

Appendix L:  
Archaeological Field Research Permit  
Final Report

Chaleur Ventus Wind Energy Project

AFRP No. 2019 NB 72

Prepared by  
Stratis Consulting Inc.





**Archaeological Field Research Permit Final Report:  
AFRP No. 2019 NB 72**

**Report to:**

Heritage and Archaeological Services Branch  
New Brunswick Department of Tourism, Heritage and Culture  
Government of New Brunswick  
P.O. Box 6000  
Fredericton, NB E3B 5H2

**Proponent:**

Chaleur Ventus Limited Partnership  
320 Queen Street, Suite 100  
Fredericton, NB E3B 1B2



Stratis was contracted by:  
WSP Canada Inc.  
1 Spectacle Lake Drive  
Dartmouth, NS B3B 1X7



**Report Prepared and Submitted by:**

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22 November 2019

Grant Aylesworth, PhD, RPA (Reg. No. 15583)

Principal Investigator and Author

22 November 2019

**DELIVERED BY HAND**

Anne Hamilton, MA, RPA  
Manager  
Regulatory Services Unit  
Heritage and Archaeological Services Branch  
Tourism, Heritage and Culture  
Government of New Brunswick  
225 King Street  
Fredericton, NB E3B 1E1

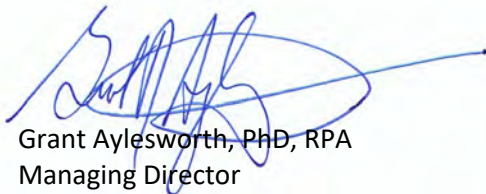
**RE: Chaleur Ventus Wind Energy Project, AFRP 2019 NB 72**

Dear Anne:

I am enclosing the Final Report for the above-captioned project. It is marked as "Appendix L" in reference to Environmental Impact Assessment Registration Number 1531.

Yours truly,

**Stratis Consulting Inc.**



Grant Aylesworth, PhD, RPA  
Managing Director

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e. grant.aylesworth@stratis.consulting

Enclosures: One compact disc (containing PDF of Final Report, GPS tracklog, NAPL aerial photographs, and NAPL metadata);  
One hard copy of Final Report; and  
One additional hard copy of field notes.

cc: WSP



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### Project

On behalf of Chaleur Ventus Limited Partnership, WSP Canada contracted Stratis Consulting Inc. to undertake an Archaeological Impact Assessment for the Chaleur Ventus Wind Energy Project.

### Project Title

Chaleur Ventus Wind Energy Project

### Project Description

The Project Description was provided by WSP as follows:

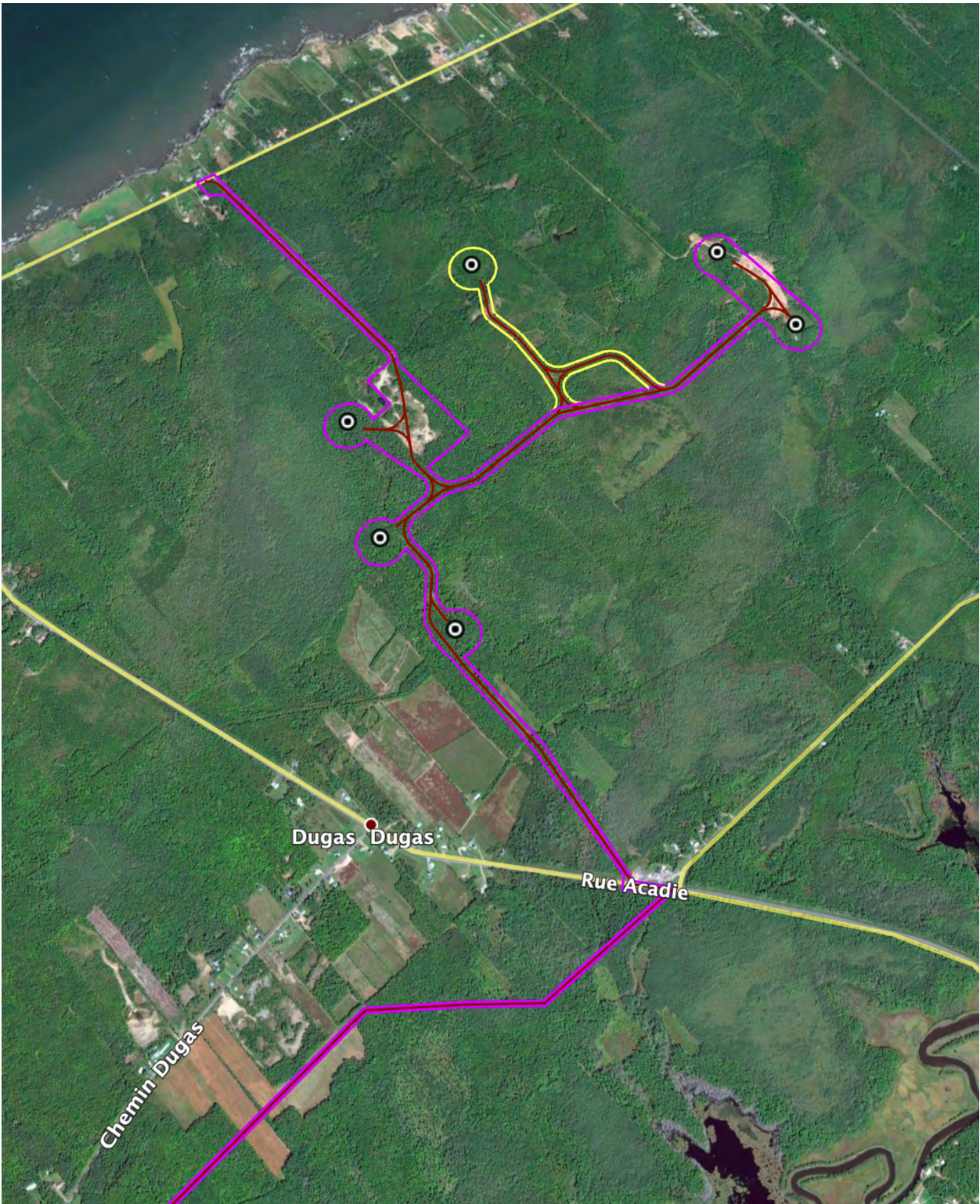
Chaleur Ventus Limited Partnership (CVLP) is proposing the development of the Project. The Project is located on privately owned land south of route 303 in Gloucester County, New Brunswick, and will have an aggregate electrical capacity of 20 megawatts (MW). The Project will consist of five wind energy converters (WECs), access roads, collection system, substation, and associated temporary laydown areas required for construction. An approximate 9 kilometre (km) transmission line is proposed that runs south and southwest from the Project area to a proposed substation that will be located on Crown land approximately 2.8 km southeast of Saint-Leolin.

The Project is expected to consist of Enercon E-126 WECs with a nominal power of 4 MW. Each assembly will consist of the tower, hub, nacelle, rotor blades, and controller, with a total height of 179.5 to 194.5 metres (m) and is dependent on WEC availability from Enercon. The total WEC rotor diameter will be 127 m. It is anticipated that each WEC will be erected on a concrete foundation. The dimensions, depth, and type of foundation will depend on an evaluation of the local soil, surficial geology characteristics, wind forces at the location, and site-specific details of each location.

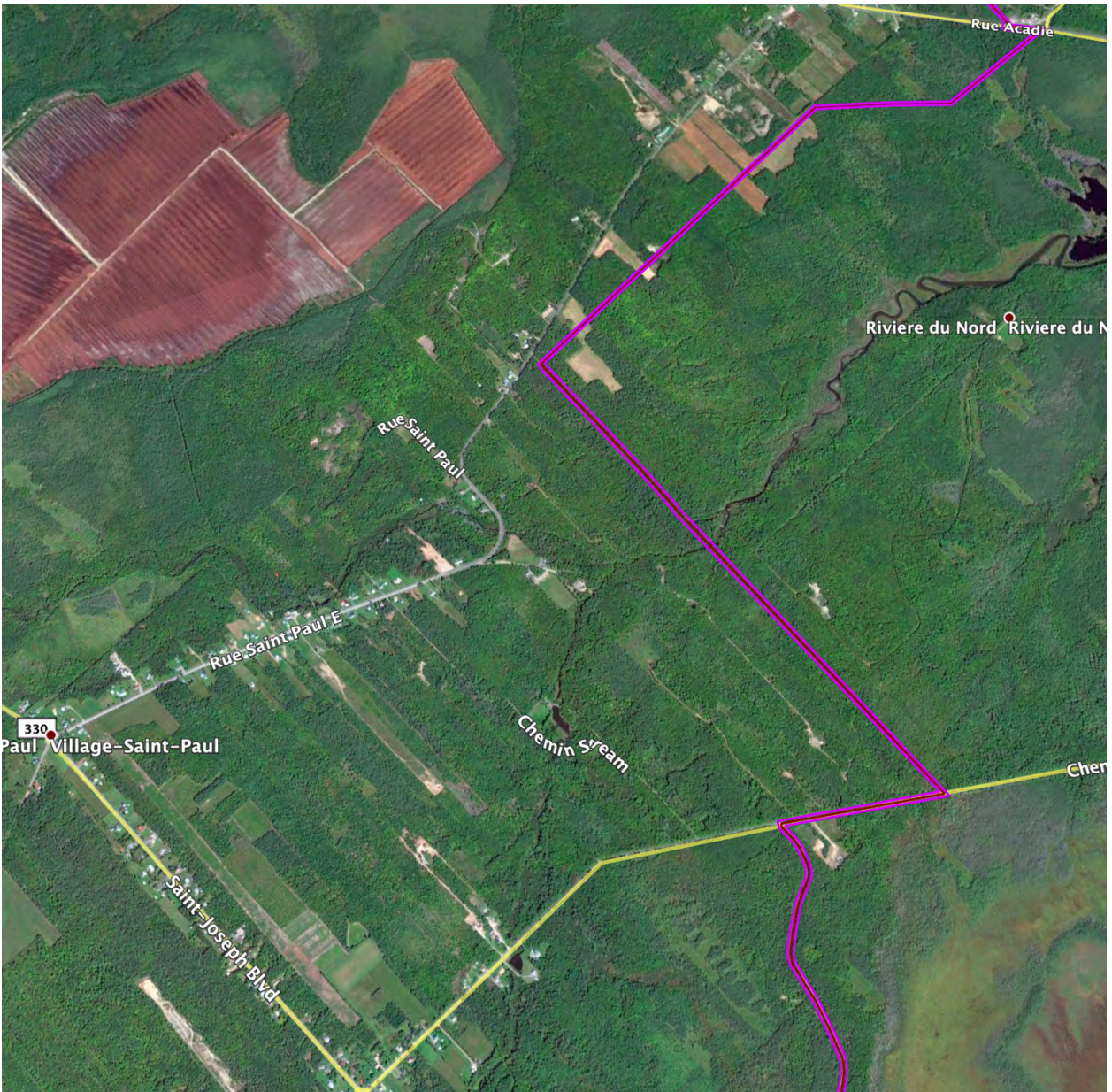
### Assessment Area

The Assessment Area consisted of the areas where project-related infrastructure will be placed. This included six WEC locations (T1, T2, T3, T4Alt, T5, and T6), access roads, collection system, substation, and temporary laydown areas. Although there are five WEC locations noted in the Project Description, Stratis was provided with six WEC areas and associated access roads to assess so as to allow for an alternate WEC location, if needed. The Assessment Area is overlaid on three Google Earth images, below:

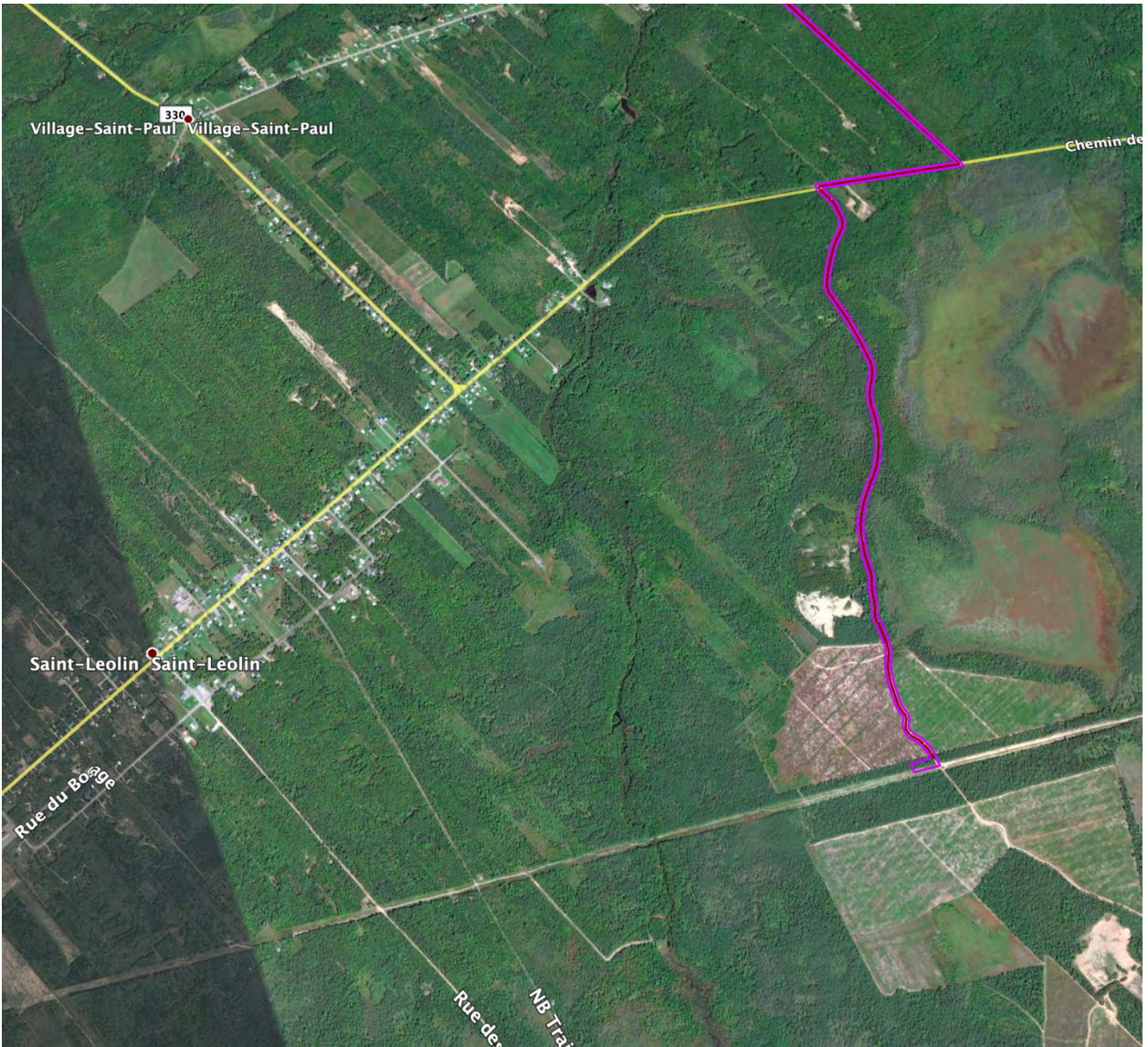
WECs, access roads, connection line.



Connection line.



Connection line and substation.



**Project Location**

The Project is located on privately owned land south of route 303 in Gloucester County, northern New Brunswick. The general location is shown below with details in the attached layout plans and the archaeological Predictive Model. Image source: Atlas of Canada



Are layout plans currently available for the Project?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Are layout plans for the Project attached? (included on CD)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

## Proponent

The proponent is Chaleur Ventus Limited Partnership (CVLP). The archaeological assessment was sub-contracted on behalf of CVLP by:

Tiffany MacAulay, MSc  
Environment, Atlantic  
WSP Canada Inc.  
1 Spectacle Lake Drive  
Dartmouth, NS B3B 1X7  
1 902 222 8904  
Tiffanay.Macaulay@wsp.com

The proponent is as follows:

Chaleur Ventus Limited Partnership  
320 Queen Street  
Suite 100  
Fredericton, NB E3B 1B2  
1 506 804 1080 extension 106  
EIA@naveco.ca

## Methodology

Methods followed provincial guidelines. Following Documentary Research, the Assessment Area was visually surveyed, with field notes, time and location stamped photographs, and GPS track logs taken.

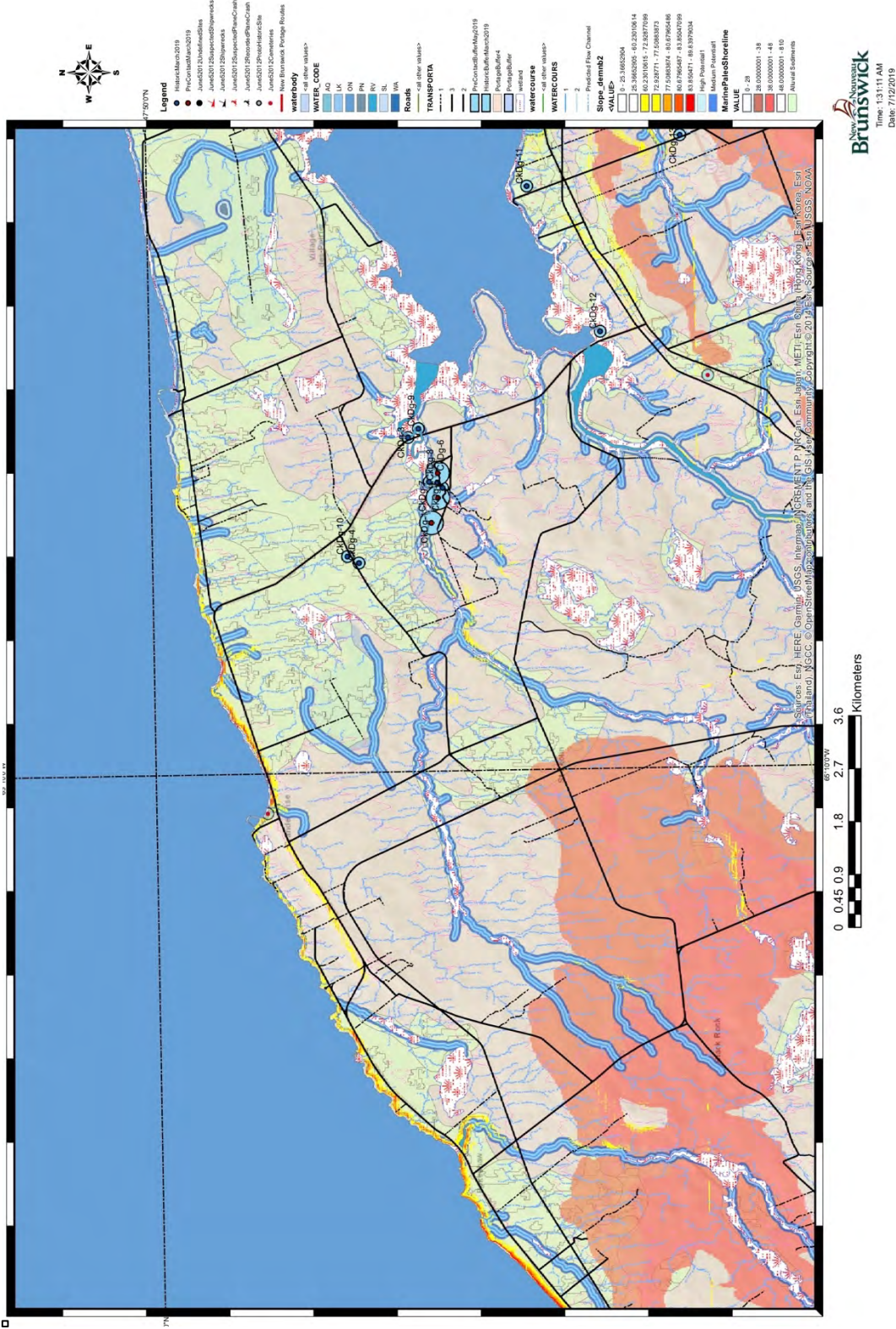
## Heritage and Archaeological Services Branch Guidelines

Published Heritage and Archaeological Services Branch Guidelines were followed during this Archaeological Impact Assessment:

Archaeological Services. 2012. Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick. Heritage Branch, Department of Culture, Tourism and Healthy Living, Fredericton.

Findings	
The findings from Documentary Research and the Preliminary Field Examination are outlined below.	
Heritage and Archaeological Services Branch Predictive Model	
Does the Predictive Model show known archaeological sites including buffer zones within the Assessment Area? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>	
Details:	All known sites shown on the Predictive Model are outside the Assessment Area. The model shows two Historic period sites along Chemin Dugas and these are outside the Assessment Area. The model shows a number of Historic period and Pre-contact period sites along Rivière du Nord and all of these are outside the Assessment Area.
Does the Predictive Model show elevated archaeological potential within the Assessment Area? <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>	
If "Yes", provide details:	The model shows high and medium archaeological potential, within 50 m and 80 m, respectively, of Rivière du Nord; however, in the Assessment Area, much of this is wetland. Other high and medium archaeological potential areas shown on the Predictive Model were outside the Assessment Area. The Predictive Model claims alluvial deposits in the Assessment Area, but the source of this information is unknown. Stratis reviewed a generalized surficial geology map, as required by Provincial Guidelines and did not find alluvial sediments to be present in the Assessment Area.

Predictive Model, as provided by Heritage and Archaeological Services Branch.



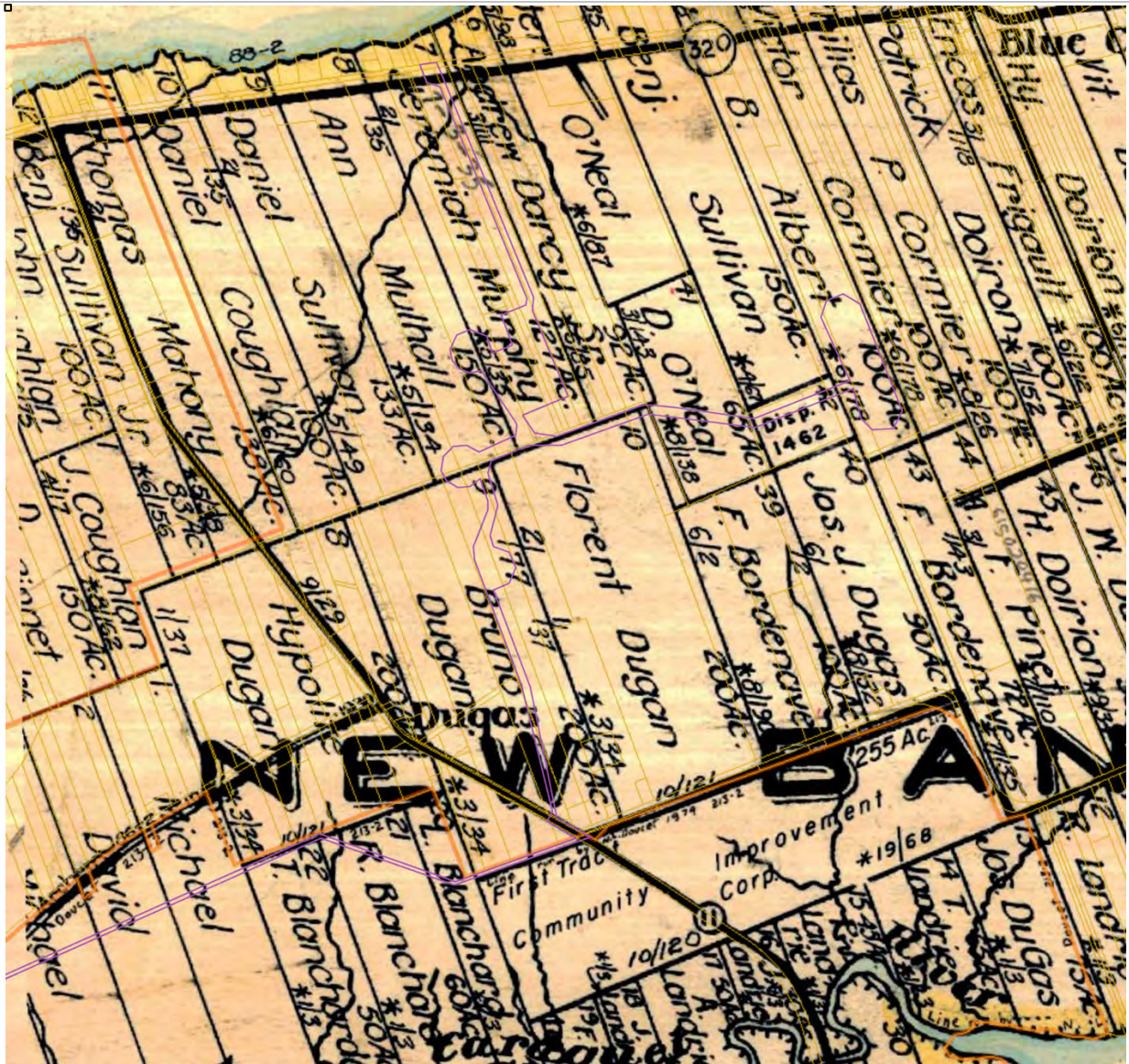
New Brunswick  
Time: 1:31:11 AM  
Date: 7/12/2019



Geology		
Reviews of provincial surficial geology and bedrock geology maps were undertaken.		
Surficial Geology		
<p>The surficial geology of the Assessment Area was determined according to:</p> <p style="padding-left: 40px;">Rampton, V. N. 1984. Generalized surficial geology map of New Brunswick. Department of Natural Resources and Energy. Minerals, Policy and Planning Division, NR-8 (scale 1:500 000).</p> <p>Descriptions and abbreviations are taken from Rampton.</p>		
Late Wisconsinan and/or Early Holocene		
LWb	<p>Lacustrine and Marine Sediments: Undifferentiated</p> <p>Blankets and plains: sand, silt, minor clay and gravel, patchy thin veneer of organic sediment; generally 1 to 10 m thick.</p> <p>According to Rampton, this covers the project area.</p>	<input checked="" type="checkbox"/> Present
Bedrock Geology		
<p>The bedrock geology of the Assessment Area was determined according to:</p> <p style="padding-left: 40px;">NBDNRE (New Brunswick Department of Natural Resources and Energy). 2000. Bedrock Geology of New Brunswick. Minerals and Energy Division. Map Nr-1 (2000 Edition). Scale 1:500 000.</p> <p>Descriptions and abbreviations are taken from NBDNRE.</p>		
Late Carboniferous		
LCP	<p>Late Carboniferous</p> <p>Pictou Group stratified rocks, sandstone typical of almost all of eastern New Brunswick.</p>	<input checked="" type="checkbox"/> Present

Heritage Place Registries		
A variety of relevant searches regarding the Assessment Area were undertaken in online registries.		
New Brunswick Register of Historic Places		
This Register is available online at: <a href="https://www.rhp-rlp.gnb.ca/PublicSearch.aspx?blnLanguageEnglish=True">https://www.rhp-rlp.gnb.ca/PublicSearch.aspx?blnLanguageEnglish=True</a>		
Was the New Brunswick Register of Historic Places searched for the Assessment Area?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
According to the Register, are any registered Historic Places located within the Assessment Area?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>If "Yes", provide details: This Register was searched for nearby place names including Dugas, Anse-Bleue, and Saint-Léolin. The "Village Historique Acadien" was the only result. It is a Provincial Heritage Place located near Dugas, NB and part of the Connection Line runs through this property. The property is identified in the Register as PIDs 20498457, 20677605. The Project will not alter the character-defining elements of this Place. This listing is available at: <a href="https://www.rhp-rlp.gnb.ca/Page1.aspx?blnLanguageEnglish=True&amp;RID=1262&amp;VER=1&amp;dp=1">https://www.rhp-rlp.gnb.ca/Page1.aspx?blnLanguageEnglish=True&amp;RID=1262&amp;VER=1&amp;dp=1</a></p>		
Canadian Register of Historic Places		
This Register is available online at: <a href="http://www.historicplaces.ca/en/rep-reg/search-recherche.aspx">http://www.historicplaces.ca/en/rep-reg/search-recherche.aspx</a>		
Was the Canadian Register of Historic Places searched for the Assessment Area?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
According to the Register, are any registered Historic Places located within the Assessment Area?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>If "Yes", provide details: The "Village Historique Acadien" is listed in this database. The Project will not alter the character-defining elements of this Place. <a href="https://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=6222&amp;pid=0">https://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=6222&amp;pid=0</a></p>		
National Historic Sites: Parks Canada		
A database is available online at: <a href="https://www.pc.gc.ca/en/lhn-nhs/recherche-search">https://www.pc.gc.ca/en/lhn-nhs/recherche-search</a>		
Was the Parks Canada database of Historic Sites searched for the Assessment Area?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
According to the database, are any Historic Sites located within the Assessment Area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If "Yes", provide details:		

Provincial Archives of New Brunswick	
A variety of relevant searches were undertaken at the Provincial Archives of New Brunswick (PANB).	
Photographic Collections	
Was the digital catalogue of photographs searched on a public workstation at PANB?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were any relevant photographs identified? If yes, provide details:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Land Grants Index and Records (RS 686)	
Land grant cadastral maps and microfilm records exist for the province of New Brunswick.	
Were the Land Grant Records searched?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Any relevant records?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
The cadastral Crown Grant Basemap (shown below) for the area was reviewed as available at: <a href="http://geonb.snb.ca">http://geonb.snb.ca</a> . The cadastral map shows the Assessment Area as within multiple grants, with the details and the dates of the grants given below the images. Most grants are in the New Bandon area or Caraquet, but none are part of the large Caraquet grant. The land grants that were found in the index date between 1831 and 1869.	



T4 Alt location and Access Road not shown here but is visible in images in the “Assessment Area” section on this image.

Jeremiah Murphy, 127 acres, Lot 7, Book 5, page 35, granted 29 January 1838, microfilm F16322

Ann Mulhall, 150 acres, Lot 8, Book 5, Page 134, granted 11 March 1851, microfilm F16355

Jer. O’Neal, size not specified, probably 100 acres, Lot 4, Book 6, Page 87, 10 November 1859, microfilm F16356

D. O’Neal, 65 acres, Lot 41, Book 8, Page 138, grant not found in index

B. Albert, 100 acres, Book 6, Page 178, probably 3 November 1853, microfilm F16339

Bruno Dugan, 200 acres, Lot 9, Book 3, Page 34, 1 July 1831, microfilm F16314

Community Improvement Corp. First Tract, 255 acres, Book 19, Page 68

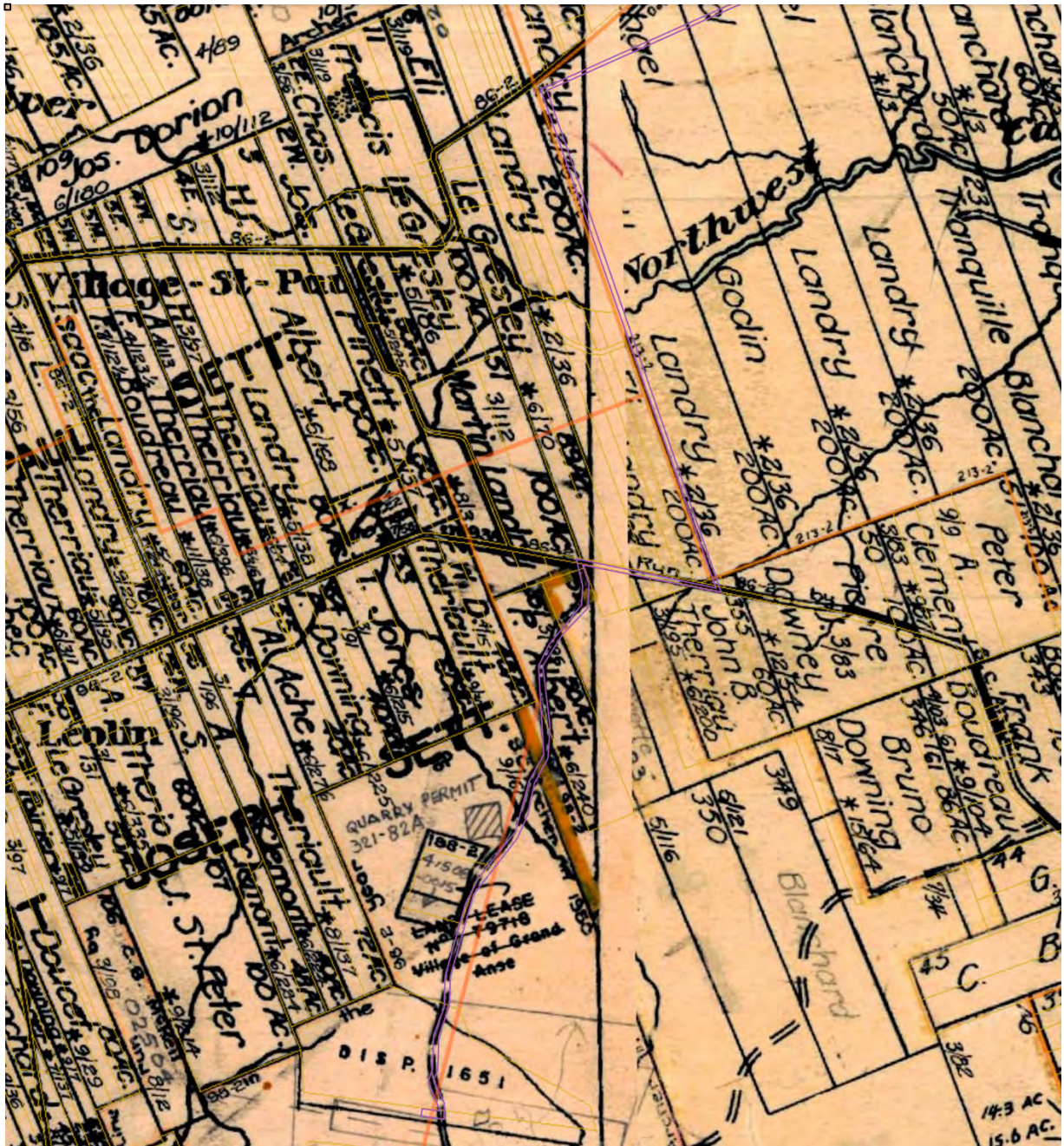
L. Blanchard, 40 acres, Lot 20, Book 1, Page 3, not found in index, could be 1839

R. Blanchard, 60 acres, Lot 21, Book 1, Page 3, not found in index, could be 1839

T. Blanchard, 50 acres, Lot 22, Book 1, Page 3, probably Tronquille Blanchard, 13 December 1839, microfilm F16324

Michael Landry, 200 acres, Lot 1, Book 2, Page 36, not found in index

David Landry, 200 acres, Lot 2, Book 2, Page 36, not found in index



Michael Godin, 200 acres, Lot 3, Book 2, Page 36, probably 5 October 1832, microfilm F16314

U. Landry, Lot 4, 200 acres, Lot 4, Book 2, Page 36, not found in index

P. Albert, 50 acres, lot 85(?), Book 6, Page 240, possibly "Placide Albert", 26 January 1869, microfilm F16374

Place Names		
<p>Two resources were consulted at PANB:</p> <p>Rayburn, A. 1975. Geographical Names of New Brunswick. Toponymy Study 2 for Canadian Permanent Committee on Geographical Names. Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa.</p> <p>Fellows, R. F. 1998 Community Place Names in New Brunswick, Canada. Associates of the Provincial Archives of New Brunswick, Fredericton.</p>		
Rayburn searched?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Fellows searched?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Any relevant records?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>If "Yes", provide details:</p> <p>Rayburn (p.97) stated: "Dugas: 7 mi. W of Caraquet. PO 1908-1953, Marcel Dugas, first postmaster."</p> <p>Rayburn (p. 243) stated: "Saint Leolin: 9 mi. W of Caraquet. PO <i>Saint-Joseph</i> c 1889-1905; PO Pepere 1904-1905; PO <i>Saint-Léolin</i> from 1905; Established 1878 as <i>Saint-Joseph</i> under the Free Grants Act."</p> <p>Rayburn (p. 38) stated: "Anse Bleue: 6 mi NW of Caraquet. PO <i>Blue Cove</i> c 1889-1960 and 1964-1968; PO <i>Anse-Bleue</i> 1968-1969."</p>		
Other PANB Resources		
<p>MC80 was searched for local history information about the Assessment Area.</p> <p>MC80/2242 is a genealogy about the Dugas family.</p> <p>MC80/73 is W.F. Ganong's History of Caraquet and Pokemouche", part of the New Brunswick Museum Historical Studies Series.</p> <p>In general, it appears that some of the people granted land in the Assessment Area may have been descendants of the large 1784 land grant of 14,150 acres that makes up the contemporary village of Caraquet (see W.F. Ganong). 1907. The History of Caraquet. <i>Acadiensis</i> 7(2): 91-114). The area of the 1784 grant, however, is outside the Assessment Area.</p> <p>MC80 also included a book about the Caisse Populaire at Bertrand.</p> <p>Nothing relevant was found.</p> <p>Search terms used at PANB included Grande-Anse, Anse-Bleue, Dugas, Saint-Paul, and Saint-Léolin</p>		

### National Air Photo Library

The earliest known aerial photographs were obtained from the National Air Photo Library and will be submitted to Heritage and Archaeological Services Branch as high-resolution TIFFs. Photos were searched at: <http://www.nrcan.gc.ca/earth-sciences/geomatics/satellite-imagery-air-photos/9265>.

The aerial photographs were reviewed against the layout drawings to determine whether or not any buildings or features visible in the aerial photographs fall into the Assessment Area. In general, the Assessment area appears to have been more accessible in the 1930s and 1940s as compared to today. This is likely related to more extensive use of the surrounding areas as agricultural fields, to which regular access would have been required. Today, much of the Assessment Area appears to be used for forestry and includes recent clear cuts. Areas that appear as cleared land today are on the Acadian Village property. The review of this historical aerial photographs indicated no historical structures or features of concern in the Assessment Area.

Roll Number: A6596

Frame Number: 0066

Date of Photograph: 18 June 1939

Rivière du Nord crossing, Chemin des Boudreau, substation area, Acadian Village road





Roll Number: A6873

Frame Number: 0045

Date of Photograph: 26 August 1942

Route 11, Route 303, Route 320, Connection Line, WEC, access roads



Roll Number: A6873

Frame Number: 0046

Date of Photograph: 26 August 1942

Route 11, Route 303, Route 320, Connection Line, WEC, access roads



Roll Number: A7357

Frame Number: 0039

Date of Photograph: 23 October 1944

Chemin des Boudreau, connection line, substation



Roll Number: A7359  
Frame Number: 0019  
Date of Photograph: 27 October 1944  
Chemin des Boudreau, connection line, substation



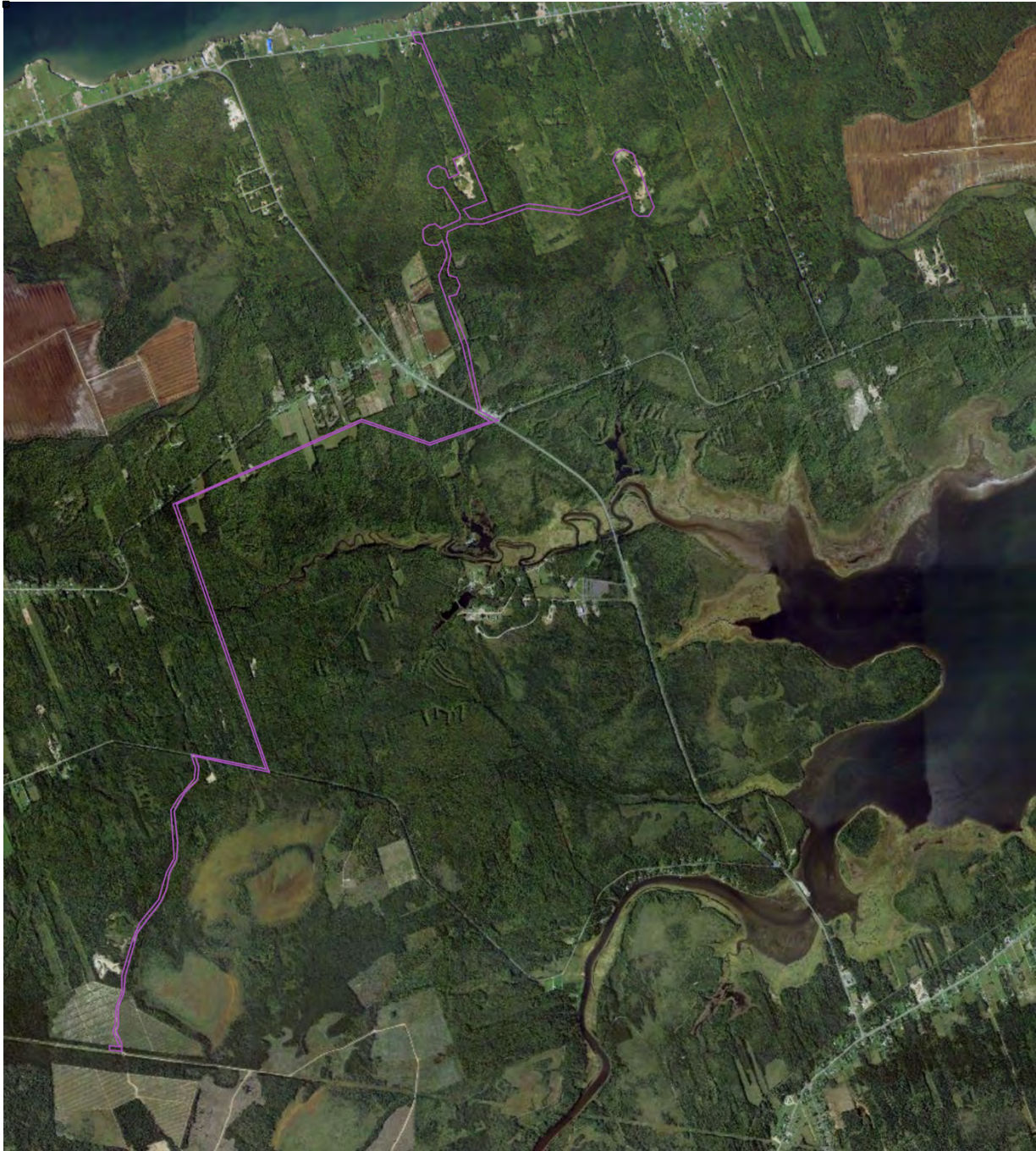
Roll Number: A7386  
Frame Number: 0067  
Date of Photograph: 28 October 1944  
Rivière du Nord, Chemin des Boudreau, Chemin Dugas



## GeoNB Aerial Imagery

This resource is available online at: <http://geonb.snb.ca/geonb/>

Below is a recent aerial image of the Assessment Area. The Assessment Area was imported as a shape file (provided by WSP) and is shown in purple below. T4ALT and its access road options are not shown here as they were not provided in this version of the shape file. Most of the areas of cleared agricultural land were overgrown or clear-cut, or overgrown clear-cut at the time of the Preliminary Field Examination.



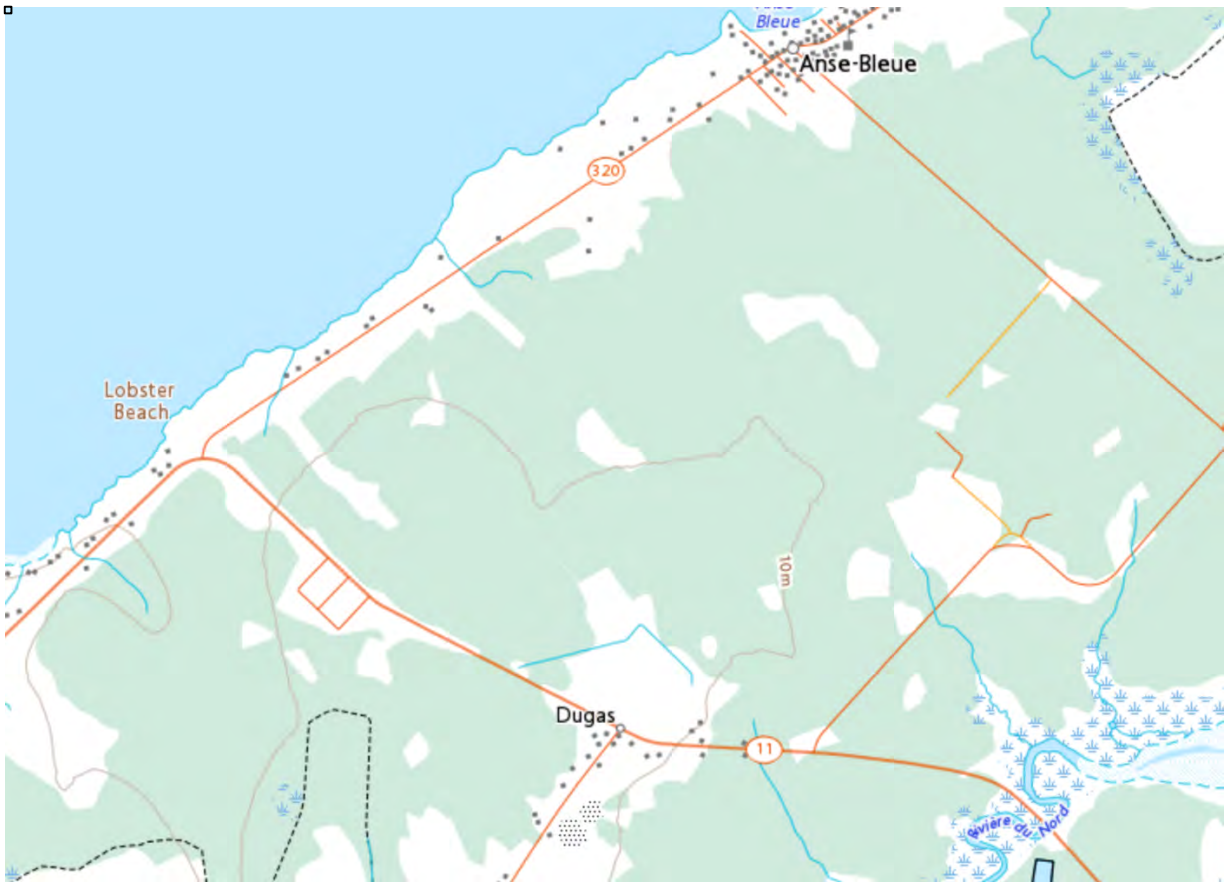
Atlas of Canada (Toporama) Images

This resource is available online at: <https://atlas.gc.ca/toporama/en/index.html>

Overview of Assessment Area. Source: Atlas of Canada, Natural Resources Canada.



Closer view of northern portion of the Assessment Area (WECs, access roads, connection line). Source: Atlas of Canada, Natural Resources Canada.

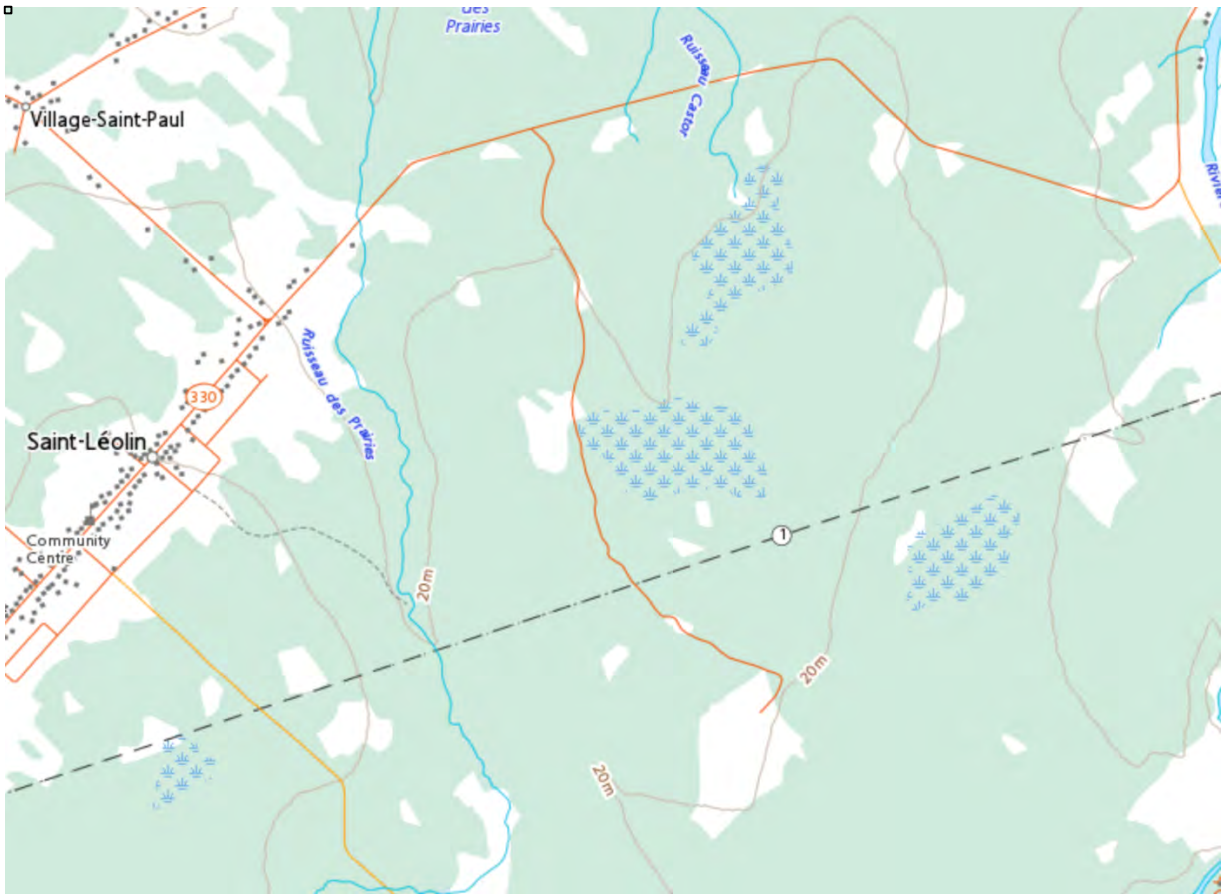




Closer view of middle portion of the Assessment Area (connection line). Source: Atlas of Canada, Natural Resources Canada.



Closer view of southern portion of the Assessment Area (connection line, substation). Source: Atlas of Canada, Natural Resources Canada.



**Wetland Maps**

These images were provided by WSP Canada and are based on GeoNB data and field assessments.

Overview of turbine area wetlands (source: WSP Canada).



Overview of collection line area wetlands (source: WSP Canada).



### Direct Consultation

Staff at the Provincial Archives of New Brunswick were consulted regarding various searches undertaken as indicated in the “Provincial Archives of New Brunswick” section of this document.

Staff at Heritage and Archaeological Services Branch, Government of New Brunswick, were consulted regarding the Archaeological Predictive Model. On 3 July 2019, Stratis requested that the model be redone because it was illegible and that details about the known sites shown on the model be provided. The redraft of the model was completed but parts of the model remained illegible. On 8 July 2019, Stratis again requested information about the catalogued archaeological sites shown on the model, including sites database abstracts and PDFs of Maritime Archaeological Resource Inventory forms for these sites. At time of writing, HASB has provided no further information other than the Predictive Model, which was purchased by WSP. Understanding the nature of known nearby sites can inform interpretations of the Assessment Area. At the same time, none of the known sites shown on the Predictive Model are in the Assessment Area and they are therefore not of further concern.

Stratis is attempting to undertake interviews with local history experts and the results of these interviews will be submitted to Heritage and Archaeological Services Branch as an addendum to this Final Report.

Other consultation with stakeholders, if any is required, is being undertaken by others.

### Preliminary Field Investigation

The Preliminary Field Examination took place over four site visits. These took place on 31 August, 1 September, 22 September, and 13 October 2019. The Assessment Area was identified on the ground using two Garmin handheld GPS units, including a GLONASS enabled Garmin Montana. Shapefiles provided by WSP were converted and imported into these units. The layout of access roads and project-related infrastructure had not then been identified on the ground and the Preliminary Field Examination relied on GPS and map navigation. Parts of the Assessment Area are along existing roads and others were in forested or clear-cut areas.

On 31 August, The first area assessed was the Connection Line south of Chemin des Boudreau. This road appears to be unnamed and was not present in the NAPL aerial photographs. Most of the road has recently been upgraded, including grading and wide longitudinal ditches. A small unnamed watercourse that did not appear on Atlas of Canada maps was found along this road. The watercourse passes under the road through a small plastic culvert. It appears to be drainage related to a nearby wetland that is visible in the Atlas of Canada and the GeoNB maps. The longitudinal ditches widen at this watercourse and the area has recently been bulldozed and reshaped. This road was followed to the substation area. The substation area is rectangular where the unnamed road south of Chemin des Boudreau meets a transmission line corridor. The substation area consists of secondary forest and is immediately south of a blueberry field that was being harvested by mechanical equipment and by hand. There is a road running immediately beside the northern side of the substation area and there is a road along the transmission line corridor. The northern and southern edges of the substation area were walked and photographed and the forested area was also walked. The forested area contained some heavy equipment push-ups and recent debris and trash piles.

The next area prioritized for assessment was T3. The area surrounding T3 is a recent clear-cut that is heavily rutted from heavy equipment and falls along an ATV road. The T3 area is also immediately adjacent to a large quarry, much of which is cut down to sandstone bedrock.

Following the T3 area, the T2 area was visited. This is also a recent clear-cut that is heavily rutted and the ground is littered with more small tree debris than the T2 area. The areas of both T3 and T2 were walked opportunistically, along heavy equipment tracks because the areas were impassable on foot outside of the equipment tracks. The T2 area did have a treefall and this uplifted soil was inspected for artifacts or features and none were noted. There are no watercourses in the T2 and T3 area and these areas hold low archaeological potential.

The area around T5 and T6 was visited next. These turbine locations are within an existing quarry that has partly been cut down to bedrock. Some parts of the quarry contain roads, others have vegetation that is indicative of disturbed soils. In general, the area is littered with debris and garbage of many sizes. Some of this is within deeply uneven and rutted ground that is overgrown with vegetation, making it difficult to see the ground and walk through. There are a number of open roads in the area and there is a motorcycle/dirt bike course that winds through the quarry north of the T6 location. The T5 and T6 area and the access road and intervening laydown area between T5 and T6 is heavily disturbed from quarrying and other activities. This area holds low archaeological potential.

On 1 September, the T4 Alt area, T1 area, the road and connection line area between T1 and T2, and the northern portion of the connection line that runs from T1 south to Route 11. T4 Alt is in a recently clear cut area with no watercourses. The area holds low archaeological potential. T1 is in an area that is more forested, although there were some linear clear-cut areas and a series of roads nearby. The T1 area has no watercourses and holds low archaeological potential. The connection line between T2 and T1 runs along an existing road that is used by ATVs. The road is built up and has longitudinal ditches. South of T1, the connection line runs along an existing road through a cleared field that is overgrown with vegetation. This area holds low archaeological potential.

On 22 September, the access roads south of T4Alt were surveyed along with the access road between T2 and T5/T6. This survey also included the access road that runs roughly east/west to T2. Additional areas for laydown were also surveyed; these were larger areas mostly within existing quarries between T5 and T6 and east of T3. Some road areas have been clear-cut, such as west of the intersection of the road from T4Alt with the road between T3 and T5/T6. Part of the access road from T4Alt goes along an existing road/ATV trail. Much of the access road area west of T5 and T6 is through low-lying wet areas that had been clear-cut, probably over ten years ago. These areas contained recent tree growth as well as an extensive cover of small cut trees and wet, uneven ground. The area where the east/west access road turns north has been recently clear-cut and is covered with vegetation debris. The laydown areas in the existing quarries were also revisited with a more extensive survey than the initial visits to the turbine locations allowed. These areas contained a variety of roads, debris, and were largely cut down to bedrock. Parts of the access road between T2 and T5 and T6 was low and wet with some standing water. The access road immediately east of the T2 area is through a clear-cut area. None of these areas have watercourses and all hold low archaeological potential.

The access road from Route 320 south to T3 is mostly along an existing road. This area was visually surveyed on 31 August, 1 September, and 22 September. The existing road turns towards the southwest near T2 and passes through a quarry that has largely been taken down to bedrock. This area has low archaeological potential.

On 13 October 2019, the additional connection line areas south of Chemin Dugas were visually surveyed. This area is entirely on the Acadian Village property until the connection line reaches Chemin des Boudreau (the area below Chemin des Boudreau was surveyed previously). Permission to survey the property and a key to access a gate was coordinated by WSP. This facilitated access to an existing road along which the connection line runs, at the western end of the Acadian Village property. This road

has longitudinal ditches and numerous areas of heavy equipment push-ups alongside it. This road leads directly towards Rivière du Nord but turns to the southeast about 100 m north of the watercourse, then resumes its course to the watercourse. At the watercourse, both the existing road and the connection line corridor are in a low-lying area that is overgrown with alders and other vegetation. This area shows up as a wetland on GeoNB. It is possible that the existing bridge was placed at this location to avoid wetter areas.

The connection line corridor diverges from the existing road north of the watercourse crossing and it does not follow the existing road south of the watercourse. Nevertheless, this existing road (about 70 m east of the connection line, was visually surveyed and the planned location for the connection line was also surveyed. The existing road climbs a hill south of the watercourse and continues south. About 350 m south of the watercourse, the road forks, with the easternmost fork leading to a quarry that is still in use. About 750 m south of the watercourse, there is an intersection with a road that heads eastward. At this location, the survey moved westward to the connector line corridor and continued south towards Chemin des Boudreau. As the survey proceeded to the south, the land became increasingly wet with many cedar trees and cedar stumps. Towards the southernmost area, there were many areas of standing water and treefalls that were inspected for artifacts and features. No cultural material was found. The visual reached the limits of walkable areas about 25 m north of Chemin des Boudreau, where the area was filled with water. The survey continued back north along the connector line corridor to the watercourse. Near the watercourse, there is a steep drop to a flat wetland area on the south side of the watercourse, about 70 m east of the existing road and bridge.

Following completion of the north/south corridor, the east/west connection line between Chemin Dugas and Route 11 was walked. This area is intermittent forest and cleared agricultural land. The cleared land is on Acadian Village property and appears not to be actively used for crops. There is a quarry around 47 47 47.4 N 65 7 38.9 W and this is visible on GeoNB images. At the eastern end of a cleared area, the connector line turns southeastward through a forested area that is a relatively wet area with standing water. There was a watercourse at about 47 47 57.0 N 65 6 19.0 W but this was clearly a canal that was excavated in a straight line and the back dirt pile was evident on its eastern bank. This appeared to be a relatively recent feature, not a historical canal. Treefalls along this section of the connector line were examined and no cultural material was found. This area holds low archaeological potential.

In terms of the visual survey as a whole, the only area to exhibit medium to high archaeological potential is where the connector line crosses Rivière du Nord.

Field Photographs

Connection line south of Chemin des Boudreau.



Connection line south of Chemin des Boudreau.





Connection line south of Chemin des Boudreau, watercourse in wetland.



Substation area, southern side.



Substation area, northern side.



Substation area, northern side.



Substation area, southern side.



Connection line, south of Chemin des Boudreau, longitudinal ditches.



T3 area, clear-cut.



T3 area, clear-cut and heavy equipment ruts.



T3 area, clear-cut.



T3 area, clear-cut, existing road/ATV trails and quarrying.



T2 area, clear-cut.



T2 area, treefall with no cultural material.



T2 area, clear-cut.



T2 area, clear-cut.



T6 area, clear-cut and debris, dumping area.



T6 area, quarry.





T6 area, quarry and road.



T6 area, quarry, existing roads.



T5/T6 area, quarry and dump.



T5/T6 area, quarry, dump, road.



T5 area, quarry area with vegetation.



T5 area, quarry with vegetation.



T5 area, quarry with vegetation.



T5 area, quarry.



T5 area, quarry with dumping.



T6 area, quarry with roads, ATV trails, dumping.



T4Alt area, clear-cut.



T4Alt area, clearing along access road.



T1 area, clearing and secondary forest.



T1 area, clearing and secondary forest.



T1 area, clearing and secondary forest.



T1 area, clearing and secondary forest.





Existing road between T1 and T2.



Existing road between T1 and T2.



Collector line area, south of T1 in clearing, along existing road.



Access road between T1 and T5/T6.



Access road between T1 and T5/T6.



Access road between T1 and T5/T6.



Access road between T1 and T5/T6.



Access road and laydown area between T1 and T2, existing quarry area.



Access road and laydown area between T1 and T2, existing quarry area.



Access road and laydown area between T1 and T2, existing quarry area.



Access road and laydown area between T1 and T2, existing quarry area.



Access road and laydown area between T1 and T2, existing quarry area.



Access road and laydown area between T1 and T2, existing quarry area.



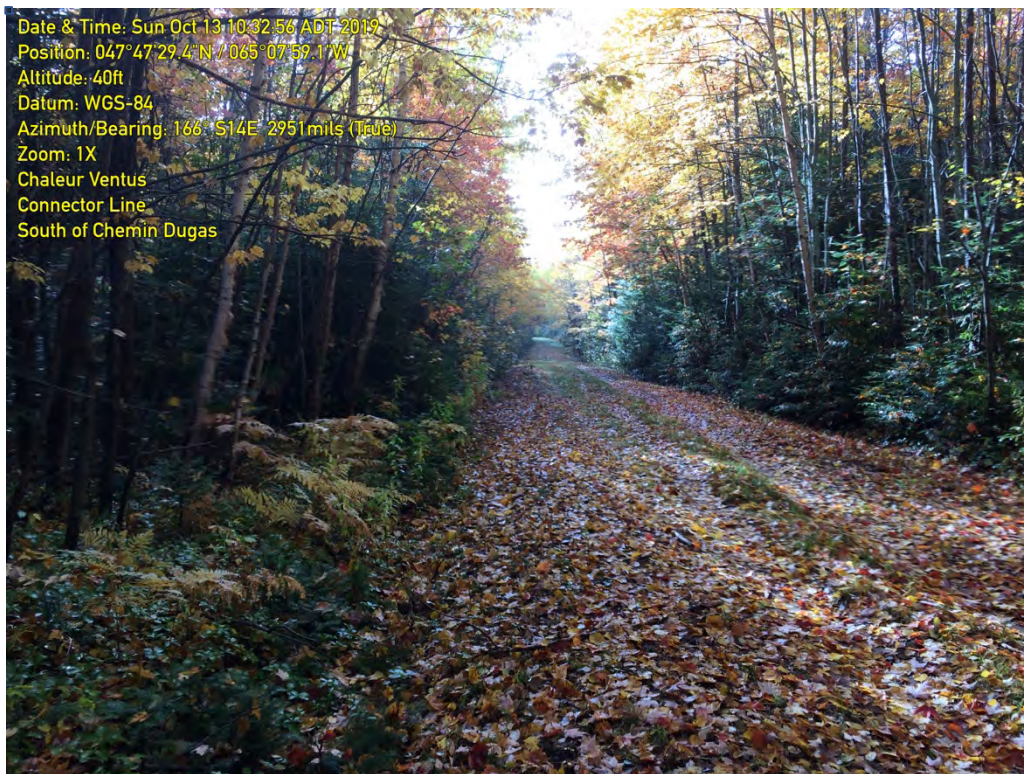
Access road and laydown area between T1 and T2, existing quarry area.



Connector line, along existing road, south of Chemin Dugas, towards river.



Connector line, along existing road, south of Chemin Dugas, towards river.





Connector line, curve along existing road, south of Chemin Dugas, near river.



Existing bridge at Rivière du Nord.



Rivière du Nord.



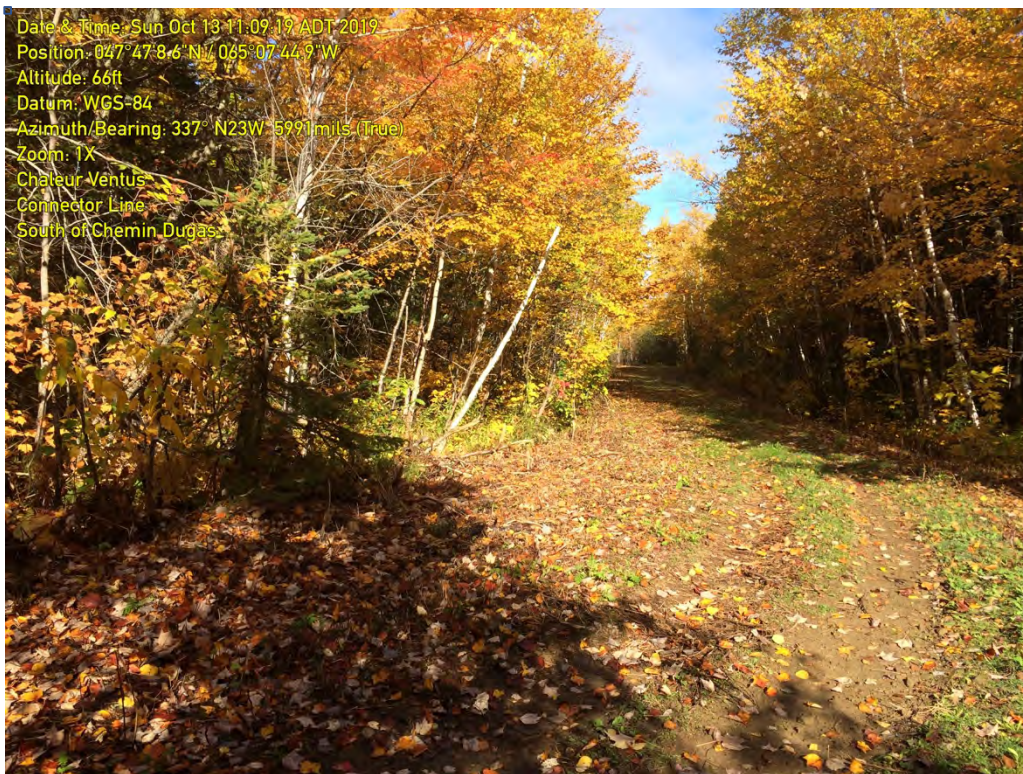
Rivière du Nord.



Existing road, south of Rivière du Nord.



Existing road, south of Rivière du Nord.



Existing road, intersection, south of Rivière du Nord.



Existing east/west road, south of Rivière du Nord.



Entrance to quarry, south of Rivière du Nord.



Quarry, south of Rivière du Nord.



Cedar wetland, connector line, north of Chemin des Boudreau.



Wetland, standing water. connector line, north of Chemin des Boudreau.



Treefall north of Chemin des Boudreau, no cultural material present.



Treefall north of Chemin des Boudreau, no cultural material present.



Connection line along northern part of Acadian Village property.



Connection line along northern part of Acadian Village property.





Quarry along connection line along northern part of Acadian Village property.



Connection line along northern part of Acadian Village property.



Quarry along connection line along northern part of Acadian Village property.



Access to Ducks Unlimited wetland, south of collector line.



Treefall with standing water, along collector line, south of Chemin Dugas, no cultural material.

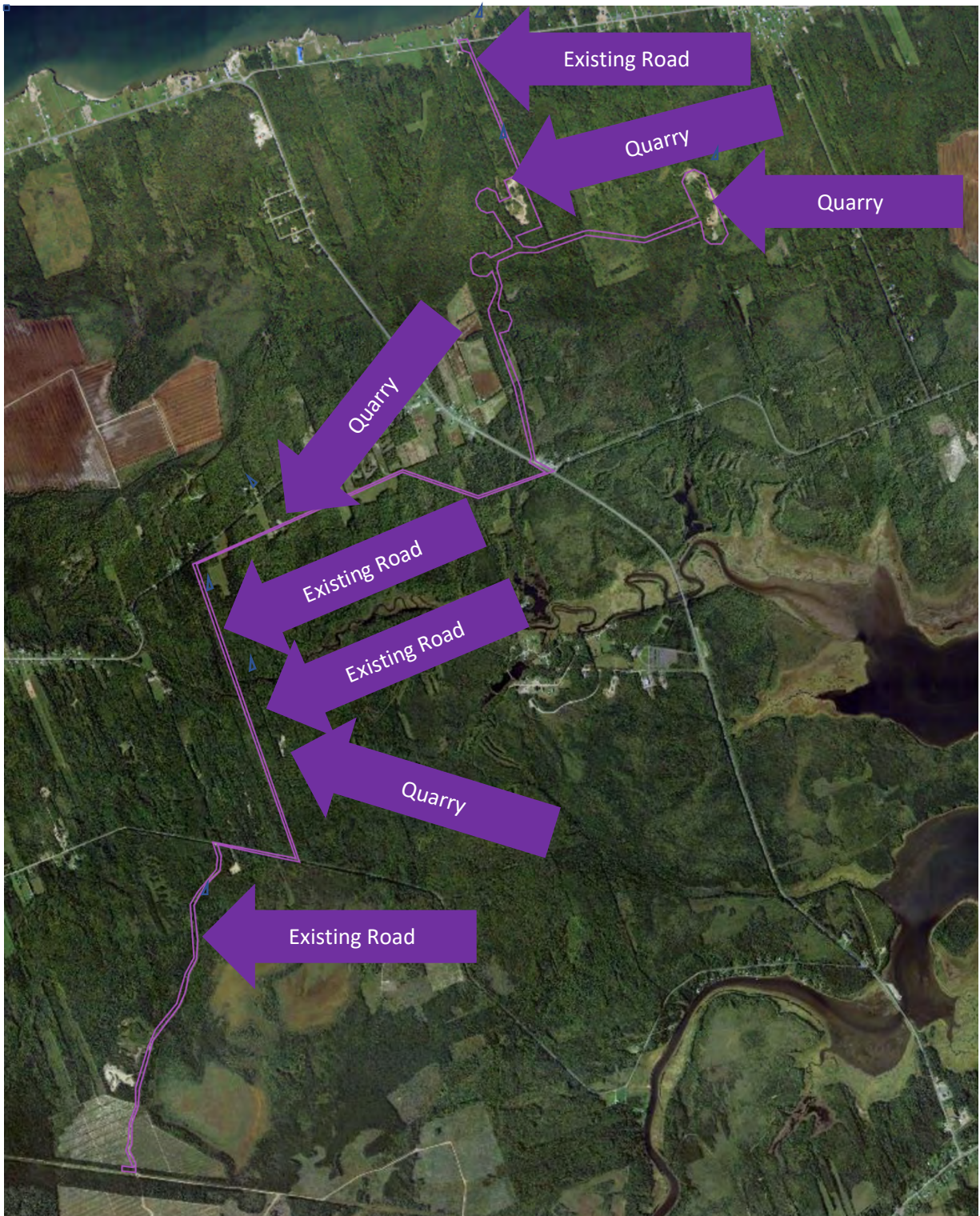


Excavated/engineered watercourse, west of Route 11.



Potential Laydown Areas

Potential laydown areas include existing roads and quarries.



### Resource Significance and Integrity Evaluation

No new archaeological resources were identified during the Preliminary Examination. Since no archaeological sites were identified, there can be no comments on relative significance and integrity of sites.

Were any archaeological resources identified within the Assessment Area?

Yes

No

### Impact Identification and Assessment

No new archaeological resources were identified. Since no sites were identified, there can be no comprehensive statement of impacts.

### Conclusions and Recommendations

The conclusions and recommendations based on Documentary Research and the Preliminary Field Examination are outlined below.

### Overview and Synthesis

There are no known catalogued archaeological sites in the Assessment Area. At the time of the Preliminary Field Examination, no Pre-contact artifacts were observed and no Historic period artifacts or features were observed in the Assessment Area.

Much of the assessment area is wetland, as determined by wetland specialists, and large areas for construction and laydown are within existing quarries that have been excavated to bedrock. There is one notable watercourse crossing in the Assessment Area and this is where the Connector Line crosses Rivière du Nord. The GeoNB maps show that wetland surrounds Rivière du Nord at the Connector Line crossing. There is an existing road and bridge structure about 100 m east of the planned Connector Line. No road or bridge will be constructed at the watercourse crossing. Work at the watercourse crossing is anticipated to involve cutting of trees and brush. Poles will be installed on the north and south sides of the watercourse using access from the north and south, respectively. The poles will be located about 25 m from the banks of the watercourse. The next closest polls are anticipated to be an additional 57 m away, putting these more distant polls outside any areas of archaeological potential.

### Recommendations

Is archaeological shovel testing recommended for the Assessment Area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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Is archaeological monitoring recommended for the Assessment Area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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In general, the Assessment Area has low archaeological potential, with the exception of the area within 80 m of Rivière du Nord. The area near the watercourse crossing has been previously disturbed and deforested (as evidenced in the NAPL photographs). The locations of project-related infrastructure are away from medium and high potential areas with the exception of two connection line pole placements that are anticipated to be 15 m to 25 m of the banks of Rivière du Nord.

In terms of the high archaeological potential (within 50 m) and medium archaeological potential (within 50-80 m) areas near Rivière du Nord, Stratis recommends mitigation measures, which are based on wetland mitigations outlined by WSP in the Project's Registration Document. In addition, the Project will follow any conditions stipulated on the Certificate of Determination with respect to archaeological resources.

The following archaeology-related mitigation measures have been identified, with respect to areas within 80 m of Rivière du Nord:

- Machinery should be operated in a manner that minimizes disturbance to soils;
- Appropriate equipment and work access routes will be selected to minimize ground disturbance;

- The existing road should be used within 80 m of the watercourse crossing and no new road or bridge will be constructed;
- Sediment and erosion control measures should be installed and maintained in such a way that no trenches are excavated for this purpose;
- Ground disturbances should be minimized to the extent possible to complete the work;
- Temporary lay down areas, temporary work areas, and temporary materials storage should not be completed within 80 m of the banks of Rivière du Nord;
- Prior to construction, all Project employees, contractors, and sub-contractors should be notified by the Proponent of the legal obligation to report accidentally discovered archaeological finds (e.g., any artifact or feature known or suspected to be 100 years old or older) to the Government of New Brunswick. Archaeological finds could be accidentally encountered anywhere in the Project area, although the probability of such discovery is considered low; and
- The Project should follow protocols for accidental discovery (sample provided in Appendix B).

The Project is not anticipated to alter any character defining elements of the Village Historique Acadien. Nevertheless, Project-related construction in the Village Historique Acadien may require a Heritage Site Alteration Permit from Heritage and Archaeological Services Branch, because the Village is listed as a Provincial Heritage Place. This is not an archaeological matter and is outside the scope of this assessment, but it is recommended that the Proponent determine the need, if any, for such a permit.

#### Legal Requirements - Accidental Discovery of Archaeological Resources

Accidental discovery of archaeological resources is possible whenever any ground disturbing activities take place. New Brunswick law (Heritage Conservation Act, SNB 2009, c H-4.05), requires that any accidental finds of archaeological resources be reported to Heritage and Archaeological Services Branch. Any person or entity doing work on this project for the Proponent, including contractors and sub-contractors, may be required by law to notify Heritage and Archaeological Services Branch if any material of archaeological interest is accidentally discovered. The Proponent may have its own protocols and/or manuals and/or standards to be followed during construction. Sample accidental discovery protocols are included in Appendix B.

## Closing

This section outlines limitations and uses of this report.

## Limitations of this Report

This report is subject to review and acceptance by Heritage and Archaeological Services Branch. Written notification about the acceptability of this report is issued at their discretion. Other agencies and/or stakeholders may review this report before it is deemed acceptable by Heritage and Archaeological Services Branch. No notice of this review or acceptance may be issued to the Proponent.

This report has been prepared to fulfill a requirement of an Archaeological Field Research Permit. Beyond that, the use of this report is for the sole benefit of the Proponent and is not intended to be used by any other person or entity, other than for its intended purposes, without the written consent of Stratis and the Proponent. Use of this report by third parties is the responsibility of such third party. This report is copyrighted by Stratis with all rights reserved.

The information and recommendations in this report are based upon work undertaken in accordance with Heritage and Archaeological Services Branch Guidelines and generally accepted practices at the time the work was undertaken. The information and recommendations in this report are in accordance with the author's understanding of the project as it was presented at the time the work was undertaken.

This report was reviewed and approved by the Proponent before submission to Heritage and Archaeological Services Branch.

## Signature

This report was prepared and submitted to Heritage and Archaeological Services Branch by the undersigned.



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Grant R. Aylesworth, PhD, RPA  
Managing Director

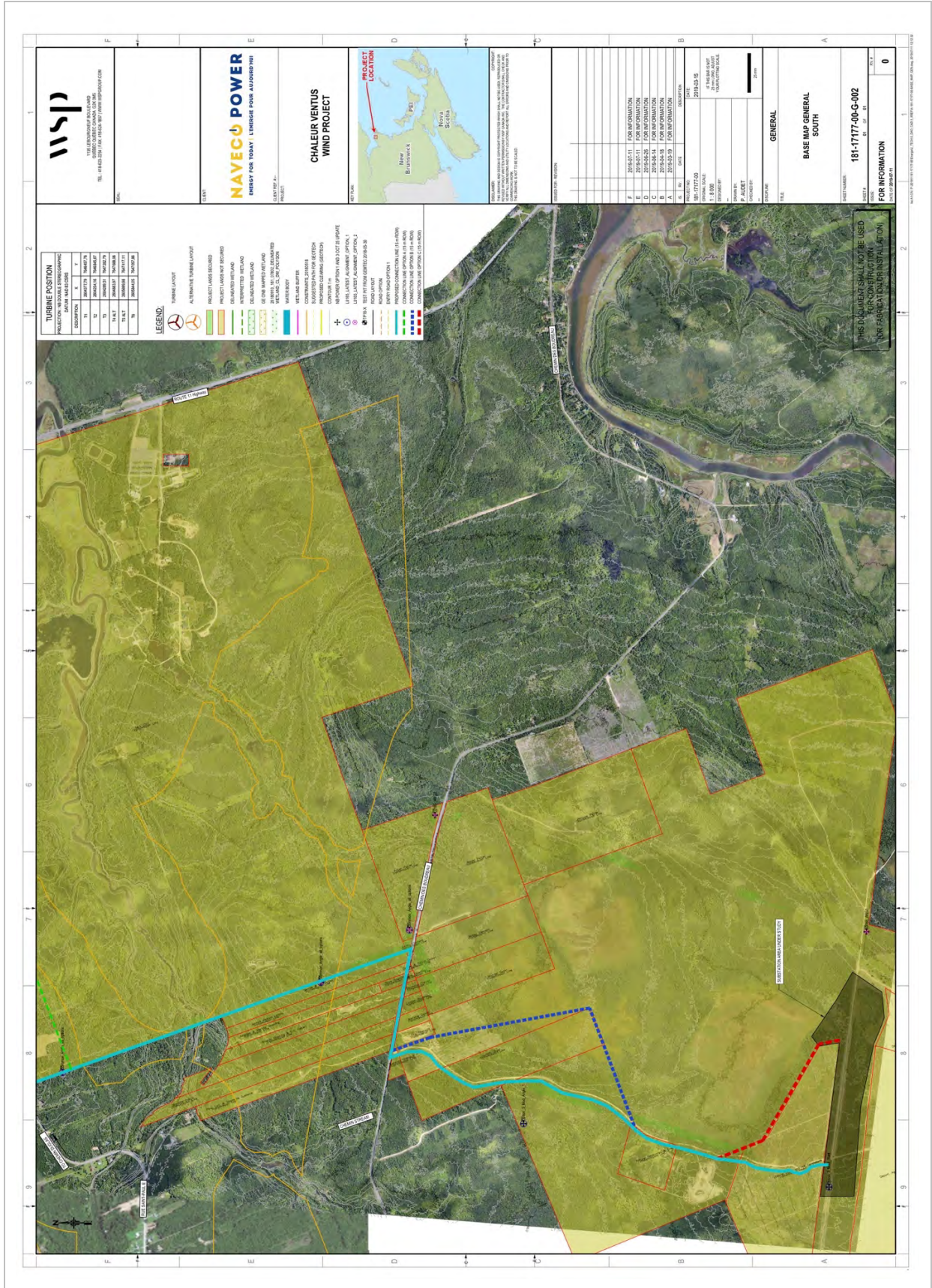
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Appendix B

Accidental Discovery Protocols

Two accidental discovery protocols are recommended for the Project.

Archaeological Resources

**PROTOCOL FOR ACCIDENTAL DISCOVERY OF ARCHAEOLOGICAL RESOURCES<sup>1</sup>**

DOES NOT INCLUDE HUMAN REMAINS

No person, other than one authorized by the Minister responsible for the Department of Tourism, Heritage and Culture, may move, destroy, damage, deface, obliterate, alter, add to, mark or in any other way interfere with an archaeological resource.

Applicable Legislation:

New Brunswick *Heritage Conservation Act*

Agencies Involved:

Heritage and Archaeological Services Branch (HASB), Department of Tourism, Heritage and Culture, Government of New Brunswick

**Protocol for Accidental Discovery of Heritage Resources (e.g., artifacts or features)**

Identify

All construction personnel are responsible for reporting any unusual materials unearthed during construction activities to the Construction Supervisor.

Stop Work

In those situations where the find is believed to be an archaeological resource (including artifacts or features), the Construction Supervisor will immediately stop work in the vicinity of the find and notify their immediate supervisor. As per the Heritage Conservation Act, the find must be reported to HASB who can be reached at (506) 453-2738. This notification can be done directly by the City of Fredericton or through a consulting archaeologist.

Investigate

HASB will respond to the find and investigate. If HASB is unable to respond, a consulting archaeologist holding a permit from the Government of New Brunswick will investigate the find and, if it is determined to be an archaeological artifact or feature, must consult with HASB. If HASB has been contacted directly and responds to the find, this consultation is not required.

Mitigate

An appropriate mitigation strategy with respect to the accidental discovery must be developed and implemented in consultation with HASB.

Resuming Work:

Work can only resume in the vicinity of the find when authorized by the Environmental Manager and/or the Construction Manager once clearance has been received from HASB.

<sup>1</sup> Sourced and edited from: Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick. Archaeological Services, Heritage Branch, Department of Culture, Tourism and Healthy Living, Fredericton. May 31, 2012.

Human Remains

**PROTOCOL FOR ACCIDENTAL DISCOVERY OF HUMAN REMAINS<sup>2</sup>**

Human remains may fall into the following four categories:

1. **Legal evidence.** All human remains that are discovered must be initially treated as potential forensic evidence.
2. **Cemeteries registered under the New Brunswick Cemetery Companies Act**
3. **Historic Cemeteries and Family plots.** These include human remains buried in currently neglected and overgrown cemeteries and family plots. Living relatives or descendants may exist.
4. **Archaeological remains.** Archaeological human remains include human remains that were interred as a result of religious/social burial practices. These remains may occur as a single burial or as multiple burials in unrecorded burial sites or unrecorded cemeteries, family plots, or elsewhere.

Applicable Legislation:

Section 182(b) of the Criminal Code of Canada states: “Every one who improperly or indecently interferes with or offers any indignity to a dead human body or human remains, whether buried or not, is guilty of an indictable offence and liable to imprisonment for a term not exceeding five years.”

Section 11 of the New Brunswick *Heritage Conservation Act* prohibits the alteration of any burial ground without an Archaeological Site Alteration Permit.

Agencies Involved:

Depending on the circumstances surrounding the discovery of human remains, several agencies may be involved and include:

- **RCMP, Caraquet Detachment.** The lead police agency will decide what course of action to initiate.
- **Regional Coroner.** The Coroner’s Office may become involved in criminal investigations and in determining the cause of death.
- **Chief Medical Officer.** The interest of the Chief Medical Officer relates to health issues.
- **Heritage and Archaeological Services Branch (HASB)** Department of Tourism, Heritage and Culture, Government of New Brunswick.

If it is determined that the human remains are not associated with a forensic matter, HASB will be consulted to determine the proper course of action.

Protocol for Accidental Discovery of Human Remains

Halt all Activities

Halt all activities in the vicinity (minimum 10 metre x 10 metre area) of the human remains at once. Until determined otherwise, the remains must be treated as evidence in a forensic investigation. If the remains are found in the bucket of heavy equipment, the bucket must not be

<sup>2</sup> Sourced and lightly edited from: Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick. Archaeological Services, Heritage Branch, Department of Culture, Tourism and Healthy Living, Fredericton. May 31, 2012.

emptied as physical evidence may be destroyed. When remains are found, the potential for additional burials or human remains must be acknowledged and future project activities must reflect this elevated potential. A strategy in respect of this will be determined in consultation with the responsible agency or agencies.

#### Secure the Area

The area must immediately be designated as “Out of Bounds” to all personnel and the public. Depending on the weather and other conditions, the human remains discovered must be provided with non-intrusive protection, such as covering with a cloth or canvas tarp (non-plastic preferred). All personnel and traffic must exit the site by one common path. Curiosity seekers must be kept off the site.

#### Inform the Lead Police Agency (RCMP, Caraquet Detachment)

The nearest detachment of the lead police agency must be informed immediately – this is not an emergency call and do not use 911. Upon verbal description of the situation, the lead police agency may visit the location to view the site/remains. The lead police agency will decide as to whether the Coroner, Chief Medical Officers, and/or HASB or others must be involved.

RCMP, Caraquet Detachment  
50 Saint-Pierre Blvd West  
Caraquet NB E1W 1B6

Non-Emergencies Telephone: 1 506 726 5222

The lead police agency may be called to determine if the situation is associated with a crime or an archaeological feature. If it is concluded to be related to a crime, the lead police agency will follow their own protocols and procedures, such as informing the Coroner, collecting data, removing the remains, or other procedures.

If the lead police agency determines the situation not to be associated with a forensic matter, then HASB will be consulted at (506) 453-2738 to determine the proper course of action.

If HASB determines that the human remains are not associated with an archaeological feature but still have to be removed, certificates of removal may be required from both the Coroner’s Office and the Chief Medical Officer of New Brunswick.

#### Resuming Work:

Work can only resume in the vicinity of the discovery once clearance has been received from the authorities and agencies concerned.

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