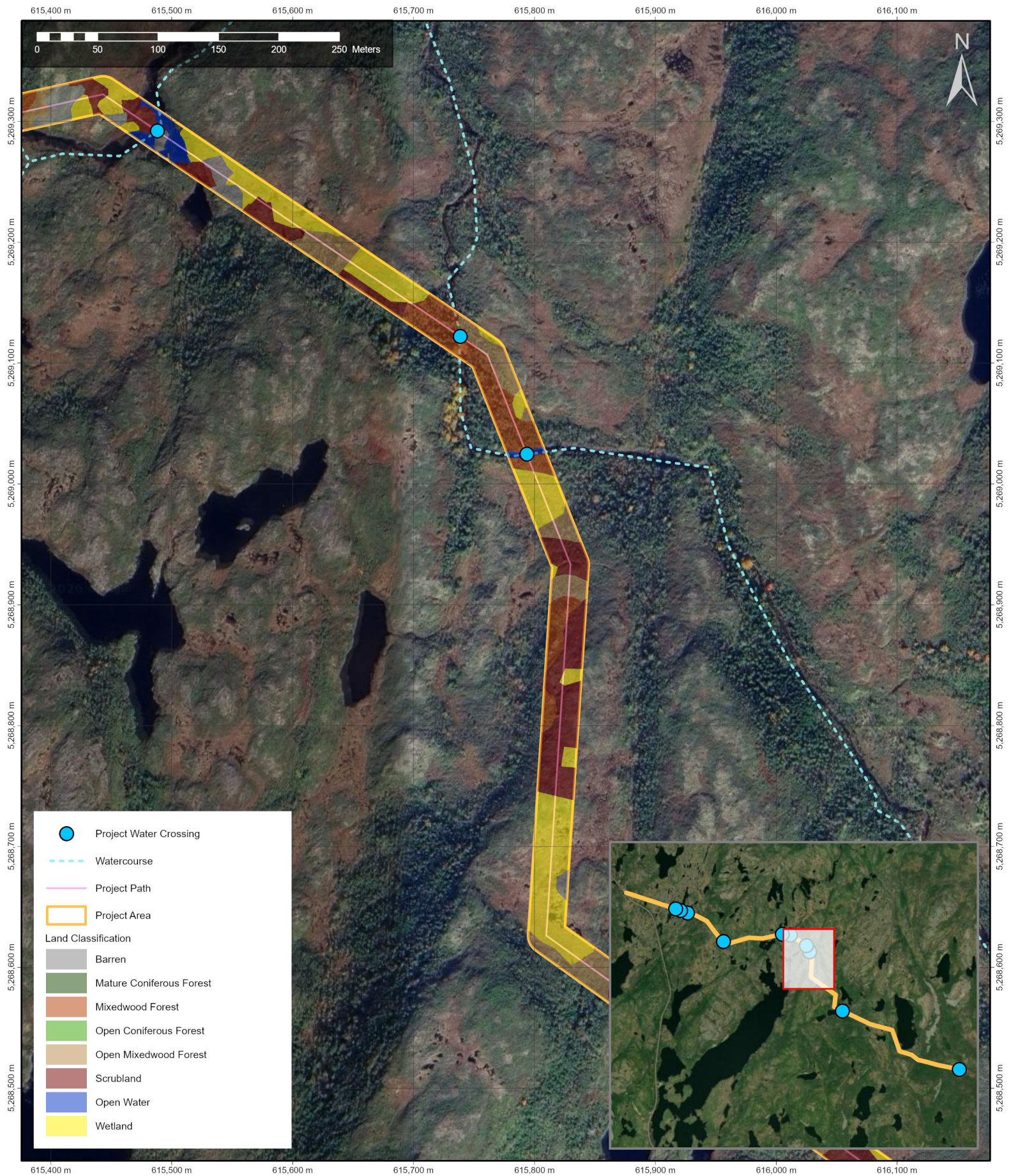


FIGURE TITLE:

Project Area Wetlands - 3

PROJECT TITLE:

NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:

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PREPARED BY:

J. Crocker

DATE:

2026-06-19

CRS:

NAD 1983 UTM Zone 21N

REVIEWED BY:



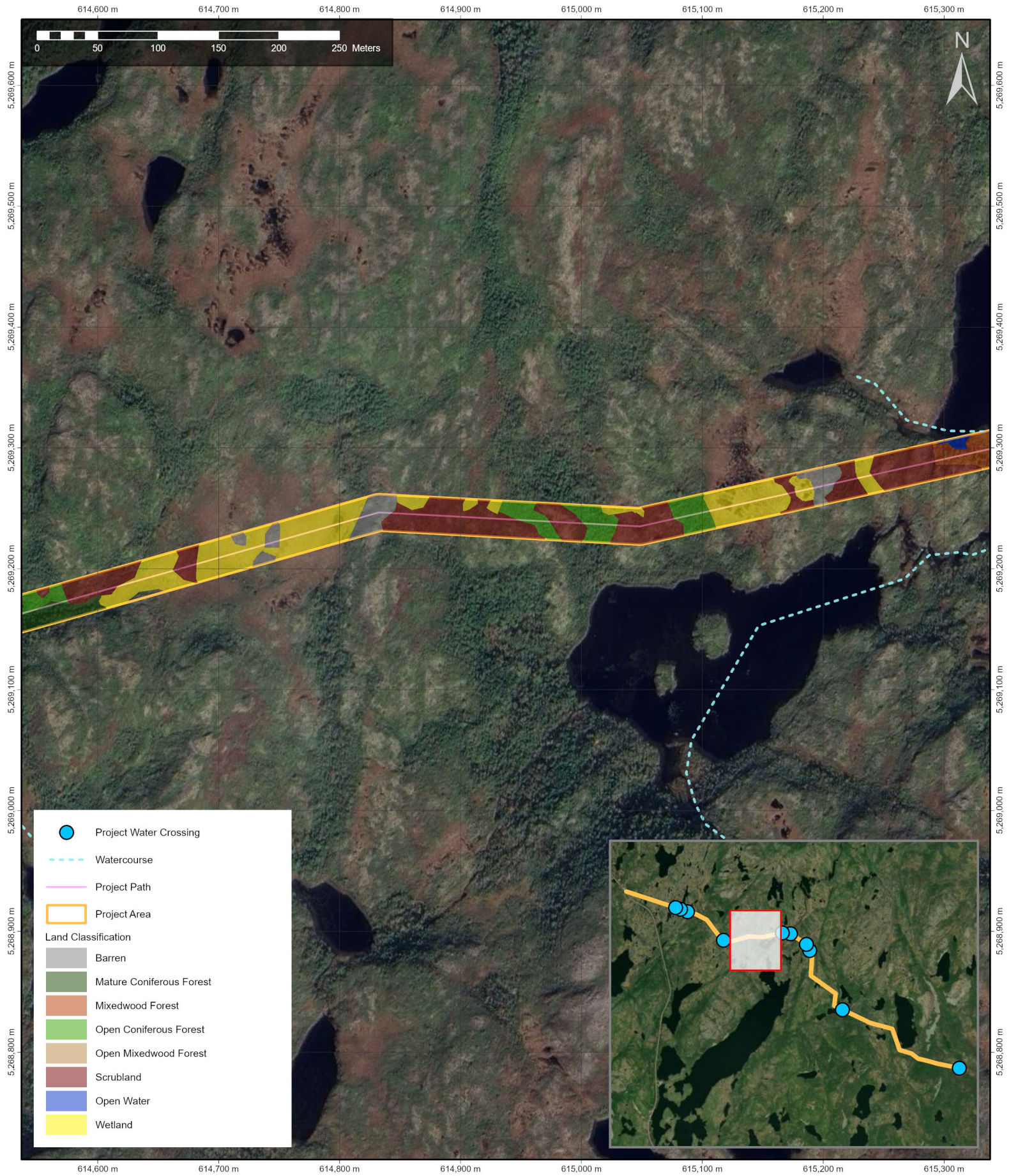


	FIGURE TITLE: Project Area Wetlands - 4	NOTES: Watercourse layer retrieved from 1:50k NTS dataset. Contains information licensed under the Open Government Licence - Canada.	PREPARED BY: J. Crocker	DATE: 2026-06-19
	PROJECT TITLE: NL Hydro Distribution System Upgrade - Belleoram Quarry		CRS: NAD 1983 UTM Zone 21N	REVIEWED BY: 

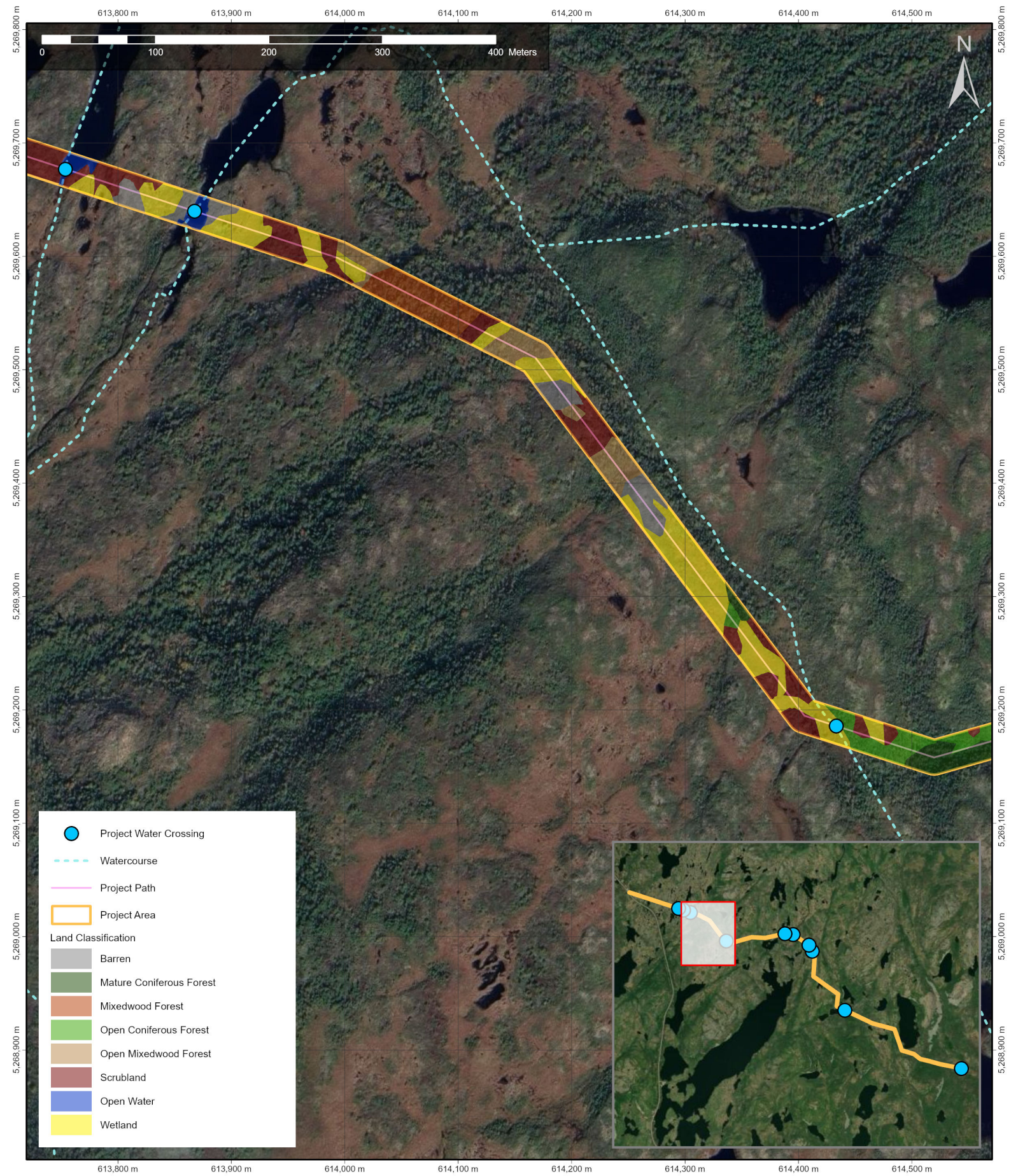


FIGURE TITLE:

Project Area Wetlands - 5

PROJECT TITLE:

NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:

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PREPARED BY: J. Crocker

DATE: 2026-06-19

CRS: IAD 1983 UTM Zone 21N

REVIEWED BY:



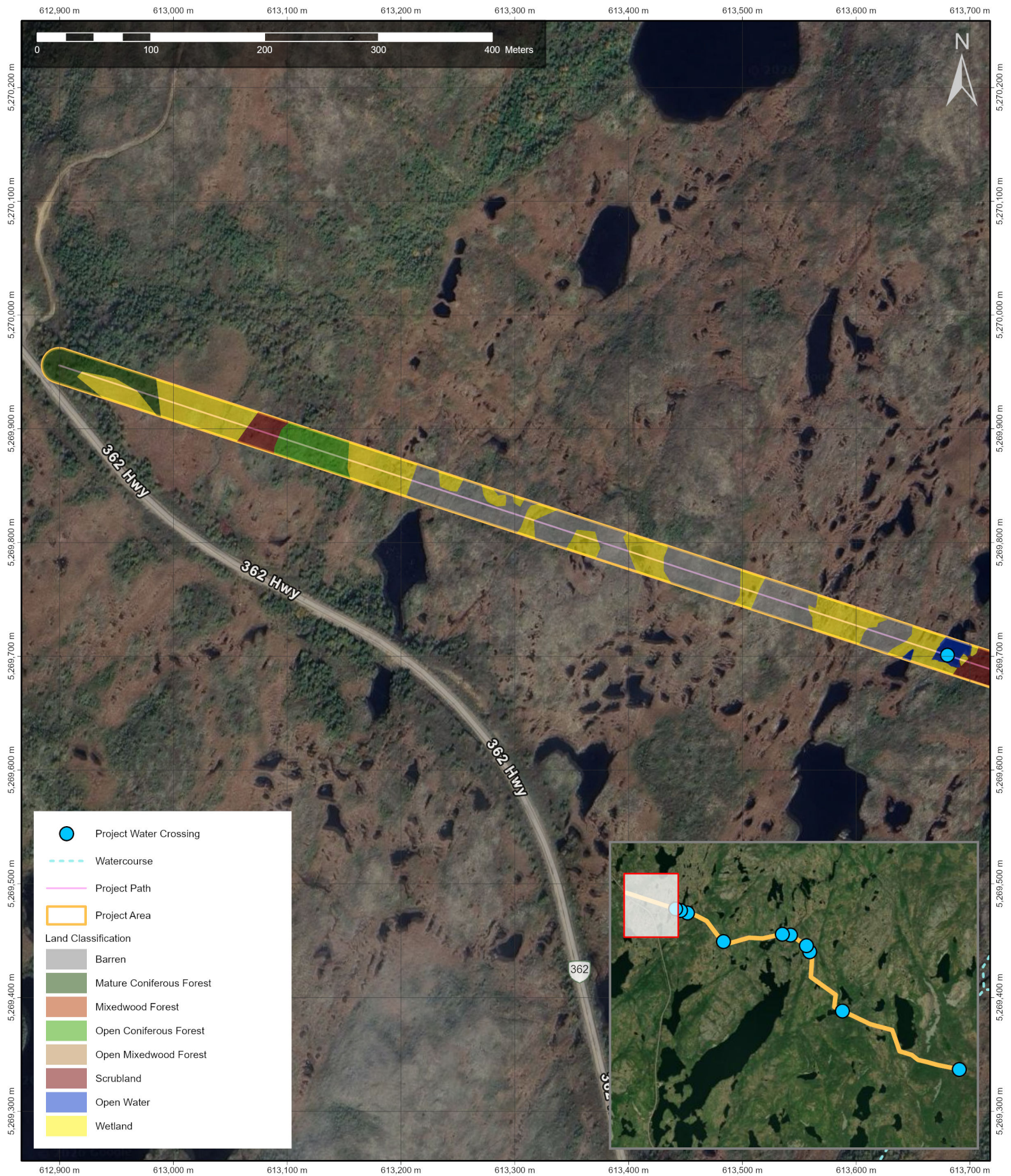


FIGURE TITLE:

Project Area Wetlands - 6

PROJECT TITLE:

NL Hydro Distribution System Upgrade - Belleoram Quarry

NOTES:

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PREPARED BY:	DATE:
J. Crocker	2026-06-19
CRS:	NAD 1983 UTM Zone 21N
REVIEWED BY:	

Appendix C

Environmental Emergency Response Plan



Environmental Emergency Response Plan

Revision	Date	Revision Description	Prepared By	Reviewed By	Approved By
R0	12/05/2025	Issued for Use	Sarah Maddigan	Rod Healey	Rod Healey

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Revision Log

Revision	Date	Description	Revised By

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1.0 Part A – General Information

1.1 Introduction

The purpose of this Environmental Emergency Response Plan (EERP) is to identify Newfoundland and Labrador Hydro's (NL Hydro) responsibilities in the event of an accidental release of a hazardous material, on-site or during transportation, and to provide the information required to effectively manage the containment, clean up and reporting procedures for such an incident.

NL Hydro is committed to being an Environmental Leader; we will help sustain a diverse and healthy environment for present and future Newfoundlanders and Labradorians by maintaining a high level of environmental compliance, responsibility and performance.

Large fines may be levied against individuals and organizations who knowingly pollute the environment and fail to undertake the necessary response to a release. Newfoundland and Labrador Hydro's (NLH) policy is to conform with all Provincial and Federal legislation in this regard with the intent of meeting both its legal and corporate responsibilities. It is estimated that greater than 80% of all spills are the result of human error. Employees must participate in this plan by practising prevention and reporting any practice or situation that could result in a spill.

1.2 Scope

This EERP is applicable to the activities associated with the following operating areas:

- Exploits Generation
- Hydro Generation
- Hydro Place
- Network Services
- Transmission Operations
- Churchill Falls
- Menihek
- Muskrat Falls
- Labrador-Island Transmission Link (LIL) and Soldiers Pond

This EERP is broken into sections:

- Part A General Information
- Part B Call Out Notification, Roles and Responsibilities
- Part C Response Procedures

- Appendices

The procedures for clean up in the event of a release of hazardous materials are described in Part C.

Note that the Holyrood Thermal Generating Station has developed an integrated Emergency Response Manual (ERM) for all safety, health and environment related emergencies. The Holyrood Thermal Generating Station also has an Oil Pollution Emergency Plan (OPEP) for incidents involving the potential release of Bunker C fuel oil while off-loading a marine tanker. A link to the Holyrood Thermal Generating Station ERM and OPEP can be found on the Environmental Services Sharepoint site.

Transmission Operations has also developed OPEP's for incidents involving the potential release of diesel fuel oil while off-loading at the Nain, Postville, Makkovik, Rigolet, and Black Tickle Diesel Generating Stations. A link to the Transmission Operations OPEP's can be found on the Environmental Services Sharepoint site.

In addition to this EERP, the Corporation has established a Corporate Emergency Response Plan (CERP). A copy of the CERP may be found on the GRID under Safety and a link can be found [here](#). The purpose of the CERP is to assign specific responsibilities to individuals within the corporate management structure as they may relate to the provision of emergency support during any emergency that may occur. An emergency is defined as any unexpected occurrence either resulting (or have the likely potential to result) in death, serious injury (or illness) requiring hospitalization, environmental impact posing serious threat to on-scene personnel or wildlife, major and significant damage to NL Hydro or other property, or significant public impact.

In the event of an emergency, the CERP also provides procedures to ensure the Corporate Emergency Operations Centre (CEOC) can be quickly activated should additional support (e.g., technical, media, family, regulatory liaison, logistics) be required.

1.3 Applicable Legislation

1.3.1 Provincial Legislation

If a petroleum product is accidentally released onto soil or into a body of water, it is within the jurisdiction of the Department of Environment and Climate Change (DECC). The *Environmental Protection Act, 2002*, is the provincial legislation that governs these types of incidents. The regulations under this Act will determine whether prosecution is warranted due to negligence and

outlines the reporting requirements that a release has occurred.

In accordance with the *Environmental Protection Act*, the Minister of the DECC has designated officials with Service NL authorization to perform and exercise those duties and powers conferred by the Act upon the Minister. Service NL officials (for DECC) have undertaken the primary role of dealing with oil spills/leaks. Therefore, DECC/Service NL may be referenced throughout this EERP.

The *Environmental Protection Act* generally states that a person shall not release or permit the release of a substance into the environment in an amount, concentration or level or at a rate of release that in the opinion of the minister causes or may cause an adverse effect, unless authorized under the Act or an approval issued under the Act. A "release" means to spill, discharge, deposit, leak, seep, pour, emit, empty, throw, dump, or place.

The *Environmental Protection Act* also states that the person responsible for the release must report the release and notify any persons or property owners potentially affected by the release. A person responsible for the release must also take all reasonable measures to prevent, reduce and remedy the adverse effects of the substance, remove or otherwise dispose of the substance in a manner that minimizes adverse effects, and rehabilitate the environment to the satisfaction of DECC/Service NL.

A person responsible may include an owner or operator, or a person who has the care management, and control of the substance released.

The *Storage and Handling of Gasoline and Associated Products Regulations, CNR 775/96* defines a "Spill" as any loss of gasoline or associated products in excess of **70 litres** from a storage tank system, pipeline, tank vessel or vehicle onto or into soil or water.

A "Leak" is defined as any discharge of gasoline or associated products from a storage tank system, pipeline, tank vessel, tank car or tank vehicle, other than through the usual function for which the storage tank system or pipeline was designed.

The *Used oil and Used Glycol Control Regulations, 100/18* similarly defines a "Spill" or "Leak" in terms of used oil or used glycol.

In the event of a spill or leak the Regulations the person responsible to immediately notify the Services NL/DECC, and take such steps as are necessary to abate the discharge, clean the area affected and restore the environment to the satisfaction of the Service NL/DECC.

The *Environmental Control Water and Sewage Regulations, 65/03* prohibits discharge into a body

of water any sewage or effluent containing visible floating debris, oils and grease. The Regulations also specify a discharge limit of 15 mg/L for Oils (ether extract).

Based on discussions with Service NL/DECC it has been identified that the requirement for immediate reporting is to be applied to a release greater than 70 litres; a release, regardless of quantity, that has entered a waterbody or has the potential to contaminate nearby property or enter a water body or sewer; or a release, regardless of quantity, from a registered storage tank system, including any associated piping or pipelines.

All waste materials resulting from a release must be handled and disposed of in accordance with the requirements of the *Environmental Protection Act*. Service NL/DECC is responsible for the approval of appropriate disposal facilities and procedures.

1.3.2 Federal Legislation

Under the *Fisheries Act 1985 (1985, c. F-14)* where there occurs a deposit of a deleterious substance in water frequented by fish, or a serious or imminent danger thereof, any person who owns the deleterious substance or causes the deposit shall report such occurrence. As well, any person responsible must as soon as possible, take all reasonable measures consistent with safety and with conservation of fish and fish habitat to prevent the deposit. A deleterious substance is given a broad definition and generally means any substance that, if added to water, would degrade or alter the quality of the water so that it is rendered deleterious to fish or fish habitat.

The *Canadian Environmental Protection Act, 1999* governs the reporting and remedial measures that must be implemented in the event of a release into the environment, or reasonable likelihood of a release into the environment, of a substance that is identified as a Toxic Substance. Polychlorinated Biphenyls (PCBs) have been identified on the Toxic Substance List under the Act. The release of PCBs into the environment is prohibited under the Act, with specific reporting thresholds defined in the *PCB Regulations, 2008*. The Regulations apply to PCBs and to any products containing PCBs.

The Regulations have set forth the limit for releases from electrical equipment that is in use at the time of release. Regardless of concentration, a person shall not release more than 1 gram of PCBs into the environment. The prohibition applies to releases from electrical capacitors, electrical transformers, pole-top transformers, and light ballasts that are in use. This quantity does not apply to each individual release event, but is cumulative and applies to one or more release events from a single piece of equipment or at a single location. For example, a piece of

equipment may be slowly dripping and will reach 1 gram after a long period of time. This is considered a PCB release and must be reported.

The Regulations have also set forth the regulatory limits for releases from all other sources, including cables and electrical equipment that is not in use. Regardless of volume, a person shall not release PCBs into the environment at a concentration of 2 mg/kg or more for liquids and 50 mg/kg or more for solids. The prohibition applies to releases from cables, or from electrical capacitors, electrical transformers, pole-top transformers, and light ballasts that are not in use. The prohibition also applies to products in storage at a PCB storage site and to PCBs stored elsewhere. (Note: mg/kg can also be expressed in terms of part per million where 1 mg/kg = 1 part per million).

The following sample calculations provide a methodology for estimating the quantity, expressed in grams, from electrical equipment that is in use at the time of release. The estimated quantity of PCB released is based on a known volume and concentration.

- Volume of oil: 100 litres
- Specific mass of contaminated dielectric oil: 0.9 kg/L
- PCB concentration of oil: 40 mg/kg
- Conversion factor: 1g/1000 mg

$$100\text{L} \times 0.9 \text{ kg/L} \times 40 \text{ mg/kg} = 3600 \text{ mg} \times 1\text{g}/1000\text{mg} = 3.6 \text{ grams of PCB}$$

(This would be considered a reportable release under the PCB Regulations. Other reporting triggers must also be considered as in the above example the volume of oil released is in excess of 70 litres and would be classified as a “spill” under the *Storage and Handling of Gasoline and Associated Products Regulations, CNR58/03.*)

OR

- Volume of oil; 10 litres
- Specific mass of contaminated dielectric oil: 0.9 kg/L
- PCB concentration of oil: 50 mg/kg
- Conversion factor: 1g/1000 mg

$$10\text{L} \times 0.9 \text{ kg/L} \times 50 \text{ mg/kg} = 450 \text{ mg} \times 1\text{g}/1000\text{mg} = 0.45 \text{ grams of PCB}$$

(This would not be considered a reportable release under the PCB Regulations. The volume of oil released is not in excess of 70 litres and would therefore not be classified as a “spill” under the *Storage and Handling of Gasoline and Associated Products Regulations, CNR58/03.*)

The below summary table is intended to provide a quick estimation of the quantity, expressed in grams, of PCB released based on various volume and PCB concentrations.

Estimated quantity (grams) of PCB released based on various volume and PCB concentrations.

PCB in Oil Concentration (mg/kg)

Volume of release (L)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
5	0.02	0.05	0.07	0.09	0.11	0.14	0.16	0.18	0.20	0.23	0.25	0.27	0.29	0.32	0.34	0.36	0.38	0.41	0.43	0.45
10	0.05	0.09	0.14	0.18	0.23	0.27	0.32	0.36	0.41	0.45	0.50	0.54	0.59	0.63	0.68	0.72	0.77	0.81	0.86	0.90
15	0.07	0.14	0.20	0.27	0.34	0.41	0.47	0.54	0.61	0.68	0.74	0.81	0.88	0.95	1.01	1.08	1.15	1.22	1.28	1.35
20	0.09	0.18	0.27	0.38	0.45	0.54	0.63	0.72	0.81	0.90	0.99	1.08	1.17	1.26	1.35	1.44	1.53	1.62	1.71	1.80
25	0.11	0.23	0.34	0.45	0.56	0.68	0.79	0.90	1.01	1.13	1.24	1.35	1.46	1.58	1.69	1.80	1.91	2.03	2.14	2.25
30	0.14	0.27	0.41	0.54	0.68	0.81	0.95	1.08	1.22	1.35	1.49	1.62	1.76	1.89	2.03	2.16	2.30	2.43	2.57	2.70
35	0.16	0.32	0.47	0.63	0.79	0.95	1.10	1.26	1.42	1.58	1.73	1.89	2.05	2.21	2.38	2.52	2.68	2.84	2.99	3.15
40	0.18	0.36	0.54	0.72	0.90	1.08	1.26	1.44	1.62	1.80	1.98	2.16	2.34	2.52	2.70	2.88	3.06	3.24	3.42	3.60
45	0.20	0.41	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.03	2.23	2.43	2.63	2.84	3.04	3.24	3.44	3.65	3.85	4.05
50	0.23	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.48	2.70	2.93	3.15	3.38	3.60	3.83	4.05	4.28	4.50
55	0.25	0.50	0.74	0.99	1.24	1.49	1.73	1.98	2.23	2.48	2.72	2.97	3.22	3.47	3.71	3.96	4.21	4.46	4.70	4.95
60	0.27	0.54	0.81	1.08	1.35	1.62	1.89	2.16	2.43	2.70	2.97	3.24	3.51	3.78	4.05	4.32	4.59	4.86	5.13	5.40
65	0.29	0.59	0.88	1.17	1.46	1.76	2.05	2.34	2.63	2.93	3.22	3.51	3.80	4.10	4.39	4.68	4.97	5.27	5.56	5.85
70	0.32	0.63	0.95	1.26	1.58	1.89	2.21	2.52	2.84	3.15	3.47	3.78	4.10	4.41	4.73	5.04	5.36	5.67	5.99	6.30
75	0.34	0.68	1.01	1.35	1.69	2.03	2.36	2.70	3.04	3.38	3.71	4.05	4.39	4.73	5.06	5.40	5.74	6.08	6.41	6.75
80	0.36	0.72	1.08	1.44	1.80	2.16	2.52	2.88	3.24	3.60	3.96	4.32	4.68	5.04	5.40	5.76	6.12	6.48	6.84	7.20
85	0.38	0.77	1.15	1.53	1.91	2.30	2.68	3.06	3.44	3.83	4.21	4.59	4.97	5.36	5.74	6.12	6.50	6.89	7.27	7.65
90	0.41	0.81	1.22	1.62	2.03	2.43	2.84	3.24	3.65	4.05	4.46	4.86	5.27	5.67	6.08	6.48	6.89	7.29	7.70	8.10
95	0.43	0.86	1.28	1.71	2.14	2.57	2.99	3.42	3.85	4.28	4.70	5.13	5.56	5.99	6.41	6.84	7.27	7.70	8.12	8.55
100	0.45	0.90	1.35	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.95	5.40	5.85	6.30	6.75	7.20	7.65	8.10	8.55	9.00

Note: All calculations assume a specific mass of 0.9 kg/L.

Waste PCB material reclaimed from a spill/leak must be transported in accordance with the federal *Transportation of Dangerous Goods Act S.C., 1992, c.34*. Waste PCB material must also be stored in accordance with the federal *PCB Regulations* and the provincial *Storage of PCB Wastes Regulations, 2003*.

1.4 Reporting Procedures

1.4.1 Reportable Releases

Based on a review of relevant legislation and in consultation with regulatory authorities immediate reporting is to be applied to:

- A release greater than 70 litres;
- A release, regardless of quantity, that has entered a waterbody or has the potential to contaminate nearby property or enter a water body or sewer;
- A release, regardless of quantity, from a registered storage tank system, including any associated piping or pipelines;
- A release of PCB material or potential thereof, in excess of 1 gram from electrical equipment in use; or
- A release of PCB material or potential thereof, at a concentration of 2 mg/kg or more for liquids and 50 mg/kg or more for solids from all other sources including cables, and

electrical equipment or materials not in use.

Notification must be made to regulatory authorities via the Environmental Emergency Report Line at **(709) 772-2083** (collect calls accepted) or **1-800-563-9089** and selecting the appropriate option as described below.

Option 1 – to a search and rescue incident, overdue vessel, or flare sighting (Joint Rescue Coordination Center)

Option 2 – to report an incident originating from a marine vessel or marine mystery pollution incident (Canada Coast Guard)

Option 3 – to report an incident on land, in a lake or river (Environment Canada)

Option 4 – to report a defective marine navigation aid (Transport Canada)

Option 5 – to report an emergency involving a marine animal

Option 6 - to reach the marine ice observations office

Option 3 would be most applicable to NLH as a land-based source. Perhaps the only exception would be a marine based spill from a vessel (Option 2) while transferring fuel to a NLH facility at the time of the incident (ie. Holyrood or a Diesel Plant location where marine deliveries are undertaken).

In addition to reporting to the Environmental Emergency Report Line, it may be necessary to notify any persons or property owners potentially affected by the release. This may involve communications with selected individuals or the general public. Any such communications should be coordinated through the Director of Public Affairs and Stakeholder Relations.

A Hazardous Material Spill Status Report (HMSSR) will need to be completed (as further described in Section 1.5.1) which will assist in providing as much information as possible with the notification. At a minimum you will need to provide information such as:

- Your name and phone number
- Name of the company or individual responsible for the spill
- Time and location of the spill
- Type and quantity of material spilled (if you know)
- Status of the spill, including actions being taken to control the spill

Documenting releases is further outlined below.

When a release of PCBs to the environment occurs, two reports must be made as soon as possible:

- a verbal notification of the release via the Environmental Emergency Report Line (see above), and
- a written report under must be filed using Environment Canada's online reporting system (ePCB).

1.4.2 Non-Reportable Releases

Non-reportable releases are those incidents that do not meet the reporting requirements as outlined in the proceeding section and therefore do not require reporting to regulatory agencies.

In the event of a non-reportable release, the observer should address the situation and proceed to report the incident to their Supervisor as soon as possible. The Supervisor should ensure the incident is appropriately addressed and documented internally through the SWOP database.

1.5 Documenting Releases

1.5.1 Reportable

A Hazardous Material Spill Status Report (Located in the [Forms database](#)) shall be used to document all reportable releases. The HMSSR is designed to ensure that adequate information is documented related to a release event, and during emergency response and clean-up procedures. The HMSSR may be used to communicate and/or distribute information to interested personnel within the Corporation and various government agencies. Follow-up HMSSRs may be required if clean-up efforts extend over a period of time or if follow-up requirements have been identified.

All reportable releases shall also be documented in SWOP. Reportable releases are always categorized as an Incident:

- Near Miss Incident = an event that **could** damage the environment, or
- Loss Incident = An event that **does** harm the environment.

Once a release has been categorized as an Incident (Near Miss or Loss) additional information will be required on what was released, quantity released (estimates are acceptable, if exact quantity is not known) and remedial action to clean up the release, and repair equipment (if applicable). The responsibility for ensuring that the HMSSR and SWOP are appropriately completed and distributed is outlined in Part B - Call-Out Notification procedures of this EERP.

1.5.2 Non-Reportable

Releases that are not required to be reported to an external agency/government shall be documented in SWOP. Non-Reportable releases are always categorized as a Condition. Once a spill has been selected additional information will be required on what was released, quantity released (estimates are acceptable, if exact quantity is not known) and remedial action to clean up the release, and repair equipment (if applicable).

1.6 Corporate Strategies for Spill Response

1.6.1 Procedures to follow during any Hazardous Material Spill

The following corporate strategy is to be used for guidance in the event of a spill or leak incident:

- 1) Assess the situation (Safety First, STEPBACK 5x5);
- 2) Identify priorities;
- 3) Initiate the appropriate actions;
 - Stop and/or contain the source of the spill;
 - Identify the product;
 - Estimate the quantity;
 - Assess the threat to people or potential for fire, and contact emergency personnel if necessary;
 - Assess the threat to property and the environment;
 - Alert necessary personnel (refer to your area specific Call Out Procedure);
 - Initiate the containment and recovery of any free product and/or contaminated material;
 - Dispose of all waste material in the appropriate manner; and
 - Restore the site to the satisfaction of the governing regulatory body.

1.7 Training and Testing

1.7.1 Training

Personnel outlined in this EERP will receive varying degrees of training. Training may be provided by internal personnel or by external agencies. A record of personnel that have attended training programs is managed through the Training Administrator.

1.7.2 Testing of the EERP

Each operating area is responsible for planning and executing an EERP test at least once every year, or at a frequency determined acceptable by area management, to ensure continued adequacy and suitability. Testing will include management (tabletop) and/or operational exercises using scenarios that are appropriate to the operating area. After completion of a test a summary outlining the type of exercise performed, and any deficiencies and/or areas for future improvement should be assembled, circulated and appropriately documented in the SWOP database.

Testing of other emergency plans that involve implementing the EERP, may be considered a test.

1.8 Review and Updating of EERP

1.8.1 Procedure for Updating the EERP

This EERP will be maintained by the Manager, Environmental Services Department (or designate). This EERP shall be reviewed:

- Annually,
- After an event has occurred requiring the implementation of the plan to determine its effectiveness during the event and areas for improvement, and
- When changes occur which may affect the implementation of the plan.

The various operating areas are responsible for the implementation of the EERP and for ensuring emergency response activities adhere to relevant legislation and guidelines.

The Environmental Services department is responsible for maintaining the corporate standard which all EERPs must conform. Any revisions or updates will be issued in accordance with EMS-09 Environmental Emergency Response Plan Procedure. EMS-09 is part of the Corporate Environmental Management System (EMS), which can be accessed on the Environmental Services Sharepoint site.

2.0 Part B – Call out Notification, Roles and Responsibilities

2.1 Call Out Notification and Roles and Responsibilities during a Release

Each area has separate procedures for addressing roles and responsibilities during a release, please refer to your specific areas procedure.

3.0 Part C – Response Procedures

3.1 Containment, Clean-up and Disposal Procedures for Releases

3.1.1 Spill Response Procedures – General

Spill response efforts should conform to the following basic strategy in the event of an oil or other or leak:

1. Determine the type of product;
2. Assess the situation and determine appropriate PPE and required safety measures;
3. Identify priorities while considering the threat to people, property and the environment;
4. Initiate the appropriate response actions:
 - Stop and/or contain the source of the spill;
 - Identify the product and estimate the quantity;
 - Contact emergency personnel and request additional support if necessary;
 - Initiate the containment and recovery of any free product and/or contaminated material;
5. Ensure required reporting and notification is carried out;
6. Dispose of all waste material in the appropriate manner;
7. Restore the site to the satisfaction of the governing regulatory body;
8. Document and investigate as required.

3.1.2 Control, Containment and Clean-up Procedure

In spill response, time is of the essence - the actions taken in the first few hours, or even minutes, determine the extent of the impacts. Even small spills can have disastrous results under the right circumstances. Safety must be the first consideration and the response planned accordingly.

Containing the oil spill is minimizing the damage of the oil by preventing the spill from spreading to other areas. Cleanup is the removal of the contaminants or oil itself from the affected area. The proper disposal of any waste materials is the final step in any cleanup.

The following measures are intended to provide general guidance during any release situation. Additional information related to spills of PCB contaminated oils, glycol, and battery acid can be found in subsequent sections.

Oil Spill Control

Controlling a spill means stop the cause or source of oil or slowing down the rate of release. The following measures are intended to provide guidance for effective spill control:

- Immediately take control of the situation.
- If possible and safe to do so, stop the source of the spill or leak. This may be achieved by turning off a valve, or turning a container upright, etc.
- Assess the direction and rate of flow of the spilled product. Local topography and permeability of the soil may influence the products behaviour. Refer to any drainage drawings that may be available for your area.
- Identify potential hazards and/or environmentally sensitive areas. Search for sources of ignition. Put out any flames or turn off any equipment that may be operating in the area. Sensitive areas should be protected if possible (i.e., drinking water sources, private property).
- Wear the proper personal protective equipment (PPE). Refer to your area specific procedure.
- Initiate the Call-Out procedure as outlined in Part B of your area specific roles and responsibilities, ensuring that appropriate internal and external personnel are notified. The sooner relevant personnel are identified the sooner assistance can be provided.

Oil Spill Containment

Containment of a spill limits the extent of the impacted area and minimizes the potential for environmental damage or impact to other properties. The following measures provide general guidance for containing a spill:

- Identify points to efficiently contain as much of the spilled material as possible. This may involve the use of locally available materials (i.e., soil or snow) or traditional emergency response materials (i.e., absorbent pads, boom, and socks).
- If the incident has occurred near any type of drainage system (i.e., floor drains, catch basins or ditches) be sure to take measures to prevent oil from entering them.
- Trenches can be dug across the flow to quickly recover the spilled material.
- If the incident has occurred within a containment system, make sure all drains are closed and/or discharge systems are stopped.
- Surround the oil spill with absorbent booms or socks. Enclose the area of contamination. In many situations locally available materials (i.e., soil or snow) may also be used.

Oil Spill Clean-Up

Clean-up involves the removal of contaminated materials (i.e. soil, water, snow, vegetation, etc.) and any free product from the affected area. The proper disposal of any waste materials is the final step in any clean-up. The following guidance is provided for clean-up a spill:

- Place absorbent pads, pillows or rolls directly on the liquid. Scatter the absorbents in different areas to aid in the clean-up. Continue placing and replacing absorbents until free product is absorbed.
- The recovery of free product may also be accomplished by using pumps or skimming devices, particularly if the volume of spilled product is large.
- If snow is present, skim oil off top of snow (as much as possible or practical).
- As much free product as possible should be recovered from all absorbent materials prior to final disposal.
- Any free product recovered may have to be temporarily stored on-site in drums, tanks or other appropriate containers.
- Additional equipment and/or workforce may have to be mobilized to site.
- All waste material must be disposed of in accordance with regulatory requirements (i.e., approved waste disposal sites and/or special waste handling companies).
- Take samples to confirm that clean-up efforts meet regulatory guidelines. Arrange this with the Environmental Services department.

Excavating equipment, haulage trucks, tank trucks, drums, pumps, and hoses should be requisitioned as required in any situation. Such equipment may be obtained from company

resources or from contractors. The requirement for additional staff/resources and/or equipment should be coordinated by the OSC.

In winter, oil and other hydrocarbons do not penetrate frozen ground as rapidly and may collect in a depression where it can be easily recovered. The collected oil can be pumped or absorbed with absorbent material or snow and put into suitable drums or containers to await disposal. Note, if there is a heavy snow cover, the direction of the flow may be difficult to determine.

3.1.3 Disposal

All waste material must be disposed of in accordance with regulatory requirements. Any free product recovered must be disposed of via a special waste handling company approved by DECC. Contaminated soil should be disposed of in consultation with DECCM/Service NL. In many areas of the province contaminated soil must be treated at a soil treatment facility prior to disposal.

Contaminated absorbent materials may be disposed of at a local landfill site, provided as much free product as possible is recovered from the absorbent materials prior to final disposal.

Petroleum hydrocarbon impacted soil with a total petroleum hydrocarbon (TPH) concentration greater than 1000 mg/kg must be disposal of at an approved soil treatment facility. Exceptions may apply in rural isolated area of the province with the approval of Services NL/DECC.

There are several approved soil treatment facilities operating across the province:

- Universal Environmental Services Incorporated (709-227-4289)
Locations: St. John's, Sunnyside, Bishop's Falls, Corner Brook, Happy Valley-Goose Bay and Wabush.
- Newfoundland Soiltec Incorporated (709-753-5229)
Locations: St. John's

Tipping/disposal fees are typically dependent upon the type of contaminant, level of contamination and the scale of the project.

3.1.4 PCB Considerations

The reporting of spills and/or leaks involving PCB contaminated oil or material is specifically outlined in the federal *PCB Regulations*. Any spill or leak of PCB oil, or potential thereof, in excess of 1 gram from electrical equipment in use must be immediately reported. For electrical equipment or materials not in use (i.e. in storage), any spill or leak of PCB material or potential

thereof, at a concentration of 2 mg/kg or more for liquids and 50 mg/kg or more for solids must be immediately reported.

Should the potential PCB concentration of an oil or material not be readily known, proceed to treat the incident as a “potential” PCB incident until the PCB concentration can be confirmed. Any “potential” PCB incident that meets the above noted reporting requirements should be immediately reported. If no records exist on file with respect to the level of PCB contamination, a CHLOR-N-OIL 50 test kit may be used. In all cases a representative sample must also be obtained for laboratory analysis. All laboratory analysis should be completed by an accredited laboratory.

Precautions should be taken to avoid personal contamination when handling oil or materials with a PCB concentration of 50 mg/kg or more. Protective clothing will vary with individual circumstances, such as concentration, quantity of PCBs and whether in solid or liquid form. Where there is a potential for direct contact with PCBs in a concentration > 50 mg/kg, protective clothing impervious to PCBs should be worn. A comparison of various types of protective clothing is provided below. Gloves, boots, disposable coveralls, bib-type aprons, and eye protection should be worn as necessary. Where PCBs are in closed containers such as capacitors, transformers, tanks or drums, and there is no direct contact with PCBs, special protective clothing may not be necessary (i.e. if a boom truck operator is moving a drum or pallet).

Highly Recommended	Recommended	Not Recommended
Butyl Rubber	Chlorinated Polyethylene	Styrene Butadiene Rubber
Neoprene		Natural Rubber
Nitrile Rubber		
Polyvinyl Alcohol		
Viton		
Saranex		
Teflon		

Source: Guidelines for the Management of Waste Containing Polychlorinated Biphenyls (PCBs) – CCME-TS/WM-TRE008, September 1989

Refer to Part C for additional guidance on control, containment and clean-up measures. Any surfaces impacted as a result of the incident should also be wiped clean using rags and appropriate degreasing agents.

All contaminated materials (including contaminated personal protective equipment) should be placed in a steel drum fitted with a removable steel lid and a gasket made of PCB resistant material such as nitrile rubber, cork or teflon. All drums should be immediately labelled and transported to PCB storage to await final disposal.

3.1.5 Glycol Considerations

Under the current legislation, reporting spills involving glycol to regulatory agencies is required. Glycol is derived by hydroxylation of alkanes and is considered a petroleum derivative. Spills of glycol should therefore be treated as an “associated product” under the *Storage and Handling of Gasoline and Associated Products Regulations*, and the *Used Oil and Used Glycol Control Regulations* and therefore require reporting in the event of a spill or leak greater than 70 litres, or a spill or leak, regardless of the quantity, that has the potential to contaminate nearby property or enter a waterbody.

When handling concentrated or dilute glycol, always refer to the SDS for personal protection equipment to be used during clean-up.

Refer to Part C for additional guidance on control, containment and clean-up measures. Rags or “universal” absorbent materials may be used. “Universal” absorbent materials absorb glycol and water, whereas regular absorbents absorb only oils and fuels.

3.1.6 Battery Acid Spills and Leaks

The main component of batteries is sulphuric acid. A spill or leak of sulphuric acid does not require reporting to regulatory agencies. In the event of sulphuric acid spill or leak, the observer should assess the situation and proceed to report the incident to their supervisor as soon as possible. The supervisor will then ensure the incident is documented internally through the SWOP database for future reference.

Sulphuric acid is considered a highly corrosive material. When responding to a spill of battery acid always wear the appropriate personal protective equipment as outlined in the SDS.

Small spills of battery acid should be diluted with an excess of water (a minimum of twice the amount of acid spilled) and the residual neutralized with alkali such as soda ash, lime or baking soda. Alkali should be added until all the water and acid is absorbed. For larger spills, dyke to contain the spill and neutralize it with alkali is the recommended procedure. All attempts should be made to keep the spill out of sewer or floor drains.

Dispose of diluted and neutralized waste at an approved waste disposal site. The remaining battery carcass can be recycled at a local recycling depot.

3.1.7 Septic Spills

In the event of a septic spill, the observer should assess the situation and proceed to report the incident to their supervisor as soon as possible. The supervisor will then ensure the incident is documented internally through the SWOP database for future reference.

Attempts to contain the spill should be made immediately, and a professional service provider should be contacted to clean up the spill.

Appendix 1: Emergency Response Materials & Personal Protective Equipment for Releases

Emergency Response Materials:

Spill Kits and personal protective equipment (PPE) should be placed at all locations where the potential for a spill exists, such as areas with storage tanks or areas where hazardous materials are stored/handled. Each spill kit should contain appropriate material to respond to a spill or leak. It is recommended that each spill kit contain a List of Contents to identify the specific materials for that particular spill kit and will help with the spill kit inspections. Another recommendation is that a quick release tab could be used to demonstrate when the spill kits have been opened.

The location and contents of each spill kits should be documented, and each spill kit shall be inspected at least annually.

Personal Protective Equipment for Releases:**Non-PCB Oil, Glycol and Septic Spills**

Safety Glasses, goggles or face shield

Nitrile Coveralls

Rubber Boots

Nitrile Gloves

For major spills of diesel, gasoline or lighter petroleum products, wear full-face respirator equipped with organic vapour cartridges.

PCB Spills

Safety Glasses, or goggles or face shield (depending on activity and risk of contact)

Nitrile Coveralls

Rubber Boots

Nitrile Gloves

Wear SCBA when PCB liquid temperatures exceed 55 degrees Celsius, or when mists, vapours or dust are present.

Wash skin that comes into contact with PCB substances, thoroughly, with soap and water.

Flush eyes that come into contact with PCB substances for 15 minutes with water.

Acid Spills

Goggles - Class 2B indirect ventilated acid splash resistant

Face Shields - Class 6A

Rubber Gloves - Neoprene gauntlet gloves

Rubber Boots - Grade 1 Butyl rubber

Rubber Apron - Neoprene

For large spills of acid, wear a full face respirator equipped with a 3M, N95 cartridge.

Flush skin thoroughly with water immediately upon contact with acid.

Flush eyes thoroughly with water immediately upon contact with acid.

Appendix 2: Hazardous Material Spill Status Report (HMSSR)

For reportable spills only.

Digital copy is available on the Forms Database on the GRID or [link available here](#).

Appendix 3: Environmental Emergency Response Plan Training Course Outline

EERP Training Course:

<http://luminous/sites/EnvSer/Environmental%20Emergency%20Response%20Plans%20EERP/Appendix%206%20-%20EERP%20Training%20Outline.aspx>

Environmental Emergency Response Plan Training Outline:

The course ID, name, and description as noted in the LMS Database:

- Course ID - 567
- Course Name - Environmental Emergency Response Plan (EERP)
- Course Description - This program identifies responsibilities in the event of an accidental release of oil or other hazardous material, on-site or during transport, and provides information required for effective management, containment, clean-up of such an incident.

The following is an outline of the information and/or topics to be discussed as part of any EERP training session:

Introduction

- Environmental Policy and Guiding Principles
- What is an EERP?
- Why have an EERP?
- Where the EERP is Located
- What information can be found in the EERP

Regulatory Requirements

Federal Statutes

- Fisheries Act
- Canadian Environmental Protection Act
- PCB Regulations

Provincial Statutes

- Environmental Protection Act
- Storage and Handling of Gasoline & Associated Products Regulations
- Used Oil and Used Glycol Control Regulations

Definition and Reporting of a Spill

- Definition of a Release

Spill Procedure Posters

- Who to Contact
- Where to Find

Control, Containment, and Clean Up Procedures

- What to do in the event of a release
- Disposal Requirements
- Documentation Procedures (HMSSR and SWOP)
- Spill Response Materials

Appendix 4: Certified Special/Hazardous Waste Transporters

Obtain a copy of valid certificate of approval for provinces of travel from the Government of Newfoundland and Labrador's website here: <https://www.gov.nl.ca/ecc/env-protection/waste/certificates/>

Ensure Certificate of Approval is not expired.

Appendix 5: Containment & Recovery Techniques

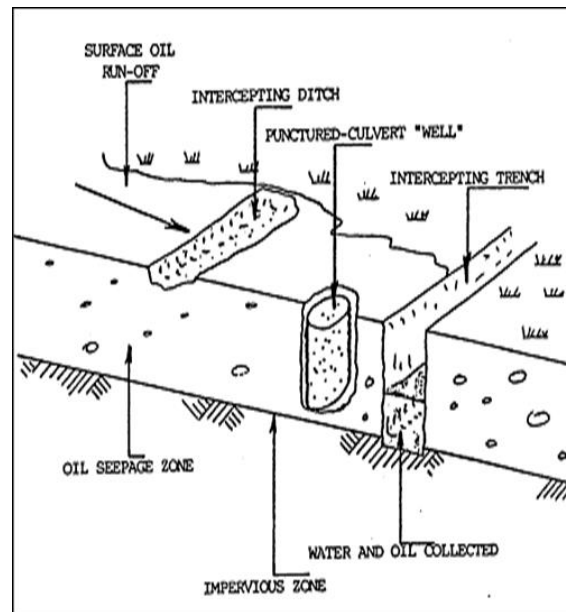
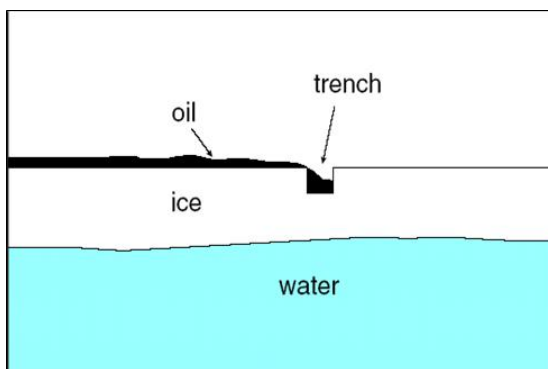
Sorbent Material

- Sorbent materials can be used to collect oil. Commercially available sorbents can be supplied as pads, rugs, blankets, rolls, sweeps, pillows or booms. Locally available materials may be appropriate on occasion, e.g., straw or peat, but usually such natural products are less effective and efficient than commercial sorbents.
- Certain types of sorbents can be cleaned and reused. This approach is not always feasible, depending on whether the sorbent supply is limited and whether the spill location is remote.

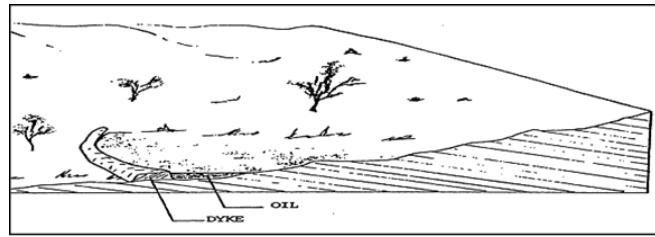


Trenches/Slots

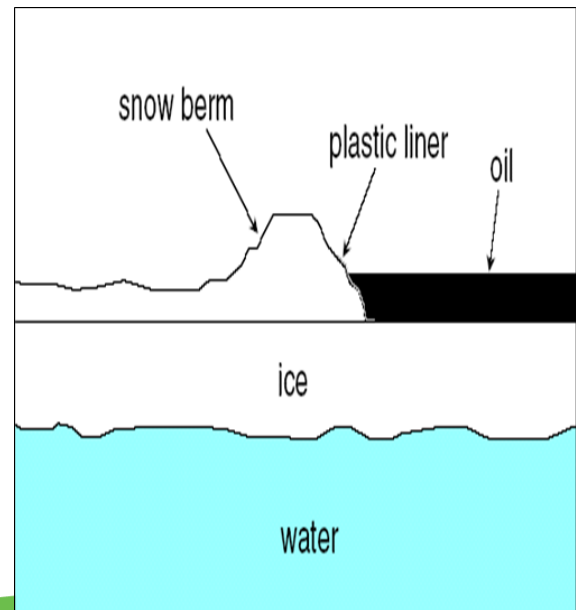
- On land, trenches or pits can be excavated to intercept, contain and collect spilled oil. On solid ice, a trench can effectively intercept, divert or collect spilled oil.



Berms

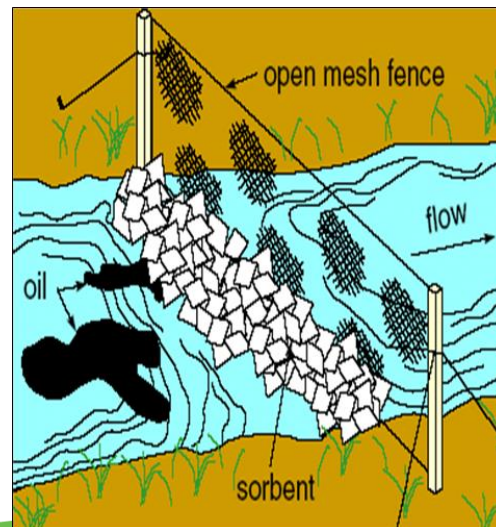
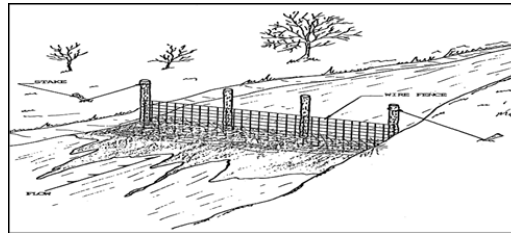


- On solid ice, surface roughness and snow act as natural barriers that limit the spread of spilled oil and may provide sufficient containment of the oil for recovery. When additional containment is required, snow can provide a quick and efficient berm construction material. For spills of diesel and light oil, a snow berm may be lined with plastic, to prevent the seepage of oil.
- Earth berms should be compacted and, if time permits, lined with plastic sheets to make them impermeable. The berm should be located sufficiently downslope of the release point to intercept the oil.



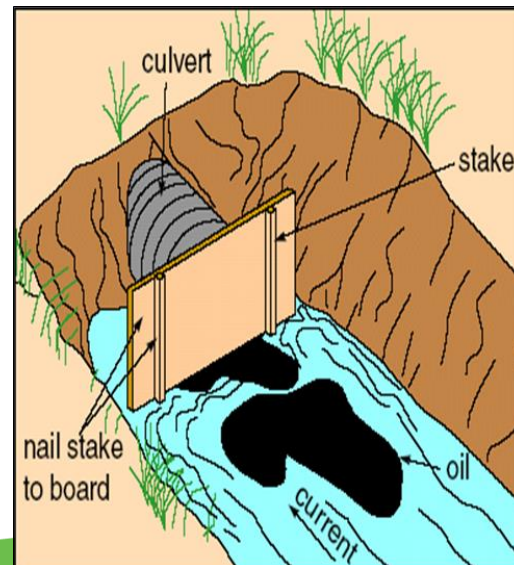
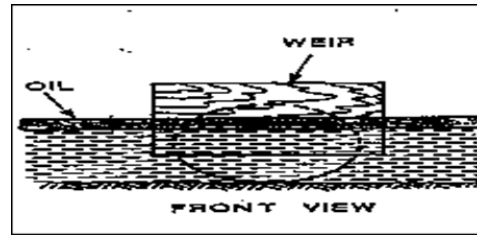
Filter Fence

- In small, slowly-flowing rivers or streams, wire mesh or netting, anchored by stakes as a back-stop for sorbent, can control the movement of oil. A second mesh can be deployed slightly upstream of the first to act as a debris screen.
- Sorbent material can be placed between the two mesh screens. Double-fencing is particularly suitable in tidal channels where current directions reverse.



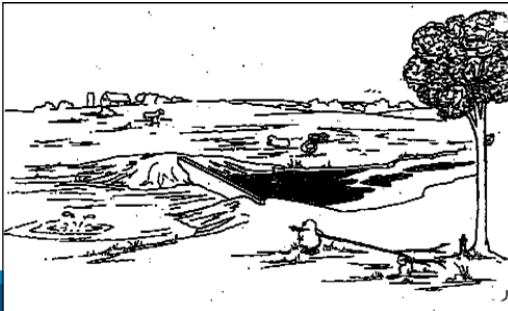
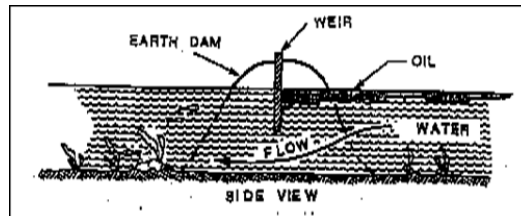
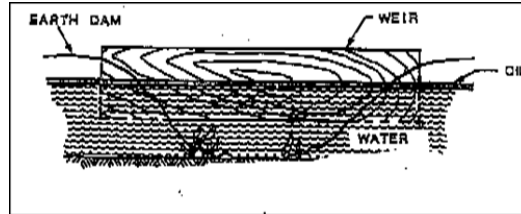
Culvert Block

- Boards or other devices can be used to halt the flow of oil in drainage systems or culverts, where the water flow must be maintained.
- The culvert opening can be partially blocked with plywood that holds back the surface oil but permits water to pass below. The position of the plywood can be adjusted vertically to maintain the water at the desired level.
- When ice is present, both oil and ice pieces can jam at the barrier making the recovery of the oil difficult.



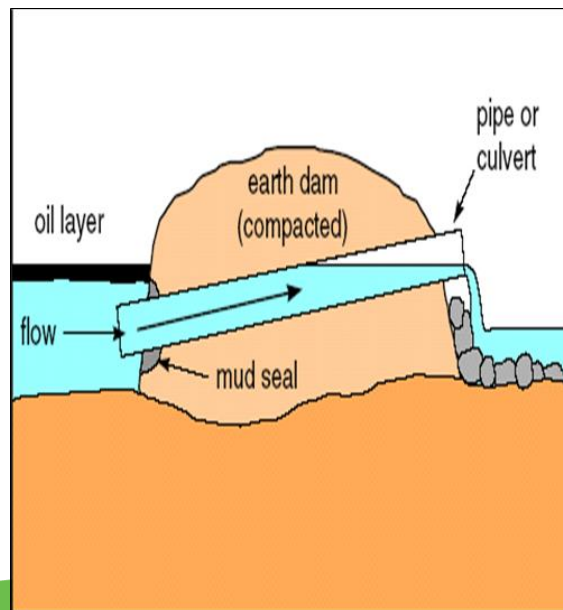
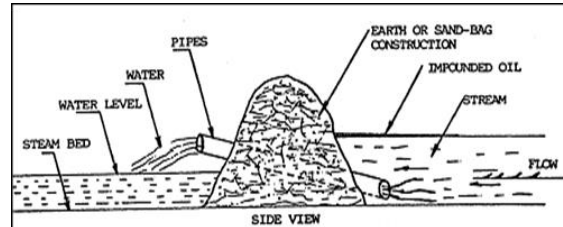
Weir

- A simple weir holds back surface oil - and ice, if present - and allows water underflow. Several weirs can be quickly placed in a small stream or ditch as they are relatively easy to install using plywood or a board. The sides should be cut well into the banks, otherwise oil can escape around the ends.



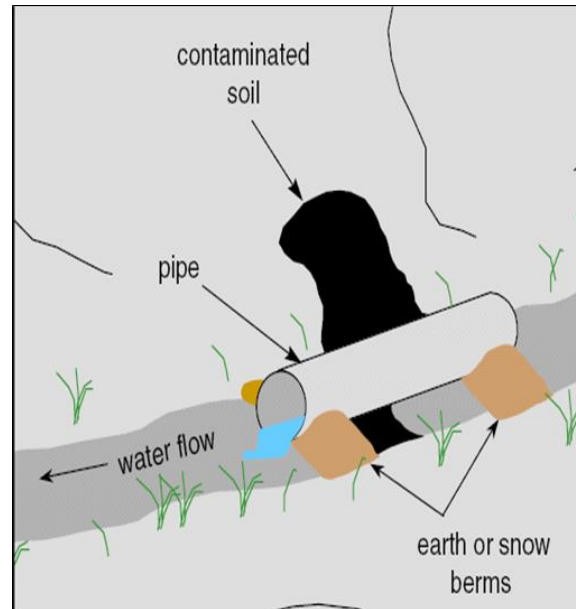
Inverted Weir

- Inverted weirs can be used to retain oil and allow the continuous flow of water in a small river or stream.
- One or more pipes are placed at an angle through a soil or sandbag dam, with the upstream end of the pipe being close to the bottom of the ditch or stream, and the downstream end at a level that permits water to drain away.
- Barriers can be constructed from snow, earth or boulders, although if large cobbles or boulders are used, plastic sheets or packed mud should be added to ensure that a good seal is made.



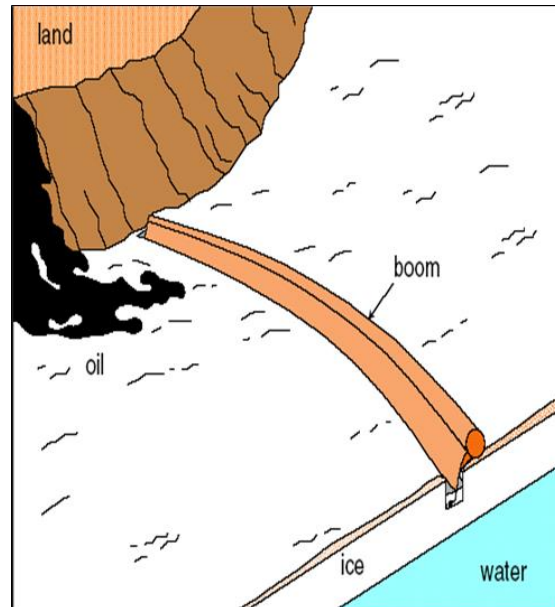
Flume

- When a slick or contaminated soil threatens a small river or creek, a flume can be built to contain the oil, while allowing the water flow to be maintained.
- Snow or earth berms should be positioned to allow a sufficiently-large containment area within the constraints of the pipe length used.
- The berms should be compacted to ensure a good seal is made with the pipe or culvert to avoid seepage. It is possible to protect a stream using a flume in broken ice conditions if water flow is maintained.



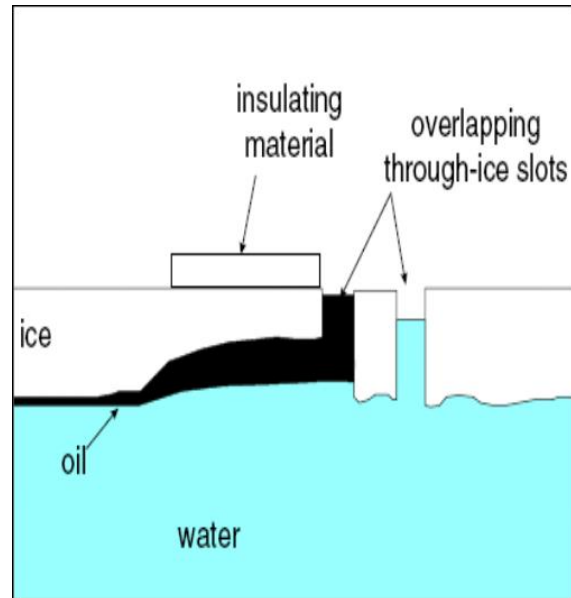
Boom/Ice Trench

- A containment or sorbent boom can be placed in a trench and frozen in place to create a barrier to divert or halt the spread of oil during winter conditions or spring melts.



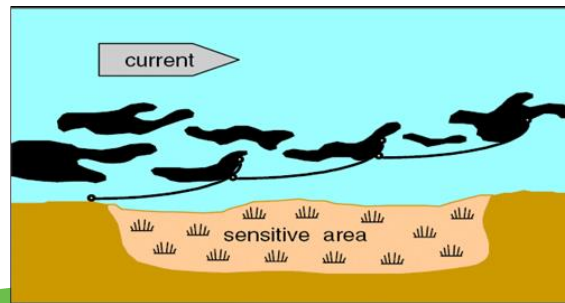
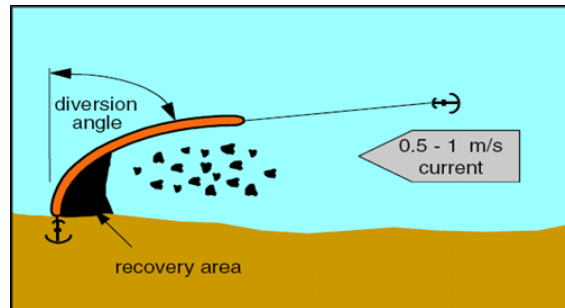
Ice Slots

- Naturally-occurring subsurface depressions and pockets under the ice provide areas where oil can accumulate. Ice slots can also be cut in the ice using an ice auger or chain saw, allowing the oil to pool at the surface and be recovered or burned.
- The slots can be lined with oil-impermeable plastic when used for recovery. Placing an insulating material, such as snow or foam, on a growing ice sheet creates a pocket beneath the ice where oil can collect.



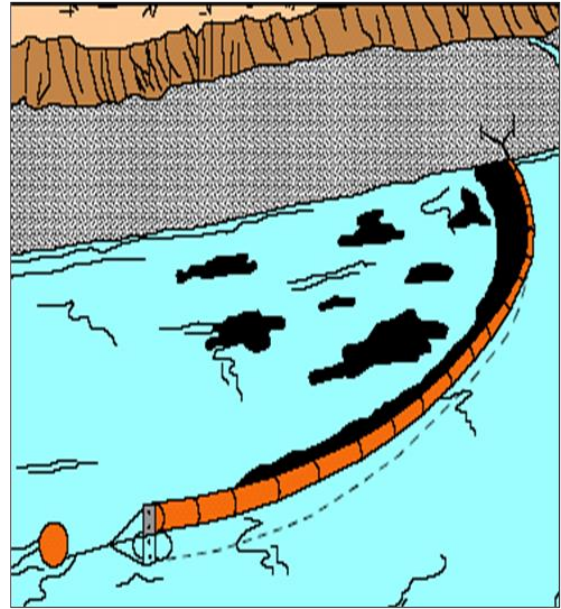
Diversion Booming

- When placed at an angle to the slick travel, containment or sorbent booms can be used to divert oil away from sensitive areas or toward sacrificial areas for collection and recovery. This method is useful in currents of up to approximately 1 m/s.
- Typically, in fast moving currents, or where the area requiring protection is extensive, a number of cascading booms are required to divert the oil.



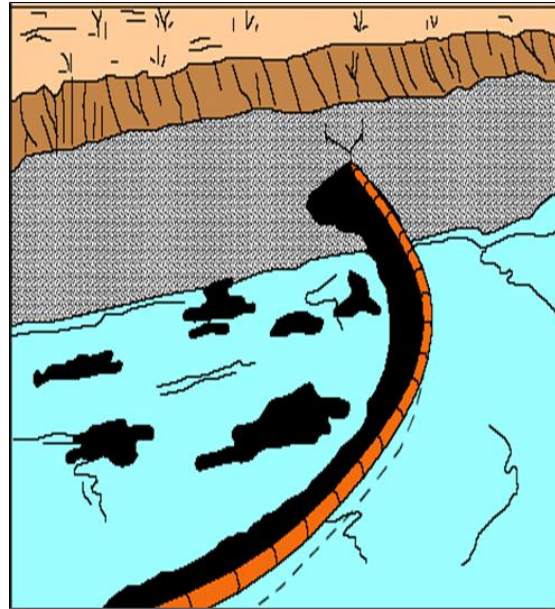
River Boom

- When current speeds exceed 0.4 m/s, it is necessary to angle a boom to reduce the current relative to the boom. Angling the boom also allows oil to be diverted to shore where it can be collected.
- In a large, coastal river with reversing tides, repositioning a boom can be difficult and time consuming.
- The deployment of booms in rivers when broken ice is present is also of questionable value, because debris or ice can damage the boom fabric.



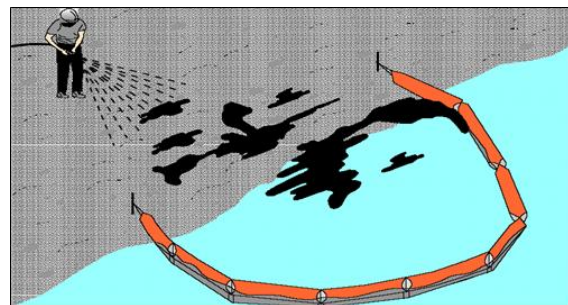
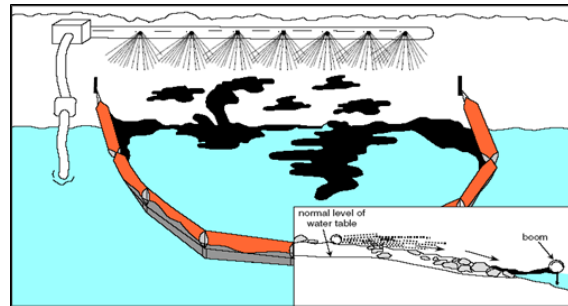
Booming in intertidal or river bank areas

- In intertidal areas, or at river banks where water levels fluctuate during the period of deployment, the boom can be sealed at the shoreline to ensure that an effective seal is maintained at the waterline.
- Sites with boulders, sharp protrusions, rip-rap or other features that will result in oil leaking under the boom when the tide changes should be avoided.
- Shore-sealing booms require regular monitoring once deployed since currents, wind and waves can move and/or twist them.



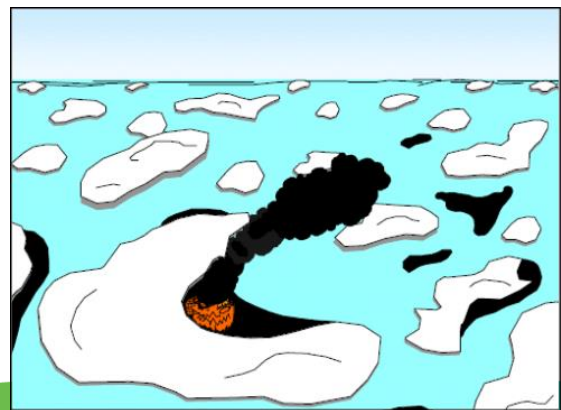
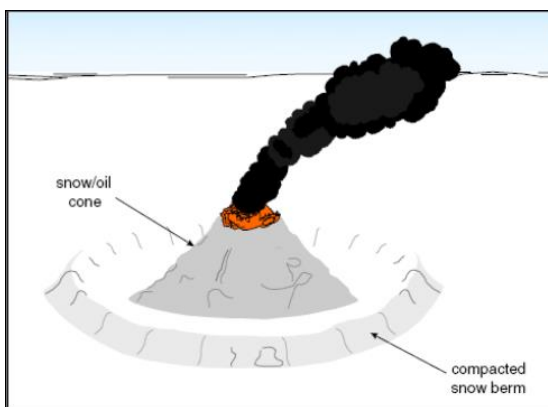
Shoreline Flushing

- The objective of flushing (or washing) is to remove oil from the shore using water and to recover the oil for disposal.
- Such a technique requires a number of separate operational steps that usually include washing, containment and recovery or collection of displaced oil for disposal.
- Oil may be flushed onto the adjacent water where it can be contained by booms and collected for recovery, or the oil can be diverted to a collection area, such as a lined sump or trench, where it can be recovered.



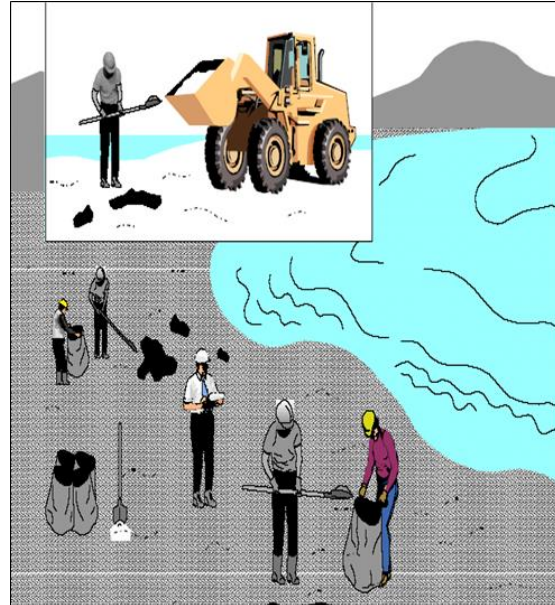
In Situ Burning

- In situ burning is possible response alternative which may be considered when the spill has occurred in an isolated area where supplies and equipment are difficult to obtain. It is relatively quick and inexpensive, but the actual amount of spilled product recovered is difficult to determine. Such a measure should only be implemented with the approval and supervision of Regulatory agencies.



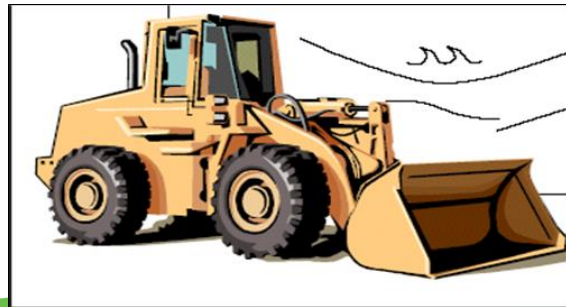
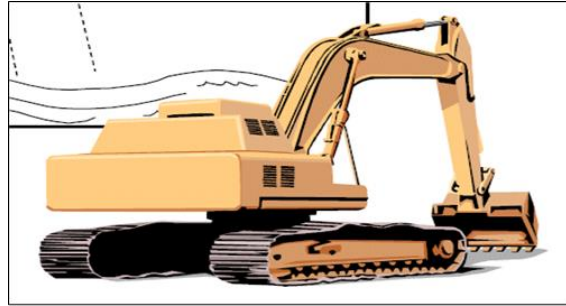
Manual Removal

- Manual removal involves personnel picking up oil, oiled sediments or oily debris with gloved hands, rakes, forks, trowels, shovels, sorbent materials or buckets.
- Oiled materials can be placed directly in plastic bags, drums or other containers for transfer. If the containers are to be carried to a temporary storage area, they should not weigh more than what can be carried by one person easily and safely. To avoid spillage, containers should not be overfilled.



Mechanical Removal

- Mechanical techniques essentially use equipment designed for earth-moving or construction projects, although a few commercial devices have been fabricated specifically for spill cleanup applications.
- Mechanical removal is more rapid than manual removal but generates larger quantities of waste.



Vacuum Truck Removal

- Vacuum trucks are effective when access to pooled oil is possible, but they are large, heavy, expensive and typically limited to lifting fluids to heights of 10 m or less.
- Vacuum trucks pick up a high ratio of water to oil when used on thin slicks.
- They are commonly used to recover oil in ice but can sometimes lose suction when lines freeze and ice pieces clog the hose inlet.

