APPENDIX A

EPR GUIDELINES AND CONCORDANCE TABLE

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
1. Name of Undertaking	
The undertaking has been assigned the Name “Star Lake to Valentine Gold Transmission Line TL271 Project”.	Section 1.1
2. Proponent	
Name the proponent and the corporate body, if any, and state the mailing and e-mail address. Name the chief executive officer if a corporate body, and telephone number and e-mail address. Name the principal contact person for purposes of environmental assessment and state the official title, telephone number and e-mail address.	Section 1.2
3. Undertaking	
State the nature of the project State the purpose/rationale/need for the project. If the proposal is in response to an established need, this should be clearly stated. Identify needs that are immediate as well as potential future needs.	Section 1.3
4. Description of Undertaking	
Provide a complete overview of the project in the following subsections, including information about the preferred choice of location, design, construction standards, operation and maintenance standards, etc.	Section 2.0
4.1. Geographical Location / Physical Components / Existing Environment: This section shall include, at a minimum, the following: 1. An accurate description of the proposed preferred and alternative transmission line routes, access routes, facilities and equipment, including GPS location coordinates and digital GIS files (e.g., Google Earth *.kml file, a GPS (*.gpx) file, a shapefile). Attach an original base map (1:25,000 scale) and/or recent air photos/aerial imagery, and,	Section 2.2
a) Existing trails/ roads for access; sections requiring maintenance or new construction; a description of any cutting, in-filling, ditching, etc.;	Section 2.2; Section 2.5.2.1
b) Source and location of in-filling materials, if required;	Section 2.5.2.1
c) Pole/tower locations;	Section 2.2; Section 2.3
d) A commitment to maintain a minimum 30-meter undisturbed zone between waterbodies that appear on 1:50,000 scale National Topographic System maps or the topographic mapping layer shown in the Provincial Land Use Atlas at https://www.gov.nl.ca/landuseatlas/details/ or on Google Earth at https://www.google.com/earth/.	Section 2.5.2.2, Section 2.5.2.3

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
e) Identification of any areas where a 30-meter buffer cannot be maintained around the above waterbodies;	Section 2.5.2.2, Section 2.5.2.3
f) A description of all waterbody and wetland crossings. A wetland includes any wetland that appears on the Natural Resources Canada 1:50,000 scale National Topographic System maps or on the topographic mapping layer shown in the Provincial Land Use Atlas at https://www.gov.nl.ca/landuseatlas/details/.	Section 2.5.2.2; Section 4.1; Section 4.3
2. The EPR shall include a description of the freshwater environment. The information provided shall include, but not be limited to, a description of:	
a) A general overview of the freshwater environment in the area;	Section 4.1
b) The location of all in-water works, e.g., all stream crossings, noting tributaries of rivers that are scheduled rivers under the *Fisheries Act*;	Section 2.5.2.2; Section 4.1
3. With regards to wetlands, as defined above, and federally and provincially listed species at risk:	
a) Describe/identify all wetlands within the project boundary. Provide a detailed description and specify the area of all wetlands that will be impacted by the proposed project.	Section 4.3
b) Describe/identify all habitats of federally and provincially listed species at risk within the project boundary	Section 4.5; Section 4.6
4.2. Construction State the time period in which proposed construction will proceed (if staged, list each stage and its approximate duration) and proposed date of first physical construction-related activity.	Section 2.4
The details, materials, methods, schedule, and location of all planned construction activities must be presented.	Section 2.4; Section 2.5
Describe how the project would be constructed if there was a future requirement to decommission and rehabilitate the area. The description shall include, but not be limited to: 1. Details regarding the design, construction, installation, and operation of all project components that may impact fish and fish habitat including:	
a) The timing and duration of the construction period for in-water works;	Section 2.4; Section 2.5.2.2
b) For all in-water works include whether installation of infrastructure is required, such as culverts (open or bottom-less culverts) or bridge structures; and	Section 2.4; Section 2.5.2.2
c) A description of project components for in-water works such as fording, removal of aquatic and/or stream side vegetation, infilling, water use activities, changes to natural flow regime.	Section 2.5.2.2; Section 5.3

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
2. Scheduling must take into consideration mitigations to help reduce any negative effects on wildlife in the area including a description of how construction activities will be planned to avoid and/or reduce disturbance or harm to migratory birds and their nests, and species at risk. An Avifauna Management Plan shall be included that outlines mitigation measures and monitoring to reduce potential effects. The plan may be included as an appendix to the EPR.	Section 2.4; Section 5.6; Appendix C
3. The Office of Women and Gender Equality requires a commitment for the development a Women's Employment Plan to improve employment and training opportunities for women and other underrepresented groups	Section 2.5.3
a) The WEP should identify specific commitments to support the recruitment, training, employment and retention of women and diverse populations.	Section 2.5.3
b) Women's Employment Plans should include establish proactive policies, practices, and lines of accountability aimed at creating inclusive workplaces free from harassment and discrimination. The WEP must outline clear lines of communication to ensure adherence to the company's WEP for contractors, sub-contractors and unions.	Section 2.5.3
4.3. All aspects of the operation and maintenance of the proposed development should be presented in detail, including but not limited to the following: 1. A description of how operation and maintenance activities will be planned to avoid and/or reduce disturbance or harm to migratory birds and their nests, and species at risk. An Avifauna Management Plan shall be included that outlines mitigation measures and monitoring to reduce potential effects	Section 2.6; Section 5.6; Appendix C
2. A description of project lighting design associated with the operation and maintenance of the project; and,	Section 2.6
3. A description of potential accidents and malfunctions that may occur as a result of the operation and maintenance of the project.	Section 2.7
5. Alternatives	
Alternative means of carrying out the project to meet the stated purpose and rationale must be provided. The EPR must identify and describe alternative means and locations of carrying out the project that are technically and economically feasible. The following steps for addressing alternative means and locations are recommended:	Section 3.0
• Identify any alternative means and locations to carry out the project;	Section 3.0
• Identify the environmental of each alternative means and location;	Section 3.0
• Identify the preferred means and location and provide rationale for selection; and,	Section 3.0
• Provide reasons for the rejection of alternative sites.	Section 3.0

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
Include information from previous project related studies describing alternate locations that were considered, including the expansion of existing sites, reasons for rejection, and reasons supporting the proposed site as the preferred location, if applicable. In addition to the potential environmental affects, each alternative must include a cost analysis and identify the party responsible for bearing the cost of the project.	Section 3.0
Alternative locations should be clearly outlined on maps of a suitable scale (i.e. 1:50,000, 1:25,000), aerial imagery and GIS shape files.	Figure 3.1
6. POTENTIAL ENVIRONMENTAL and MITIGATION:	
In this section you will provide detailed information regarding the potential of the project on the environment and the proposed mitigation to be used to avoid adverse environmental effects. This section must describe, at a minimum, the following:	Section 5.0
1. Detailed information regarding the potential and cumulative of the project, both the preferred and alternative routes, on the environment and the proposed mitigation to be used to avoid adverse environmental, including: a) A detailed assessment of potential spatial and temporal effects of the transmission line and associated infrastructure on resident and migrating caribou, with respect to:	Section 5.2
i. effects from project associated upgrades to access roads and trails during their construction and maintenance;	Section 5.2.1
ii. cumulative effects from the transmission line and existing and proposed linear features/corridors and the proposed mine's footprint;	Section 5.2.2
b) Identification and assessment of potential spatial and temporal effects on other wildlife species and their habitat, particularly species designated and listed under the provincial Endangered Species Act and/or the Federal Species at Risk Act, sensitive wildlife species or species of conservation concern; and,	Section 5.4; Section 5.5; Section 5.6
c) Identification and details of mitigations to avoid and/or minimize adverse effects to wildlife species, particularly during sensitive time periods such as breeding, brood rearing and migration.	Section 5.5; Section 5.6
2. The effects of the project on wetlands as previously defined. Include efforts to avoid and minimize wetlands within the project boundary	Section 5.4
3. The effects of the project on migratory birds. The EPR shall include an Avifauna Management Plan that describes appropriate measures to minimize the risk of effects of the construction and operation of the project. The plan may be included as an appendix to the EPR.	Section 5.6; Appendix C
4. A description of the cumulative effects of the undertaking in addition to other existing and proposed linear features/corridors and the proposed Valentine Gold Mine footprint.	Section 5.2.2; Section 5.3.2; Section 5.4.2; Section 5.5.2; Section 5.6.2; Section 5.7.2

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
5. An assessment of the archaeological potential within the project footprint, in accordance with the Historic Resources Act, including	Section 4.8; Appendix E
a) Ground assessment of Medium Potential Zones to determine whether subsurface testing is warranted, and where warranted, subsurface testing will be undertaken;	Section 4.8; Appendix E
b) Ground assessment and subsurface testing of High Potential Zones;	Section 4.8; Appendix E
c) An assessment of the archaeological potential for upgraded and new access roads;	Section 4.8; Appendix E
6. A description of the potential effects to fish and fish habitat associated with:	Section 5.3
a) Work windows and sensitive times of the year (e.g. migration, feeding and spawning) which are critical for fish populations identified in the project area;	Section 5.3.1
b) The construction of project facilities or infrastructure including, but not limited to; culvert and bridge structures;	Section 5.3.1
c) In-water works during construction such as; fording, removal of aquatic and/or stream side vegetation, infilling, changes to natural flow regime;	Section 5.3.1
d) Turbidity, sedimentation, and/or siltation and other contamination from surface runoff;	Section 5.3.1
e) The proponent shall describe mitigation measures to avoid possible death of fish and/or harmful alteration, disruption or destruction of fish habitat (HADD)	Section 5.3.1
7. Measures that will be undertaken to mitigate the potential adverse effects of accidents and malfunctions described in section 4.3.	Section 2.7.2
8. Identification of how the project will avoid interference with the rights of other legitimate land owners/users; and,	Section 5.7
9. This project may have the potential for significant adverse effects to the outfitting industry through the disruption of wildlife. The primary concern is the Woodland Caribou herds that are within or very near the proposed project throughout different parts of the year. The project may also impact other wildlife, including moose and black bears, and has the potential to impact salmon and brook trout. The EPR shall outline efforts to mitigate negative effects on the big game carry capacity of the area.	Section 5.7

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
10. You are reminded that the modernized Fisheries Act (2019) includes fish and fish habitat protection provisions which came into effect on August 28, 2019. If you are conducting work in or near water you should refer to the Projects Near Water website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) to get information about how to comply with the Fisheries Act and as well as information on the project review process. You are responsible for: understanding the effects your project will likely have on fish and fish habitat; taking measures to avoid and mitigate effects to fish and fish habitat; requesting an authorization from the Minister and abiding by the conditions of your authorization when it is not possible to avoid and mitigate project effects on fish and fish habitat; ensuring compliance with all statutory instruments, including federal, provincial, or municipal legislations/requirements. In cases where effects to fish and fish habitat cannot be avoided, and the project does not fall within waterbodies where a Fish and Fish Habitat Protection Program (FFHPP) review isn't required or the scope of the project is not covered under standards and codes of practice, you are asked to submit a Request for Review to the NL Region-FFHPP at FPP-NL@dfo-mpo.gc.ca.	Noted
7. DECOMMISSIONING and REHABILITATION:	
Describe all aspects of the decommissioning and rehabilitation plans for the project, assuming the eventual need to eliminate the entire project footprint from the landscape This section must describe, but may not be limited to, the following:	Section 6.0
1. Details of rehabilitation activities, including efforts to reduce the introduction of invasive species;	Section 6.1
2. This project may see an increase in traffic that may lead to disturbances of wildlife including shifts in where they live, disturbances for hunters accessing hunting areas and finding animals in these traditional hunting areas, and other disturbances for outfitters. This has the potential to significantly impact their business. The EPR should outline a decommissioning plan that mitigates negative impact to the outfitting sector.	Section 6.2
8. PROJECT- RELATED DOCUMENTS:	
Provide a bibliography of all project-related documents already generated by or for the proponent (e.g., feasibility study, engineering reports, etc.).	Section 7.0
9. PUBLIC INFORMATION MEETING:	
A Public Information Session shall be held at a place adjacent to or in the geographical area of the undertaking, or as the minister may determine, in order to:	Section 9.0
1. provide information concerning the undertaking to the people whose environment may be affected by the undertaking;	
2. record and respond to the concerns of the local community regarding the environmental of the undertaking; and,	
3. present the information gathered to fulfill the requirements of Section 5 of these guidelines.	

Table A.1 Concordance Table Star Lake to Valentine Gold Transmission Line TL271 Project

	Section
You are required to notify the Minister and the public of the scheduled meeting not fewer than 7 days before that meeting. Public concerns shall be addressed in a separate section of the EPR. Protocol for these public sessions will comply with Section 10 of the Environmental Assessment Regulations, 2003. Public notification specifications are outlined in Appendix A.	
10. APPROVAL OF THE UNDERTAKING:	
List the main permits, licences, approvals, and other forms of authorization required for the undertaking, together with the names of the authorities responsible for issuing them (e.g., federal government department, provincial government department, municipal council, etc.)	Section 8.0
You are required to provide one paper copy and an electronic version of the EPR, for posting to the Environmental Assessment website, together with a covering letter to the following address: Minister Environment and Climate Change P.O. Box 8700 St. John's NL A1B 4J6	Noted
11. FEE FOR ENVIRONMENTAL ASSESSMENT	
Undertakings with an estimated capital cost greater than $5 million are subject to the Department's fees for environmental assessment found at https://www.gov.nl.ca/ecc/env-assessment/fees/. You are to email an estimate of the capital cost of the undertaking using current standard estimating practices and construction costs, to the following email address: Director of Environmental Assessment EAProjectComments@gov.nl.ca	Noted

APPENDIX B

MAPBOOK

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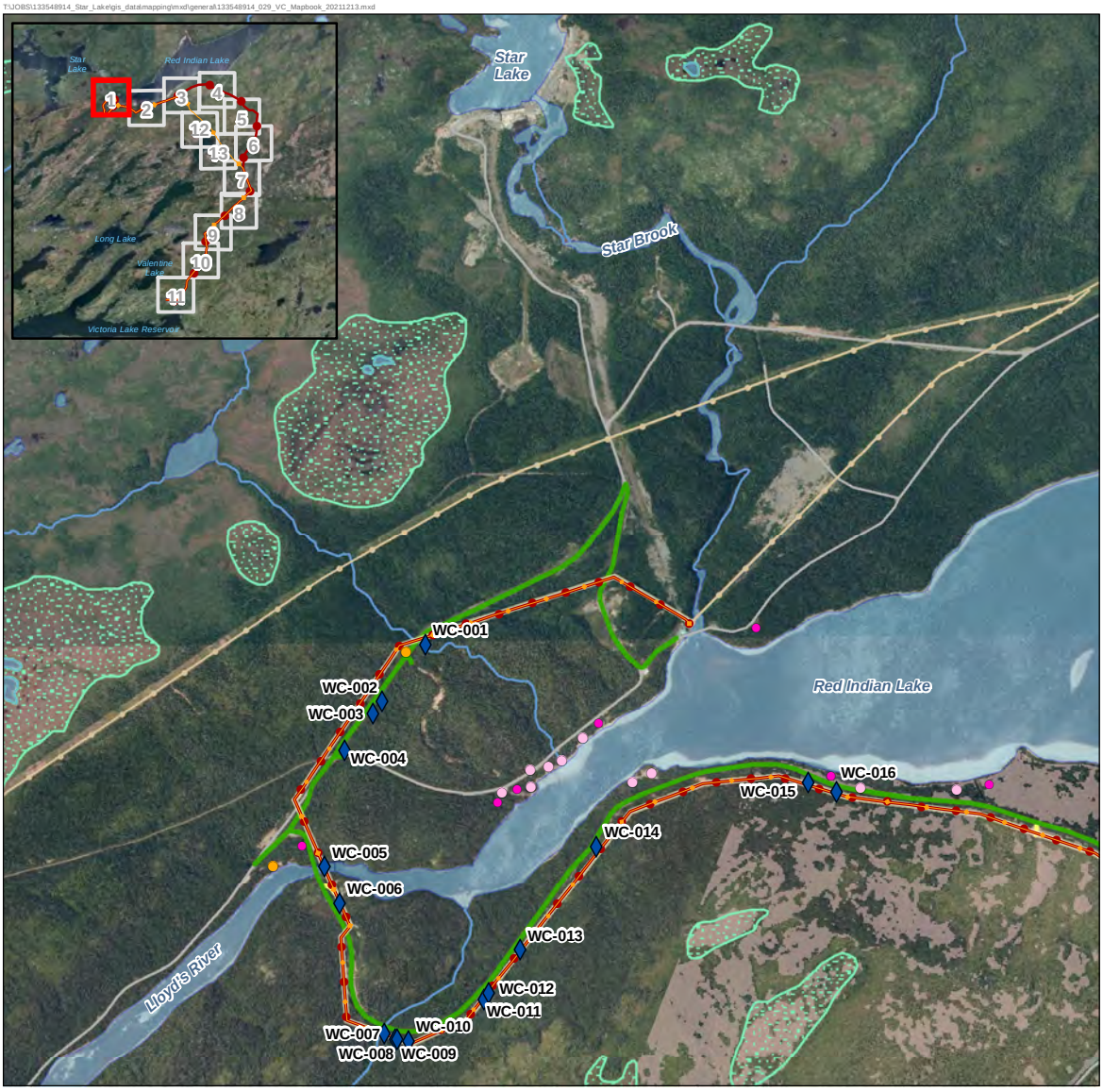

Proposed TL271 Route
Alternate Route
20 m Right of Way

Resource Road Condition

Open - Maintained
Status Unknown - Good

Watercourse Crossing
Cabin
Cabin (Unregistered)
Outfitter Lodge

Watercourse [4]
Existing Transmission Line
Wetland [2]
ELC ecotypes assumed to consist primarily of wetland habitat [3]
Waterbody [2]

0 250 500
Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 1
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- Proposed TL271 Route
- Alternate Route
- 20 m Right of Way

Resource Road Condition

- Open - Maintained
- Status Unknown - Good

- Watercourse Crossing
- Known Archaeological Site
- Cabin
- Cabin (Unregistered)

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]

0 250 500 Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 2
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Proposed TL271 Route
Alternate Route
20 m Right of Way

Resource Road Condition

Open - Maintained
Status Unknown - Good

Watercourse Crossing
Cabin
Cabin (Unregistered)

Watercourse [4]
Wetland [2]
ELC ecotypes assumed to consist primarily of wetland habitat [3]
Waterbody [2]

0 250 500
Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 3
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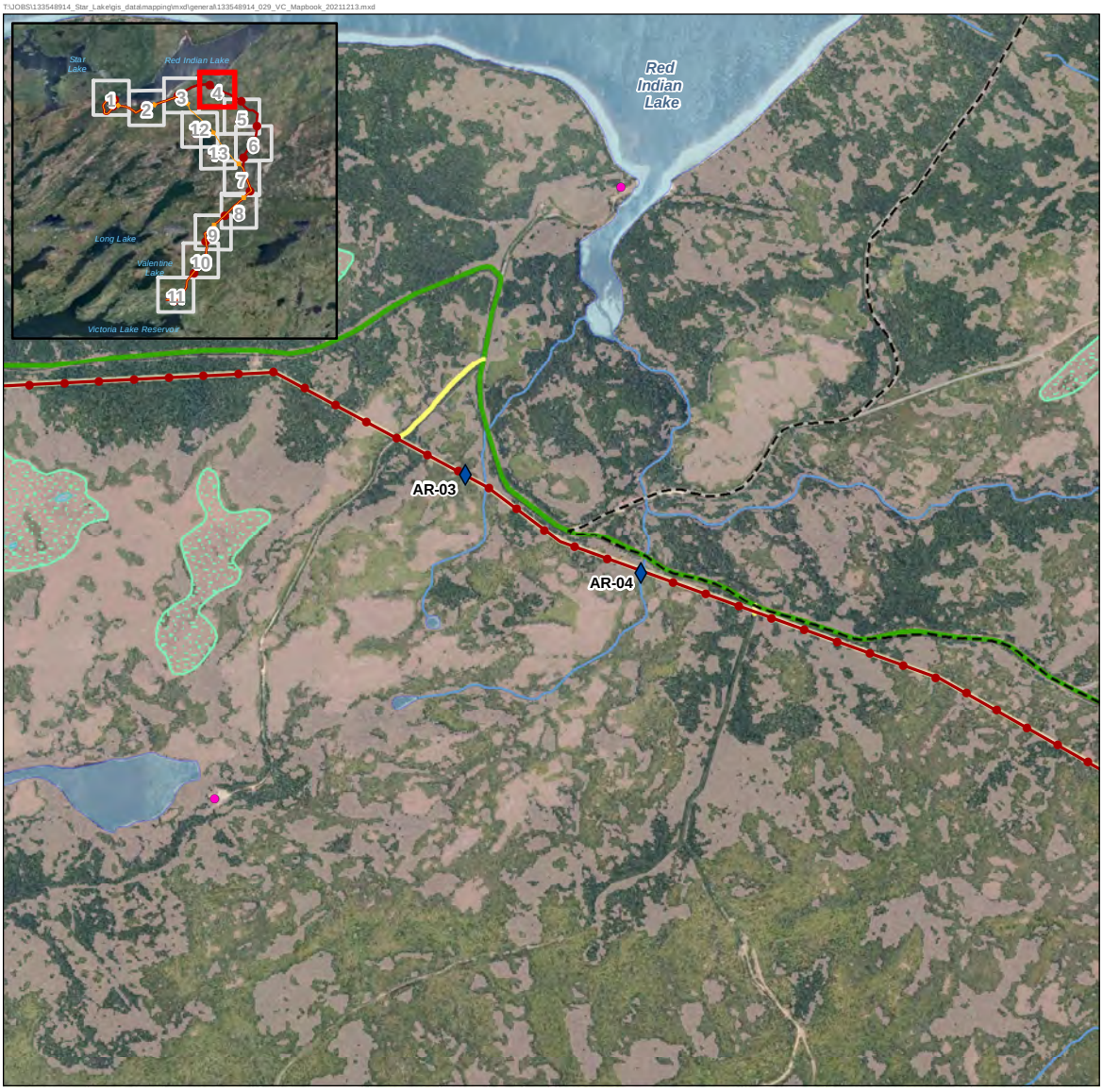

- Proposed TL271 Route
- 20 m Right of Way

Mine Features

- Mine Access Road

Resource Road Condition

- Open - Maintained
- Status Unknown - Good

- Watercourse Crossing
- Cabin

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]

0 250 500 N

Metres

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 4
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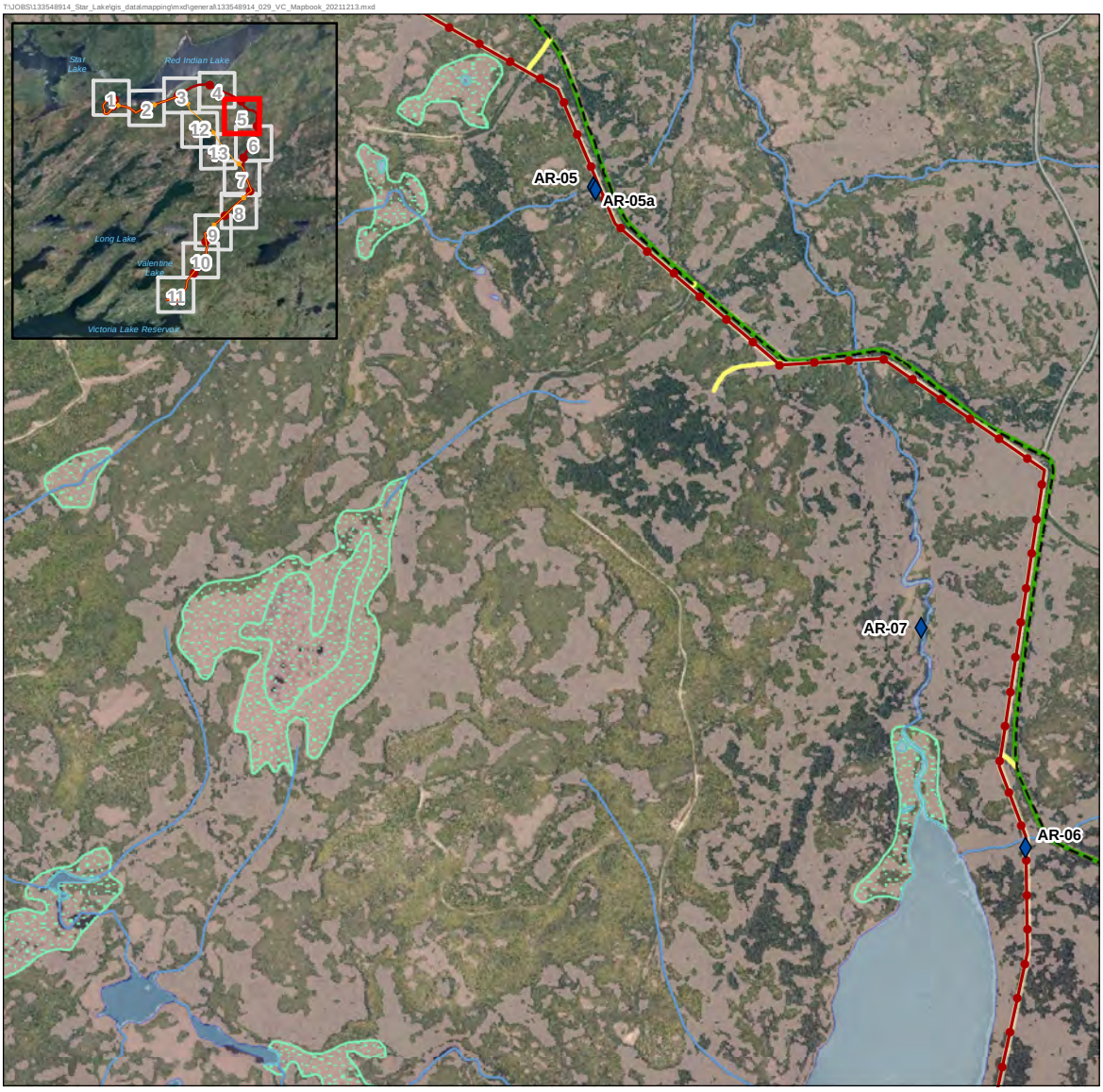

Proposed TL271 Route

20 m Right of Way

Mine Features

Mine Access Road

Resource Road Condition

Open - Maintained

Status Unknown - Good

Watercourse Crossing

Watercourse [4]

Wetland [2]

ELC ecotypes assumed to consist primarily of wetland habitat [3]

Waterbody [2]

0 250 500 Metres

N

Notes

1. Background: GovNL

2. CanVec 1:50 000 data, Natural Resources Canada

3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.

4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location

Central Newfoundland, CA

Map: 5
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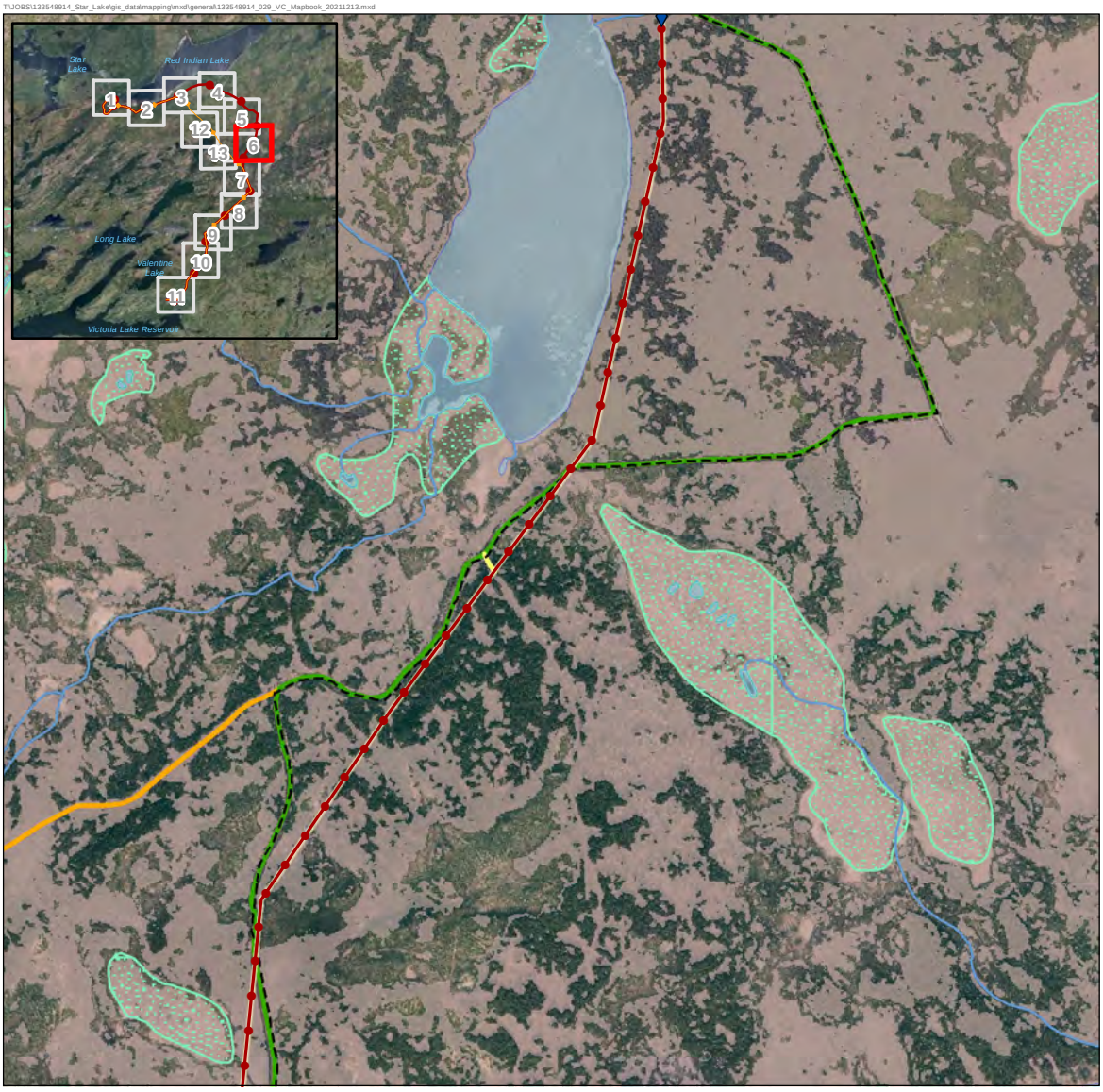

- Proposed TL271 Route
- 20 m Right of Way

Mine Features

- Mine Access Road

Resource Road Condition

- Open - Maintained
- Status Unknown - Good
- Status Unknown -Poor
- Watercourse Crossing
- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]

0 250 500 Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 6
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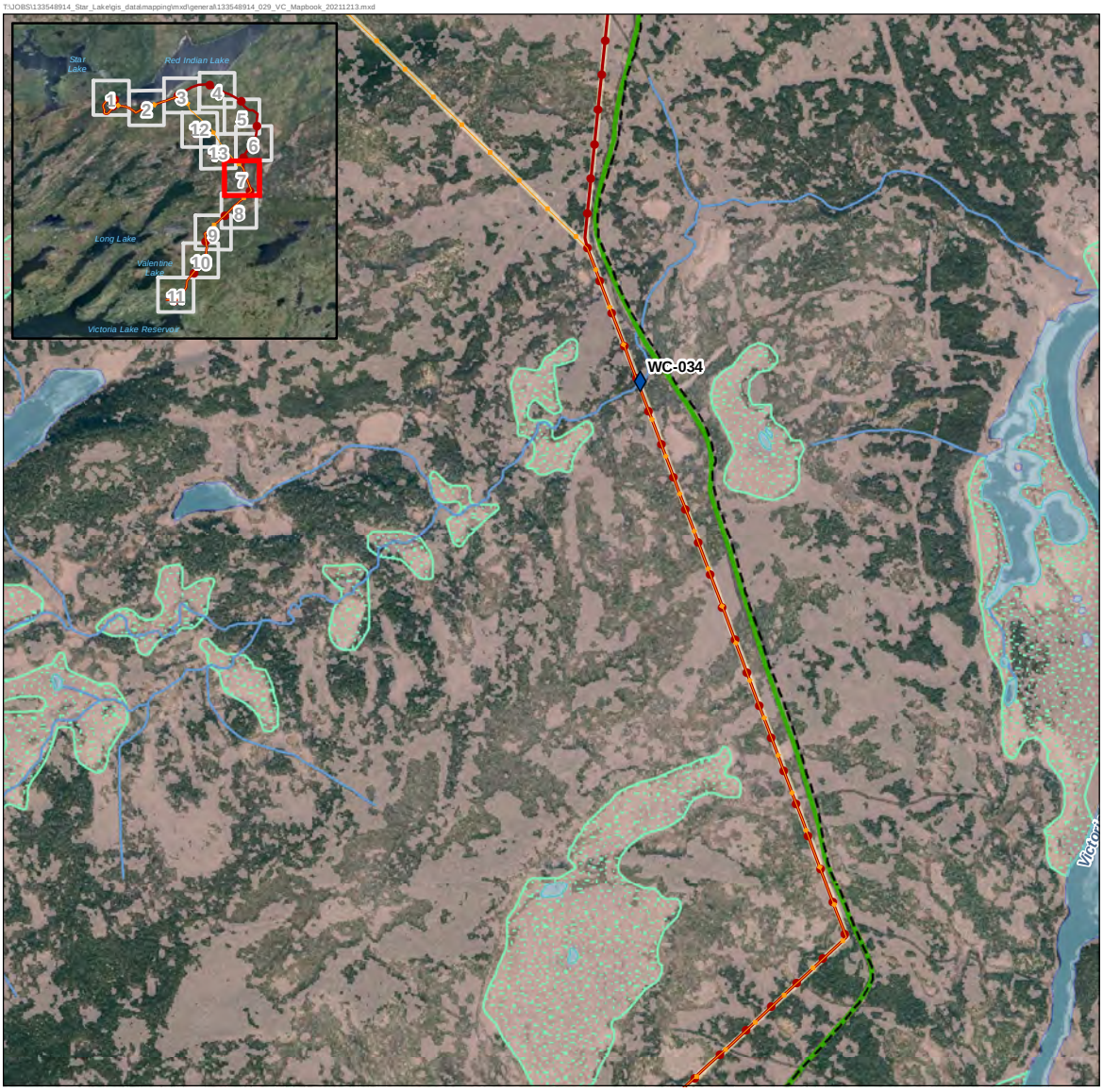

Proposed TL271 Route
Alternate Route
20 m Right of Way

Mine Features

Mine Access Road

Resource Road Condition

Open - Maintained

Watercourse Crossing

Watercourse [4]
Wetland [2]
ELC ecotypes assumed to consist primarily of wetland habitat [3]
Waterbody [2]

0 250 500
Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 7
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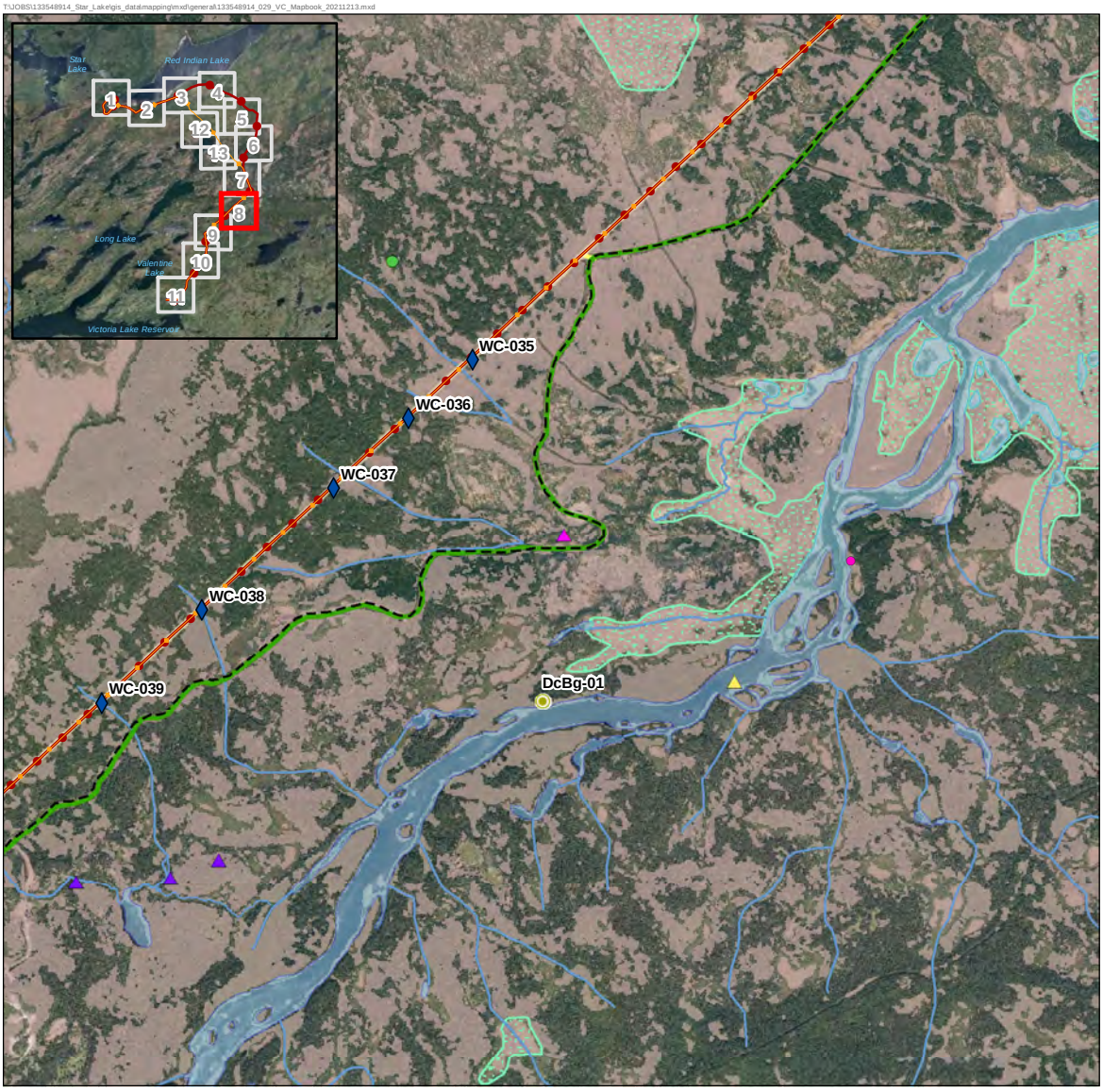

- Proposed TL271 Route
- Alternate Route
- 20 m Right of Way

Mine Features

- Mine Access Road

Resource Road Condition

- Open - Maintained
- Status Unknown - Good

- Watercourse Crossing
- Known Archaeological Site
- Cabin
- Rusty Blackbird (*Euphagus carolinus*)
- Olive-sided Flycatcher (*Contopus cooperi*)
- Caspian Tern (*Hydroprogne caspia*)
- Short-scale Sedge (*Carex deweyana*

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]

0 250 500 Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 8
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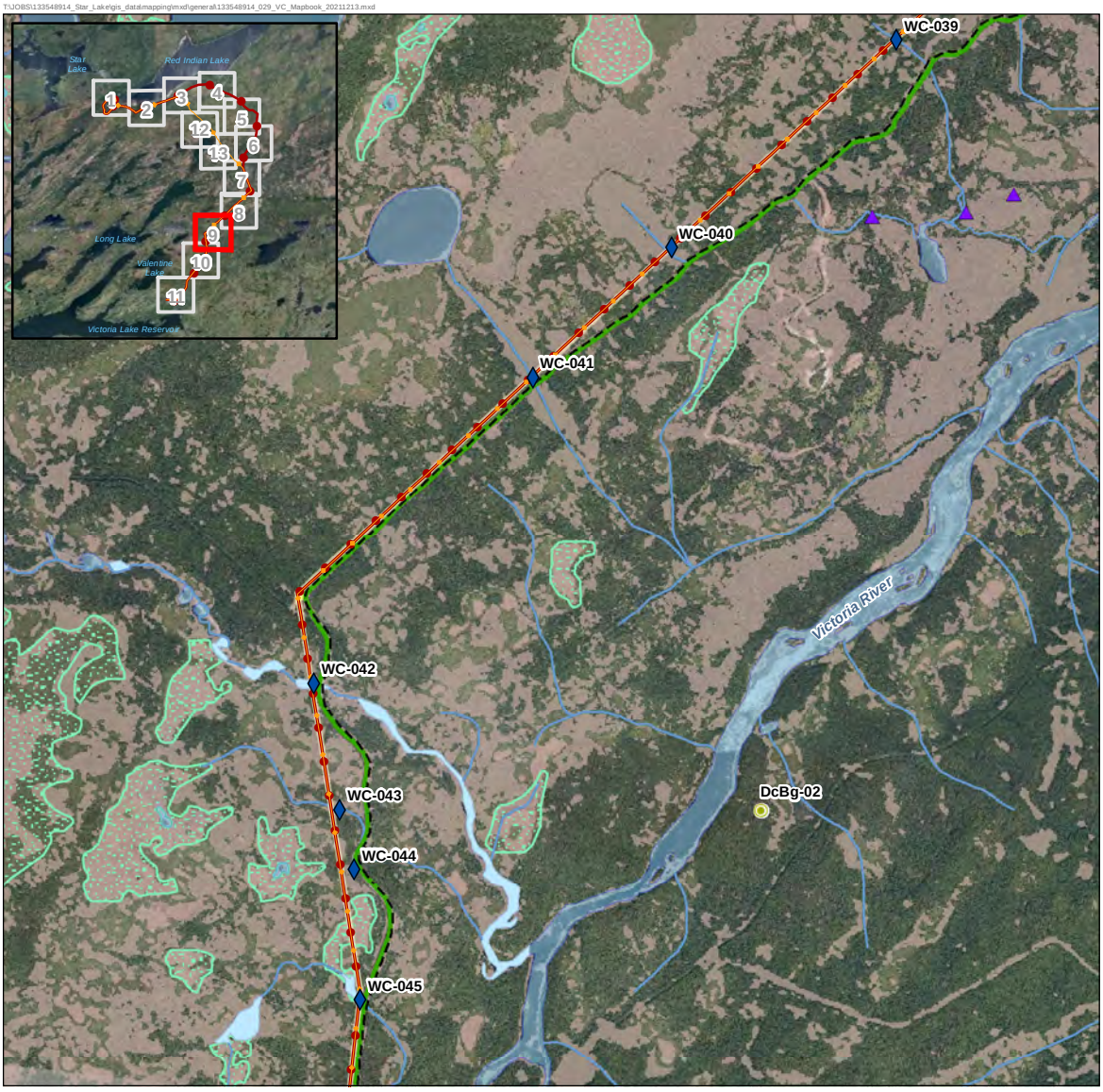

- Proposed TL271 Route
- Alternate Route
- 20 m Right of Way

Mine Features

- Mine Access Road

Resource Road Condition

- Open - Maintained
- Status Unknown - Good

- Watercourse Crossing
- Known Archaeological Site
- Olive-sided Flycatcher (*Contopus cooperi*)

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]
- Valentine Gold Project Mine Site

0 250 500

Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 9
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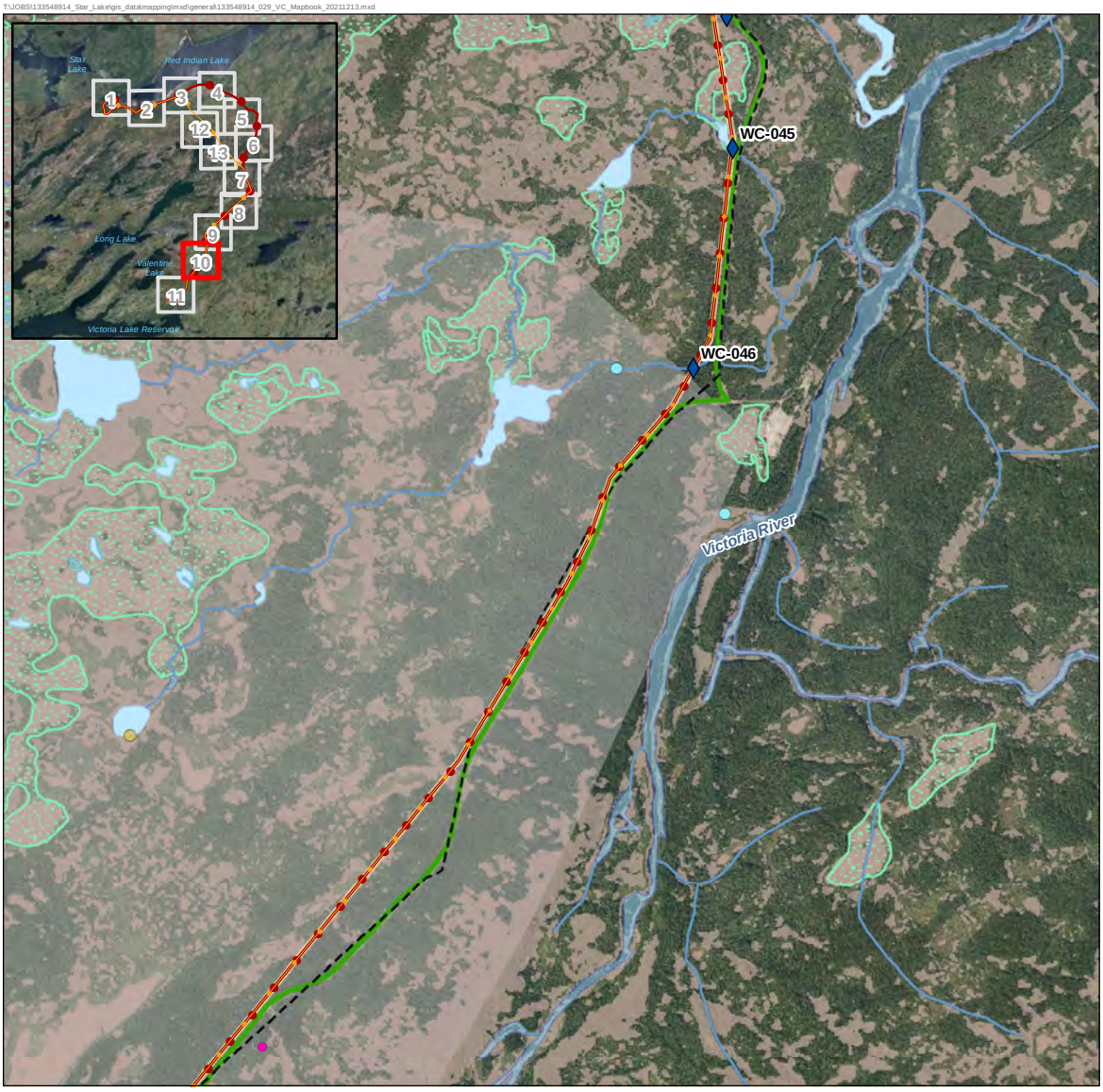

- Proposed TL271 Route
- Alternate Route
- 20 m Right of Way

Mine Features

- Mine Access Road

Resource Road Condition

- Open - Maintained

- Watercourse Crossing
- Cabin
- Perennial Bentgrass (*Agrostis perennans*)
- Nodding Water Nymph (*Najas flexilis*)

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]
- Valentine Gold Project Mine Site

0 250 500 Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 10
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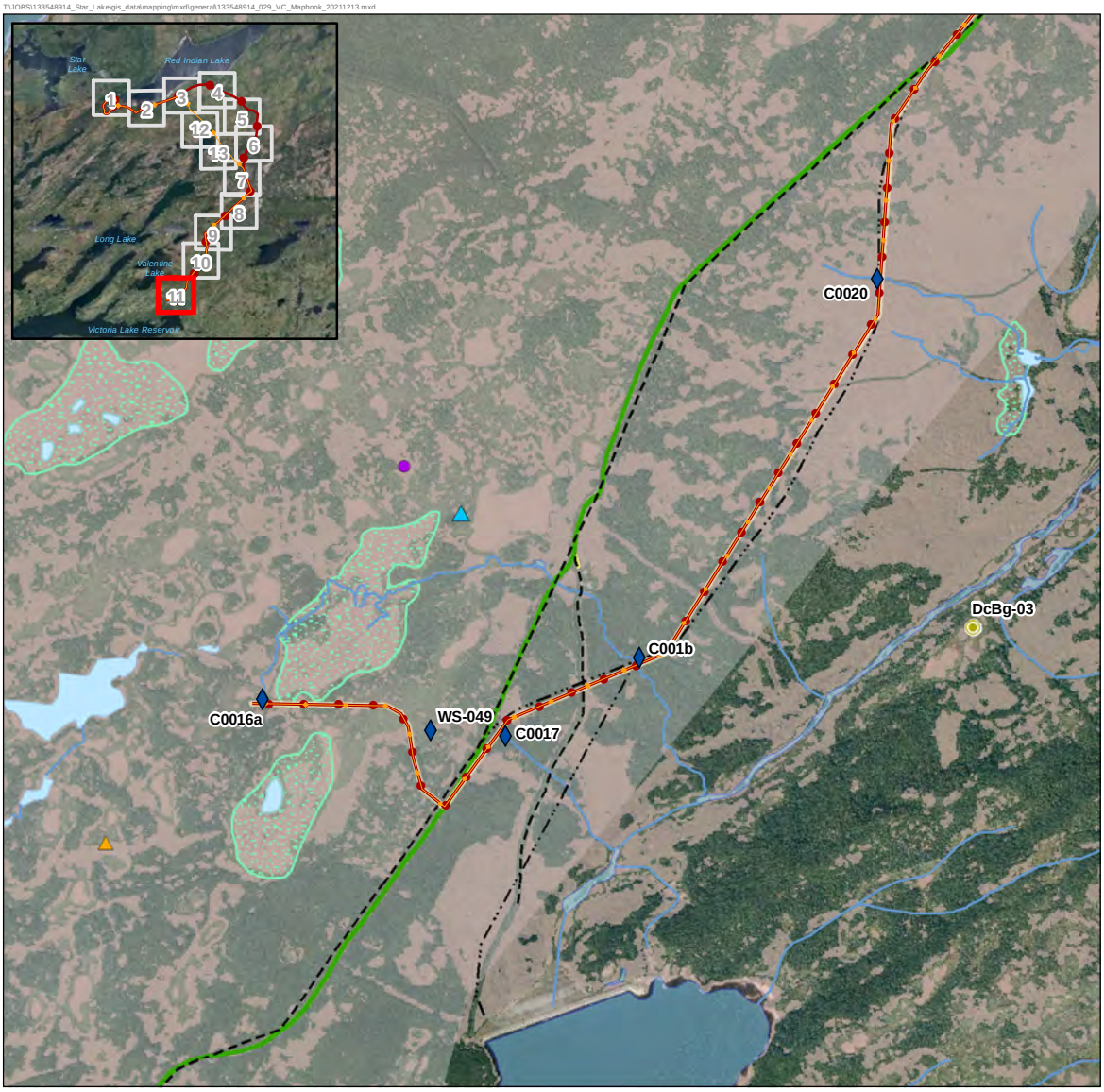

- Proposed TL271 Route
- Alternate Route
- 20 m Right of Way

Mine Features

- Mine Access Road
- Proposed Mine Access Road Realignment

Resource Road Condition

- Open - Maintained
- Status Unknown - Good

- Watercourse Crossing
- Known Archaeological Site
- Common Nighthawk (*Chordeiles minor* [10m accuracy])
- Bay-breasted Warbler (*Setophaga castanea*)
- Common Water Primrose (*Ludwigia palustris*)

- Watercourse [4]
- Wetland [2]
- ELC ecotypes assumed to consist primarily of wetland habitat [3]
- Waterbody [2]
- Valentine Gold Project Mine Site

0 250 500 Metres

N

Notes

1. Background: GovNL
2. CanVec 1:50 000 data, Natural Resources Canada
3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.
4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location
Central Newfoundland, CA

Map: 11
133548914_029

Stantec

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Alternate Route

20 m Right of Way

Resource Road Condition

Status Unknown - Good

Status Unknown -Poor

Watercourse Crossing

Known Archaeological Site

Watercourse [4]

Wetland [2]

ELC ecotypes assumed to consist primarily of wetland habitat [3]

Waterbody [2]

0 250 500

Metres

N

Notes

1. Background: GovNL

2. CanVec 1:50 000 data, Natural Resources Canada

3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.

4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location

Central Newfoundland, CA

Map: 12
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Alternate Route

20 m Right of Way

Resource Road Condition

Status Unknown - Good

Status Unknown -Poor

Watercourse Crossing

Known Archaeological Site

Watercourse [4]

Wetland [2]

ELC ecotypes assumed to consist primarily of wetland habitat [3]

Waterbody [2]

0 250 500 N

Metres

Notes

1. Background: GovNL

2. CanVec 1:50 000 data, Natural Resources Canada

3. ELC ecotypes assumed to consist primarily of wetland habitat include: open wetlands (shrub/graminoid fen and shrub bog), wet coniferous forests, alder thicket, black spruce forest, and riparian thicket.

4. CanVec 1:50 000 data, Natural Resources Canada and Field Verification

Project Location

Central Newfoundland, CA

Map: 13
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APPENDIX C

AVIFAUNA MANAGEMENT PLAN

TL 271 Avifauna Management Plan

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Abbreviations and Acronyms

AMP	Avifauna Management Plan
BBC	Breeding Bird Surveys
CBC	Christmas Bird Counts
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
EPP	Environmental Protection Plan
km	kilometers
kV	kilovolt
m	metres
Marathon	Marathon Gold Corporation
MBCA	*Migratory Birds Convention Act, 1994*
NL	Newfoundland and Labrador
NL ESA	Newfoundland and Labrador *Endangered Species Act*
OSEM	On-Site Environmental Monitor
RoW	right of way
SAR	Species at Risk
SARA	*Species at Risk Act*
SOCC	Species of Conservation Concern
SSAC	Species Status Advisory Committee
TL	transmission line

1.0 INTRODUCTION

Newfoundland and Labrador Hydro (NL Hydro) is planning the construction of transmission line (TL) 271 to convey power from the Star Lake Terminal Station to the Valentine Gold Project, which is being developed by Marathon Gold Corporation (Marathon). There is a risk that activities associated with the construction of the transmission line may cause disturbance to bird species. This Avifauna Management Plan (AMP) has been developed to manage potential effects to avifauna, which are protected by both federal and provincial policies and regulations in Newfoundland and Labrador (NL).

2.0 SCOPE

This AMP addresses the required aspects of avifauna management for the construction phases of the TL 271 (the Project; described in Section 3.0).

3.0 PROJECT DESCRIPTION

The proposed TL 271 is a 69 kilovolt (kV) transmission line that spans approximately 45 kilometers (km) between the existing Star Lake Terminal Station and the proposed Valentine Terminal Station being developed by Marathon in west-central Newfoundland (Figure 3.1). The purpose of the Project is to enable the supply of electrical power to the Valentine Gold Project proposed by Marathon (the Customer). The Valentine Gold Project is currently undergoing regulatory review. If the Valentine Gold Project does not obtain release from both the federal and provincial EA processes, this Project is not required and will not proceed.

TL 271 is primarily single wood pole construction, with three-pole dead-end structures as necessary within an approximately 20 m wide right-of-way (RoW). Clearing for the RoW is scheduled to occur between May 2022 and August 2022, with line construction occurring from June 2022 to January 2023. However, this schedule may be delayed pending the regulatory approval timeline for the Valentine Gold Project and this Project. Implementation of this AMP is crucial particularly in the event that clearing and construction activities occur during the breeding bird season (April 1 to August 31).

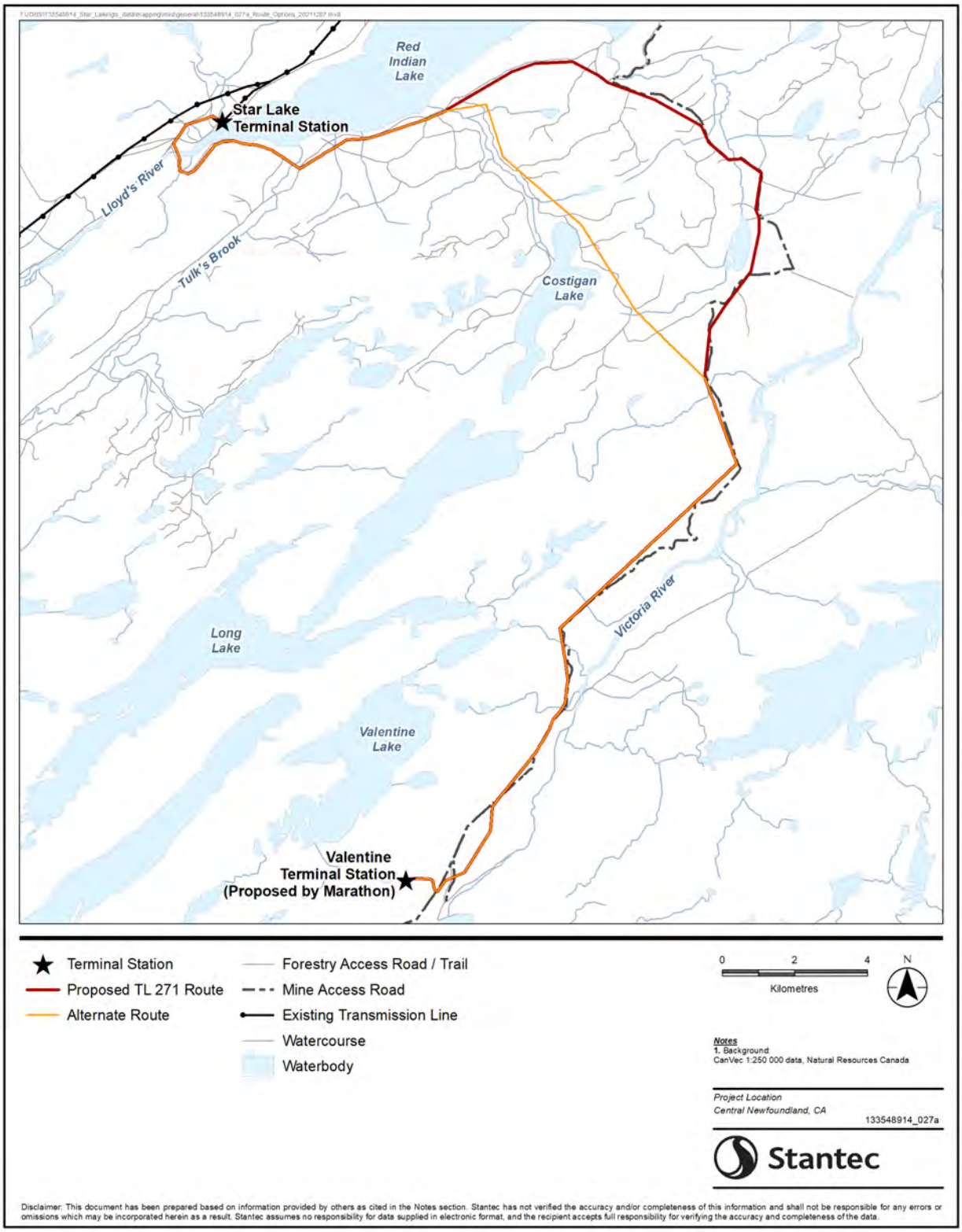

Figure 3.1 Transmission Line Routing

4.0 REGULATORY CONTEXT

In Canada, the protection of species is legally required for those listed under Schedule 1 of the *Species at Risk Act, 2002* (SARA) and those included in the *Migratory Birds Convention Act, 1994* (MBCA). Within NL, the *Newfoundland and Labrador Endangered Species Act* (NL ESA) and the Newfoundland and Labrador *Wild Life Act* provide provincial protection for species.

Rare species include both species at risk (SAR) and species of conservation concern (SOCC). SAR are here defined as those species designated under the federal SARA or the NL ESA. SOCC are defined as those species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or recommended for listing by the Species Status Advisory Committee (SSAC) as Endangered, Threatened, Vulnerable, or Special Concern but not yet listed under NL ESA or SARA, or those considered provincially rare, i.e., those species with provincial status ranks (S-ranks) of S1 (critically imperiled), S2 (imperiled), or combinations thereof (e.g., S1S2) upon review by the Atlantic Canada Conservation Data Centre (AC CDC 2021).

4.1 *SPECIES AT RISK ACT*

SARA was established to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened (Government of Canada 2002). It is one of a three-part Government of Canada strategy for the protection of SAR. The other two parts of this strategy include commitments under the Accord for the Protection of Species at Risk and activities under the Habitat Stewardship Program for SAR, which protect SAR on federal land.

There are three main prohibitions in SARA relevant to Extirpated, Endangered, or Threatened SAR and their critical habitat:

- Section 32, which prohibits killing, harming, or taking of SAR
- Section 33, which prohibits damage or destruction of residences of SAR
- Subsection 58(1), which prohibits destruction of critical habitat of SAR

4.2 *MIGRATORY BIRDS CONVENTION ACT, 1994*

The MBCA was designed to protect and conserve migratory birds, both as populations and individual birds, and their nests (Government of Canada 1994a). Environment and Climate Change Canada (ECCC) is responsible for implementing the MBCA through the *Migratory Birds Regulations* and the *Migratory Birds Sanctuary Regulations*.

The *Migratory Birds Regulations* prohibit the disturbance, destruction, or taking of a nest, nest shelter, eider duck shelter or duck box of a migratory bird, or the possession of a live migratory bird, or a carcass, skin, nest or egg of a migratory bird (Government of Canada 1994b). The *Migratory Bird Sanctuary Regulations* prohibit the hunting, disturbance, destruction or taking of a nest of migratory birds, or the

possession of a live migratory bird, or carcass, skin, nest or egg of a migratory bird within a migratory bird sanctuary.

Most of the native bird species expected to occur in or near the Project are protected by the provisions within the MBCA, except for some non-migratory groups, and some species, such as raptors, kingfishers and cormorants. Some rare species that are not protected under the MBCA are afforded protection under provincial legislation such as the NL ESA described below.

4.3 NEWFOUNDLAND AND LABRADOR *ENDANGERED SPECIES ACT*

In addition to SARA and the MBCA, the NL ESA affords protection to many rare species within NL. The NL ESA protects wildlife species, subspecies or populations within the province that are considered Endangered, Threatened, Vulnerable, or Special Concern based on recommendations from COSEWIC or the provincial SSAC.

The purpose of NL ESA is to:

- Prevent listed species from being extirpated from NL
- Provide for the recovery of species listed as Extirpated, Endangered, or Threatened due to human activity
- Conserve species listed as Special Concern to prevent them from becoming Endangered or Threatened

Prohibitions of NL ESA include Section 16, which states “a person shall not disturb, harass, injure, or kill an individual of a species designated as threatened, endangered or extirpated”. Species are listed under the Endangered Species List Regulations.

4.4 NL *WILD LIFE ACT*

The NL *Wild Life Act* affords protection of wildlife (including avifauna species) and prohibits the hunting, taking or killing of wildlife or classes of wildlife, whether in particular places or at particular times or by particular methods, except under license or permit. The Act, in combination with other provincial regulations and Acts including the *Wilderness and Ecological Reserves Act* and the NL ESA, protects the biodiversity and wildlife resources of NL from being compromised.

4.5 OTHER RELEVANT ACTS, STRATEGIES AND MANAGEMENT PLANS

Other provincial Acts, strategies and management plans related to the protection of wildlife and their habitat in the vicinity of the Project include (but are not limited to) the following:

- Little Grand Lake Provisional Ecological Reserve Regulations
- Little Grand Lake Wild Life Reserve Regulations
- *Forestry Act*
- Recovery Plan for the Threatened Newfoundland population of American marten (*Martes americana atrata*) (Newfoundland Marten Recovery Team 2010)
- Provincial Sustainable Forest Management Strategy 2014-2024
- Sustainable Forest Management Planning Regulations, NLR 61/13

5.0 BASELINE INFORMATION

5.1 KEY AVIFAUNA SPECIES

In this AMP, avifauna species are categorized into three broad groups: Raptors (including owls), Migratory Birds (species covered under the MBCA), and Other Avifauna Species (e.g., Upland Gamebirds, Crows, Ravens, Jays, Kingfishers, and Starlings). Migratory Birds are further categorized based largely on categories identified under the MBCA and include Game and Non-Game Birds (e.g., waterfowl, shorebirds, gulls, loons, pigeons and bitterns) and Insectivorous Birds (e.g., chickadees, flycatchers, nighthawks, swallows, warblers, and woodpeckers).

5.2 RAPTORS

Raptors are birds of prey which include species which primarily hunt and feed on other vertebrates (including mammals, fish, and other birds). Two species of raptor were confirmed in the vicinity of the Project during the Valentine Gold Project baseline point count surveys in 2011 (Stantec 2014): northern goshawk (*Accipiter gentilis*) and merlin (*Falco columbarius*). Other raptors identified in the vicinity of the RoW, either incidentally during other baseline studies for the Valentine Gold Project (Stantec 2014a, 2014c, 2015, 2017, 2018, 2019b) and/or through additional data sources (i.e., Breeding Bird Species [BBS], Christmas Bird Counts [CBC]) include osprey (*Pandion haliaetus*), northern harrier (*Circus hudsonius*), bald eagle (*Haliaeetus leucocephalus*), great horned owl (*Bubo virginianus*), and boreal owl (*Aegolius funereus*) (Table 5.1; Marathon 2020). None of the raptor species identified in the vicinity of the RoW, either during baseline studies in support of the Valentine Gold Project and/or through additional data sources, are identified as a SAR or SOCC.

Table 5.1 Raptor Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
Osprey	*Pandion haliaetus*	S4S5B, SUM	Baseline Studies	No
Norther Harrier	*Circus hudsonius*	S3B, SUM	Baseline Studies	No
Northern Goshawk	*Accipiter gentilis*	S3	Baseline Studies	No
Bald Eagle	*Haliaeetus leucocephalus*	S4	Baseline Studies	No
Great Horned Owl	*Bubo virginianus*	S4	CBC, Baseline Studies	No
Boreal Owl	*Aegolius funereus*	S4	Baseline Studies	No
Merlin	*Falco columbarius*	S4S5B, SUM	BBS, Baseline Studies	No

Notes:

1 Data ranks provided by AC CDC in December 2020 (AC CDC 2020b). S3 = vulnerable, due to a restricted range, < 80 populations, widespread declines, or other factors; S4 = apparently secure, uncommon but not rare; S5 = secure, common, widespread and abundant; S#S# = indicates a range of uncertainty of the status of a species; SU = unrankable, more information needed; B = Breeding; M = Migrant (AC CDC 2021).

2 Baseline Studies include field programs conducted for the Valentine Gold Project between 2013 and 2020.

3 SAR = Species at Risk; SOCC = Species of Conservation Concern

Source: Adapted from Marathon Gold (2020)

5.3 MIGRATORY BIRDS

In this AMP, migratory birds include the following groups (as described under the MBCA):

Game and Non-Game Birds: Anatidae or waterfowl, including brant, wild ducks, geese, and swans; Gruidae or cranes, including little brown, sandhill, and whooping cranes; Rallidae or rails, including coots, gallinules and sora and other rails; Limicolae or shorebirds, including avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plovers, sandpipers, snipe, stilts, surf birds, turnstones, willet, woodcock, and yellowlegs; and Columbidae or pigeons, including doves and wild pigeons; and Auks, auklets, bitterns, fulmars, gannets, grebes, guillemots, gulls, herons, jaegers, loons, murres, petrels, puffins, shearwaters, and terns.

Insectivorous Birds: Bobolinks, catbirds, chickadees, cuckoos, flickers, flycatchers, grosbeaks, hummingbirds, kinglets, martins, meadowlarks, nighthawks or bull bats, nuthatches, orioles, robins, shrikes, swallows, swifts, tanagers, titmice, thrushes, vireos, warblers, waxwings, whip-poor-wills, woodpeckers, and wrens, and all other perching birds which feed entirely or chiefly on insects.

5.3.1 Migratory Game and Non-Game Birds

Eighteen species of game and non-game migratory birds (Table 5.2) were documented in the vicinity of the Project during baseline waterfowl surveys (Stantec 2014a, 2017) or incidentally during other surveys in support of the Valentine Gold Project (Stantec 2014b, 2014c, 2015, 2018, 2019; Marathon 2020). One additional species, rock pigeon (*Columba livia*), was documented only during CBC surveys; this species is listed as SNA (not applicable) under AC CDC, indicating that a conservation status rank is not applicable because the species is not a suitable target for conservation activities. Of the 18 species of game and non-game migratory birds identified, one species observed during field surveys (Marathon 2020), Caspian tern (*Hydroprogne caspia*) (Figure 5.1), is considered a SOCC (bolded in Table 5.2).

Table 5.2 Migratory Game and Non-Game Bird Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
American Black Duck	*Anas rubripes*	S4	Baseline Studies, CBC	No
Canada Goose	*Branta canadensis*	S4	Baseline Studies	No
Common Goldeneye	*Bucephala clangula*	S4	Baseline Studies	No
Common Loon	*Gavia immer*	S5B, S4N	Baseline Studies, BBS	No
Common Merganser	*Mergus merganser*	S4	Baseline Studies, BBS	No
Green-winged Teal	*Anas crecca*	S4B, SUM	Baseline Studies	No
Mallard	*Anas platyrhynchos*	S3B, SUM	Baseline Studies	No
Red-breasted Merganser	*Mergus serrator*	S4B, S4M	Baseline Studies	No
Ring-necked Duck	*Aythya collaris*	S5B, S5M	Baseline Studies	No
Killdeer	*Charadius vociferus*	S3B, SUM	Baseline Studies	No
Wilson's Snipe	*Gallinago delicata*	S5B, S5M	Baseline Studies, BBS	No
Spotted Sandpiper	*Actitis macularius*	S4B, SUM	Baseline Studies, BBS	No
Greater Yellowlegs	*Tringa melanoleuca*	S3B, S4M	Baseline Studies, BBS	No
Herring Gull	*Larus argentatus*	S4	Baseline Studies, BBS	No
Caspian Tern	***Hydroprogne caspia***	**S2B, SUM**	**Baseline Studies**	**SOCC**
Common Tern	*Sterna hirundo*	S4B, SUM	Baseline Studies	No
American Bittern	*Botaurus lentiginosus*	S4B, SUM	Baseline Studies, BBS	No
Rock Pigeon	*Columba livia*	SNA	CBC	No

Notes:

[1] Data ranks provided by AC CDC in December 2020 (AC CDC 2020b). S2 = imperiled, due to a very restricted range, < 20 populations, steep declines, or other factors; S3 = vulnerable, due to a restricted range, < 80 populations, widespread declines, or other factors; S4 = apparently secure, uncommon but not rare; S5 = secure, common, widespread and abundant; SU = unrankable, more information needed; SNA = not applicable, not suitable target for conservation; B = Breeding; N = nonbreeding; M = Migrant (AC CDC 2021).

[2] Baseline Studies include field programs conducted for the Valentine Gold Project between 2013 and 2020; BBS = Breeding Bird Surveys; CBC = Christmas Bird Counts

[3] SAR = Species at Risk; SOCC = Species of Conservation Concern

Source: Adapted from Marathon (2020)

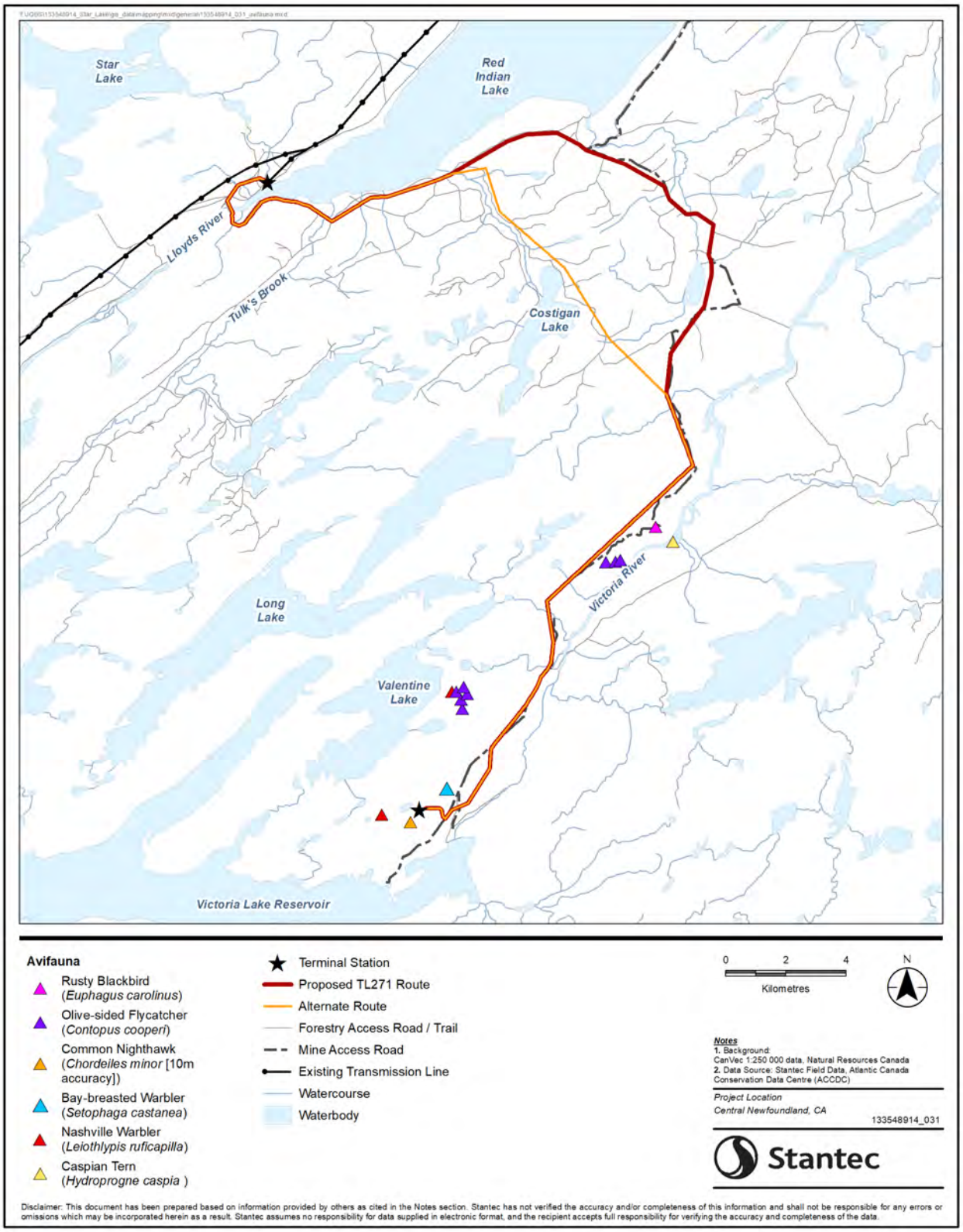

Figure 5.1 Known Locations of Avifauna SAR / SOCC in the Vicinity of the Project

5.3.2 Migratory Insectivorous Birds

Insectivorous migratory birds encompass a broad range of species that, as the name suggests, feed entirely or chiefly on insects. Of this group, species in the order Passeriformes (commonly known as perching birds) comprise the largest and most dominant group of birds, and most species likely to occur in or near the RoW fall within this classification. Other categories of migratory insectivorous birds reported in the vicinity of the Project include Woodpeckers, Swallows and Nightjars.

A total of 63 species of migratory insectivorous birds (Table 5.3) were confirmed in the vicinity of the Project during baseline studies in support of the Valentine Gold Project (Stantec 2014a, 2014b, 2014c, 2015, 2017, 2018, 2019b) and/or through historic records (i.e., BBS, CBC) (Marathon 2020). Six of these species are a SAR under SARA: common nighthawk (*Chordeiles minor*), olive-sided flycatcher (*Contopus cooperi*), red crossbill (*Loxia curvirostra*), bank swallow (*Riparia riparia*), gray-cheeked thrush (*Catharus minimus*) and evening grosbeak (*Coccothraustes vespertinus*). Two avifauna SOCC –Nashville warbler (*Leiothlypis ruficapilla*) and bay-breasted warbler (*Setophaga castanea*) – were also detected during baseline field surveys (Figure 5.1). Most species of migratory insectivorous birds would be expected to occur in suitable habitats in the Project RoW during the breeding season, apart from SAR / SOCC that have more limited distributions or are at the edge of their breeding range in the Project area. SAR / SOCC are bolded in Table 5.3 and are discussed in more detail in Section 5.5.

Table 5.3 Migratory Insectivorous Bird Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
Common Nighthawk	***Chordeiles minor***	**SNA**	**AC CDC, Baseline Studies**	**SARA Status: Threatened (Schedule 1); COSEWIC: Special Concern; NL ESA: Threatened**
Black-backed Woodpecker	*Picoides arcticus*	S4	BBS, Baseline Studies	No
Downy Woodpecker	*Dryobates pubescens*	S4	CBC, Baseline Studies	No
Hairy Woodpecker	*Dryobates villosus*	S4	BBS, CBC, Baseline Studies	No
Northern Flicker	*Colaptes auratus*	S4	BBS, Baseline Studies	No
Olive-sided Flycatcher	***Contopus cooperi***	**S3B, SUM**	**BBS, Baseline Studies**	**SARA Status: Threatened (Schedule 1); COSEWIC: Special Concern; NL ESA: Threatened**
Yellow-bellied Flycatcher	*Empidonax flaviventris*	S5B, S5M	BBS, Baseline Studies	No
Alder Flycatcher	*Empidonax alnorum*	S4B, SUM	BBS	No
Least Flycatcher	*Empidonax minimus*	S2S3?B, SUM	BBS, Baseline Studies	No
Northern Shrike	*Lanius borealis*	S3N, SUM	CBC	No

Table 5.3 Migratory Insectivorous Bird Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
Blue-headed Vireo	*Vireo solitarius*	S3B, SUM	BBS, Baseline Studies	No
Bank Swallow	***Riparia riparia***	**S1S2B, SUM**	**AC CDC**	**SARA Status: Threatened (Schedule 1); COSEWIC: Threatened**
Tree Swallow	*Tachycineta bicolor*	S4B, SUM	BBS, Baseline Studies	No
Black-capped Chickadee	*Poecile atricapillus*	S5	BBS, CBC, Baseline Studies	No
Boreal Chickadee	*Poecile hudsonicus*	S4	BBS, CBC, Baseline Studies	No
Red-breasted Nuthatch	*Sitta canadensis*	S5	BBS, Baseline Studies	No
Brown Creeper	*Certhia americana*	S3	Baseline Studies	No
Winter Wren	*Troglodytes hiemalis*	S3B, SUM	BBS	No
Golden-crowned Kinglet	*Regulus satrapa*	S5B, S4N, SUM	BBS, CBC, Baseline Studies	No
Ruby-crowned Kinglet	*Regulus calendula*	S5B, S5M	BBS, Baseline Studies	No
Gray-cheeked Thrush	***Catharus minimus***	**S2B, SUM**	**BBS**	**NL ESA Status: Threatened**
Swainson's Thrush	*Catharus ustulatus*	S5B, S5M	BBS, Baseline Studies	No
Hermit Thrush	*Catharus guttatus*	S5B, S5M	BBS, Baseline Studies	No
American Robin	*Turdus migratorius*	S5B, S5M	BBS, Baseline Studies	No
Bohemian Waxwing	*Bombycilla garrulus*	S4N, SUM	CBC	No
Cedar Waxwing	*Bombycilla cedrorum*	S4B, SUM	BBS	No
House Sparrow	*Passer domesticus*	SNA	BBS, CBC	No
Evening Grosbeak	***Coccothraustes vespertinus***	**S4**	**BBS, CBC**	**SARA Status: Special Concern; COSEWIC: Special Concern**
Pine Grosbeak	*Pinicola enucleator*	S5	BBS, CBC, Baseline Studies	No
Purple Finch	*Haemorhous purpureus*	S5	BBS	No
Common Redpoll	*Acanthis flammea*	S2S3B, S4N, SUM	BBS, CBC	No
Red Crossbill	***Loxia curvirostra***	**S1S2**	**BBS**	**SARA Status: Threatened (Schedule 1); COSEWIC: Threatened; NL ESA: Endangered**

Table 5.3 Migratory Insectivorous Bird Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
White-winged Crossbill	*Loxia leucoptera*	S5	BBS, Baseline Studies	No
Pine Siskin	*Spinus pinus*	S4S5	BBS, CBC, Baseline Studies	No
American Goldfinch	*Spinus tristis*	S5	BBS, CBC, Baseline Studies	No
Fox Sparrow	*Passerella iliaca*	S5B, S5M	BBS, Baseline Studies	No
American tree Sparrow	*Spizelloides arborea*	S3B, SUM	CBC	No
Dark-eyed junco	*Junco hyemalis*	S5	BBS, CBC, Baseline Studies	No
White-crowned Sparrow	*Zonotrichia leucophrys*	S4B, SUM	Baseline Studies	No
White-throated Sparrow	*Zonotrichia albicollis*	S5B, S5M	BBS, CBC, Baseline Studies	No
Vesper Sparrow	*Pooecetes gramineus*	SNA	Baseline Studies	No
Savannah Sparrow	*Passerculus sandwichensis*	S5B, S5M	BBS, Baseline Studies	No
Song Sparrow	*Melospiza melodia*	S4B, SUM	Baseline Studies	No
Lincoln's Sparrow	*Melospiza lincolnii*	S5B, S5M	BBS, Baseline Studies	No
Swamp Sparrow	*Melospiza georgiana*	S5B, S5M	BBS, Baseline Studies	No
Ovenbird	*Seiurus aurocapilla*	S3B, SUM	BBS, Baseline Studies	No
Northern Waterthrush	*Parkesia noveboracensis*	S5B, S5M	BBS, Baseline Studies	No
Black-and-white Warbler	*Mniotilta varia*	S5B, S5M	BBS, Baseline Studies	No
Tennessee Warbler	*Leiothlypis peregrina*	S4B, SUM	BBS	No
Nashville Warbler	***Leiothlypis ruficapilla***	**S2B, SUM**	**BBS, Baseline Studies**	**SOCC**
Mourning Warbler	*Geothlypis philadelphia*	S4B, SUM	BBS, Baseline Studies	No
Common Yellowthroat	*Geothlypis trichas*	S5B, S5M	BBS, Baseline Studies	No
American Redstart	*Setophaga ruticilla*	S5B, S5M	BBS, Baseline Studies	No
Magnolia Warbler	*Setophaga magnolia*	S4B, SUM	BBS, Baseline Studies	No
Bay-breasted Warbler	***Setophaga castanea***	**S2B, SUM**	**BBS, Baseline Studies**	**SOCC**

Table 5.3 Migratory Insectivorous Bird Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
Yellow Warbler	*Setophaga petechia*	S5B, S5M	BBS, Baseline Studies	No
Blackpoll Warbler	*Setophaga striata*	S5B, S5M	BBS, Baseline Studies	No
Palm Warbler	*Setophaga palmarum*	S5B, S5M	BBS, Baseline Studies	No
Pine Warbler	*Setophaga pinus*	SNA	Baseline Studies	No
Yellow-rumped Warbler	*Setophaga coronata*	S5B, S5M	BBS, Baseline Studies	No
Black-throated green Warbler	*Setophaga virens*	S5B, S5M	BBS, Baseline Studies	No
Wilson's Warbler	*Cardellina pusilla*	S5B, S5M	BBS, Baseline Studies	No
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	SNA	CBC	No

Notes:

[1] Data ranks provided by AC CDC in December 2020 (AC CDC 2020b). S1 = critically imperiled, due to extreme rarity, ≤ 5 individuals, steep declines, or other factors; S2 = imperiled, due to a very restricted range, < 20 populations, steep declines, or other factors; S3 = vulnerable, due to a restricted range, < 80 populations, widespread declines, or other factors; S4 = apparently secure, uncommon but not rare; S5 = secure, common, widespread and abundant; S#S# = indicates a range of uncertainty of the status of a species; SU = unrankable, more information needed; SNA = not applicable, not suitable target for conservation; B = Breeding; N = nonbreeding; M = Migrant (AC CDC 2021).

[2] Baseline Studies include field programs conducted for the Valentine Gold Project between 2013 and 2020; BBS = Breeding Bird Surveys; CBC = Christmas Bird Counts

[3] SAR = Species at Risk; SOCC = Species of Conservation Concern

SAR / SOCC are reported in **bold** text

Source: Adapted from Marathon (2020)

5.4 OTHER AVIFAUNA SPECIES

Species included in the Other Avifauna category are those species (excluding raptors) that are not protected under the MBCA. While the MBCA affords protection to majority of the native bird species expected to occur in the vicinity of the RoW, some species not protected by the MBCA are protected under the NL ESA and/or the NL *Wild Life Act*.

Three species of Upland Gamebirds: ruffed grouse (Bonasa umbellus), spruce grouse (*Falcipennis canadensis*), and willow ptarmigan (*Lagopus lagopus*); four species of Corvids: Canada jay (*Perisoreus canadensis*), blue jay (*Cyanocitta cristata*), American crow (*Corvus brachyrhynchos*) and common raven (*Corvus corax*); as well as European starling (*Sturnus vulgaris*) and rusty blackbird (*Euphagus carolinus*), are likely to occur in the vicinity of the RoW, based on confirmation of their occurrence in the area during baseline studies conducted for the Valentine Gold Project (Stantec 2014a, 2014b, 2014c, 2015, 2017b, 2018, 2019b) and BBS or CBC surveys (Table 5.4; Marathon 2020). Rusty blackbird is *a* SAR listed as Special Concern on Schedule 1 of SARA and by COSEWIC, and as Vulnerable under the NL ESA)

Table 5.4 Other Avifauna Species Reported in the Vicinity of the Project

Common Name	Scientific Name	AC CDC Rank[1]	Data Source[2]	SAR / SOCC[3]
Ruffed Grouse	*Bonasa umbellus*	SNR	BBS, Baseline Studies	No
Spruce Grouse	*Falcipennis canadensis*	SNA	CBC, Baseline Studies	No
Willow Ptarmigan	*Lagopus lagopus*	S5	CBC, Baseline Studies	No
Belted Kingfisher	*Megaceryle alcyon*	S4B, S3N, SUM	BBS, Baseline Studies	No
Canada Jay	*Perisoreus canadensis*	S5	BBS, CBC, Baseline Studies	No
Blue Jay	*Cyanocitta cristata*	S5	BBS, CBC	No
American Crow	*Corvus brachyrhynchos*	S5	BBS, CBC, Baseline Studies	No
Common Raven	*Corvus corax*	S5	BBS, CBC, Baseline Studies	No
European Starling	*Sturnus vulgaris*	SNA	BBS, CBC	No
Rusty Blackbird	***Euphagus carolinus***	**S2S3B, SUM**	**BBS, Baseline Studies**	**SARA Status: Special Concern (Schedule 1); COSEWIC: Special Concern; NL ESA: Vulnerable**

Notes:

1 Data ranks provided by AC CDC in December 2020 (AC CDC 2020b). S2 = imperiled, due to a very restricted range, < 20 populations, steep declines, or other factors; S3 = vulnerable, due to a restricted range, < 80 populations, widespread declines, or other factors; S4 = apparently secure, uncommon but not rare; S5 = secure, common, widespread and abundant; S#S# = indicates a range of uncertainty of the status of a species; SU = unrankable, more information needed; SNA = not applicable, not suitable target for conservation; SNR = unranked, not yet assessed; B = Breeding; N = nonbreeding; M = Migrant (AC CDC 2021).

2 Baseline Studies include field programs conducted for the Valentine Gold Project between 2013 and 2020; BBS = Breeding Bird Surveys; CBC = Christmas Bird Counts

3 SAR = Species at Risk; SOCC = Species of Conservation Concern

SAR / SOCC are reported in **bold** text

Source: Adapted from Marathon (2020)

5.5 AVIFAUNA SAR / SOCC

Avifauna SAR and SOCC identified during baseline field surveys for the Valentine Gold Project and/or other publicly available data sources are summarized in Table 5.5 and discussed below. Those avifauna SAR and SOCC that are most likely to occur in suitable habitats in the Project Area during the migratory bird breeding season are highlighted in the table (bold text).

Table 5.5 Summary of Avifauna SAR / SOCC and their Occurrence in the Vicinity of the Project

Common Name	Scientific Name	Legal Status	Occurrence in the Vicinity of the Project	Data Sources
SAR				
Common Nighthawk	*Chordeiles minor*	Threatened (SARA & NL ESA); Special Concern (COSEWIC); SNA (AC CDC)	One record in RAA. Known to breed only in S. Labrador and considered an uncommon visitor to Newfoundland.	Marathon Gold (2020), AC CDC (2020), Government of NL n.d.
Olive-sided Flycatcher	***Contopus cooperi***	**Threatened (SARA & NL ESA); Special Concern (COSEWIC); S3B, SUM (AC CDC)**	**Twelve records in the RAA (2011 and 2019 surveys)**	**Marathon Gold (2020), BBS**
Bank Swallow	*Riparia riparia*	Threatened (SARA & COSEWIC); S1S2B, SUM (AC CDC)	One record reported near Buchans. Occasional sightings throughout the island but breeding generally restricted to SW Newfoundland.	AC CDC (2020), Warkentin and Newton (2009)
Gray-cheeked Thrush	***Catharus minimus***	**Threatened (NL ESA), S2B, SUM (AC CDC)**	**Observed along BBS NL 5704 route in Buchans, most recently in 2002. Most common in northern areas in Newfoundland, and the Avalon Peninsula.**	**Marathon Gold (2020), BBS, Warkentin and Newton (2009)**
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern (SARA & COSEWIC); S4 (AC CDC)	Recorded during winter in Buchans, most recently in 2007. Mainly occurs during winter, and then typically occurs in SE Newfoundland.	Marathon Gold (2020), CBC, Warkentin and Newton (2009)
Red Crossbill	***Loxia curvirostra***	**Threatened (SARA & COSEWIC); Endangered (NL ESA); S1S2 (AC CDC)**	**One individual recorded on BBS NL 5704 route in Buchans in 1984. Prefers mature coniferous forests.**	**Marathon Gold (2020), BBS, Warkentin and Newton (2009)**
Rusty Blackbird	***Euphagus carolinus***	**Special Concern (SARA & COSEWIC); Vulnerable (NL ESA); S2S3B, SUM (AC CDC)**	**Incidental sightings throughout much of insular Newfoundland. Three individuals recorded in RAA.**	**Marathon Gold (2020), BBS, Wildlife Division (2020)**

Table 5.5 Summary of Avifauna SAR / SOCC and their Occurrence in the Vicinity of the Project

Common Name	Scientific Name	Legal Status	Occurrence in the Vicinity of the Project	Data Sources
SOCC				
Caspian Tern	*Hydroprogne caspia*	S2B, SUM (AC CDC)	One (solitary) record in RAA. Typically breeds in colonies on islands in large lakes or on offshore islands. Unlikely that the single observation represents a breeding attempt in the area.	Marathon Gold (2020), Dunn and Alderfer (2017), Warkentin and Newton (2009)
Nashville Warbler	*Leiothlypis ruficapilla*	S2B, SUM (AC CDC)	Two records in RAA. At the northern most distribution of its breeding range (irregular occurrence in NL).	Marathon Gold (2020), Dunn and Alderfer (2017)
Bay-breasted Warbler	*Setophaga castanea*	S2B, SUM (AC CDC)	One record in RAA. At the northern most distribution of its breeding range (irregular occurrence in NL).	Marathon Gold (2020), Dunn and Alderfer (2017)

Notes:

1 ACCDC ranks: SNA = not applicable / status not assessed; SU = unrankable (more information needed); S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; B = breeding; M = migrant

2. Marathon Gold field data include baseline programs from 2013-2020; BBS = Breeding Bird Surveys; CBC = Christmas Bird Counts

3. Species indicted in bold are most likely to occur in suitable habitats in the Project Area during the migratory bird breeding season.

6.0 PROPOSED MITIGATION MEASURES

There are three levels of mitigation measures to be implemented with this AMP:

- Level I - designed to reduce the likelihood of interaction during clearing and other construction and operation activities
- Level II – considerations personnel should be aware of that may incidentally identify an active nest
- Level III – protocols for aerial and ground avifauna surveys that should be completed by surveyors in areas of potential habitat within or near the Project footprint

Procedures for active nests, if discovered, are described in Section 7.0.

6.1 LEVEL I PROTECTION – GENERAL MITIGATION MEASURES

General mitigation measures will be implemented to reduce the effects of construction on all species of wildlife, including avifauna:

- Do not disturb, move or destroy migratory bird nests. If a nest or young birds are encountered, cease work in the immediate area of the nest. Work shall not continue in the area until the nest is no longer occupied, otherwise the work plan shall be modified to avoid nest sites by a minimum buffer distance as outlined in Section 7.0).
- Execute tree and vegetation clearing activities in a manner that complies with the MBCA and SARA, specifically to avoid incidental harm to birds.
- Primary mitigation during the bird breeding season is achieved through Project planning and scheduling of clearing activities, on a best-efforts basis, to avoid the breeding season of April 1 to August 31. NL Hydro will take due diligence related to nest searches and established buffers during breeding season (Level 3 Protection).
- Avoid disturbance and / or the clearing of sensitive wildlife areas during all clearing.
- Implement no harvesting policy and other harassment of wildlife, and no possession of firearms or pets by Project personnel.
- Implement environmental awareness training and conduct regular briefings for all personnel.
- Trained and experienced environmental monitors to implement the EPP.
- Use existing roads, quarries and other disturbed areas, where possible.
- Restrict public access to temporary roads and work areas.
- Post and enforce speed limits.
- Rehabilitate work areas and access roads no longer required in accordance with the EPP to encourage re-formation of natural conditions.
- Undertake blasting in accordance with permits and standard procedures.
- Use existing right-of-way corridors for construction of transmission lines where possible.
- Schedule activities related to transmission line construction around sensitive periods or areas, to the extent practical.
- Should high risk areas be identified during the course of operations, consider installing avian avoidance devices to minimize bird collisions with Project infrastructure.

6.2 LEVEL 2 PROTECTION – GENERAL AWARENESS MITIGATION MEASURES

The disturbance footprint for the Project will include potential nesting habitat for many migratory bird species (ground, tree, and shrub nesters). The presence of natural upland and wetland habitat in the disturbance footprint increases the chances of the presence of a nesting migratory bird species onsite. On-site staff and contractor staff will review the following information that outlines basic nesting behaviours to identify potential avifauna nests and procedures to follow if encountered.

Nests could be located in trees or shrubs or on the ground. An active nest can be identified by:

- the presence of birds or eggs in a nest
- adult birds carrying food or nesting materials to a specific location
- adult birds defending territory, through singing, screeching, or diving

When one or more of these indicators are noted, measures should be undertaken to identify if the potential location of the nest is in the disturbance footprint or within a recommended setback buffer. If the nest is not physically detected, the area will be considered a potentially active nest and have a recommended setback buffer.

6.3 LEVEL 3 PROTECTION – DIRECTED SURVEY PROTOCOLS

In the event that clearing and or grubbing needs to occur during the bird breeding season, trained surveyors (e.g., an ornithologist, qualified biologist, or individuals specifically trained to identify nests and nesting behaviours) will survey the potential habitat in advance of clearing activities to identify active avifauna nests (secondary mitigation). These surveys can include activity surveys of known raptor nests, aerial search for additional nests (either previously unknown raptor nests or nest of other species), and ground surveys to identify breeding migratory bird species within the areas.

Aerial Surveys

Helicopter surveys for active raptor (Landbird) nests will be completed during late May through early June of the area of interest. Results will be reported to Avifauna coordination personnel, and Construction Managers who will communicate findings to the On-site Environmental Monitors (OSEMs).

Ground Surveys

Trained surveyors will complete ground searches for avifauna nests approximately from 1 April to 31 August, though this is dependent on regional conditions and could change season to season. The surveys will be conducted <7 days prior to clearing activities. This may be adjusted later in the nesting season. The census techniques will vary according to habitat but will be based on 100% coverage of the area of interest. Crews of varying sizes will walk transects, usually approximately 10 m apart.

Active and potentially active nests will be identified using the criteria identified above (Section 6.2) and locations and mitigation measures communicated to the Construction Manager who will communicate to the OSEMs. The area of interest will only be cut after the survey team has cleared the area after completing their search. No cutting will be permitted until the survey team has returned to a buffered area to confirm fledging within the appropriate timeframe for the species in question found at the active nest. Note that an experienced avifauna biologist will be available for assistance and consultation following the initial surveys and throughout the identified period for the project.

In addition, personnel will be instructed in the identification of such nests that may be readily visible or well concealed. It is therefore important to be aware of behavioural cues that suggest the presence of an active nest, even if it cannot be seen. These include singing males, pairs observed together (including courtship and copulation), adult birds repeatedly carrying nest materials or foods to a specific location, aggressive defense of a location (against other birds or people), or the presence of recently fledged birds (often with some tufts of down feathers remaining or begging persistently for food). Table 6.1 provides an overview of the types of nests that may be expected within the Project area.

Table 6.1 Identification of Active Avifauna Nests

Nest Type	Location	Typical Species	Notes
Open cup – small nests woven from coarse plant fibres such as grass stems, leaves and bark strips	Usually in shrubs or trees, but can be on the ground; depends on foraging and shelter preferences of species	Flycatchers, vireos, thrushes, warblers, sparrows, finches, blackbirds	Often concealed in forks of trees, within shrubs, or under overhanging forbs or other dense vegetation; difficult to see in trees
Domed - ground nests with grasses or other vegetation used to cover the nest, leaving an entrance hole on one side	Ground	Some warblers and sparrows	Often well camouflaged and difficult to detect; best found through behavioural cues
Bank – burrows in sandy slopes	Sand banks, especially along rivers	Bank Swallow, Belted Kingfisher	Usually the nest holes can be seen from a distance; bird activity is easy to monitor from a distance
Cavity – excavated inside a rotting trunk or stump	On the main trunk of living or dead trees	Woodpeckers, chickadees, nuthatches, Tree Swallow	Used by different species over time; look for woodpecker activity (holes and missing bark) on nearby trees
Stick – large nest made of small to large sticks, lined with bark and grasses	On or near the top of large trees	Osprey, Bald Eagle, Great Horned Owl, Common Raven	Visible from the air, difficult to detect from below; nest may be built by one species and then adopted by another; often used for several years
Scrape – lightly excavated depression on the ground, often lined with grasses, down, or other material from nearby	Wetland edges	Dabbling ducks, geese, shorebirds	Well concealed; females may remain on nest hoping that their plumage provides good camouflage (better than allowing the eggs to be visible)
Floating – clumps of aquatic vegetation upon which a loose cup platform is built	Over water, often in sheltered part of a wetland	Waterfowl	Relatively poorly constructed and can look like a naturally occurring clump of vegetation
Source: The Cornell Lab of Ornithology 2012 Available: http://www.allaboutbirds.org/Page.aspx?pid=1189			

7.0 PROCEDURES FOR ACTIVE NESTS

If a potentially active nest has been identified during pre-construction surveys, or is incidentally identified during construction, a setback buffer needs to be established around the nest site to ensure no further disturbance of the nesting migratory species occurs. Setback distance for nests of species not of management concern is 30 m for passerine nests and 100 m for waterfowl/waterbird nests. Any adjustments to the recommended setback buffers need to be discussed with the appropriate regulatory body. The buffer will remain in place until the young have permanently left the nest. Recommended buffers are presented below in Table 7.1.

Table 7.1 Recommended Avifauna Buffer Zones

Activity	Environmental Receptor	Recommended Width (m) of Buffer
Clearing or other work activity causing noise disturbance	Active raptor nest	800 m (April 1 to August 31) 200 m (remainder of year)
Clearing/construction	Active waterfowl/waterbird nests (species not of management concern)	100 m
Clearing/construction	SAR and SOCC	75 m
Clearing/construction	Active passerine nests (species not of management concern)	30 m

In forested and non-forested habitats, flagging or other suitable marking should be used to mark the outer boundary of the buffers with appropriate direction and bearing recorded in the field notes. If an occupied nest is discovered on or adjacent to the disturbance footprint during construction, activities within the minimum buffer zone (Table 7.1) should not occur until the environmental monitor has been notified by the Construction Manager. Once the environmental monitor is notified, a wildlife monitor will be dispatched to the site (if not already present) to identify the nest or bird species and determine the appropriate mitigation in consultation with the Construction Manager and appropriate TL271 personnel. If a nest is found adjacent to an existing trail, vehicles will be allowed to continue using the trail but will be prohibited from stopping within the recommended setback buffer. Further mitigation to protect songbird and waterfowl nests is provided in Appendix A, Section A.1.

7.1 AVOIDANCE OF ACTIVE RAPTOR NESTS

Mitigation for known active raptor nests include:

- Replace physically disturbed Osprey or Bald Eagle nests with artificial platforms;
- Restrict activities within 200 m of active raptor nests outside of breeding season; and
- Restrict clearing within 800 m of active raptor nest during breeding season.

Further mitigation to protect raptors is presented in Appendix A, Section A.2.

7.2 PROTOCOL FOR REMOVING EXCLUSION AREAS

In order to reduce the potential for nest abandonment or failure, monitoring or rechecking of an identified active nest will occur after the estimated completion of the fledging period (or when the young have left the nest). Depending on the nesting stage (i.e., incubating or fledging) observed during the nest search, the timing of follow-up nest checks will be determined using literature-based estimates of the species-specific incubation and fledging periods (i.e., approximate number days for incubation and/or fledging to be completed). Inactive raptor nests will be relocated, as required, to support construction activities.

8.0 REPORTING

NL Hydro will institute a series of reporting and documentation initiatives regarding activities and results related to the scope of this AMP. On a daily basis, a suitable form would be completed by the OSEM and/or on-site survey team member during approximately April 1 to August 31 (and as appropriate thereafter regarding avifauna) documenting the following:

- Instance of personnel briefing and training;
- Results of dedicated aerial survey for tree-nesting raptors or ground surveys for other nesting avifauna;
- Locations of any active nests and mitigation measures implemented to address potential incidental take;
- Documentation that such nests are no longer active (i.e., post-fledging) before proceeding with construction activities; and
- Documentation of all communications with appropriate federal and provincial authorities.

These daily reports will be kept onsite with active nests identified in subsequent daily briefings and other notifications regarding stated avoidance measures.

9.0 REFERENCES

9.1 CITED WORKS

Environment Canada. 1991. Birds protected in Canada under the Migratory Birds Convention Act. Occasional Paper Number 1. Canadian Wildlife Service. Available at: http://publications.gc.ca/collections/collection_2011/ec/CW69-1-1-1991.pdf. Accessed on: 7 January 2022.

Government of Canada. 1994a. Migratory Birds Convention Act, 1994. Available at: http://laws-lois.justice.gc.ca/eng/acts/M-7.01/page-1.html. Accessed on: 7 January 2022.

Government of Canada. 1994b. Migratory Birds Regulations, 1994. Available at: http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1035/page-1.html. Accessed on: 7 January 2022.

Government of Canada. 2002. Species at Risk Act, 2002. Available at: http://laws-lois.justice.gc.ca/eng/acts/S-15.3/page-1.html. Accessed on: 7 January 2022.

Government of Newfoundland and Labrador. 2004. Endangered Species Act, 2004. Available at: http://www.assembly.nl.ca/Legislation/sr/statutes/e10-1.htm#31_. Accessed on: 7 January 2022.

Government of Canada. 2012. Species at Risk Schedule 1 – List of Wildlife Species at Risk. Available at: https://laws.justice.gc.ca/eng/acts/S-15.3/page-10.html#h-435647

NLFFA (Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture). nd. Species at Risk: Birds. Available at:https://www.gov.nl.ca/ffa/wildlife/endangeredspecies/birds/. Accessed on: 7 January 2022.

Stantec (Stantec Consulting Ltd.). 2014a. 2011 Baseline Waterfowl and Waterfowl Habitat Study Valentine Lake Project. Final report prepared for Marathon Gold Corporation, August 13, 2014. 7 pp + Appendices.

9.2 PERSONAL COMMUNICATION

Gahbauer, M. Senior Wildlife Biologist, Stantec Consulting Ltd. Correspondence with Environment Canada in 2009.

APPENDIX A

NEST PROTECTION PROCEDURES

Appendix A NEST PROTECTION PROCEDURES

A.1 SONGBIRD AND WATERFOWL NESTS

Setback distance for nests of species of management concern is 75 m, 30 m for passerine nests and 100 m for waterfowl/waterbird nests. Any adjustments to the recommended setback buffers need to be discussed with the appropriate regulatory body.

In forested and non-forested habitats, flagging is used to mark the buffers with appropriate direction and bearing recorded in the field notes. If an occupied nest is discovered on or adjacent to the disturbance footprint during construction, activities within a minimum of 30 m from the nest should not occur until the OSEM hasbeen notified by the Construction Manager. Once the OSEM is notified, a wildlife monitor will be dispatched to the site (if not already present) to identify the nest or bird species and determine the appropriate mitigation in consultation with the Construction Manager and appropriate TL 271 personnel. If a nest is found adjacent to an existing trail, vehicles will be allowed to continue using the trail but will be prohibited from stopping within the recommended setback buffer.

Protocol for Removing Exclusion Areas

To reduce the potential for nest abandonment or failure, monitoring or rechecking of an identified active nest will occur after the estimated completion of the fledging period (or when the young have left the nest). Depending on the nesting stage (i.e., incubating or fledging) observed during the nest search, the timing of follow-up nest checks will be determined using literature-based estimates of the species-specific incubation and fledging periods (i.e., approximate number days for incubation and/or fledging to be completed). Inactive raptor nests will be relocated, as required, to support construction activities.

Protocol for Songbird Nests in Areas of Critical Infrastructure

If a nest exists in an area in which the nest buffer cannot be avoided during the nesting season, the following protocol will apply:

1. On-site construction management will contact the OSEM to confirm the necessity of interacting with the identified buffer.
2. Avifauna teams will be directed to return to the nest location and confirm the exact location of the nest.
3. The following options will be confirmed by the On-Site Environmental Representative depending on certain factors (e.g., species, time of year, egg presence):
    a. Reduce buffer
    b. Maintain buffer
    c. Attempt relocation if permits can be obtained

A.2 RAPTOR NESTS

The TL 271 Environmental Protection Plan indicates the following measures for raptor nests:

- Replace physically disturbed nests with artificial platforms.
- Restrict activities within 200m of active raptor nests outside of breeding season.
- Restrict clearing within 800 m of active raptor nest during breeding season.

The following measures are proposed to limit the impact of construction on raptor nests:

Active raptor nest within RoW at accessible location:

1. Create bypass trail with a 100 m buffer on the nest. This bypass should be expedited to limit interaction with the nest within the 800 m buffer.
2. Constant monitoring of the nest is required during bypass construction. If the bird appears to be in danger of vacating the nest, construction should be delayed until bird settles on the nest.
3. Nest can be relocated and the tree and buffer can be cleared following the nesting season, as per conditions of the *Wild Life Act* permit and procedures discussed with NL Hydro environmental personnel.

Active raptor nest within RoW at remote location or where bypass is not feasible

1. Clear up to nest with constant monitoring. If the bird is in danger of vacating the nest, construction should be delayed until bird re-settles on the nest.
2. Nest will have to be relocated with consultation of ornithologist to a nearby location accessible by appropriate equipment (i.e., excavator). Relocation to utilize active relocation procedures as discussedwith NL Hydro environmental personnel.
3. Nest can then be cleared with constant monitoring of the relocated nest. This clearing should be expedited to limit interaction with nest and increase probability of successful relocation.
4. Follow up and monitoring protocol to be implemented to confirm successful relocation.

APPENDIX D

WATERCOURSE CROSSING DATA

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-001	5377687N, 483957E	Both	Perennial	3	1	Gr, Co, Bo	Trees	Can avoid crossing	Ford site full of boulders. Fording possible but can also travel in from access road
WC-002	5377495N, 483809E	Both	Overland	n/a	n/a	n/a	n/a	n/a	No water observed/ no issue crossing here
WC-003	5377455N, 483778E	Both	Perennial	1	<0.5	Sa, Gr, Co, Bo	Trees	Ford	No issue fording. Hard bottom, low embankments
WC-004	5377326N, 483682E	Both	Ephemeral	n/a	n/a	Co, Bo	Shrubs	Ford	No water at this location at time of assessment. Looks like it may flow during spring runoff/ high precipitation events.
WC-005	5376932N, 483613E	Both	Perennial	50	>2	n/a	Trees	Can avoid crossing	Lloyd's River. No ford at this location
WC-006	5376810N, 483665E	Both	Overland	n/a	n/a	n/a	Trees	n/a	No water at this location but all bog that spans ~50 meters south along road from this point. Will require crib material depending on structure location and also mitigation.
WC-007	5376365N, 483817E	Both	Perennial	3 - 3.5	<0.5	Co, Bo	Shrubs	Can avoid crossing	Steep embankments at this location. Recommended travel on adjacent road to avoid having to ford.
WC-008	5376349N, 483854E	Both	Overland	n/a	n/a	n/a	Shrubs	n/a	No water during time of assessment. Possibly flows during spring runoff and high precipitation events.

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-009	5376346N, 483860E	Both	Overland	n/a	n/a	n/a	Shrubs	n/a	No water during time of assessment. Possibly flows during spring runoff and high precipitation events.
WC-010	5376343N, 483899E	Both	Overland	n/a	n/a	n/a	Shrubs	n/a	Very little to no water during time of assessment. Possibly flows during spring runoff and high precipitation events.
WC-011	5376482N, 484155E	Both	Perennial	~1	<0.5	Sa, Gr, Co	Shrubs	Can avoid crossing	Very small slow moving brook. Steep but small moss covered embankments. WC11 and WC12 flow into one brook near the road.
WC-012	5376504N, 484171E	Both	Perennial	~1	<0.5	Sa, Gr, Co	Trees	Can avoid crossing	Very small slow moving brook. Steep but small moss covered embankments. WC11 and WC12 flow into one brook near the road.
WC-013	5376651N, 484279E	Both	Overland	n/a	n/a	Co	Shrubs	n/a	No water during time of assessment. Possible flow during spring thaw and high precipitation events.
WC-014	5377001N, 484538E	Both	Perennial	~1	<0.5	Co, Bo	Shrubs	Can avoid crossing	Big boulders/ uneven ground at this location. Looks to be flashy at times.
WC-015	5377219N, 485257E	Both	Perennial	~1	<0.5	Co, Bo	Shrubs	Ford	Hard bottom, sloped embankments. No issues fording at this location.

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-016	5377186N, 485354E	Both	Overland	n/a	n/a	Co, Bo, Gr	Shrubs	n/a	No water during time of assessment. Possibly flows during spring runoff and high precipitation events.
WC-017	5377169N, 485432E	Both	Perennial	~2	<0.5	Co, Gr	Trees	Ford	No issue crossing at this location. Can also avoid crossing by travelling adjacent road.
WC-018	5376557N, 486851E	Both	Perennial	~40	>1	Gr, Co	Trees	n/a	Tulk's Brook. No ford here. Assumed scheduled salmon river.
WC-019	5377223N, 488068E	Both	Perennial	~4	<1	Sa, Gr, Co	Shrubs/ Trees	Ford/ Can avoid crossing	Not a great ford site, however road is ~100 m from ROW here. Steep embankments and it looks to be a flashy system.
WC-020	5377318N, 488825E	Both	Perennial	~3	<0.5	Sa, Gr, Co	Shrubs	Ford/ Can avoid crossing	Hard bottom, good embankments. No issue fording at this location, however crews can also travel the adjacent road.
WC-021	5378021N, 490896E	Both	Overland	~3 - 4	n/a	n/a	Shrubs	n/a	No ford here - possible deep bog
WC-022	5378099N, 491077E	Both	Perennial	15-20	<1	Co, Bo	Shrubs, Trees	Can avoid crossing	No ford here – Can travel in and out from access road here. Assumed Scheduled Salmon River.

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
AR-01	5378481N, 491603E	Proposed	Perennial	1	0.1	Gr, Co	Shrubs	Can avoid crossing	The right of way is next to the road here so fording should not be required. No issue.
AR-02	5379202N, 492960E	Proposed	Perennial	1	0.1	Gr, Co	Grass/ Shrubs/Trees	Can avoid crossing	The right of way is next to the road here so fording should not be required. No issue.
AR-03	5379069N, 495140E	Proposed	Perennial	1	0.2	Sa, Gr	Shrubs	Can avoid crossing	If this ford site is to be used it will require mitigation due to the composition of the banks
AR-04	5378737N, 495737E	Proposed	Perennial	2.5	0.2	Sa, Gr, Co	Shrubs	Can avoid crossing	
AR-05	5377321N, 498157E	Proposed	Perennial	1	0.2	Gr, Co	Shrubs	Can avoid crossing	
AR-05A	5377310N, 498166E	Proposed	Perennial	1	0.2	Gr, Co	Shrubs	Can avoid crossing	AR 05A is a stream that flows out of AR 05. It isn't on a topo map but is a fish bearing stream
AR-06	5375076N, 499627E	Proposed	Perennial	3	0.3	Gr, Co	Shrubs	Can avoid crossing	This is a fordable site but there is a bridge nearby so fording should not be necessary

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
AR-07	5375820N, 499272E	Proposed	Perennial	9	0.5	Cl, Sa, Gr	Shrubs	Can avoid crossing	This site will require significant mitigation to make it an acceptable crossing. Fording without mitigation is not recommended. NOTE: Following field assessment, the route was updated to realign more closely with the mine access road in this location to avoid a new crossing through area. AR-07 can now be crossed using the existing road crossing.
WC-034	5370239N, 498319E	Both	Perennial	~3	<0.5	Sa, Gr	Shrubs	Ford	All blowdowns surrounding ford site. Ok ford site.
WC-035	5366895N, 497464E	Both	Overland	n/a	n/a	n/a	n/a	Ford	No established waterbody found during assessment. Possibly flows during spring thaw/ high precipitation events. Hard organic bottom
WC-036	5366695N, 497247E	Both	Overland	n/a	n/a	n/a	Grass	Ford	Bog drainage. ~10 m span of bog. Organic bottom
WC-036a	n/a	Both	Perennial	<0.5	<0.5	n/a	Shrubs	Ford	No flow/ stagnant water. Possibly flows during spring thaw/ high precipitation events.
WC-037	5366460N, 496994E	Both	Overland	n/a	n/a	Co	Shrubs	Ford	Very low flow/ stagnant water.

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-037a	n/a	Both	Perennial	<0.5	<0.5	n/a	n/a	Ford	Very low flow/ stagnant water. Organic bottom
WC-038	5366045N, 496545E	Both	Overland	n/a	n/a	n/a	Shrubs	Ford	No water/ no sign of prominent waterbody. May flow during spring thaw/ high precipitation events.
WC-039	5365730N, 496205E	Both	Overland	n/a	n/a	n/a	Shrubs	Ford	No water/ no sign of prominent waterbody. May flow during spring thaw/ high precipitation events.
WC-040	5365017N, 495434E	Both	Overland	n/a	n/a	n/a	Shrubs	Ford	No established/ intermediate stagnant waterbodies. May flow during spring thaw/ high precipitation events.
WC-041	5364574N, 494958E	Both	Perennial	~1	~0.5	Gr, Co, Bo	Trees	Ford	
WC-042	5363526N, 494209E	Both	Perennial	15-20	~1.0	Co, Bo	Shrubs	Can avoid crossing	Fast Flowing. No need to ford as it is adjacent to bridge/road.
WC-043	5363093N, 494297E	Both	Perennial	<1	<0.5	n/a	Shrubs	Ford	No issue fording here. Heavily vegetated. Organic bottom, may require mitigation in area.
WC-044	5362889N, 494347E	Both	Overland	n/a	n/a	n/a	Trees	Ford	Shallow bog drainage. No issue. Organic Bottom.

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-045	5362442N, 494368E	Both	Perennial	~1-2	<0.5	Gr, Co	Shrubs	Ford	Good hard bottom, low flow, shallow embankments. No issue fording here, can also avoid by travelling adjacent road.
WC-046	5361695N, 494234E	Both	Perennial	~3	<0.5	Gr, Co	Shrubs	Can avoid crossing	Steep embankments. Not a good ford site. Not a good ford site due to steep embankments, however adjacent road is ~75 m from the ROW here.
WC-049	5356862N, 490724E	Both	Overland	n/a	n/a	Cl, Sa, Bo	Grass	Ford	Small bog drainage
C0020	5358391 N, 492241E	Both						Can avoid crossing	Adjacent to realignment of mine access road to be completed for the Valentine Gold Project; crossing was surveyed for the Valentine Gold Project and found no fish habitat
C001b	5357107N, 491431E	Both		3.7	0.12	Cobble/Rubble	Trees	Can avoid crossing	Adjacent to realignment of mine access road to be completed for the Valentine Gold Project; crossing was surveyed for the Valentine Gold Project and fish habitat confirmed present

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
C0017	5356843N, 490978E	Both						Can avoid crossing	Adjacent to realignment of mine access road to be completed for the Valentine Gold Project; crossing was surveyed for the Valentine Gold Project and found no fish habitat
C0016a	5357188N, 490218E	Both		1.37	0.05	Fines	Grass	Can avoid crossing	Primarily wetland drainage - connectivity only during very high flows through wetland with no visible channel as a result of beaver dam downstream. Fish were confirmed absent during field survey for Valentine Gold Project.
WC-023	5377988N, 492049E	Alternate	Perennial	~1-2	<0.5	Co, Bo	Shrubs, Trees	Can avoid crossing	Not a good ford site. Steep embankments, 1-1.5 m embankments. Moderate flow.
WC-024	5377988N, 492049E	Alternate	Perennial	<1	<0.5	Co	Shrubs	Ford	No issues fording at this location. Slow flow brook good embankments.
WC-025	5375804N, 493724E	Alternate	Perennial	<0.5	<0.5	Co	Shrubs, Trees	n/a	Low flow/ stagnant water/ looks to be bog drainage.
WC-026	5375671N, 493870E	Alternate	Perennial	<0.5	<0.5	Co	Shrubs	Ford	Low flow/ stagnant water and segmented sections/ looks to be bog drainage.
WC-027	5375590N, 493960E	Alternate	Perennial	~1	~0.5	Co	Shrubs	Ford	Low flow/ some shallow bog on approaches

Table D.1 Potential Watercourse Crossings for the Proposed and Alternate Routes

Potential Watercourse Label	Field Coordinates (NAD 83 Zone 21)	Route (Proposed, Alternate, Both)	Channel (Overland Drainage, Ephemeral or Intermittent, Perennial)	Estimated Width (m)	Estimated Depth (m)	Dominant Substrate (Cl, Sa, Gr, Co, Bo, Be)[1]	Dominant Riparian Vegetation (Grass, Shrubs, Trees)	Proposed Crossing	Comments
WC-028	5374844N, 494758E	Alternate	Perennial	<1	<0.5	Co	Shrubs	Ford	Two small brooks adjacent to each other, looks like old skidder trail that turned into a brook. Low flow.
WC-029	5374521N, 494968E	Alternate	Ephemeral	<1	<0.5	Co	n/a	Ford	Boggy land drainage. Looks to be flashy when it rains. Runs through old growth forest. No issues fording
WC-030	5374491N, 494988E	Alternate	Perennial	~1	<0.6	Co	Shrubs	Ford	Slow moving/ stagnant water.
WC-031	5373201N, 495830E	Alternate	Overland	n/a	n/a	n/a	Grass	Ford	No prominent stream/waterbody observed. No issues crossing here. Hard organic bottom.
WC-032	5372467N, 496342E	Alternate	Overland	n/a	n/a	n/a	Grass	n/a	~ 75 meters of bog/wetland at this location. No ford possible. No ford possible at this location. Mitigation/ cribbing will have to be considered depending on placement of structures near this area.
WC-033	5371869N, 496949E	Alternate	Perennial	<0.5	<0.5	Co	Shrubs	Ford	Very slow flow/ good approach with hard bottom. No issue fording here.
WC-033a*	5372101N, 497115E	Alternate	Perennial	1 - 1.5	<0.5	Gr, Co	Shrubs	Ford	Already used as ford site by public. Well established, good ford site. No issue fording here

Notes
[1] Cl =clay; Sa = sand; Gr = gravel; Co = cobble; Bo = boulder; Be=bedrock

APPENDIX E

ARCHAEOLOGICAL SURVEY RESULTS

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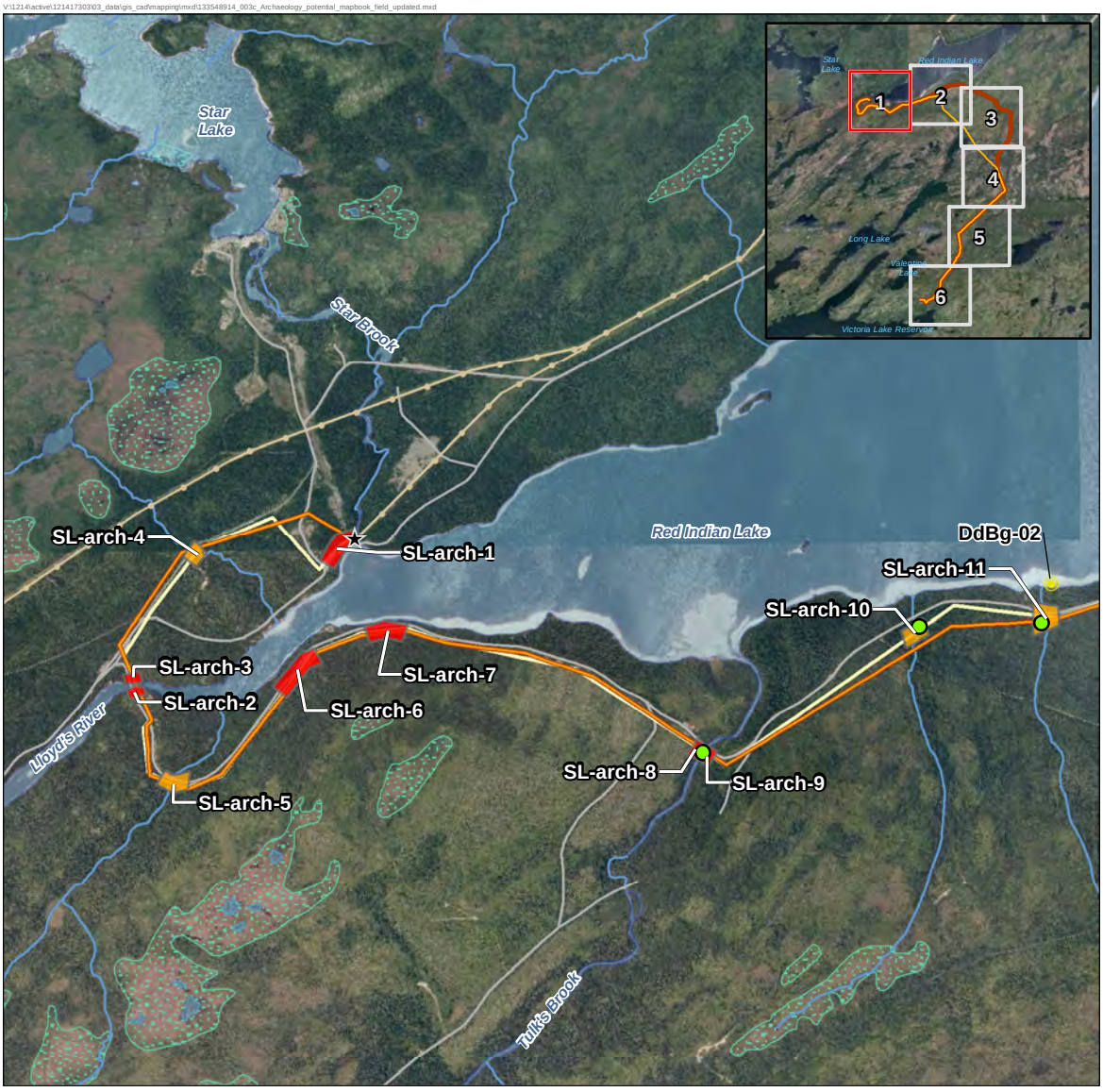

- Testing Location
- Terminal Station
- Road
- Existing Transmission Line
- Watercourse
- Wetland
- Waterbody

Archaeological Potential Area

- High Potential
- Medium Potential
- Low Potential
- Archaeological Site
- Proposed TL271 Route
- Alternate Route
- Proposed Route at Time of Survey

N

0 0.5 1

Kilometers

Notes

1. Background: GovNL
CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 1
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Stantec

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Testing Location

Archaeological Potential Area

- High Potential
- Medium Potential
- Low Potential

Terminal Station

Proposed TL271 Route

Alternate Route

Proposed Route at Time of Survey

Road

Watercourse

Wetland

Waterbody

N

0 0.5 1

Kilometers

Notes

1. Background: GovNL
CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 2
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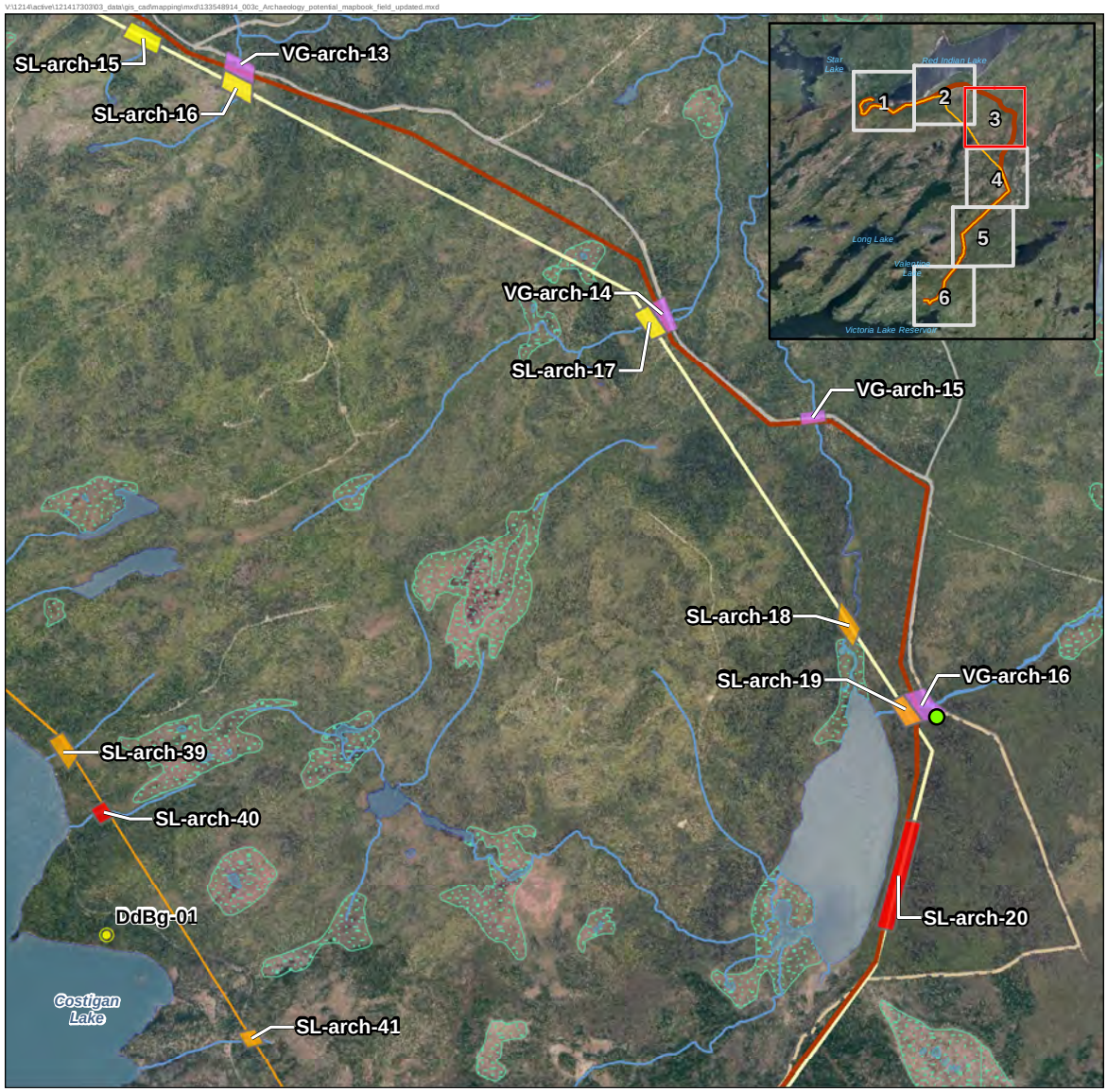

Testing Location

Archaeological Potential Area

- High Potential
- Medium Potential
- Low Potential
- Valentine Gold Project Potential Area
- Archaeological Site
- Terminal Station
- Proposed TL271 Route
- Alternate Route
- Proposed Route at Time of Survey
- Road
- Mine Access Road
- Watercourse
- Wetland
- Waterbody

N

0 0.5 1

Kilometers

Notes

1. Background: GovNL CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 3
133548914_003c

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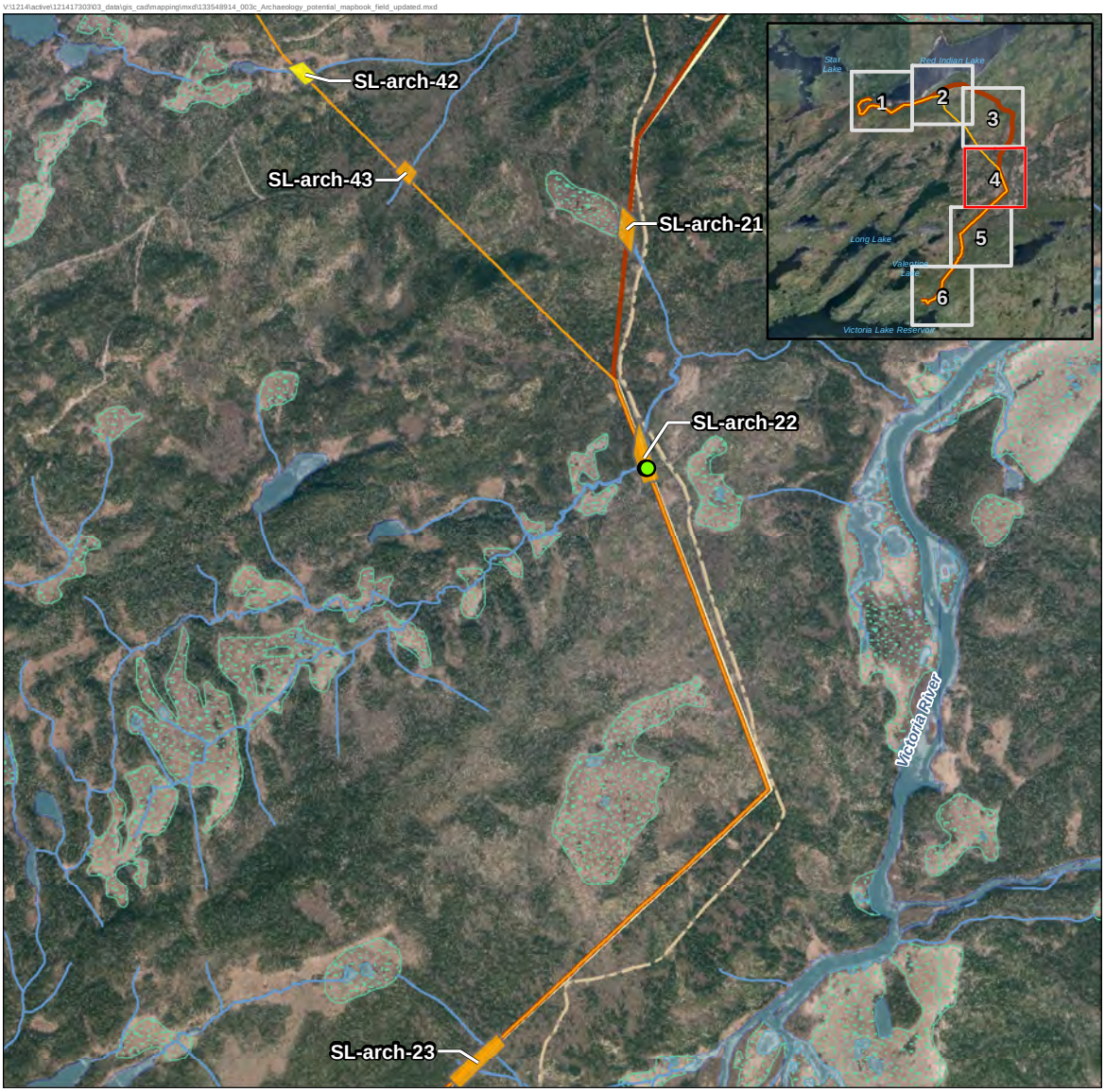

Testing Location

Archaeological Potential Area

- High Potential
- Medium Potential
- Low Potential

Terminal Station

Proposed TL271 Route

Alternate Route

Proposed Route at Time of Survey

Road

Mine Access Road

Watercourse

Wetland

Waterbody

N

0 0.5 1

Kilometers

Notes

1. Background: GovNL
CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 4
133548914_003c

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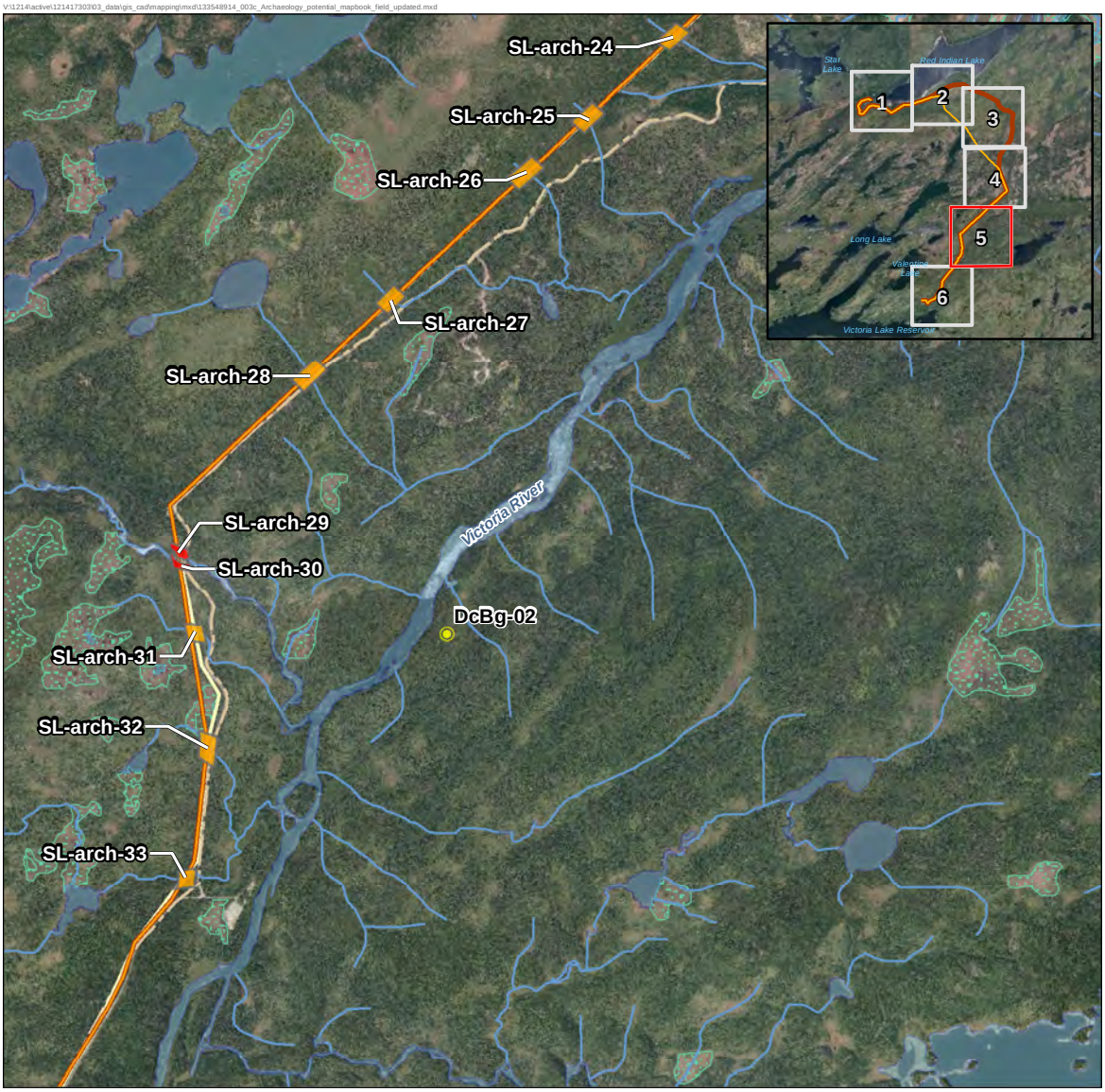

Archaeological Potential Area
- High Potential
- Medium Potential
- Low Potential
- Archaeological Site

- Terminal Station
- Proposed TL271 Route
- Alternate Route
- Proposed Route at Time of Survey

- Road
- Mine Access Road
- Watercourse
- Wetland
- Waterbody

N

0 0.5 1
Kilometers

Notes
1. Background: GovNL
CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 5
133548914_003c

Stantec

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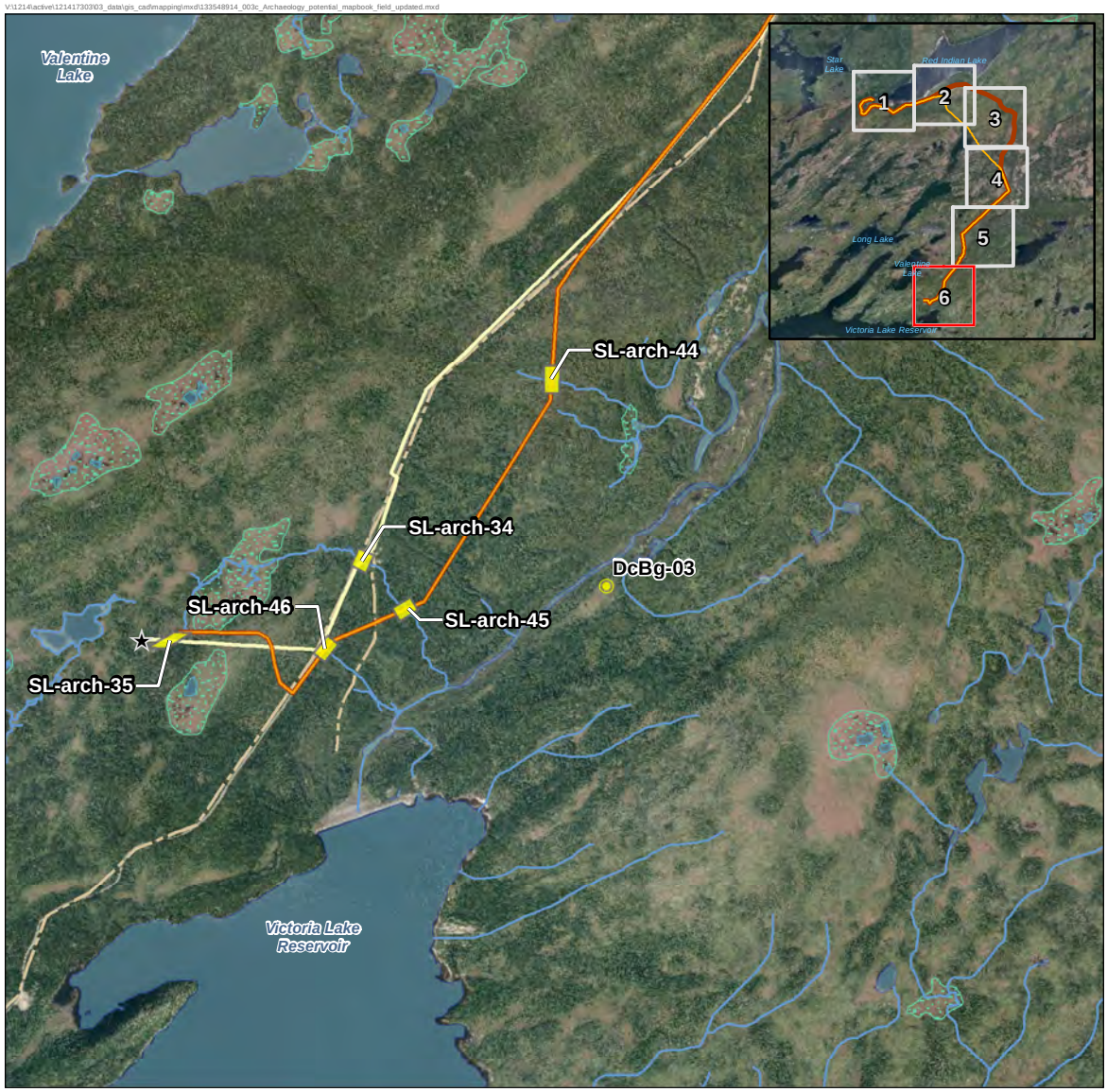

Archaeological Potential Area
- High Potential
- Medium Potential
- Low Potential
- Archaeological Site
- Terminal Station
- Proposed TL271 Route
- Alternate Route
- Proposed Route at Time of Survey
- Road
- Mine Access Road
- Watercourse
- Wetland
- Waterbody

N

0 0.5 1

Kilometers

Notes

1. Background: GovNL
CanVec 1:50 000 data, Natural Resources Canada

Project Location
Central Newfoundland, CA

Map: 6
133548914_003c

Stantec

APPENDIX F

PUBLIC INFORMATION SESSION PRESENTATION

Proposed TL271
Star Lake to Valentine Gold

March 1, 2022

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TL271 Project Overview

- NL Hydro is proposing to construct and operate a new 69 kV wood pole transmission line (TL271) from Star Lake to the site of the Valentine Gold Project.
- Some expansion is also required at the Star Lake terminal station to connect the line the Island Interconnected electrical grid
- Purpose of the proposed project is to supply power to the Valentine Gold project, currently under regulatory review.
- Estimated that Valentine Gold project will require a peak energy load of 23 MW

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TL271 Project Overview

- Construction of TL271 is dependent on regulatory approval of the Valentine Gold project. TL271 is a separate project from Valentine Gold, and was registered as a separate undertaking with the Government of Newfoundland and Labrador
- TL271 will be designed, constructed and operated by NL Hydro with funding provided by Marathon Gold. The project will be neutral to the rate payer
- NL Hydro has a contractor relationship with Marathon Gold who will own and operate the Valentine Gold site.

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TL271 Project Overview

- On July 14, 2021 a ministers decision was issued that the proposed project was subject to an Environmental Preview Report (EPR) before a final decision on release from Environmental Assessment could be determined
- EPR guidelines were issued to NL Hydro on September 22, 2021
- Its anticipated that the EPR report will be submitted to Government for review during the week of March 7
- The following presentation provides details on the proposed project with a focus on the EPR guidance and overall changes that have evolved since the undertaking was originally presented for environmental assessment

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TL271 Project Changes

- The original design of TL271 was a double pole, H frame structure.
  - Through development of EPR, design has changed to a single pole design
  - There are several reasons for the change in design
    - Supply chain: originally the insulators required for single pole design were not available to meet project requirements (quantity and delivery)
    - Fiber Optic: through consultation with Marathon, the design of TL271 now includes the addition of Fiber option cable to allow for high speed communications for the mine site

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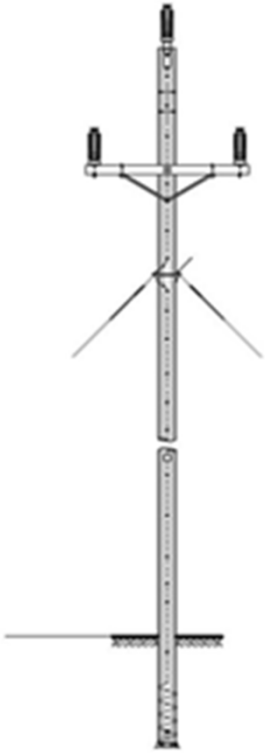
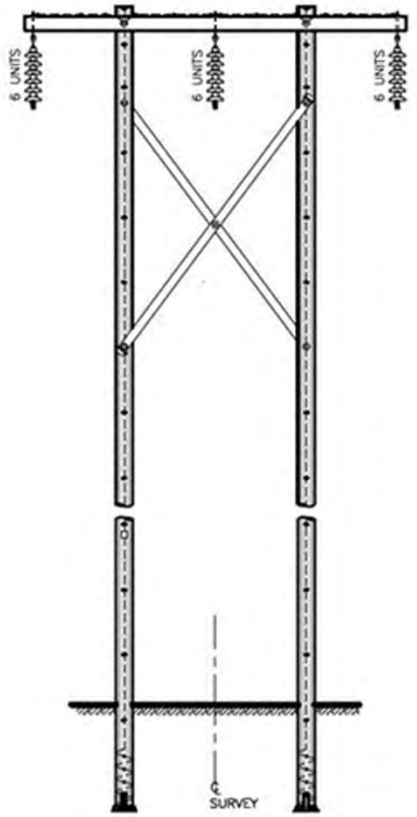
TL271 Project Changes



Typical Single Pole Structure



Typical Double Pole Structure

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TL271 Project Changes

- The change to a single pole design also allows for a narrower Right of Way (RoW)
  - The EA registration presented a cleared RoW of 25 metres in width which was required for the double pole, H frame design. The estimated clearing required was 1 square kilometers
  - The RoW presented in the ERP is 20 metres wide which reflects the change in design and an estimated clearing requirement of 0.91 square kilometers

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TL 271 Project Changes

- The transmission line route presented in the EA registration was approximately 40 kilometers in length and included a section near Costigan Lake
  - During development of the EPR the route has been refined to follow more closely to maintained resource roads
  - The route presented in the ERP closely resembles the route described as the alternate route in the EA Registration
  - The proposed route is now approximately 45 kilometers
  - The change in route allows for greater avoidance of caribou migration routes and water crossings and does not require rehabilitation of older resource roads in the vicinity of Costigan Lake

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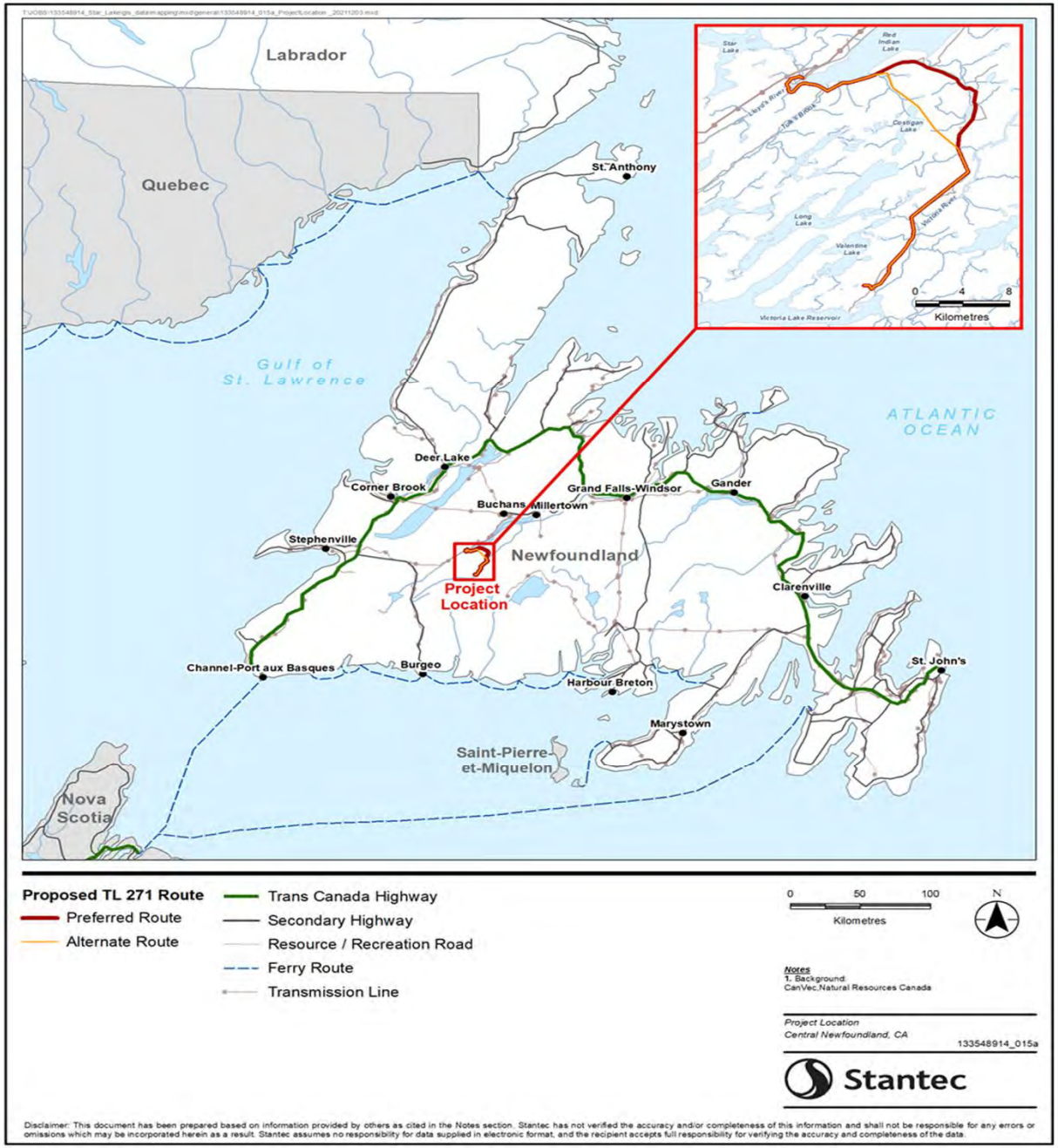
TL271 Project Location



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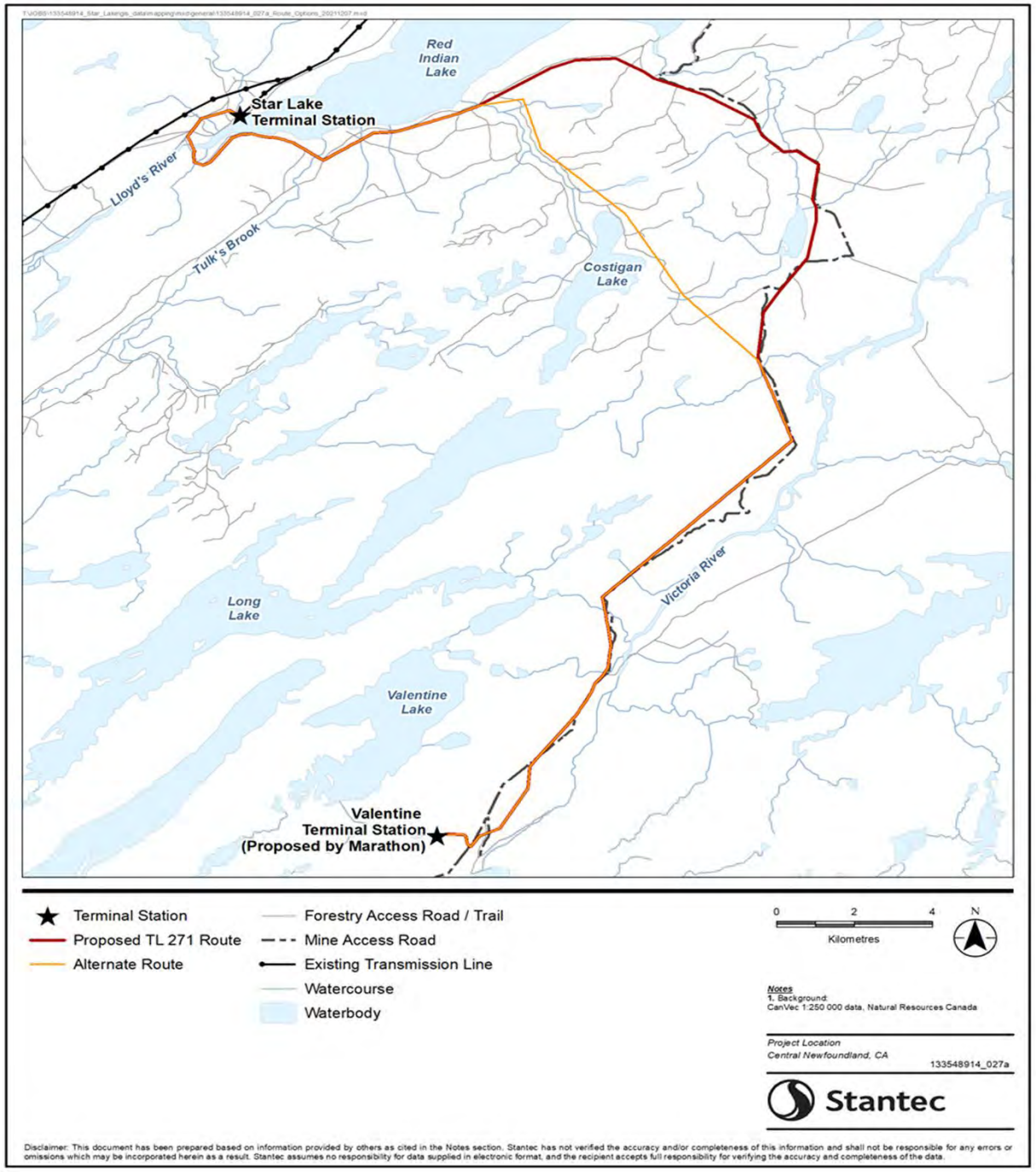
TL271 Project Route



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TL 271 Project Approach

- Stantec Consulting Limited assisted with preparation of environmental documents for the project
- Desktop component studies were completed for the original Environment Assessment to identify valued components such as water resources, wildlife, vegetation, historic resources and area users
- Component studies utilize available government and private datasets as well as field data (where available) from work completed in the project area
- Desktop studies identified areas where further field assessment was required to fully assess environmental attributes and determine appropriate mitigation

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TL 271 Project Approach

- During the 2021 field season, studies were completed to further assess
  - Locations identified as having medium or high potential for Historic Resources
  - A water resources assessment was completed to document all locations where the RoW will interact with surface water bodies
  - Field assessments were focused on both the preferred and alternate routes
- Following review of the project and consultation with regulatory bodies, additional fields works may be required

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TL 271 Project Timing

- Depending on the timing of regulatory release (and obtaining all required permits), it is anticipated that field activity would commence in the summer of 2022 with survey and RoW clearing

- Line Construction and expansion activity at the Star Lake terminal station are proposed for summer/fall of 2022
  - The timing of these activities will be dependent on progress at the Valentine Gold site

- Construction and commissioning will be complete to provide first power to the Valentine Gold project during the first or second quarter of 2023

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Project Considerations – Aquatic Environments

- Desktop and field surveys have identified 47 potential watercourses that intersection the proposed project RoW (51 potential crossings on alternate route)

- Based on the Newfoundland and Labrador Angler's Guide (DFO 2021) many of the watercourses in the project area are classified as Class 0 scheduled Salmon Rivers (Catch and Release)

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Project Considerations – Aquatic Environments

- Primary mitigation for water resources is avoidance
  - The proposed route closely follows established resources roads.
  - Proximity to roads will allow for existing watercourse crossings (bridges and/or culverts) to be used rather than crossing watercourses within the RoW.
  - Where warranted, select watercourses may be crossed via fording provided approvals are obtained and adequate field conditions exist

- Project is not anticipated to require any new, permanent water crossings

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Project Considerations - Caribou

- Caribou Populations in the project area
  - The project area overlaps with the Buchan's and Grey River herds
  - Buchan's herd migrates through the project area biannually
  - Project has potential for change in habitat, movement or mortality risks
  - Effects on caribou are expected to decrease once construction of the line has been completed

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Project Considerations - Caribou

- EPR contains measures to help mitigate project effects on caribou
  - Timing/location of will be adjusted to avoid key migration paths during spring and fall for the Buchan's herd
  - If snow clearing is required during construction, breaks in snowbanks will be provided for wildlife crossing
  - Project vehicles will be required to adhere to speed restrictions
  - Project activity will be reduced and/or delayed when caribou are observed within 500 metres of work sites

Project Considerations – Avifauna

- An Avifauna Management Plan (AMP) has been developed as part of the EPR process
- This AMP identified three main categories including raptors, migratory birds and other avifauna species which may occur in the project area
- There is a three tiered approach to protecting avifauna
  - Level 1: general mitigation measures
  - Level 2: general awareness mitigation measures
  - Level 3: directed survey protocols
- There are also documented procedures should a potentially active nest be identified during pre-construction surveys or incidentally identified during construction

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Project Considerations – Historic Resources

- The initial environmental assessment included a baseline study for the project area
  - Based on this work, a field survey program was conducted in 2021 to investigate 37 locations identified as having medium to high potential for historic resources
  - All identified areas were inspected by walking the sites in transects to identify any surface visible archaeology features
  - Based on the site inspections, subsurface work was conducted at 4 sites
  - There were no archaeological finds reported and no further recommendations for additional investigations

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TL271 Summary

- The main project components are
    - Expansion at the Star Lake Terminal Station to tie into the island electrical grid
    - Clearing of a 20 metre wide RoW
    - Construction of a single pole transmission line
    - Routine line inspection and maintenance during the operational phase of the transmission line

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Questions?

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