

Project Description

Madawaska/Edmundston International Bridge Replacement

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Executive Summary

The International Bridge between the City of Edmundston (New Brunswick, Canada) and the Town of Madawaska (Maine, United States) represents an important transportation route over the Saint John River, where a large proportion of surface trade between the two countries has traditionally passed.

The bridge was opened to traffic in 1921 (97 years ago) and now has many structural deficiencies. Consequently, weight restrictions were applied in October of 2017, prohibiting the passage of vehicles heavier than 5 tons. This restriction prevents the passage of large trucks and certain emergency vehicles. Although targeted structural repairs were carried out in the fall of 2017 on the Canadian side of the bridge deck, the 5-ton weight restriction remains.

The existing Land Port of Entry (LPOE) in Madawaska, Maine, (built in 1959) is also substandard, inhibiting the United States (U.S.) agencies assigned to the Port from adequately fulfilling their respective missions. The small size of the facility does not support adequate queuing space for vehicles and causes traffic to back up into Edmundston. The Canadian border facility in Edmundston, New Brunswick, was built in 1992 and remains adequate.

A Feasibility and Planning Study (Maine DOT et al., 2018) was carried out to identify a preferred location for the replacement of the international bridge. More than twelve potential crossing locations/configurations were initially considered. The alternative currently preferred by all Federal, State and Provincial partners is a downtown location close to the existing location, because:

- The bridge replacement is needed as soon as possible, due to the structural deficiencies which have resulted in a significant load restriction.
- The Canadian Border Services Agency (CBSA) and Public Services and Procurement Canada (PSPC) built the current border facility on the Canadian side in 1992, and do not currently have plans or a budget in place to build a new facility elsewhere.
- Overall costs (new bridge, new road connections, new border facilities, etc.) are lower downtown than at other locations.

The proposed new bridge location is upstream of the existing location, and will connect the existing Canadian border facility to a new U.S. LPOE located 350 m west of the existing U.S. LPOE. The new bridge will be longer than the existing one (see Figure 1.1).

The Maine Department of Transportation (Maine DOT) is in charge of designing the bridge, tendering the project, administering the contracts, and overseeing construction. The Maine DOT will also be responsible for obtaining regulatory approvals in the U.S. The New Brunswick Department of Transportation and Infrastructure (NBDTI) will assist with the design, conduct public consultation in Canada, and seek regulatory approvals in Canada, including:

- At the provincial level, an Environment Impact Assessment (EIA), which is under way. Valued Components in the bridge area include: the aquatic environment, wetlands and rare plants, wildlife and wildlife habitat, migratory birds and migratory birds habitat, heritage resources, the atmospheric environment, groundwater, land use and economy, and the current use of land and resources for traditional purposes by Indigenous Persons.
- At the federal level, the list of Designated Projects in the *Canadian Environmental Assessment Act* (CEAA) from 2012 includes international bridges. This Project Description is being submitted in accordance with the regulations under CEAA 2012 and the Canadian Environmental Assessment (CEA) Agency's guidance document. After reviewing this Project Description, the CEA Agency will determine if a federal Environmental Assessment is required or not in this case.

Two public meetings were held (in June of 2017 and January of 2018), in both the Town of Madawaska and the City of Edmundston each time, to gather feedback from the general public during the Feasibility and Planning Study. Indigenous Communities were directly informed about the project as well. Meetings were held with other stakeholders including industry (railways, pulp and paper mill), business groups, and elected officials.

The new bridge will have two driving lanes, shoulders, and a sidewalk. The bridge design work and the regulatory approval process will take place concurrently over the next two years, and the construction phase will likely last three years. The bridge opening will have to coincide with the opening of the new LPOE in Madawaska, Maine, which will be built simultaneously (but is not part of the international bridge project).

Abbreviations

ASB	Archaeological Services Branch of the New Brunswick Department of Tourism, Heritage and Culture
CBP	Customs and Border Protection (United States of America)
CBSA	Canadian Border Services Agency
CEAA	Canadian Environmental Assessment Act
CEA Agency	Canadian Environmental Assessment Agency
CRA Fishery	Commercial/Recreational/Aboriginal Fishery
DFO	Department of Fisheries and Oceans (Canada)
ECCC	Environment and Climate Change Canada
EIA	Environment Impact Assessment (provincial – New Brunswick)
EA	Environment Assessment (federal - Canada)
EMM	Environmental Management Manual
EMP	Environmental Management Plan
GSA	General Services Administration (United States of America)
LPOE	Land Port of Entry
Maine DOT	Maine Department of Transportation
NBAAS	New Brunswick Aboriginal Affairs Secretariat
NBDELG	New Brunswick Department of Environment and Local Government
NBDERD	New Brunswick Department of Energy and Resource Development
NBDTHC	New Brunswick Department of Tourism, Heritage and Culture
NBDTI	New Brunswick Department of Transportation and Infrastructure
PSPC	Public Services and Procurement Canada
U.S.	United States of America

CEAA Project Description Concordance Table

Content required by the <i>Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act (2012)</i>*	Corresponding Report Section
1. General Information and Contacts	
1.1 Nature of the designated project, and proposed location	1.1 & Figure 1.1
1.2 Proponent information	1.2
1.2.1 Name of the designated project	1.2.1
1.2.2 Name of proponent	1.2.2
1.2.3 Address of the proponent	1.2.3
1.2.4 Chief Executive Officer	1.2.4
1.2.5 Principal contact person	1.2.5
1.3 List of jurisdictions and other parties consulted	1.3
1.4 Regulatory requirements from other jurisdictions	1.4 & Table1.1
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2.4.3 Types of wastes and plans for their disposal	2.4.3
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Content required by the <i>Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act (2012)</i>*	Corresponding Report Section
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2.5.2 Main activities in each phase of the project	2.5.2
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3.1.1 Coordinates	3.1.1
3.1.2 Site maps/plans of project components and activities	3.1.2, Figures 3.1 to 3.3
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3.1.4 Photographs of work locations	3.1.4, Figures 3.6 & 3.7
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3.2 Land and water uses	
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3.2.2 Legal description of land to be used	3.2.2
3.2.3 Applicable land use, water use, resource management or conservation plans	3.2.3
3.2.4 Access to land used for traditional purposes by Indigenous Groups	3.2.4
4. Federal Involvement	
4.1 Proposed or anticipated federal financial support	4.1
4.2 Federal lands that may be used	4.2
4.3 Federal permits, licenses or other authorizations	4.3 & Table 1.1
5. Environmental Effects	
5.1 Description of the physical and biological setting	5.1, Figures 5.1 to 5.3
5.2 Description of any changes that may be caused to:	
a) Fish and fish habitat	5.1.3 & 5.2.1

Content required by the <i>Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act (2012)</i>*	Corresponding Report Section
b) Aquatic species at Risk/Marine plants	5.1.3, 5.1.4 & 5.2.2
c) Migratory birds	5.1.5 & 5.2.3
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6.4 Consultation and information-gathering plan	6.4
7. Consultation with the Public and Other Parties	
7.1 Overview of key comments and concerns	7.1
7.2 Overview of any ongoing and proposed consultation activities	7.2 & Table 7.1
7.3 Description of consultations with other jurisdictions regarding EA or regulatory decisions	7.3 & Table 7.2
8. Summary of the Project Description (English and French)	See separate summary document
*SOURCE: <i>Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, 2012</i> . (Canadian Environmental Assessment Agency, March 2015)	

1 General Information and Contacts

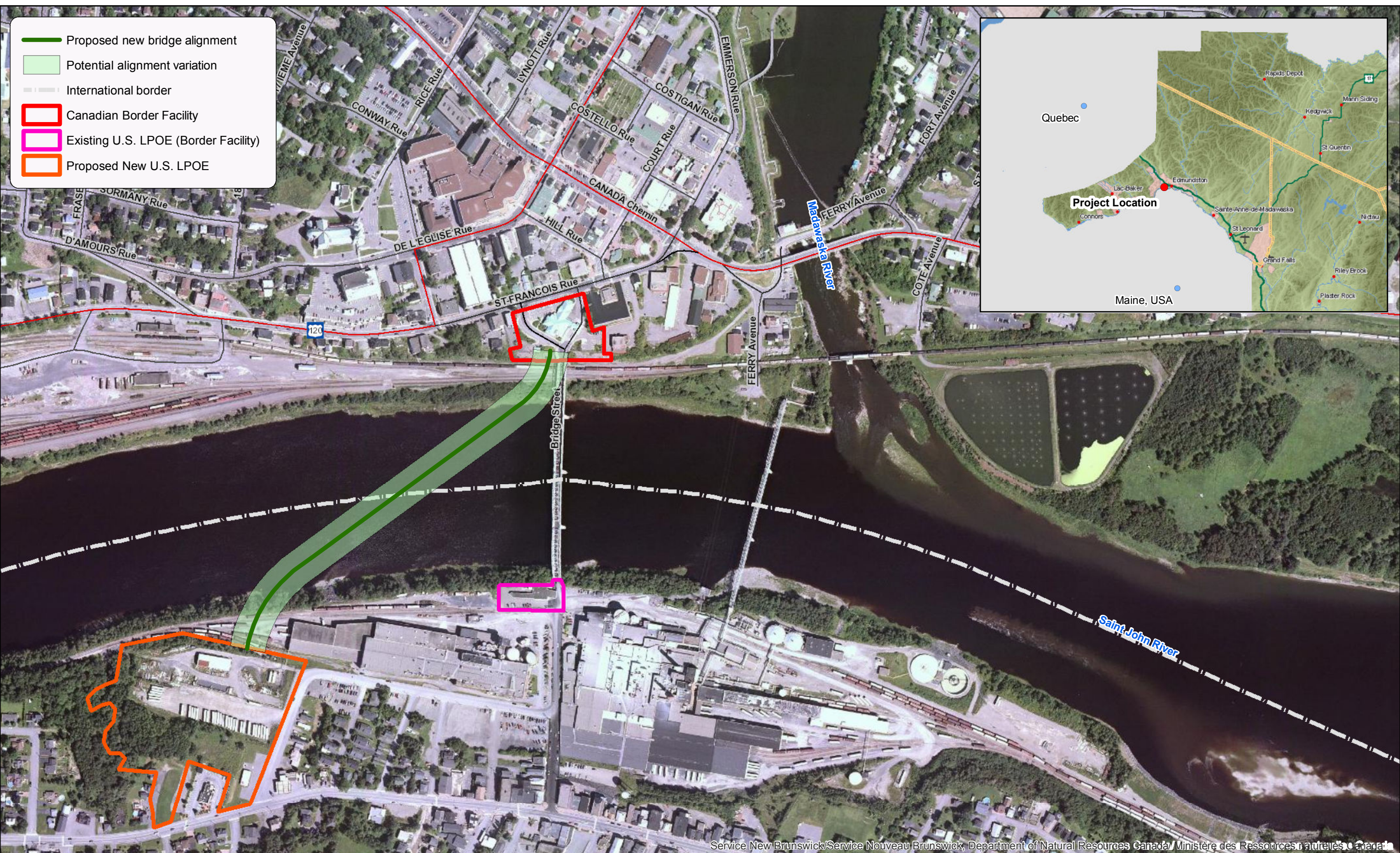
1.1 Nature of the designated project and proposed location

The International Bridge over the Saint John River between the City of Edmundston, New Brunswick, and the Town of Madawaska, Maine, represents an important transportation route where a large proportion of surface trade between the two adjacent jurisdictions has traditionally passed. The bridge provides a connection between Route 120 on the Canadian side and Route 1 on the United States (U.S.) side. However, the bridge is aging and requires replacement to restore truck traffic and trade across the border, and to maintain the flow of traffic. The Maine Department of Transportation (Maine DOT) and the New Brunswick Department of Transportation and Infrastructure (NBDTI) each own and maintain half of the existing bridge, as the international border is located approximately in the middle of the bridge.

The purpose of the Madawaska/ Edmundston International Bridge Replacement Project (the Project) is to replace the existing bridge with a new bridge. This new bridge will span the Saint John River between the existing Canada Border Services Agency (CBSA) facility and a proposed new U.S. Land Port of Entry (LPOE) to be constructed approximately 350 m upstream of the existing LPOE. For border security, visibility, and traffic flow purposes, the border agencies require that the new bridge span directly between the customs facilities in a relatively straight line. Because of moving the US border facility, the proposed bridge will be longer than the existing bridge (approximately 520 m compared to 290 m currently). Figure 1.1 shows the bridge alignment currently being considered.

The Maine DOT is in charge of designing the bridge, tendering the project, administering the contracts, and overseeing construction. The Maine DOT will also be responsible for obtaining regulatory approvals in the US. The NBDTI is assisting with the design, obtaining regulatory approvals from Canadian regulators, and public consultation in Canada. The NBDTI is currently carrying out a provincial Environmental Impact Assessment, which will focus on the environmental effects of the project that may occur on the Canadian side of the border. Effects on the U.S. side are undergoing appropriate environmental reviews in that country.

Document Path: S:\STRENVIRONNEMENT\District 6\Madawaska Edmundston International Bridge\01 - Mapping\CEAA Figures\Fig_1.1_ProjectLocation_2018_11_16.mxd



New Brunswick Department of Transportation and Infrastructure
 Date: November 16, 2018
 Projection: NB Stereographic



Madawaska-Edmundston International Bridge
 Project Description

Location Map

Drawn by:
 GMQ

Figure No.: 1.1

Checked by:
 VB



1.2 Proponent information

1.2.1 Name of the designated project

Madawaska/Edmundston International Bridge Replacement.

1.2.2 Name of the proponent

The NBDTI will act as the proponent with regards to obtaining provincial and federal environmental approval for the project on the Canadian side of the border.

1.2.3 Address of the proponent

New Brunswick Department of Transportation and Infrastructure

<u>Mailing Address:</u>	<u>Published Address:</u>
Kings Place	Kings Place
P. O. Box 6000	440 King Street
Fredericton, New Brunswick	Fredericton, New Brunswick
E3B 5H1	E3B 5H8
Canada	Canada

1.2.4 Chief Executive Officer

Serge Gagnon, Executive Director

NBDTI – Engineering Services

Telephone: (506) 457-7881

Email: Serge.Gagnon@gnb.ca

1.2.5 Principal contact person

Vincent Balland, Environmental Engineer

NBDTI – Design Branch

Telephone: (506) 453-5344

Email: Vincent.Balland@gnb.ca

1.3 List of jurisdictions and other parties consulted

A Feasibility and Planning Study (Maine DOT et al., 2018) was conducted from January of 2017 to April of 2018. As part of the study, various potential locations for the new international bridge and associated border crossing facilities were considered. The Maine DOT and the NBDTI have been working together to inform stakeholders (federal, state/provincial, and municipal jurisdictions in both countries, indigenous communities, and the public) of the proposed project plans, and have been eliciting feedback to help guide the study design and decision-making process. The following sections provide details on the consultation that has taken place to date.

The detailed outcome of First Nations consultation activities is provided in *Section 6 - Proponent Engagement and Consultation with Indigenous Communities*.

The detailed records of the two public information sessions and stakeholders' consultation activities are provided in *Section 7 – Consultation with the Public and Other Parties*.

1.3.1 Consultation of various jurisdictions

During the course of the Feasibility and Planning Study, meetings/conference calls took place monthly. Typically, the following agencies participated in these meetings, in addition to the consultants hired to assist with the project (HNTB, Gannett Fleming, and Opus):

Canada – Federal level:

- Canadian Border Services Agency (CBSA)
- Public Services and Procurement Canada (PSPC)

Canada – Provincial level:

- NBDTI

USA – Federal level:

- U.S. Customs and Border Protection (CBP)
- U.S. General Services Administration (GSA)

USA – State level:

- Maine DOT

Other jurisdictions consulted by the Maine DOT and the NBDTI as part of the Feasibility and Planning Study included:

Canada – Federal level:

- Canadian Environmental Assessment Agency (CEA Agency) (October and December of 2017)
- Transport Canada (October and November of 2017)
- Global Affairs Canada (October of 2017)

Canada – Provincial level:

- New Brunswick Department of Environment and Local Government (NBDELG) (February of 2018)
- New Brunswick Department of Energy and Resource Development (NBDERD)
- New Brunswick Aboriginal Affairs Secretariat (NBAAS)
- New Brunswick Intergovernmental Affairs
- New Brunswick Executive Council Office

Canada – Municipal level: Meetings were held with the City of Edmundston on:

- March 8th, 2017
- June 28th, 2017
- November 7th, 2017
- January 29th, 2018

USA – Federal level:

- US Department of State
- US Coast Guard

USA – State level:

- Maine State Historic Preservation Commission
- Maine Department of Economic and Community Development

USA – Municipal level:

Several Meetings were held with the Town of Madawaska in 2017 and 2018

1.3.2 Consultations with elected officials and other representatives

Meetings were held with local elected officials and other representatives on:

- December 19th, 2017, via conference call with Minister Fraser (NBDTI), NBDTI officials, and local Edmundston politicians/representatives (business community, municipal, provincial and federal);
- January 29th, 2018 in Edmundston, NB, with local Edmundston politicians/representatives (business community, municipal, provincial and federal).

1.3.3 First Nations consultation

First Nations were contacted:

- In western New Brunswick, by mail, in May of 2017 and September of 2018;
- In north-eastern Maine, by email, in December of 2017.

More detailed information regarding First Nations consultation is provided in Section 6.

1.3.4 Industry consultation

- Meetings were held with the Canadian National Railway Company (CN Rail) on:
 - March 10, 2017
 - June 23rd, 2017
- Consultation with Maine Northern Railways (MNR) was conducted via telephone by the Maine DOT
- Meetings were held with Twin Rivers Paper Company on:
 - February 2, 2017
 - March 30, 2018
 - April 23, 2018

1.3.5 Local public consultation

Consultation has taken place with the following local organizations and at public sessions:

- Meetings were held with the Edmundston Chamber of Commerce on:
 - March 10th, 2017
 - June 28th, 2017
 - January 29th, 2018

- Meetings were held with the Edmundston Downtown Business Group on:
 - March 20th, 2017
 - June 28th, 2017
 - January 29th, 2018

- Public information sessions were held in both Edmundston and Madawaska on:
 - June 28th, 2017
 - January 31st, 2018

1.3.6 Other consultation

A study-specific website – <https://www1.maine.gov/mdot/planning/studies/meib/>– has been created and updated as materials are developed. In addition to materials about the study, the website provides an opportunity to submit comments directly to the Maine DOT and the NBDTI.

1.4 Regulatory requirements from other jurisdictions

1.4.1 Provincial Environmental Impact Assessment (New Brunswick)

The bridge replacement project will undergo a provincial Environmental Impact Assessment (EIA) in New Brunswick to satisfy provincial regulatory requirements. The provincial EIA process is administered by the New Brunswick Department of Environment and Local Government (NBDELG). An EIA registration document will be prepared by the NBDTI in the summer/fall of 2018, after field surveys have been carried out during the spring/summer of 2018. The scope of the provincial EIA will include assessments of the following Valued Components (VCs):

- **Aquatic environment** (fish, fish habitat, species at risk, critical habitat, fisheries including sport or subsistence fisheries, migration routes/movement corridors, water quality, river flows, water levels, navigable waters)
- **Wetlands and rare plants** (general vegetation/habitat, species at risk, species of conservation concern, and critical habitat)
- **Wildlife and wildlife habitat** (general wildlife/habitat, species at risk, species of conservation concern, and critical habitat)
- **Migratory birds and migratory birds habitat** (including early and summer breeding bird studies, and including species at risk and critical habitat)
- **Heritage resources** (including paleontological resources, archaeological resources, and built heritage)
- **Atmospheric environment** (air quality, sound quality (noise), greenhouse gas emissions)
- **Groundwater** (hydrogeology, groundwater resource use within 500 m of the project, groundwater quality)
- **Land use and economy**
- **Current use of land and resources for traditional purposes by Indigenous Persons**

In the provincial EIA Registration Document, potential effects of the project will be assessed, and associated mitigation measures will be developed. The NB EIA process includes a review of the registration document by a Technical Review Committee (TRC) comprised of representatives of relevant provincial and federal (Canadian) agencies, including at least:

- The NB Department of Environment and Local Government (NBDELG)
- The NB Department of Energy and Resource Development (NBDERD)
- The NB Aboriginal Affairs Secretariat (NB AAS)

- The CEA Agency
- Fisheries and Oceans Canada (DFO)
- Environment and Climate Change Canada (ECCC)
- Transport Canada

The NBEIA process also requires public consultation steps, including engagement with First Nation communities.

1.4.2 Environmental Assessment in the USA

U.S. agencies that are part of the project team are undergoing an Environmental Impact Study that incorporates both the new border station and the U.S. portion of the bridge.

The project will also need the review and approval of the Maine Department of Environmental Protection under Section 401 (of the Clean Water Act) Water Quality Certification. This approval is typically issued by the Maine Department of Environmental Protection concurrently with the *Natural Resources Protection Act* Permit.

1.4.3 Navigation

Canada:

Transport Canada provided the following information on February 27, 2018:

- *Existing bridge: The existing bridge is considered a “lawful” works under the regime of the Navigation Protection Act (NPA) by virtue of it being a “crown work” – as such any proposed changes to the bridge (including its removal) would require an application to, and approval from, the NPP. The existing bridge, however, is located on waterway not listed in the Schedule of the NPA and the Province has the option of “opting-out” (removing the bridge from the NPA regime) prior to April 1, 2019. If the bridge is “opted out”, it would NOT require an approval for its physical removal/decommissioning.*
- *Proposed new bridge: with respect to the proposed new bridge – the applicability of the NPA will depend on the timing of any application submitted to the department and/or the commencement of construction activities. Under the current legislation, as mentioned above,*

the proposed bridge would be located over a waterway that is not listed on the Schedule to the Act – meaning it would not require an approval pursuant to the current NPA. However, the NPA is undergoing legislative changes. A new act – the Canadian Navigable Waters Protection Act (CNWA) - is scheduled to come into force in early 2019. Under the new legislation, proponents of all new projects proposed in, on, over, under or through any navigable water (not just Scheduled Waters) will be required to post/advertise the proposed project on a public registry for review and comments by the public. In this second scenario, any navigation related issues that could not be resolved between the public and the proponent could result in the Minister of Transport pulling the project into the CNWA regime and determining that a CNWA approval would be required.” (personal communication from Carl Ripley, Transport Canada)

The NBDTI intends to “opt out” the existing bridge before April of 2019.

Due to the timing of the new bridge design, the NBDTI anticipates to be required to apply for an approval of the new bridge under the new CNWA.

United States:

The Saint John River has been determined to be a non-navigable waterway by the U.S. Army Corps of Engineers.

1.4.4 Additional regulatory requirements

Table 1.1 below lists the approvals broadly related to environmental considerations anticipated to be needed for this project, in Canada, in the USA, and internationally (International Boundary Commission and International Joint Commission). This list is indicative only and is not intended to represent an exhaustive list of legal requirements.

Table 1.1 Key Environmental Regulatory Requirements

Agency	Name of Permit or Approval
Canada - Province of New Brunswick	
New Brunswick Department of Environment and Local Government	Environmental Impact Assessment (EIA)
New Brunswick Department of Environment and Local Government	Watercourse and Wetland Alteration (WAWA) Permit
Canada - Federal agencies	
Canadian Environmental Assessment Agency	Decision Statement, possibly Environmental Assessment if project is screened in
Transport Canada	<i>Navigation Protection Act</i> Approval <i>International Bridges and Tunnel Act</i> : approval required from the Governor in Council
Department of Fisheries and Oceans Canada	<i>Fisheries Act</i> Authorization (if project anticipated to cause serious harm to fish species or habitats associated with commercial, recreational or indigenous fisheries)
U.S. - State of Maine	
Maine Department of Environmental Protection	Section 401 (of the <i>Clean Water Act</i>) Water Quality Certification
Maine Historic Preservation Commission	Compliance with Section 106 of the <i>National Historic Preservation Act</i>
U.S. Army Corps of Engineers and Maine Department of Environmental Protection	Section 404 of the <i>Clean Water Act</i> Permit and <i>Natural Resource Protection Act</i> Permit
U.S. - Federal agencies	
U.S. General Services Administration	Compliance with the <i>National Environmental Policy Act</i>
Federal Highway Administration	Compliance with the <i>National Environmental Policy Act</i> (if federal funds are used in the replacement of the international bridge)
Federal Highway Administration	Compliance with Section 4(f) of the U.S. Department of <i>Transportation Act</i> of 1966 for use of public properties / properties with a public interest (if federal funds are used in the replacement of the international bridge)
U.S. Coast Guard	Bridge Permit
U.S. Department of State	Presidential Permit or waiver of permit
U.S. Department of State	Secretary of State approval of agreements between countries
International agencies	
International Boundary Commission	International Boundary Commission Approval
International Joint Commission	Order of Approval in accordance with the <i>International Boundary Waters Treaty Act</i> of 1909

1.5 Existing regional environmental study

An Environmental Impact Statement (EIS) report was prepared by the US General Services Administration, regarding a proposed new Madawaska Border Station in 2007. This report includes a detailed section describing the surrounding environment (in pages 35 to 55). This EIS report will be provided to the CEA Agency along with this project description.

2 Project Information

2.1 Description of the project, context and objectives

The purpose of this project is to provide a crossing for a safe and efficient flow of current and projected traffic volumes, including the movement of goods and people between Edmundston, New Brunswick and Madawaska, Maine.

The proposed project is needed because the existing international bridge is nearing the end of its useful life. The existing 287 m long bridge was opened to traffic in 1921 (97 years ago). The bridge now has many deficiencies:

- Substandard geometry – roadway width & clearance
- Foundations susceptible to undermining
- Piers cracked and deteriorated
- Significant steel corrosion
- Insufficient bridge capacity

The existing Madawaska LPOE (built in 1959) is substandard, inhibiting the agencies assigned to the Port from adequately fulfilling their respective missions. The small size of the facility does not support adequate queuing space for vehicles and causes traffic to back up into Edmundston. The Canadian Border Facility (Edmundston LPOE) was built in 1992 and is still adequate.

Due to the condition of the bridge, weight restrictions had to be applied October 27, 2017, prohibiting the passage of vehicles heavier than 5 tons (whereas the bridge was previously rated for the highway rating of 43.5 tons). Large trucks and even certain emergency vehicles are no longer allowed to cross the bridge.

Heavier vehicles currently must use the Clair/ Fort Kent international bridge 32 km upstream, or the Saint-Leonard/Van Buren international bridge 43 km downstream. Despite targeted structural repairs (replacement of critical rusted stringers) carried out in the fall of 2017 on the

Canadian side of the bridge deck, the load rating was kept at a maximum of 5 tons. Due to the extent of the steel deterioration on the bridge and the amount of time and money it would take to repair the defects, it is anticipated that the 5 tons posting will remain in effect until the bridge is replaced.

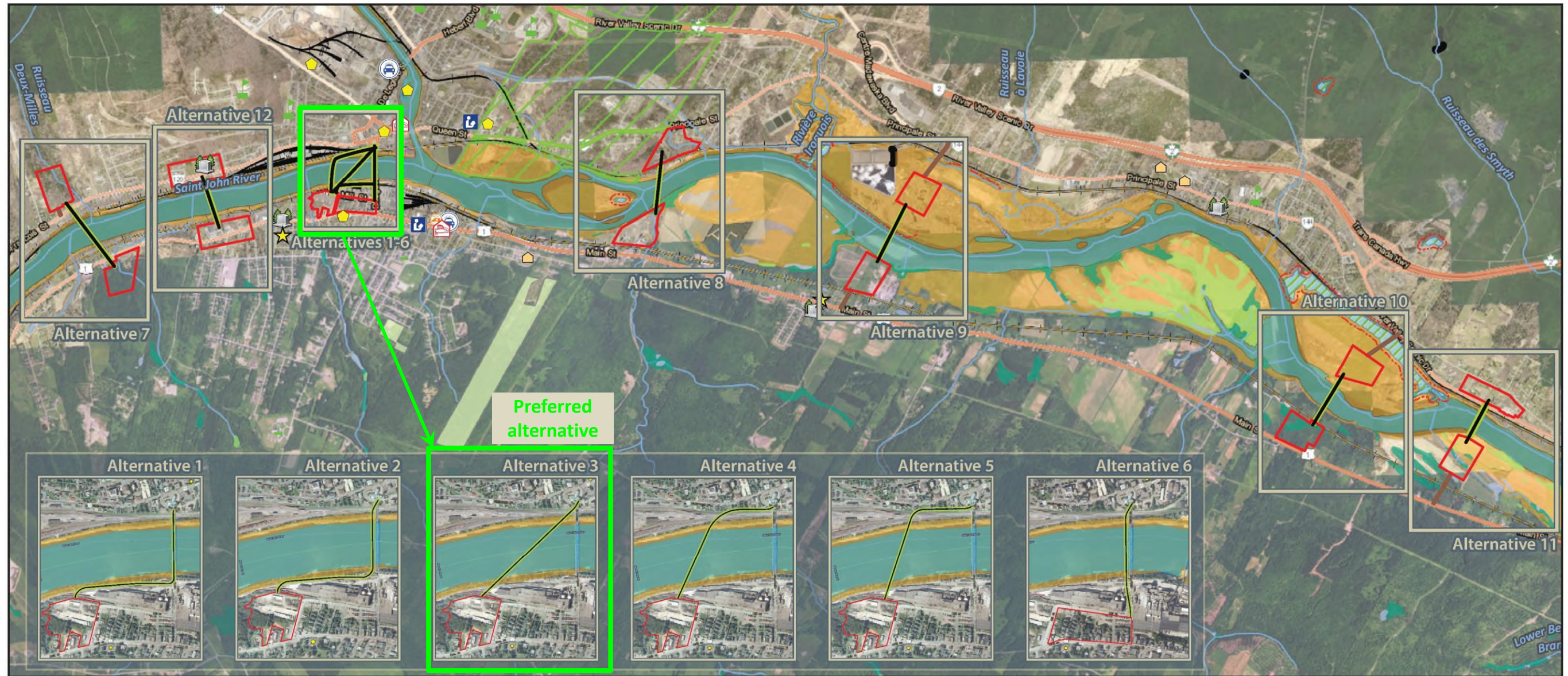
A Feasibility and Planning Study was carried out from January of 2017 to April of 2018. More than twelve potential crossing locations/configurations were initially considered during the study, including several out-of-town options upstream and downstream of the existing bridge. Figure 2.1 shows twelve of these options that were assessed in greater detail. Alternative 3 on Figure 2.1 was selected as the preferred option. Rehabilitating the existing bridge was also considered, but this option was not retained. The existing bridge is anticipated to be removed as part of the project.

The alternative currently preferred by all Federal, State and Provincial partners is a downtown location close to the existing location. The new bridge will likely span directly from the existing Canadian Border Facility to the new planned Madawaska Port of Entry, located approximately 365 m to the west of the existing facility. Several factors lead to the choice of this option:

- The bridge replacement is needed as soon as possible, due to the current bridge condition which has resulted in a significant load restriction.
- The CBSA and PSPC built the current border facility on the Canadian side in 1992, and do not currently have plans or a budget in place to build a new facility elsewhere.
- Overall costs (new bridge, new road connections, new border facilities, etc.) are lower downtown than at other locations.

The new bridge will have two driving lanes, shoulders, and a sidewalk, and will be designed for a 75-year life. During the Operation phase, activities in the Project Area will include traffic flow, as well as winter and other maintenance.

Figure 2.1 Alternative locations considered for the new Madawaska-Edmundston International Bridge during the Feasibility Study (Source: HNTB)



Legend			
★ Cultural resource building	🚓 Police	🌊 Stream flowline	🌿 Freshwater emergent wetland
📖 Library	🏠 Nursing home	🔴 Regulated wetlands map – 30 meter buffer (NB)	🌳 Freshwater forested/shrub wetland
🚒 Fire station / EMS	🚚 Bridge	🛣️ Man-made structures to access water	🌊 Freshwater pond
🏪 Cemetery	🟢 Bridge Right-of-way	🏠 Crown Lands (Canada)	🌿 Wetlands (Canada)
🚑 Ambulance	🔴 Port of Entry property	🏠 Conserved Lands (Maine)	🌊 Stream/River area
🎓 Ecole	🚂 Railroad	🌿 Indigenous Lands	
🏞️ Park		🟡 2008 Flood (Canada)	
		🟠 Protected wellfields	

0 1,500 3,000 6,000 9,000 Feet

0 460 910 1,830 2,740 Meters

Note: Inset images of Alternatives 1 through 6 are not to scale

2.2 Provisions of the *Regulations Designating Physical Activities*

The proposed project falls under Section 28 (a) of the consolidated Regulation SOR/2012-147 (amended on Dec. 31, 2014):

*“28 The construction, operation, decommissioning and abandonment of a new
(a) international or interprovincial bridge or tunnel;”*

2.3 Components and activities

2.3.1 Physical works

The project includes the construction of a new international bridge spanning across the Saint John River between Edmundston, New Brunswick, and Madawaska, Maine. The bridge is being constructed as a replacement for the existing international bridge which is anticipated to be demolished upon completion of the new bridge. The new bridge will be located upstream from the existing bridge. In addition to spanning over the Saint John River, the bridge will span over railway tracks on both side of the river. Adjustments to the layout of the Edmundston border facility will be completed to connect the new bridge to the existing facility.

The configuration of the proposed bridge, including the number and location of the piers, has not been finalized. However, based on a planning study completed for the project, the conceptual bridge alignment includes four piers, two of which fall on the Canadian side of the river. The final bridge alignment, geometry, and the number of piers required, will be established during preliminary design of the project.

2.3.2 Anticipated capacity

The bridge structure will be designed according the American Association of State Highway and Transportation Officials (ASSHTO) LRFD Bridge Design Specifications, using the HL-93 design vehicle, which has a gross vehicle weight of 32 Tons and will be checked with the CSA S6-14 Canadian Highway Bridge Design Code (CHBDC) CL-625-ONT design vehicle, which has a gross vehicle weight of 64 Tons, to ensure that the bridge has sufficient capacity to handle all legal commercial vehicles originating in Canada and the US.

The Madawaska/Edmundston border crossing processed approximately 1,484,000 vehicles in 2016 (3993 passenger cars per day and 73 commercial trucks per day on average) (Transport Canada, 2017). Traffic may increase by up to 10% by 2030. Most of traffic is passenger vehicle traffic compared to commercial vehicle traffic. This proportion of passenger vehicle traffic and commercial vehicle traffic is expected to continue to the year 2030. Whereas the existing bridge will not remain in service following construction of the new bridge, this project is not expected to significantly change projected traffic volumes. The capacity of the bridge in terms of traffic will be in the highest category (Class A - over 4,000 vehicles/day, as per Table 1.1 of the CHBDC).

The roadway on the bridge structure will be configured according to the latest version of the American Association of State and Highway Transportation Officials (AASHTO) – A Policy on Geometric Design of Highways and Streets, to accommodate the projected volume of traffic. In general, the conceptual design for the International Bridge and the approach roadway proposes a bridge consisting of two travel lanes, similar to the existing bridge. Each travel lane will measure 3.66 meters wide. Two shoulders, each measuring approximately 1.5 meters wide, and a sidewalk measuring approximately 1.7 meters wide, will also be provided. The final cross-section and dimensions will be established as part of preliminary design.

The processing capacity of the border crossings on each side is currently the limiting factor to the maximum number of vehicles that can cross the bridge in a day. A traffic study will be done on the Canadian side to analyze the turning movements and queues entering and exiting Canada, and improvements will be made to the roadway geometry and inspection lanes to optimize the efficient movement of vehicles through the existing Canadian Border Facility. The United States port of entry will be completely new and will be designed to optimize the processing of the expected volume of passenger and commercial vehicles.

2.3.3 Expansion

The project does not consist of an expansion of existing infrastructure.

2.3.4 Incidental Physical Activities

The following physical activities are incidental to the designated project:

- Laydown/work areas on the Canadian side: near the Canadian Border Facility.
- Temporary access roads will likely be constructed within Canadian Nation Railways (CN) property to access the work area and the work trestles that will be constructed. The location and size of the roads, as well as the materials that the temporary access roads are constructed from, will be established by the Contractor. There will be strict guidelines for working on or near the rail tracks.
- The new bridge is expected be built from a temporary trestle constructed either upstream or downstream from the proposed bridge. The location, size, and configuration of the temporary trestle will be established by the Contractor. There is also an option to do the work from a barge. On the U.S. side of the river, the construction of a temporary “rock road” may be an option provided to the Contractor.
- In-water piers will be built in isolation of the stream flow by using cofferdams, through the use of cased drilled shafts without separate cofferdams, or using other similar means.
- Once the new bridge is complete, the existing bridge will likely be demolished. The bridge superstructure will be carefully dismantled with debris removed offsite. The three existing river piers will be removed by isolating them from the stream flow by a cofferdam and then demolishing them and removing the debris. The location, size, and configuration of the temporary trestle will be established by the Contractor. There is also an option to do the work from a barge. On the U.S. side of the river, the construction of a temporary “rock road” causeway may be an option provided to the Contractor.
- The construction of temporary shoring towers / falsework may be required to facilitate construction of the new bridge, and to support demolition of the existing trusses. These towers will likely be supported by temporary driven pile foundations. These temporary works will be removed upon completion of the project.

- The Twin Rivers Paper Company (TRPC) owns and operates several utility lines on the existing international bridge under a license agreement with the State of Maine and the Province of New Brunswick. The International Bridge currently supports the following utility lines:
 - On the downstream side of the bridge:
 - Two - 24 inch (61 cm) diameter pipelines
 - One - 18 inch (46 cm) diameter pipeline
 - One - 16 inch (41 cm) diameter pipeline
 - On the upstream side of the bridge:
 - One - 12 inch (31 cm) diameter pipeline
 - One 10 inch x 10 inch (25 cm x 25 cm) wooden duct bank

Only the two 24 inch (61 cm) diameter utility lines conveying liquids or slurries are believed to be operational and will therefore require relocation. Twin Rivers Paper Company has advised that the types of processed water transported through the pipelines consist of Sulphite white water and Groundwood white water. These lines will be relocated elsewhere and the bridge will be demolished. Several options are being explored for potential relocation of the utility lines including:

- 1) on Twin River's existing utility bridge located downstream from the existing international bridge (see Figure 3.5), or
- 2) beneath the Saint John River.

A conclusion has not yet been made regarding the relocation of Twin Rivers' bridge-mounted utilities. The demolition of the existing bridge is within the care and control of the Maine DoT and the NBDBTI. The relocation of the utility lines is not, it is within the care and control of Twin Rivers Papers.

The Maine DOT is in charge of designing the bridge, tendering the project, administering the contracts, and overseeing construction. The Maine DOT will also be responsible for obtaining regulatory approvals in the US. The NBDBTI will seek regulatory approvals in Canada for the project. The Contractor(s) hired for bridge construction, LPOE modification, and/or bridge demolition, and any incidental activities, will have to complete environmental training and comply with the following documents:

- *Construction Manual* (Maine DOT, 2003) ⁽¹⁾
- *Standard Specifications* (Maine DOT, 2014) ⁽¹⁾
- *Best Management Practices for Erosion and Sedimentation Control* (Maine DOT, 2008) ⁽¹⁾
- *Maine Erosion and Sediment Control Practices Field Guide for Contractors* (Maine DEP, 2014) ⁽¹⁾
- Two project-specific plans which will be prepared by the Contractor(s) and be subject to Maine DOT approval: *A Spill Prevention Control and Countermeasure Plan*, and a *Temporary Soil Erosion and Water Pollution Control Plan*.

In addition, on the Canadian side of the project, the Contractor(s) will have to comply with the following documents:

- *Environmental Management Manual (EMM)* (NBDTI,2010) ⁽¹⁾: the EMM is a comprehensive document outlining procedures and methods for environmental impact avoidance during:
 - Planning and Design phases: physical and environmental constraint mapping for corridor selection, minimization of environmental impacts during field surveying and subsurface investigations, choice of horizontal and vertical alignments that minimize impacts, registration of larger projects for Environmental Impact Assessments with the NBDELG.
 - Construction, and Operations, Maintenance & Rehabilitation (OMR) phases: environmental protection measures employed for many activities, including but not limited to: clearing, grubbing, excavation, culvert installation, summer and winter OMR, disposal areas, hazardous material handling, bridge maintenance and ferry operations.

The EMM also contains protection measures used when dealing with environmentally sensitive areas such as: domestic water supplies, designated watersheds, heritage resources, agricultural lands, forest resources, environmentally significant areas, classified waterbodies, estuaries, wetlands, fish habitat, wildlife habitat and species at risk habitat.

- *Standard Specifications* (NBDTI,2015) ⁽¹⁾: the NBDTI will add certain specifications (including environmental specifications) to the contract documents prepared by the Maine DOT.
- The *site-specific Environmental Management Plan (EMP)* which will be prepared by the Design Branch of the NBDTI for this project, once the provincial EIA and the federal environmental review processes are completed. The EMP will be prepared before construction starts, and will include site-specific mitigation measures not already covered by the EMM.

¹ Available online, see reference section at end of document.

During construction, a representative from the Maine DOT will be responsible for on-site inspection to ensure adherence to all construction specifications and permit restrictions, including environmental protection measures.

2.4 Emissions, discharges and waste

2.4.1 Sources of atmospheric emissions

Dust emissions and greenhouse gas (GHG) emissions will be caused by the construction equipment used to build the new bridge and demolish the existing bridge. GHG emissions will also be generated on existing highway infrastructure when trucks deliver supplies to the site. A preliminary calculation of GHG emissions was carried out by Stantec Consulting Ltd (Stantec, 2018), including:

- The GHG emissions associated with the use of heavy equipment during the construction phase of the Project;
- The current GHG emissions during the operation of the existing bridge associated with heavy-duty commercial trucks travelling to the alternate bridges upstream and downstream of the Madawaska/ Edmundston International Bridge; and
- An estimation of the GHG emissions associated with the operation of the future bridge, which will be able to accommodate heavy truck traffic (a detour will no longer be needed).

a) Construction phase:

The assumptions made for the calculations were the following:

- typical construction equipment for a bridge-replacement project will be used,
- construction will occur over a three-year period, 6 months of the year each year; and
- equipment will operate 12 hours a day during that period.

A high-level estimation of the emissions associated with equipment used during construction is 5,900 tCO₂e (tonnes of carbon dioxide equivalent).

b) Operation phase

The assumptions made for the calculations were the following:

- On average, 73 trucks per day were passing through the Edmundston border crossing before the weight restrictions (Transport Canada, 2017);
- half of the commercial trucks that would normally use the Madawaska / Edmundston bridge are travelling to the Clair/ Fort Kent bridge, which is 32 km away; and
- half of the commercial trucks that would normally use the Madawaska/ Edmundston bridge are travelling to the St. Leonard/Van Buren bridge, which is 43 km away.
- Once the Project is constructed, there will be a 32 to 43 km reduction in travel per trip.
- A 143/132km trip was assumed for current conditions (100 km base trip plus the additional distance to detour), and a 100 km trip was assumed once the bridge is operating.

The estimated emissions associated with heavy-duty commercial trucks travelling in the current scenario is 9.1 tCO₂e/day, whereas after the new bridge is operational, the emissions are estimated to be 6.6 tCO₂e/day. The estimated reductions in emissions associated with heavy-duty commercial trucks being able to use the new bridge are 2.5 tCO₂e/day or 923 tCO₂e per year.

Measures to limit dust emissions, vibrations, GHG emissions, and noise pollution during construction on the Canadian side of the project will be as per the EMM (NBDTI, 2010), including Sections 5.6 *Dust Control*, 5.8.2 *Blasting*, 5.19.2 *Idling*, 5.23.6 *Noise Sensitive Areas*. If additional mitigation measures are identified during the provincial EIA review process, they will be added to the site-specific EMP that will be prepared for this project.

2.4.2 Sources and location of liquid discharges

The project may include the construction of closed drainage systems. Bridge drains will also be installed on the proposed bridge. The number and location of drainage outlets and bridge drains will be established as part of preliminary design. No other liquid discharges are anticipated as part of this project.

In case of an accidental spill:

- In Maine, emergency response measures are established and enforced in accordance with the U.S. Clean Water Act. Soil Erosion and Water Pollution Control Plans (SEWPCP) are prepared for all earthmoving construction projects undertaken by the Maine DOT. Maine DOT has developed Standard Specification 656, Temporary Soil Erosion and Water Pollution Control, which requires the contractor to develop a SEWPCP, have it approved by Maine DOT, and implement it for the life of the contract. This standard has requirements for documenting inspections and maintenance as well as a Spill Prevention Control and Countermeasures Plan. Earthmoving construction and maintenance projects carried out by state employees are also required to develop and implement a SEWPCP. This manual is referenced and incorporated into that standard and provides guidance and specifications for BMP implementation. These requirements are administered by the Surface Water Quality Unit (SWQU) of Maine DOT's Environmental Office.
- In New Brunswick, emergency response measures and preventative measures to avoid contamination are included in the following sections of the EMM (NBDTI, 2010): *5.12 Spill Management*, *5.13 Storage and Handling of Petroleum Products*, and *5.14 Storage and Handling of Other Hazardous Materials*.

2.4.3 Types of wastes and plans for their disposal

The existing bridge is anticipated to be decommissioned and removed. The steel superstructure will become the property of the Contractor and will likely be recycled. The existing superstructure may contain lead paint. Therefore, provisions will be included in the Contract documents to address requirements for abatement and handling. The concrete piers are expected to be isolated from the stream flow prior to being demolished. The resulting concrete debris will be transported and disposed of at an approved landfill site.

2.5 Project phases and scheduling

2.5.1 Scheduling

The bridge design work and the regulatory approval process will take place concurrently over the next two years, and the construction phase will likely last three years. The bridge opening will have to coincide with the opening of the new Madawaska LPOE which will be built simultaneously (but is not part of this project). A refined project schedule will be prepared during the preliminary design phase.

2.5.2 Main project activities

During the preliminary design for this project, several options will be assessed by the Maine DOT and the NBDTI as part of a Bridge Type Study to determine the feasibility, advantages and disadvantages of various structure types, span configurations and constructing approaches considering factors such as longevity, constructability, schedule, environmental impact and cost. The bridge study will include an assessment of options for avoiding and minimizing environmental impacts to the extent practical. The potential adverse effects of construction will vary depending on the structure type and construction method selected.

The major construction components and activities listed below are anticipated based on the outcome of the Feasibility and Planning Study. Refinement of these components and activities will occur during preliminary design, the results of which may require modifications to the assumed work.

Substructure (abutments, piers, footings)

- Foundation installation for piers, including potential drilled shaft or cofferdam installation, is assumed to require large equipment supported by a trestle, access platform, on barges, or by other means of access within the limits of the river. Cofferdams are expected to be removed upon completion of construction.
- Heavy equipment for abutment foundation construction will be situated on land in the immediate vicinity of the abutments.
- Pier construction is expected to occur within cofferdams. Material delivery is expected to occur via the work trestle/access platform, or by barge.

- Construction of the Canadian abutment will likely require the installation of sheet piling (or a similar earth retention strategy) between the proposed abutment and the existing bridge and border facility, to be able to keep the existing bridge open during construction.
- Pier, abutment and retaining wall construction will consist of excavation, installation and subsequent removal of formwork, placement of reinforcing steel, placement of concrete, placement of prefabricated wall components, and backfilling.

Bridge Approaches and Canadian Port of Entry Modifications

- Construction of the bridge approaches and embankments will consist of placement/compaction of granular material and installation of asphalt pavement.
- Modifications to the Canadian border facility on Federal Land will involve removal of existing pavement, sidewalks and curbing, placement/compaction of granular material, installation of asphalt pavement, curbing and sidewalks, and relocation of a small storage shed. Currently no modifications to the existing building are planned, but may be deemed necessary based on the results of preliminary design.

Superstructure including bridge deck

- Erection of the superstructure is expected to be carried out by cranes placed on trestles, access platforms, or barges. The construction of some bridge options may also allow for superstructure construction using launching or balanced cantilever construction approaches.
- Erection of the superstructure may also require the use of temporary bents or shoring towers to support girder segments during construction. The installation of driven piles using pile driving equipment on barges may be needed for the temporary bents.
- Material delivery and placement will occur via cranes supported by temporary access roads, temporary trestles, access platforms or barges.
- Deck construction will consist of installation and subsequent removal of formwork, placement of reinforcing steel and placement of concrete. Miscellaneous items, such as bridge railings, will be installed from the finished deck once the concrete has cured.

Staging Area

- Staging areas will be required on both the Canadian and the U.S. sides of the river. The locations of these areas have not yet been determined. However, staging/work areas will be required in the immediate vicinity of the proposed and existing bridges to allow reasonable clearance for construction activities and material deliveries. Additional staging areas away from the proposed bridge will also be required to allow for contractor laydown and staging.
- Temporary access roads will also be required (site leveling and granular placement/compaction) to provide connectivity between local roadways, the construction area, and the Contractor's work trestles/access platforms.

Removal of existing bridge

- The trusses will either be removed in place or picked off the piers and transported to a staging area for demolition. However, transportation of large trusses to a staging area may not be feasible. In this case the trusses could be demolished in place using cranes placed on trestles, access platforms, or barges.
- Demolition of the bridge may require the use of temporary bents or shoring towers to support the trusses during demolition. The installation of driven piles using pile driving equipment on barges may be needed for the temporary bents. Given the low disturbance caused by these activities the installation of these driven pile foundations would not be completed within a cofferdam, but instead would use turbidity curtains or other similar means.
- The concrete abutments will be removed using air tools such as pneumatic hammers and blunted chisel tools.
- The method of pier removal is expected to include either the use of cofferdams and/or turbidity curtains. Removal will be completed from barges and/or temporary work trestles. The proposed demolition method will be confirmed during subsequent design phases of the project.

3 Project Location

3.1 Description of the designated project's location

The project is located in North-Western New Brunswick, across the Saint-John River which constitutes the international border with the State of Maine in the U.S. The bridge provides a connection between downtown Edmundston (NB) and downtown Madawaska (Maine). The bridge also spans overtop of railway lines that follow the banks of the river in both countries.

3.1.1 Coordinates

The following coordinates are based on the conceptual alignment developed as part of the project Feasibility and Planning Study. The final coordinates for the bridge may change as the alignment is finalized during preliminary design.

- North end of future bridge (on Canadian river bank): 47° 21' 41.3" N, 68° 19' 43.7 W.
- Southern limit of Canadian side of future bridge (border location, located approximately in the middle of river): 47° 21' 35.8" N, 68° 19' 51.6" W.
- Southern limit of future bridge (on U.S. river bank): 47° 21' 28.6" N, 68° 20' 02.4 W.

3.1.2 Site plans

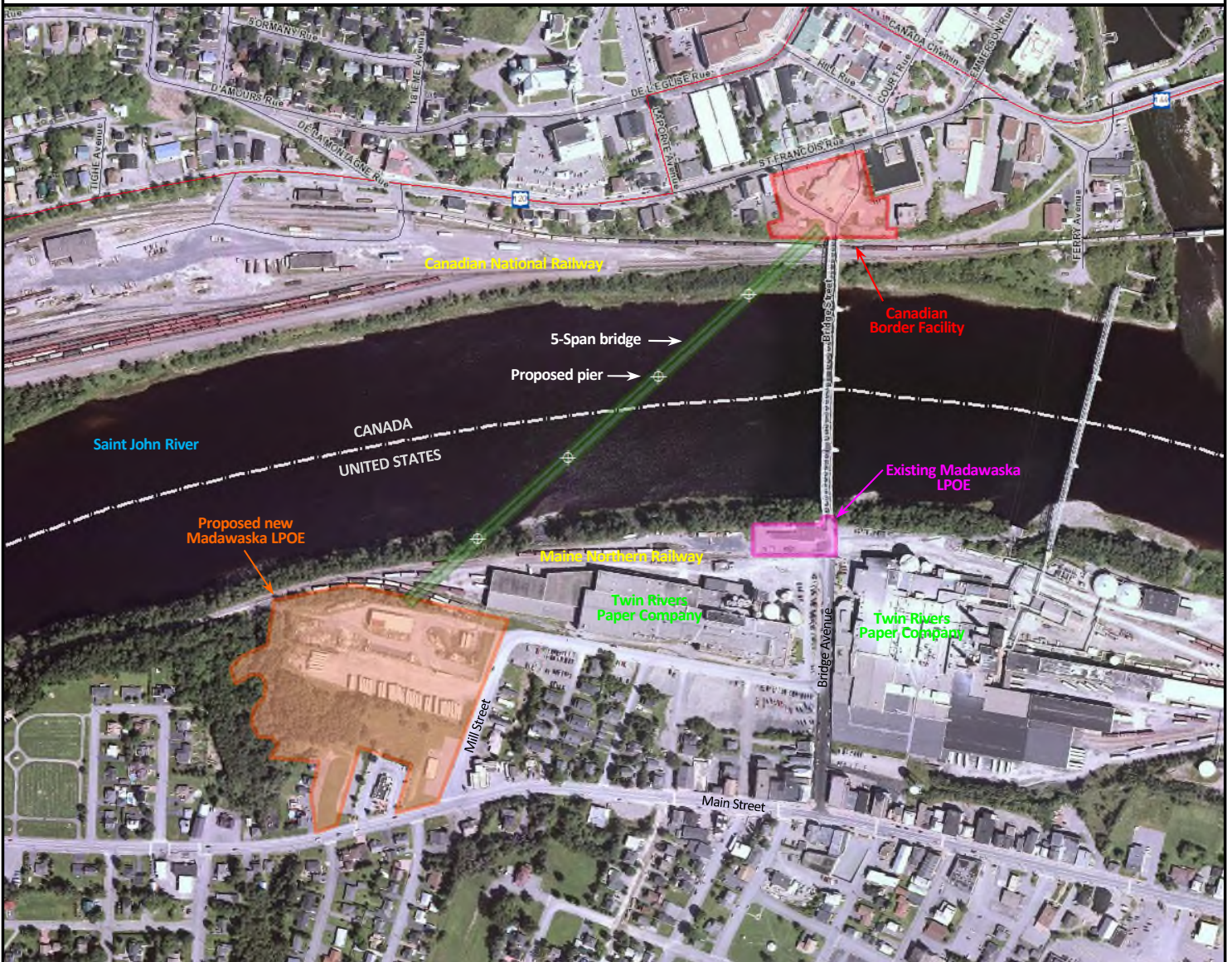
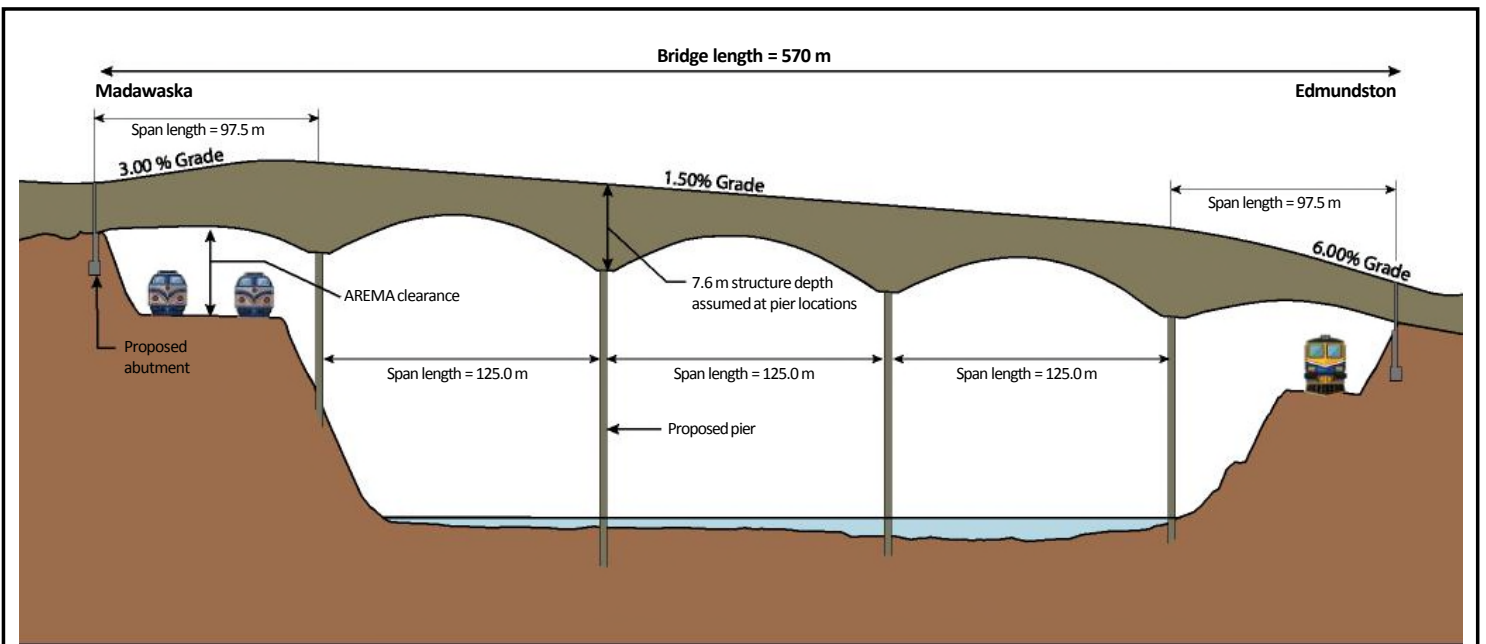
Preliminary drawings displayed on Figures 3.1 to 3.3 represent the three bridge alternatives currently considered. Further refinement and revision of the bridge design will be completed during the preliminary design phase, in consultation with the border agencies (CBSA and CBP).

3.1.3 Maps

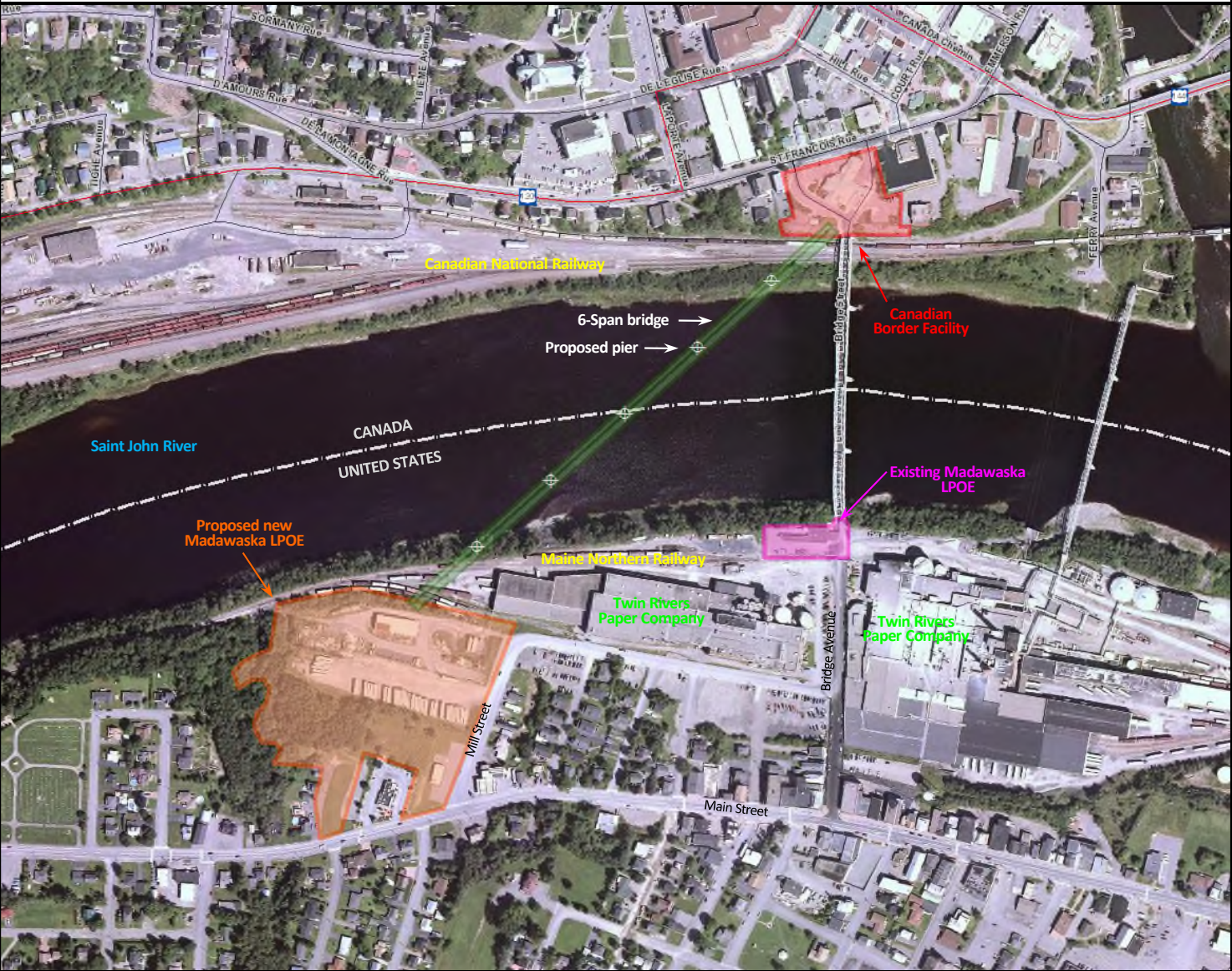
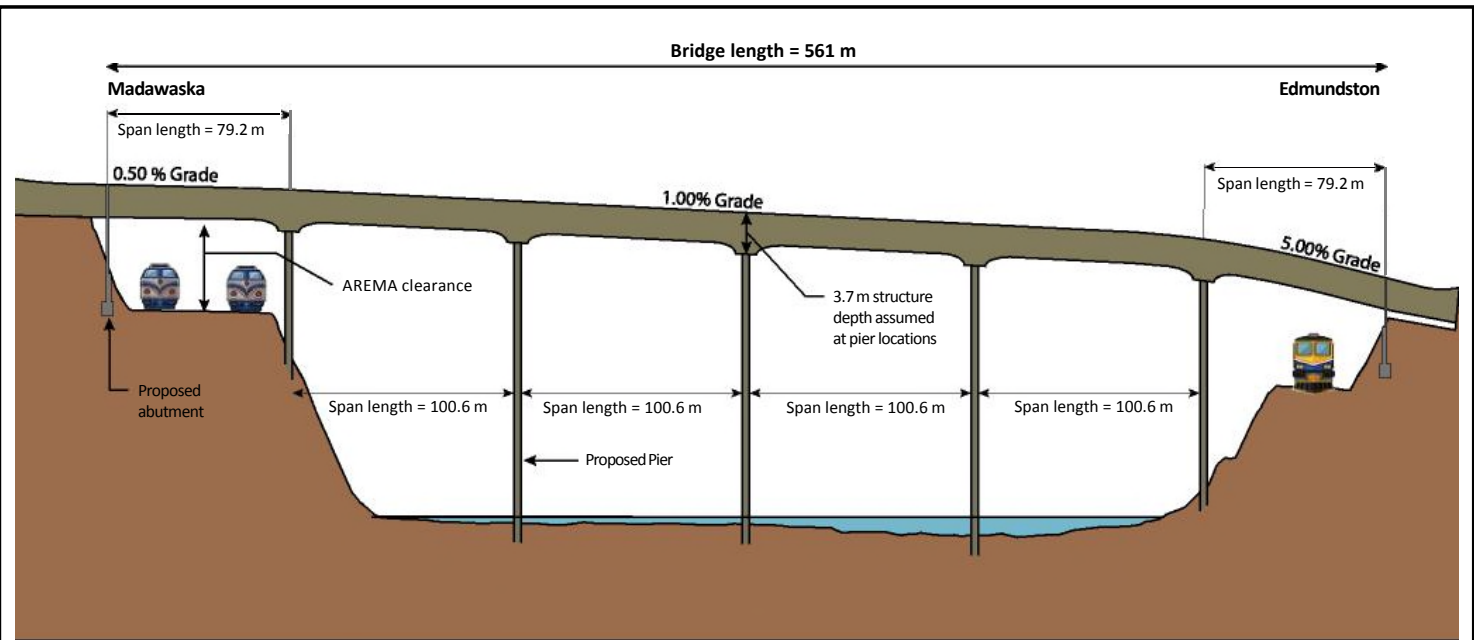
Figure 3.4 shows where the project is located in Edmundston, as well as transportation infrastructure in the area. The City limits are large and extend beyond the entire area visible on the figure on the Canadian side of the border. Figure 3.5 illustrates the municipal zoning near the bridge, and the extent of the CBSA property (federal property).

3.1.4 Photographs

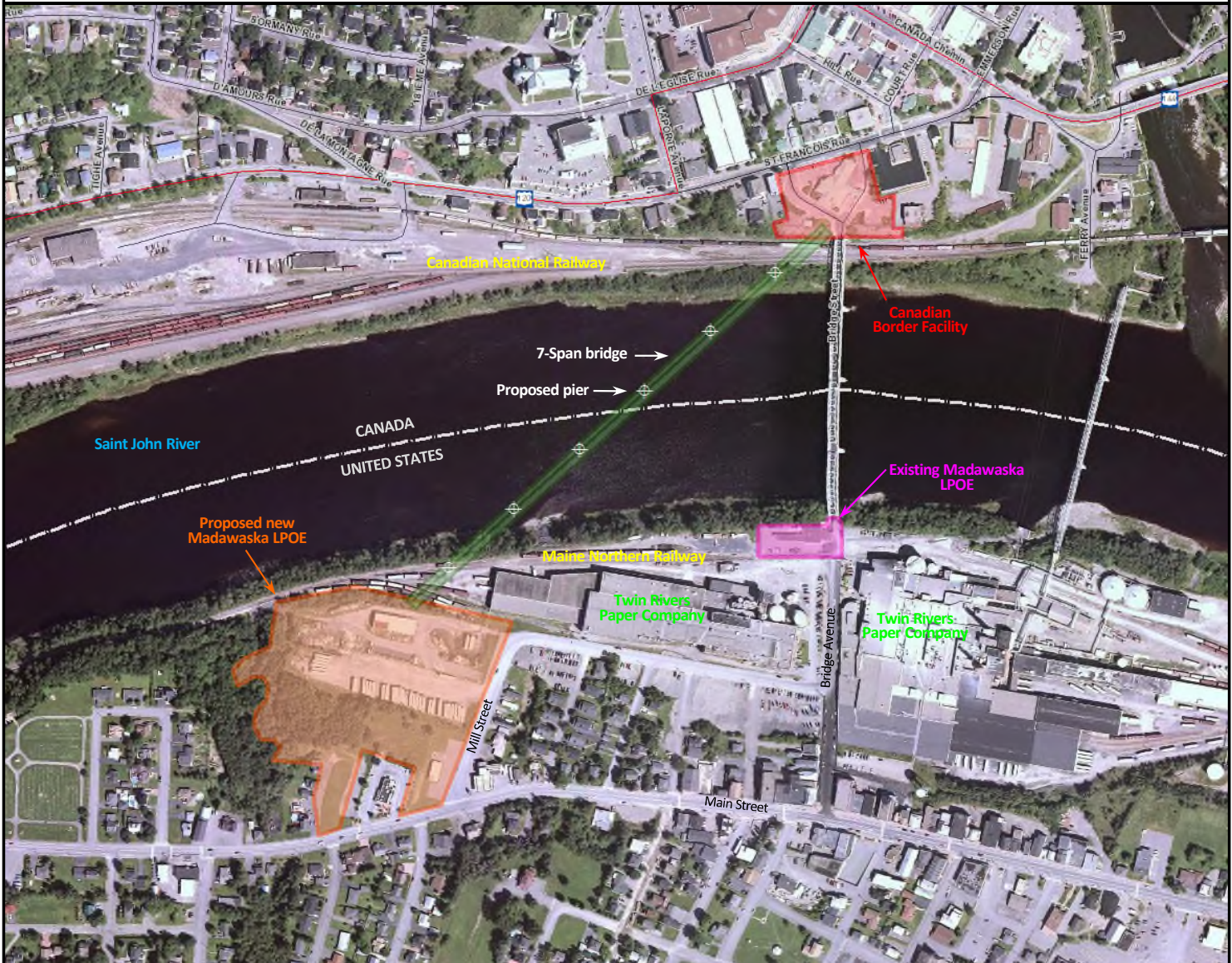
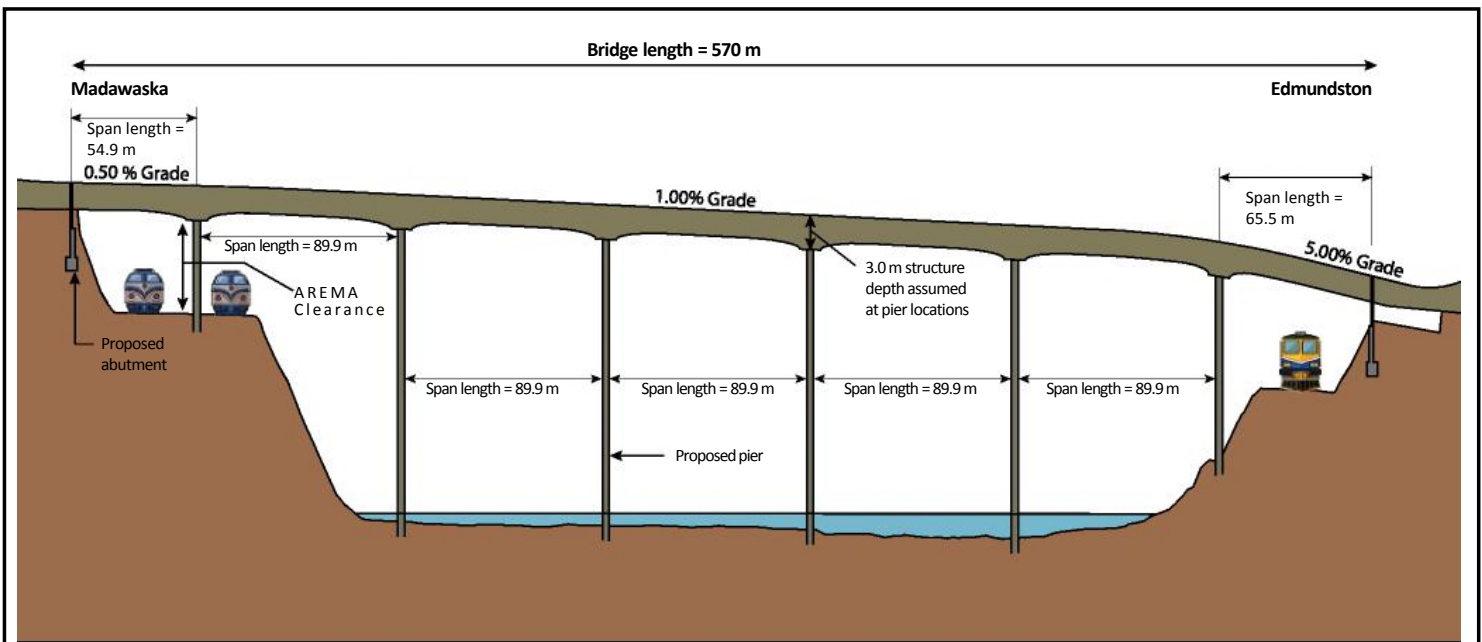
Photographs of the existing bridge and of the future bridge location are presented on Figures 3.6 and 3.7.



Project Description Bridge Alternative No. 1 (5 spans) Plan and Profile	Project: Madawaska/Edmundston International Bridge	
	Date: 2018/11/20	Figure: 3.1

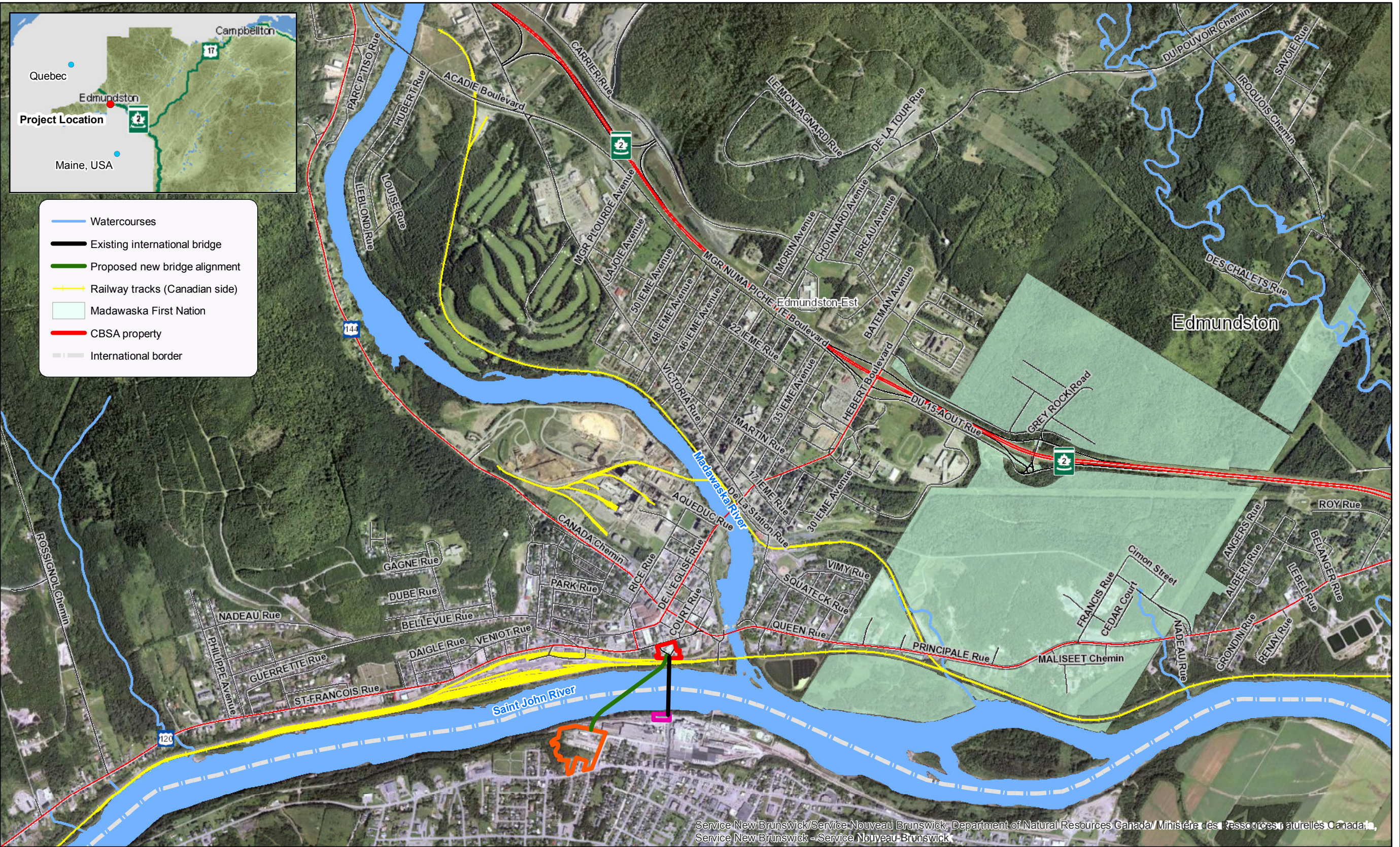


Project Description Bridge Alternative No. 2 (6 spans) Plan and Profile	Project: Madawaska/Edmundston International Bridge	
	Date: 2018/11/20	Figure: 3.2



Project Description Bridge Alternative No. 3 (7 spans) Plan and Profile	Project: Madawaska/Edmundston International Bridge	
	Date: 2018/11/20	Figure: 3.3

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New Brunswick Department of Transportation and Infrastructure

Date: November 19, 2018

Projection: NB Stereographic



Madawaska-Edmundston International Bridge Project Description

Local Transportation
Network

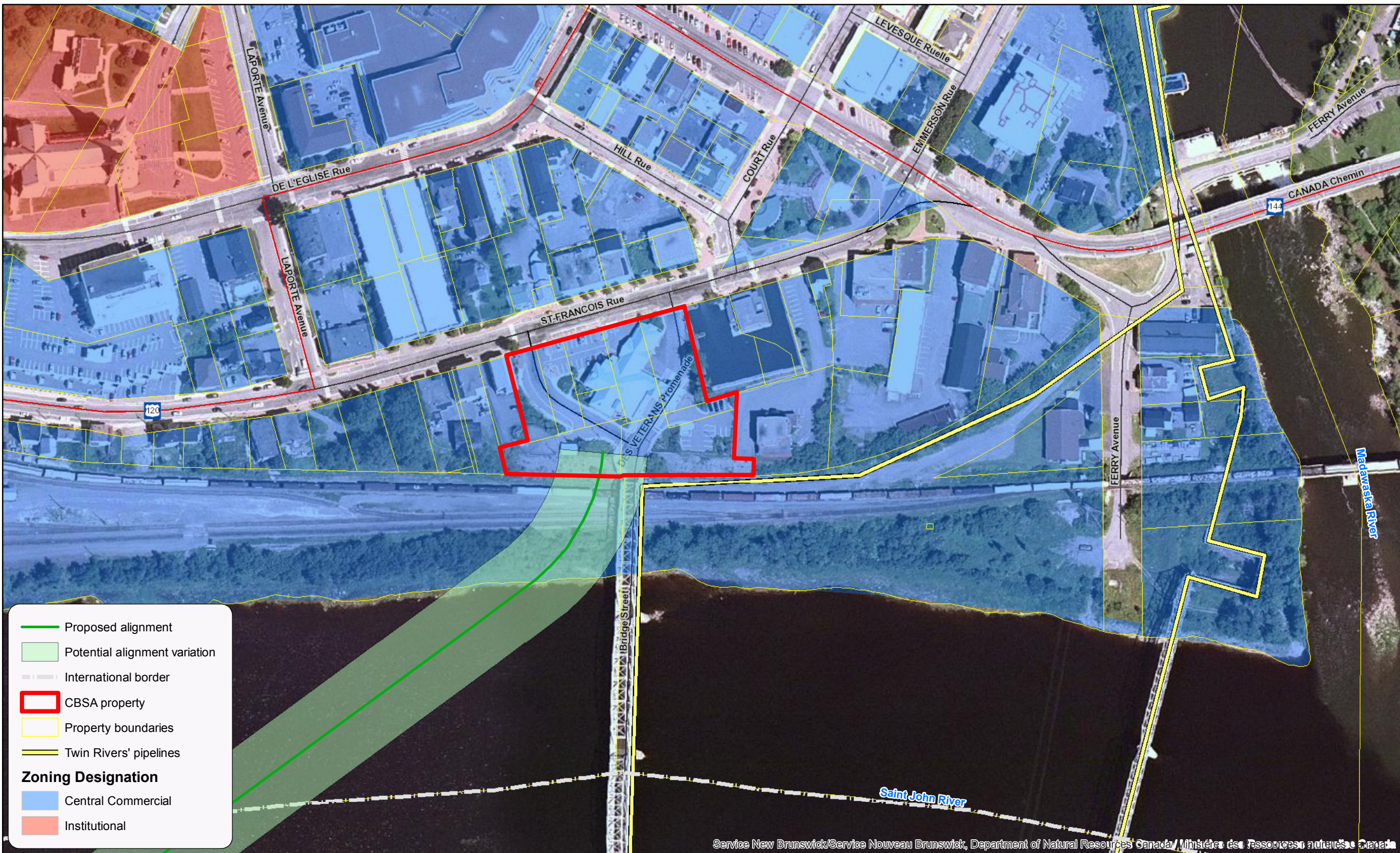
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Figure No.: 3.4

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VB



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— Proposed alignment
 Potential alignment variation
 International border
 CBSA property
 Property boundaries
 Twin Rivers' pipelines
Zoning Designation
 Central Commercial
 Institutional

Service New Brunswick/Service Nouveau Brunswick, Department of Natural Resources Canada / Ministère des Ressources naturelles Canada

New Brunswick Department of Transportation and Infrastructure
 Date: November 19, 2018
 Projection: NB Stereographic



1:2,000

Madawaska-Edmundston International Bridge
 Project Description

Properties and
 Municipal Zoning

Drawn by:
 GMQ

Figure No.: 3.5

Checked by:
 VB





Entrance into Canadian Border Facility



Northern river bank and abutment of existing bridge



View from north end of bridge, looking toward the west



Project Description Photographs taken on November 28, 2017 (Canadian side of bridge)	Project: Madawaska/Edmundston International Bridge	
	Date: 2018/11/20	Figure: 3.6



Saint John River upstream of (west of) existing bridge



Saint John River downstream of existing bridge



Upstream side of existing bridge pier – Canadian side



Existing bridge entrance – Canadian side

Project description

Photographs

Project: **Madawaska/Edmundston International Bridge**

Date: **2018/11/20**

Figure: **3.7**

3.1.5 Proximity of the project to residences, Aboriginal lands and federal lands:

3.1.5.1 Permanent, seasonal or temporary residences:

To the west of the Canadian Border facility:

- A dentist office (Civic # 80 on Rue Saint-Francois).
- A small apartments building (Civic # 82 on Rue Saint-Francois).
- A residence (Civic # 88 on Rue Saint-Francois).

To the east of the Canadian Border facility:

- A branch office of the Royal Bank of Canada (RBC)

Across the Street, from west to east:

- A parking garage, a few residences, and commercial space (retail stores/offices)

The larger neighbourhood consists of a dense urban setting, including residences and small businesses.

3.1.5.2 Traditional territories, settlement land (under a land claim agreement) as well as lands and resources currently used for traditional purposes by Indigenous peoples

The Madawaska First Nation community is located approximately one kilometre to the east of the Project (see Figure 3.4). Indigenous people from this community, as well as other Wolastoqey communities, likely use the Saint-John River as a resource in the Project Area (fishing, recreation).

The area reserved for the Madawaska First Nation Community covers approximately 700 acres. In 1996, the Community entered into a Special Claims process with the federal government to claim a larger reserve area (3900 acres – including the current reserve area). The land claim was settled in favour of the Madawaska First Nation in November of 2017 by Canada's Specific Claims Tribunal. Through the Special Claims settlement, the additional 3200 acres of land, which includes the Project Area, will not be returned to the First Nation, but financial compensation will be provided instead. More information about the ruling can be found at:

<http://www.cbc.ca/news/canada/new-brunswick/land-claim-victory-madawaska-maliseet-first-nation-1.4426546>

and at:

<https://cimtchau.ca/nouvelles/revendication-territoriale-malecite-aucun-impact-sur-la-ville-dedmundston/>

The two articles are also attached in Appendix A.

3.1.5.3 Federal lands

Federal lands in the Project Area consist of several parcels encompassing the Canadian border facility, adjacent roadways, and a storage area (parcels within the red outline on Figure 3.5).

3.2 Land and water uses

The ownership and zoning of land and water that may be affected by the project is described in the following section, to the extent that is known at this time.

3.2.1 Zoning designations

Land use in the downtown Edmundston business zone is a mix of commercial, industrial, and residential properties (City of Edmundston, 2008). Figure 3.5 shows the municipal zoning in the Project Area. The zoning designation at the northern end of the bridge (including the railway tracks) is “Commercial – Central (C2A)” (City of Edmundston, 2018).

The Canadian National Railway Company (CN) tracks run along the Saint John River, and the CN Edmundston Yard is located west of the existing bridge; six to ten trains a day operate under the existing bridge (CN, 2018).

3.2.2 Legal description of land to be used

Description of the federal land parcels (CBSA property) on which the existing Canadian Border Facility is built:

“All those parcels of land owned by Her Majesty the Queen in right of Canada as represented by the Department of Public Works and Government Services Canada located at 66 Saint-Francois Street in the City of Edmundston, Parish of Madawaska, County of Madawaska, Province of New Brunswick, more particularly described as follows:

Bounded on the north by the southerly limit of Saint-Francois Street, on the south by the northerly limit of the Canadian National Railway, on the west by properties allegedly owned by Gilles Pelletier Corporation Professionnelle and by Gilbert Bard and Jacques Bard, and on the east by properties allegedly owned by Royal Bank of Canada and by Église du Saint-Esprit Inc., having a total area of 0.807 hectares, more or less. The subject properties are shown highlighted in red on the attached map.” (see Figure 3.5)

Between the federal properties and the river’s edge, the land belongs to the Canadian National Railway Company (CN). Based on preliminary investigations (consultation with NB Department of Energy and Resource Development), it appears that the river bottom between the shore and the international border (located in the middle of the river) belongs to the upland owner, in this case CN as well.

3.2.3 Applicable land use, water use, resource management or conservation plans

It is not known at this time if there is groundwater use in the vicinity of the bridge or if all the buildings are supplied with municipal water. Potential impacts to groundwater and to land use will be assessed during the provincial EIA process, and appropriate mitigation measures developed.

The NB Department of Energy and Resource Development was contacted and confirmed that there are no resource management or conservation plans in the Project Area.

3.2.4 Access to lands and resources currently used for traditional purposes by Indigenous Groups

It is not anticipated that the use/access/occupation of lands and resources currently used for traditional purposes by Indigenous Groups will be necessary for the completion of this project.

4 Federal Involvement

4.1 Federal financial support anticipated

Given the cost of the proposed bridge, NBDTI and Maine DOT will apply for federal funding on the U.S. side, and possibly on the Canadian side. The funding formula for the design and construction of the replacement structure is not yet finalized.

4.2 Federal lands that may be used

The red outline on Figure 3.5 shows the extent of the federally-owned lands (CBSA) adjacent to the existing international bridge.

Temporary laydown/work areas will include parts of the CBSA property. Once the new bridge is in place, the situation in terms of easements/rights-of-way will be very similar to what it is now. Some re-alignment of roadways will occur on the CBSA property to facilitate the movement of vehicles onto the new bridge.

4.3 Federal permits, licenses or other authorizations

Key Federal permits, licences or other authorizations broadly related to environmental considerations anticipated to be needed for this project, in Canada are listed in Table 1.1 in Section 1.4.

5 Existing Conditions and Potential Environmental Effects

The international border is located approximately in the centre of the Saint John River channel and runs longitudinally along the river at the bridge location. This description of the environment focuses on environmental features that might be affected by the project on Canadian territory, while effects on U.S. territory are undergoing appropriate environmental reviews in that country. On the Canadian side, the proposed new bridge will meet the river bank at roughly the same location as the existing bridge. On the U.S. side, the bridge will end several hundred metres upstream of the existing abutment.

For the purpose of this preliminary assessment, the “Project Area” includes the Canadian side of the Saint John River between approximately 100 m upstream of the future international bridge location, and 100 m downstream of the existing bridge, plus the land area located between Saint-Francois Street and the river shoreline, including a few private properties, the CBSA property, and the railway tracks (See Figure 5-1).

5.1 Physical and biological environmental setting

5.1.1 Physical setting

Edmundston is located within the Madawaska Ecodistrict of the Central Uplands Ecoregion (Zelazny, 2007), which is a heavily forested, hilly area, deeply incised by swift-flowing rivers that converge toward the Saint John River. The City of Edmundson is located on a low area at the junction of the Madawaska and Saint John Rivers and is surrounded by large hills.

The surficial geology within the Project Area is comprised of shallow lodgment till with alluvial deposits nearby along the Madawaska River to the east (Rampton, 1984). The underlying bedrock in the area around Edmundston is underlain by non-calcareous Devonian slate and siltstone of the Timiscouata Formation (Zelazny, 2007). The Project Area slopes toward the Saint John River and is well-drained.

The typical river water level elevation at Edmundston is around 136 m above mean sea level. The elevations of the top of the hills on both sides of the river range between 300 m and 400 m above mean sea level. The existing international bridge spans the Saint John River approximately 350 m upstream of the confluence of the Madawaska River.

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Madawaska-Edmundston International Bridge

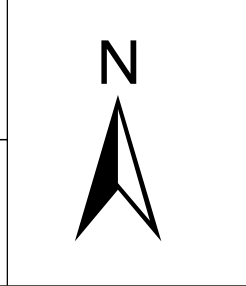
Project Description

Project Area for Environmental Assessment on the Canadian side of the Saint John River

Figure No.: 5.1

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The Saint John River flows in eastern direction through the Project Area. A gauging station maintained by the U.S. Geological Survey (USGS), USGS #01014000, is located in the Saint John River below the Fish River confluence, near Fort Kent, Maine and Clair, N.B (latitude: 47°17'00" N, longitude: 68°35'07" W), 32 km upstream of the Project Area. In Clair, the drainage area of the river covers 14,670 km², and the average annual flow measured over the past 90 years was 280 m³/s. The flow was typically lowest in February (80 m³/s) and highest in May (910 m³/s). During the summer/fall period, the flow is typically the lowest in September (130 m³/s) (USGS, 2018).

Typical water level variations in Edmundston ranged between 134.3 m and 142.9 m above mean sea level between 1980 and 2015, and the average level was 135.5 m over that period, based on data from a water level gauge operated by Environment Canada. The gauge is located 300 m downstream of the bridge (latitude: 47° 21' 38" N, longitude: 68° 19' 29" W, drainage area: 15,500 km²). The Saint John River in the Edmundston area is considered floodplain and flood-risk, with the floodplain extending up the Madawaska River, Iroquois River, and the Green River. Flood stage level for the Edmundston area is 139.0 m geodetic. Mapped floodplain in the bridge area shows that the floodplain limits are constrained to the steep banks of the Saint John River in the downtown business zone above the confluence of the Madawaska River.

The existing bridge deck is several metres above the highest recorded river level. The new bridge will be at least as high as the existing bridge.

According to the *Canadian Wind Energy Atlas* (ECCC, 2004), prevailing winds in the Project Area are, in decreasing order of frequency, from the north-west, west, south-west and south. Locally the air quality is principally influenced by the pulp mill (in Edmundston) and the paper mill (in Madawaska), as well as local vehicular traffic through both communities. Currently, due to the undersized U.S. LPOE, a line of idling vehicles sometimes forms on the bridge.

5.1.2 Heritage resources

Heritage resources are those resources, both human-made and naturally occurring, related to activities from the past that remain to inform present and future societies of that past. Heritage resources are relatively permanent, although highly tenuous, features of the environment. If heritage resources are present, their integrity is highly susceptible to construction and ground-disturbing activities. Heritage resources are assessed in New Brunswick by completing an assessment of the potential impacts of the project on heritage resources, via either an archaeological impact assessment or a built heritage resources assessment (or combination of these assessments), depending the nature of the potential heritage resources in the areas to be affected by the Project. There are no built heritage resources in the Project Area that will be affected by the Project.

Heritage resources in New Brunswick are regulated under the *Heritage Conservation Act* (PNB,2010). The regulatory management of heritage resources falls under the New Brunswick Department of Tourism, Heritage, and Culture (NBTHC), and is administered by its Archaeological Services Branch (ASB) for archaeological resources, the Historic Places Section for built heritage resources, and the New Brunswick Museum Agency for palaeontological resources. The *Heritage Conservation Act* states that it is prohibited to carry out archaeological or paleontological field research without a permit and that anyone who finds an archaeological or palaeontological object in New Brunswick must report it as soon as possible to the NBTHC). The ASB has guidelines (*Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick* (NBDTHC, 2012) stipulating how Archaeological Impact Assessments must be carried out in the province: The ASB maintains a database of recorded archaeological sites in the province, and also has classified the province by varying degrees of potential for the presence of archaeological resources. Prior to the initiation of construction activities for regulated projects, a field investigation is typically required to determine the potential for the presence of archaeological resources within the project area. This determination may be made through the field assessment and/or by subsurface investigations (e.g., archaeological shovel testing).

In January 2018, following a request by NBDTI, the ASB provided a map showing the various degrees of archaeological potential in and around the Project Area (see Figure 5.2). In general, the ASB has determined that any area within 80 m of a watercourse is considered to have elevated potential for archaeological resources. However, in the Project Area, for a considerable portion of the land area, this potential has been reduced or eliminated due to the extreme steepness of the topography, in particular in proximity to the Saint John River (areas indicated by the red and orange colours on the map).

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Madawaska Edmundston International Bridge

Heritage Resources

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Project Description

Figure No.: 5.2

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An Archaeological Impact Assessment has been carried out in September/October of 2018 by Stantec Consulting Ltd (Stantec). The following were noted during that assessment:

- No registered archaeological sites (either historic period or Pre-contact Indigenous sites) were identified in the Project Area on the map provided by ASB, during the desktop research carried out for the purpose of the assessment.
- During the field assessment carried out by Stantec on September 27, 2018, two stone foundations were observed on two adjacent private properties located in the northwestern corner of the Project Area (see Figure 5.2). As these two cellars are likely of sufficient age to be considered by the ASB to be heritage resources, they will be registered as archaeological sites with the Province through the Maritime Archaeological Resource Inventory process and included in the Province's database. The properties on which these cellars are located were initially included in the Project Area as a potential access route to be used during construction. However, these two properties are steep and thus will not be suitable for construction activities. At this time, it is not anticipated that any project activities will affect these properties. The NBDTI will consult with the ASB to determine if any additional mitigation will be required, beyond the registration of these cellars and the avoidance of the area. No other areas of elevated archaeological potential, and no Indigenous pre-contact archaeological sites were identified in the Project Area during the field assessment.

A palaeontological report, based on known data sources, was prepared by the New Brunswick Museum (Miller, 2018). The report noted that geological formations within the Project Area consist entirely of sedimentary rocks of the Devonian Age Temiscouata Formation (Miller, 2018). The report states there are no documented fossil sites located within the Project Area; however, fossils have been documented a few kilometres to the east and west of the Project Area, and therefore, Project activities that involve the excavation of bedrock could encounter fossils (Miller, 2018). If any fossils are encountered during construction activities, NBDTI will contact the New Brunswick Museum.

A search of the Canadian Register of Historic Places (CRHP, 2018) and the New Brunswick Register of Historic Places (NBRHP, 2018) revealed a record of 39 historic places or heritage sites, 10 of which are located within a 2 km radius of the Project Area; however, it is anticipated that none of these sites will be affected by Project activities.

5.1.3 Aquatic environment

The aquatic environment in the Project Area consists of freshwater habitat.

At this time, it is known that there will be an instream footprint and through consultation with DFO a determination will be made if that footprint will result in any adverse impacts to fish or fish habitat. This could result in the requirement for a *Fisheries Act* Authorization, which would include a requirement for Offsetting to mitigate impacts to fish and fish habitat.

5.1.3.1 Water quality, fish habitat and fish

The Aquatic Environment includes surface water quality, fish habitat and fish. The regulatory framework for the protection of the Aquatic Environment includes the provincial *Clean Water Act*, and federal *Fisheries Act*. There is potential for impacts to occur with surface water quality, habitat quantity and habitat quality in addition to direct mortality to fish during Construction, and Operation & Maintenance & Rehabilitation phases. On February 6, 2018, the federal government proposed changes to the *Fisheries Act* and “introduced proposed amendments to restore lost protections and incorporate modern safeguards into the Fisheries Act.” (DFO, 2018). The assessment of potential impacts of this project will consider the proposed amendments in anticipation that they may proceed successfully through the parliamentary process.

A Water Quality Index, as developed in the *State of the Saint John River Report* (Canadian Rivers Institute, 2011) rated the water quality for Aquatic Life for the Saint John River based on “reaches”. The Edmundston area falls within Reach 1, the head water reach, which received a water quality rating of “Fair” in 2000, the last reported assessment. The following excerpt from the *State of the Saint John River Report* explains the meaning of this rating:

“The Water Quality Index (WQI) was developed by the Canadian Council of Ministers of the Environment (CCME) to provide a broad overview of the environmental performance of surface waters (www.ccme.ca/ourwork/water.html). The index takes information on how often and by how much the CCME guidelines for each measurement is exceeded (“failed tests”) and combines it into a single value. The WQI is an attempt to simplify large amounts of data into something more meaningful for the public. However, it cannot replace detailed analyses of water chemistry and biological measures of performance, e.g., biodiversity. The WQI always ranges from 0 to 100 with four rankings: excellent (95-100; waters very close to natural quality); good (80-94); fair (65-79); marginal (45-64); and poor (0-44; waters almost always threatened or impaired).”

Fish habitat in the Project Area consists of lower gradient riffle/run/pool sequences. Low flow wet width is approximately 180 m and bankfull width is approximately 225 m (see also Photo 5.1 below). Habitat would be conducive to year-round use by fishes adapted to cool and warm waters.



Photo 5.1. Saint John River on the Canadian side of the Project (facing upstream): existing bridge and fish habitat.

The Project is situated approximately 60 km upstream of Grand Falls, a natural barrier to virtually all species of fish. As a result, with the exception of the potential presence of American eel, there are no diadromous fish populations at the proposed bridge location. The *State of the Saint John River Report* (Canadian Rivers Institute, 2011) reports on fish presence in subreaches. The Edmundston area falls within subreach 1B and there are 26 fish species known to be present within that reach. Of the fish species reported in this subreach there is potential for the following to use the habitat in the area of the bridge: threespine stickleback, ninespine stickleback, banded killifish, blacknose dace, blacknose shiner, brook trout, brown bullhead, burbot, central mudminnow common shiner, creek chub, fallfish, fathead minnow, finescale dace, golden shiner, lake chub, longnose sucker, mummichog, muskellunge, northern redbelly dace, pearl dace, pumpkinseed sunfish, rainbow trout, slimy sculpin, smallmouth bass, white sucker, and yellow

perch. In addition, in the *State of the River Report* there is a report of a historic record of American eel being present in this reach. However, present numbers would be very low as Grand Falls presents an obstacle to upstream passage. All of these species are either a CRA Fishery or support a CRA fishery.

5.1.3.2 Aquatic Species at Risk, Critical Habitat and Species of Conservation Concern

For the purposes of the assessment, Species at Risk are Schedule 1 *Species at Risk Act* Listed (Federal) species and *Species at Risk Act* Listed (Provincial) species. Such species may have critical habitat identified as a part of the Action Plan, Recovery Strategy and Management Plan. Species of Conservation Concern are considered species for which the Committee on the Status of Endangered Wildlife in Canada has assigned a recommended listing or for which other Conservation organizations have assigned a ranking (e.g., Atlantic Canada Conservation Data Center).

There are no reported Aquatic Species at Risk in the area of the Project based on DFO's Aquatic Species at Risk Map (accessed March 14, 2018) which reports Species at Risk Act, Schedule 1 Listed species and no Critical Habitat for a Listed species. There is the potential for American eel (recommended listing of "Threatened" by Committee on the Status of Endangered Wildlife in Canada (2012)). However, the probability is low as Grand Falls presents an obstacle to upstream passage of American eels.

5.1.4 Wetlands and wetland functions

In New Brunswick, wetlands are protected under the Watercourse and Wetland Alteration (WAWA) Regulation under the Clean Water Act. The New Brunswick Wetlands Conservation Policy provides the rationale for wetland protection in the province. Permits are required under that regulation for any activities occurring within 30 m of a wetland or watercourse and are issued by the New Brunswick Department of Environment and Local Government (NBDELG). NBDELG provides a publicly available online inventory of wetlands⁽²⁾ that are considered to require permitting for alterations.

In addition to the provincial policy, there is a Federal Policy on Wetland Conservation, that, while not supported by legislation, provides a mandate for the objective of 'no-net-loss' of wetlands on federal lands and for federal undertakings.

The closest provincially regulated wetland is located approximately 1250 m to the east of the existing bridge, and is not directly associated with the Saint John River. A preliminary review of the site conditions near the existing bridge suggests the potential presence of a narrow fringe of riparian wetland (2 – 5 m wide) along the shore of the river that is not regulated by the province. The wetland occupies a narrow fringe along the shore at the base of the steep slopes that flank the river at this location. Vegetation is impeded directly under the bridge and as a result the fringing wetland is narrower. It is anticipated that any shoreline wetland that might be disturbed in the replacement of the bridge will regenerate within a growing season or two and that there will be no permanent net loss of wetland as a result of the project and the area temporarily disturbed will be very small (less than 0.1 ha). The actual presence and extent of unmapped wetlands will be determined in the field during the surveys carried out for the provincial EIA.

² <http://geonb.snb.ca/geonb/>

5.1.5 Terrestrial ecosystem

5.1.5.1 General description of terrestrial ecosystem

The Project Area falls within a heavily developed portion of the river-frontage of the City of Edmundston, and is largely occupied by existing development in the form of the following anthropogenic features:

- the existing bridge and associated roadway;
- the railway which includes a gravel service road and three sets of tracks, converging into two tracks to the east of the bridge; and
- the existing Canadian border facility and associated parking, embankments and ancillary structures.

The vegetated terrestrial habitat outside the footprint of these developments includes a band (~25 m wide) of shrubby riparian habitat that follows the Saint John River and extends under the bridge, and some smaller, sparsely vegetated areas interspersed among the developed areas.

Based on field surveys conducted in June and August 2018, the vegetation along the vegetated riparian strip is comprised of Manitoba maple (*Acer negundo*), trembling aspen (*Populus tremuloides*), grey birch (*Betula populifolia*), American elm (*Ulmus americana*), mixed willows (*Salix* spp.), and other common tree and shrub species. While several rare plants have been found along the shoreline in the Edmundston area of the bridge (Figure 5.3), there were none found within the Project Area. The shoreline is dominated by fringed brome (*Bromus ciliatus*) and the non-native reed canary-grass (*Phalaris arundinacea*), which behaves invasively in riparian habitats. Photos 5.2 and 5.3 show the vegetated habitats.

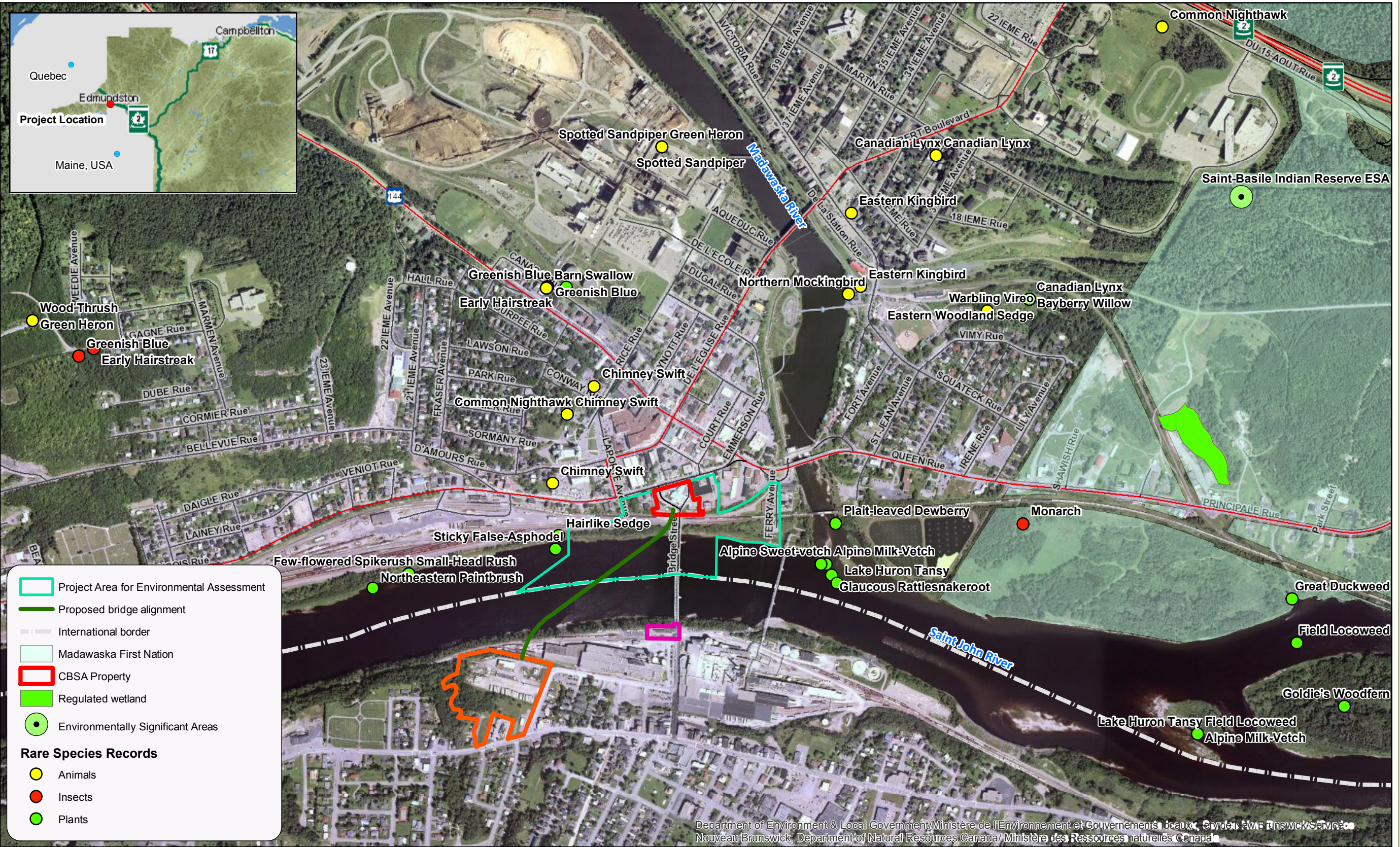


Photo 5.2. View of the vegetated riparian habitat under the existing bridge.



Photo 5.3. View of the vegetated portions of the anticipated Project area between the CBSA property and the river, looking at the existing bridge and toward downstream.

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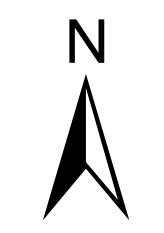
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 Project Description

Environmental Features
 Figure No.: 5.3

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 Nouveau Brunswick, Department of Natural Resources Canada / Ministère des Ressources naturelles Canada

Wildlife use of this habitat is probably limited to birds and smaller mammals such as rodents and shrews (*Sorex* spp.) and aquatic species such as muskrat and beaver. The availability of a contiguous vegetated riparian zone along the river may be important to the movement of some small mammals along the river corridor and for shielding birds using the river from the noise and activity of the City of Edmundston. However, the steep and narrow vegetated embankment is unlikely important to any species at the population level due to its small size, largely disturbed nature, and busy urban surroundings.

5.1.5.2 Terrestrial Species at Risk, Critical Habitat and Species of Conservation Concern

Species of conservation concern (SOCC) include those ranked “S3” (“Vulnerable”) or rarer by the Atlantic Canada Conservation Data Centre (ACDC). Species at Risk (SAR) include those species listed as “Threatened”, “Endangered”, or “Extirpated” on Schedule 1 of the federal *Species at Risk Act* (SARA), or are listed with the same rankings under the Schedule A of the *New Brunswick Species at Risk Act* (NB SARA). Terrestrial SAR and SOCC include mammals, birds, amphibians, reptiles, invertebrates and vascular plants. Fish are discussed separately in a previous section.

While no surveys of wildlife or plants have yet been conducted in support of the Project, a report of known occurrences of SOCC and SAR was obtained from the ACDC and is attached in Appendix B. The data show that within 500 m of the existing bridge, there are records of seven plant SOCC and two bird SAR, and several more plant and animal SOCC and SAR within 5 km (See Figure 5.3). Of the nearby rare plant records, only one (Glaucous rattlesnakeroot – *Prenanthes racemosa*) was recorded within the last 100 years, so many of the populations represented by these records may not have persisted in the area. There are no known records for plant SAR near the Project. Glaucous rattlesnakeroot is ranked S3 (“Vulnerable”), by the ACDC.

SAR records within 5 km of the Project Area include Canada lynx (*Lynx canadensis* - Endangered), wood thrush (*Hylocichla mustelina* - Threatened), barn swallow (*Hirundo rustica* - Threatened), chimney swift (*Chaetura pelagica* – Threatened), bank swallow (*Riparia riparia* – Threatened), Bobolink (*Dolichonyx oryzivorus* – Threatened), and common nighthawk (*Contopus virens* – Threatened).

There is very little vegetated area within the anticipated Project Area, and so the likelihood of affecting SAR is anticipated to be low. However, there is minor potential for some SAR/SOCC to use the Project area for nesting, such as barn swallows, chimney swifts (both of which can nest on manufactured structures), and common nighthawk (which nests in open, sometime disturbed areas). However, the metal substrate of the existing bridge is not highly favorable to swallows

and the open areas are noisy and busy with human traffic and are not ideal for common nighthawk.

Bird, wildlife, and vegetation surveys are being conducted in 2018 to assess the presence and potential for occurrence of SAR and SOCC. A migration survey (in early May of 2018) and a bird and plant survey (in June of 2018) have already been conducted. An additional plant survey (in the summer) and bird migration survey (in the fall) will be conducted this year. In June, it was verified that no swallows were using the bridge as nesting habitat, and that no SAR were nesting in or around the Project Area. No plant SAR were found within the Project Area during the June survey. In the execution of the Project, no work will be undertaken that would disturb or harm SAR or nesting migratory birds in contravention of the *Migratory Bird Convention Act* (1994).

In contrast with the existing bridge, the new bridge will not have trusses and will have a lower vertical profile, and is anticipated to have a positive effect on any birds commuting along the river, by reducing the vertical surface area of the structure. Clearing of vegetation will preferentially be conducted outside the breeding bird time period (April 15th to August 31st), to avoid contravention of with the *Migratory Bird Convention Act*. Given the small terrestrial footprint and habitats present there is low potential to affect SAR or SOCC in the terrestrial environment.

5.2 Anticipated changes to federally regulated environmental features

5.2.1 Fish and fish habitat, as defined in the *Fisheries Act*

Mitigation measures will be employed during construction to minimize risks of impacts to the aquatic environment. This will include sediment and erosion control, proper maintenance of equipment, and other standard practices from the Maine DOT and the NBDTI listed at the end of Section 2.3.4. If any interactions with aquatic species are identified during the detailed design, mitigation could also include scheduling of work to avoid/minimize fish migration and spawning windows, restrictions on construction methods to reduce noise/vibration levels and/or compensation if required by Fisheries and Oceans Canada (DFO).

The project will be carried out in consultation with DFO. A provincial Watercourse and Wetland Alteration (WAWA) Permit will be procured since the Project is taking place in and within 30 m of the Saint John River. DFO will participate in the review of project details during the WAWA permitting process. NBDELG, DFO and other stakeholders who have input on the WAWA permit will have the opportunity to include additional mitigation measures or restrictions as conditions of approval. Any other required permits and approvals will be obtained from applicable provincial and federal agencies, and any impacts to fish and fish habitat will be compensated if required as per the current *Fisheries Act*.

5.2.2 Marine plants, as defined in the *Fisheries Act*

There are no anticipated interactions with marine plants since the project is in a freshwater environment, and several hundred kilometers upstream of the head of tide.

5.2.3 Migratory birds, as defined in the *Migratory Birds Convention Act*

There is a small amount of vegetated habitat within the anticipated Project Area as described in Section 5.1. There is some potential for nesting of migratory birds within that area. There is also potential for migratory birds (including the SARs barn swallows and bank swallows) to nest on structures similar to the existing bridge, although an inspection of the site by a bird expert in June 2018 revealed that no migratory birds or SAR were using the bridge as a nesting site. As mitigation for potential effects on migratory birds, clearing of vegetation will preferentially be conducted

outside of the breeding bird season (April 15th to August 31st) ⁽³⁾ and bird surveys will be conducted within the breeding bird season so determine the use of the area of migratory birds including SAR. This survey will include an inspection of the bridge for use by nesting swallows. None of the terrestrial habitat within the anticipated Project Area is considered critical for the support of migratory bird populations.

5.3 Changes to the environment on federal lands or outside of Canada

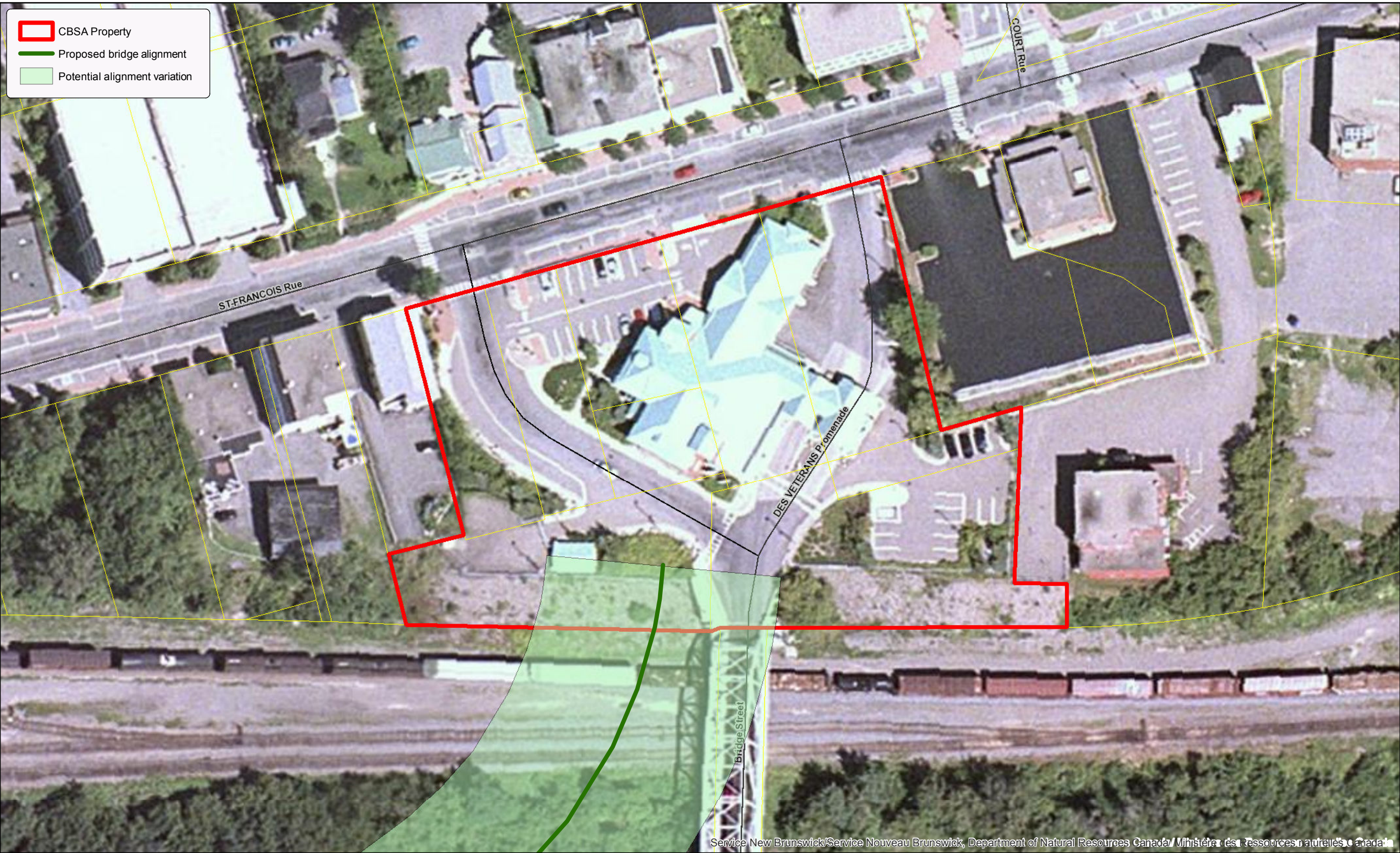
5.3.1 Changes on federal lands

The extent of the federal lands within the Project Area consists of several parcels of lands, occupied by CBSA's customs facility and ancillary buildings, parking lots, and roadways (see Figure 5.4). The existing facility will not be replaced but roadway re-alignments will likely take place around the main building, and a storage building (located in the south-western corner of the property) will be moved. During construction, portions of the CBSA parcels may also be used as laydown or staging areas. These parcels are almost entirely developed, and include small areas of mowed grass, exposed gravel embankment, and sparse shrubs (see Figure 5.4). The federal properties are separated from the Saint John River by the Canadian National Railway property that follows the river.

The location and extent of staging or laydown areas will be determined during the Detailed Design phase, and any additional required studies and permits will be completed/obtained at that time. There are no anticipated permanent negative effects on the federal land, as vegetation will be restored to undeveloped areas following construction. The potential for minor negative effects during construction will be addressed through appropriate mitigations such as the use of erosion and sedimentation measures, and cutting of vegetation outside of the breeding bird season.

³ <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html>

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 Date: November 20, 2018
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Madawaska-Edmundston International Bridge

Federal Lands

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Project Description

Figure No.: 5.4

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5.3.2 Changes on lands outside of Canada

The international border is located at approximately the half-way point in the Saint John River between New Brunswick and Maine at the proposed new bridge location. The southern half of the bridge is included as part of the project and may result in environmental impacts outside of Canada. Potential environmental effects related to components of this project on U.S. lands have been studied at various stages through:

- The Madawaska-Edmundston Feasibility and Planning Study (Maine DOT, 2018) conducted to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE; and
- The Madawaska Border Station Final Environmental Impact Statement (EIS) (U.S. GSA 2007) conducted to review environmental impacts associated with a proposed new border facility.

In addition to these studies, U.S. agencies are undergoing a new EIS that incorporates both the new border facility and the U.S. portion of the bridge. The new U.S. LPOE will be completed in the United States as part of a standalone design and construction project. The facility is planned to be located near the southern terminus of the proposed bridge (the final disposition of the existing LPOE building has not yet been determined). Construction of the new U.S. LPOE will include the demolition of a small storage building, utility relocations, earthwork/site leveling, retaining wall construction, installation of closed drainage systems, paving, connections with the new international bridge, and the construction of new buildings, parking areas, inspection booths, canopies and security fencing. Although the work related to construction of the U.S. LPOE is not expected to require work within the limits of the Saint John River, soil erosion and increased sedimentation in the river may occur temporarily during construction.

5.3.3 Trans-boundary effects

The Project is located on the Saint John River. The international border runs longitudinally along the centre of the river in the Project Area. Project activities on either side of the border have some potential to have effects on the other side, although the potential for trans-boundary effects is largely limited to effects related to the river itself. The potential effects are identified as the following:

- Scouring and ice movement – the preferred bridge design will include either the same number of piers as the existing bridge, or one or two additional piers. The detailed design will include consideration of potential ice jam and scouring and the bridge will be designed to mitigate these potential effects.
- Potential impacts to the aquatic environment in the area of the project may include lost habitat under the new piers, sedimentation during construction, and noise/vibration related effects during construction.
- Wildlife and wildlife habitat including birds – while there is potential for changes to wildlife habitat on either side of the border to have trans-boundary effects on either individuals or populations, the area of vegetated habitat to be disturbed on the U.S. side of the border is anticipated to be very small and mitigations will be implemented to avoid effects on migratory birds in compliance with the *Migratory Bird Convention Act* (MBCA).
- Noise levels for surrounding residents.

Protection and mitigation measures for potential trans-boundary effects will be addressed as part of the provincial Environmental Impact Assessment review process.

5.4 Effects on Indigenous Communities

Potential effects on Indigenous Communities and appropriate mitigation will be examined during the provincial EIA review process.

It is not anticipated that the project will cause changes to the environment that would affect Indigenous Communities, such as health and socio-economic conditions, current use of lands for traditional purposes, or physical and cultural heritage.

As explained in Section 5.1.2, the Archaeological Impact Assessment recently carried out in September and October of 2018 by Stantec revealed that:

- No registered archaeological sites (either historic period or Pre-contact Indigenous sites) were identified in the Project Area during the desktop research.
- During the field assessment, two stone foundations (historic period) were found near Saint-Francois Street on properties that will not be needed for the project. No other areas of elevated archaeological potential and no Pre-contact Indigenous sites were identified in the Project Area.

6 Proponent Engagement and Consultation with Indigenous Communities

6.1 Indigenous Communities that may be interested in the designated project

Indigenous Communities likely hold Aboriginal or treaty rights in the proposed bridge area with regards to fishing and recreation in the Saint John River. The proposed project is not anticipated to have a substantial effect on these rights. A passage for small boats will be provided through the construction area.

Indigenous Communities that may be affected:

- Madawaska First Nation, a Wolastoqey (Maliseet) Community located approximately one kilometre downstream of the existing international bridge, on the east side of the Madawaska River (see Figure 3.4).

Indigenous Communities that may be interested:

- Madawaska First Nation
- Other Wolastoqey Communities located in the Saint John River watershed: Tobique, Woodstock, Kingsclear, St Mary's, Oromocto (in Canada), and Houlton (in the U.S.)
- The Aroostook Band of Micmac (U.S. side) also located in the Saint-John River watershed
- The Penobscot (U.S. side)
- The Passamaquoddy (U.S. side)

6.2 Engagement activities carried out to date with Indigenous Communities

In Canada:

A voicemail about the project was left on March 10, 2017 by NBDTI to Patricia Bernard, the Chief of the Madawaska First Nation. A letter was also sent to Ms. Bernard on May 4, 2017 (at the same time as other indigenous communities, see below).

A notification letter was sent by the NBDTI on May 4, 2017 to the Chiefs and the Consultation Coordinators of the following Wolastoqey Communities, located along the Saint John River downstream of the project. This letter advised of the need for the project and offered to meet and discuss any concerns or questions that the Wolastoqey Communities may have. The communities contacted are listed in order of proximity to the project:

- Madawaska First Nation (adjacent to City of Edmundston)
- Tobique First Nation (adjacent to Town of Perth-Andover)
- Woodstock First Nation
- Kingsclear First Nation
- St. Mary's First Nation (adjacent to City of Fredericton)
- Oromocto First Nation

The following organisations were also sent a copy of this letter:

- Saint John River Tribal Council
- New Brunswick Aboriginal Affairs Secretariat (NBAAS)
- Infrastructure Canada

No feedback was received after the initial notification letter was sent. A follow up letter was therefore sent by the NBDTI on September 26, 2018 to the Chiefs and Consultation Coordinators of the same Wolastoqey Communities, providing them with a link to view the recently finalised *Feasibility and Planning Study* (Maine et al., 2018), and explaining the status of the project. This letter also offered to meet and discuss any concerns or questions that Wolastoqey Communities may have about the project.

The following organisations were also sent a copy of this second letter:

- Wolastoqey Nation
- NBAAS
- Fisheries and Oceans Canada
- Transport Canada
- CEA Agency

Both letters are attached in Appendix C.

In the USA:

The Indigenous Communities that are located the closest to the project are the Aroostook Band of Micmacs, and the Houlton Band of Maliseets. All four federally-recognized First Nations in Maine (Penobscot, Passamaquoddy, Micmac, and Maliseet) were notified on December 13, 2017 by the Maine DOT. A copy of the message sent is attached in Appendix C.

6.3 Overview of key comments and concerns expressed by Indigenous groups

In Canada, the following comments were received:

- The former Chief of the Madawaska First Nation and current CEO of the Madawaska Maliseet Economic Development Corporation contacted NBDTI staff in May of 2018. She said that she is hoping that the project will lead to further economic development opportunities for her community, in particular with regards to the Grey Rock Power Centre.
- The Consultation Coordinator of the Madawaska First Nation wrote on September 27, 2018: *“The Wolastoqey Nation in New Brunswick (WNNB) do wish to be consulted on this international project proposal”* and said that WNNB would be formally responding to NBDTI’s second letter.

In the U.S. only the Houlton Band of Maliseets responded to the notification, and provided the following comment: *“Should any human remains, archaeological properties or other items of historical importance be unearthed while working on this project, we recommend that you stop your project and report your findings to the appropriate authorities, including the Houlton Band of Maliseet Indians.”*

6.4 Consultation and information-gathering plan

Additional consultation will take place with Indigenous Communities during the preliminary design stage. Next steps regarding future engagement include:

- Once the NBDTI submits the EIA Registration document to the NBDELG (likely in early 2019, after the field surveys have been completed), NBAAS will carry out an Initial Assessment of the project. This assessment is typically a short summary of the project, of its potential environmental impacts, and of potential impact on First Nations’ communities/rights. This Initial Assessment will be sent by NBAAS to Indigenous Communities.
- Certain Indigenous Communities may request a meeting with NBDTI after receiving NBAAS’s assessment letter, to be further informed about the project. At such meetings, NBDTI typically presents the latest project plans, and gathers feedback from the participants. Potential concerns raised during such meetings are either answered to right away, or addressed through design changes when possible, and/or mitigation measures.

- Once the provincial EIA review process nears completion, NBAAS will complete a Preliminary Assessment of the Project, to determine if adequate engagement and consultation of Indigenous Communities was conducted for the project.

7 Consultation with the Public and Other Parties

7.1 Overview of key comments and concerns

7.1.1 First public information session

On June 28, 2017, public information sessions for the Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study were held to consult with and obtain input from the public prior to developing conceptual alternatives that satisfied the project's purpose and need. The agencies represented at these meetings were: the NBBDTI, PSPC, CBSA, Maine DOT, GSA, and CBP.

Two separate sessions were held; one in the City of Edmundston which was attended by about 50 people and one in the Town of Madawaska which was attended by about 40 people. The sessions were presented in an open house format with displays and handouts; comment forms were available for people to submit more formal comments for consideration. Representatives from the agencies present answered questions and gathered input to help facilitate the process of identifying, developing, and screening conceptual alternatives.

The display boards and handouts were provided in both English and French and covered topics such as:

- Welcome to the Meeting;
- Purposes of this Information Session;
- Purpose and Need for the Project;
- Basic Facts about the Project;
- Regional Context Map;
- Existing Conditions Map;
- Typical Project Timeline; and
- Staying Informed.

Public suggestions and comments received during the information sessions consisted of:

- The replacement of the International Bridge and Madawaska POE is critical for the survival of Northern Maine;
- The International Bridge should be kept downtown; an equal number of attendees suggested it be moved out of downtown, either upstream or downstream;

- The Madawaska LPOE is severely outdated and a modern LPOE is needed as soon as reasonably possible;
- The International Bridge should be designed with multiple lanes in each direction to accommodate future growth in traffic;
- The International Bridge should be designed with oversized lanes to accommodate commercial traffic;
- The International Bridge should be designed to accommodate ATVs and snowmobiles;
- The existing International Bridge should be kept and used for pedestrians and, during daylight, for passenger vehicles; and
- Noise and light pollution should be minimized where possible.

7.1.2 Second public information session

Following the identification, development, and screening of conceptual alternatives, a second set of public information sessions was held on January 31, 2018. The meetings were held to present the general findings of the Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study as well as the preferred option (bridge adjacent and to the west of the existing bridge, connecting the existing Canadian Border Facility to a new US Border facility). The agencies represented at these meetings were: the NBDTI, PSPC, CBSA, Maine DOT, GSA, and CBP.

The session in the City of Edmundston was attended by about 90 people and the one in the Town of Madawaska was attended by about 95 people. The sessions were broken into two parts, one was an open house format with displays and handouts, while the other part consisted of a slide presentation; comment forms were available for people to submit more formal comments for consideration. Representatives from the agencies present answered questions and gathered input to help facilitate the study. Suggestions and comments received during the information sessions primarily consisted of the following:

- Concerns regarding the safety of the existing International Bridge due to the posting of the five ton weight limit.

- Requests for more communication from the project team.
- Questions about next steps and required approvals.
- Questions about how the public can express concerns and provide feedback.
- Requests for architectural features on the new proposed bridge as it would be a landmark bridge in the Saint John River Valley.
- Requests for an observation/rest area on the new bridge.

7.1.3 Summary of comments and concerns from various stakeholders

Table 7.1 Summary of feedback from stakeholders in 2017 and 2018

Stakeholder	Main comments/concerns
Twin Rivers Paper Company (TRPC) (which owns facilities on both sides of the river)	<ul style="list-style-type: none"> - Existing utilities (TRPC provided a map): - Two active pipelines are located on existing bridge, relocation of these lines will be costly, Twin Rivers does not want to assume the cost. - Parties agreed to pursue funding to relocate utilities on road bridge to existing utility bridge owned by Twin Rivers. - Buried utilities throughout area, some not mapped - Concerns about new LPOE area on U.S. side: <ul style="list-style-type: none"> -Change to traffic flow may impact operations -Current marshalling yard important to daily operations - Project must not impact Twin River’s operations: <ul style="list-style-type: none"> -Vibrations can affect alignment of equipment -Shipments made 24 / 7 / 365 by truck and train -Nearly all rail lines and spur lines active - Bridge replacement: <ul style="list-style-type: none"> -Queues on existing bridge are an operational issue -Moving bridge won’t impact operations -Existing bridge can be removed
Canadian National Railways	<ul style="list-style-type: none"> - CN contact only provided general comments at this time, as specific comments would depend on the location for the International Bridge: - Operational Perspective: whatever alternative/option chosen should not impact their busy rail yard and rail line in the area. - Safety Perspective: protect bridge piers from derailment impact, follow vertical clearance requirements, and ensure that there will be no issues with snow removal or debris falling onto their tracks. - CN subsequently provided a document describing their standards and clearances. - An agreement will need to be drafted and signed between NBDTI and CN that outlines access on CN property during construction.
Maine Northern Railways	<ul style="list-style-type: none"> - No concerns about the project - Need to maintain the horizontal and vertical clearances required by the American Railway Engineering and Maintenance-of-Way Association.
City of Edmundston	<ul style="list-style-type: none"> - Noted that the bridge is the key connection point between the two communities and the downtown areas. - If the bridge is to move, that it be as close to the two communities as possible. - Past concerns with truck traffic downtown and geometry entering the Canadian border facility. - City has been looking at possible ring-road for the western part of the City. - Recent study regarding inter-modal transportation should be considered. - Other modes of transportation should be looked at (pedestrians, snowmobiles, and train).

Stakeholder	Main comments/concerns
	<p>On January 23, 2018, the City of Edmundston and the Town of Madawaska issued a joint statement (provided in Appendix D), including the following points:</p> <ul style="list-style-type: none"> - “The replacement of the international bridge is highly supported, and all agree on the urgency and the need for the bridge to be located within their respective business zones. - The new bridge should be designed to integrate and accommodate the new commercial entry point, as well as pedestrian and recreational traffic such as snowmobiles, while decongesting the flow of heavy trucking in the respective downtowns of each community. - The elected representatives want the new international bridge to have historical aesthetic qualities that recognize the culture and history of the Acadian region to increase tourism which is of vital importance to the regional economies of Madawaska and Edmundston, and surrounding areas.” <p>https://edmundston.ca/en/renseignements/communiqués/887-pont-international-signature-d-une-resolution-historique-entre-edmundston-et-madawaska)</p>
Edmundston Chamber of Commerce	<ul style="list-style-type: none"> - Chamber supports the project in general - Chamber likes the bridge where it is as it is a critical economic link to the City of Edmundston and the Town of Madawaska and for the businesses in the region. - If the bridge needs to move, the Chamber wants it close enough to maintain downtown-downtown connection. - Would rather see a bridge in the vicinity of Verret/St. Hilaire (west/upstream of existing site), than St. Basile (south-east). - Truck traffic is an issue in Edmundston (issues with street deterioration), and they support the Edmundston truck-bypass. The Chamber suggested a second bridge solely for truck traffic but was informed that that was not an option. - Consider snowmobile and ATV access due to growing interest in the area for these transportation modes.
Downtown Edmundston Group	<ul style="list-style-type: none"> - The bridge is a vital link between Edmundston and Madawaska - The bridge should remain downtown as businesses rely heavily on traffic for customers. - If the bridge has to move, it should be to the west
Town of Madawaska	<ul style="list-style-type: none"> - Town and public want a new crossing: <ul style="list-style-type: none"> - Perception is that existing bridge is unsafe - Geometry and capacity of existing facility are substandard - Existing facilities don’t look good - Long wait times and queues in both directions - Maintaining a downtown crossing is critical - Snowmobile accommodations would be desirable, the river flows well below the bridge - On January 23, 2018, the City of Edmundston and the Town of Madawaska issued a joint statement (see details above in Section about the City of Edmundston)

7.2 Overview of any ongoing and proposed consultation activities

A public information session will be held as part of the provincial EIA process in 2019 in Edmundston, once the preliminary bridge design is completed. A public information session is also planned in the coming months in Madawaska, Maine as part of the U.S. federal environmental assessment process (EIS Study).

The stakeholders listed in Table 7.1 will be further consulted as the bridge design progresses.

7.3 Consultation with other jurisdictions

Table 7.2 describes consultation that has occurred so far with other jurisdictions that have environmental assessment information, or regulatory decisions to make with respect to the project. The Maine DOT and its design consultants have been corresponding with agencies in the U.S., and the NBDTI has been consulting with agencies in Canada.

Table 7.2 Summary of communication with regulatory agencies

Agency	Communication initiated/planned	Feedback received
Canada - Province of New Brunswick		
New Brunswick Department of Environment and Local Government	February of 2018	Clarification about “one-window approach” for provincial EIA and federal EA review processes.
Canada - Federal agencies		
Canadian Environmental Assessment Agency	Fall of 2017	Information about federal EA process, guidelines regarding submitting a Project Description
Transport Canada	Fall of 2017	Clarification about <i>Navigation Protection Act</i> requirements
Department of Fisheries and Oceans Canada	Winter of 2018-2019	

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Agency	Communication initiated/planned	Feedback received
<i>U.S. - State of Maine</i>		
Maine Department of Environmental Protection	Winter of 2018-2019	
Maine Department of Inland Fisheries and Wildlife	August 2018	Information about known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat
Maine Natural Areas Program	August 2018	Information on plant species and natural communities
Maine Historic Preservation Commission	Fall of 2017	Information on historic and archaeological resources
U.S. Army Corps of Engineers and Maine Department of Environmental Protection	Winter of 2018-2019	
<i>U.S. - Federal agencies</i>		
U.S. General Services Administration	Since early 2017, project co-lead	
Federal Highway Administration	Since spring of 2018, project co-lead	
U.S. Fish and Wildlife Service	August 2018	information for known locations of Endangered, Threatened, and Special Concern species;
U.S. Coast Guard	Spring of 2017	
U.S. Department of State	Fall of 2017	
<i>International agencies</i>		
International Boundary Commission	Winter of 2018-2019	
International Joint Commission	Winter of 2018-2019	

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Appendix A – News Articles Regarding First Nation Land Claim

Project Description - Madawaska/Edmundston International Bridge Replacement
NBDTI – November 22, 2018



Tribunal rules downtown Edmundston is on Maliseet First Nation land

Madawaska First Nation fought for recognition of land claim for more than 20 years

Sarah Petz · CBC News · Posted: Nov 30, 2017 3:03 PM AT | Last Updated: November 30, 2017



An independent tribunal declared Wednesday that the Madawaska Maliseet First Nation claim to land that eventually became most of downtown Edmundston is legitimate. (Étienne Dumont/Radio-Canada)

A First Nation in northwestern New Brunswick is celebrating a hard-fought legal victory in its claim to land encompassing most of downtown Edmundston.

Canada's Specific Claims tribunal said Wednesday that the Madawaska Maliseet First Nation's claim to the 3,900 acres, or more than 1,575 hectares, was valid.

The band has been fighting for this recognition since 1996.

The independent tribunal, established in 2008, is a joint initiative of the federal government and Assembly of First Nations for resolving monetary claims made by First Nations more expeditiously.

Long road for community

Patricia Bernard, the band chief and legal counsel on the claim, said the land was taken away from the community unlawfully when the Madawaska reserve was created.



Chief Patricia Bernard of the Madawaska First Nation says her community is happy with Wednesday's decision, and the next step is to work out the compensation.

She said the community is ecstatic to finally have its claim recognized.

"It has been a very long road of bumps and ups and downs," she said. "It was quite overwhelming."

The history of the claim dates back to 1787, when the surveyor general of New Brunswick set aside 3,900 acres for the Maliseet.

The First Nation argued that this was when the reserve was created, Bernard said.

The federal government, however, argued the reserve was actually created in 1860 and only comprised 700 acres, which is roughly what it occupies now.

With the land claim victory this week, the First Nation's argument was validated, she said.

No land to change hands

The tribunal doesn't have the authority to return the land, and the First Nation doesn't want it back, Bernard said.

The only option is to compensate the Madawaska First Nation for the loss of use of the land, she said.

The maximum possible compensation for a land claim in Canada is \$150 million, but a figure for the Maliseet claim has to be negotiated. If the community and federal government can't agree on a figure, the matter will go back to the tribunal.

Bernard said the band will organize a community meeting soon to discuss its next steps.

Edmundston mayor not concerned

The federal government has 30 days to decide whether to ask for a judicial review.

Edmundston Mayor Cyrille Simard said he is not worried about the decision, since it doesn't change anything for the city.

He said the city considers itself a partner of the Madawaska First Nation, and Wednesday's decision was the culmination of a long fight.

In 2009, the federal government of the day told the First Nation its original land claim had not been accepted for negotiation, saying the land was not on a reserve.

No other explanation was given.

With files from Radio-Canada and Shift

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Visitez Radio-Canada.ca

Revendication territoriale malécite: aucun impact sur la Ville d'Edmundston

Publié le 30 novembre 2017 à 10:39, modifié le 30 novembre 2017 à 16:50

Par: [CIMTCHAU](#)



La Première Nation Malécite du Madawaska vient de remporter une importante victoire devant le Tribunal des revendications particulières du gouvernement du Canada, qui a déclaré clairement qu'une grande partie du centre-ville d'Edmundston se trouve sur des terres autochtones.

Bien qu'il s'agisse d'un gain important pour la Première Nation Malécite du Madawaska, cela ne signifie pas que les terres seront rendues à la PNMM, ni que la Ville d'Edmundston ait à payer pour ces terres.

«Les revendications particulières font généralement référence aux demandes de dommages pécuniaires présentées par une Première Nation contre le Canada concernant l'administration des terres et d'autres biens des Premières Nations», a déclaré la chef de la PNMM, Patricia Bernard, qui travaille sur cette revendication depuis 20 ans. «C'est un dossier entre le PNMM et le gouvernement du Canada.»

Félicitant la Chef Bernard et la PNMM pour cette importante victoire, le maire d'Edmundston, Cyrille Simard, affirme que cela ne changera pas la relation entre les communautés voisines. «Nous avons signé un accord d'amitié en 2014 et nous travaillons ensemble sur un certain nombre de dossiers et de projets. Nous ne pouvons qu'être heureux pour nos amis et partenaires, car cela aidera à réparer certains des dommages causés par le passé. »

Alors que les recherches sur cette revendication ont débuté en 1996, les audiences n'ont eu lieu que cet été. Dans leur argumentation, les représentants de la Première Nation Malécite du Madawaska ont déclaré que la réserve avait été créée en 1787 et que sa taille originale était d'environ 3 900 acres alors qu'elle se situe maintenant autour de 700 acres.

Le juge s'est prononcé en faveur de la PNMM, affirmant que le Canada doit maintenant indemniser. Le Tribunal des revendications particulières n'a pas le pouvoir de transférer des terres, mais il a le pouvoir d'accorder jusqu'à concurrence de 150 000 000 \$ à titre d'indemnisation. Bien que le Canada n'ait pas le droit d'interjeter appel, il dispose de 30 jours pour demander un contrôle judiciaire.

**Appendix B – Report from Atlantic Canada Conservation
Data Centre (ACCDC)**

Project Description - Madawaska/Edmundston International Bridge Replacement
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DATA REPORT 5998: Edm Mad Bridge, NB

Prepared 15 January 2018

by J. Churchill, Data Manager

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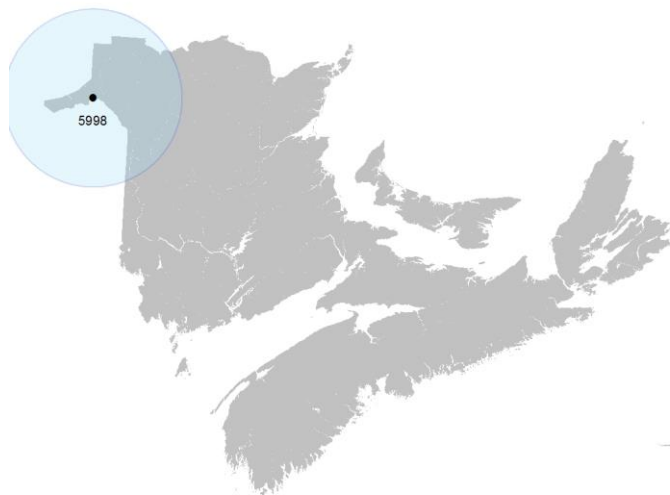
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Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (ACCDC) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The ACCDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the ACCDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees. URL: www.ACCDC.com.

Upon request and for a fee, the ACCDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the ACCDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename	Contents
EdmMadBrNB_5998ob.xls	All Rare and legally protected <i>Flora and Fauna</i> in your study area
EdmMadBrNB_5998ob100km.xls	A list of Rare and legally protected <i>Flora and Fauna</i> within 100 km of your study area
EdmMadBrNB_5998sa.xls	All <i>Significant Natural Areas</i> in your study area

1.2 RESTRICTIONS

The ACCDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting ACCDC data, recipients assent to the following limits of use:

- a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
- b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
- c) The ACCDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
- d) ACCDC data responses are restricted to the data in our Data System at the time of the data request.
- e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
- f) ACCDC data responses are not to be construed as exhaustive inventories of taxa in an area.
- g) The absence of a taxon cannot be inferred by its absence in an ACCDC data response.

1.3 ADDITIONAL INFORMATION

The attached file DataDictionary 2.1.pdf provides metadata for the data provided.

Please direct any additional questions about ACCDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries

Sean Blaney, Senior Scientist, Executive Director

Tel: (506) 364-2658

sblaney@mta.ca

Animals (Fauna)

John Klymko, Zoologist

Tel: (506) 364-2660

jklymko@mta.ca

Plant Communities

Sarah Robinson, Community Ecologist

Tel: (506) 364-2664

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Data Management, GIS

James Churchill, Data Manager

Tel: (902) 679-6146

jlchurchill@mta.ca

Billing

Jean Breau

Tel: (506) 364-2657

jrbreau@mta.ca

Questions on the biology of Federal Species at Risk can be directed to ACCDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Stewart Lusk, Natural Resources: (506) 453-7110.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Sherman Boates, NSDNR: (902) 679-6146. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NSDNR Regional Biologist:

Western: Duncan Bayne

(902) 648-3536

Duncan.Bayne@novascotia.ca

Western: Jason Power

(902) 634-7555

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Central: Shavonne Meyer

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Eastern: Terry Power

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For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

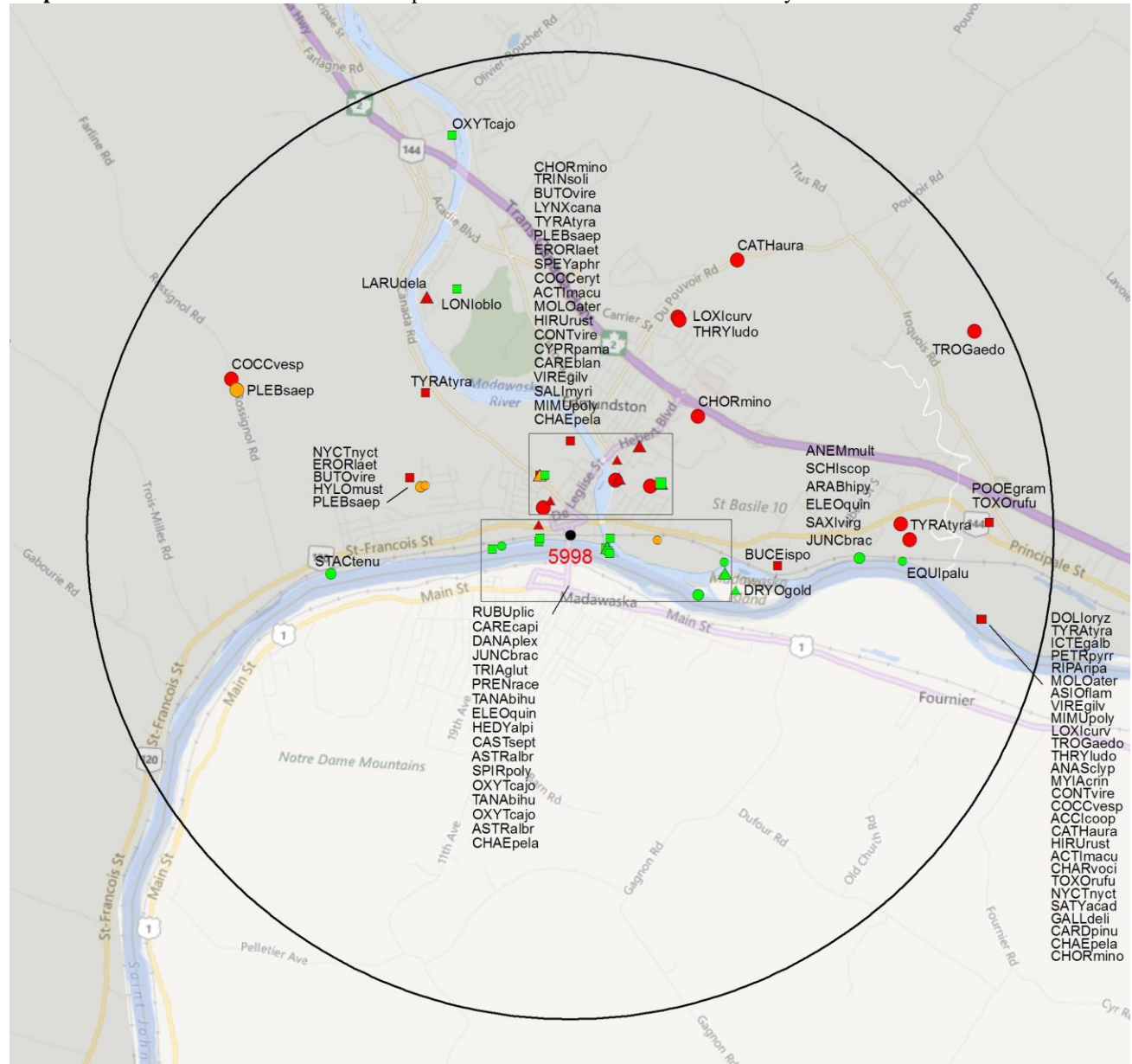
2.1 FLORA

The study area contains 29 records of 23 vascular, no records of nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 93 records of 35 vertebrate, 14 records of 5 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List). Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



RESOLUTION

- 4.7 within 50s of kilometers
- 4.0 within 10s of kilometers
- 3.7 within 5s of kilometers
- △ 3.0 within kilometers
- △ 2.7 within 500s of meters
- ◇ 2.0 within 100s of meters
- ◇ 1.7 within 10s of meters

HIGHER TAXON

- vertebrate fauna
- invertebrate fauna
- vascular flora
- nonvascular flora

3.0 SPECIAL AREAS

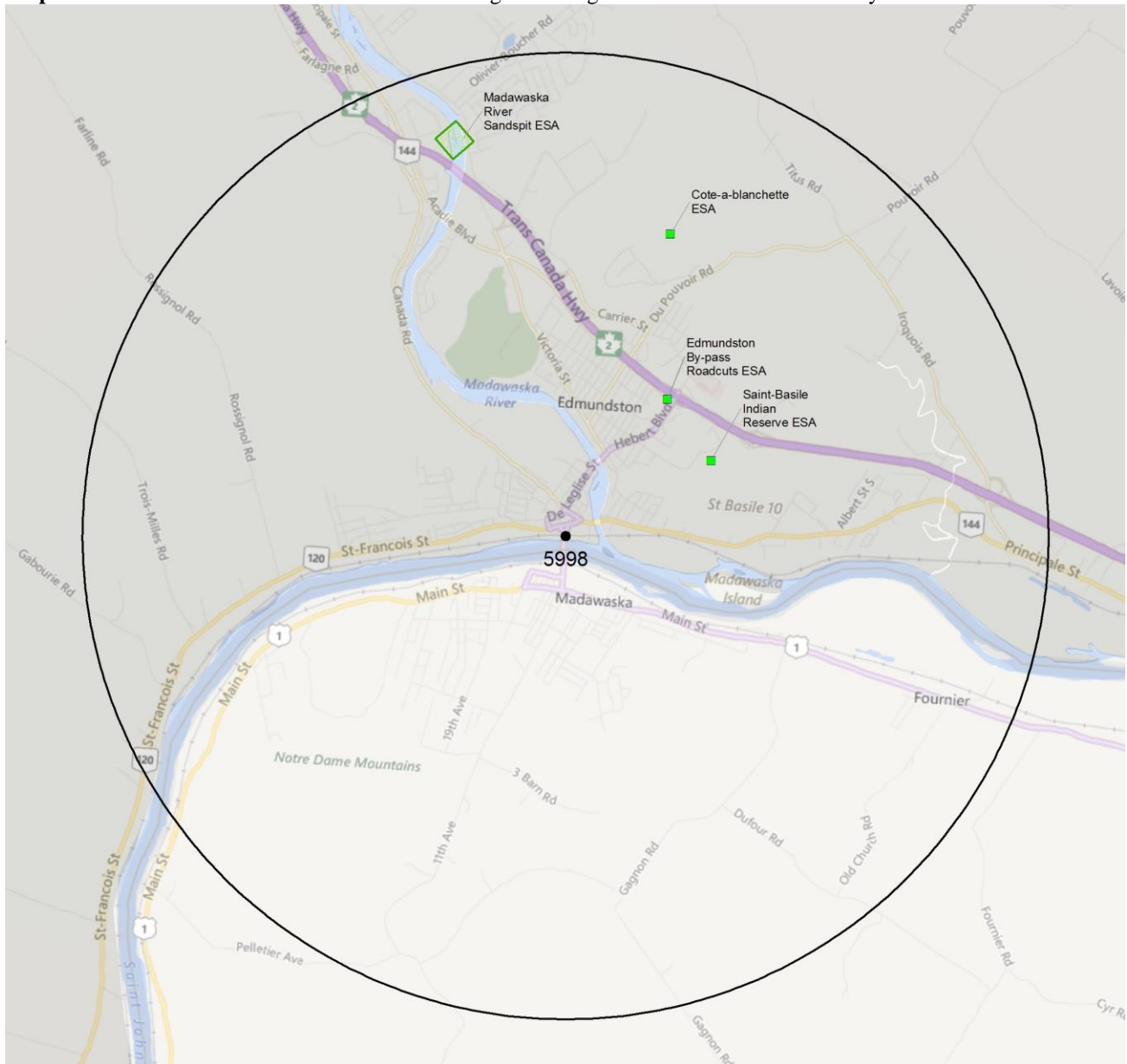
3.1 MANAGED AREAS

The GIS scan identified no managed areas in the vicinity of the study area (Map 3).

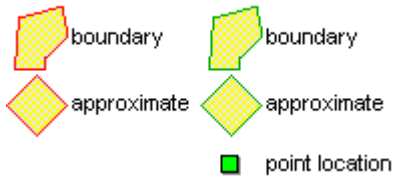
3.2 SIGNIFICANT AREAS

The GIS scan identified 4 biologically significant sites in the vicinity of the study area (Map 3 and attached file: *sa*.xls).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



MANAGED AREAS SIGNIFIGANT AREAS



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding “location-sensitive” species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (\pm the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
P	<i>Rubus plicatifolius</i>	Plait-leaved Dewberry				S1	5 Undetermined	1	0.4 \pm 5.0
P	<i>Carex blanda</i>	Eastern Woodland Sedge				S1	2 May Be At Risk	1	1.1 \pm 2.0
P	<i>Saxifraga virginiensis</i>	Early Saxifrage				S1S2	2 May Be At Risk	1	3.0 \pm 0.0
P	<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed				S2	3 Sensitive	3	1.5 \pm 0.0
P	<i>Anemone multifida</i>	Cut-leaved Anemone				S2	3 Sensitive	1	3.0 \pm 0.0
P	<i>Castilleja septentrionalis</i>	Northeastern Paintbrush				S2	3 Sensitive	1	0.8 \pm 5.0
P	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's-Slipper				S2	2 May Be At Risk	1	0.7 \pm 2.0
P	<i>Schizachyrium scoparium</i>	Little Bluestem				S2	3 Sensitive	1	3.0 \pm 0.0
P	<i>Salix myricoides</i>	Bayberry Willow				S2?	3 Sensitive	1	1.1 \pm 10.0
P	<i>Lonicera oblongifolia</i>	Swamp Fly Honeysuckle				S2S3	3 Sensitive	1	2.8 \pm 5.0
P	<i>Juncus brachycephalus</i>	Small-Head Rush				S2S3	3 Sensitive	2	0.7 \pm 0.0
P	<i>Prenanthes racemosa</i>	Glaucous Rattlesnakeroot				S3	4 Secure	1	0.4 \pm 5.0
P	<i>Tanacetum bipinnatum</i> ssp. <i>huronense</i>	Lake Huron Tansy				S3	4 Secure	2	0.4 \pm 5.0
P	<i>Arabis hirsuta</i> var. <i>pyncocarpa</i>	Western Hairy Rockcress				S3	4 Secure	1	3.0 \pm 0.0
P	<i>Astragalus alpinus</i> var. <i>brunetianus</i>	Alpine Milk-Vetch				S3	4 Secure	2	0.4 \pm 1.0
P	<i>Hedysarum alpinum</i>	Alpine Sweet-vetch				S3	4 Secure	1	0.4 \pm 5.0
P	<i>Stachys tenuifolia</i>	Smooth Hedge-Nettle				S3	3 Sensitive	1	2.5 \pm 0.0
P	<i>Carex capillaris</i>	Hairlike Sedge				S3	4 Secure	1	0.3 \pm 5.0
P	<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush				S3	4 Secure	2	0.7 \pm 0.0
P	<i>Triantha glutinosa</i>	Sticky False-Asphodel				S3	4 Secure	1	0.3 \pm 5.0
P	<i>Dryopteris goldiana</i>	Goldie's Woodfern				S3	3 Sensitive	1	1.8 \pm 0.0
P	<i>Equisetum palustre</i>	Marsh Horsetail				S3	4 Secure	1	3.4 \pm 0.0
P	<i>Spirodela polyrrhiza</i>	Great Duckweed				S3S4	4 Secure	1	1.6 \pm 0.0

4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened		Threatened	S1S2B,S1S2M	2 May Be At Risk	1	1.8 \pm 7.0
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	5	0.7 \pm 4.0
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	5	0.3 \pm 0.0
A	<i>Riparia riparia</i>	Bank Swallow	Threatened			S2S3B,S2S3M	3 Sensitive	1	4.3 \pm 7.0
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	3	4.3 \pm 7.0
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	8	0.4 \pm 0.0
A	<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	Special Concern	S2B,S2M	3 Sensitive	1	4.3 \pm 7.0
A	<i>Bucephala islandica</i> (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	1	2.2 \pm 5.0
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	2	3.9 \pm 0.0
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	2	0.7 \pm 4.0
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1S2B,S1S2M	2 May Be At Risk	1	4.3 \pm 7.0
A	<i>Lynx canadensis</i>	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	3	1.1 \pm 1.0
A	<i>Thryothorus ludovicianus</i>	Carolina Wren				S1B,S1M	8 Accidental	2	2.5 \pm 0.0
A	<i>Butorides virescens</i>	Green Heron				S1S2B,S1S2M	3 Sensitive	2	1.0 \pm 5.0
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	2	1.8 \pm 7.0
A	<i>Troglodytes aedon</i>	House Wren				S1S2B,S1S2M	5 Undetermined	3	4.3 \pm 7.0
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	2	0.7 \pm 0.0
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	4	4.3 \pm 7.0

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Poocetes gramineus</i>	Vesper Sparrow				S2B,S2M	2 May Be At Risk	1	4.3 ± 7.0
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	1	1.0 ± 5.0
A	<i>Anas clypeata</i>	Northern Shoveler				S2S3B,S2S3M	4 Secure	1	4.3 ± 7.0
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	1	4.3 ± 7.0
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	1	4.3 ± 7.0
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	2	2.5 ± 0.0
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	2	4.3 ± 7.0
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	2	3.3 ± 0.0
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	6	4.3 ± 7.0
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	1	0.7 ± 4.0
A	<i>Vireo gilvus</i>	Warbling Vireo				S3B,S3M	4 Secure	2	1.0 ± 0.0
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	2	0.7 ± 4.0
A	<i>Icterus galbula</i>	Baltimore Oriole				S3B,S3M	4 Secure	3	4.3 ± 7.0
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	9	0.8 ± 1.0
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	7	0.7 ± 4.0
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	3	4.3 ± 7.0
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	1	2.9 ± 2.0
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	1	0.9 ± 0.0
I	<i>Erora laeta</i>	Early Hairstreak				S1	2 May Be At Risk	3	0.7 ± 1.0
I	<i>Plebejus saepiolus</i>	Greenish Blue				S1S2	4 Secure	4	0.7 ± 1.0
I	<i>Satyrnum acadica</i>	Acadian Hairstreak				S3	4 Secure	1	4.3 ± 7.0
I	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	5	0.7 ± 1.0

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species “location sensitive”. Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with “YES”.

New Brunswick

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
<i>Chrysemys picta picta</i>	Eastern Painted Turtle			No
<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	No
<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	No
<i>Haliaeetus leucocephalus</i>	Bald Eagle		Endangered	YES
<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Endangered	No
<i>Cicindela marginipennis</i>	Cobblestone Tiger Beetle	Endangered	Endangered	No
<i>Coenonympha nipisiquit</i>	Maritime Ringlet	Endangered	Endangered	No
<i>Bat Hibernaculum</i>		[Endangered] ¹	[Endangered] ¹	No

¹ *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NB Species at Risk Act.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
46	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
26	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
18	eBird. 2014. eBird Basic Dataset. Version: EBD_relNov-2014. Ithaca, New York. Nov 2014. Cornell Lab of Ornithology, 25036 recs.
14	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
8	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
8	Speers, L. 2008. Butterflies of Canada database: New Brunswick 1897-1999. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 2048 recs.
4	Klymko, J.J.D. 2014. Maritimes Butterfly Atlas, 2012 submissions. Atlantic Canada Conservation Data Centre, 8552 records.
4	Tims, J. & Craig, N. 1995. Environmentally Significant Areas in New Brunswick (NBESA). NB Dept of Environment & Nature Trust of New Brunswick Inc.
3	Clayden, S.R. 2007. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, download Mar. 2007, 6914 recs.
3	Hinds, H.R. 1986. Notes on New Brunswick plant collections. Connell Memorial Herbarium, unpubl, 739 recs.
2	Sollows, M.C., 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
1	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
1	McAlpine, D.F. 1998. NBM Science Collections databases to 1998. New Brunswick Museum, Saint John NB, 241 recs.
1	Speers, L. 2001. Butterflies of Canada database. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 190 recs.
1	Thomas, A.W. 1996. A preliminary atlas of the butterflies of New Brunswick. New Brunswick Museum.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 4869 records of 87 vertebrate and 102 records of 28 invertebrate fauna; 4027 records of 228 vascular, 157 records of 76 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs. All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (\pm the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	2	87.0 \pm 1.0	NB
A	<i>Rangifer tarandus pop. 2</i>	Woodland Caribou (Atlantic-Gasp [r-sie pop.]	Endangered	Endangered	Extirpated	SX	0.1 Extirpated	1	87.2 \pm 1.0	NB
A	<i>Emydoidea blandingii</i>	Blanding's Turtle - Nova Scotia pop.	Endangered	Endangered				1	94.5 \pm 1.0	NB
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened		Threatened	S1B,S1M	2 May Be At Risk	9	19.5 \pm 7.0	NB
A	<i>Ixobrychus exilis</i>	Least Bittern	Threatened	Threatened	Threatened	S1S2B,S1S2M	1 At Risk	4	10.5 \pm 0.0	NB
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened		Threatened	S1S2B,S1S2M	2 May Be At Risk	120	1.8 \pm 7.0	NB
A	<i>Caprimulgus vociferus</i>	Whip-Poor-Will	Threatened	Threatened	Threatened	S2B,S2M	1 At Risk	4	74.4 \pm 7.0	NB
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	289	0.7 \pm 4.0	NB
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2B,S2M	1 At Risk	139	21.3 \pm 0.0	NB
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2S3	1 At Risk	10	19.9 \pm 0.0	NB
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	114	0.3 \pm 0.0	NB
A	<i>Riparia riparia</i>	Bank Swallow	Threatened		Threatened	S2S3B,S2S3M	3 Sensitive	119	4.3 \pm 7.0	NB
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	376	12.0 \pm 0.0	NB
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	424	5.3 \pm 0.0	NB
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	169	4.3 \pm 7.0	NB
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	106	0.4 \pm 0.0	NB
A	<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	Special Concern	S2B,S2M	3 Sensitive	14	4.3 \pm 7.0	NB
A	<i>Bucephala islandica</i> (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	1	2.2 \pm 5.0	NB
A	<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	Special Concern	S3	3 Sensitive	1	49.5 \pm 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B,S3M	2 May Be At Risk	100	20.3 ± 7.0	NB
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	192	3.9 ± 0.0	NB
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	2	37.5 ± 0.0	NB
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	191	0.7 ± 4.0	NB
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	1	24.1 ± 2.0	NB
A	<i>Bubo scandiacus</i>	Snowy Owl	Not At Risk			S1N,S2S3M	4 Secure	2	35.0 ± 1.0	NB
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1S2B,S1S2M	2 May Be At Risk	8	4.3 ± 7.0	NB
A	<i>Fulica americana</i>	American Coot	Not At Risk			S1S2B,S1S2M	3 Sensitive	2	15.4 ± 0.0	NB
A	<i>Sorex dispar</i>	Long-tailed Shrew	Not At Risk	Special Concern		S2	3 Sensitive	3	99.1 ± 1.0	NB
A	<i>Buteo lineatus</i>	Red-shouldered Hawk	Not At Risk	Special Concern		S2B,S2M	2 May Be At Risk	9	36.7 ± 0.0	NB
A	<i>Chlidonias niger</i>	Black Tern	Not At Risk			S2B,S2M	3 Sensitive	3	15.8 ± 0.0	NB
A	<i>Lynx canadensis</i>	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	84	1.1 ± 1.0	NB
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B,SUM	3 Sensitive	32	9.9 ± 0.0	NB
A	<i>Podiceps grisegena</i>	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	1	24.1 ± 0.0	NB
A	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Not At Risk		Endangered	S4	1 At Risk	88	4.3 ± 7.0	NB
A	<i>Puma concolor pop. 1</i>	Eastern Cougar	Data Deficient		Endangered	SU	5 Undetermined	8	72.8 ± 1.0	NB
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S1?B,S5M	4 Secure	16	6.9 ± 0.0	NB
A	<i>Progne subis</i>	Purple Martin				S1B,S1M	2 May Be At Risk	18	75.1 ± 7.0	NB
A	<i>Thryothorus ludovicianus</i>	Carolina Wren				S1B,S1M	8 Accidental	2	2.5 ± 0.0	NB
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B,S2S3M	4 Secure	4	36.3 ± 0.0	NB
A	<i>Aythya affinis</i>	Lesser Scaup				S1B,S4M	4 Secure	1	55.5 ± 0.0	NB
A	<i>Eremophila alpestris</i>	Horned Lark				S1B,S4N,S5M	2 May Be At Risk	33	24.1 ± 1.0	NB
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S1N,S2M	3 Sensitive	1	64.8 ± 0.0	NB
A	<i>Butorides virescens</i>	Green Heron				S1S2B,S1S2M	3 Sensitive	10	1.0 ± 5.0	NB
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	17	1.8 ± 7.0	NB
A	<i>Empidonax traillii</i>	Willow Flycatcher				S1S2B,S1S2M	3 Sensitive	4	25.8 ± 7.0	NB
A	<i>Troglodytes aedon</i>	House Wren				S1S2B,S1S2M	5 Undetermined	5	4.3 ± 7.0	NB
A	<i>Calidris bairdii</i>	Baird's Sandpiper				S1S2M	3 Sensitive	2	6.8 ± 5.0	NB
A	<i>Microtus chrotorrhinus</i>	Rock Vole				S2?	5 Undetermined	5	90.0 ± 1.0	NB
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	27	0.7 ± 0.0	NB
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	63	4.3 ± 7.0	NB
A	<i>Poocetes gramineus</i>	Vesper Sparrow				S2B,S2M	2 May Be At Risk	19	4.3 ± 7.0	NB
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S2B,S4S5N,S4S5M	3 Sensitive	57	16.2 ± 2.0	NB
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	13	1.0 ± 5.0	NB
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	12	17.8 ± 7.0	NB
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S2S3	3 Sensitive	16	8.7 ± 7.0	NB
A	<i>Salmo salar</i>	Atlantic Salmon				S2S3	2 May Be At Risk	105	57.9 ± 0.0	NB
A	<i>Anas clypeata</i>	Northern Shoveler				S2S3B,S2S3M	4 Secure	18	4.3 ± 7.0	NB
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	22	4.3 ± 7.0	NB
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	128	4.3 ± 7.0	NB
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	3 Sensitive	2	6.9 ± 0.0	NB
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	20	2.5 ± 0.0	NB
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	94	4.3 ± 7.0	NB
A	<i>Prosopium cylindraceum</i>	Round Whitefish				S3	4 Secure	6	26.9 ± 1.0	NB
A	<i>Salvelinus namaycush</i>	Lake Trout				S3	3 Sensitive	5	26.9 ± 1.0	NB
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	24	3.3 ± 0.0	NB
A	<i>Rallus limicola</i>	Virginia Rail				S3B,S3M	3 Sensitive	8	8.0 ± 0.0	NB
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	235	4.3 ± 7.0	NB
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	13	0.7 ± 4.0	NB

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A	<i>Vireo gilvus</i>	Warbling Vireo				S3B,S3M	4 Secure	53	1.0 ± 0.0	NB
A	<i>Piranga olivacea</i>	Scarlet Tanager				S3B,S3M	4 Secure	141	5.7 ± 7.0	NB
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B,S3M	4 Secure	13	62.9 ± 7.0	NB
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	70	0.7 ± 4.0	NB
A	<i>Icterus galbula</i>	Baltimore Oriole				S3B,S3M	4 Secure	55	4.3 ± 7.0	NB
A	<i>Somateria mollissima</i>	Common Eider				S3B,S4M,S3N	4 Secure	2	72.4 ± 0.0	NB
A	<i>Dendroica tigrina</i>	Cape May Warbler				S3B,S4S5M	4 Secure	105	5.7 ± 7.0	NB
A	<i>Anas acuta</i>	Northern Pintail				S3B,S5M	3 Sensitive	6	25.2 ± 7.0	NB
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	21	11.1 ± 7.0	NB
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	4 Secure	1	6.9 ± 0.0	NB
A	<i>Bucephala albeola</i>	Bufflehead				S3M,S2N	3 Sensitive	1	24.1 ± 1.0	NB
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	165	0.8 ± 1.0	NB
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	235	0.7 ± 4.0	NB
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	205	4.3 ± 7.0	NB
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	64	2.9 ± 2.0	NB
A	<i>Dendroica striata</i>	Blackpoll Warbler				S3S4B,S5M	4 Secure	82	20.3 ± 7.0	NB
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3S4M	4 Secure	8	6.9 ± 0.0	NB
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3S4M	4 Secure	5	6.8 ± 5.0	NB
A	<i>Calidris alba</i>	Sanderling				S3S4M,S1N	3 Sensitive	3	6.9 ± 0.0	NB
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	6	0.9 ± 0.0	NB
I	<i>Ophiogomphus howei</i>	Pygmy Snaketail	Special Concern	Special Concern	Special Concern	S2	2 May Be At Risk	1	14.2 ± 0.0	NB
I	<i>Bombus terricola</i>	Yellow-banded Bumblebee	Special Concern			S3?	3 Sensitive	1	45.9 ± 0.0	NB
I	<i>Erora laeta</i>	Early Hairstreak				S1	2 May Be At Risk	4	0.7 ± 1.0	NB
I	<i>Leucorrhinia patricia</i>	Canada Whiteface				S1	2 May Be At Risk	7	83.9 ± 1.0	NB
I	<i>Plebejus saepiolus</i>	Greenish Blue				S1S2	4 Secure	13	0.7 ± 10.0	NB
I	<i>Ophiogomphus colubrinus</i>	Boreal Snaketail				S1S2	2 May Be At Risk	2	23.7 ± 0.0	NB
I	<i>Aeshna juncea</i>	Rush Darner				S2	3 Sensitive	1	83.9 ± 1.0	NB
I	<i>Coenagrion interrogatum</i>	Subarctic Bluet				S2	3 Sensitive	6	22.8 ± 0.0	NB
I	<i>Hesperia sassacus</i>	Indian Skipper				S3	4 Secure	1	5.7 ± 7.0	NB
I	<i>Papilio brevicauda</i>	Short-tailed Swallowtail				S3	4 Secure	2	20.7 ± 0.0	NB
I	<i>Satyrium acadica</i>	Acadian Hairstreak				S3	4 Secure	3	4.3 ± 7.0	NB
I	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	7	0.7 ± 1.0	NB
I	<i>Boloria eunomia</i>	Bog Fritillary				S3	5 Undetermined	4	39.8 ± 0.0	NB
I	<i>Boloria bellona</i>	Meadow Fritillary				S3	4 Secure	2	14.4 ± 1.0	NB
I	<i>Polygonia satyrus</i>	Satyr Comma				S3	4 Secure	4	20.6 ± 0.0	NB
I	<i>Polygonia gracilis</i>	Hoary Comma				S3	4 Secure	6	5.7 ± 7.0	NB
I	<i>Nymphalis l-album</i>	Compton Tortoiseshell				S3	4 Secure	3	5.7 ± 7.0	NB
I	<i>Gomphus vastus</i>	Cobra Clubtail				S3	3 Sensitive	2	19.9 ± 0.0	NB
I	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail				S3	4 Secure	5	14.2 ± 0.0	NB
I	<i>Somatochlora albicincta</i>	Ringed Emerald				S3	4 Secure	4	83.9 ± 1.0	NB
I	<i>Somatochlora cingulata</i>	Lake Emerald				S3	4 Secure	5	63.6 ± 1.0	NB
I	<i>Somatochlora forcipata</i>	Forcipate Emerald				S3	4 Secure	3	22.0 ± 0.0	NB
I	<i>Lestes eurinus</i>	Amber-Winged Spreadwing				S3	4 Secure	1	83.9 ± 1.0	NB
I	<i>Alasmidonta undulata</i>	Triangle Floater				S3	3 Sensitive	4	10.4 ± 1.0	NB
I	<i>Pantala hymenaea</i>	Spot-Winged Glider				S3B,S3M	4 Secure	1	94.4 ± 1.0	NB
I	<i>Satyrium liparops</i>	Striped Hairstreak				S3S4	4 Secure	2	5.7 ± 7.0	NB
I	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle				SH	2 May Be At Risk	2	56.9 ± 1.0	NB
N	<i>Campyllum halleri</i>	Haller's Fine Wet Moss				S1	2 May Be At Risk	2	57.0 ± 1.0	NB
N	<i>Drepanocladus capillifolius</i>	Hair Hook Moss				S1	5 Undetermined	1	75.8 ± 1.0	NB
N	<i>Grimmia unicolor</i>	a Moss				S1	2 May Be At Risk	1	74.9 ± 1.0	NB

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N	<i>Hypnum recurvatum</i>	Recurved Plait Moss				S1	2 May Be At Risk	3	57.0 ± 1.0	NB
N	<i>Bryum pallens</i>	a Moss				S1?	2 May Be At Risk	3	56.5 ± 0.0	NB
N	<i>Catoscopium nigratum</i>	Black Golf Club Moss				S1?	2 May Be At Risk	4	57.0 ± 1.0	NB
N	<i>Dicranum bonjeanii</i>	Bonjean's Broom Moss				S1?	2 May Be At Risk	1	56.2 ± 1.0	NB
N	<i>Seligeria recurvata</i>	a Moss				S1?	2 May Be At Risk	5	57.0 ± 1.0	NB
N	<i>Timmia megapolitana</i>	Metropolitan Timmia Moss				S1?	2 May Be At Risk	3	66.8 ± 1.0	NB
N	<i>Metacalypogeia schusterana</i>	Schuster's Pouchwort				S1S2	6 Not Assessed	2	83.5 ± 1.0	NB
N	<i>Calliergon richardsonii</i>	Richardson's Spear Moss				S1S2	2 May Be At Risk	2	82.9 ± 1.0	NB
N	<i>Campyllum radicale</i>	Long-stalked Fine Wet Moss				S1S2	5 Undetermined	1	85.9 ± 100.0	NB
N	<i>Grimmia longirostris</i>	a Moss				S1S2	2 May Be At Risk	1	57.0 ± 1.0	NB
N	<i>Hygrohypnum bestii</i>	Best's Brook Moss				S1S2	3 Sensitive	1	57.0 ± 10.0	NB
N	<i>Oncophorus virens</i>	Green Spur Moss				S1S2	2 May Be At Risk	3	57.0 ± 1.0	NB
N	<i>Platydictya confervoides</i>	a Moss				S1S2	3 Sensitive	5	57.0 ± 1.0	NB
N	<i>Seligeria brevifolia</i>	a Moss				S1S2	3 Sensitive	1	95.2 ± 1.0	NB
N	<i>Timmia austriaca</i>	Austrian Timmia Moss				S1S2	2 May Be At Risk	3	66.2 ± 1.0	NB
N	<i>Tomentypnum falcifolium</i>	Sickle-leaved Golden Moss				S1S2	2 May Be At Risk	2	68.3 ± 1.0	NB
N	<i>Bryohaplocladium microphyllum</i>	Tiny-leaved Haplocladium Moss				S1S2	2 May Be At Risk	7	68.0 ± 1.0	NB
N	<i>Tritomaria scitula</i>	Mountain Notchwort				S1S3	6 Not Assessed	1	67.7 ± 1.0	NB
N	<i>Cirriphyllum piliferum</i>	Hair-pointed Moss				S2	3 Sensitive	2	57.0 ± 1.0	NB
N	<i>Didymodon ferrugineus</i>	a moss				S2	3 Sensitive	1	57.0 ± 1.0	NB
N	<i>Ditrichum flexicaule</i>	Flexible Cow-hair Moss				S2	3 Sensitive	6	56.7 ± 1.0	NB
N	<i>Fontinalis hypnoides</i>	a moss				S2	3 Sensitive	1	68.7 ± 15.0	NB
N	<i>Hypnum pratense</i>	Meadow Plait Moss				S2	3 Sensitive	1	83.5 ± 1.0	NB
N	<i>Isopterygiopsis pulchella</i>	Neat Silk Moss				S2	3 Sensitive	1	93.7 ± 2.0	NB
N	<i>Meesia triquetra</i>	Three-ranked Cold Moss				S2	2 May Be At Risk	1	86.4 ± 100.0	NB
N	<i>Physcomitrium immersum</i>	a Moss				S2	3 Sensitive	2	57.0 ± 1.0	NB
N	<i>Pohlia elongata</i>	Long-necked Nodding Moss				S2	3 Sensitive	1	93.7 ± 2.0	NB
N	<i>Seligeria calcarea</i>	Chalk Brittle Moss				S2	3 Sensitive	1	81.0 ± 0.0	NB
N	<i>Tortula mucronifolia</i>	Mucronate Screw Moss				S2	3 Sensitive	3	57.0 ± 1.0	NB
N	<i>Zygodon viridissimus</i> var. <i>rupestris</i>	a moss				S2	3 Sensitive	2	74.1 ± 0.0	NB
N	<i>Anomobryum filiforme</i>	a moss				S2	5 Undetermined	1	57.0 ± 1.0	NB
N	<i>Barbilophozia lycopodioides</i>	Greater Pawwort				S2?	6 Not Assessed	1	95.6 ± 1.0	NB
N	<i>Anomodon minor</i>	Blunt-leaved Anomodon Moss				S2?	2 May Be At Risk	2	66.6 ± 0.0	NB
N	<i>Bryum pallescens</i>	Pale Bryum Moss				S2?	5 Undetermined	1	57.0 ± 1.0	NB
N	<i>Schistostega pennata</i>	Luminous Moss				S2?	3 Sensitive	1	61.7 ± 1.0	NB
N	<i>Seligeria campylopoda</i>	a Moss				S2?	3 Sensitive	3	57.0 ± 1.0	NB
N	<i>Seligeria diversifolia</i>	a Moss				S2?	3 Sensitive	2	80.6 ± 1.0	NB
N	<i>Trichodon cylindricus</i>	Cylindric Hairy-teeth Moss				S2?	3 Sensitive	1	86.5 ± 0.0	NB
N	<i>Plagiomnium rostratum</i>	Long-beaked Leafy Moss				S2?	3 Sensitive	3	85.5 ± 1.0	NB
N	<i>Hypogymnia bitteri</i>	Powdered Tube Lichen				S2?	5 Undetermined	2	53.3 ± 0.0	NB
N	<i>Bryum uliginosum</i>	a Moss				S2S3	3 Sensitive	2	57.0 ± 1.0	NB
N	<i>Bryum weigellii</i>	Weigel's Bryum Moss				S2S3	3 Sensitive	1	80.4 ± 3.0	NB
N	<i>Campyllum polygamum</i>	a Moss				S2S3	3 Sensitive	2	56.7 ± 1.0	NB
N	<i>Didymodon rigidulus</i>	Rigid Screw Moss				S2S3	3 Sensitive	6	56.7 ± 1.0	NB
N	<i>Orthotrichum speciosum</i>	Showy Bristle Moss				S2S3	5 Undetermined	3	19.5 ± 5.0	NB
N	<i>Pohlia prolifera</i>	Cottony Nodding Moss				S2S3	3 Sensitive	1	93.7 ± 2.0	NB
N	<i>Saetania glaucescens</i>	Blue Dew Moss				S2S3	3 Sensitive	1	68.7 ± 15.0	NB

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N	<i>Taxiphyllum deplanatum</i>	Imbricate Yew-leaved Moss				S2S3	3 Sensitive	1	19.5 ± 5.0	NB
N	<i>Plagiomnium drummondii</i>	Drummond's Leafy Moss				S2S3	3 Sensitive	2	36.3 ± 3.0	NB
N	<i>Parmeliopsis ambigua</i>	Green Starburst Lichen				S2S3	5 Undetermined	1	53.3 ± 0.0	NB
N	<i>Tortella fragilis</i>	Fragile Twisted Moss				S3	3 Sensitive	2	57.0 ± 1.0	NB
N	<i>Hymenostylium recurvirostre</i>	Hymenostylium Moss				S3	3 Sensitive	1	57.0 ± 1.0	NB
N	<i>Solorina saccata</i>	Woodland Owl Lichen				S3	5 Undetermined	1	83.1 ± 2.0	NB
N	<i>Peltigera membranacea</i>	Membranous Pelt Lichen				S3	5 Undetermined	1	33.9 ± 0.0	NB
N	<i>Anomodon rugelii</i>	Rugel's Anomodon Moss				S3S4	3 Sensitive	4	56.7 ± 1.0	NB
N	<i>Barbula convoluta</i>	Lesser Bird's-claw Beard Moss				S3S4	4 Secure	2	56.7 ± 1.0	NB
N	<i>Calliergon giganteum</i>	Giant Spear Moss				S3S4	3 Sensitive	1	67.2 ± 3.0	NB
N	<i>Dicranella cerviculata</i>	a Moss				S3S4	3 Sensitive	2	10.4 ± 1.0	NB
N	<i>Dicranella varia</i>	a Moss				S3S4	4 Secure	8	48.9 ± 3.0	NB
N	<i>Encalypta ciliata</i>	Fringed Extinguisher Moss				S3S4	3 Sensitive	1	19.5 ± 5.0	NB
N	<i>Fissidens bryoides</i>	Lesser Pocket Moss				S3S4	4 Secure	3	68.7 ± 15.0	NB
N	<i>Helodium blandowii</i>	Wetland-plume Moss				S3S4	4 Secure	1	78.5 ± 3.0	NB
N	<i>Heterocladium dimorphum</i>	Dimorphous Tangle Moss				S3S4	4 Secure	2	68.7 ± 15.0	NB
N	<i>Isopterygiopsis muelleriana</i>	a Moss				S3S4	4 Secure	4	68.7 ± 15.0	NB
N	<i>Myurella julacea</i>	Small Mouse-tail Moss				S3S4	4 Secure	1	57.0 ± 1.0	NB
N	<i>Pogonatum dentatum</i>	Mountain Hair Moss				S3S4	4 Secure	1	10.4 ± 1.0	NB
N	<i>Splachnum rubrum</i>	Red Collar Moss				S3S4	4 Secure	1	85.4 ± 2.0	NB
N	<i>Tomentypnum nitens</i>	Golden Fuzzy Fen Moss				S3S4	4 Secure	1	78.5 ± 3.0	NB
N	<i>Weissia controversa</i>	Green-Cushioned Weissia				S3S4	4 Secure	1	56.7 ± 1.0	NB
N	<i>Abietinella abietina</i>	Wiry Fern Moss				S3S4	4 Secure	3	56.7 ± 1.0	NB
N	<i>Trichostomum tenuirostre</i>	Acid-Soil Moss				S3S4	4 Secure	2	68.7 ± 15.0	NB
N	<i>Rauvella scita</i>	Smaller Fern Moss				S3S4	3 Sensitive	1	74.1 ± 0.0	NB
N	<i>Nephroma parile</i>	Powdery Kidney Lichen				S3S4	4 Secure	2	33.1 ± 0.0	NB
P	<i>Juglans cinerea</i>	Butternut	Endangered	Endangered	Endangered	S1	1 At Risk	15	53.8 ± 2.0	NB
P	<i>Pedicularis furbishiae</i>	Furbish Lousewort	Endangered	Endangered	Endangered	S1	1 At Risk	45	52.5 ± 0.0	NB
P	<i>Symphyotrichum anticostense</i>	Anticosti Aster	Threatened	Threatened	Endangered	S2S3	1 At Risk	116	13.9 ± 5.0	NB
P	<i>Pterospora andromedea</i>	Woodland Pinedrops			Endangered	S1	1 At Risk	5	94.9 ± 0.0	NB
P	<i>Cryptotaenia canadensis</i>	Canada Honewort				S1	2 May Be At Risk	5	66.9 ± 1.0	NB
P	<i>Antennaria parlinii</i>	a Pussytoes				S1	2 May Be At Risk	1	51.0 ± 0.0	NB
P	<i>Arnica lonchophylla</i>	Northern Arnica				S1	2 May Be At Risk	3	82.5 ± 5.0	NB
P	<i>Erigeron acris ssp. politus</i>	Bitter Fleabane				S1	2 May Be At Risk	3	45.2 ± 1.0	NB
P	<i>Hieracium robinsonii</i>	Robinson's Hawkweed				S1	3 Sensitive	2	57.0 ± 1.0	NB
P	<i>Symphyotrichum laeve</i>	Smooth Aster				S1	5 Undetermined	2	87.4 ± 1.0	NB
P	<i>Canadanthus modestus</i>	Great Northern Aster				S1	2 May Be At Risk	43	30.0 ± 0.0	NB
P	<i>Cynoglossum virginianum</i>	Wild Comfrey				S1	2 May Be At Risk	1	74.9 ± 1.0	NB
P	<i>Cynoglossum virginianum var. boreale</i>	Wild Comfrey				S1	2 May Be At Risk	4	51.6 ± 0.0	NB
P	<i>Arabis x divaricarpa</i>	Limestone Rockcress				S1	2 May Be At Risk	1	97.2 ± 1.0	NB
P	<i>Cardamine concatenata</i>	Cut-leaved Toothwort				S1	2 May Be At Risk	4	83.1 ± 0.0	NB

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P	<i>Draba breweri</i> var. <i>cana</i>	Brewer's Whitlow-grass				S1	2 May Be At Risk	1	85.3 ± 1.0	NB
P	<i>Chenopodium capitatum</i>	Strawberry-blite				S1	2 May Be At Risk	5	7.4 ± 10.0	NB
P	<i>Chenopodium simplex</i>	Maple-leaved Goosefoot				S1	2 May Be At Risk	1	85.2 ± 0.0	NB
P	<i>Drosera anglica</i>	English Sundew				S1	2 May Be At Risk	5	84.0 ± 0.0	NB
P	<i>Drosera linearis</i>	Slender-Leaved Sundew				S1	2 May Be At Risk	4	92.6 ± 0.0	NB
P	<i>Oxytropis deflexa</i> var. <i>foliolosa</i>	Nodding Locoweed				S1	2 May Be At Risk	8	87.2 ± 0.0	NB
P	<i>Ranunculus lapponicus</i>	Lapland Buttercup				S1	2 May Be At Risk	17	43.8 ± 0.0	NB
P	<i>Rubus plicatifolius</i>	Plait-leaved Dewberry				S1	5 Undetermined	6	0.4 ± 5.0	NB
P	<i>Valeriana dioica</i> var. <i>sylvatica</i>	Marsh Valerian				S1	2 May Be At Risk	2	51.0 ± 0.0	NB
P	<i>Viola canadensis</i>	Canada Violet				S1	2 May Be At Risk	1	74.8 ± 0.0	NB
P	<i>Carex blanda</i>	Eastern Woodland Sedge				S1	2 May Be At Risk	1	1.1 ± 2.0	NB
P	<i>Carex cephaloidea</i>	Thin-leaved Sedge				S1	2 May Be At Risk	3	40.6 ± 0.0	NB
P	<i>Carex merritt-feraldii</i>	Merritt Fernald's Sedge				S1	2 May Be At Risk	1	55.3 ± 0.0	NB
P	<i>Carex norvegica</i>	Norway Sedge				S1	2 May Be At Risk	7	33.3 ± 0.0	NB
P	<i>Carex norvegica</i> ssp. <i>inferalpina</i>	Scandinavian Sedge				S1	2 May Be At Risk	15	43.5 ± 0.0	NB
P	<i>Carex sterilis</i>	Sterile Sedge				S1	2 May Be At Risk	1	42.7 ± 0.0	NB
P	<i>Carex grisea</i>	Inflated Narrow-leaved Sedge				S1	2 May Be At Risk	2	67.1 ± 0.0	NB
P	<i>Rhynchospora capillacea</i>	Slender Beakrush				S1	2 May Be At Risk	5	11.5 ± 0.0	NB
P	<i>Juncus stygius</i> ssp. <i>americanus</i>	Moor Rush				S1	2 May Be At Risk	1	39.1 ± 10.0	NB
P	<i>Allium canadense</i>	Canada Garlic				S1	2 May Be At Risk	5	20.9 ± 0.0	NB
P	<i>Malaxis brachypoda</i>	White Adder's-Mouth				S1	2 May Be At Risk	1	22.9 ± 1.0	NB
P	<i>Platanthera macrophylla</i>	Large Round-Leaved Orchid				S1	2 May Be At Risk	1	92.8 ± 1.0	NB
P	<i>Festuca subverticillata</i>	Nodding Fescue				S1	2 May Be At Risk	3	67.3 ± 10.0	NB
P	<i>Stuckenia filiformis</i> ssp. <i>occidentalis</i>	Thread-leaved Pondweed				S1	2 May Be At Risk	3	42.3 ± 0.0	NB
P	<i>Potamogeton friesii</i>	Fries' Pondweed				S1	2 May Be At Risk	5	42.3 ± 0.0	NB
P	<i>Potamogeton strictifolius</i>	Straight-leaved Pondweed				S1	2 May Be At Risk	2	67.1 ± 100.0	NB
P	<i>Dryopteris clintoniana</i>	Clinton's Wood Fern				S1	2 May Be At Risk	1	39.1 ± 10.0	NB
P	<i>Gymnocarpium robertianum</i>	Limestone Oak Fern				S1	2 May Be At Risk	3	80.9 ± 0.0	NB
P	<i>Huperzia selago</i>	Northern Firmoss				S1	2 May Be At Risk	3	34.9 ± 0.0	NB
P	<i>Galium trifidum</i> ssp. <i>subbiflorum</i>	Three-petaled Bedstraw				S1?	5 Undetermined	4	47.1 ± 0.0	NB
P	<i>Sisyrinchium mucronatum</i>	Michaux's Blue-eyed-grass				S1?	5 Undetermined	6	48.5 ± 0.0	NB
P	<i>Rumex aquaticus</i> var. <i>fenestratus</i>	Western Dock				S1S2	2 May Be At Risk	29	33.3 ± 0.0	NB
P	<i>Anemone multifida</i> var. <i>richardsiana</i>	Cut-leaved Anemone				S1S2	5 Undetermined	8	24.2 ± 1.0	NB
P	<i>Saxifraga virginensis</i>	Early Saxifrage				S1S2	2 May Be At Risk	5	3.0 ± 0.0	NB
P	<i>Carex crawei</i>	Crawe's Sedge				S1S2	2 May Be At Risk	4	85.4 ± 0.0	NB
P	<i>Selaginella rupestris</i>	Rock Spikemoss				S1S2	2 May Be At Risk	4	30.4 ± 0.0	NB
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S1S3	2 May Be At Risk	3	75.0 ± 0.0	NB
P	<i>Osmorhiza depauperata</i>	Blunt Sweet Cicely				S2	3 Sensitive	6	30.5 ± 1.0	NB
P	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely				S2	3 Sensitive	6	67.1 ± 0.0	NB
P	<i>Sanicula odorata</i>	Clustered Sanicle				S2	2 May Be At Risk	4	66.8 ± 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Solidago simplex</i> var. <i>racemosa</i>	Sticky Goldenrod				S2	2 May Be At Risk	23	31.7 ± 0.0	NB
P	<i>Impatiens pallida</i>	Pale Jewelweed				S2	2 May Be At Risk	14	65.9 ± 0.0	NB
P	<i>Betula minor</i>	Dwarf White Birch				S2	3 Sensitive	17	38.0 ± 1.0	NB
P	<i>Arabis drummondii</i>	Drummond's Rockcress				S2	3 Sensitive	2	42.9 ± 0.0	NB
P	<i>Stellaria longifolia</i>	Long-leaved Starwort				S2	3 Sensitive	1	49.2 ± 1.0	NB
P	<i>Triosteum aurantiacum</i>	Orange-fruited Tinker's Weed				S2	3 Sensitive	2	75.0 ± 0.0	NB
P	<i>Shepherdia canadensis</i>	Soapberry				S2	3 Sensitive	23	55.6 ± 0.0	NB
P	<i>Astragalus eucosmus</i>	Elegant Milk-vetch				S2	2 May Be At Risk	8	74.7 ± 0.0	NB
P	<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed				S2	3 Sensitive	32	1.5 ± 0.0	NB
P	<i>Quercus macrocarpa</i>	Bur Oak				S2	2 May Be At Risk	1	83.2 ± 1.0	NB
P	<i>Nuphar lutea</i> ssp. <i>rubrodiscalis</i>	Red-disked Yellow Pond-lily				S2	3 Sensitive	3	48.8 ± 5.0	NB
P	<i>Orobanche uniflora</i>	One-Flowered Broomrape				S2	3 Sensitive	2	75.0 ± 0.0	NB
P	<i>Polygala senega</i>	Seneca Snakeroot				S2	3 Sensitive	23	71.6 ± 50.0	NB
P	<i>Anemone multifida</i>	Cut-leaved Anemone				S2	3 Sensitive	52	3.0 ± 0.0	NB
P	<i>Anemone parviflora</i>	Small-flowered Anemone				S2	3 Sensitive	12	94.8 ± 1.0	NB
P	<i>Hepatica nobilis</i> var. <i>obtusata</i>	Round-lobed Hepatica				S2	3 Sensitive	1	99.7 ± 1.0	NB
P	<i>Ranunculus longirostris</i>	Eastern White Water-Crowfoot				S2	5 Undetermined	3	46.1 ± 1.0	NB
P	<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly Rose				S2	2 May Be At Risk	25	47.1 ± 0.0	NB
P	<i>Galium kamtschaticum</i>	Northern Wild Licorice				S2	3 Sensitive	7	46.4 ± 0.0	NB
P	<i>Salix candida</i>	Sage Willow				S2	3 Sensitive	19	42.0 ± 50.0	NB
P	<i>Castilleja septentrionalis</i>	Northeastern Paintbrush				S2	3 Sensitive	24	0.8 ± 5.0	NB
P	<i>Scrophularia lanceolata</i>	Lance-leaved Figwort				S2	3 Sensitive	3	97.3 ± 0.0	NB
P	<i>Dirca palustris</i>	Eastern Leatherwood				S2	2 May Be At Risk	2	9.9 ± 10.0	NB
P	<i>Phryma leptostachya</i>	American Lopseed				S2	3 Sensitive	1	67.1 ± 0.0	NB
P	<i>Verbena urticifolia</i>	White Vervain				S2	2 May Be At Risk	3	80.2 ± 1.0	NB
P	<i>Viola novae-angliae</i>	New England Violet				S2	3 Sensitive	12	7.7 ± 0.0	NB
P	<i>Symplocarpus foetidus</i>	Eastern Skunk Cabbage				S2	3 Sensitive	3	16.3 ± 0.0	NB
P	<i>Carex concinna</i>	Beautiful Sedge				S2	3 Sensitive	32	55.0 ± 0.0	NB
P	<i>Carex granularis</i>	Limestone Meadow Sedge				S2	3 Sensitive	25	69.9 ± 0.0	NB
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	3 Sensitive	14	33.1 ± 1.0	NB
P	<i>Carex hirtifolia</i>	Pubescent Sedge				S2	3 Sensitive	3	17.3 ± 0.0	NB
P	<i>Carex livida</i> var. <i>radicalis</i>	Livid Sedge				S2	3 Sensitive	30	39.1 ± 5.0	NB
P	<i>Carex plantaginea</i>	Plantain-Leaved Sedge				S2	3 Sensitive	2	85.2 ± 1.0	NB
P	<i>Carex prairea</i>	Prairie Sedge				S2	3 Sensitive	19	33.1 ± 1.0	NB
P	<i>Carex rostrata</i>	Narrow-leaved Beaked Sedge				S2	3 Sensitive	9	29.9 ± 1.0	NB
P	<i>Carex sprengelii</i>	Longbeak Sedge				S2	3 Sensitive	20	20.8 ± 0.0	NB
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S2	2 May Be At Risk	8	39.1 ± 5.0	NB
P	<i>Carex albicans</i> var. <i>emmonsii</i>	White-tinged Sedge				S2	3 Sensitive	2	39.1 ± 5.0	NB
P	<i>Elodea nuttallii</i>	Nuttall's Waterweed				S2	3 Sensitive	9	10.3 ± 0.0	NB
P	<i>Amerorchis rotundifolia</i>	Small Round-leaved Orchis				S2	2 May Be At Risk	24	33.7 ± 1.0	NB
P	<i>Calypso bulbosa</i> var. <i>americana</i>	Calypso				S2	2 May Be At Risk	10	36.1 ± 5.0	NB
P	<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted Frog Orchid				S2	2 May Be At Risk	4	22.9 ± 1.0	NB
P	<i>Cypripedium parviflorum</i> var.	Small Yellow Lady's-Slipper				S2	2 May Be At Risk	7	0.7 ± 2.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>makasin</i> <i>Galearis spectabilis</i>	Showy Orchis				S2	2 May Be At Risk	2	67.0 ± 10.0	NB
P	<i>Goodyera oblongifolia</i>	Menzies' Rattlesnake-plantain				S2	3 Sensitive	3	26.7 ± 1.0	NB
P	<i>Spiranthes lucida</i>	Shining Ladies'-Tresses				S2	3 Sensitive	5	17.3 ± 0.0	NB
P	<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass				S2	3 Sensitive	2	42.9 ± 0.0	NB
P	<i>Elymus canadensis</i>	Canada Wild Rye				S2	2 May Be At Risk	1	39.1 ± 5.0	NB
P	<i>Poa glauca</i>	Glaucous Blue Grass				S2	4 Secure	22	67.3 ± 0.0	NB
P	<i>Schizachyrium scoparium</i>	Little Bluestem				S2	3 Sensitive	47	3.0 ± 0.0	NB
P	<i>Asplenium trichomanes</i>	Maidenhair Spleenwort				S2	3 Sensitive	3	84.6 ± 0.0	NB
P	<i>Woodsia alpina</i>	Alpine Cliff Fern				S2	3 Sensitive	39	67.8 ± 0.0	NB
P	<i>Lycopodium sitchense</i>	Sitka Clubmoss				S2	3 Sensitive	3	22.9 ± 1.0	NB
P	<i>Botrychium minganense</i>	Mingan Moonwort				S2	3 Sensitive	6	68.5 ± 0.0	NB
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S2	3 Sensitive	12	39.8 ± 5.0	NB
P	<i>Symphotrichum novi-belgii</i> var. <i>crenifolium</i>	New York Aster				S2?	5 Undetermined	1	80.6 ± 1.0	NB
P	<i>Galium obtusum</i>	Blunt-leaved Bedstraw				S2?	4 Secure	1	31.7 ± 1.0	NB
P	<i>Salix myricoides</i>	Bayberry Willow				S2?	3 Sensitive	26	1.1 ± 10.0	NB
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S2?	5 Undetermined	1	79.7 ± 0.0	NB
P	<i>Solidago altissima</i>	Tall Goldenrod				S2S3	4 Secure	69	71.3 ± 0.0	NB
P	<i>Barbarea orthoceras</i>	American Yellow Rocket				S2S3	3 Sensitive	13	23.5 ± 1.0	NB
P	<i>Callitriche hermaphroditica</i>	Northern Water-starwort				S2S3	4 Secure	15	29.5 ± 0.0	NB
P	<i>Lonicera oblongifolia</i>	Swamp Fly Honeysuckle				S2S3	3 Sensitive	41	2.8 ± 5.0	NB
P	<i>Epilobium coloratum</i>	Purple-veined Willowherb				S2S3	3 Sensitive	3	42.4 ± 5.0	NB
P	<i>Rumex pallidus</i>	Seabeach Dock				S2S3	3 Sensitive	1	87.0 ± 0.0	NB
P	<i>Amelanchier sanguinea</i> var. <i>gaspensis</i>	Round-Leaved Serviceberry				S2S3	5 Undetermined	2	65.7 ± 0.0	NB
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S2S3	3 Sensitive	39	33.0 ± 1.0	NB
P	<i>Valeriana uliginosa</i>	Swamp Valerian				S2S3	3 Sensitive	58	33.1 ± 1.0	NB
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	4 Secure	4	74.3 ± 1.0	NB
P	<i>Juncus brachycephalus</i>	Small-Head Rush				S2S3	3 Sensitive	24	0.7 ± 0.0	NB
P	<i>Corallorhiza maculata</i> var. <i>maculata</i>	Spotted Coralroot				S2S3	3 Sensitive	6	16.0 ± 0.0	NB
P	<i>Listera auriculata</i>	Auricled Twayblade				S2S3	3 Sensitive	8	22.9 ± 1.0	NB
P	<i>Eragrostis pectinacea</i>	Tufted Love Grass				S2S3	4 Secure	1	76.7 ± 1.0	NB
P	<i>Stuckenia filiformis</i>	Thread-leaved Pondweed				S2S3	3 Sensitive	4	43.6 ± 0.0	NB
P	<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Thread-leaved Pondweed				S2S3	3 Sensitive	15	26.9 ± 1.0	NB
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S2S3	4 Secure	18	26.6 ± 10.0	NB
P	<i>Ophioglossum pusillum</i>	Northern Adder's-tongue				S2S3	3 Sensitive	3	50.7 ± 10.0	NB
P	<i>Arnica lanceolata</i>	Lance-leaved Arnica				S3	4 Secure	74	27.0 ± 0.0	NB
P	<i>Artemisia campestris</i>	Field Wormwood				S3	4 Secure	3	12.7 ± 0.0	NB
P	<i>Artemisia campestris</i> ssp. <i>caudata</i>	Field Wormwood				S3	4 Secure	6	12.7 ± 0.0	NB
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3	4 Secure	118	31.8 ± 0.0	NB
P	<i>Prenanthes racemosa</i>	Glaucous Rattlesnakeroot				S3	4 Secure	21	0.4 ± 5.0	NB
P	<i>Tanacetum bipinnatum</i> ssp. <i>huronense</i>	Lake Huron Tansy				S3	4 Secure	54	0.4 ± 5.0	NB
P	<i>Symphotrichum</i>	Boreal Aster				S3	3 Sensitive	16	38.0 ± 5.0	NB

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P	<i>boreale</i>									
P	<i>Betula pumila</i>	Bog Birch				S3	4 Secure	1	84.1 ± 0.0	NB
P	<i>Arabis glabra</i>	Tower Mustard				S3	5 Undetermined	16	25.7 ± 0.0	NB
P	<i>Arabis hirsuta</i> var. <i>pycnocarpa</i>	Western Hairy Rockcress				S3	4 Secure	20	3.0 ± 0.0	NB
P	<i>Subularia aquatica</i> var. <i>americana</i>	Water Awlwort				S3	4 Secure	3	75.6 ± 0.0	NB
P	<i>Astragalus alpinus</i>	Alpine Milk-vetch				S3	4 Secure	1	85.4 ± 0.0	NB
P	<i>Astragalus alpinus</i> var. <i>brunetianus</i>	Alpine Milk-Vetch				S3	4 Secure	88	0.4 ± 1.0	NB
P	<i>Hedysarum alpinum</i>	Alpine Sweet-vetch				S3	4 Secure	164	0.4 ± 5.0	NB
P	<i>Gentianella amarella</i> <i>ssp. acuta</i>	Northern Gentian				S3	4 Secure	12	40.1 ± 0.0	NB
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	4 Secure	1	90.2 ± 0.0	NB
P	<i>Stachys tenuifolia</i>	Smooth Hedge-Nettle				S3	3 Sensitive	39	2.5 ± 0.0	NB
P	<i>Nuphar lutea</i> ssp. <i>pumila</i>	Small Yellow Pond-lily				S3	4 Secure	7	25.8 ± 0.0	NB
P	<i>Epilobium hornemannii</i>	Hornemann's Willowherb				S3	4 Secure	20	16.4 ± 5.0	NB
P	<i>Polygonum scandens</i>	Climbing False Buckwheat				S3	4 Secure	5	47.7 ± 0.0	NB
P	<i>Littorella uniflora</i>	American Shoreweed				S3	4 Secure	4	44.4 ± 0.0	NB
P	<i>Primula mistassinica</i>	Mistassini Primrose				S3	4 Secure	32	7.7 ± 0.0	NB
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	4 Secure	14	22.9 ± 1.0	NB
P	<i>Clematis occidentalis</i>	Purple Clematis				S3	4 Secure	7	22.7 ± 0.0	NB
P	<i>Ranunculus gmelinii</i>	Gmelin's Water Buttercup				S3	4 Secure	1	55.3 ± 0.0	NB
P	<i>Thalictrum venulosum</i>	Northern Meadow-rue				S3	4 Secure	17	53.4 ± 0.0	NB
P	<i>Rubus occidentalis</i>	Black Raspberry				S3	4 Secure	1	18.9 ± 1.0	NB
P	<i>Galium boreale</i>	Northern Bedstraw				S3	4 Secure	6	48.4 ± 0.0	NB
P	<i>Salix interior</i>	Sandbar Willow				S3	4 Secure	13	30.6 ± 5.0	NB
P	<i>Salix pedicellaris</i>	Bog Willow				S3	4 Secure	34	40.9 ± 0.0	NB
P	<i>Parnassia glauca</i>	Fen Grass-of-Parnassus				S3	4 Secure	144	7.7 ± 0.0	NB
P	<i>Veronica serpyllifolia</i> <i>ssp. humifusa</i>	Thyme-Leaved Speedwell				S3	4 Secure	16	8.0 ± 0.0	NB
P	<i>Viola adunca</i>	Hooked Violet				S3	4 Secure	3	73.4 ± 1.0	NB
P	<i>Viola adunca</i> var. <i>adunca</i>	Hooked Violet				S3	4 Secure	1	47.1 ± 0.0	NB
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	4 Secure	116	7.7 ± 0.0	NB
P	<i>Carex arcta</i>	Northern Clustered Sedge				S3	4 Secure	26	29.8 ± 0.0	NB
P	<i>Carex atratiformis</i>	Scabrous Black Sedge				S3	4 Secure	180	30.0 ± 0.0	NB
P	<i>Carex capillaris</i>	Hairlike Sedge				S3	4 Secure	146	0.3 ± 5.0	NB
P	<i>Carex chordorrhiza</i>	Creeping Sedge				S3	4 Secure	11	90.2 ± 0.0	NB
P	<i>Carex conoidea</i>	Field Sedge				S3	4 Secure	11	25.1 ± 1.0	NB
P	<i>Carex eburnea</i>	Bristle-leaved Sedge				S3	4 Secure	88	46.5 ± 0.0	NB
P	<i>Carex exilis</i>	Coastal Sedge				S3	4 Secure	23	84.1 ± 0.0	NB
P	<i>Carex garberi</i>	Garber's Sedge				S3	3 Sensitive	23	7.7 ± 0.0	NB
P	<i>Carex haydenii</i>	Hayden's Sedge				S3	4 Secure	3	26.0 ± 0.0	NB
P	<i>Carex michauxiana</i>	Michaux's Sedge				S3	4 Secure	2	59.5 ± 1.0	NB
P	<i>Carex ormostachya</i>	Necklace Spike Sedge				S3	4 Secure	7	79.4 ± 0.0	NB
P	<i>Carex rosea</i>	Rosy Sedge				S3	4 Secure	7	16.1 ± 5.0	NB
P	<i>Carex tenera</i>	Tender Sedge				S3	4 Secure	8	13.3 ± 5.0	NB
P	<i>Carex tuckermanii</i>	Tuckerman's Sedge				S3	4 Secure	29	6.8 ± 0.0	NB
P	<i>Carex vaginata</i>	Sheathed Sedge				S3	3 Sensitive	39	33.1 ± 1.0	NB
P	<i>Carex wiegandii</i>	Wiegand's Sedge				S3	4 Secure	2	38.0 ± 5.0	NB
P	<i>Cyperus esculentus</i>	Perennial Yellow Nutsedge				S3	4 Secure	2	9.6 ± 0.0	NB
P	<i>Eleocharis intermedia</i>	Matted Spikerush				S3	4 Secure	25	47.6 ± 0.0	NB
P	<i>Eleocharis</i> <i>quinqueflora</i>	Few-flowered Spikerush				S3	4 Secure	46	0.7 ± 0.0	NB
P	<i>Rhynchospora</i>	Small-headed Beakrush				S3	4 Secure	10	7.7 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
	<i>capitellata</i>									
P	<i>Trichophorum clintonii</i>	Clinton's Clubrush				S3	4 Secure	15	7.7 ± 0.0	NB
P	<i>Lemna trisulca</i>	Star Duckweed				S3	4 Secure	1	25.8 ± 0.0	NB
P	<i>Triantha glutinosa</i>	Sticky False-Asphodel				S3	4 Secure	103	0.3 ± 5.0	NB
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S3	3 Sensitive	14	39.1 ± 5.0	NB
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3	4 Secure	3	20.8 ± 0.0	NB
P	<i>Platanthera blephariglottis</i>	White Fringed Orchid				S3	4 Secure	9	74.8 ± 1.0	NB
P	<i>Bromus latiglumis</i>	Broad-Glumed Brome				S3	3 Sensitive	103	8.9 ± 0.0	NB
P	<i>Muhlenbergia richardsonis</i>	Mat Muhly				S3	4 Secure	57	7.6 ± 0.0	NB
P	<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed				S3	4 Secure	8	22.2 ± 10.0	NB
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S3	3 Sensitive	41	22.3 ± 1.0	NB
P	<i>Adiantum pedatum</i>	Northern Maidenhair Fern				S3	4 Secure	11	68.5 ± 0.0	NB
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S3	4 Secure	46	6.8 ± 5.0	NB
P	<i>Asplenium trichomanes-ramosum</i>	Green Spleenwort				S3	4 Secure	24	43.3 ± 0.0	NB
P	<i>Dryopteris fragrans</i> <i>var. remotiuscula</i>	Fragrant Wood Fern				S3	4 Secure	18	31.7 ± 0.0	NB
P	<i>Dryopteris goldiana</i>	Goldie's Woodfern				S3	3 Sensitive	6	1.8 ± 0.0	NB
P	<i>Woodsia glabella</i>	Smooth Cliff Fern				S3	4 Secure	23	66.5 ± 0.0	NB
P	<i>Equisetum palustre</i>	Marsh Horsetail				S3	4 Secure	18	3.4 ± 0.0	NB
P	<i>Lycopodium sabinifolium</i>	Ground-Fir				S3	4 Secure	10	22.9 ± 1.0	NB
P	<i>Botrychium dissectum</i>	Cut-leaved Moonwort				S3	4 Secure	1	88.1 ± 10.0	NB
P	<i>Botrychium lanceolatum</i> <i>var. angustisegmentum</i>	Lance-Leaf Grape-Fern				S3	3 Sensitive	5	54.1 ± 5.0	NB
P	<i>Botrychium simplex</i>	Least Moonwort				S3	4 Secure	12	38.0 ± 8.0	NB
P	<i>Polypodium appalachianum</i>	Appalachian Polypody				S3	4 Secure	2	88.4 ± 0.0	NB
P	<i>Crataegus submollis</i>	Quebec Hawthorn				S3?	3 Sensitive	1	87.3 ± 1.0	NB
P	<i>Mertensia maritima</i>	Sea Lungwort				S3S4	4 Secure	1	98.0 ± 50.0	NB
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3S4	4 Secure	97	7.7 ± 0.0	NB
P	<i>Myriophyllum sibiricum</i>	Siberian Water Milfoil				S3S4	4 Secure	41	8.2 ± 1.0	NB
P	<i>Stachys pilosa</i>	Hairy Hedge-Nettle				S3S4	5 Undetermined	14	51.3 ± 0.0	NB
P	<i>Stachys pilosa</i> <i>var. pilosa</i>	Marsh Hedge-Nettle				S3S4	5 Undetermined	1	33.6 ± 1.0	NB
P	<i>Potentilla arguta</i>	Tall Cinquefoil				S3S4	4 Secure	48	10.8 ± 10.0	NB
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	4 Secure	6	84.9 ± 1.0	NB
P	<i>Cladium mariscoides</i>	Smooth Twigrush				S3S4	4 Secure	3	90.5 ± 0.0	NB
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3S4	4 Secure	1	91.1 ± 10.0	NB
P	<i>Spirodela polyrrhiza</i>	Great Duckweed				S3S4	4 Secure	6	1.6 ± 0.0	NB
P	<i>Corallorhiza maculata</i>	Spotted Coralroot				S3S4	3 Sensitive	9	22.9 ± 1.0	NB
P	<i>Calamagrostis stricta</i>	Slim-stemmed Reed Grass				S3S4	4 Secure	13	7.3 ± 0.0	NB
P	<i>Calamagrostis stricta</i> <i>ssp. stricta</i>	Slim-stemmed Reed Grass				S3S4	4 Secure	4	41.1 ± 0.0	NB
P	<i>Potamogeton oakesianus</i>	Oakes' Pondweed				S3S4	4 Secure	1	87.7 ± 1.0	NB
P	<i>Carex scirpoidea</i>	Scirpuslike Sedge				SH	2 May Be At Risk	2	76.8 ± 1.0	NB
P	<i>Phleum alpinum</i>	Alpine Timothy				SH	2 May Be At Risk	1	89.2 ± 0.0	NB
P	<i>Gymnocarpium jessoense</i> <i>ssp. parvulum</i>	Asian Oak Fern				SH	2 May Be At Risk	5	49.9 ± 0.0	NB
P	<i>Botrychium lineare</i>	Narrow-leaved Moonwort				SH	2 May Be At Risk	1	24.3 ± 5.0	NB

5.1 SOURCE BIBLIOGRAPHY (100 km)

The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
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Appendix C – Records of First Nation Consultation

Project Description - Madawaska/Edmundston International Bridge Replacement
NBDTI – November 22, 2018

File No. 289-2

May 24, 2017

Chief Gabriel Atwin, Kingsclear First Nation
Chief Patricia Bernard, Madawaska Maliseet First Nation
Chief Shelley Sabattis, Oromocto First Nation
Chief Candice Paul, St. Mary's First Nation
Chief Ross Perley, Tobique First Nation
Chief Timothy Paul, Woodstock First Nation

Re: Edmundston- Madawaska International Bridge Feasibility Study

I am writing to advise that the New Brunswick Department of Transportation & Infrastructure (NBDTI) is involved in a feasibility study to review options to rehabilitate or replace the Madawaska-Edmundston International Bridge. Please see the attached location plan.

The existing international bridge was constructed in 1921 and is nearing the end of its service life, therefore rehabilitation or replacement options are currently being considered. Although replacement options of a possible new location have not been determined as of yet, upstream and downstream locations are likely to be considered.

Through this letter, NBDTI wishes to express its willingness to meet and discuss any questions or concerns that you, or members of your communities, might have about this project. The Project would be cost shared by the Province of New Brunswick and the State of Maine. It is anticipated that an Environmental Impact Assessment (EIA), will be required for this project, and NBDTI will register the Project with the Department of Environment and Local Government. In addition Fisheries and Oceans Canada, Transport Canada and other federal regulatory agencies may have regulatory roles in the project and may wish to accompany NBDTI on any discussions with First Nations communities.

Please provide notification of your interest in this project and whether you would like to provide additional information to NBDTI by June 23 2017. If you have any questions, please do not hesitate to contact me at the contact information provided below.



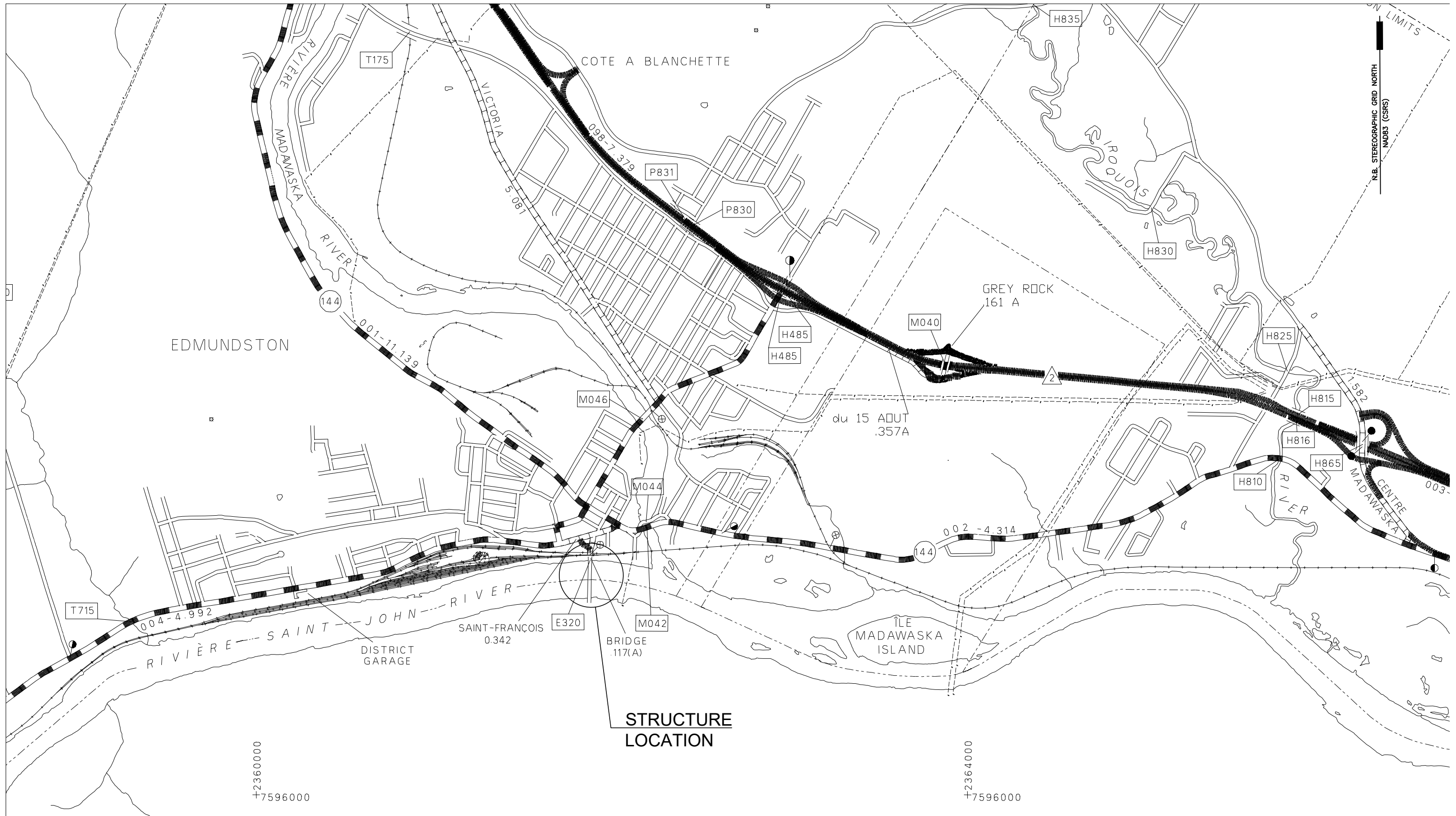
We thank you for your attention to this matter and look forward to discussing this project with you, should you wish, in the near future.

Sincerely,
<Original signed by>

James Hoyt, P.Eng.
Director – Design Branch
(506) 461-4495
James.Hoyt@gnb.ca

c.c. Shyla O'Donnell, Executive Director, Saint John River Tribal Council
Keyaira Gruben, Consultation Coordinator, Kingsclear First Nation
Gordon Gray, Consultation Liaison, Kingsclear First Nation
Russ Letica, Consultation Coordinator, Madawaska First Nation
Fred Sabattis, Consultation Coordinator, Oromocto First Nation
Megan Fullarton, Consultation Coordinator, St. Mary's First Nation
Jamie Gorman, Consultation Coordinator, Tobique First Nation
Amanda McIntosh, Consultation Coordinator, Woodstock First Nation
Kim Allen – New Brunswick Aboriginal Affairs Secretariat

Enc.



**STRUCTURE
LOCATION**



DEPARTMENT OF
TRANSPORTATION AND
INFRASTRUCTURE
Design Branch - Structures Unit

MADAWASKA-EDMUNDSTON INTERNATIONAL BRIDGE
Parish of Madawaska
MADAWASKA COUNTY
LOCATION PLAN

Contract No.	—	Asset No.	E320
Date	May 23, 2017	File No.	—
Drawn by:	ARA	DWG	01 OF 01

File No. 289-2

September 26, 2018

Chief Gabriel Atwin, Pilick First Nation (Kingsclear)
Chief Patricia Bernard, Kapskuksisok First Nation (Madawaska)
Chief Shelley Sabattis, Welamakotuk First Nation (Oromocto)
Chief Alan Polchies Jr., Sitansisk First Nation (St. Mary's)
Chief Ross Perley, Nekotkuk First Nation (Tobique)
Chief Timothy Paul, Woodstock First Nation

Re: Edmundston-Madawaska International Bridge - Feasibility Study and Status Update

I am writing to follow up on our May 24, 2017 letter sent to advise of the feasibility study that the New Brunswick Department of Transportation & Infrastructure (NB DTI) has been involved in to review options to rehabilitate or replace the Madawaska-Edmundston International Bridge. Please see the attached location plan (Figure 1.1).

The existing international bridge was constructed in 1921 and is nearing the end of its service life, therefore the feasibility study was carried out to determine rehabilitation or replacement options for this bridge. The feasibility study is now complete and identifies a preferred alternative for this bridge. A copy of the feasibility study can be obtained at the following link:

<https://www1.maine.gov/mdot/planning/studies/meib>

The preferred alternative proposes moving the currently substandard Madawaska Land Port of Entry (LPOE) to a location slightly upstream of the existing LPOE and building a new bridge on an angle connecting the existing Edmundston Port of Entry (POE) to the new Madawaska LPOE. See attached Figure (Sheet Number 1).

The Maine Department of Transportation (Maine DOT) is the lead agency for the project. They will be responsible for obtaining regulatory approvals in the USA and will be designing and tendering the project. Maine DOT will also be responsible for contract administration and construction oversight for the project. NB DTI will be assisting with the design and will be obtaining regulatory approvals in Canada.

NB DTI is conducting a provincial Environmental Impact Assessment for submittal to the Provincial Department of Environmental and Local Government. It is understood that the replacement of an international bridge is on the Canadian Environmental Assessment Act (CEAA) list of designated projects. NB DTI will be submitting a Project Description to the Canadian Environmental Assessment Agency (CEA Agency) for their review and determination on the requirement for a federal environmental assessment.



Current status of the project:

- The feasibility study is complete and identifies a preferred alternative for the bridge.
- NBDTI has started the environmental fieldwork for the Provincial Environmental Impact Assessment.
- NBDTI is preparing a Project Description for submittal to CEA Agency for determination on a federal environmental assessment.
- Maine DOT has started the preliminary design process for the replacement bridge.

Through this letter, NBDTI wishes to express its willingness to meet and discuss any questions or concerns that you, or members of your communities, might have about this project. The Project would be cost shared by the Province of New Brunswick and the State of Maine. In addition, the New Brunswick Department of Environmental and Local Government, Fisheries and Oceans Canada, Transport Canada, the Canadian Environmental Assessment Agency and other federal and provincial regulatory agencies may have regulatory roles in the project and may wish to accompany NBDTI on any discussions with First Nation communities.

Please provide notification of your interest in this project and whether you would like to provide additional information to NBDTI by November 2, 2018. If you have any questions, please do not hesitate to contact me at the contact information provided below.

We thank you for your attention to this matter and look forward to discussing this project with you, should you wish, in the near future.

Sincerely,

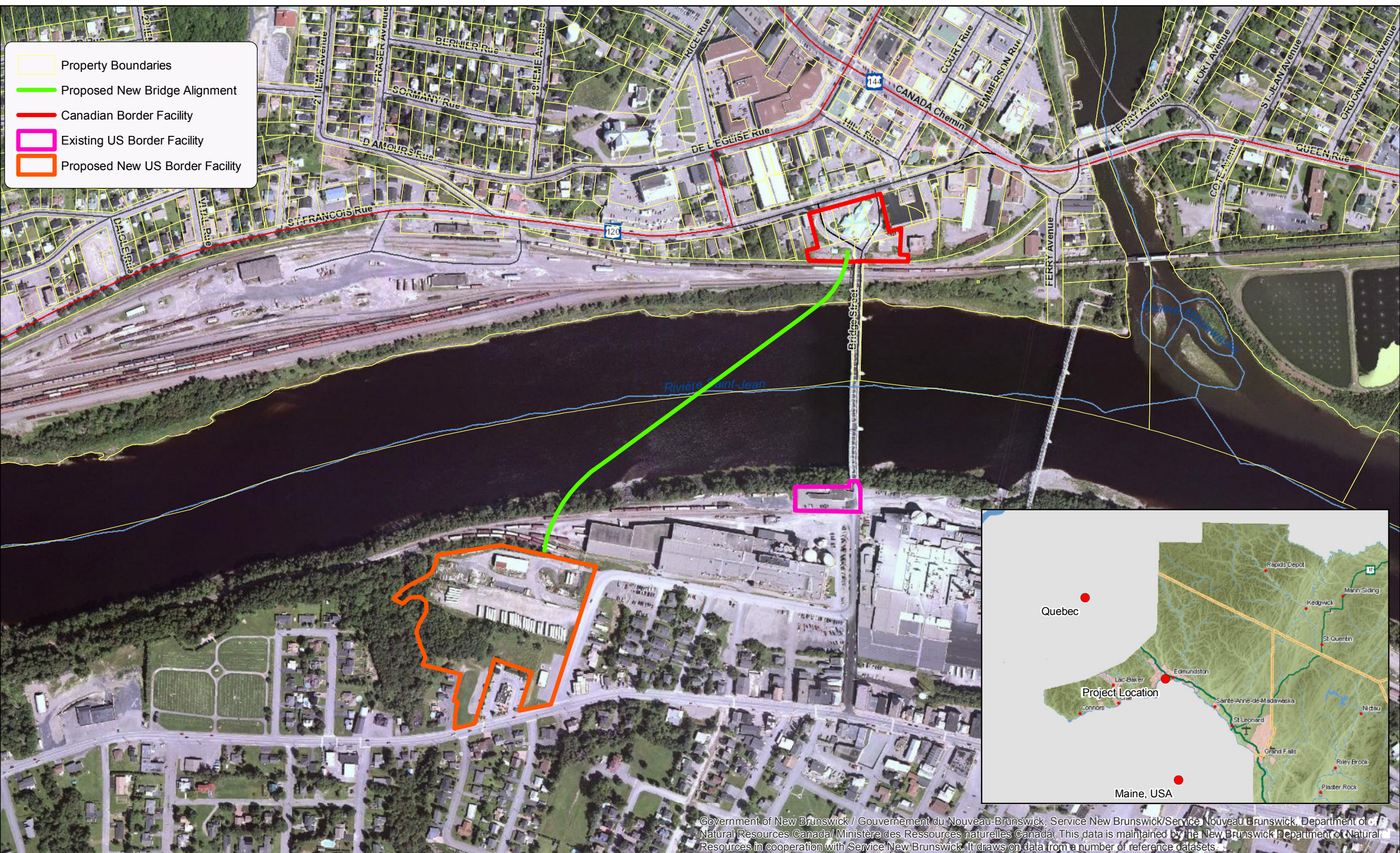
<Original signed by>



James Hoyt, P.Eng.
Director – Design Branch
(506) 461-4495
James.Hoyt@gnb.ca

c.c. Shyla O'Donnell, Executive Director, Wolastoqey Nation
Deana Sappier, EIA Coordinator, Wolastoqey Nation
Natasha Sacobie, Consultation Coordinator, Pillick First Nation (Kingsclear)
Russ Letica, Consultation Coordinator, Kapskuksisok First Nation (Madawaska)
Fred Sabattis, Consultation Coordinator, Welamakotuk First Nation (Oromocto)
Tim Plant, Consultation Coordinator, Sitansisk First Nation (St. Mary's)
Jamie Gorman, Consultation Coordinator, Nekotkuk First Nation (Tobique)
Amanda McIntosh, Consultation Coordinator, Woodstock First Nation
Kim Allen – New Brunswick Aboriginal Affairs Secretariat
George Brown – Fisheries and oceans Canada
Kevin Leblanc – Transport Canada
Andrea Service – Canadian Environmental Assessment Agency

Document Path: S:\STRENVIRONNEMENT\District 6\Madawaska Edmundston International Bridge\01 - Mapping\Fig_1.1_ProjectLocation_2018_04_05.mxd



Government of New Brunswick / Gouvernement du Nouveau-Brunswick, Service New Brunswick/Service Nouveau Brunswick, Department of Natural Resources Canada / Ministère des Ressources naturelles Canada, This data is maintained by the New Brunswick Department of Natural Resources in cooperation with Service New Brunswick. It draws on data from a number of reference datasets.

New Brunswick Department of Transportation and Infrastructure
 Date: 4/5/2018
 Projection: NB Stereographic

0 100 200 400 Meters 1:5,000

Madawaska-Edmundston International Bridge
 Project Description

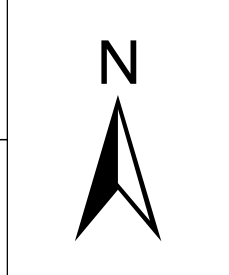
Location Map

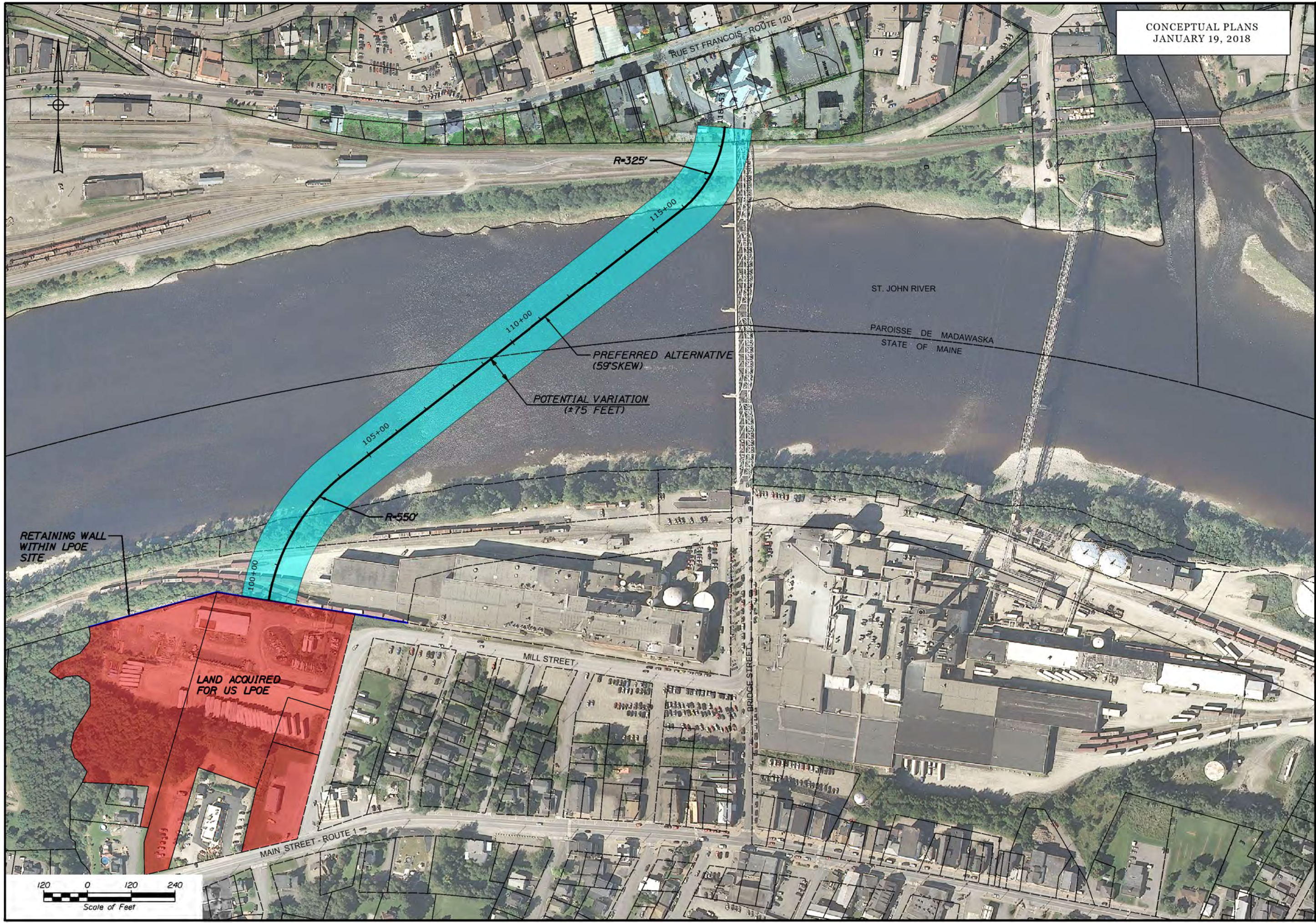
Proposed Alignment

Figure No.: 1.1

Drawn by:
GMQ

Checked by:
VB

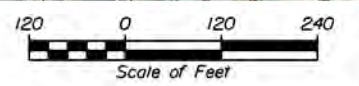




STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-TALENT					
CHECKED-REVISED					
DESIGN-TALENT					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

MADAWASKA - EDMUNDSTON
INTERNATIONAL BRIDGE CROSSING
PLANNING AND FEASIBILITY STUDY
**PREFERRED ALTERNATIVE
ALIGNMENT ENVELOPE**



Balland, Vincent (DTI/MTI)

From: Russ Letica <russletica@madawaskamaliseet.com>
Sent: Thursday, September 27, 2018 10:16 AM
To: Murray, Debra Ann (DTI/MTI); Alan Polchies Jr.; Gabriel Atwin; Patricia Bernard; Ross Perley; Shelley Sabattis; Timothy Paul
Cc: Allen, Kim (AAS); George.Brown@dfo-mpo.gc.ca; kevin.leblanc@tc.gc.ca; andrea.service@canada.ca; Cummings, Melissa (DTI/MTI); Balland, Vincent (DTI/MTI); Amanda McIntosh; Deana Sappier; Fred Sabattis; Jamie Gorman; Natasha Sacobie; Shyla O'Donnell; Tim Plant; Sal Poirier
Subject: RE: Edmundston-Madawaska International Bridge - Feasibility Study and Status Update

Good Morning Debra Ann,

Kci Woliwon for the information pertaining to the Edmundston-Madawaska International Bridge project. The Wolastoqey Nation In New Brunswick (WNNB) do wish to be consulted on this international project proposal. WNNB will be formally responding to your letter before Nov 2, 2018 requested date.

** I have cc'ed Sal Poirier to the email. Sal is Madawaska Maliseet communities, EV Tech and will team with the consultation department on the project proposal. Please included him on all communications.

Wəliwəḥ,
Russ Letica
Madawaska Maliseet First Nation
Development Resource
Consultation Coordinator/
Assistant Lands Officer
1771 Main St.
M.M.F.N. NB. E7C 1W9
Office (506) 735-1757
Fax: (506) 735-0024

Samaqan nit Pomawsuwakon!
Water is Life!

[Http://www.wolastoqey.ca](http://www.wolastoqey.ca)

This message is the property of Madawaska Maliseet First Nation and is intended only for the named recipient(s). If you have received this message in error, please delete the original email and notify the sender. Communication contained in this electronic mail (and any associated attachment(s)) is considered privileged and confidential and must not be disclosed, copied, forwarded or distributed without the written consent of the sender.

From: Murray, Debra Ann (DTI/MTI) <Debra.Murray@gnb.ca>
Sent: September 26, 2018 3:51 PM
To: Alan Polchies Jr. <Sakomalanpolchiesjr@smfn.ca>; Gabriel Atwin <gabrielatwin@kingsclear.ca>; Patricia Bernard <patriciabernard@madawaskamaliseet.com>; Ross Perley <rossperley@hotmail.com>; Shelley Sabattis <shelley.sabattis@ofnb.com>; Timothy Paul <tim.paul@nb.aibn.com>
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<shyla.odonnell@wtci-nb.ca>; Tim Plant <timonthypant@smfn.ca>

Subject: Edmundston-Madawaska International Bridge - Feasibility Study and Status Update

Please find attached a letter regarding the above noted project.

Thank you.

Debbie Murray

Administrative Assistant /Adjointe administrative

Department of Transportation & Infrastructure /Ministère des Transports et de l'Infrastructure

Design Branch / Tracé des Routes

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Bridge Improvements, Main Street Bridge #2504

Rangeley	22220.00	Bicycle/Pedestrian Improvements
Madawaska	22218.00	Sidewalk Construction
Madawaska	21736.00	Bridge Improvements, International Bridge# 2399
Mars Hill-		
Westfield	20870.00	Mill and Fill

Please review and comment regarding effects to historic properties on tribal lands as well as significant religious and cultural historic properties. This is in accordance with the National Historic Preservation Act, National Environmental Policy Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, Executive Order 13007--Indian Sacred Sites, Executive Order 13175--Consultation and Coordination with Indian Tribal Governments, Executive Order 12898--Executive Order on Environmental Justice and the implementing regulations for these authorities. The Maine Historic Preservation Commission will also be identifying National Register Eligible historic properties. Please find enclosed a location map to assist your review.

Thanks,

Julie Senk
Historic Coordinator
Maine DOT – Environmental Office

**Appendix D – Joint Statement from the Town of Madawaska
and the City of Edmundston**

Project Description - Madawaska/Edmundston International Bridge Replacement
NBDTI – November 22, 2018

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edmundston ouverte prospère durable

hôtel de ville services aux citoyens renseignements développement notre ville

pont international: signature d'une résolution historique entre edmundston et madawaska

Publié le 23 janvier 2018

Mychèle Poitras
Responsable des communications
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Des représentants municipaux d'Edmundston au Nouveau-Brunswick et de Madawaska au Maine viennent de signer une résolution conjointe qui vise à exprimer leurs attentes en ce qui a trait au projet d'un nouveau pont international reliant les deux communautés.

Afin d'en arriver à l'adoption de cette résolution, le Board of Selectmen de Madawaska a tenu une réunion extraordinaire publique à l'hôtel de ville d'Edmundston en simultanée avec celle du conseil municipal d'Edmundston.



Les élus des deux communautés se sont entendus sur le fait que le nouveau pont est un enjeu majeur dans le développement futur d'Edmundston et Madawaska.

Ainsi, selon la résolution, les élus expliquent qu'ils appuient le remplacement du pont international dans les plus brefs délais et expriment la nécessité que le pont soit situé à l'intérieur de leurs zones commerciales respectives.

De plus, les élus s'accordent pour dire que le nouveau pont doit être conçu pour intégrer et accueillir le nouveau point d'entrée commercial, ainsi que la circulation piétonnière et récréative comme les motoneiges, tout en décongestionnant la circulation du camionnage lourd dans les centres-villes respectifs.

Enfin, les élus souhaitent que le nouveau pont international possède des qualités esthétiques historiques qui reconnaissent la culture et l'histoire de la région acadienne afin d'augmenter le tourisme qui est d'importance vitale pour les économies régionales d'Edmundston, de Madawaska et des régions avoisinantes.

« C'était important pour nous de s'allier et d'exprimer clairement nos attentes en ce qui a trait au futur pont international. Ce projet se réalisera dans un horizon de cinq ans, donc c'est maintenant qu'il faut agir », explique le maire d'Edmundston, M. Cyrille Simard.

Pour le directeur général de Madawaska, la résolution conjointe démontre à quel point le dossier du pont international est important pour les deux communautés. « Cet effort conjoint marque un nouveau début avec notre voisine, Edmundston. Il y a beaucoup de potentiel et de progrès à venir à ce niveau. »

Le président du Board of Selectmen de Madawaska, M. Brian Thibault, a déclaré: «La résolution conjointe démontre à quel point le pont international est important pour les deux communautés. C'est la première fois que nos deux communautés font un pas comme celui-ci. Le pont nous unit, fait partie de notre patrimoine, mais il est aussi essentiel pour notre développement respectif. »

Rappelons enfin que d'importantes sessions de consultation publique sur le pont international ont lieu le mercredi 31 janvier à Edmundston (Palais des congrès, 17 h 30) et à Madawaska (cafétéria Madawaska High School à 19 h – US). Un plan préliminaire du nouveau pont et de son emplacement sera présenté.

CONTACTS:

Cyrille Simard, maire d'Edmundston, 506.739.2115, cyrille.simard@edmundston.ca

Gary Picard, directeur général de Madawaska, 207-728-6351, gmpicard@madawaska.me

<https://edmundston.ca/fr/renseignements/communiques/887-pont-international-signature-d-une-resolution-historique-entre-edmundston-et-madawaska>