

New Madawaska Land Port of Entry and International Bridge Project

*Madawaska, Aroostook County, ME to
Edmundston, New Brunswick, Canada*



Draft Supplemental Environmental Impact Statement and Draft Programmatic Section 4(f) Evaluation

**U.S. General Services Administration, Region 1
Federal Highway Administration**

FHWA-ME-EIS-18-01-D

November 2018

Federal Co-Lead Agencies:



U.S. Department
of Transportation
**Federal Highway
Administration**

State Lead Agency:



MaineDOT

Cooperating Agency:



In coordination with U.S. Customs and Border Protection, the New Brunswick Department of Transportation and Infrastructure, Public Services and Procurement Canada, and the Canada Border Services Agency

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In Cooperation with the U.S. Coast Guard

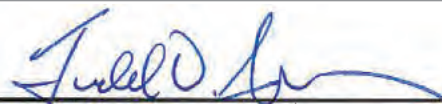
In Coordination with U.S. Customs and Border Protection, the New Brunswick Department of Transportation and Infrastructure,
Public Services and Procurement Canada, and the Canada Border Services Agency

The U.S. General Services Administration (GSA), the Federal Highway Administration (FHWA), and the Maine Department of Transportation (MaineDOT), in cooperation with the U.S. Coast Guard (USCG), and in coordination with U.S. Customs and Border Protection (CBP), the New Brunswick Department of Transportation and Infrastructure (NBDTI), Public Services and Procurement Canada (PSPC), and the Canada Border Services Agency (CBSA), propose to replace the existing U.S. Land Port of Entry (LPOE) and the existing International Bridge in Madawaska, Aroostook County, Maine, and Edmundston, New Brunswick, Canada, with a new LPOE and International Bridge to improve safety, security, and functionality. The existing LPOE facilities are undersized and obsolete, and consequently incapable of allowing the federal agencies assigned to the LPOE to fulfill their missions efficiently. The existing International Bridge is nearing the end of its useful life and has been restricted to vehicles weighing under five tons. The project consists of the likely demolition or decommissioning of the existing LPOE and International Bridge, and the construction of a new LPOE facility, and a proposed bridge replacement. This Draft Supplemental Environmental Impact Statement (DSEIS) evaluates a no action alternative and several build alternatives for the LPOE and the International Bridge Project. No alternative has been identified as the preferred alternative. However, a preferred location for the new LPOE and a preferred corridor for the proposed International Bridge have been identified.

Signed electronically on:

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Acronyms

AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
ACTS	Aroostook County Transportation Study
AREMA	American Railway Engineering and Maintenance-of-way Association
b.g.s.	below ground surface
BMP	best management practice
CAAA	Clean Air Act Amendments
CBP	U.S. Customs and Border Protection
CBSA	Canada Border Services Agency
CNR	Canadian National Railway
dba	A-weighted decibel
DEIS	draft environmental impact statement
DOS	U.S. Department of State
DSEIS	draft supplemental environmental impact statement
EIS	environmental impact statement
EISA	Energy Independence and Security Act of 2007
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	final environmental impact statement
FSEIS	final supplemental environmental impact statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
GSA	U.S. General Services Administration
HAER	Historic American Engineering Record
ITS	Interconnecting Trails System
Leq	equivalent sound (or noise) level
Leq(h)	hourly equivalent sound (or noise) level
LPOE	Land Port of Entry
MDEP	Maine Department of Environmental Protection
MDIFW	Maine Department of Inland Fisheries and Wildlife
MaineDOT	Maine Department of Transportation
MEFPS	<i>Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study</i>
MESA	Maine Endangered Species Act
MGS	Maine Geological Survey
MHPC	Maine Historic Preservation Commission
MM&A	Montreal, Maine and Atlantic Railroad
MNAP	Maine Natural Areas Program
MNR	Maine Northern Railway

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MOA	memorandum of agreement
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NBDTI	New Brunswick Department of Transportation and Infrastructure
NEPA	National Environmental Policy Act
NHS	National Highway System
NLEB	northern long-eared bat
NMDC	Northern Maine Development Commission
NOI	notice of intent
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRPA	National Resources Protection Act
NSA	Noise Sensitive Area
NWI	National Wetlands Inventory
POE	Port of Entry
ppm	parts per million
PSPC	Public Services and Procurement Canada
ROD	record of decision
SEIS	Supplemental Environmental Impact Statement
SIP	State Implementation Plan
SSA	sole source aquifer
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WQS	water quality standards
UST	underground storage tank
VOC	volatile organic compound
WQS	water quality standards

Glossary

abutment. A structure built to support the lateral pressure of an arch or span; e.g., at the ends of a bridge.

affected environment. The physical features and land area(s) to be influenced or impacted by an alternative under consideration. This term also includes various social and environmental factors and conditions pertinent to an area.

ambient noise level. The composite of noise (or sound) from all sources, near and far; the normal or existing level of environmental noise (or sound) at a given location, typically defined by the equivalent noise level.

annual average daily traffic (AADT). The total yearly volume in both directions of travel divided by the number of days in the year.

archaeological sites. Places in which past peoples left physical evidence of their occupation. Archaeological sites may include ruins and foundations of historic-era buildings and structures, or surface ruins and/or underground deposits of Native American occupation debris such as artifacts, food remains (shells and bones), and former dwelling structures. Important archaeological sites can qualify as “historic properties.”

average daily traffic (ADT). The total volume of vehicle travel during a given time period (in whole days), greater than one day and less than one year, divided by the number of days in that time period.

A-weighted sound level (dBA). The sound level in decibels as measured on a sound level meter using an A-weighted filter, which deemphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

background noise level. The underlying ever-present lower level noise that remains in the absence of intrusive

or intermittent sounds, typically consisting of distant sources such as traffic. The background noise level is typically defined by the 90th percentile noise level.

best management practices (BMPs). Techniques and measures employed before, during, and after construction to treat surface runoff and protect receiving water quality.

block group. The smallest geographic unit for which the U.S. Census Bureau tabulates data.

CEQ Regulations. Directives issued by the Federal Council on Environmental Quality, published in 40 CFR 1500-1508, which govern the implementation of the National Environmental Policy Act and the development and issuance of environmental policy and procedure for federal actions by public agencies. The regulations contain definitions, spell out applicability and responsibilities, and mandate certain processes and procedures.

conceptual design. Idea or feasibility phase of the design process during which various alternatives are developed and tested. During this phase, various environmental and engineering issues are identified and accounted for prior to advancing a range of alternatives into the preliminary and final design phases.

cooperating agency. An agency, other than the lead federal agency, that has jurisdiction by law or special expertise with respect to an environmental impact involved in a proposed action. To be a cooperating agency, an agency needs to be invited by the lead federal agency as there are specific responsibilities to be fulfilled.

criteria pollutants. Six pollutants for which the U.S. Environmental Protection Agency has established national ambient air quality standards to protect human health, as required by the 1970 amendments to the Clean Air Act. These pollutants include ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide.

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critical habitat. The specific areas within the geographic area occupied by a species that have the physical and biological features essential to the conservation of the species and that may require special management considerations or protection, and specific areas outside the geographic area occupied by a species at the time it is listed, upon determination that such areas are essential for the conservation of the species.

cultural resources. Historic properties, archaeological sites, Native American cultural resources, cultural institutions, ways of life, culturally valued viewsheds, places of cultural association, and other valued places and social institutions.

cumulative effects. The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions that take place over a period of time.

Customs and Border Protection (CBP). Border management and law enforcement agency within the Department of Homeland Security tasked with safeguarding U.S. borders, while enabling legitimate trade and travel.

decibel scale. A logarithmic rating system used to describe sound that accounts for large differences in the intensities of audible sound. This scale accounts for the human perception of a doubling of loudness with an increase of 10 decibels.

decibel. A unit of sound measurement. In general, a sound doubles in loudness for every 10-decibel increase.

deciduous. Refers to woody vegetation, such as oak or maple trees, that shed their leaves after the growing season.

deck. The driving surface of the bridge; in the case of the existing International Bridge, it consists of an open steel grate.

direct impacts. The immediate effects on the social, economic, and physical environment caused by the construction and operation of a highway; these impacts are usually experienced within the right-of-way or in the immediate vicinity of the highway or other project element.

disadvantaged population. A group of people, living in one area, that has a median income below the federal poverty level or exhibits other indicators of economic disadvantage.

displaced person. Any person (individual, family, partnership, association or corporation) who moves from real property, or moves personal property from real property as a direct result of (1) the acquisition of the real property, in whole or in part, (2) a written notice from the Agency of its intent to acquire, (3) the initiation of negotiations for the purchase of the real property by the Agency, or (4) a written notice requiring a person to vacate real property for the purpose of rehabilitation or demolition of improvements, provided the displacement is permanent and the property is needed for a Federal or federally assisted program or project.

endangered species. Any species which is in danger of extinction throughout all or a significant portion of its range.

environment. The complex of social, natural, and cultural conditions that are present in the physical surroundings.

Environmental Impact Statement (EIS). A document prepared by a federal agency when undertaking a “major Federal action significantly affecting the quality of the human environment.” An EIS is to serve as an action-forcing device to ensure that the policies and goals defined in the National Environmental Policy Act (NEPA) are infused into the ongoing programs and actions of the Federal Government. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data, per 40 CFR Section 1502.1.

Environmental Justice. A set of principles that federal agencies are urged to consider in analyses performed under the National Environmental Policy Act, as established by Executive Order 12898, which provides that “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.”

environmental site assessment. A risk assessment and management tool to determine potential environmental liabilities associated with real estate acquisitions by the U.S. General Services Administration. A Phase I environmental site assessment is a paper study conducted to identify reported or observable environmental conditions of the site that have resulted from past actions and current actions. A Phase II environmental site assessment is conducted if the Phase I assessment indicates that hazardous materials may be present. A Phase II environmental site assessment is conducted to confirm the presence and extent of contamination by means of sample collection and analysis.

equivalent noise level (Leq). The average A-weighted sound level, on an equal energy basis, during the measurement period.

feasibility study. A general term that refers to various types of systematic evaluations carried out to better assess the desirability or practicality of further developing a proposed action. Such studies are typically performed during the planning stages.

Federal Highway Administration (FHWA). The branch of the U.S. Department of Transportation responsible for administering the funding of federal aid highway projects.

Federal Register. A daily publication of the U.S. Government Printing Office that contains notices, announcements, rulemaking, and other official pronouncements of the administrative agencies of the U.S. Government. Various announcements and findings related to specific environmental matters and transportation projects and activities appear in this publication.

floodplain. The level area adjoining a river channel that is inundated during periods of high flow.

floor beams. The steel beams that are perpendicular to the stringers; they support the stringers and distribute weight to the trusses.

General Services Administration (GSA). Federal agency tasked with administering supplies and providing workplaces for federal employees. GSA helps federal agencies build, acquire, and manage office space, products and other workspace services, and oversees the preservation of historic federal properties. GSA also promotes management best practices and efficient government operations through the development of government-wide policies.

girder. A large iron or steel beam or compound structure used for building bridges.

ground water recharge. The inflow of water to a ground water reservoir from the ground surface; also, the volume

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of water added by this process. Infiltration of precipitation and its movement to the water table is one form of natural recharge.

hazardous material or substance. Any item or agent (biological, chemical, or physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. Typical hazardous materials or substances are toxic, corrosive, ignitable, explosive, or chemically reactive.

hazardous waste. Byproducts of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Hazardous waste possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or appears on special lists prepared by the U.S. Environmental Protection Agency available in the Code of Federal Regulations, Title 40, Part 261.

historic properties. Places that are eligible for inclusion in the National Register of Historic Places, or local landmarks. These properties can include districts, sites, buildings, structures, objects, and landscapes significant in American history, prehistory, architecture, archaeology, engineering, and culture. Historic properties can also include traditional cultural properties.

impact. A term used to describe the positive or negative effects on the natural or human environment as a result of a specific project(s).

indirect effect (or secondary impact). Effects caused by a given action occurring later in time or farther removed in distance but that are reasonably foreseeable (e.g., induced changes to land-use patterns, population density, and growth rate).

intrusive sound level. The noise that intrudes over and above the ambient noise at a given location. The relative

intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver. The intrusive sound level is generally defined by the 10th percentile noise level.

land port of entry (LPOE). The facility that provides controlled entry into or departure from the United States for persons and materials.

lead agencies. The federal project proponents with primary responsibility for preparing an environmental document.

Least Environmentally Damaging Practicable Alternative (LEDPA). This is identified by the U.S. Army Corps of Engineers in compliance with Section 404(b)(1) of the U.S. Clean Water Act. Critical to the selection of the LEDPA is the recognition of the full range of alternatives and impacts in determining which alternatives are (1) practicable, and (2) environmentally less damaging. The U.S. Army Corps of Engineers is the only federal agency that can determine the LEDPA.

level of detail. A general term referring to the amount of data collected and the scale, scope, extent, and degree to which item-by-item particulars and refinements of specific points are necessary or desirable in carrying out a study. Level of detail is an important factor in the quality of a study, overall study costs, and length of time needed to perform study work.

load. The weight to be carried by a structure.

Maine Department of Transportation (MaineDOT). A cabinet-level state agency with primary responsibility for statewide transportation by all modes of travel.

Maine Natural Areas Program (MNAP). Serves as the most comprehensive source of information on the state's

important natural features. The program inventories lands that support rare and endangered plants and animals, rare natural communities, and outstanding examples of natural communities.

mitigation. Actions that avoid, minimize, or compensate for potential adverse impacts.

mitigation measures. Specific design, commitment, or compensation made during the environmental evaluation and study process that serve to moderate or lessen impacts from a proposed action. In accordance with CEQ Regulations, mitigation includes avoidance, minimization, rectification, reduction, and compensation.

National Environmental Policy Act (NEPA). An act signed into law on January 1, 1970. Section 102 of the NEPA sets the requirements for and outlines the contents of environmental impact statements that are to accompany every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment.

National Register of Historic Places (NRHP). The nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, this register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. Properties listed in the register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The National Register of Historic Places is administered by the National Park Service, which is part of the U.S. Department of the Interior.

National Wetlands Inventory (NWI). A program administered by the U.S. Fish and Wildlife Service for mapping and classifying wetland resources in the United States.

Native American cultural resources. Cultural resources that include Native American skeletal remains, funerary items, sacred items, and objects of cultural patrimony. Native American traditional resource procurement areas and culturally important regional landscapes are also Native American cultural resources and may be traditional cultural properties if they define the tribal identity and meet the eligibility criteria for the National Register of Historic Places.

no-build alternative. Typically includes short-term, minor restoration types of activities (e.g., safety and maintenance improvements) that maintain the continuing operation of an existing facility. The No-Build Alternative serves as a baseline for the comparison of other alternatives.

noise abatement criteria (NAC). Noise levels measured in decibels that are used as a basis of comparison for evaluating the impact from predicted design year noise and for determining whether noise abatement measures should be considered.

noise abatement measures. Actions that reduce traffic noise impacts. Noise abatement measures can be traffic management measures, alteration of horizontal and vertical alignments, acquisition of property rights for construction of noise barriers, construction of noise barriers, acquisition of real property or interest for buffer zones, or noise insulation of public use or nonprofit institutional structures.

noise receptor. Locations that may be affected by noise. Sensitive receptors include residences, parks, schools, churches, libraries, hotels, and other public buildings.

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noise sensitive area. An area that may be sensitive to changes in noise levels.

particulate matter. Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog which are found in air or emissions.

permit port. A port that has the ability to inspect and pass only those commercial vehicles with a permit — generally commercial traffic from regular importers who have local deliveries.

pollutant loading. The accumulation of pollutants in a water body from one source or multiple sources, often measured as a rate (i.e., a “pollutant load”) in weight per unit time or per unit area (e.g., pounds/year or pounds/acre).

public hearing. A meeting designed to afford the public the fullest opportunity to express opinions on a project. A verbatim record (i.e., transcript) of the proceedings is made part of the project record.

public involvement. Activities that present information to the public, seek public comments, and serve to ensure consideration of public opinion.

public meeting. A meeting designed to facilitate participation in the decision-making process and to assist the public in gaining an informed view of a proposed project. Such a gathering may be referred to as a public information meeting.

rare and exemplary natural community. An assemblage of interacting plants and animals and their common environment, recurring across the landscape, in which the effects of recent human interference are minimal. Rare natural communities are those that occur infrequently. Exemplary natural communities are exceptional representatives of more common natural communities.

Record of Decision (ROD). The document, prepared by the lead federal agency, that presents the basis for the federal agency action, summarizes any mitigation measures to be incorporated, and documents any required approvals. No federal agency action may be undertaken until a ROD has been signed. A ROD is prepared no sooner than 30 days after the public release of the Final Environmental Impact Statement (FEIS).

rem. Roentgen equivalent man is a special unit used for expressing dose equivalent. Some types of nuclear radiation produce greater biological effects for the same amount of energy imparted than other types. The rem is a unit that relates the dose of absorbed radiation to the biological effect of that dose. One thousandth of a rem (millirem) is abbreviated “mrem,” and one millionth of a rem (microrem) is abbreviated “µrem.”

retaining wall. A wall that holds back earth or water.

riverine. Of and relating to rivers.

secondary (or indirect) impacts. The impacts that are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable; secondary impacts may include induced changes to land use patterns, population density, or growth rate, and related effects on natural systems, including ecosystems.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC Section 303). Section 4(f) Legislation protecting publicly owned parks, public recreation areas, historic properties, or wildlife and waterfowl refuges. The statute states that no Department of Transportation project may use land from these areas unless it has been demonstrated that there is to be no prudent and feasible alternative to using the land and that the project includes all possible planning to minimize harm resulting from the use.

Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Legislation (33 USC Section 403) that resulted in a permit being required from the U.S. Army Corps of Engineers for projects requiring construction in or over navigable waters, the excavation from or dredging or disposal of materials in such waters, or any obstruction or alteration in a navigable water (e.g., stream channelization).

Section 106 of the National Historic Preservation Act (Section 106). The National Historic Preservation Act of 1966 (16 USC 470f), Section 106, requires federal agencies to consider the effect of their undertakings on properties included in or eligible for inclusion on the National Register of Historic Places and to afford the Advisory Council on Historic Preservation the opportunity to comment on such undertakings.

Section 404 of the Clean Water Act (Section 404). The Federal Water Pollution Control Act Amendments of 1972 (33 USC 401 et seq.) is the legislation for protection of waters of the United States by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. In accordance with Section 404 of the Clean Water Act, a permit is required from the U.S. Army Corps of Engineers for projects requiring discharge of dredged or fill material into waters of the United States.

sedimentation. The deposition of eroded soil particles that are suspended in the water of streams and other water bodies.

significant impact. Any number of social, environmental, or economic effects or influences that may occur as a result of the implementation of a project. “Significant impacts” may include effects that are direct, secondary, or cumulative. The term “significant” is used to measure both context and intensity of potential impacts.

span. The distance between two intermediate supports for a structure, e.g., a beam or a bridge.

stringer. The steel beams which run the length of the bridge and support the deck.

study area. An identified expanse of land or topography selected and defined at the outset of engineering or environmental evaluations that is sufficiently adequate in size to fully identify, analyze, and document impacts and effects for proposed projects within its boundaries.

Supplemental Environmental Impact Statement (SEIS). A document prepared by a federal agency when it is determined that after the publication, of a DEIS or FEIS; 1) Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or 2) New information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.

threatened species. Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

traditional cultural property (TCP). A property or site that is eligible for inclusion on the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are rooted in that community’s history and are important to maintaining the continuing cultural identity of the community.

United States Coast Guard (USCG). A branch of the United States’ armed forces, and the principal Federal agency responsible for maritime safety, security, and environmental stewardship in U.S. ports and waterways.

New Madawaska Land Port of Entry and International Bridge Project

visual quality. The comprehensive experience of a place, including its surroundings.

watershed. A region or area that contains all land ultimately draining to a watercourse, body of water, or aquifer.

wetlands. Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support – and that under typical circumstances do support – a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wild and Scenic River. A river or river segment designated by an act of Congress, a state, or states through which it flows, and approved by the U.S. Department of the Interior, because of the outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values (16 USC 1271-1287).

wingwall. A subordinate lateral wall (as an abutment) or an oblique retaining wall.

Summary

A. Introduction

1. Background

It is widely recognized that the International Bridge connecting Edmundston, New Brunswick and Madawaska, Maine is functionally obsolete, nearing the end of its useful life, and in need of rehabilitation or replacement (Exhibit S.1). Underscoring the need to rehabilitate or replace the International Bridge, the Maine Department of Transportation (MaineDOT) and New Brunswick Department of Transportation and Infrastructure (NBDTI) posted the International Bridge at five tons (the equivalent of a passenger vehicle) in October 2017. It is further recognized that the size and conditions of the existing building and overall site of the existing Madawaska Land Port of Entry (LPOE) are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their missions (Exhibit S.2).

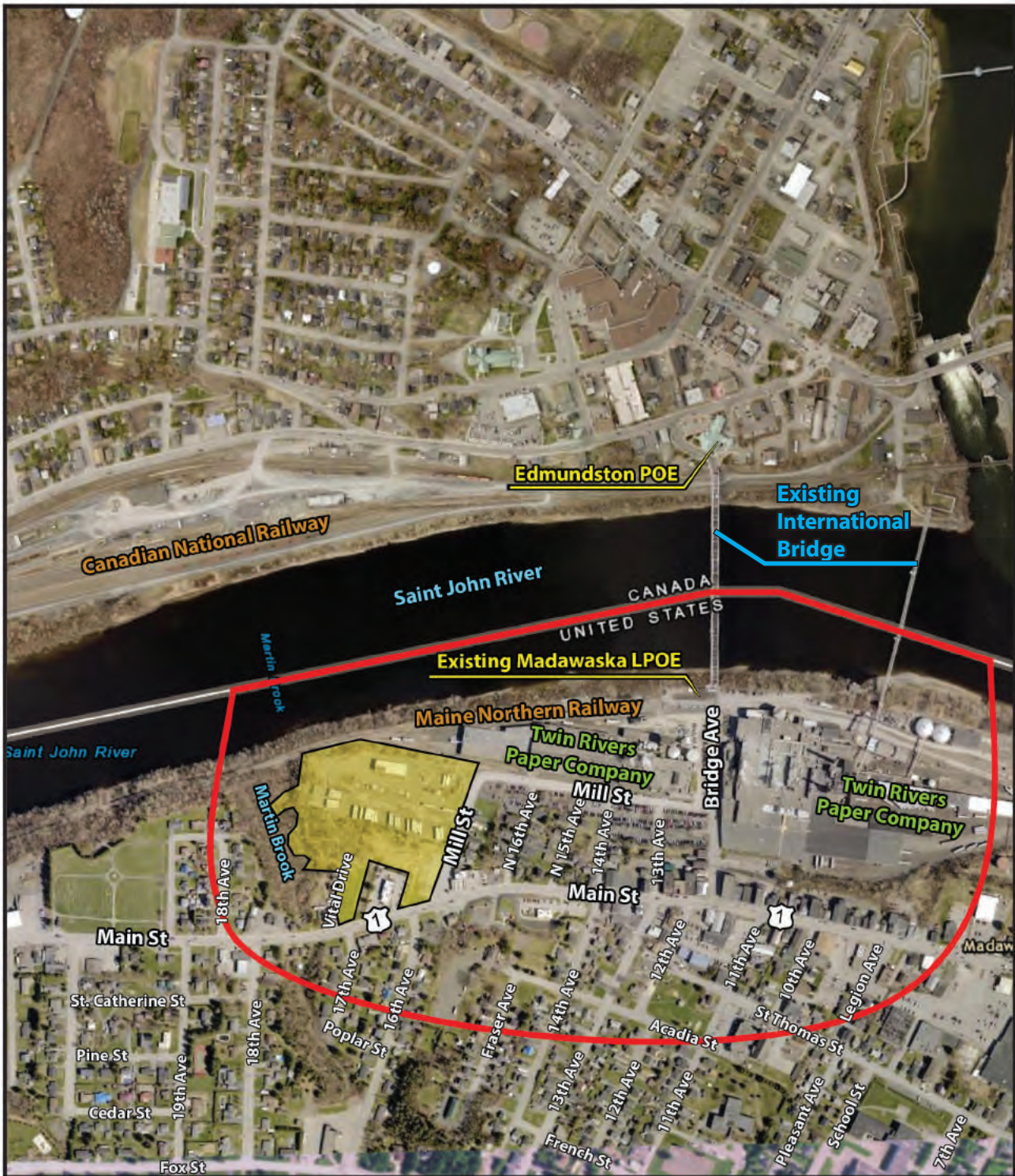
In response, the federal, provincial, and state agencies responsible for the movement of people and goods across this international crossing initiated in 2017 the preparation of the *Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study* (MEFPS) to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE.

After identifying the preferred location, the MEFPS led directly to this Draft Supplemental Environmental Impact Statement for the New Madawaska LPOE and International Bridge. Replacing the Madawaska LPOE was considered by the U.S. General Services Administration (GSA) in 2006 and 2007 and an Environmental Impact Statement was prepared. The GSA chose not to advance the replacement of the LPOE due to the high cost of maintaining an elevated roadway along the top of the bank of the Saint John River connecting to the existing International Bridge.

The condition of the existing International Bridge has continued to deteriorate. The GSA and the Federal Highway Administration (FHWA), acting as joint lead federal agencies, and the MaineDOT as the state lead agency, in cooperation with the U.S. Coast Guard (USCG), and in coordination with the U.S. Customs and Border Protection (CBP), NBDTI, Public Services and Procurement Canada (PSPC), and the Canada Border Services Agency (CBSA), propose to replace the existing Madawaska LPOE facility and the existing International Bridge in Madawaska, Aroostook County, Maine, and Edmundston, New Brunswick, Canada, with a new LPOE and International Bridge to improve safety, security, and functionality.




New Madawaska Land Port of Entry and International Bridge Project

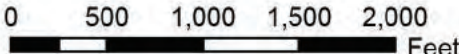


Legend

- Study Area Boundary
- USA-owned Property

Exhibit S.2 - Study Area Map





0 500 1,000 1,500 2,000 Feet

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2. Project Description

The proposed project consists of the likely demolition or decommissioning of the existing Madawaska LPOE and the existing International Bridge; the construction of a new LPOE consisting of a main administration building and support buildings with parking, circulation, and processing areas; and the construction of a new International Bridge. The new LPOE would be designed in accordance with the requirements and criteria of the GSA and the CBP to provide facilities adequate for fulfilling the agencies' respective missions. The new International Bridge would be designed in accordance with MaineDOT standards with a design life of at least 75 years.

The existing International Bridge carries utility lines operated by Twin Rivers Paper Company (Twin Rivers) across the Saint John River. These lines would be relocated, and the existing International Bridge would likely be demolished.

As part of the construction of the LPOE, the portions of Mill Street and Main Street adjacent to the LPOE may be reconstructed or reprofiled to provide smooth ingress and egress to the LPOE.

3. Purpose and Need

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

The proposed project is needed because: 1) the existing International Bridge is nearing the end of its useful life, and 2) the size and conditions of the existing building and overall site of the Madawaska LPOE are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions (MaineDOT, et al., 2018).

a. Existing Madawaska Land Port of Entry

The Madawaska LPOE is situated on approximately 0.87 acre and has many deficiencies and physical limitations. The size and conditions of the existing building and overall site are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions. The deficiencies with the existing facilities have led to extensive traffic delays for vehicles entering the U.S.

b. Existing International Bridge is Nearing the End of its Useful Life

The International Bridge is a 928-foot-long four-span bridge carrying Bridge Avenue over the Saint John River. Originally built in 1920, each span consists of a Pennsylvania Truss measuring 232 feet long with a roadway width of 20 feet, 8 inches (MaineDOT, 2017a).

After nearly 100 years of service, the overall bridge is in poor condition. Despite efforts to maintain the bridge, the rate of deterioration has accelerated to the point

New Madawaska Land Port of Entry and International Bridge Project

that the end of the useful service life of the bridge is fast approaching. In October 2017, the bridge was posted at five tons (the equivalent of a passenger vehicle). Further attempts to repair or rehabilitate the bridge will not restore the full capacity of the bridge to meet today's load requirements or geometric standards; hence, any substantial investments would be impractical. Extensive repairs will be needed in the future on a more frequent basis to maintain the usefulness of the structure, albeit in a reduced state of functionality.

B. Alternatives

In the GSA's 2007 Final Environmental Impact Statement and Record of Decision, the selected alternative for replacing the LPOE was the construction of a new LPOE to the southwest in the Town of Madawaska's industrial zone. A 1,600-foot long elevated roadway along the top of the bank of the Saint John River would provide access to the existing International Bridge.



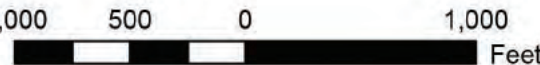


The results of the MEFPS identified a preferred location for the new LPOE and a preferred corridor for the International Bridge that was supported by the GSA, MaineDOT, CBP, NBDTI, PSPC, and the CBSA. Many alternatives, including some that were studied in the 2007 Final Environmental Impact Statement and other studies, were identified and 12 were developed and analyzed before a preferred location for the LPOE and a preferred corridor for a proposed International Bridge were identified (Exhibit S.3). As part of developing and analyzing a preferred location for the LPOE and a preferred corridor for a proposed new International Bridge, social, economic, and natural features, and potential impacts were taken into consideration and extensive public involvement occurred.

The preferred location for the Madawaska LPOE is a parcel of land, to the west of the existing LPOE and the Twin Rivers facility, that is currently owned by the U.S. government.

The preferred corridor for the new International Bridge connects the USA-owned property to the existing Edmundston Port of Entry (POE), as the PSPC and the CBSA noted that the POE was adequate for the foreseeable future and there are no plans to modify or expand it (MaineDOT, et al., 2018).

Following the identification of a preferred location and corridor, the GSA identified, developed, and analyzed three build alternatives that could potentially satisfy the project's purpose and needs for the LPOE; the FHWA and MaineDOT identified, developed, and analyzed three build alternatives for the new International Bridge. In developing and analyzing alternatives, the GSA, FHWA, and MaineDOT consulted with regulatory and resource agencies at the federal and state levels, local officials, industry, and the public. The alternatives for the LPOE and International Bridge were compared to the No-Build Alternative.



Legend		Exhibit S.3 - Location for the Preferred Alternative	
	Preferred Corridor	 	
	USA-owned Property		
	Existing Ports of Entry		

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New Madawaska Land Port of Entry and International Bridge Project

1. The No-Build Alternative

The National Environmental Policy Act and other legislation affording the consideration and protection of social, natural, and cultural features require the consideration of a No-Build Alternative. In addition to fulfilling a requirement, discussion of this alternative serves two important purposes: 1) it may be a reasonable alternative, especially where the adverse impacts of a proposed action are high and the need is relatively minor; and 2) the No-Build Alternative serves as a benchmark against which the impacts of the other alternatives can be compared.

Under the No-Build Alternative, operation of the existing LPOE and International Bridge would continue at their existing locations and using the existing facilities. Except for regular maintenance and minor repairs to the existing infrastructure and equipment, no new construction or demolition would take place. No new inspection and travel lanes, facilities, or bridge structure would be built. This alternative would not require the acquisition of private property. The International Bridge would continue to deteriorate, and the posted weight limit would remain in effect.

The No-Build Alternative does not satisfy the project's purpose or needs because, without new construction, there would be no appreciable improvement to the current operating conditions at the LPOE or International Bridge. The CBP and other agencies' staff would continue to operate with inadequate space to efficiently perform their duties and carry out their agencies' missions. Outbound inspection of vehicles and pedestrians would continue to be difficult and hazardous for LPOE staff. The existing International Bridge would continue to deteriorate, the five-ton weight restriction would remain in effect, the amount of time and cost to maintain the bridge would increase, and, eventually, the bridge would become unsafe for use.

2. Madawaska Land Port of Entry

Following the preparation of the 2018 MEFPS, the GSA began further study of the USA-owned property and developed alternatives for the LPOE. The USA-owned property has constraints that were considered in the development of alternatives for the LPOE. The Town of Madawaska has zoned the area along Martin Brook as a resource protection zone and development should be setback 75 feet to help ensure its protection. From Main Street to the area of the proposed International Bridge, the USA-owned property decreases approximately 45 feet in elevation. In the development of the LPOE, the GSA would like to maintain a grade of 2 percent or less (MPdL Studio, 2018).

The build alternatives were designed to meet several key building, processing, and parking area requirements:

- A consolidated administration building.
- Primary inspection areas for commercial traffic (trucks), passenger vehicles, and buses.

- Secondary inspection areas for trucks, passenger vehicles, and buses.
- Adequate number and location of parking spaces.
- Adequate space to accommodate security measures.

Each of the build alternatives was designed to follow the sequential circulation of traffic flow of a LPOE, which requires certain buildings be adjacent to one another. For instance, the primary inspection areas must precede secondary ones. Administration should be consolidated to the extent possible in one building. Parking for visitors and employees should be in a convenient location in proximity to the buildings they serve.

a. Alternative A

Alternative A was developed on the existing USA-owned property with no additional private property (Exhibit S.4). The existing USA-owned property has few opportunities for access to and from Main Street. As a result, outbound and inbound driveways are separated by private property owned by McDonald's ("the McDonald's property"). The outbound driveway is close to the intersection at Mill Street, and the inbound driveway is located between Vital Drive and the exit from the McDonald's property parking lot and drive-through (MPdL Studio, 2018).

The required distance between a driveway and an unsignalized intersection, as per MaineDOT access management guidelines, should be at least 100 feet from the edge of the existing intersection and the edge of the new driveway. Alternative A does not meet this guideline (MPdL Studio, 2018).

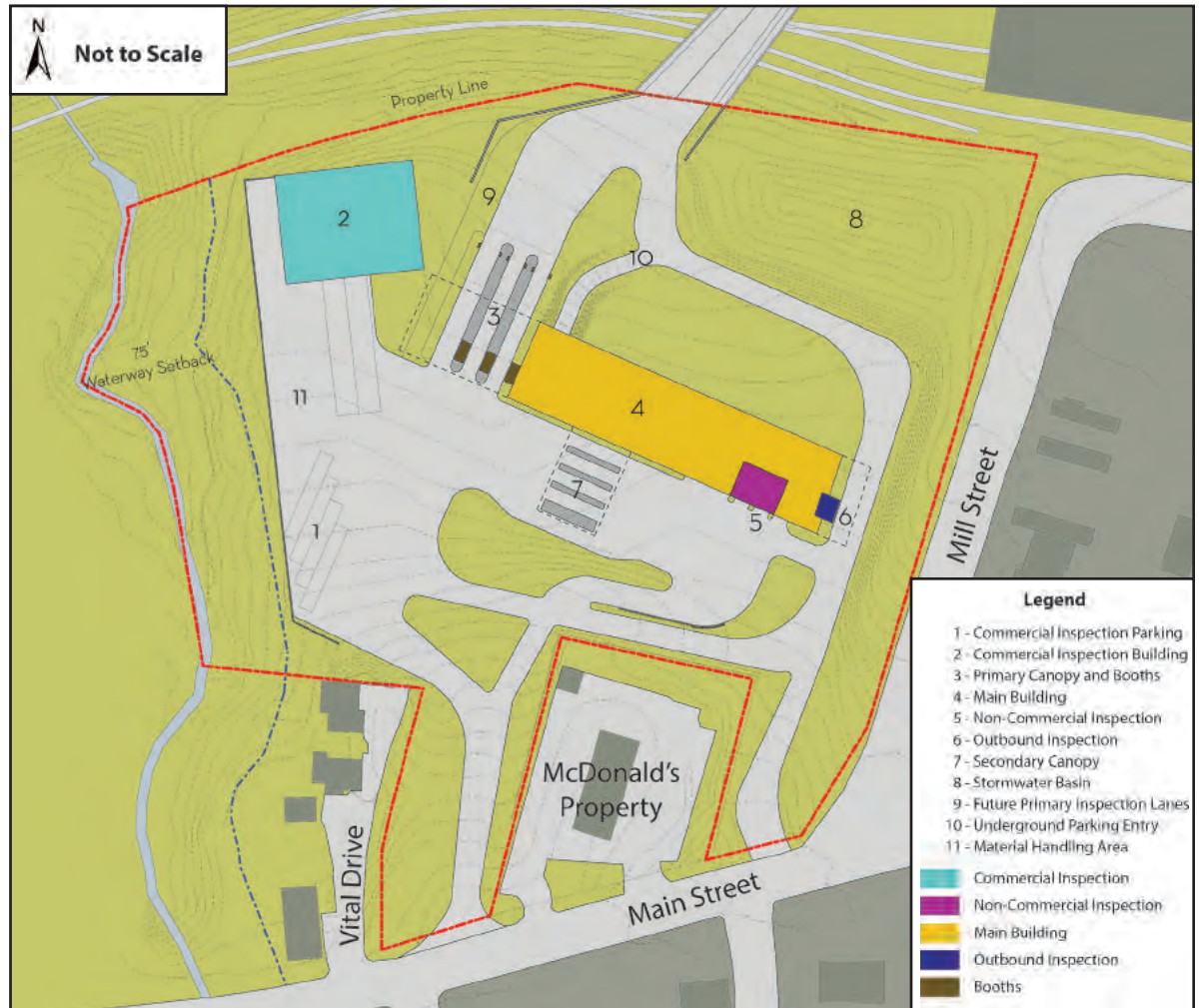
Canadian B-trains (double trailers) would need to travel on Main Street for a short distance, since this alternative does not provide direct access from the USA-owned property to Mill Street. Canadian B-trains are not permitted on Maine State Highways, but they are used frequently by Twin Rivers. Alternative A would require MaineDOT to permit B-trains on Main Street between the new LPOE and Mill Street (MPdL Studio, 2018).

The USA-owned property limits the arrangement of the buildings and parking areas for the LPOE. Most notably, Alternative A would require underground parking to meet the projected parking demands of the LPOE. Visitor parking is not practical. The functionality of the commercial inspection parking is compromised due to limited space. The materials handling area, the commercial inspection staging lot, and the impound lot are in proximity to one another, resulting in vehicle conflicts (MPdL Studio, 2018).

Alternative A has approximately 60 percent of the open space necessary to accommodate seasonal snow storage (MPdL Studio, 2018).

New Madawaska Land Port of Entry and International Bridge Project

Exhibit S.4 - Madawaska LPOE Alternative A



Source: MPdL Studio, 2018

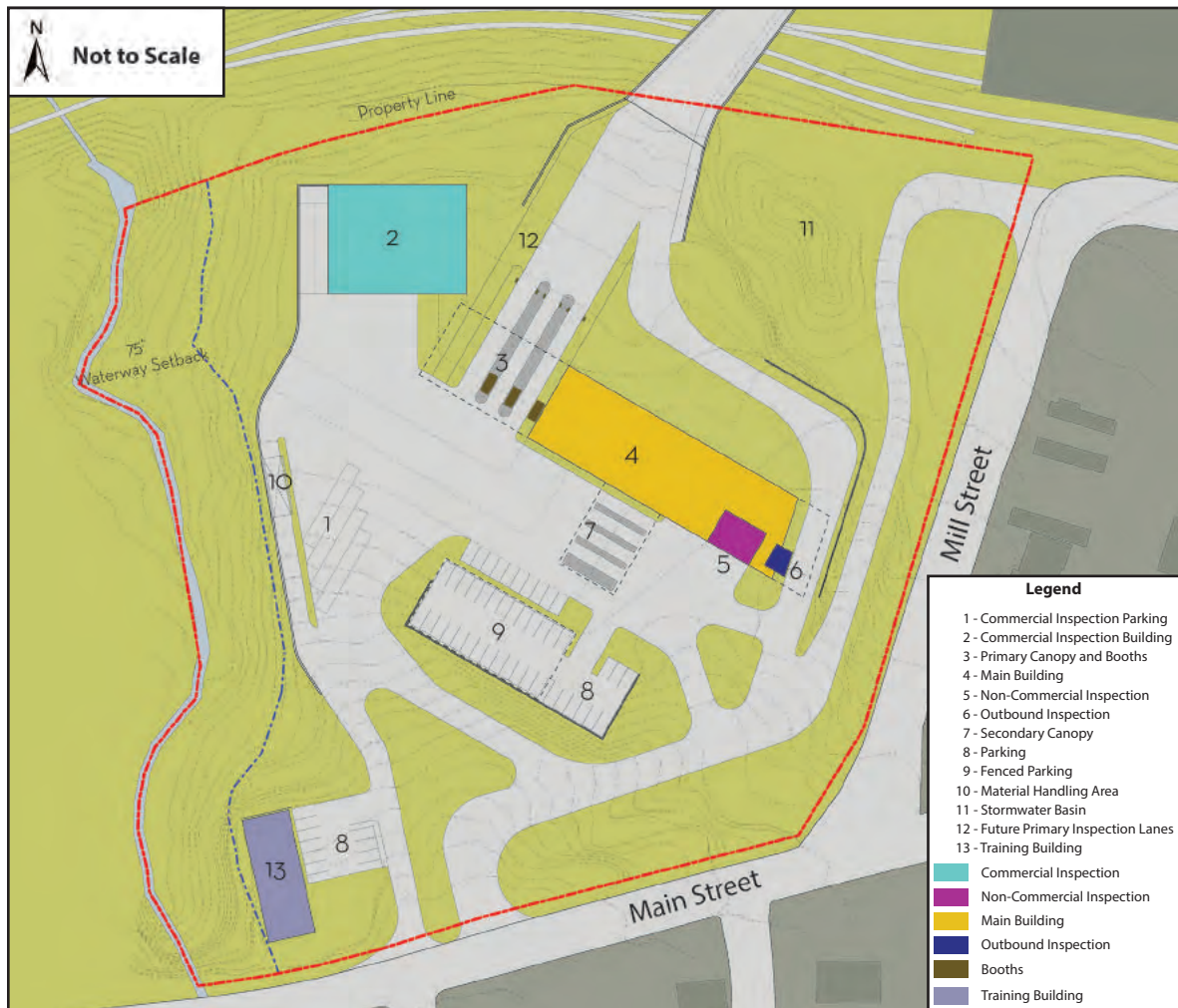
b. Alternative B

Alternative B requires the acquisition of additional private property (Exhibit S.5). Several options were pursued, exploring the acquisition of only the McDonald's property and/or the Vital Drive properties. GSA concluded that acquiring these two sets of properties had substantial benefit for the flow of traffic and pedestrians around and through the new LPOE. Therefore, Alternative B would require the acquisition of the McDonald's property and the three Vital Drive properties (MPdL Studio, 2018).

Alternative B allows for improved visibility for vehicles entering and exiting the new LPOE as well as favorable locations for ingress and egress from Main Street. The outbound driveway is more than 100 feet away from the intersection of Mill Street and Main Street which reduces the potential for vehicle crashes and safety concerns (MPdL Studio, 2018).

Alternative B provides direct inbound access from the USA-owned property to Mill Street, reducing traffic on Main Street. Given the additional land, Alternative B

Exhibit S.5 - Madawaska LPOE Alternative B



Source: MPdL Studio, 2018

accommodates the necessary length of road to descend from the bridge landing elevation to Mill Street without a steep grade. Alternative B does not include a direct outbound connection to Mill Street. Alternative B would require MaineDOT to permit Canadian B-trains to use Main Street between Mill Street and the new LPOE (MPdL Studio, 2018).

Alternative B has space for all necessary LPOE activities, flow of traffic, and snow storage (MPdL Studio, 2018).

c. Alternative C

Alternative C requires the acquisition of additional private property (Exhibit S.6) (MPdL Studio, 2018). Alternative C would require the acquisition of the McDonald's property and the three Vital Drive properties (MPdL Studio, 2018).

Alternative C allows for improved visibility for vehicles entering and exiting the new LPOE. The outbound driveway is more than 100 feet from the intersection of Mill

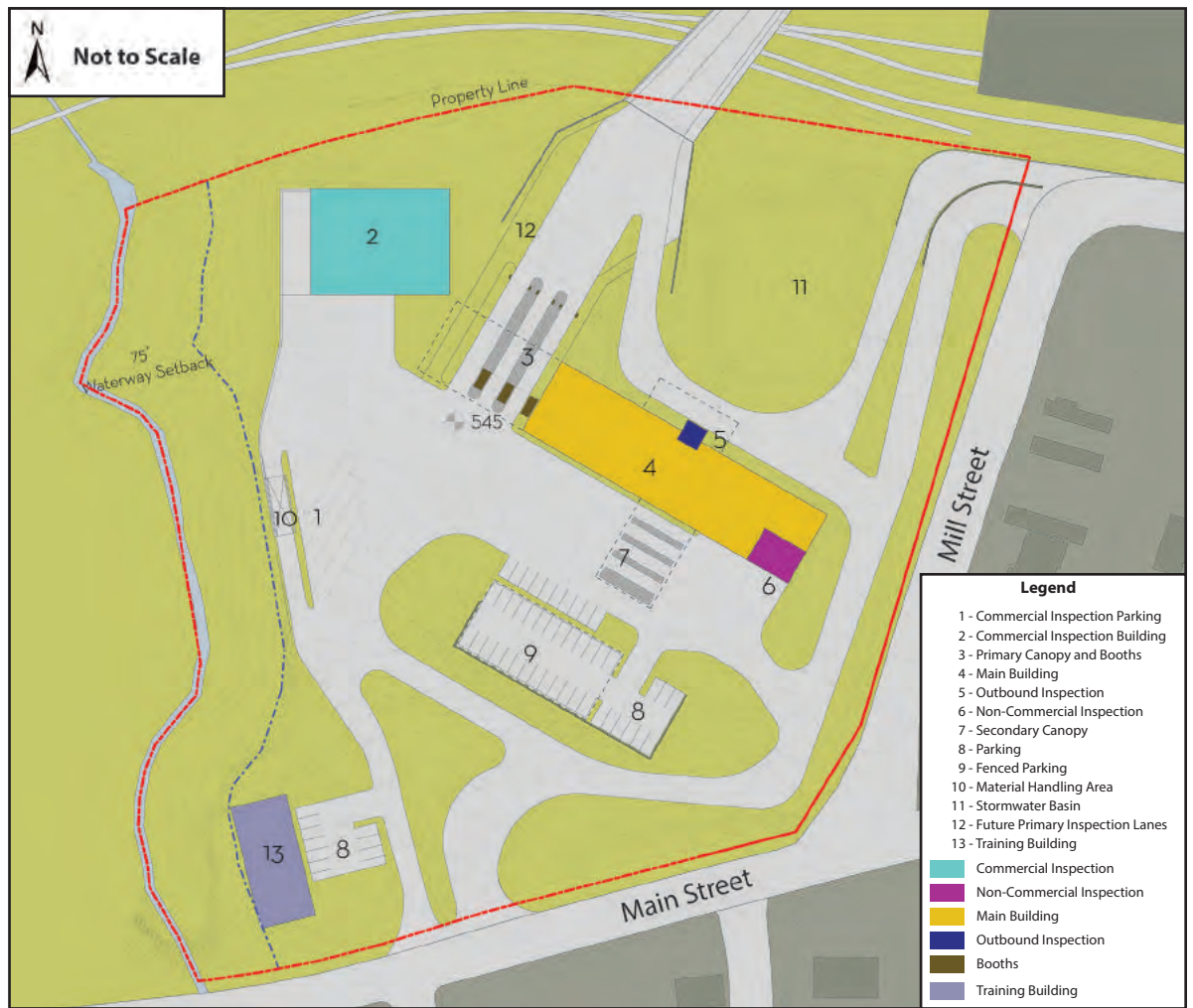
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Street and Main Street, which reduces the potential for vehicle crashes and safety concerns (MPdL Studio, 2018).

Alternative C provides direct inbound and outbound access to and from the USA-owned property to Mill Street. Given the additional land, Alternative C accommodates the necessary length of road to descend and ascend from the bridge landing elevation to Mill Street without a steep grade. This would enable Canadian B-trains, currently not permitted on Maine State Highways but frequently used by Twin Rivers, to access Mill Street, both inbound and outbound (MPdL Studio, 2018).

Alternative C has space for all necessary LPOE activities, flow of traffic, and snow storage (MPdL Studio, 2018).

Exhibit S.6 - Madawaska LPOE Alternative C



Source: MPdL Studio, 2018

3. International Bridge

Conceptual bridge alternatives were developed and evaluated.

It is recognized that bridges with fewer spans have greater girder/concrete depths. These larger structure depths may unacceptably reduce clearances over the Maine Northern Railway (MNR) and Canadian National Railway (CNR) rail lines. Conversely, increasing the number of spans would require the construction of additional piers which would increase in-stream construction, the potential for ice jams, and construction costs.

Based on these considerations, the construction of a steel girder or segmental concrete bridge with either five, six, or seven spans was selected. Additional options consisting of steel tub girders and precast segmental concrete were briefly considered but dismissed after being judged less desirable based on the proposed bridge size, geometry, and constraints during construction.

Each of the bridge alternatives shares the following features:

- The bridge typical section (Exhibit S.7).
- The horizontal bridge alignment.
- The vertical alignment for the bridge generally decreases from north to south, maintaining minimum vertical clearance required over the MNR and CNR rail lines.
- Stub or cantilever abutments between the LPOE and POE facilities and the adjacent railroad tracks.
- Portions of the bridge ends would be flared to accommodate the turning movements of large trucks.
- Access roads along the banks of the Saint John River and temporary work trestles traversing portions of the river would be necessary to complete construction of the piers and portions of the superstructure.

a. **Bridge Alternative 1: Cast-in-place Segmental Concrete Bridge with Five Spans**

Bridge Alternative 1 consists of the construction of a cast-in-place segmental concrete bridge with five spans (Exhibit S.8). Bridge Alternative 1 is approximately 1,870 feet in length with two 320-foot spans at either end and three 410-foot interior spans. Of the four piers needed, one would be on the bank of the Saint John River in Madawaska, two would be in the Saint John River, and one would be near the bottom of the riverbank in Edmundston.

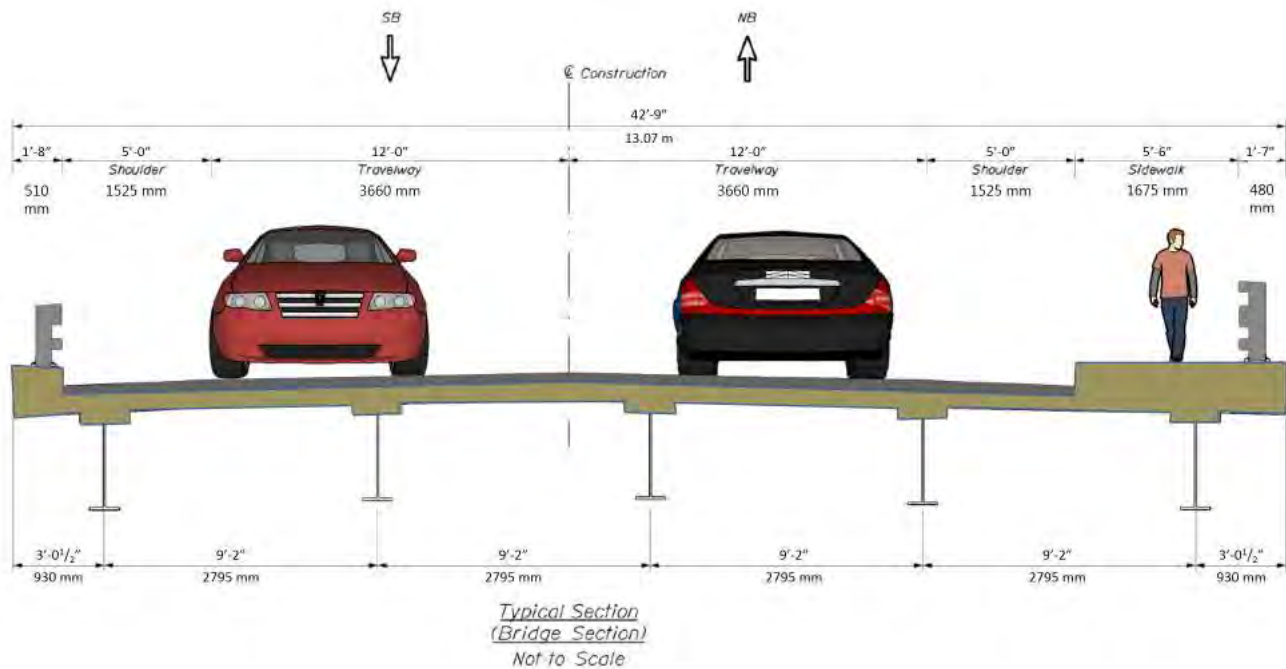
The vertical profile for Bridge Alternative 1 is governed by the required clearance over the MNR and CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

b. **Bridge Alternative 2: Steel Plate Girder Bridge with Six Spans**

Bridge Alternative 2 consists of the construction of a steel girder bridge with six spans (Exhibit S.9). Bridge Alternative 2 is approximately 1,840 feet in length with

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Exhibit S.7 - Cross Section of the International Bridge



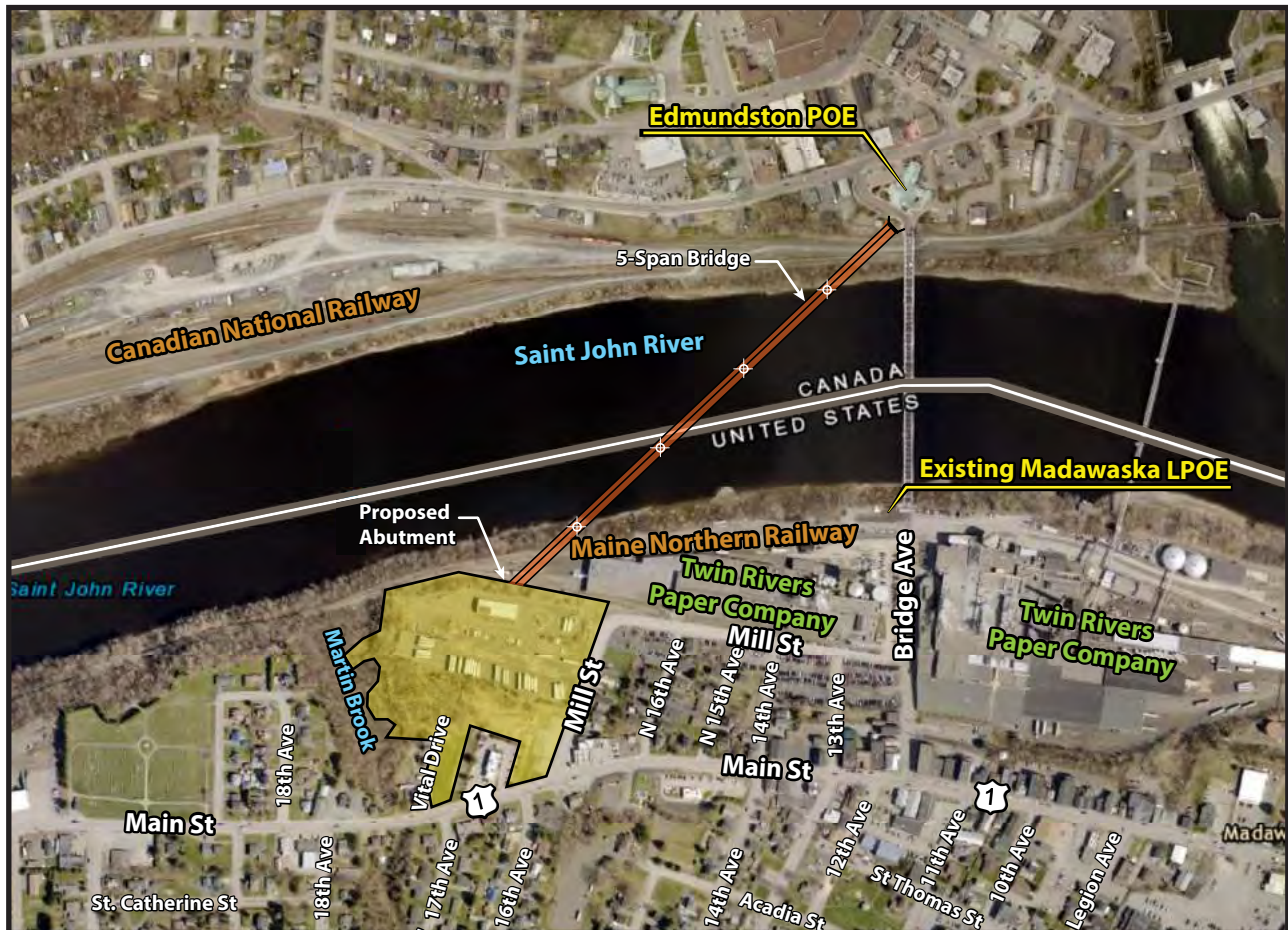
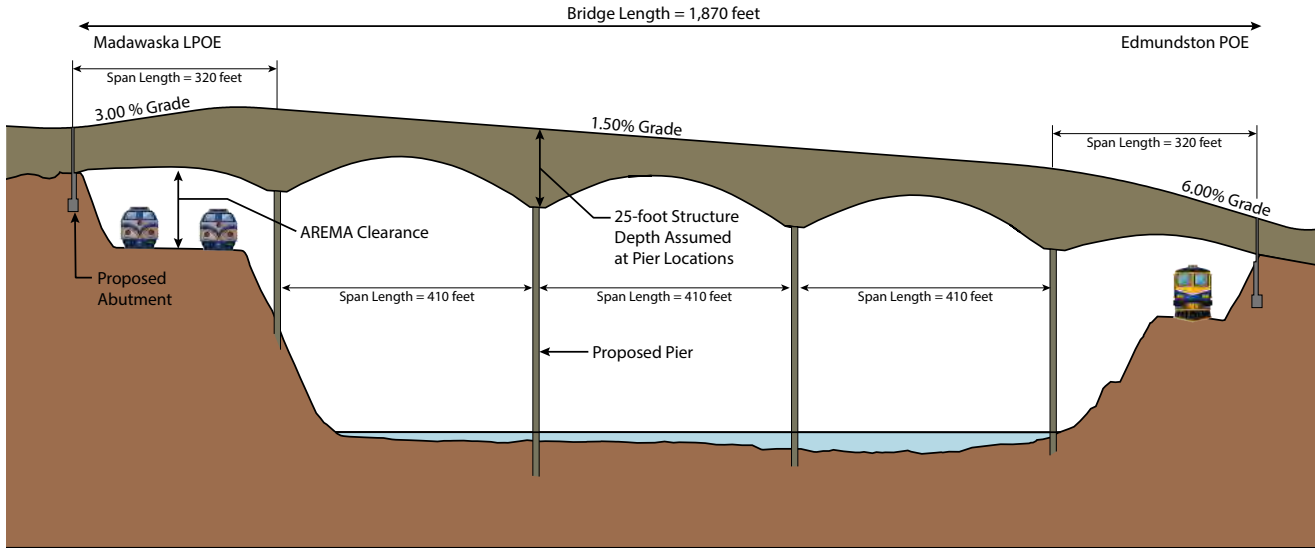
two 260-foot spans at either end and four 330-foot interior spans. Of the five piers needed, one would be near the top of the riverbank in Madawaska, three piers would be in the river, and one would be near the bottom of the riverbank in Edmundston.

The vertical profile for Bridge Alternative 2 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

c. Bridge Alternative 3: Steel Plate Girder Bridge with Seven Spans

Bridge Alternative 3 consists of the construction of a steel girder bridge with seven spans (Exhibit S.10). Bridge Alternative 3 is similar to Bridge Alternative 2 but has an additional pier and span to reduce span lengths, reduce girder depths, and generally improve the shipment and erection of the steel girders. Bridge Alternative 3 is approximately 1,870 feet in length with a span of 180 feet connecting to the new Madawaska LPOE, a span of 215 feet connecting to the Edmundston POE, and five 295-foot interior spans. Of the six piers needed, one would be positioned between the MNR railroad tracks in Madawaska, four piers would be in the river, and one would be on the riverbank in Edmundston.

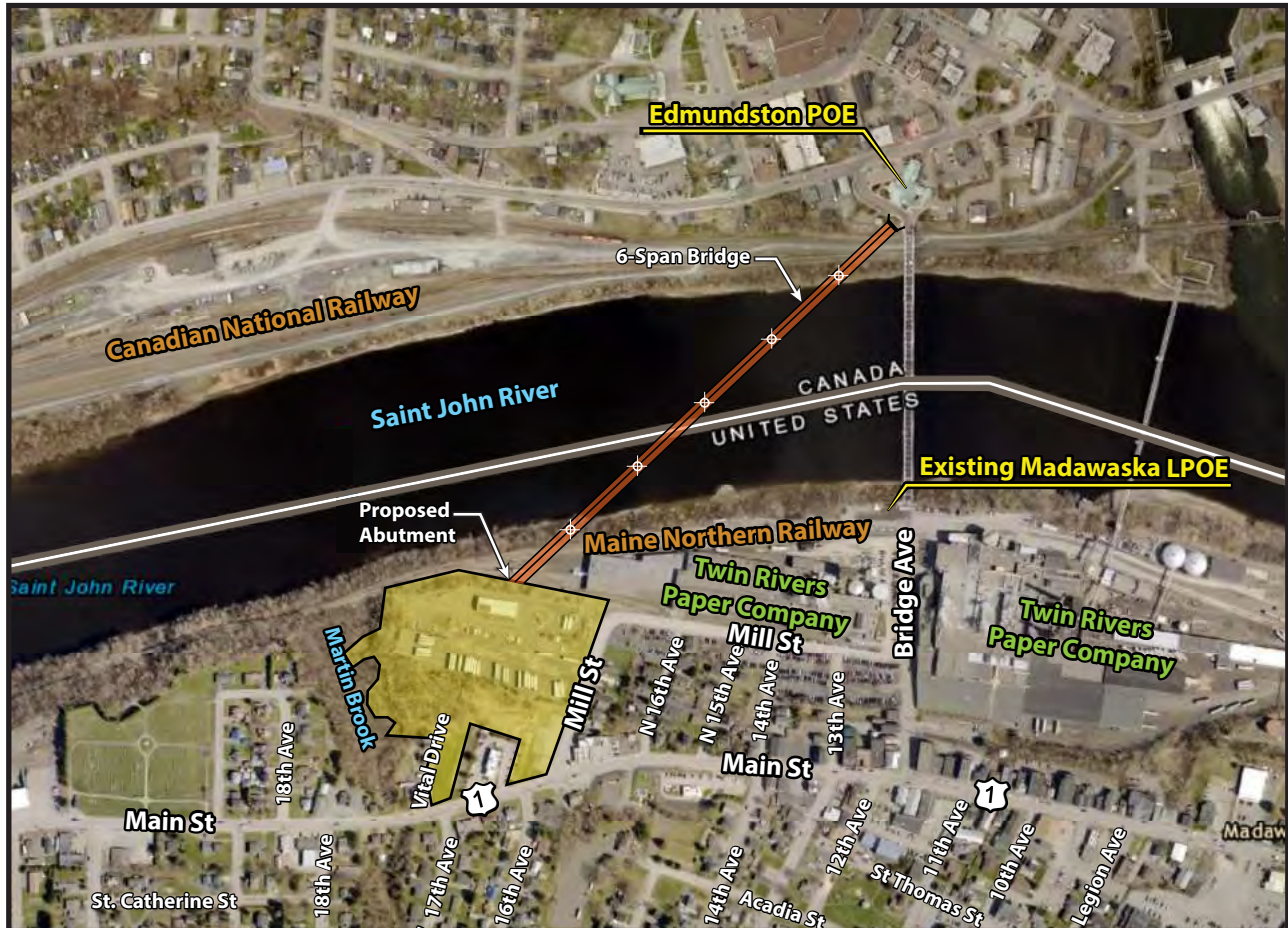
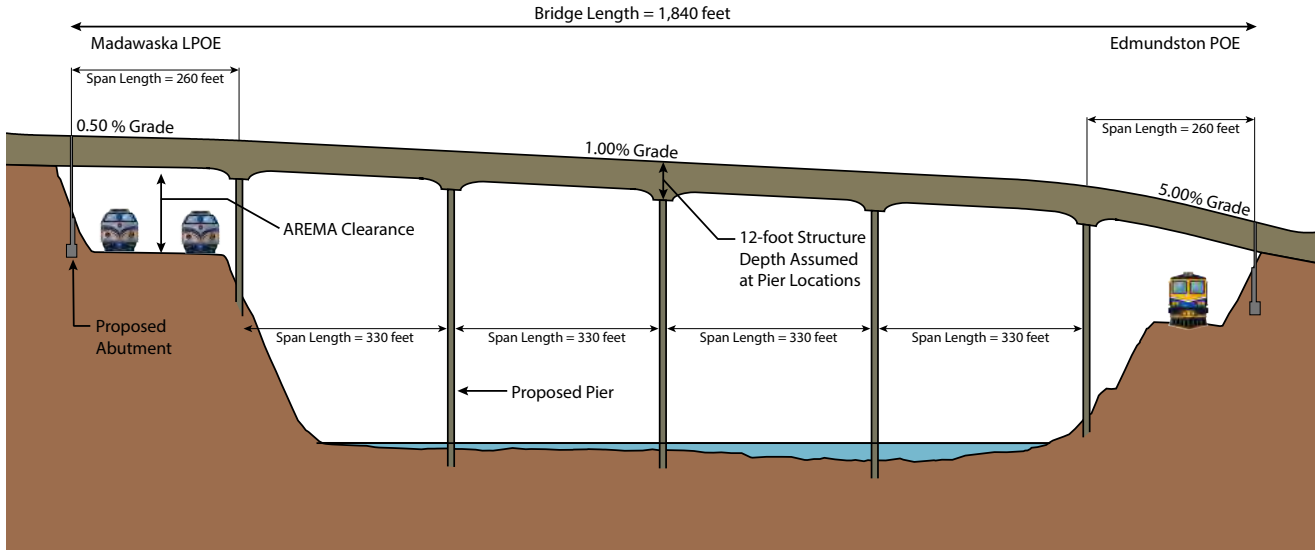
The vertical profile for Bridge Alternative 3 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.



Legend		Exhibit S.8 - Bridge Alternative 1 Plan and Profile	
Pier (Type to be Determined)	Bridge	 Not to Scale	
USA-owned Property			

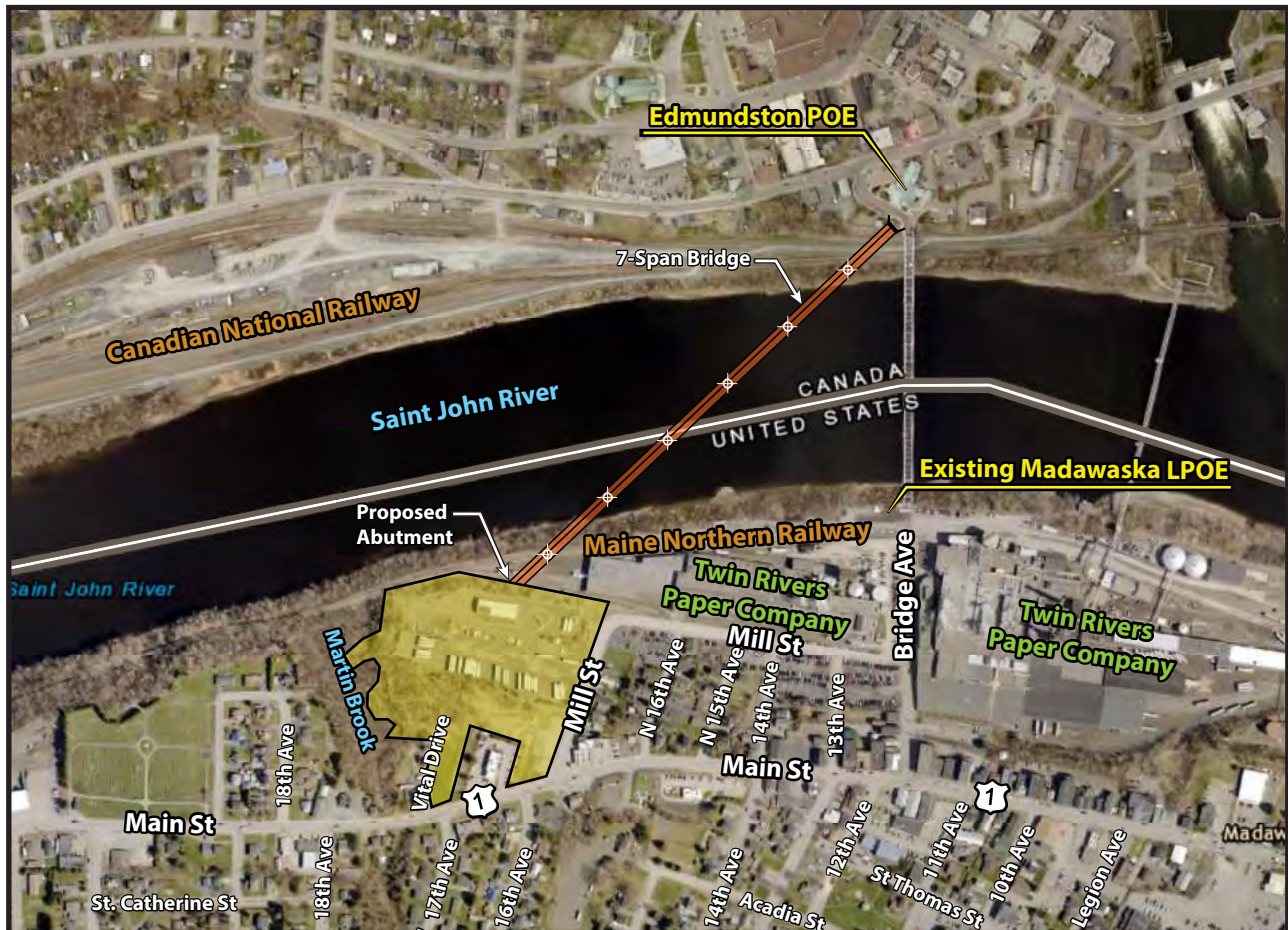
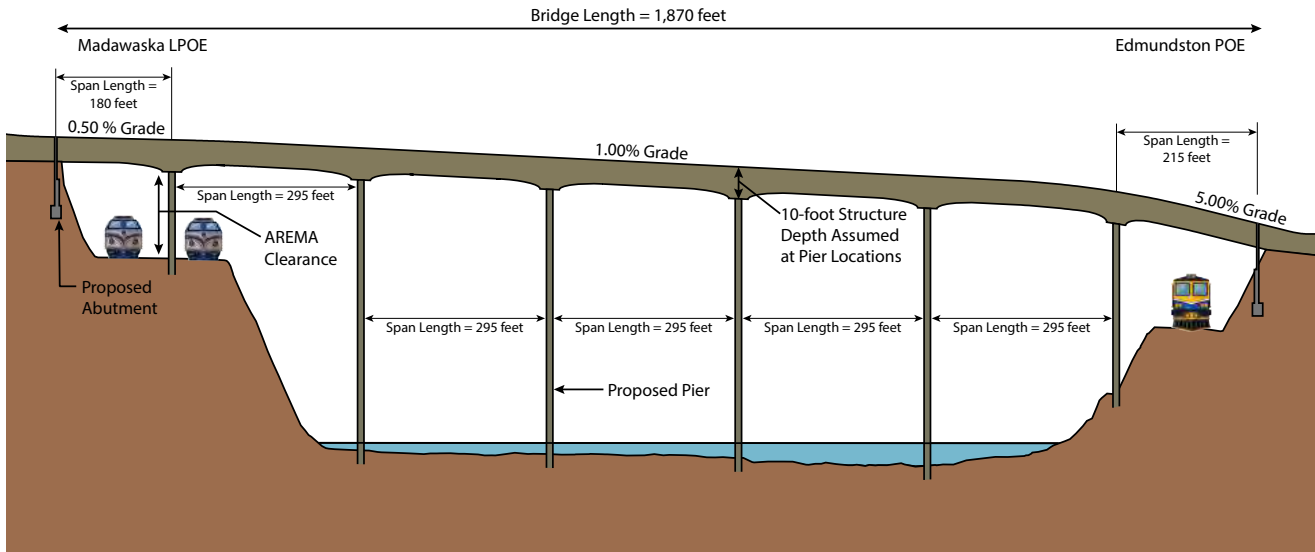
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Legend		Exhibit S.9 - Bridge Alternative 2 Plan and Profile	
	Pier (Type to be Determined)		Bridge
	USA-owned Property	 Not to Scale	

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Legend		Exhibit S.10 - Bridge Alternative 3 Plan and Profile	
Pier (Type to be Determined)	Bridge	Not to Scale	
USA-owned Property			

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C. Affected Environment and Environmental Consequences

LPOE Alternative A would not require the acquisition of private property.

The LPOE Alternatives B and C would require the acquisition of private property along Main Street and Vital Drive. They both require the acquisition of the McDonald's property, and three Vital Drive properties, one of which is an owner-occupied residence.

The LPOE Alternatives A, B, and C would impact approximately 2.5 acres of deciduous trees and shrubs near Martin Brook and the Saint John River. The increased impervious area and stormwater would be addressed during final design to help reduce erosion and sedimentation caused by construction.

Bridge Alternatives 1, 2, and 3 would adversely impact the Saint John River, bedrock geology, and aquatic habitat and fisheries due to the construction of bridge piers within the river. Under Alternative 1, two piers would be constructed within the Saint John River. Under Alternative 2, three piers would be constructed within the Saint John River. Under Alternative 3, four piers would be constructed within the Saint John River. The size of the piers would be determined during final design.

Under Bridge Alternatives 1, 2 and 3, the existing International Bridge would likely be removed. The likely removal of the existing International Bridge and piers from the Saint John River would result in a positive impact to the Saint John River.

Bridge Alternatives 1, 2, and 3 would result in an adverse effect to the International Bridge which is eligible for listing on the National Register of Historic Places. Under these alternatives, a new bridge would be constructed, and the existing International Bridge would likely be demolished. A memorandum of agreement would be prepared between the FHWA, MaineDOT, and Maine Historic Preservation Commission (representing the Maine State Historic Preservation Office) to document the mitigation measures for the adverse effect. Mitigation would consist of documenting the bridge in accordance with the National Park Service's (NPS) Historic American Engineering Record (HAER) standards. HAER standards were established by the NPS, Library of Congress, and the American Society of Civil Engineers to document bridges and other historic sites and structures related to engineering and industry (NPS, 2018).

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in a variety of positive impacts to the flow of traffic. As part of the construction of the LPOE, the portions of Mill Street and Main Street adjacent to the LPOE may be reconstructed or reprofiled to provide smooth ingress and egress to the LPOE.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would have a beneficial impact on community cohesion between Madawaska and Edmundston by improving the ease of travel between the two communities. Emergency service providers for the Town of Madawaska and the City of Edmundston would be able to travel across the new bridge in response to emergencies, in fulfillment of their mutual aid emergency service agreement.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would change the visual appearance of the downtown business zone.

There are no other major actions proposed by other government agencies in the study area.

D. Areas of Controversy

There are no areas of controversy regarding this project.

E. Issues to be Resolved

Issues to be resolved on this project consist of:

- Determination of the final disposition of the existing International Bridge.
- Timing for the relocation of Twin Rivers' utility lines as it relates to the likely demolition of the existing International Bridge.

A. Introduction

1. Background

It is widely recognized that the International Bridge connecting Edmundston, New Brunswick and Madawaska, Maine is functionally obsolete, nearing the end of its useful life, and in need of rehabilitation or replacement (Exhibit 1.1). Underscoring the need to rehabilitate or replace the International Bridge, the Maine Department of Transportation (MaineDOT) and New Brunswick Department of Transportation and Infrastructure (NBDTI) posted the International Bridge at five tons (the equivalent of a passenger vehicle) in October 2017. It is further recognized that the size and conditions of the existing building and overall site of the existing Madawaska Land Port of Entry (LPOE) are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their missions.

In response, the federal, provincial, and state agencies responsible for the movement of people and goods across this international crossing initiated in 2017 the preparation of the *Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study* (MEFPS) to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE.

The process used to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE broadly consisted of: developing an understanding of the purpose for rehabilitating or replacing the International Bridge and Madawaska LPOE and why it is needed; soliciting comments from potential stakeholders; identifying the transportation, environmental, social, and cultural features in the area that could potentially be adversely impacted or enhanced by rehabilitation or replacement of the International Bridge and Madawaska LPOE; developing design criteria and performance measures for the International Bridge and Madawaska LPOE; and identifying, conceptually developing, and screening a broad range of alternatives leading to the identification of the preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE.

The MEFPS summarizes the conceptual alternatives identification, development, and screening process leading to the identification of the preferred locations for the replacement of the International Bridge and Madawaska LPOE. Throughout the preparation of the MEFPS, the Public Services and Procurement Canada (PSPC) and the Canada

Chapter Contents

- 1.A. Introduction
- 1.B. Prior Studies and Conclusions
- 1.C. Federal and State Decisions and Actions
- 1.D. Scope of the Environmental Analysis
- 1.E. Applicable Regulations, Guidance, and Required Permits

Purpose of this Chapter

Chapter 1 details the underlying purpose and needs to which the project's sponsors are responding with alternatives in Chapter 2. Chapter 1 provides an overview of the decision makers and decision-making process and provides a foundation for the remainder of the document.



Exhibit 1.1 - Location Map

Border Services Agency (CBSA) noted that the Edmundston Port of Entry (POE) was adequate for the foreseeable future and there are no plans to modify or expand it (MaineDOT, et al. 2018). The MEFPS was concluded in 2018 and is available at <https://www1.maine.gov/mdot/planning/studies/meib/>.

After identifying the preferred location, the MEFPS led directly to this Draft Supplemental Environmental Impact Statement for the New Madawaska LPOE and International Bridge. Replacing the Madawaska LPOE was considered by the U.S. General Services Administration (GSA) in 2006 and 2007 and an Environmental Impact Statement was prepared. The GSA chose not to advance the replacement of the LPOE due to the high cost of maintaining an elevated roadway along the top of the bank of the Saint John River connecting to the existing International Bridge.

The condition of the existing International Bridge has continued to deteriorate. The GSA and the Federal Highway Administration (FHWA), acting as joint lead federal agencies, and the MaineDOT as the state lead agency, in cooperation with the U.S. Coast Guard (USCG), and in coordination with the U.S. Customs and Border Protection (CBP), NBDTI, Public Services and Procurement Canada (PSPC), and the Canada Border Services Agency (CBSA), propose to replace the existing Madawaska LPOE facility and the existing International Bridge in Madawaska, Aroostook County, Maine, and Edmundston, New Brunswick, Canada, with a new LPOE and International Bridge to improve safety, security, and functionality(Exhibit 1.2).

In support of developing a new International Bridge and LPOE at these preferred locations, this DSEIS builds upon the 2018 MEFPS and identifies and describes:

- Several build alternatives for both the LPOE and the International Bridge;
- The existing natural and human environments within the study area; and
- Potential impacts to those environments resulting from the construction of the identified alternatives.

Exhibit 1.2 - Regional Location Map



2. Project Description

The proposed project consists of the likely demolition of the existing Madawaska LPOE and the existing International Bridge; the construction of a new LPOE consisting of a main administration building and support buildings with parking, circulation, and processing areas; and the construction of a new International Bridge. The new LPOE would be designed in accordance with the requirements and criteria of the GSA and the CBP to provide facilities adequate for fulfilling the agencies' respective missions. The new International Bridge would be designed in accordance with MaineDOT standards with a design life of at least 75 years. Specifically, the proposed project would consist of (Exhibit 1.3):

Madawaska LPOE:

- Construction of a new LPOE with an administration building and support buildings for processing the movement of people and goods across the border;
- Parking, roadways, and stormwater management facilities; and
- Likely demolition of the existing Madawaska LPOE.

International Bridge:

- Construction of a new International Bridge, consisting of two 12-foot lanes, a 5-foot shoulder, and a 5.5-foot sidewalk with railing; and
- Likely demolition or decommissioning of the existing bridge.

The new International Bridge would be built from a temporary bridge or trestle extending partially across the Saint John River to each pier. Piers in the Saint John River would be built using cofferdams (a watertight enclosure pumped dry to permit construction work below the waterline) or using drilled shafts without separate cofferdams. Once the new International Bridge is complete, the existing bridge would likely be removed using a temporary bridge or trestle, and the piers supporting the existing International Bridge would be removed using cofferdams.

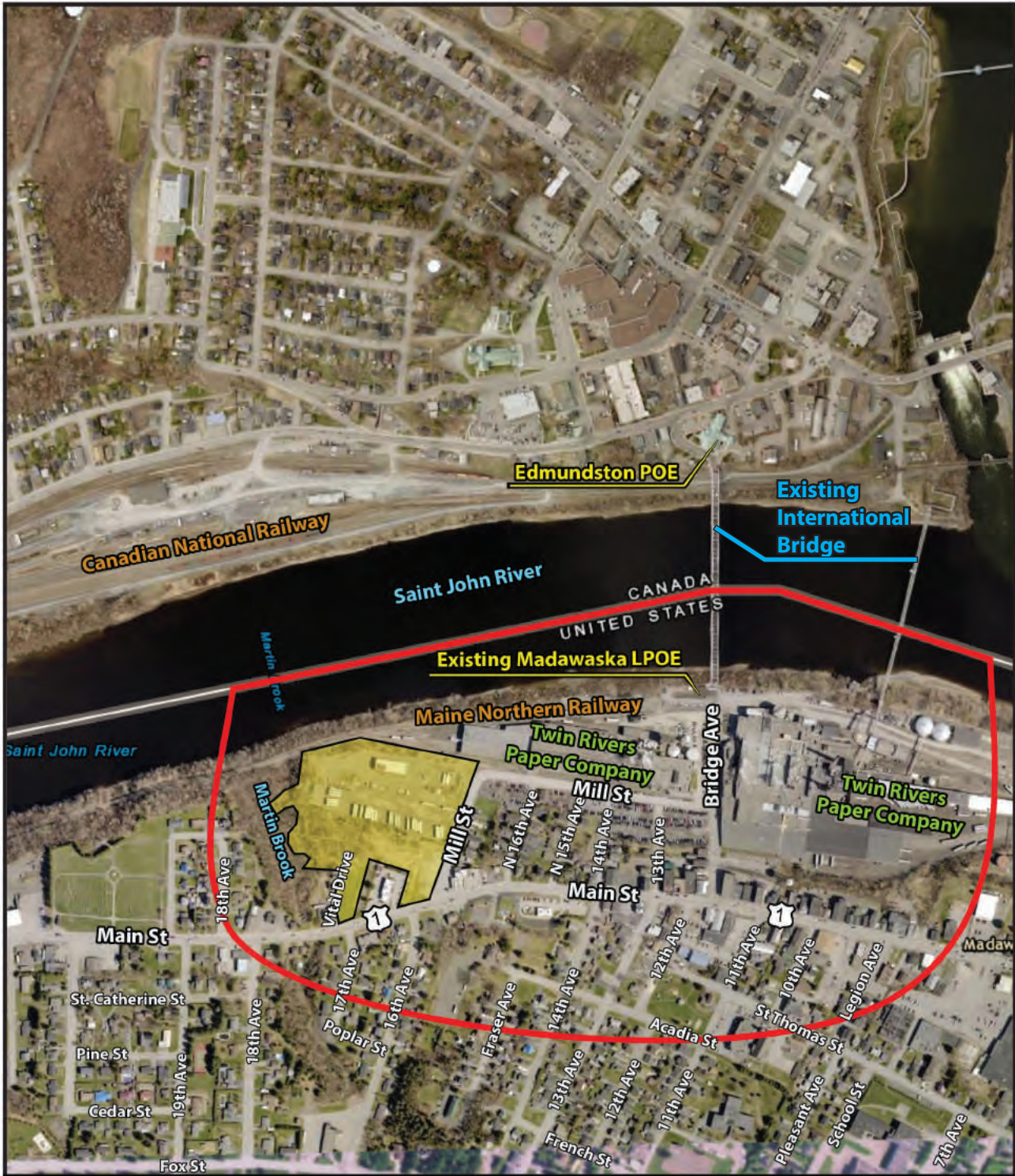
The existing International Bridge carries utility lines operated by Twin Rivers Paper Company (Twin Rivers) across the Saint John River. These lines would be relocated, and the bridge would likely be demolished.

As part of the construction of the new LPOE, the portions of Mill Street and Main Street adjacent to the LPOE may be reconstructed or reprofiled to provide smooth ingress and egress to the LPOE.

MaineDOT is considering allowing snowmobiles to use the shoulder to cross the new International Bridge.

The schedule for the New Madawaska LPOE and International Bridge Replacement Project moving forward is as follows; it is noted that this schedule is aggressive and


New Madawaska Land Port of Entry and International Bridge Project



Legend

- Study Area Boundary
- USA-owned Property

Exhibit 1.3 - Study Area Map



0 500 1,000 1,500 2,000 Feet

Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

a best-case scenario and contingent upon the receipt of the required permits for construction in both Maine and New Brunswick:

- Start design of the LPOE and International Bridge – Summer 2018
- Complete design of the LPOE and International Bridge – 2019
- Begin Construction of the New Madawaska LPOE – 2020
- Begin Construction of the New International Bridge – 2020
- Complete all Construction – 2022
- Open the new Madawaska LPOE and International Bridge to traffic – 2022
- Likely demolition of the existing International Bridge – 2023

3. Purpose and Need

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

The proposed project is needed because: 1) the existing International Bridge is nearing the end of its useful life, and 2) the size and conditions of the existing building and overall site of the Madawaska LPOE are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions (MaineDOT, et al., 2018).

a. Existing Madawaska Land Port of Entry

In 2007, the GSA published the Final Environmental Impact Statement (FEIS) “Madawaska Border Station, Madawaska, Aroostook County, Maine” and subsequent “Record of Decision for the Construction of a New Border Station in Madawaska, Maine” (ROD) which assessed the potential impacts of the construction of a new Madawaska LPOE. The GSA chose not to advance the replacement of the LPOE due to the high cost of maintaining an elevated roadway along the top of the bank of the Saint John River connecting to the existing International Bridge. The condition of the existing International Bridge has continued to deteriorate.

The Madawaska LPOE is situated on approximately 0.87 acre and has many deficiencies and physical limitations. The size and conditions of the existing building and overall site are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions. The deficiencies with the existing facilities have led to extensive traffic delays for vehicles entering the U.S. Specifically, the deficiencies at the Madawaska LPOE fall into two broad categories (Exhibit 1.4):

- Building deficiencies
- Overall site layout deficiencies



The existing LPOE main building, looking north. Photo shows the lack of an outbound inspection lane.



Legend

- Inbound Lanes
- Inspection Lanes
- Outbound Lane

Exhibit 1.4 - Existing Conditions

150 75 0 150 Feet

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Building Deficiencies

The existing LPOE is a single-story masonry building with a basement that was built in 1959. The 6,000 square feet of building space at the LPOE represent approximately 25 percent of the required gross building area for a medium-sized LPOE. The agencies housed within this building lack adequate office space with no space for expansion. The lower level of the building is not compliant with the Architectural Barriers Act. The U.S. Drug Enforcement Administration and Food and Drug Administration, while not tenants of the building, frequent the port. These agencies do not have designated spaces within the building (GSA, 2007).



Bridge Avenue looking north. Photo shows the long, downhill approach to the LPOE.

Overall Site Layout Deficiencies

The site is deficient in primary and secondary inbound inspection areas, outbound inspection areas, parking and delivery areas, and building setbacks required to meet current guidelines and satisfy the needs of the agencies (GSA, 2007).

The site has substantial physical limitations. While the property is approximately 0.87 acre in size, approximately half of the property consists of the steep banks along the Saint John River and is not usable area. The usable portion of the property owned by the GSA is approximately 100 feet wide and 200 feet long (GSA, 2007).

The small size of the LPOE site causes traffic to back up into the City of Edmundston. The two inbound primary inspection lanes are too close to the bridge to allow for the efficient queuing of inbound vehicles. The most significant operational deficiency of the existing site is the lack of space available to accommodate the secondary inspection of large commercial vehicles (GSA, 2007).

Adding to poor traffic circulation is the proximity of the primary inspection booth to the Maine Northern Railway (MNR) railroad tracks that cross Bridge Avenue about 60 feet south of the primary inspection booth. While the train traffic is not heavy, when present, the trains leave little room for queuing and storage of vehicles (GSA, 2007).

b. Existing International Bridge is Nearing the End of its Useful Life

The International Bridge is a 928-foot-long four-span bridge carrying Bridge Avenue over the Saint John River. Originally built in 1920, each span consists of a Pennsylvania Truss measuring 232 feet long with a roadway width of 20 feet, 8 inches (MaineDOT, 2017a). In 2016, the average annual daily traffic using the International Bridge was approximately 2,017 vehicles per day (MaineDOT, 2017c).



The existing LPOE, looking north. Photo shows the lack of space for an inbound traffic queue.

After nearly 100 years of service, the overall bridge is in poor condition. Despite efforts to maintain the bridge, the rate of deterioration has accelerated to the point that the end of the useful service life of the bridge is fast approaching. Further attempts to repair or rehabilitate the bridge will not restore the full capacity of the bridge to meet today's load requirements or geometric standards; hence, any substantial investments would be impractical. Extensive repairs will be needed in the future on a more frequent basis to maintain the usefulness of the structure, albeit in a reduced state of functionality.

The specific factors contributing to the overall inadequacy of the bridge are:

- Poor Condition of Structural Members;
- Substandard Load Carrying Capacity;
- Geometric Constraints; and
- Extensive Deteriorating Repairs and Retrofits.

Condition of Structural Members

The bridge was inspected in July 2017 in accordance with the requirements of the FHWA's National Bridge Inspection Standards. The existing International Bridge is considered a fracture critical bridge (a fracture critical bridge is defined by the FHWA as a steel member in tension, or with a tension element, whose failure would probably cause a portion of, or the entire bridge, to collapse). A hands-on fracture-critical and routine inspection was completed using an under-bridge inspection vehicle to inspect the underdeck sections of the bridge superstructure and truss, and a standard bucket truck to inspect the upper truss chords and braces.

Stringers

Stringers are the steel beams which run the length of the bridge and support the open steel grid deck. The stringers in Spans 1 and 2 (spans are numbered 1 through 4 starting on the Canadian side of the bridge) are in poor condition and exhibit significant deterioration in several members. Approximately 50 percent of the stringers in Span 1 and 20 percent of the stringers in Span 2 exhibit significant deterioration. Most of the stringers in Spans 3 and 4 show moderate deterioration. Some stringers have significant deterioration at the connections to the floor beams and, in three cases, have corrosion cracks (MaineDOT, 2017a).



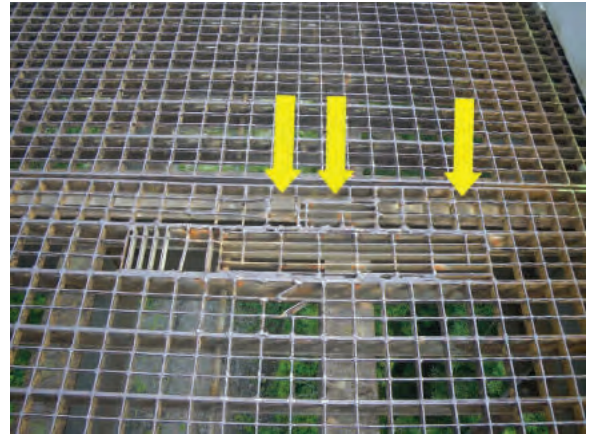
Span 4 - Floor beam web and top flange section loss adjacent to/above stringer connection.

Floor Beams

The floor beams support the stringers and distribute the loads to the trusses. The floor beams exhibit moderate to advanced deterioration throughout, particularly at the stringer connections. The bottom flange and bottom flange cover plate of the floor beams exhibit moderate to advanced deterioration throughout, particularly at the stringers (MaineDOT, 2017a).

Deck

The open steel grid deck in Spans 1 and 2 is in poor condition and exhibits many distressed areas comprised of cracked, failed, or missing sections to the extent that some areas warp under truck weight. There are many deck repairs throughout Spans 1 and 2, and these repairs are weak points which have now failed. Some of these failed repairs have become detached with sharp edges and/or warp under truck weight (MaineDOT, 2017a).



Looking south - Cracked transverse welds between the grid deck and floor beam top flange. Note failed repairs.

Substructures

The piers exhibit many vertical cracks, some of which extend the full height of the piers, particularly on the east and west faces. These cracks exhibit moderate to heavy discoloration and crystallization, known as efflorescence. The faces of Piers 1 and 2 exhibit cracks along the pier cap and moderate splintering or chipping. At Piers 2 and 3, the pier column noses exhibit advanced splintering at mid-height due to ice floe collision damage with missing sections of the steel angle, particularly at Pier 3. The north face of the Pier 3 nose is chipped with exposed, debonded, and twisted reinforcement, and a missing section of the steel angle (MaineDOT, 2017a).

Load Carrying Capacity

Upon completion of the bridge inspection, structural engineers evaluated the bridge in October 2017 in accordance with the Manual for Bridge Evaluation published by the American Association of State Highway and Transportation Officials. This evaluation concluded that extensive deterioration of the stringers and floor beams has significantly decreased the load carrying capacity of the bridge from the standard gross vehicle weight limit of 40 tons. Based on the results of the load capacity evaluation, the MaineDOT and NBDTI collectively decided to post the bridge at five tons. This weight limit ensures that the bridge remains safe for passenger vehicles. All vehicles weighing more than five tons, including tractor trailer trucks, box trucks, buses, and fire trucks, are prohibited from crossing the bridge. (MaineDOT, 2017b).

In November and December of 2017, NBDTI completed a temporary strengthening initiative including the replacement of four stringers supporting the bridge roadway surface that exhibited critical amounts of deterioration; the cost to replace the four stringers was approximately \$65,000 (CAN). The replacement of these stringers was complex with each stringer replacement requiring approximately two weeks to replace. Currently, an additional 75 deteriorated stringers remain in place; the estimated cost to replace the remaining stringers is approximately \$1.5 million (MaineDOT, 2018). Given the time, effort, and cost required to replace these components, the MaineDOT and NBDTI do not believe it is prudent to replace them. Therefore, the five-ton limit will remain in effect until the bridge is replaced.



Pier 2 pier wall, south face - Map/vertical cracks with moisture throughout, delamination along pier cap and scattered delaminations, spalls, and scaling.

Geometric Constraints

The geometry of the bridge is substandard and limits the accessibility and rideability of the bridge. The width of the roadway is a major contributing factor to the inefficient movement of vehicles, particularly commercial trucks, as they approach and traverse the bridge from either direction. The approach into and out of the LPOE or Edmundston POE is cumbersome and not conducive to smooth traffic flow without affecting the oncoming traffic, especially as trucks leave Edmundston and turn onto the bridge. The roadway width of 20 feet, 8 inches between the curbs is extremely narrow.

The vertical clearance above the bridge is substandard at 14 feet, 3 inches. Several overhead beams appear to have been struck by commercial trucks as indicated by several bent cross-frame members. The vertical clearance above the Canadian National Railway (CNR) tracks is 22 feet and 3/4 of an inch, which is nearly 1 foot less than the required 23 feet of vertical clearance (MaineDOT, 2017a).

Extensive Repairs

Many repairs to the bridge have been implemented over the last 60 years; however, the rate of deterioration has begun to exceed the rate of the repair efforts. In 1961, the original timber deck was replaced with an open steel grid deck and the floor beams were strengthened with top and bottom cover plates on the flanges. In the 1980s, concrete repairs were performed on the north abutment, and stone riprap was placed around the footings of Piers 1 and 2. A significant rehabilitation effort was undertaken on Spans 3 and 4 in 2001, which consisted of replacement of steel stringers, grid deck, and connection angles between stringers and floor beams. Concrete repairs to the south abutment and Pier 3 were also completed. In 2005, the sidewalk was replaced in Spans 3 and 4 (MaineDOT, 2017a).

B. Prior Studies and Conclusions

To provide a context for the New Madawaska LPOE and International Bridge Replacement Supplemental Environmental Impact Statement (SEIS), prior studies concerning the movement of vehicles between the Edmundston POE and the Madawaska LPOE were reviewed. These prior studies, briefly summarized below, are:

- *Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study* – 2018
- *International Border Crossing Feasibility Study* – 2010
- *Atlantic Gateway Border Traffic and Infrastructure Study* – 2009
- *Madawaska Border Station Final Environmental Impact Statement* – 2007
- *Border Crossing Recommendation Memorandum* – 2002

1. Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study, 2018

In the spring of 2018, the MaineDOT, in cooperation with the GSA, CBP, NBDTI, PSPC, and CBSA, completed the MEFPS. The purpose of the feasibility and planning study was to identify a preferred location for a crossing between Madawaska and Edmundston that all sponsors could afford and support to build and operate.

Twelve alternatives were identified, conceptually developed, and evaluated. Alternatives included either rehabilitating the existing bridge or building a new bridge on one of several new alignments while maintaining the existing Edmundston POE, and building new border crossing facilities at various locations outside of the downtown business zone (2 upstream and 4 downstream). In addition to the 12 alternatives conceptually developed and evaluated, several other alternatives were identified and briefly considered but were not advanced for detailed evaluation. Based on initial evaluations, the project sponsors determined that each of these additional alternatives was impractical from a cost, impact, and/or schedule perspective.

After analyzing the 12 conceptual alternatives, the project sponsors concluded the alternative locations outside of the downtown business zone needed to be dismissed from further consideration and the focus needed to turn to maintaining an international crossing in the downtown business zone.

Analysis and discussion of the alternatives led to the identification of Alternatives 3, 4, and 5 for further analysis. It was determined that Alternatives 4 and 5 were substantially similar, and a new alternative, Alternative 4.5, was developed as a combination of the two.

Further discussion and analysis of Alternatives 3 and 4.5 led to modifying the bridge approach to both the Edmundston POE and the Madawaska LPOE to address some of the concerns with Alternative 3. The modification consisted of adding curvature to both ends of the bridge as they pass over the CNR and MNR tracks to allow for a preferable orientation approaching both POEs. The modifications to the bridge alignment for Alternative 3 created a corridor within which the preferred alternative would be developed during design.

2. International Border Crossing Feasibility Study, 2010

In 2010, the MaineDOT, NBDTI, and the GSA performed the International Border Crossing Feasibility Study (MaineDOT, 2010). The goal of the study was to determine if upgraded LPOEs at Madawaska/Edmundston and Van Buren, Maine/St. Leonard, New Brunswick could accommodate commercial traffic in the long term (the year 2030).

The study examined the current conditions of the ports to establish the current conditions and capacity of the international crossings. Once the current conditions

were understood, the study examined the planned upgrades and forecasted future travel demand. The current capacity was compared to the forecasted future travel demand. For the Madawaska/Edmundston border crossing, the study concluded (MaineDOT, 2010):

- “The narrow width of the bridge creates traffic flow issues for large commercial vehicles where it is difficult for two trucks to cross at the same time.”
- “There is insufficient space for commercial vehicles to efficiently access the bridge on the Canadian side of the border. Commercial vehicles accessing the bridge encroach on opposing travel lanes to complete turning maneuvers.”
- “There is inadequate space for commercial vehicles to access the third booth at the Edmundston CBSA facility.”
- “Large commercial vehicles turning right from the CBSA facility to Rue St. François in Edmundston require both lanes of the roadway to complete the turn due to the truck turning radius.”
- “A new border station is planned for Madawaska to replace the existing facility... The new station will address a range of deficiencies.”

This study finds that the planned improvements at Madawaska/Edmundston and Van Buren/St. Leonard ensure sufficient capacity to accommodate both passenger and commercial traffic to the year 2030. As such, further study of a new (third) commercial border crossing in the Upper Saint John Valley was not recommended (MaineDOT, 2010).

3. *Atlantic Gateway Border Traffic and Infrastructure Study, 2009*

The purpose of the Atlantic Gateway Border Traffic and Infrastructure Study was to analyze the movement of goods at key locations along the Canada-U.S. border in New Brunswick and to assess the efficiency of this component of the Atlantic Gateway transportation system (Opus, 2009).

On an average day, approximately 18,000 passenger vehicles, 1,800 trucks, and 4 trains cross the border between New Brunswick and Maine. The two busiest crossings, in terms of passenger vehicles, are the Ferry Point crossing in downtown St. Stephen/Calais and Edmundston/Madawaska. The distribution of traffic between the border crossings has stayed relatively constant over the last eight years (Opus, 2009).

The opportunities and deficiencies identified at the Madawaska LPOE and Edmundston POE are:

- Queues of passenger vehicles at the LPOE block the access to the commercial inspection booths. The proposed LPOE will be located approximately 1,000 feet from the existing building, allowing additional area for separating passenger vehicles from commercial traffic.
- Limited space to maneuver large vehicles within the POE. Commercial trucks encroach on the opposite lanes when turning to and from the bridge. It was concluded that insufficient space is available within the POE to improve traffic

flows to and from the bridge. However, the turning radius for trucks turning right from the POE onto Rue St. François can be improved.

- Insufficient space is available at the Edmundston POE to improve traffic flows to and from the bridge. However, lane markings can be changed on Rue St. François in Edmundston to increase the right turn radius.
- Investigate the feasibility of installing NEXUS lanes at the POE and the LPOE to improve the flow of passenger vehicles (Opus, 2009).

4. Madawaska Border Station Final Environmental Impact Statement, 2007

In 2007, the GSA prepared an Environmental Impact Statement (EIS) in support of replacing the LPOE in accordance with the National Environmental Policy Act (NEPA). In 2007, rehabilitating or replacing the existing International Bridge was not part of the proposed action as MaineDOT did not anticipate the need to replace this bridge at that time (MaineDOT, 2006). According to the 2007 EIS, the project was proposed because the size and conditions of the existing building and overall site are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions. This condition had become more noticeable in recent years due to the increase in commercial truck traffic. The deficiencies with the existing facilities have led to extensive traffic delays for vehicles entering the U.S. (GSA, 2007).

The GSA developed four alternatives to address the deficiencies of the LPOE.

Three alternatives – A, B, and C – were developed that attempted to locate the new LPOE within a small geographical area immediately adjacent to the existing LPOE, roughly bordered by the Twin Rivers mill, the Saint John River, and Bridge Avenue and Mill Street. These three alternatives only marginally met the project's requirements. They had the general disadvantages of poor on-site traffic circulation, inadequate space, substandard security, substantial disruption of Twin Rivers operations, and numerous at-grade crossings of railroad tracks and sidings (GSA, 2007).

The GSA determined that an additional alternative – Alternative D – should be developed that would better meet the project's purpose and need and eliminate as many of the disadvantages of the other alternatives as possible. Alternative D consisted of a new facility on approximately a 9-acre property about 1,600 feet west of the existing LPOE. The site was of a sufficient size that would permit a layout more consistent with the requirements and criteria of the GSA than the other three alternatives (GSA, 2007).

Vehicles traveling from the International Bridge would make a 90-degree turn west and proceed on a secure access road and elevated roadway over the MM&A Railroad tracks to the site of the new LPOE. The GSA would own and maintain the access road and elevated roadway (GSA, 2007).

5. Border Crossing Recommendation Memorandum, 2002

In 2002, MaineDOT considered locations for a new commercial border crossing near Madawaska to replace the existing Madawaska/Edmundston border crossing in conjunction with the Aroostook County Transportation Study (ACTS) (VHB, 2002).

A secondary purpose of the analysis was to review the corridors in the ACTS for their compatibility with a potential new border crossing in Madawaska and to identify alternative routes for a new highway connecting Route 11, north of Eagle Lake, with the crossings. The purpose of these new highway connections would be to provide direct trucking access to I-95 via Route 11 from the Canadian border (VHB, 2002).

Based upon preliminary findings, a new border crossing could have been most easily established in Van Buren (0.5 mile southeast of the existing Van Buren border crossing) which would provide a direct connection between Route 1 and both the TransCanada and Route 17. A new commercial crossing in Van Buren would have offered the shortest, most direct route to points within and south of the ACTS study area from the Saint John Valley (VHB, 2002).

Of the three Van Buren crossing locations considered, Site 10 offered the best connection with the TransCanada. The site would take advantage of the infrastructure improvements in New Brunswick where the TransCanada was being upgraded to a four-lane divided highway; the roadway was four lanes from Edmundston to within one mile of the proposed connector road at the border crossing with Site 10. This crossing location would help reduce truck traffic along Main Street in Van Buren (VHB, 2002).

Of the crossing sites in Madawaska considered, Site 7 (at Grand Isle) appeared to be the best option, provided the distance from downtown Madawaska was acceptable.

C. Federal and State Decisions and Actions

The NEPA requires federal agencies to consider the potential impacts to the natural and human environment from their projects as part of their decision-making process, and disclose the potential impacts in a document that is circulated for public review. The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and to take actions that protect, restore, and enhance the environment (40 CFR Part 1500.1).

In 2007, GSA concluded a NEPA process to evaluate the environmental impacts of the construction of a new LPOE. This NEPA process did not analyze the construction of a new international bridge. The EIS for the Madawaska LPOE was first circulated publicly as a draft EIS (DEIS) in 2006. Following publication of the DEIS, a public hearing was held to solicit additional public input into the planning and decision-making process. Additional public input was accepted during a comment period following publication of the DEIS. Comments from other federal agencies, state

agencies, and the public were used to assist the GSA in further developing the selected alternative that was further described in a publicly circulated FEIS.

Publication of the FEIS was followed by the GSA issuing a ROD explaining the rationale for identifying the selected alternative and the funding, construction, operation, and monitoring of the selected alternative. Generally, a ROD will:

- State the decision.
- Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy that were balanced by the agency in making its decision and state how those considerations entered into its decision.
- State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program has been adopted and summarized where applicable for any mitigation (40 CFR Part 1505.2).

After the publication of the 2007 FEIS and ROD, the GSA chose not to advance the replacement of the Madawaska LPOE due to the high cost of maintaining the elevated roadway.

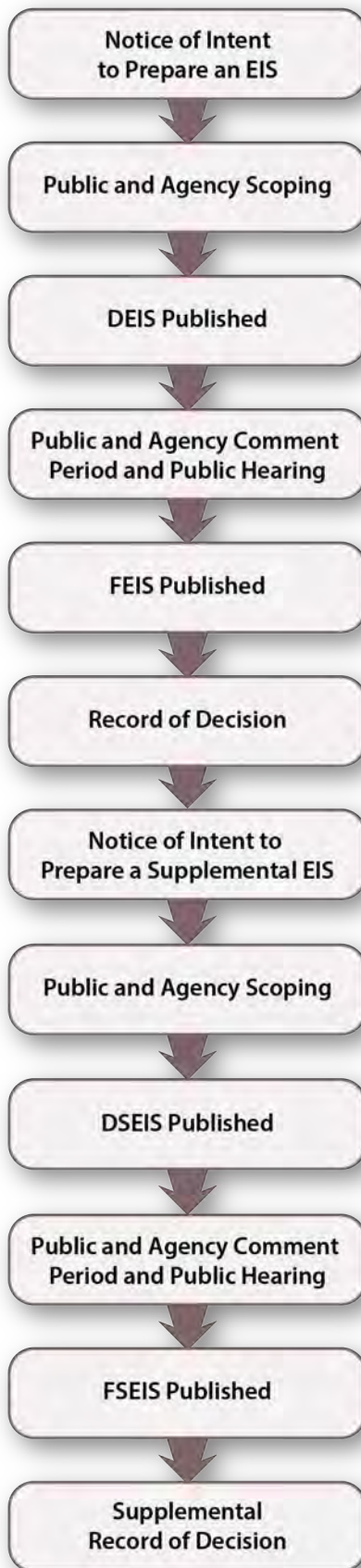
Recognizing that the International Bridge connecting Edmundston and Madawaska was functionally obsolete, nearing the end of its useful life, and in need of rehabilitation or replacement, in 2017 MaineDOT, in coordination with the GSA, NBDTI, PSPC, and CBSA, initiated the preparation of the MEFPS to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE.

Because of this change in the proposed action, the GSA, FHWA, and the MaineDOT, in cooperation with the USCG, determined that the completion of a Supplemental Environmental Impact Statement (SEIS), building upon the 2007 FEIS, that gives consideration to the construction of a new international bridge, is the most appropriate way to address the NEPA process for this project.

The GSA and FHWA are the co-lead federal agencies for this project with MaineDOT acting as the state lead agency. The GSA, FHWA, and MaineDOT, in cooperation with the USCG, with input from the public and other federal and state agencies, will decide what action to take in accordance with the NEPA.

The purpose of this SEIS is to provide the GSA, FHWA, MaineDOT, USCG, and the public with a full accounting of the potential environmental impacts of the alternatives developed for meeting the project's purpose and needs.

Exhibit 1.5 - NEPA Process



The SEIS serves as the primary document to facilitate review of the project by federal, state, and local agencies and the public. The SEIS is intended to provide a full and fair discussion of the potential significant environmental impacts and inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment (40 CFR Part 1502.1). An SEIS must briefly discuss the purpose and need for the proposed action, the range of alternatives considered, the resultant potential environmental impacts from the proposed action, and the agencies and people consulted during the planning of the proposed action. The ultimate objective of this SEIS is to identify a solution that furthers the project's purpose, satisfies the needs of the project, and minimizes adverse environmental and social impacts, at an affordable cost.

GSA, FHWA and MaineDOT prepared this Draft SEIS (DSEIS) to describe the new proposed action, the alternatives considered, and to evaluate and document the changes in potential impacts to the human environment based on the updated proposed action (Exhibit 1.5).

After publication of the DSEIS, a 45-day public comment period will follow, during which a public hearing will be held to solicit additional public input. Comments received on the DSEIS will be used in preparing the Final SEIS (FSEIS). Following publication of the FSEIS, a ROD will be issued explaining the rationale for identifying the new selected alternative and the funding, construction, operation, and monitoring of the new selected alternative (Exhibit 1.5).

D.Scope of the Environmental Analysis

Public participation is integral to the preparation of an EIS. This section summarizes the issues and concerns that were identified during the public scoping process. Scoping is a process for determining the range of issues to be addressed in an EIS and for identifying significant issues associated with the alternatives (40 CFR Part 1501.7). The objectives of the scoping process are to notify interested persons, other federal, state, and local agencies, tribes, and other groups about the alternatives being considered; solicit comments about environmental issues, alternatives, and other items of interest; and consider those comments in the preparation of the EIS.

Scoping for the 2007 EIS began with the GSA issuing its Notice of Intent (NOI) to prepare an EIS, which was published in the Federal Register on January 6, 2006, and continued until the end of the comment period on February 20, 2006. The GSA held a public scoping meeting on January 10, 2006 at the Madawaska Middle/High School. Approximately 40 people attended, and the following questions and comments were collected:

- Coordinate with the FHWA and MaineDOT on the Aroostook County EIS and potential for an international border crossing several miles east in St. David.

- Is the City of Edmundston interested in moving border crossing to connect with Canadian Route 2?
- What would happen to the proposed facility if a new border crossing is built outside Madawaska?
- Has coordination taken place with Canadian national or provincial officials?
- Concerned that the bridge is in poor condition and may be nearing the end of its lifespan.
- Wastewater pump station adjacent to existing LPOE needs to be upgraded and potentially relocated depending on alternative selected.
- Will the new facility require local infrastructure to be upgraded (water, sewer, stormwater)?
- Underground utility lines in the area may not be mapped well.
- Alternative D takes land from proposed “Four Corners” Park.
- Concern that festivals and other events would be impacted by changes at the LPOE.
- Lots of snowmobiles cross the border during the International Snowmobile Festival.
- Acadian Festival generates lots of cross-border traffic.
- Will the new border station be upgraded to a commercial port?
- Are traffic volumes projected to increase because of the new LPOE?
- Are truck volumes projected to increase because of the new LPOE?
- Will the new LPOE be able to process more vehicles?
- Are facilities planned to accommodate pedestrians, snowmobiles, bikes, and ATVs and will they be safe?
- Will the project disrupt the MM&A railroad tracks, sidings, and offices and Fraser Papers (now Twin Rivers) sidings?
- How will snow be removed and where will it be stored on site?
- Potential to disrupt Fraser Papers operations that could result in adverse economic impacts.
- Potential to disrupt MM&A operations that could result in adverse economic impacts.
- Be aware that there is a foreign trade zone in Madawaska.
- New LPOE should be aesthetically pleasing.
- New LPOE should be visible from Main Street.
- Existing LPOE lacks security and new border station should be more efficient.
- Will new LPOE create new jobs?
- Will the project follow the local planning board/board of appeals application review process and purchase the necessary permits?
- Safety concern for Alternatives B and C that two-way traffic on Bridge Street south of Mill Street cannot work due to steep grades.
- Alternative D appears to be the most feasible and least disruptive to Fraser Papers.

New Madawaska Land Port of Entry and International Bridge Project

- Concern that Alternative D requires a 90-degree turn at the bridge and that trucks will not stay in their lanes, leading to delays and safety hazard.

Scoping for the 2018 DSEIS occurred at the public meeting for the MEFPS on January 31, 2018. Approximately 95 people attended the meeting. The meeting consisted of two parts: an open house for small group conversation with displays and handouts, followed by a formal meeting with a presentation; comment forms were available for people to submit more formal comments for consideration. Representatives from the agencies present answered questions and gathered input (Exhibit 1.6).

Exhibit 1.6 - 2018 Scoping Identification and Tracking

Comment or Question	Addressed in Section...	Remarks
Concern regarding the safety of the existing International Bridge due to the posting of the five-ton weight limit.	Chapter 1, Section A.3.b. – <i>Introduction: Purpose and Need: Existing International Bridge is Nearing the End of its Useful Life</i>	Based on the results of the load capacity evaluation performed by MaineDOT and NBDTI, they collectively decided to post the bridge at five tons. This weight limit ensures that the bridge remains safe for passenger vehicles. All vehicles weighing more than five tons, including tractor trailer trucks, box trucks, buses, and fire trucks, are prohibited from crossing the bridge.
Concern for Edmundston POE being difficult for turn movements by large trucks.	Chapter 1, Section A.1. – <i>Introduction: Background</i>	Throughout the preparation of the MEFPS, the PSPC and the CBSA noted that the Edmundston POE was adequate for the foreseeable future and there are no plans to modify or expand it.
Question about how the public can express concerns and provide feedback.	Chapter 1, Sections C. – <i>Federal and State Decisions and Actions</i> and D. – <i>Scope of the Environmental Analysis</i>	Public participation is integral to the preparation of an EIS. The purpose of this EIS is to provide the GSA, the cooperating agencies, and the public with a full accounting of the potential environmental impacts of the alternatives developed for meeting the project's purpose and needs.
Request for architectural features on the new proposed bridge as it would be a landmark bridge in the Saint John River Valley.	-	The suggestion for the International Bridge is noted and will be determined during the final design for the bridge.
Request for an observation/rest area on the proposed bridge.	-	The suggestion for the International Bridge is noted and will be determined during the final design for the bridge.
Request for a bridge that allows for scenic viewing of the Saint John River Valley and the two communities.	-	The suggestion for the International Bridge is noted and will be determined during the final design for the bridge.
Concern over the longer bridge and accessibility for pedestrians during cold weather.	-	The proposed International Bridge would be approximately 900 feet longer than the existing bridge. The suggestion for the International Bridge is noted and will be determined during the final design for the bridge.

Exhibit 1.6 - 2018 Scoping Identification and Tracking (continued)

Comment or Question	Addressed in Section...	Remarks
Concern over traffic congestion, traffic controls, and new patterns around the new Madawaska LPOE.	Chapter 2, Section C.2. – <i>Range of Reasonable Alternatives Retained for Further Study: Madawaska Land Port of Entry</i> and Chapter 3, Section D.2. – <i>Transportation Facilities and Operations: Roadway Facilities and Operations</i>	The proposed International Bridge and new LPOE would result in a variety of positive impacts to the flow of traffic in the study area. As part of the construction of the LPOE, portions of Mill Street and Main Street may be reconstructed or re-profiled.
Request for snowmobile access to the new International Bridge.	Chapter I, Section A.2. – <i>Introduction: Project Description</i>	MaineDOT is considering allowing snowmobiles to use the shoulder to cross the new International Bridge.
Suggestion to move the POE to the CNR yard and construct a shorter bridge perpendicular to the Saint John River.	Chapter 2, Section D. – <i>Alternatives Considered for the LPOE and Dismissed from Further Study</i>	Relocating the Edmundston POE to the CNR yard was considered as it would allow for construction of a shorter bridge. However, this option was dismissed from further consideration because it would require PSPC and CBSA to fund and construct a new POE, and because the time and cost required to relocate the existing CNR yard would be prohibitive.
A resident who lives next to the USA-owned property wrote to voice concerns regarding the project and its potential effects on the property and quality of life.	Chapter 3, Section E.1.b. – <i>Land Use and Cultural, Social, and Economic Environments: Land Use: Land Acquisition</i>	The proposed project may require the acquisition of private property and cause the displacement of residents and/or businesses. If so, the GSA shall conduct those activities in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs Act. The project would introduce new lighting, which would be designed to reduce the amount of light to unintended areas, such as abutting private properties, and include vegetation planting for shielding.
An agent for McDonald's Corporation requested more information regarding potential impacts to its restaurant, which is located next to the USA-owned property.	Chapter 3, Section E.1.b. – <i>Land Use and Cultural, Social, and Economic Environments: Land Use: Land Acquisition</i> and Chapter 3, Section E.4.c. <i>Economic Development and Initiatives</i>	The proposed project may require the acquisition of private property and cause the displacement of residents and/or businesses. If so, the GSA shall conduct those activities in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs Act. The project would introduce new lighting, which would be designed to reduce the amount of light to unintended areas, such as abutting private properties, and include vegetation planting for shielding.

On February 5, 2018 the GSA published a NOI to prepare a SEIS in the Federal Register. Two comment letters were received in response to the NOI:

- A resident who lives next to the USA-owned property wrote to voice concerns regarding the project and its potential effects on the resident's property and quality of life (Clavette, 2018).

- An agent for McDonald's Corporation requested more information regarding potential impacts to its restaurant, which is located next to the USA-owned property (Martel, 2018).

E. Applicable Regulations, Guidance, and Required Permits

1. Applicable Regulations and Guidance

Many statutes and Presidential Executive Orders (EOs) apply to the proposed action and were considered during the planning and conceptual design of the proposed project and preparation of this EIS (Exhibit 1.7).

Exhibit 1.7 - Applicable Statutes and Orders

Law or Executive Order	Requirements	Implications & Regulations
Americans with Disabilities Act of 1990	Prohibits discrimination against individuals with disabilities in all areas open to the public.	Consider the accessibility of the proposed action during the NEPA process (42 U.S.C. § 12101 et seq.).
Archeological and Historic Preservation Act	Requires federal agencies to identify and recover data from archaeological sites threatened by their actions.	Conduct surveys, identify archaeological sites, consult with specialists and others during NEPA analyses, fund data recovery.
Architectural Barriers Act	Requires public buildings to be accessible to persons with disabilities.	Consider accessibility issues, and the environmental impact of accessibility solutions, during NEPA process.
Bridge Act of 1966	Under 33 USC 491 (as amended by PL 114-120 of February 8, 2016) the plans for the new bridge must be approved by the Secretary of the Department of Homeland Security.	Once approved by the the Secretary of the Department of Homeland Security, the International Bridge must be constructed in accordance with the plans developed unless a modification is approved.
Clean Air Act	Requires agencies to comply with state air quality standards set in State Implementation Plans (SIPs).	Review SIP, measure current air quality, project potential changes, seek alternatives that meet standards in NEPA analyses (40 CFR 50).
Clean Water Act (CWA)	Requires a permit from the U.S. Army Corps of Engineers (USACE) for actions affecting "waters of the United States."	Identify potentially affected waters, consult with USACE during NEPA analyses, explore alternatives to minimize filling (33 CFR 320-330; 40 CFR 35, 116, 117, 122, 124, 125,131,133, 220, 401, 403).
Community Environmental Response Facilitation Act	Requires identification of uncontaminated property.	Phase I and sometimes Phase II remediation studies.
Comprehensive Environmental Response, Compensation, and Liability Act	Requires reporting of releases and cleanup of hazardous substances.	Phase I and sometimes Phase II remediation studies (40 CFR 373; 41 CFR 101-47).
Endangered Species Act (ESA)	Requires consultation with U.S. Fish and Wildlife Service (USFWS) to ensure actions do not jeopardize threatened or endangered species or their critical habitat.	Analyze impacts on fish, wildlife, plants, habitats. Ecosystem analysis. Consult with USFWS where potential effect exists (50 CFR 402).
Environmental Impact and Related Procedures	Prescribes the policies and procedures of the FHWA and Federal Transit Administration for implementing the NEPA as amended.	Requirements under NEPA for the processing of highway and public transportation projects (23 CFR, Part 771).

Exhibit 1.7 - Applicable Statutes and Orders (continued)

Law or Executive Order	Requirements	Implications & Regulations
Environmental Quality Improvement Act	National policy for enhancement of environmental quality, assigns primary responsibility to state and local governments.	Underscores the need for quality NEPA studies and environmentally sensitive decisions, consults with state and local governments.
Farmland Protection Policy Act (FPPA)	Establishes criteria for identifying and considering the effects of federal actions on the conversion of farmland to non-agricultural uses.	Identify potentially affected prime farmland, explore alternatives to minimize impacts (7 CFR 658; see also 7 CFR 657 [Prime Farmlands]).
Federal Facility Compliance Act	Requires federal facilities to comply with state and local environmental laws and federal environmental laws.	Ascertain applicable state and local laws, apply in NEPA analyses and alternative selection.
Federal Property and Administrative Services Act	Gives GSA responsibility for acquiring and using federally owned and leased office buildings and space.	Conduct NEPA review on real estate transactions (41 CFR 101).
Federal Records Act	Controls maintenance and disposal of government documents with historical value.	Identify potentially affected documents (e.g., in buildings being disposed of) and address in NEPA review (36 CFR 1222, 1228, 1230, 1232, 1234, 1236, and 1238).
Fish and Wildlife Coordination Act	Requires consultation with USFWS on actions affecting stream modifications.	Study potential impacts on streams, consult.
Flood Disaster Protection Act	Prohibits federal actions in areas subject to flood hazards.	Delineate floodplain, seek alternatives that do not promote floodplain development (See EO 11988 and EO 11990).
National Environmental Policy Act of 1969 (NEPA)	Requires agencies to consider and document environmental impacts during project planning.	Consider impacts on the quality of the human environment, guided by national policy (40 CFR 1500-1508).
National Historic Preservation Act (NHPA)	Requires agencies to identify historic properties subject to effect by their actions, and to consult with State Historic Preservation Officer and others about alternatives and mitigation.	Conduct surveys to identify historic properties, determine potential effects. Consult, execute, and implement agreements, document in NEPA documents (36 CFR 800; also 36 CFR 60, 61, 65, 68).
Native American Graves Protection and Repatriation Act	Requires consultation with Indian tribes; repatriation of human remains, cultural items, other items. Requires development and implementation of a Plan of Action for treatment.	Identify culturally affiliated tribes or groups, consult with them, seek to develop plans of action, report in NEPA documents and implement as mitigation (43 CFR 10).
Public Buildings Act	Provides GSA a mandate to acquire and manage lands and buildings.	Actions under the Act require NEPA review.
Public Buildings Amendments of 1972	Permits GSA to enter into purchase contracts to acquire space.	Actions under the Amendments require NEPA review.
Resource Conservation and Recovery Act	Regulates hazardous and solid waste, and underground storage tanks (USTs).	Phase I and possible Phase II remediation studies (40 CFR 260-281).
Rural Development Act	Directs federal agencies to site their facilities in such a way as to support appropriate rural development.	Consider requirements when identifying alternatives.
Safe Drinking Water Act	Sets standards for drinking water quality and regulates activities affecting drinking water supplies.	Analyze existing water quality and potential impacts on it (40 CFR 141).

Exhibit 1.7 - Applicable Statutes and Orders (continued)

Law or Executive Order	Requirements	Implications & Regulations
Superfund Amendments and Reauthorization Act	Requires plans for cleanup of contaminated sites, and disclosure to public of hazardous materials and processes.	Phase I and possible Phase II remediation studies (40 CFR 373).
Toxic Substances Control Act	Regulates chemical substances, including polychlorinated biphenyls and asbestos.	Address in NEPA review (40 CFR 761).
Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs (42 U.S.C. Chapter 61)	Property owners are treated fairly and consistently. The GSA shall make every reasonable effort to acquire property expeditiously by negotiation. The GSA shall establish the just compensation for the property, which shall be no less than the approved appraisal of the fair market value. Further, displaced persons and businesses are entitled to relocation assistance and payments.	All land acquisition and relocation (if required for the project) shall be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs Act and the rules promulgated at 49 CFR Part 24.
U.S. Department of Transportation Act of 1966, Section 4(f)	Stipulates U.S. Department of Transportation cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent alternative to the use of land and the action includes all possible planning to minimize harm to the property resulting from use.	Consider the proposed action's impact using public properties (49 U.S.C. § 303 and 23 U.S.C. § 138).
EO 11514 Protection and Enhancement of Environmental Quality	Requires agencies to monitor, evaluate, and control activities to protect and enhance the quality of the environment.	Underscores the need for quality NEPA analyses, monitoring of mitigation measures.
EO 11593 Protection and Enhancement of the Cultural Environment	Requires agencies to identify, evaluate, and protect historic properties.	Same requirements as NHPA.
EO 11988 Floodplain Management	Requires agencies to evaluate the potential effects of any action it takes in a floodplain, and consider alternatives to avoid adverse effects.	Delineate floodplain, impacts on floodplain values, potential development of floodplain. Consider alternatives. Specific 8-step process set forth by Federal Emergency Management Agency (FEMA).
EO 11990 Protection of Wetlands	Requires agencies to minimize destruction, loss, or degradation of wetlands.	Delineate wetlands, pursue alternatives and mitigation to minimize loss.
EO 12072 Federal Space Management	Requires GSA to meet certain criteria, including consideration of socio-economic, environmental, and cultural criteria.	Consider socioeconomic, cultural effects as well as effects on natural and built environment in NEPA analysis of urban real estate transactions.
EO 12088 Federal Compliance with Pollution Control Standards	To prevent, control, and abate environmental pollution from federal facilities and activities.	Phase I, possible Phase II remediation studies.
EO 12372 Intergovernmental Review of Federal Programs	To provide for review of its actions by state and local elected officials.	Consult state and local governments during NEPA review.

Exhibit 1.7 - Applicable Statutes and Orders (continued)

Law or Executive Order	Requirements	Implications & Regulations
EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	Requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.	Conduct social impact analyses, identify potentially affected populations, involve them in NEPA review, make adjustments in public involvement to accommodate them, seek alternatives that avoid disproportionately adverse effects.
EO 13166 Improving Access to Services for Persons with Limited English Proficiency (LEP)	Requires federal agencies to improve access to federally conducted and federally assisted programs and activities for persons who, as a result of national origin, are limited in their English proficiency.	Conduct social impact analyses to identify if LEP populations are present and, if so, take reasonable steps in public involvement activities to make project information more accessible to LEP populations.
EO 13807 Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects	Actions to enhance and modernize the federal environmental review and authorization process.	During the review of the proposed action, ensure careful consideration and coordination.
GSA Order ADM 1095.1F, Environmental Considerations in Decision Making, 19 October 1999	This order establishes policy and assigns responsibility for implementing NEPA, its implementing regulations, and related laws, executive orders, and regulations in the decision-making processes of the GSA.	In decision-making, GSA will attend carefully to policy set forth in Section 101 of NEPA. GSA will ensure that its actions protect and improve the quality of the human environment, including the built and sociocultural environments of the nation’s urban areas.
Maine Endangered Species Act (MESA), 12 MRSA § 7751	Requires agencies to coordinate with the Maine Department of Inland Fisheries and Wildlife and the Maine Natural Areas Program (MNAP).	Identify threatened or endangered species and avoid, to the extent possible, impacting them.
Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 MRSA 1301, 1979	Sets requirements for the disposal and handling of waste products.	Ensure that new facilities are in compliance with waste disposal and handling requirements.
Maine Public Law, Natural Resources Protection Act (NRPA), 38 MRSA, Chapter 3 § 480	<p>The law is focused on “protected natural resources.” A permit is required when an “activity” will be:</p> <ul style="list-style-type: none"> • In, on, or over any protected natural resource, or • Adjacent to A) a coastal wetland, great pond, river, stream, or brook or significant habitat in a freshwater wetland, or B) certain freshwater wetlands. 	A permit is required for: A) dredging, bulldozing, removing, or displacing soil, sand, vegetation, or other materials; B) draining or dewatering; C) filling, including adding sand or other material to a sand dune; or D) construction, repair, or alteration of a permanent structure. Coordinate with Maine Department of Environmental Protection (MDEP).

2. *Required Permits*

The GSA, FHWA, and MaineDOT would be required to obtain permits and approvals prior to the start of construction of the proposed action (Exhibit 1.8).

Exhibit 1.8 - *Required Permits and Approvals*

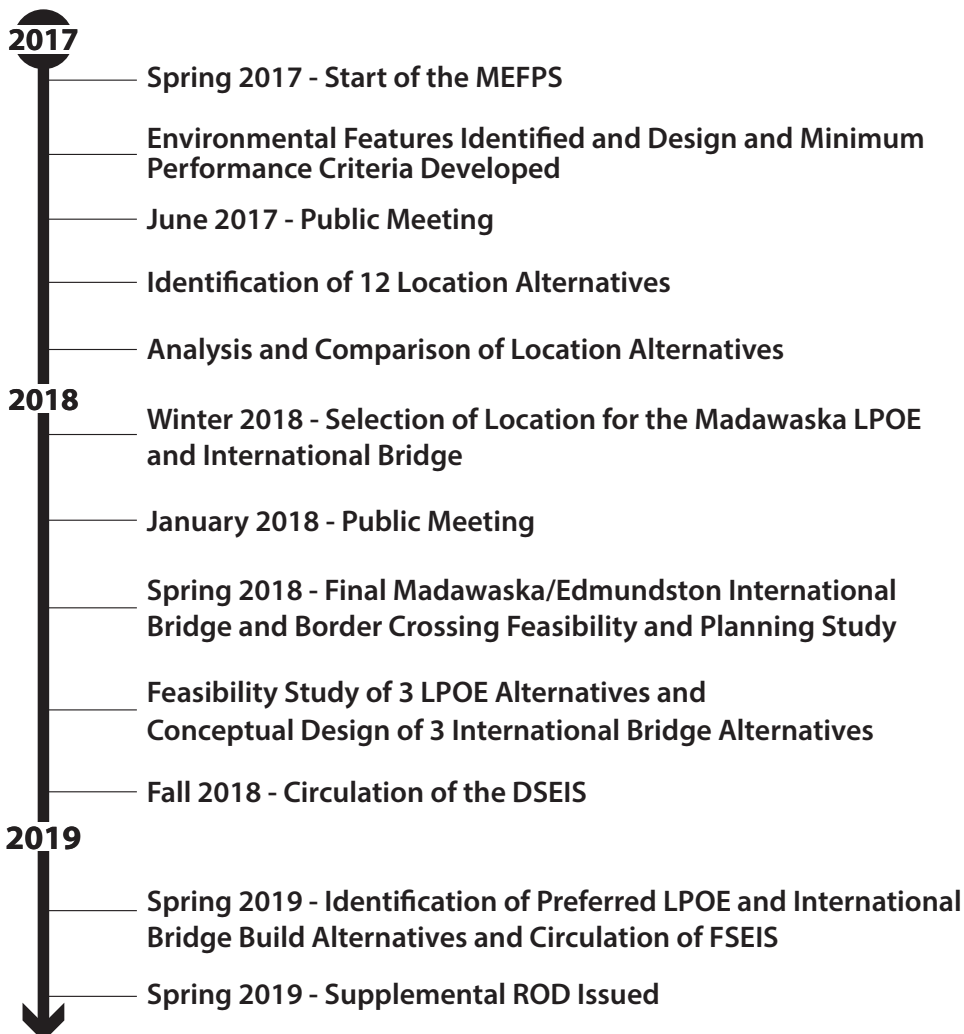
Permit or Approval	Agency	Description
International Boundary Commission Approval	International Boundary Commission	The International Boundary Commission regulates land uses and is responsible for maintaining a 10-foot clear zone on both sides of the border.
Order of Approval in accordance with the International Boundary Waters Treaty Act of 1909	International Joint Commission	International Joint Commission makes decisions on projects that affect the natural level and flow of water across the boundary to help prevent and resolve disputes over shared waters.
Bridge Permit	USCG	The Coast Guard permits the location and plans for bridges and causeways and imposes conditions relating to the construction, maintenance, and operation of bridges in the interest of public navigation.
Secretary of State approval of agreements between countries	U.S. Department of State (DOS)	DOS must approve agreements between countries before they are finalized. Examples of agreements that may require approval are those governing design, construction, operation, and maintenance of the International Bridge.
Natural Resources Protection Act Permit	MDEP	Permit is for projects in, on, over, or adjacent to protected natural resources. Protected resources are coastal wetlands, great ponds, rivers, streams, significant wildlife habitat, and freshwater wetlands.
Section 401 Water Quality Certification	MDEP	Section 401 Water Quality Certification is required to ensure that the project would comply with state water quality standards.

A. Introduction

The results of the MEFPS identified a preferred location for the new LPOE and a preferred corridor for the International Bridge that was supported by the GSA, MaineDOT, CBP, NBDTI, PSPC, and the CBSA. Many alternatives, including some that were studied in the 2007 FEIS and other studies (see Chapter 1.B.), were identified and 12 were developed and analyzed before a preferred location for the LPOE and a preferred corridor for the new International Bridge were identified (Exhibit 2.1). As part of developing and analyzing a preferred location for the LPOE and a preferred corridor for the new International Bridge, social, economic, and natural features, and potential impacts were taken into consideration and extensive public involvement occurred.

The preferred location for the Madawaska LPOE is a parcel of land, to the west of the existing LPOE and the Twin Rivers facility, that is currently owned by the U.S. government.

Exhibit 2.1 - Alternatives Development Timeline



Chapter Contents

- 2.A. Introduction
- 2.B. Conceptual Alternatives Development
- 2.C. Range of Reasonable Alternatives Retained for Further Study
- 2.D. Alternatives Considered for the LPOE and Dismissed from Further Study
- 2.E. Other Considerations

Purpose of this Chapter

Chapter 2 presents the alternatives analysis. It introduces the range of reasonable action alternatives developed to meet the study's purpose and need. It identifies those alternatives retained for or dismissed from more detailed study and the reasons for their retention or dismissal.

The preferred corridor for the new International Bridge connects the USA-owned property to the existing Edmundston POE, as the PSPC and the CBSA noted that the POE was adequate for the foreseeable future and there are no plans to modify or expand it (MaineDOT, et al., 2018).

Following the identification of a preferred location and corridor, the GSA identified, developed, and analyzed three build alternatives that could potentially satisfy the project's purpose and need for the LPOE; the FHWA and MaineDOT identified, developed, and analyzed three conceptual build alternatives for the new International Bridge. In developing and analyzing alternatives, the GSA, FHWA, and MaineDOT consulted with regulatory and resource agencies at the federal and state levels, local officials, industry, and the public. The alternatives for the LPOE and International Bridge were compared to the No-Build Alternative.

The build alternatives were designed to meet several key requirements:

Madawaska LPOE:

- A consolidated administration building (to the extent reasonably possible);
- Primary inspection areas for commercial traffic (trucks), passenger vehicles, and buses;
- Follow the sequential circulation of traffic flow of LPOEs, which requires certain buildings be adjacent to one another (e.g., the primary inspection areas must precede secondary ones);
- Secondary inspection areas for trucks, passenger vehicles, and buses;
- Adequate number and location of parking spaces and in proximity to the buildings they serve; and
- Adequate space to accommodate security measures.

International Bridge:

- Safe, visible approaches to the LPOE and POE;
- Least adverse impacts to the Saint John River; focus on preventing ice jamming;
- Cost effective (including overall life cycle costs); and
- A design life of at least 75 years.

B. Conceptual Alternatives Development

The alternatives identification, development, and analysis phase began with the MEFPS where natural and social environment features were identified, followed concurrently by the development of project design criteria and a design charrette to identify a range of conceptual alternatives, and a detailed analysis and comparison of the conceptual alternatives. Alternatives in the downtown business zone of the Town of Madawaska and City of Edmundston were considered as well as alternatives outside the downtown business zone. The analysis and comparison of the conceptual alternatives led to the identification of a location for the new LPOE and two corridors for the International

Bridge to evaluate further. The study resulted in the identification of a preferred location and for the new LPOE and corridor for the International Bridge (MaineDOT, et al., 2018).

Following the identification of a preferred location and corridor, the GSA identified, developed, and analyzed three build alternatives that could potentially satisfy the project's purpose and need for the LPOE; the FHWA and MaineDOT identified, developed, and analyzed three conceptual build alternatives for the new International Bridge (MaineDOT, et al., 2018).

1. Alternatives Development Process

The alternatives development process began with the identification of transportation, natural, social, and cultural features in the study area. Once features were identified, a design charrette was held to develop the design criteria and a range of conceptual alternatives for analysis and comparison (MaineDOT, et al., 2018).

a. Features Identification

Aerial photography of the region was used to help identify the transportation, natural, social, and cultural features in the area and as a base map for adding other features information, the conceptual alternatives, and quantifying potential adverse impacts (USGS, 2008). The features information was supplemented with select information based on visual observations in the study area.

b. Design Criteria and Minimum Performance Criteria for Ports of Entry

Concurrent with the identification and understanding of land use, transportation, and environmental and social features in the study area, design and minimum performance criteria for developing the conceptual alternatives for the LPOE and the International Bridge to satisfy the project's purpose and need were developed.

Ports of Entry

For the alternatives in the downtown business zone of the Town of Madawaska, it was assumed that approximately 10 acres would be needed to accommodate a modern LPOE that satisfies the GSA's and the CBP's requirements.

For the alternatives in the downtown business zone of the City of Edmundston, the PSPC and CBSA stated that the existing Edmundston POE meets their current needs and no changes are required or planned for the foreseeable future.

For the alternatives outside the downtown business zone of the Town of Madawaska and City of Edmundston, the POEs were conceptually planned using properties approximately 20 acres in size within which approximately 15 acres would be impacted and converted to government use.

Highway and Bridge Criteria

For the International Bridge and the highways approaching it, the MaineDOT's and the NBDTI's highway and bridge design guides, requirements, and standards were reviewed and a set of project-specific standards was created for developing the conceptual alternatives (Exhibit 2.2).

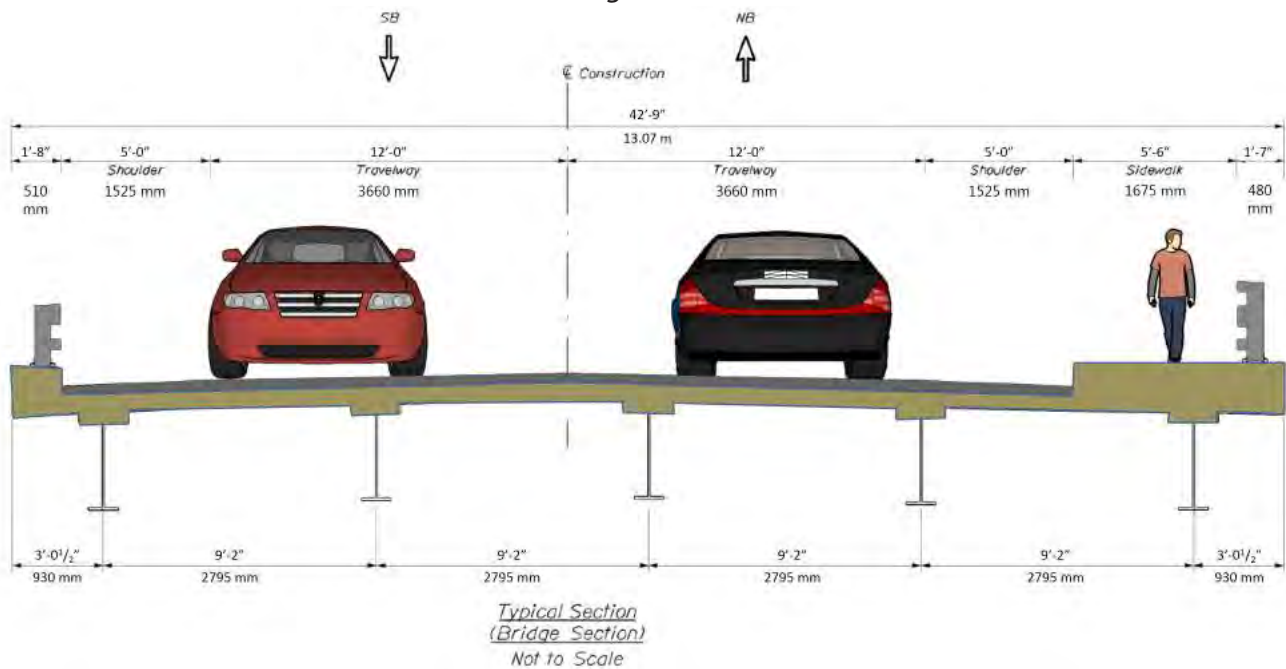
In general, the conceptual designs for the International Bridge and the highways approaching it consisted of two travel lanes, each 12 feet wide, shoulders approximately 5 feet wide, and on the International Bridge, a sidewalk approximately 5 feet, 6 inches wide (Exhibit 2.3). When crossing over the railroads, a minimum vertical clearance

Exhibit 2.2 - Highway and Bridge Design Criteria

Topic or Item	Maine Standard	New Brunswick Standard	Project Standard
Bridge			
Design Life - years	100	75	75 - 100
Lane Width	12 feet	3.66 meters	12 feet
Shoulder Width	4-10 feet	2.5 meters	5 feet (greater in some areas to satisfy snow storage requirements)
Sidewalk Width	5 feet, 6 inches (plus railing or barrier width)	2.0 meters	5 feet, 6 inches
Railroad Horizontal Clearance	Provide American Railway Engineering and Maintenance-of-way Association (AREMA) clearance if possible, maintain existing as a minimum.	—	—
Railroad Vertical Clearance	23 feet, 0 inches	7.163 meters	23 feet, 0 inches; verify with CNR.
Railroad Collision	—	—	CNR will require a collision wall to protect any substructure elements.
Bridge Freeboard	4 feet minimum with 10 feet preferred	—	4 feet minimum with 10 feet preferred
Highway			
Design Speed	25 miles/hour	40 kilometers/hour	25 miles/hour (40 kilometers/hour)
Lane Width	12 feet	3.66 meters	12 feet (3.66 meters)
Shoulder Width	4-10 feet	2.50 meters	5 feet (possibly greater to satisfy snow storage and off-tracking requirements)
Sidewalk Cross Slope	1%	2%	1%
Minimum Radius	144 feet (43 meters)	55 meters (183 feet)	183 feet (55 meters)
Stopping Sight Distance	155 feet (46.5 meters) at level grade	45 meters (150 feet)	155 feet (46.50 meters)
Maximum Grade %	5%	5%	5%

Source: CBSA, et al., 2017

Exhibit 2.3 - Cross Section of the International Bridge



of 23 feet was used. Over the Saint John River, the height of the existing International Bridge or greater was used.

c. LPOE and International Bridge Design Charrette

Following the development of the project’s purpose and need and the identification and understanding of land use, transportation, and environmental and social features in the study area, the GSA, CBP, MaineDOT, NBDTI, PSPC, and the CBSA held a design charrette to identify a conceptual range of alternatives to be developed and analyzed further.

The PSPC and CBSA noted that the Edmundston POE was adequate for the foreseeable future and have no plans to modify or expand it.

The proposed alternatives were grouped into two broad categories: 1) alternatives within the downtown business zone of the Town of Madawaska and City of Edmundston, and 2) alternatives outside the downtown business zone of the Town of Madawaska and City of Edmundston.

The agencies first discussed alternatives within the downtown business zone of the Town of Madawaska and the City of Edmundston (which included rehabilitating the existing International Bridge):

- The GSA and the CBP were generally only willing to build/own/operate a new border crossing further upstream, in the area of the U.S. government-owned property. They cited the existing LPOE location and its immediate vicinity as extremely constrained and inadequate for operating a modern LPOE.

- MaineDOT would be willing to build/own/operate an alternative near the existing International Bridge with the exception of rehabilitating the existing bridge. They were not supportive of rehabilitating the International Bridge since the existing bridge geometry does not meet current needs, is widely regarded as functionally obsolete, and rehabilitating the existing International Bridge could provide a crossing only for the short term (i.e., approximately 30 years into the future).
- The NBDTI would be willing to build/own/operate a new crossing immediately upstream, immediately downstream, or further upstream. They felt construction on the alignment of the existing International Bridge was not feasible considering the need for Twin Rivers to maintain its operations and the need to maintain the use of the International Bridge during construction. Rehabilitation of the International Bridge would not allow current geometric standards to be met, the bridge is widely regarded as functionally obsolete, and rehabilitation could provide a crossing only for the short term (i.e., approximately 30 years into the future). They expressed a desire to avoid an excessively skewed crossing of the river, if possible.
- The CBSA was amenable to each alternative and location with the exception of reconstructing the bridge on the existing alignment as traffic would continue to queue into Edmundston.

The project sponsors discussed alternatives outside the downtown business zone of the Town of Madawaska and City of Edmundston either upstream or downstream:

- Three of the four project sponsors would be willing to build/own/operate facilities outside of the downtown business zone; the PSPC and the CBSA believed the Edmundston POE is adequate for the foreseeable future and have no plans or funding to relocate the POE to maintain two POEs in proximity to one another.
- No agency would support maintaining the existing international crossing if a new crossing was constructed out of the downtown business zone.
- MaineDOT, the GSA, and the CBP would be willing to build/own/operate a new crossing either upstream or downstream.
- The NBDTI would be willing to build/own/operate a new crossing downstream and potentially upstream.
- All project sponsors agreed moving forward that an out-of-downtown business zone option would substantially increase the project schedule and cost.

At the design charrette, 12 alternatives were identified – 6 in the downtown business zone of the Town of Madawaska and City of Edmundston, 2 upstream, and 4 downstream – to be conceptually developed and evaluated.

It was noted, regardless of location, that the Madawaska LPOE would remain a “permit port” for the immediate future. A permit POE is one that can inspect and pass only those commercial vehicles with a permit – generally, commercial traffic from regular importers who have local deliveries.

2. LPOE and International Bridge Alternatives Development and Screening
Representatives of GSA, CBP, MaineDOT, NBDTI, PSPC, and the CBSA attended a charrette to identify a preliminary range of alternatives to be conceptually developed for

analysis and comparison. The outcome of the meeting was the identification of potential locations for new border crossings – consisting of both POE and an International Bridge – in the downtown business zone and outside of the downtown business zone. Alternatives included building a new bridge on one of several new alignments downtown (maintaining the existing Edmundston POE), and building new border crossings at various locations outside of the downtown business zone (two upstream and four downstream).

These preliminary alternatives were further refined into 12 feasible alternatives: 6 downtown business zone alternatives, and 6 out-of-downtown business zone alternatives (Exhibit 2.4). An alternatives analysis matrix was created and used to compare and contrast the alternatives.

Probable costs were developed for six primary construction elements associated with the entirety of this project: Edmundston POE, Madawaska LPOE, bridge demolition, approach roadway, elevated roadway construction, and bridge construction. Not all construction elements applied to each alternative. For each conceptual alternative, the probable cost of the Madawaska LPOE was assumed to be \$90 million. Except for the bridge rehabilitation alternative, the probable cost of bridge demolition was estimated to be \$4 million. The probable costs for the project action were estimated to be \$101 million to \$165 million (MaineDOT, et al., 2018).

a. Downtown Alternatives Summary

The six downtown alternatives were focused on maintaining the existing Edmundston POE and building a new Madawaska LPOE and International Bridge. Leaving the Edmundston POE in place and constructing the new Madawaska LPOE on developed land lowered the overall cost, construction timeframe, and environmental impacts as compared to the out-of-downtown business zone alternatives. The probable costs of these alternatives were estimated to be approximately \$101-\$110 million. The downtown business zone alternatives require limited Canadian funding for changes to the POE, and federal funding for the LPOE has been secured.

Keeping the border crossing in the downtown business zone maintains the community cohesion between Madawaska and Edmundston, causing the fewest disruptions to the community. While traffic patterns would be altered due to the change in location of the Madawaska LPOE, the overall commute time between Madawaska and Edmundston would not change substantially.

Alternatives 1 through 5 propose relocating the Madawaska LPOE to a U.S. government-owned parcel to the west of the existing Madawaska LPOE. To construct the LPOE, the parcel would need to be graded extensively and the area of Martin Brook to the west of the property would need to be avoided; Martin Brook is within Town of Madawaska's resource protection zone and governed by Madawaska's Shoreland Zoning Ordinance (Town of Madawaska, 2009). The U.S. government-owned parcel was purchased from Twin Rivers in 2011. Since then, Twin Rivers has continued to operate on the parcel

under a license agreement with the U.S. These operations would need to cease before construction of the LPOE could begin. Businesses and residences surrounding the parcel, including Twin Rivers and the MNR, would be disrupted by construction activities at the new LPOE. Twin Rivers would no longer be bisected by Bridge Avenue and the Madawaska LPOE, which could lead to improved operations.

Alternatives 3, 4, and 5 provide separation between the existing and new International Bridge, between the existing and new Madawaska LPOE, and would allow the existing border crossing to remain operational during construction.

Alternative 6 proposes acquiring land in downtown Madawaska to the south of the existing LPOE. This alternative would also displace businesses and residences and disrupt others during construction of the LPOE.

b. Out-of-Downtown Alternatives Summary

The six out-of-downtown alternatives would move the border crossing and related facilities out of the downtown business zone. Moving the border crossing out of downtown would require constructing two new POEs (U.S. and Canada) and a new bridge.

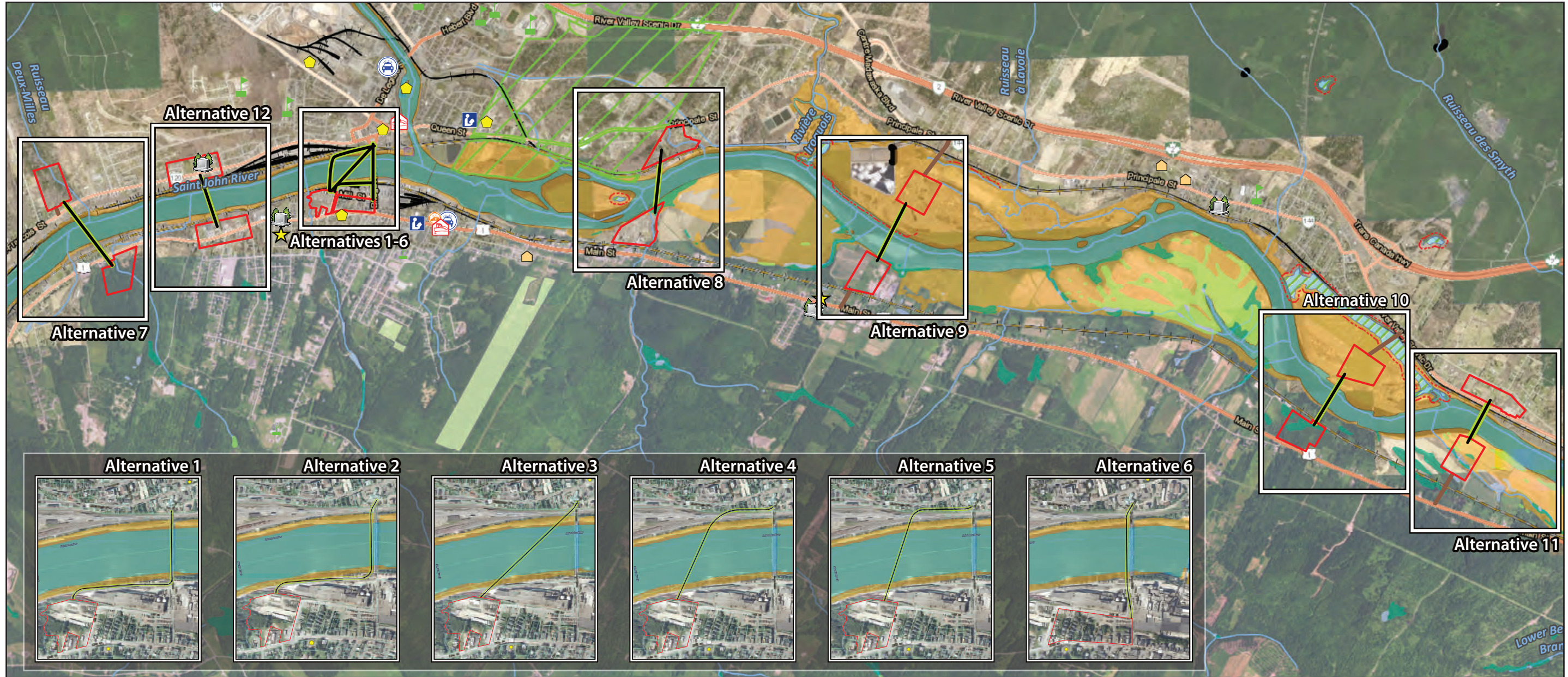
Alternatives 7 through 12 would include more space for the POEs, improved traffic circulation on the POE sites, few to no direct impacts to the Twin Rivers facilities and railroad lines, and would not cause the existing border crossing to shut down during construction.

The new border crossing facilities would be constructed on land that would need to be acquired, increasing the overall cost, construction timeframe, and environmental impacts when compared to the downtown business zone alternatives. In addition, PSPC and CBSA have no plans or funding for a new POE.

The probable costs of the out-of-downtown alternatives range from approximately \$139 million to \$164 million and would be contingent on concurrent federal funding authorization and appropriation of both the United States and Canadian governments for a new LPOE and POE, respectively, further risking delayed opening of a new border crossing.

MaineDOT and NBDTI have agreed that if any of the out-of-downtown alternatives would be constructed, the existing bridge and border crossing facilities in the downtown business zone would be removed from service. Removing the existing border crossing would reduce community cohesion between Madawaska and Edmundston, causing substantial disruption to the communities, and substantially increasing overall commute time between Madawaska and Edmundston. The increased travel time would increase shipping costs to businesses such as Twin Rivers which operates on both sides of the border.

Exhibit 2.4 - Alternatives Summary Map



<p>Legend</p> <ul style="list-style-type: none"> ★ Cultural Resource Building Point 📖 Libraries 🚒 Fire Station / EMS 🪦 Cemeteries 🚑 Ambulance 🎓 School 🏡 Park 		<ul style="list-style-type: none"> 🚓 Police 🏠 Nursing Homes <p>Alternative Bridge Options</p> <ul style="list-style-type: none"> — Bridge — Bridge ROW — Port of Entry Property — Road — Railroads 		<ul style="list-style-type: none"> — Stream Flowline --- Regulated Wetlands Map (RWM)-30-meter Buffer — Man-made Structures to Access Water ▨ Canada Crown Lands ▨ Conserved Lands - ME ▨ Aboriginal Lands 🟡 Flood 2008 - Canada 🟠 Protected Wellfields 		<p>Waters</p> <ul style="list-style-type: none"> 🟢 Freshwater Emergent Wetland 🌿 Freshwater Forested/Shrub Wetland 💧 Freshwater Pond 🌿 Wetlands - Canada 🌊 Stream/River Area 	
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1 inch = 3,000 feet

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

Inset images of Alternatives 1 through 6 not to scale
 Source: MaineDOT, 2018

c. Alternatives Considered in Greater Detail

After developing and analyzing the 12 conceptual alternatives, the alternative locations outside of the downtown business zone were dismissed from further consideration due to the reasons listed below, and the focus needed to turn to maintaining an international crossing in the downtown business zone.

The reasons for choosing to focus attention only on the alternatives in the downtown business zone were overall practicality, adverse impacts to people and natural resources, cost, and schedule:

- Keeping the border crossing in the downtown business zone respects the needs and requests of PSPC and the CBSA to use the existing Edmundston POE in its present form to the extent possible;
- It maintains the direct connectivity and community cohesion that exists between Madawaska and Edmundston;
- Many of the out-of-downtown locations would have resulted in greater impacts to wetlands, floodplains, or both;
- The overall cost of the project – considering the new bridge, POEs, and roadway connections – is substantially lower in the downtown business zone than at an out-of-downtown location;
- A new border crossing in the downtown business zone can be delivered several years sooner than an out-of-downtown location.

Madawaska LPOE

The GSA and CBP previously considered replacing the Madawaska LPOE. In 2007, after completing its *Madawaska Border Station FEIS*, the GSA issued a ROD. It had determined that the Madawaska LPOE should be relocated to land south and west of Twin Rivers and Mill Street. The U.S. Government purchased properties from Twin Rivers and the Aroostook Medical Center as the future site of the LPOE. As part of the MEFPS, GSA and CBP reviewed the FEIS and ROD site determination and considered other possibilities in the downtown business zone within a reasonable distance upstream and downstream of the Edmundston POE. The GSA and CBP ultimately reaffirmed the decision in the FEIS and ROD site as their preferred location because:

- Other sites in the downtown business zone are too small and would not provide sufficient space, are too costly, and/or too disruptive to the operations of Twin Rivers.
- Constructing the new LPOE on this site away from the existing LPOE would allow CBP operations to continue during construction.
- Constructing the new LPOE on this site would provide better traffic circulation, shorter traffic queues, and faster processing times than the other alternatives considered in the downtown business zone.

Bridge Alignments

Concurrent with the GSA's and CBP's considerations and analysis of a location for a new LPOE in the downtown business zone, the MaineDOT and NBDTI developed

and evaluated conceptual alternative alignments for a new International Bridge between the LPOE and POE.

Based on the analysis of the conceptual alternative alignments, MaineDOT and NBDTI dismissed Alternative 1, the rehabilitation of the existing International Bridge (Exhibit 2.4). The evaluation concluded Alternative 1 was not reasonable and prudent based on:

- **Bridge Condition:** A detailed inspection and assessment of the existing bridge, completed in July 2017, identified numerous areas of advanced deterioration and corrosion. Following the inspection, a structural evaluation of the bridge was completed. The evaluation concluded that the observed deterioration significantly decreased the load carrying capacity of the structure. Based on the evaluation results, a load restriction was placed on the bridge in October 2017, limiting traffic to vehicles weighing five tons or less. Rehabilitating the bridge to safely carry heavier loads was deemed impractical given the widespread level of deterioration, the lengthy bridge closures required to complete the work, and the significant financial investment required to address structural deficiencies.
- **Bridge Geometry:** The geometry of the existing bridge is narrow, does not meet current standards, and limits traffic operations. The narrow roadway and tight turns at each end of the structure do not accommodate the turning movements of large trucks.
- **Connectivity with new Madawaska LPOE:** The new LPOE will be approximately 1,500 feet to the southwest of the existing LPOE. If rehabilitation of the bridge in its existing location were pursued, construction of an elevated roadway along the bank of the Saint John River linking the existing bridge with the new LPOE would be required. The construction of an elevated roadway would add substantial cost to the construction of the LPOE; result in substantial impacts to Twin Rivers and MNR during construction; substantially impact paper mill and railroad operations after construction; substantially increase the long-term maintenance, operations, and security costs for the LPOE; and hinder CBP from safely and effectively securing the border.

Alternative 2, which consisted of construction of a new bridge parallel to and immediately upstream of the existing bridge, was also dismissed. The evaluation concluded Alternative 2 was not reasonable and prudent based on the same challenges associated with connecting the new bridge and LPOE cited for Alternative 1.

Alternative 3 consisted of building a new, straight bridge directly connecting the existing Edmundston POE to the USA-owned property. Alternative 3 was retained for further study.

Alternatives 4 and 5 both proposed to build an elevated roadway on the the northern bank of the Saint John River and connecting it to the USA-owned property with a slightly skewed bridge. The similarity between Alternatives 4 and 5 was discussed and evaluated. It was concluded that the radius of Alternative 5 was likely smaller

than desirable, and the radius of Alternative 4 was likely larger than desirable. Based on this assessment, Alternatives 4 and 5 were dismissed and a new Alternative, Alternative 4.5, was created, representing a hybrid of the two.

Alternative 6 proposed building a new bridge immediately upstream of the existing bridge and placing a new Madawaska LPOE on property in downtown Madawaska between Main Street and Mill Street that would need to be acquired before construction could begin. Alternative 6 was dismissed from further study because it required significant land acquisition.

Following the initial screening of the downtown alternatives, a more refined evaluation of the two remaining alternatives, Alternatives 3 and 4.5, was conducted. Alternative 4.5 was refined to minimize property impacts in Edmundston. Alternative 3 was refined to provide a more desirable angle of entry into the Madawaska LPOE and the Edmundston POE.

Detailed evaluation of Alternatives 3 and 4.5 included the development of conceptual horizontal and vertical roadway geometries, discussions with MaineDOT and NBDTI regarding bridge type, conceptual bridge pier and abutment layouts, establishment of conceptual limits of retaining walls and slope grading, completion of initial assessments of constructability and utility impacts, and development of refined construction cost estimates. The construction cost estimates were developed assuming Alternative 3 would be a five-span segmental concrete structure. The use of segmental concrete was assumed to allow for longer span lengths which, in turn, minimizes both the number of piers in the river and ice jamming potential. Alternative 4.5 was assumed to include construction of a seven-span steel plate girder or steel tub girder structure due to the shorter bridge and span lengths required.

The MaineDOT and the NBDTI considered both alternatives in detail, and lists of positives and negatives of each alternative were created (MaineDOT, et al., 2018):

Alternative 3

<i>Pros:</i>	<i>Cons:</i>
<ul style="list-style-type: none"> • Direct line of sight for CBSA officers; • Less property impacted in Edmundston; • Minimizes the number and size of retaining walls in Edmundston; and • Does not require significant modifications to the Edmundston POE. 	<ul style="list-style-type: none"> • Cost is greater than Alternative 4.5; • Approach angle of bridge creates an inefficient orientation for the Madawaska LPOE; • Very little queueing area between bridge and inspection booths at the Edmundston POE; • Constructability in Edmundston could add cost and/or require additional property acquisition; and • More piers required unless a bridge type with longer spans is used.

Alternative 4.5

Pros:	Cons:
<ul style="list-style-type: none"> • Lower initial cost; • Approach angle of bridge allows for more effective orientation of the Madawaska LPOE; • Approach roadway allows for longer queueing area for vehicles and potential for two lanes between bridge and inspection booths; • Improved constructability – larger laydown area in Edmundston; and • Fewer piers. 	<ul style="list-style-type: none"> • Size of retaining wall in Edmundston; • The use of closed-circuit television would be required to offset the loss of line of sight of CBSA personnel; • Greater property impacts in Edmundston; and • A pier would be required within CNR’s rail yard.

d. Identification of a Preferred Corridor for the International Bridge

Further discussion and analysis of Alternatives 3 and 4.5 identified several concerns associated with Alternative 4.5. Alternative 4.5 provided the lowest-cost solution of the two remaining alternatives; however, it would also result in more significant property impacts in Edmundston and require an extensive retaining wall along the property owned by CNR. Additionally, the alternative was undesirable for the CBSA because it would not provide adequate line of sight for their officers, require the installation of a closed-circuit television system, and require additional security measures along the access road which would parallel Rue Saint François.

An analysis of Alternative 3 identified a potential improvement for this alternative consisting of the addition of curvature to both ends of the bridge as they pass over the CNR and MNR tracks. The modification could allow for a more desirable orientation approaching both POEs and improved line of sight for border security personnel; additional evaluation of this modification would be performed during preliminary design of the bridge.

Following detailed evaluation and review, the modified Alternative 3 was identified as the preferred location alternative. Considering the conceptual nature of the work and uncertainty surrounding the final layout of the Madawaska and Edmundston POEs, a 150-foot-wide corridor (extending 75 feet left and right of the anticipated bridge centerline) was created (Exhibit 2.5). An evaluation of the potential social, economic, and environmental impacts, and extensive public involvement took place prior to identifying the preferred corridor for the International Bridge.

The corridor illustrates the anticipated bridge alignment while recognizing that future coordination, design, and constructability assessments may necessitate minor changes to bridge skew, curvature, and location of abutments. No significant modifications to the rail infrastructure owned by CNR or MNR would be required. Coordination would be required during the design phase of the International Bridge regarding design details (e.g., the inclusion of crash walls at abutments and piers), track outages, and temporary access required for construction.

C. Range of Reasonable Alternatives Retained for Further Study

At the preferred location for the LPOE and within the preferred corridor for the International Bridge, the GSA, FHWA, and MaineDOT considered alternatives.

1. *The No-Build Alternative*

NEPA and other legislation affording the consideration and protection of social, economic, and environmental features requires the consideration of a No-Build Alternative. In addition to fulfilling a requirement, discussion of this alternative serves two important purposes: 1) it may be a reasonable alternative, especially where the adverse impacts of a proposed action are high and the need is relatively minor; and 2) the No-Build Alternative serves as a benchmark against which the impacts of the other alternatives can be compared. Ideally, the consequences of the No-Build Alternative are fully developed for a future point in time.

Under the No-Build Alternative, operation of the existing LPOE and International Bridge would continue at their existing locations and using the existing facilities. Except for regular maintenance and minor repairs to the existing infrastructure and equipment, no new construction or demolition would take place. No new inspection and travel lanes, facilities, or bridge structure would be built. This alternative would not require the acquisition of property. The International Bridge would continue to deteriorate, and the posted weight limit would remain in effect. Over time, the amount of time and cost to maintain the International Bridge would increase.

The No-Build Alternative does not satisfy the project's purpose or need because, without new construction, there would be no appreciable improvement to the current operating conditions at the LPOE or International Bridge. The CBP and other agencies' staff would continue to operate with inadequate space to efficiently perform their duties and carry out their agencies' missions. The small size and inefficient configuration of the facility would result in continued operating inefficiency. The queuing of traffic from the City of Edmundston would not only remain but may increase over time. Outbound inspection of vehicles and pedestrians would continue to be difficult and hazardous for LPOE staff.

The existing International Bridge would continue to deteriorate, the five-ton weight restriction would remain in effect, the amount of time and cost to maintain the bridge would increase, and, eventually, the bridge would become unsafe for use. The movement of traffic across the border would become increasingly more difficult as the weight limit would be reduced again until the bridge would need to be closed completely. Commercial and other large trucks that rely on the Madawaska/Edmundston border crossing would need to continue to take detours to use the other border crossings at Fort Kent/Clair to the west (approximately 40 miles roundtrip) or Van Buren/Saint Leonard to the east (approximately 48 miles roundtrip), increasing operating costs for companies such as Twin Rivers. The community cohesion between

Madawaska and Edmundston would be severed as the bridge conditions worsen and all traffic is prevented from crossing the border at Madawaska/Edmundston.

The No-Build Alternative was retained for further consideration and detailed analysis, and its consequences were fully developed, to allow equal comparison to the build alternatives, and to help decision-makers and the public understand the ramifications of taking no action.

2. Madawaska Land Port of Entry

Following the preparation of the 2018 MEFPS, the GSA began further study of the USA-owned property and developed alternatives for the LPOE.

The build alternatives were conceptually developed to meet several key building, processing, and parking area requirements:

- A consolidated administration building.
- Primary inspection areas for commercial traffic (trucks), passenger vehicles, and buses.
- Secondary inspection areas for trucks, passenger vehicles, and buses.
- Adequate number and location of parking spaces.
- Adequate space to accommodate security measures.

Each of the build alternatives was conceptually developed to follow the sequential circulation of traffic flow of a LPOE, which requires certain buildings be adjacent to one another. For instance, the primary inspection areas must precede secondary ones. Administration should be consolidated to the extent possible in one building. Parking for visitors and employees should be in a convenient location in proximity to the buildings they serve.

The GSA identified three build alternatives for the new Madawaska LPOE: Alternative A, Alternative B, and Alternative C.

a. Alternative A

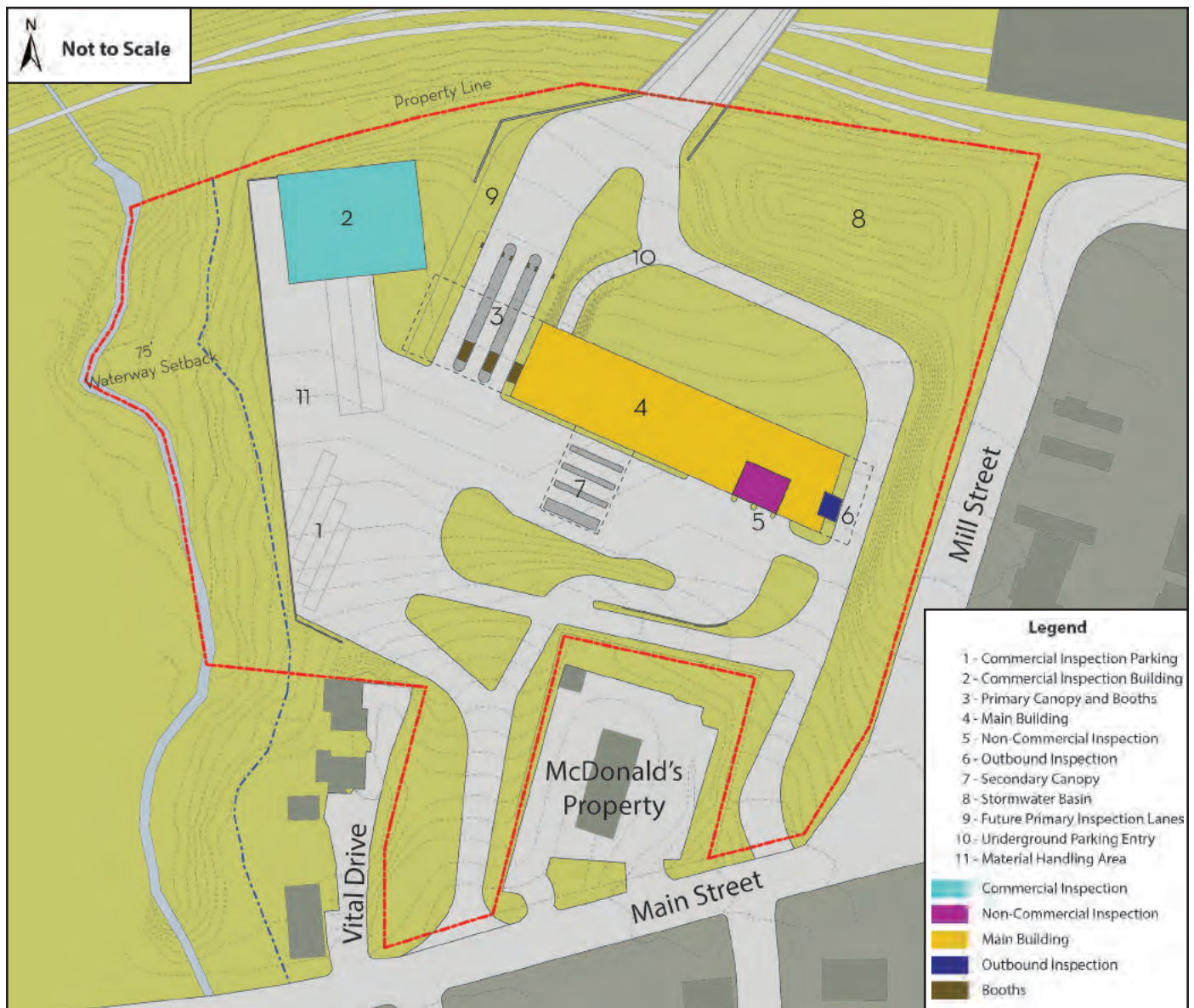
Alternative A was developed on the existing USA-owned property with no additional private property. The existing USA-owned property has few opportunities for access to and from Main Street. As a result, outbound and inbound driveways are separated by the McDonald's property (Exhibit 2.6). The outbound driveway is close to the intersection at Mill Street, and the inbound driveway is located between Vital Drive and the exit from the McDonald's property parking lot and drive-through (MPdL Studio, 2018).

The required distance between a driveway and an unsignalized intersection, as per MaineDOT access management guidelines, should be at least 100 feet from the edge of the existing intersection and the edge of the new driveway. Alternative A does

not meet this guideline, as the outbound driveway is approximately 35 feet from the Mill Street intersection. The location of the inbound driveway has a favorable sight distance at the crest of the vertical curve of Main Street, but does pose some challenges because of the proximity of other driveways. Vehicles entering and exiting the McDonald's lot or Vital Drive would obstruct the view of traffic traveling along Main Street. The locations of the outbound and inbound driveways in proximity to other driveways and an intersection raise safety concerns and the potential for traffic accidents (MPdL Studio, 2018).

Canadian B-trains (double trailers) would need to travel on Main Street for a short distance, since this alternative does not provide direct access from the USA-owned property to Mill Street (Exhibit 2.7). Canadian B-trains are not permitted on Maine

Exhibit 2.6 - Madawaska LPOE Alternative A

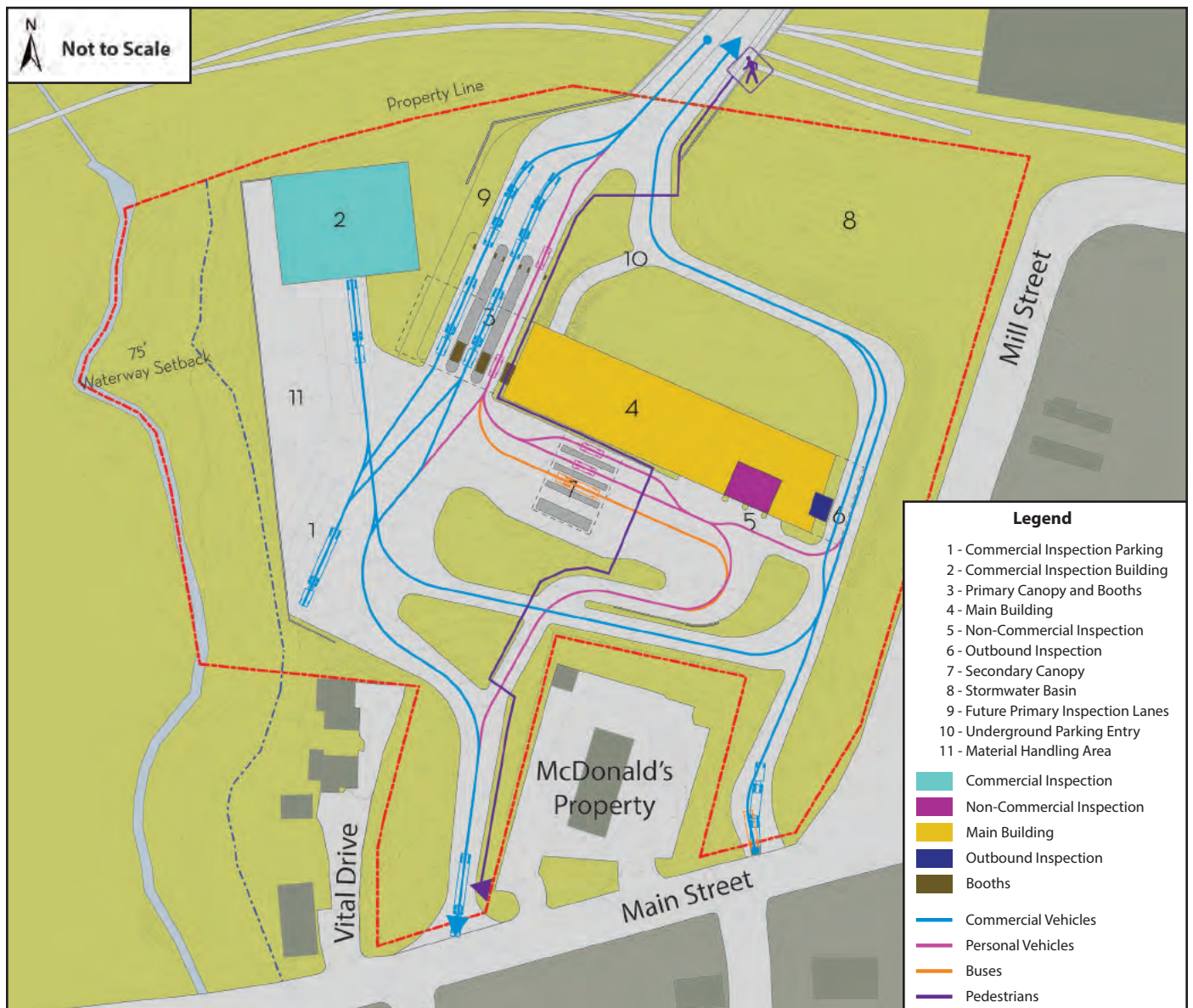


Source: MPdL Studio, 2018

State Highways, but they are used frequently by Twin Rivers. Alternative A would require MaineDOT to permit B-trains on Main Street between the new LPOE and Mill Street (MPdL Studio, 2018).

The USA-owned property limits the arrangement of the buildings and parking areas for the LPOE. Most notably, Alternative A would require underground parking to meet the projected parking demands of the LPOE. Due to limited space and the topography of the site, access to the underground parking would be on the north side of the main building, beyond the outbound inspection booth. Visitor parking is not practical. The functionality of the commercial inspection parking is compromised due to limited space. The materials handling area, the commercial inspection staging

Exhibit 2.7 - Alternative A Traffic Flow Patterns



Source: MPdL Studio, 2018

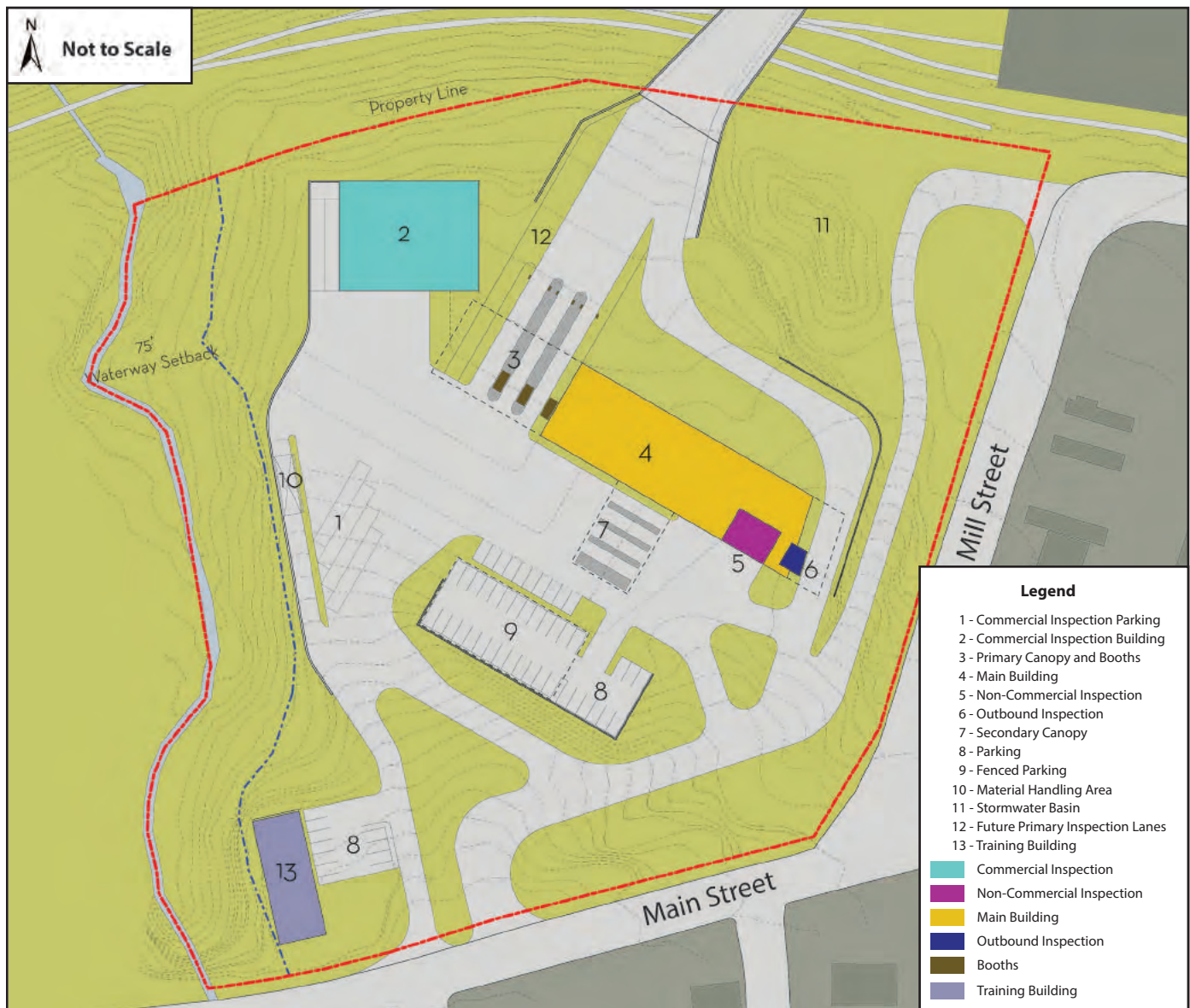
lot, and the impound lot are in proximity to one another, resulting in vehicle conflicts (MPdL Studio, 2018).

Alternative A has approximately 60 percent of the open space necessary to accommodate seasonal snow storage. A considerable portion of this open space is on the north of the site, where snow storage is less practical. Alternative A is not ideally compatible with the adjacent McDonald’s property and Vital Drive properties and does not have open space for future expansion (MPdL Studio, 2018).

b. Alternative B

Alternative B requires the acquisition of additional private property (Exhibit 2.8). Several options were pursued, exploring the acquisition of only the McDonald’s

Exhibit 2.8 - Madawaska LPOE Alternative B



Source: MPdL Studio, 2018

property, and/or the Vital Drive properties. GSA concluded that acquiring these two sets of properties had significant benefit for the flow of traffic and pedestrians around and through the new LPOE. Therefore, Alternative B would require the acquisition of the McDonald's property and the Vital Drive properties (MPdL Studio, 2018).

Alternative B allows for improved visibility for vehicles entering and exiting the new LPOE as well as favorable locations for ingress and egress from Main Street. The inbound approach to Main Street is at the crest of a vertical curve which allows good visibility in both directions. The outbound driveway is more than 100 feet away from the intersection of Mill Street and Main Street, which meets MaineDOT's required distance between a driveway and an unsignalized intersection. The distance from the Mill Street intersection, in conjunction with the elimination of Vital Drive and the McDonald's parking lot and drive-through entrances, reduces the potential for vehicle crashes and safety concerns (MPdL Studio, 2018).

Alternative B provides direct inbound access from the USA-owned property to Mill Street, reducing traffic on Main Street (Exhibit 2.9). Given the additional land, Alternative B accommodates the necessary length of road to descend from the bridge landing elevation to Mill Street without a steep grade. Alternative B does not include a direct outbound connection to Mill Street. Alternative B would require MaineDOT to permit Canadian B-trains to use Main Street between Mill Street and the new LPOE. The outbound inspection booth is at the east end of the main building and offers visibility of the approaching traffic (MPdL Studio, 2018).

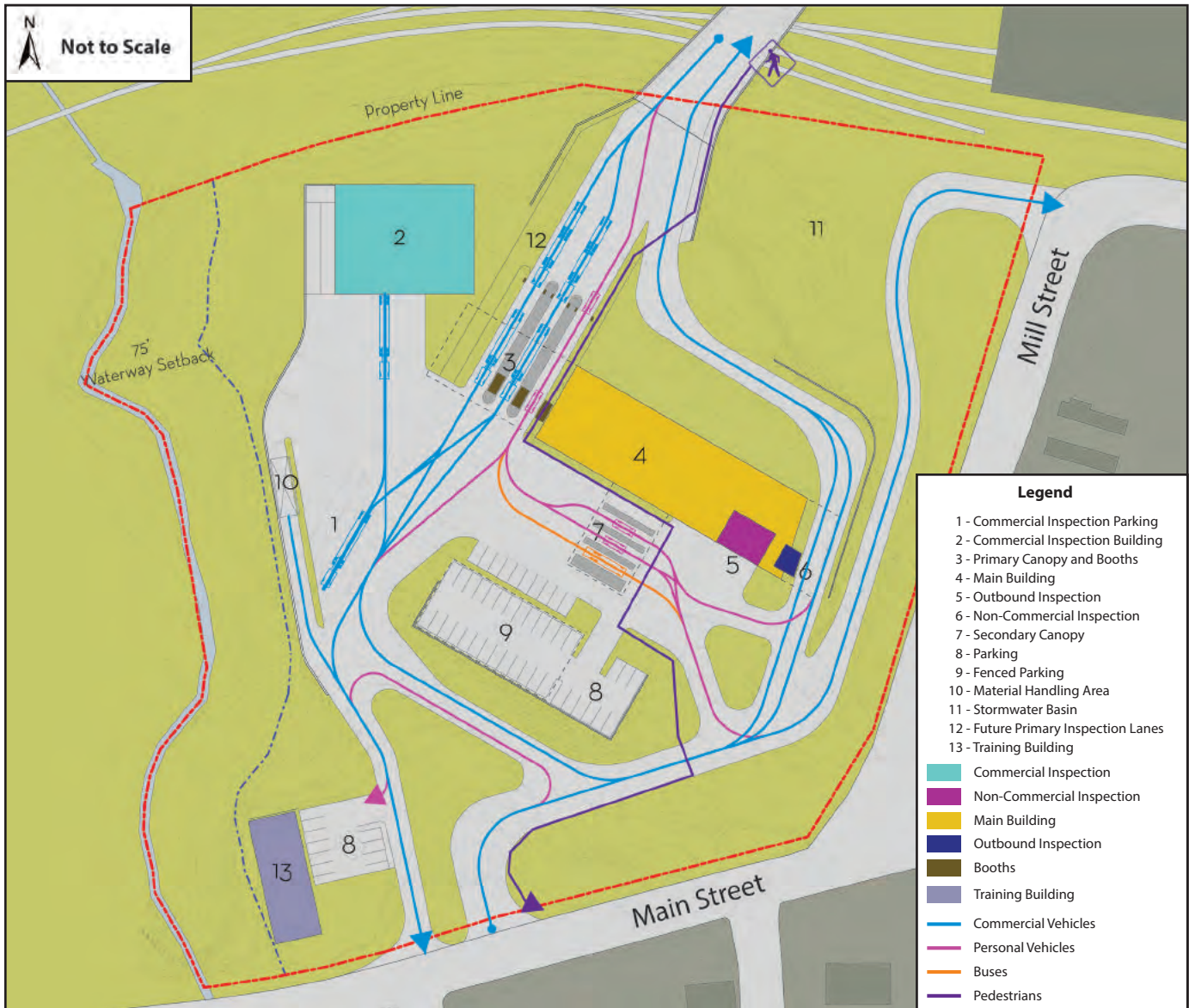
Alternative B has space for all necessary LPOE activities and flow of traffic. Surface parking is centrally located and easily accessible from all buildings. There is room to place the materials handling area away from other buildings, and the commercial truck inspection staging area has space to operate efficiently. Alternative B has space for future expansion. There is open space to accommodate snow storage. The amount of visibility impeded by snow storage would be reduced compared to Alternative A (MPdL Studio, 2018).

c. **Alternative C**

Alternative C requires the acquisition of additional private property (Exhibit 2.10). Alternative C would require the acquisition of the McDonald's property and the three Vital Drive properties (MPdL Studio, 2018).

Alternative C allows for improved visibility for vehicles entering and exiting the new LPOE. The inbound approach to Main Street is at the crest of a vertical curve, allowing good visibility in both directions. The outbound driveway is more than 100 feet from the intersection of Mill Street and Main Street, which meets MaineDOT's requirements. The distance from the Mill Street intersection, in conjunction with the elimination of Vital Drive and the McDonald's parking lot and drive through entrances, reduces the potential for vehicle crashes and safety concerns (MPdL Studio, 2018).

Exhibit 2.9 - Alternative B Traffic Flow Patterns



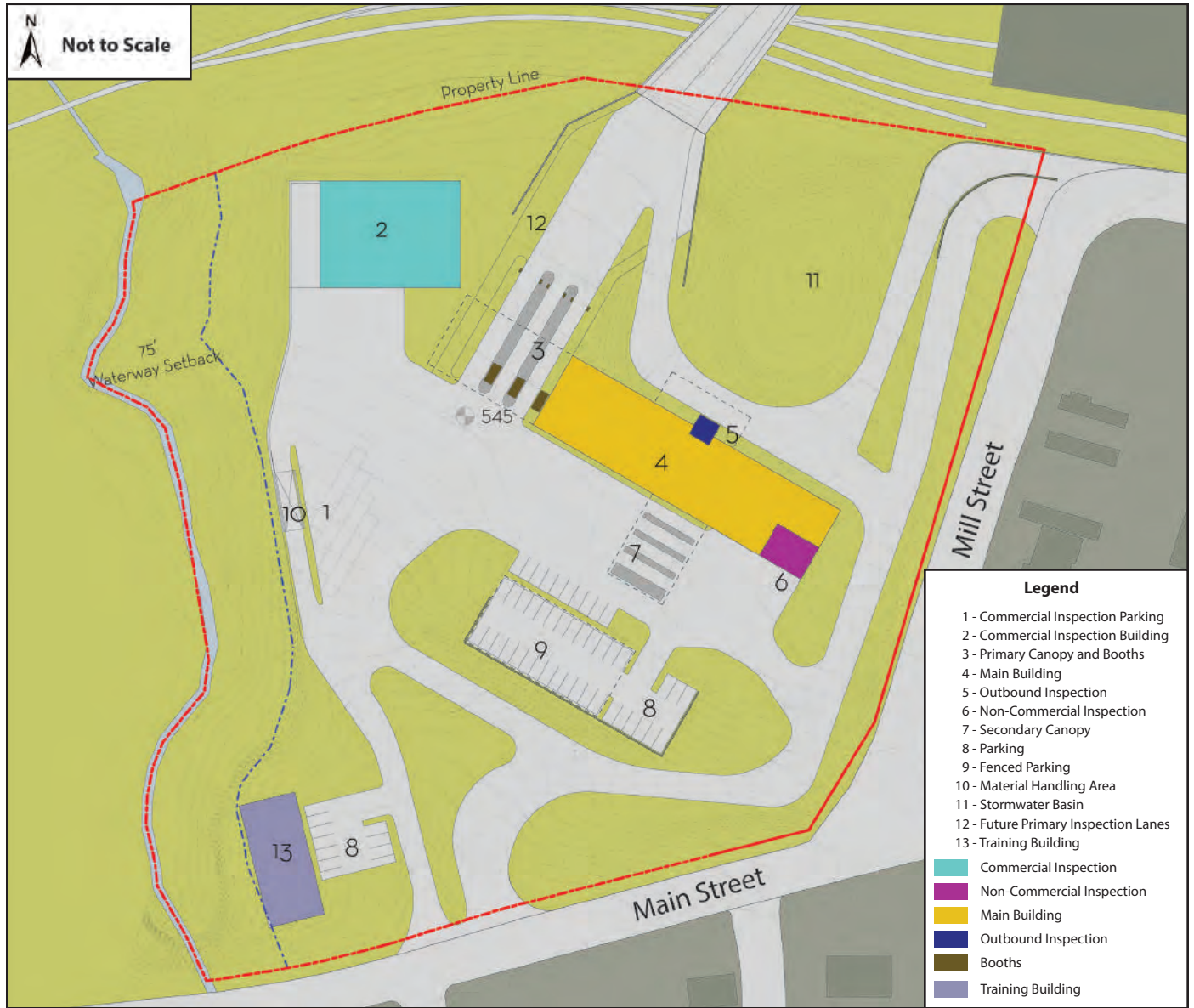
Source: MPdL Studio, 2018

Alternative C provides direct inbound and outbound access to and from the USA-owned property to Mill Street (Exhibit 2.11). Given the additional land, Alternative C accommodates the necessary length of road to descend and ascend from the bridge landing elevation to Mill Street without a steep grade. This would enable Canadian B-trains, currently not permitted on Maine State Highways but frequently used by Twin Rivers, to access Mill Street, both inbound and outbound. The outbound inspection booth is on the north side of the main building (MPdL Studio, 2018).

Alternative C has space for all necessary LPOE activities and flow of traffic. Surface parking is centrally located and easily accessible from the buildings. There is room to place the materials handling area away from other buildings, and the commercial truck inspection staging area has space to operate efficiently. Alternative C has space

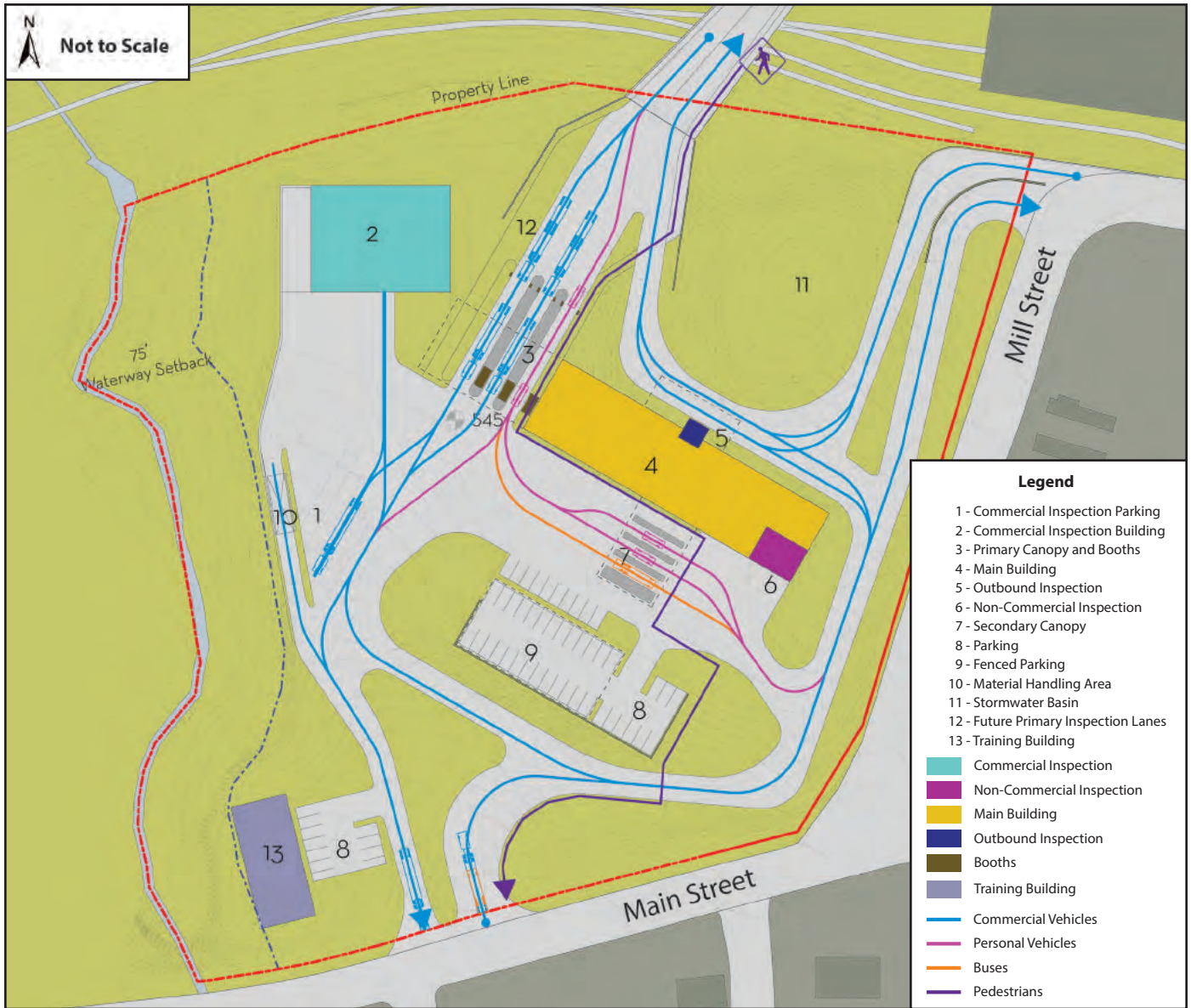
for future expansion. There is open space to accommodate snow storage. The amount of visibility impeded by snow storage would be reduced compared to Alternative A (MPdL Studio, 2018).

Exhibit 2.10 - Madawaska LPOE Alternative C



Source: MPdL Studio, 2018

Exhibit 2.11 - Alternative C Traffic Flow Patterns



Source: MPdL Studio, 2018

3. International Bridge

Following the identification of the preferred corridor for the International Bridge, the GSA, FHWA, and MaineDOT agreed to eliminate the horizontal curvature from each end of the bridge to allow for the construction of a straight bridge, thereby reducing the complexity of design and construction of it and lowering the cost of constructing it while still maintaining security and line of sight.

Conceptual bridge alternatives were developed and evaluated. This evaluation consisted of limited assessments of geotechnical conditions, hydrology and hydraulics, bridge horizontal and vertical alignments, span configuration, foundation and substructure type, and superstructure type.

It is recognized that bridges with fewer spans have greater girder/concrete depths. These larger structure depths may unacceptably reduce clearances over the MNR and CNR rail lines. Conversely, increasing the number of spans would require the construction of additional piers which would increase in-stream construction, the potential for ice jams, and construction costs.

Based on these considerations, the construction of a steel girder or segmental concrete bridge with either five, six, or seven spans was selected. Additional options consisting of steel tub girders and precast segmental concrete were briefly considered but dismissed after being judged less desirable based on the proposed bridge size, geometry, and constraints during construction.

Each of the bridge alternatives share the following features:

- The bridge typical section (Exhibit 2.3).
- The horizontal bridge alignment.
- The vertical alignment for the bridge generally decreases from north to south, maintaining minimum vertical clearance required over the MNR and CNR rail lines.
- Stub or cantilever abutments between the LPOE and POE facilities and the adjacent railroad tracks.
- Portions of the bridge ends would be flared to accommodate the turning movements of large trucks.
- Access roads along the banks of the Saint John River and temporary work trestles traversing portions of the river would be necessary to complete construction of the piers and portions of the superstructure.

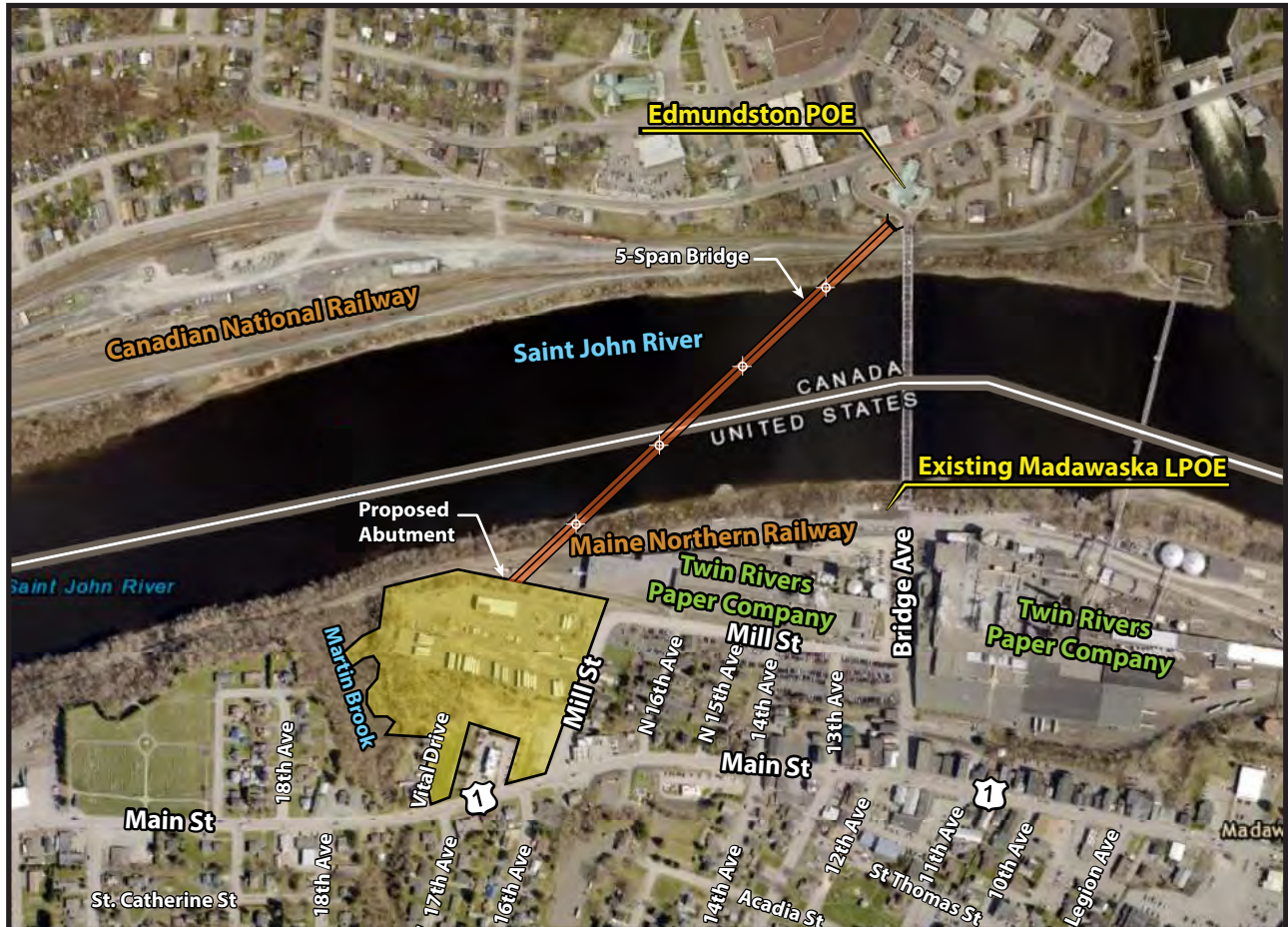
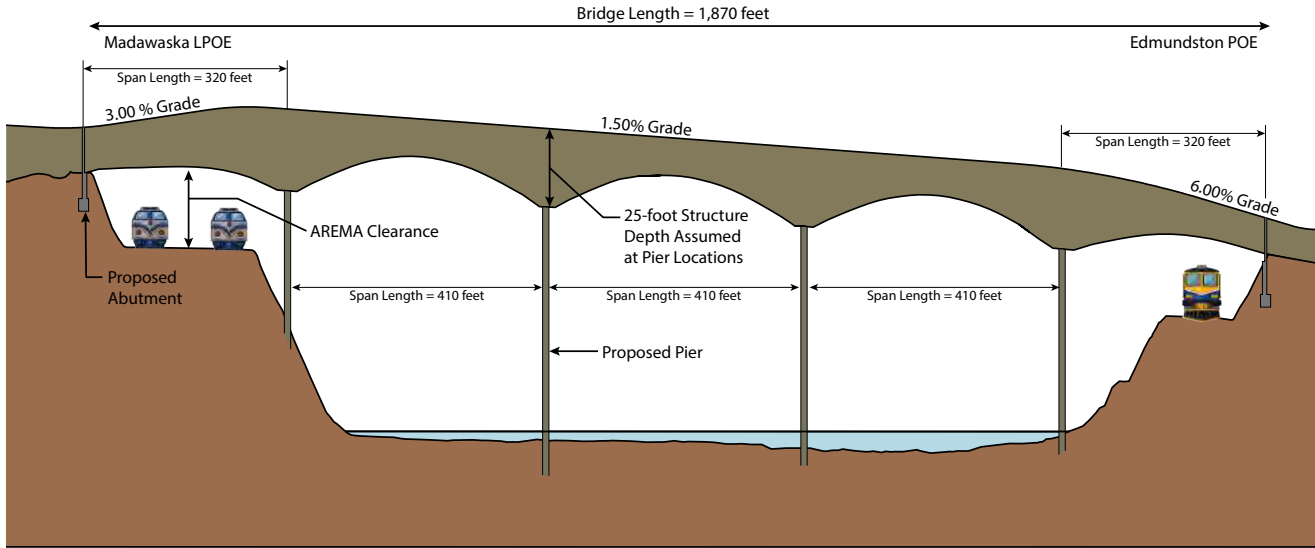
a. **Bridge Alternative 1: Cast-in-place Segmental Concrete Bridge with Five Spans**

Bridge Alternative 1 consists of the construction of a cast-in-place segmental concrete bridge with five spans (Exhibit 2.12). Bridge Alternative 1 is approximately 1,870 feet in length with two 320-foot spans at either end and three 410-foot interior spans. Of the four piers needed, one would be on the bank of the Saint John River in Madawaska, two would be in the Saint John River, and one would be near the bottom of the riverbank in Edmundston.

The vertical profile for Bridge Alternative 1 is governed by the required clearance over the MNR and CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

b. **Bridge Alternative 2: Steel Plate Girder Bridge with Six Spans**

Bridge Alternative 2 consists of the construction of a steel girder bridge with six spans (Exhibit 2.13). Bridge Alternative 2 is approximately 1,840 feet in length with two 260-foot spans at either end and four 330-foot interior spans. Of the five piers



Legend		Exhibit 2.12 - Bridge Alternative 1 Plan and Profile	
	Pier (Type to be Determined)		Bridge
	USA-owned Property	 Not to Scale	

Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

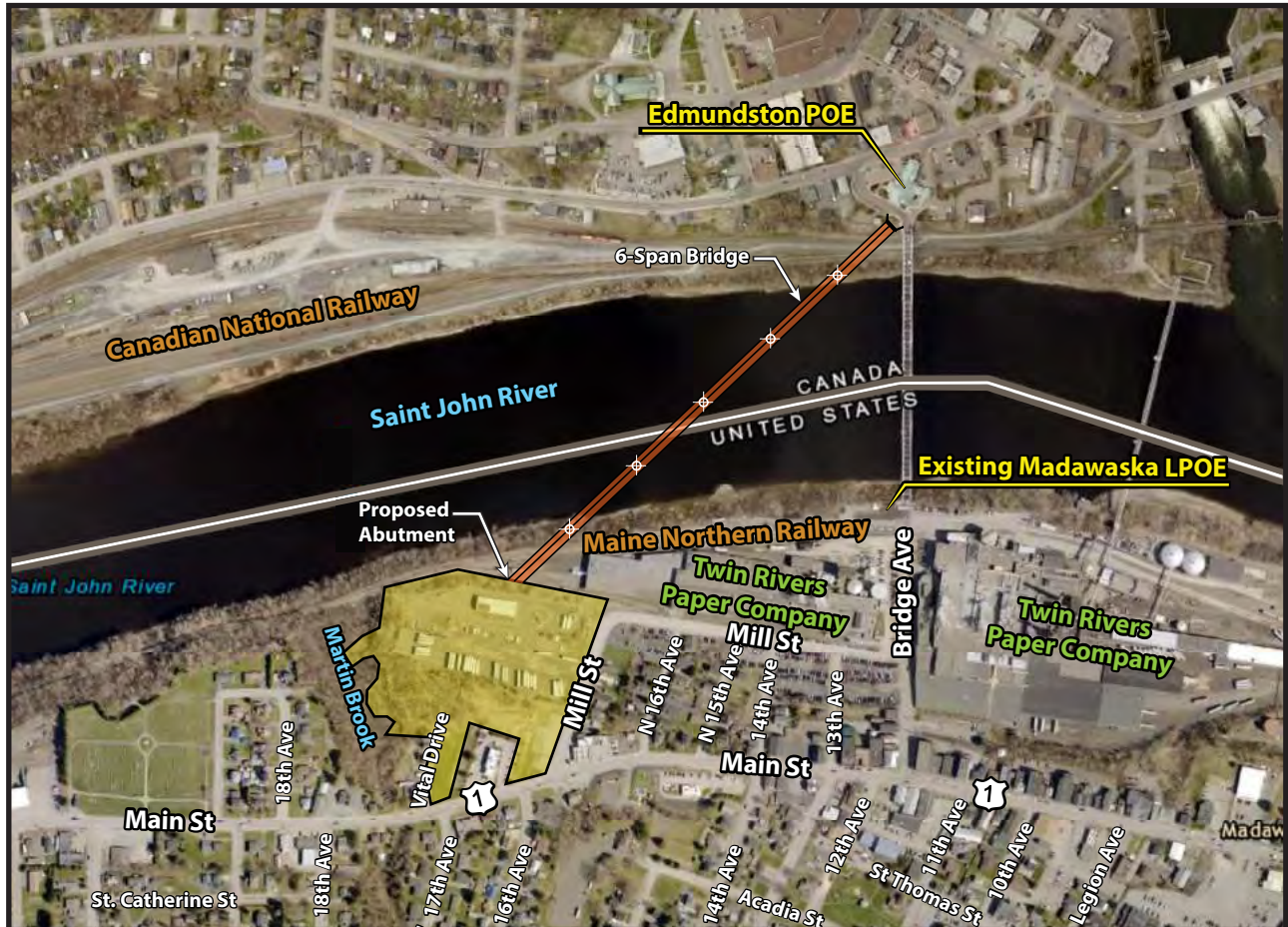
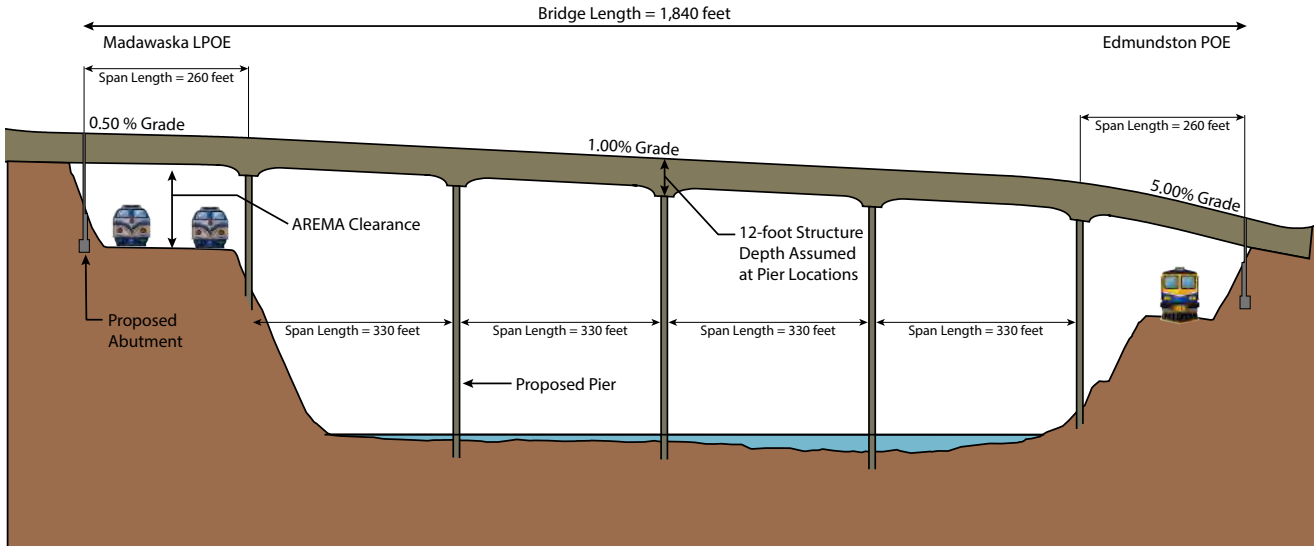
needed, one would be near the top of the riverbank in Madawaska, three piers would be in the river, and one would be near the bottom of the riverbank in Edmundston.

The vertical profile for Bridge Alternative 2 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

c. **Bridge Alternative 3: Steel Plate Girder Bridge with Seven Spans**

Bridge Alternative 3 consists of the construction of a steel girder bridge with seven spans (Exhibit 2.14). Bridge Alternative 3 is similar to Bridge Alternative 2 but has an additional pier and span to reduce span lengths, reduce girder depths, and generally improve the shipment and erection of the steel girders. Bridge Alternative 3 is approximately 1,870 feet in length with a span of 180 feet connecting to the new Madawaska LPOE, a span of 215 feet connecting to the Edmundston POE, and five 295-foot interior spans. Of the six piers needed, one would be positioned between the MNR railroad tracks in Madawaska, four piers would be in the river, and one would be on the riverbank in Edmundston.

The vertical profile for Bridge Alternative 3 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.



Legend

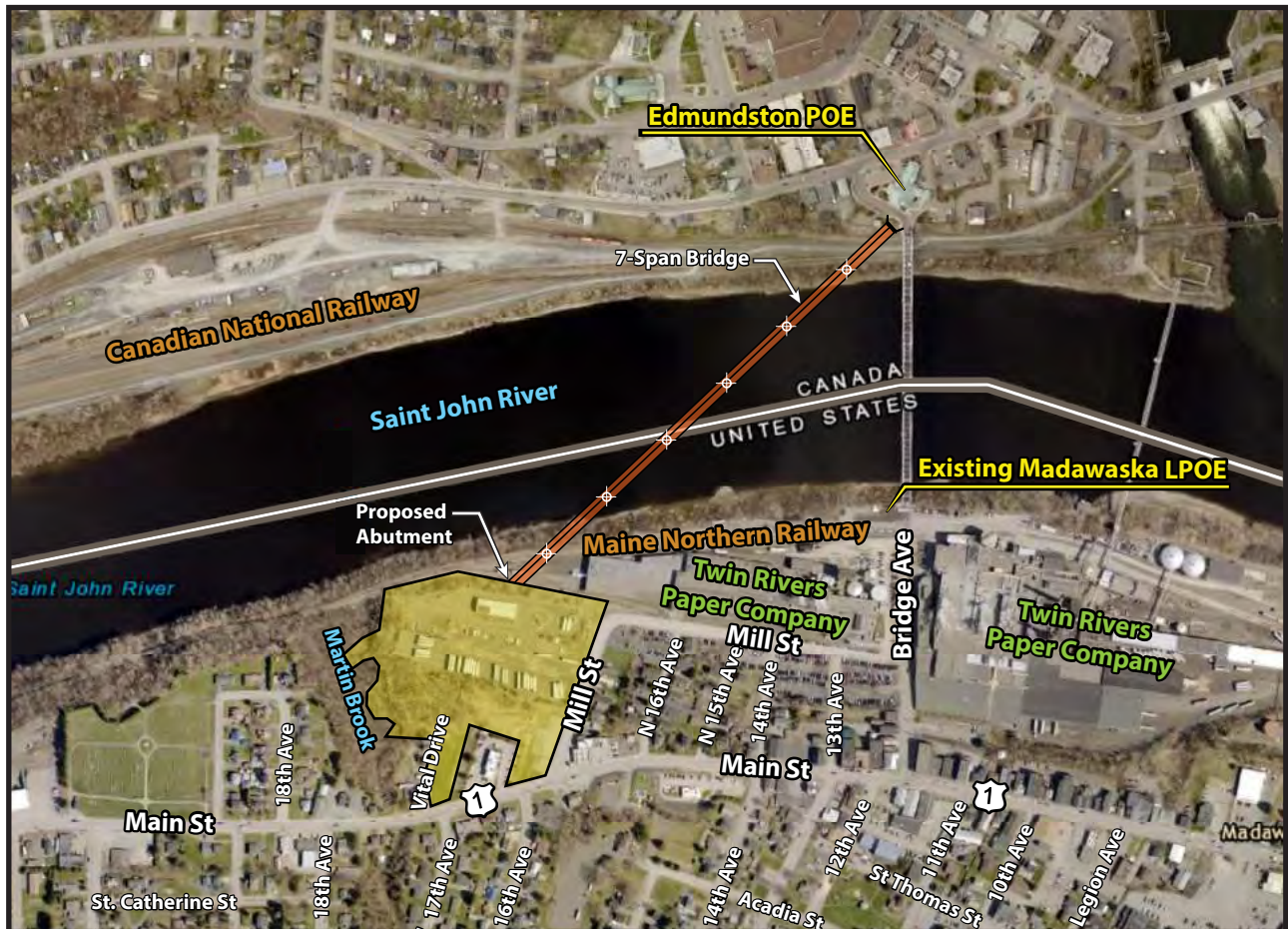
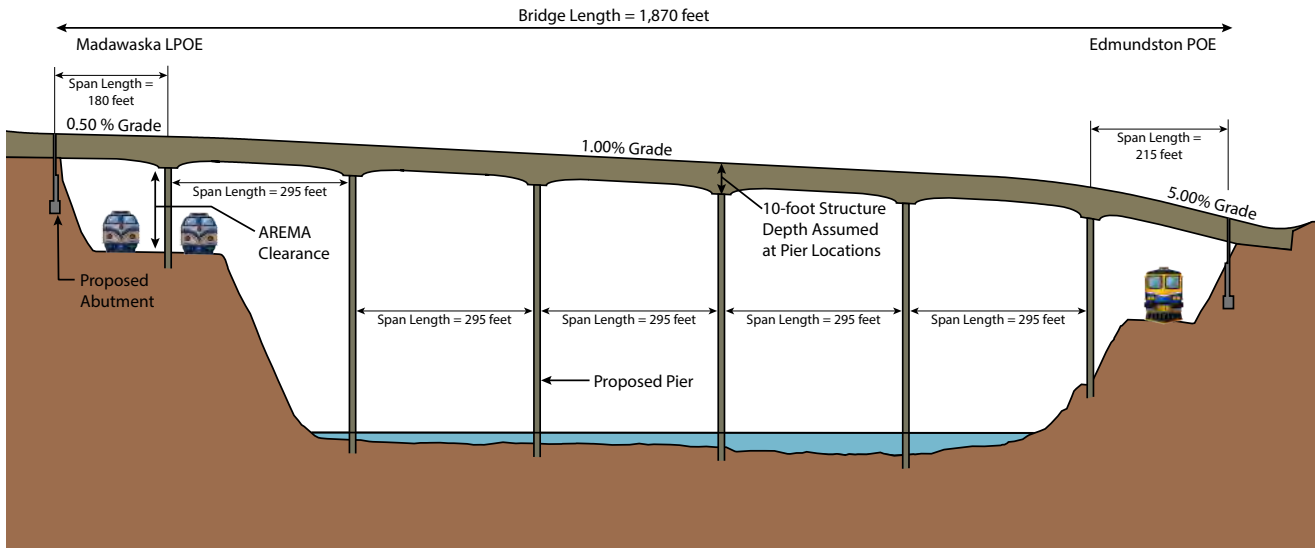
Pier (Type to be Determined)
 Bridge
 USA-owned Property

Exhibit 2.13 - Bridge Alternative 2
Plan and Profile

Not to Scale

Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

New Madawaska Land Port of Entry and International Bridge Project



Legend		Exhibit 2.14 - Bridge Alternative 3 Plan and Profile	
	Pier (Type to be Determined)		Bridge
	USA-owned Property	 Not to Scale	

Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

D. Alternatives Considered for the LPOE and Dismissed from Further Study

During the development of the 2007 FEIS on the Madawaska LPOE, three alternatives – known as A, B, and C – were considered for replacing the Madawaska LPOE. Each of these alternatives relied upon the existing International Bridge for cross-border travel or the rehabilitation or replacement of the International Bridge in its present location.

1. 2007 EIS Alternative A

2007 EIS Alternative A consisted of demolishing the existing Madawaska LPOE building, building new ones on the existing site, and expanding them in an attempt to meet CBP's required space standards and increased security requirements. This alternative located the LPOE between Twin Rivers and the Saint John River, straddling the MNR tracks (GSA, 2007).

Alternative A was not considered further because the LPOE building and site layout were not ideal, on-site traffic circulation was cumbersome, and security, while improved over existing conditions, would not fully meet the CBP's requirements. Additionally, Alternative A would likely have resulted in substantial disruption to operations of Twin Rivers and the MNR. Due to the many problems associated with this alternative and because other alternatives existed with substantially less adverse impact, Alternative A was dismissed from further consideration (MaineDOT, et al., 2018).

2. 2007 EIS Alternative B

2007 EIS Alternative B consisted of demolishing the existing LPOE building and constructing a new LPOE immediately south of the MNR tracks within Bridge Avenue and on property owned by Twin Rivers along Bridge Avenue and Mill Street (GSA, 2007).

Alternative B was not considered further because the LPOE building and site layout were not ideal, on-site traffic circulation was cumbersome, and security, while improved over existing conditions, would not fully meet the CBP's requirements. Additionally, this alternative would likely have resulted in substantial disruption to operations of Twin Rivers. Due to the many problems associated with this alternative and because other alternatives existed with substantially less adverse impact, Alternative B was dismissed from further consideration (MaineDOT, et al., 2018).

3. 2007 EIS Alternative C

2007 EIS Alternative C consisted of demolishing the existing LPOE building and constructing a new one along the MNR tracks, Bridge Avenue, and a portion of Twin Rivers parking areas adjacent to Mill Street (GSA, 2007).

Alternative C was not considered further because the site layout was not ideal, on-site traffic circulation was cumbersome, and security, while improved over

existing conditions, would not fully meet the CBP's requirements. Additionally, this alternative would likely have resulted in substantial disruption to operations of Twin Rivers. Due to the many problems associated with this alternative and because other alternatives existed with less adverse impact, Alternative C was dismissed from further consideration (MaineDOT, et al., 2018).

4. *Madawaska Port of Entry over a Portion of the Saint John River*

The GSA considered an alternative at the site of the existing LPOE that consisted of a raised platform extending over a portion of the Saint John River and a shorter International Bridge. The new LPOE would be sited on the platform integral with the shorter bridge and extend above the existing LPOE.

This alternative had many distinct disadvantages compared to other alternatives:

- It provided limited space for the LPOE. The maximum platform size that could be feasibly erected without major impact on the river or crossing the international boundary is less than 2.5 acres, which is far below the CBP's minimum operational requirements. It would have very limited space for on-site parking, traffic circulation, maintenance and delivery on site, and emergency vehicle access.
- It would require additional piers in the Saint John River, contributing to additional ice jamming.
- Snow removal would have been difficult and costly.
- It would have very high initial construction, operating, and life cycle costs.
- It would have required property from Twin Rivers and railroad.
- It would require shutdown of the existing LPOE, requiring the construction and operation of temporary facilities.

This alternative was dismissed due to the substantial concerns regarding overall viability, complexity of design and overall logistics including operation and maintenance, significant hydrologic and other environmental impacts, and high costs (MaineDOT, et al., 2018).

E. Other Considerations

1. Utilities

A license was issued to Fraser Companies Limited (currently Twin Rivers) in 1925 by the government of Canada to install utility lines on the existing International Bridge. The license has been updated several times, adding an agreement with the State of Maine, and allows (now) Twin Rivers to own and operate several utility lines, attached to the existing International Bridge. The license agreement states that the utility lines can occupy space on the International Bridge; however, installation, maintenance, and removal costs would be the sole responsibility of Twin Rivers (GOC, 1925).

Twin Rivers has stated that there may be other unmapped utility lines buried in the area of the new International Bridge and LPOE (HNTB and Twin Rivers, 2017). The potential for utility lines existing in the area would be investigated during final design.

The International Bridge currently supports four utility lines – two 24-inch, one 18-inch, and one 16-inch diameter – on the downstream side of the bridge, and one 12-inch diameter utility line, as well as a 10-inch-by-10-inch wooden duct bank on the upstream side of the bridge. Only the two 24-inch diameter utility lines are believed to be operational. Therefore, the relocation of only these two lines is assumed to be required (HNTB, 2018).

The options for relocating the two 24-inch bridge-mounted utility lines are:

- Conversion of existing bridge to a utility structure to be owned by Twin Rivers,
- Relocation to the downstream utility bridge owned by Twin Rivers,
- Directional drilling of new utilities under the river,
- Direct burial of new utilities under the river, and
- Relocation to the new International Bridge (HNTB, 2018).

a. Conversion of the Existing Bridge to a Utility-only Structure

This relocation approach leaves the utilities in their existing location. Upon completion of the new International Bridge, ownership of the existing bridge would be transferred to Twin Rivers. Twin Rivers would become responsible for future bridge inspection, maintenance, operations, and bridge removal costs (HNTB, 2018).

A significant investment would be needed to convert the existing bridge into an acceptable utility-only structure. Both the CBP and the CBSA would require that the existing bridge deck be completely removed at one end of the bridge or otherwise rendered impassable to prevent its use as a bridge. Moreover, neither agency has resources available to cover the cost of required security upgrades including cameras, gates, access control, and security monitoring (HNTB, 2018).

Additional concerns include how snow removal operations would impact the Edmundston POE, potential confusion for users unfamiliar with the crossing, and potential conflicts between the existing bridge and the proposed replacement bridge at the Edmundston POE (HNTB, 2018).

The NBDTI has expressed concerns that allowing the existing bridge to remain would increase the possibility of ice jamming in the river. There is no way to effectively mitigate this concern because it is derived from the proximity, location, and number of piers in the river for the existing and replacement bridges (HNTB, 2018).

Given the significant uncertainty regarding the required bridge modifications and security improvements required for this option, a conceptual cost was not developed.

b. Relocation to the Existing Utility Bridge

Twin Rivers owns and maintains a utility crossing located approximately 900 feet downstream of the existing International Bridge. Relocation would require installation of a utility trench of approximately 750 feet from the bridge abutment at the Madawaska LPOE to the pipeline bridge. The two utility lines would be supported by the pipeline bridge across the river. An additional 50 feet of utility trench is assumed on the Canadian side to match into the existing line location. (HNTB, 2018).

This option decouples the utilities from the bridge replacement and allows increased flexibility in timing of the relocation. Furthermore, relocating the existing utility lines to the pipeline bridge does not have the concerns associated with conversion of the existing bridge. However, the existing utility bridge was not designed to carry these utility lines and would likely require strengthening to safely carry the utilities. The cost excluding required strengthening is estimated to be approximately \$3 million (HNTB, 2018).

c. Directional Drilling

Directional drilling is a steerable trenchless construction method that allows the installation of pipes or conduits without disturbing the surrounding area. The method uses a drilling rig to install the conduit or pipe in a shallow arc and is used when traditional excavation is not feasible or cost effective. One advantage of this option is that the utilities are no longer impacted by replacement of the bridge or bridge maintenance (HNTB, 2018).

Directional drilling was investigated for relocation of the existing bridge-mounted utilities under the river and adjacent railroad tracks. The cost of this option was determined to be the most expensive of the relocation options. Additionally, there are technical issues that are difficult to fully evaluate at this stage which result in a significant contingency cost for this alternative. The cost to perform directional drilling for large pipes on the order of 12-inch diameter is approximately \$1,000 per linear foot per pipe, which does not include mobilization costs and site preparation for construction. While not all pipes on the bridge are of this size, it is commonly the maximum size that most contractors can perform. To provide an equivalent flow for the existing pipes on the bridge, Twin Rivers would need approximately eight 12-inch diameter pipes. Overall, the estimated cost for this alternative is \$17 million (HNTB, 2018).

d. Direct Burial

This option entails the excavation of a trench parallel to the existing bridge and placing the existing utilities into the utility trench. This option decouples the utilities from the bridge and minimizes the operational impact to Twin Rivers. The trench could be constructed using conventional excavation for the entire length except for the portions where the lines must cross the railroad tracks on both the U.S. and the Canadian sides of the river. In those locations, some other method would be

required, such as directional drilling, to avoid an outage for an extended period of time (HNTB, 2018).

However, there are several complications with direct burial. First, if directional drilling under the railroad tracks is used, it would be expensive to mobilize the drilling rig to locations on both river banks. Additionally, the steep slopes on both sides of the river make access, construction, and installation of the utility lines difficult. Furthermore, the restrictions typically required by railroads to prevent fouling the tracks and the difficult access due to the steep embankment slopes would complicate future maintenance activities that may be required. The estimated cost of this relocation option could be as high as \$7 million (HNTB, 2018).

e. **Relocation to the New International Bridge**

Under this relocation option, the utilities would be moved from the existing bridge to the proposed bridge. This option may require the installation of a utility trench of approximately 1,500 feet from the existing bridge abutment at the Madawaska LPOE to the proposed abutment, depending on the final location of these utilities on Twin Rivers property (HNTB, 2018).

This option requires the utility relocation to occur after construction of the proposed International Bridge is complete and prior to the likely demolition of the existing bridge; close coordination during design and construction would be required. Furthermore, by remaining on the bridge, Twin Rivers would potentially be affected by bridge maintenance activities and the final selection of superstructure type. The cost of this option is estimated to be \$6 million (HNTB, 2018).

f. **Conclusion**

Based on evaluation of the relocation alternatives, the two relocation alternatives that appear to be the most feasible are relocation of the utility lines to the existing downstream utility bridge (\$3 million) and relocation to the proposed new bridge (\$6 million). The remaining three options present significant challenges with respect to cost, constructability, security, and long-term maintenance and operations (MaineDOT, et al., 2018).

Relocating the utilities may require a Presidential Permit from the DOS. Twin Rivers would be responsible for acquiring the Presidential Permit and moving the utility lines; the timeframe for moving the utility lines and removing the existing International Bridge is unknown.

2. Final Disposition of the Existing International Bridge

The MaineDOT and NBDTI recognize Twin Rivers owns and operates several significant utilities on the existing bridge (see Chapter 2.E.1.). To minimize impacts to these utilities, the MaineDOT and NBDTI considered closing the bridge to the public and transferring ownership of the bridge, as well as all responsibility for future

maintenance, operations, and demolition, to Twin Rivers. However, the feasibility of any such agreement would be subject to a thorough technical review, acceptance by U.S. and Canadian border agencies, and the negotiation of final terms and conditions.

A limited investigation into maintaining the existing bridge was completed. The investigation identified potential conflicts between the existing bridge and a new bridge at the Edmundston POE; resolving these conflicts would necessitate removing the existing bridge. In addition, adding a new bridge in the downtown business zone will increase the number of piers in the river which will increase the potential for ice jams on the Saint John River (MaineDOT, et al., 2018).

The MaineDOT and NBDTI stated that they would not support maintaining the existing bridge in their respective bridge inventories; the agencies cited concerns regarding the deteriorated condition of the structure and the significant and increasing long-term maintenance and operation costs of operating the bridge (CBSA, et al., 2017).

The CBSA and CBP have no plans to operate or maintain staff presence at the existing bridge if a new bridge is built. Both agencies note an agreement to maintain the existing bridge would be subject to their review and approval; approval would require the installation of security devices such as gates, fences, and surveillance and monitoring devices. The cost to install these devices and for subsequent monitoring would likely be the responsibility of others (CBSA, et al., 2017).

A. Introduction

The GSA, FHWA, and MaineDOT developed a study area of approximately 50 acres that encompasses the range of reasonable alternatives, and performed a detailed analysis of the natural, social, and economic features of the study area (Exhibit 1.3). The study area covers not only the land that would be used for the build alternatives for the LPOE and International Bridge, but also the areas that would experience direct and indirect impacts from them.

This section identifies the potential environmental consequences associated with the construction and operation of the No-Build Alternative and the build alternatives for satisfying the purpose and need of the project. The potential impacts — both beneficial and adverse — were identified and, where possible, quantified through studies of the natural, social, and economic environments. Potential impacts include the direct impacts, the indirect or secondary impacts (i.e., impacts occurring later in time or physically removed from the direct impacts), and the cumulative impacts (the impact when considered with other past, present, and reasonably foreseeable future actions) of the No-Build Alternative and the build alternatives.

B. Physical and Biological Environment

1. Physical Geography, Soils, and Geology

The physical geography or physiography of the area is a description of the physical features of the natural landscape. The physical geography, soils, and geology of the study area may influence the alternatives development and selection process as natural landforms and geologic features may determine the extent of environmental features and engineering constraints and feasibility.

a. Physical Geography

Most of the study area slopes gently towards the Saint John River. Along the northern portion of the study area, steep slopes define the floodway of the Saint John River. Elevations in the study area range from 460 feet to 560 feet above sea level.

The study area is within the New England Upland Section of the New England Physiographic Province (USGS, 2018). Located within the Northern Interior Division climatological division, peak summer temperatures average 70°F but can reach highs of 90°F. Winters within the Northern Interior Division record 40 to 60 days of sub-zero temperatures (Maine Tourism, 2018).

The average annual precipitation in the Northern Interior Division is 40 inches and heavy fog can occur. The average annual snowfall is between 90 and 110 inches. January normally records the most snow with an average of about 20 inches (Maine Tourism, 2018).

Chapter Contents

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- 3.B. Physical and Biological Environment
- 3.C. Atmospheric Environment
- 3.D. Transportation Facilities and Operations
- 3.E. Land Use and Cultural, Social, and Economic Environments
- 3.F. Uncontrolled Petroleum and Hazardous Materials
- 3.G. Environmental Justice
- 3.H. Navigation
- 3.I. Indirect and Cumulative Impacts
- 3.J. Summary of Transboundary Impacts
- 3.K. Relationship between the Short-term Uses of the Human Environment and Enhancement of Long-term Productivity
- 3.L. Irreversible and Irrecoverable Commitment of Resources
- 3.M. Construction Impacts
- 3.N. Mitigation and Commitments

Purpose of this Chapter

Chapter 3 is an inventory of the affected environment and a discussion of consequences and potential mitigation measures resulting from the alternatives retained for detailed study. It succinctly describes the physical, biological, social, and economic environments of the area to be affected by the alternatives. It describes the impacts of the alternatives; the adverse effects that cannot be avoided if implemented; the relationship between short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and any irreversible or irretrievable commitments of resources that would result if an alternative is implemented (40 CFR Part 1502.16).

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not substantially alter the physical geography of the study area.

b. Soils

According to the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), four soil types historically existed in the study area: Machias gravelly loam (MaB), Stetson gravelly loam (SgB), mixed alluvial soils (Mn), and Allagash fine sandy loam (AgD) (USDA and NRCS, 2018a). Most of the soils in the study area are disturbed through construction and development and no longer resemble their original characteristics.

MaB and SgB are identified as prime farmland soils (USDA and NRCS, 2018c). The areas mapped as MaB and SgB are developed for residential, commercial, and industrial uses and have no value as farmland. Located along the steep slopes between the Saint John River and the MNR, Mn is listed as a local hydric soil for Aroostook County (USDA and NRCS, 2018b). AgD is not listed as a prime farmland soil or a soil of statewide importance. None of the four original soil types are recognized by the State of Maine or the United States as hydric soils (see Chapter 3.B.2.d. – Wetlands).

GSA collected soil borings from the site of the proposed LPOE (Exhibit 3.1) (GZA, 2009a).

Exhibit 3.1 - Generalized Subsurface Conditions

Soil Unit	Approx. Encountered Thickness (feet)	Description
Port of Entry Facility Area		
Fill	2 to 9	Medium dense to very dense, brown, fine to coarse Sand, trace to some Silt, no to some Gravel. Encountered in B-122 through B-138
Glacial Till	0 to 46.5	Very dense, brown, fine to coarse, SAND, trace to equal parts Silt and Gravel. Encountered in test borings B-122 through B-128.
Elevated Roadway and Approach Roadways		
Fill	5 to 38	Very loose to dense, brown to gray, with widely varying composition ranging from predominantly GRAVEL, to fine to coarse, SAND with varying amounts of Gravel and Silt, to SILT and CLAY. Portions of the fill appear to be reworked glacial till. Encountered in test borings B-101 through B-121.
Alluvial	Up to 38	Loose to medium dense, brown, varying composition and frequently layered. Ranging from fine to medium SAND, little to some Silt, with Silt & Clay seams, to SILT and CLAY with fine Sand lenses. Encountered in test borings B-101 through B-105.
Glacial Till	>2 to 92.3	Medium dense to very dense, brown to gray, varying composition from fine to coarse SAND, little to equal parts Gravel, some to equal parts Clayey Silt, to Clayey SILT, to Gravel with varying amounts of Sand and Silt. Encountered in test borings B-102 through B-122.

Source: GZA, 2009a

The No-Build Alternative would not impact soils in the study area. Excavation and grading would not occur, and current conditions would remain.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would require vegetation removal and earthmoving activities. The soil would temporarily be exposed to erosive wind and stormwater forces. Temporary sediment basins may be required for dewatering during construction. Prior to construction, a site dewatering, erosion, and sedimentation control plan would be prepared and submitted to the MDEP for review and approval.

There would be no conversion of agricultural soils protected by the FPPA to non-agricultural use. Construction of the LPOE Alternatives A, B, and C, and abutments for Bridge Alternatives 1, 2, and 3 would occur on previously disturbed soils.

For Bridge Alternatives 1, 2, and 3, erosion and sedimentation control measures would be developed and incorporated into the final design of the International Bridge and implemented during construction, in accordance with Section II of the MaineDOT's *Best Management Practices Manual for Erosion and Sedimentation Control* (MaineDOT, 2008).

c. Geology

The southern portion of the study area is underlain by surficial geologic units of the Late Wisconsinan (Pleistocene) age and are glacial till deposits, alluvial deposits, and fill (GZA, 2009a). Alluvial deposits are described as sand, gravel, some silt, minor clay, and organic sediment; generally, more than 6 feet thick; deposited as channel, overbank, and floodbasin deposits. The morainal sediments consist of lodgment till, ablation till, and associated sand and gravel deposited directly by Late Wisconsinan ice or with minor reworking by water. There are layers of loamy lodgment till, minor ablation till, silt, sand, gravel, and rubble with the composition of the till likely mainly stony (GZA, 2009a).

The Bedrock Geologic Map of New Brunswick (2000) indicates that bedrock is of the Temiscouata Formation. This formation consists of dark grey, thin-bedded to laminated, non-calcareous siltstone (slate), and minor fine-grained, weakly calcareous, micaceous sandstone and polymictic conglomerate (GZA, 2009a).

The GSA obtained bedrock cores from the study area. Bedrock was encountered at depths ranging from 80 to 109 feet below ground surface (b.g.s.). Within the LPOE, bedrock was encountered at 47 feet b.g.s. (GZA, 2009a).

The geology underlying the Saint John River mainly consists of alluvial floodplain deposits and lodge moraine deposits. The alluvial deposits are typically composed of fine sand found at or slightly below the surface, and silty sand with some minor organic material. The lodge moraine deposits are predominately composed of compact silt

and clay till with pebbles; there are also boulders that could be found near the surface as well as exposed bedrock in some areas. Based on the geotechnical explorations completed along the top of the streambank in Madawaska, bedrock was encountered at elevations ranging from 408 to 530 feet (124 to 162 meters), with an average top of bedrock elevation of approximately 413 feet (126 meters) (GZA, 2009b).

Bedrock underlying the Saint John River consisted of hard, fresh, aphanitic, gray slate with rock quality designations ranging from 0 to 78 percent, with an average of approximately 23 percent. Given the lack of existing subsurface information in the river channel near the proposed International Bridge, it is assumed the elevation of bedrock in the river channel is at an approximate average elevation of 413 feet. The existing river channel elevation ranges from roughly 440 feet to 445 feet (GZA, 2009b).

The No-Build Alternative would not impact geology. There would be no change to current geologic conditions.

The LPOE Alternatives A, B, and C would not substantially impact the geology underlying the study area. Within the area of the LPOE, bedrock was encountered at 46.8 feet b.g.s., and excavation would not reach that depth.

Bridge Alternatives 1, 2, and 3 would permanently impact bedrock geology within the Saint John River during construction of the bridge piers. Under Alternative 1, two piers would be constructed within the Saint John River. Under Alternative 2, three piers would be constructed within the Saint John River. Under Alternative 3, four piers would be constructed within the Saint John River. The size of the piers would be determined during final design. The piers would be constructed using 30-by-50-foot cofferdams, resulting in a temporary impact for each alternative: 3,000 square feet for Alternative 1; 4,500 square feet for Alternative 2; and 6,000 square feet for Alternative 3. The cofferdams would be removed when construction is completed. The permanent impact for each alternative would be less than the temporary impact.

The LPOE Alternatives A, B, and C would not temporarily impact the geology of the study area during construction. The Bridge Alternatives 1, 2, and 3 may temporarily impact geology during construction of bridge piers.

2. Aquatic Resources

a. Water Resources

Groundwater

The Maine Geological Survey (MGS) online mapping tool, Aquifer 24K, shows that the study area has surface deposits with moderate to good potential groundwater yield, with yields generally greater than 10 gallons per minute for a properly constructed well. Deposits consist primarily of sand and gravel but can include areas of sandy till and alluvium (MGS, 2002a). According to the MGS Water Well Database, two wells are in the study area (Exhibit 3.2) (MGS, 2010).

Exhibit 3.2 - MGS Water Well Database Online

Address	Drill Date	Well Depth	Well Yield
73 14th Ave., Madawaska	6/18/1980	150 ft	15 gallons per minute
586 Main St., Madawaska	9/12/1980	150 ft	7 gallons per minute

Source: MGS, 2010

Groundwater was measured within the area of the LPOE in four locations. Water was measured at 52.5, 46.8, 44.1, and 21.8 feet b.g.s. (GZA, 2009a).

According to the United States Environmental Protection Agency (EPA) Region 1: EPA New England – Sole Source Aquifer (SSA) Program website, there are no SSAs in the study area. EPA defines a SSA as one where the aquifer supplies at least 50 percent of the drinking water for its service area and there are no reasonably available alternative drinking water sources should the aquifer become contaminated (EPA, 2018b).

The No-Build Alternative would not impact groundwater quality and quantity. There would be no change to current groundwater conditions.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not permanently impact groundwater quality, quantity, or groundwater wells in the study area.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may have a temporary impact on groundwater during construction due to excavation. The water table within the area of the LPOE was measured between 21.8 and 52.5 feet, and excavation may not reach these depths.

Surface Water

The study area is in the Saint John River watershed. The Saint John River is approximately 418 miles long with a basin area of approximately 21,280 square miles. The Saint John River forms the northern border of the study area and Martin Brook is in the western portion of the study area.

The Saint John River flows from west to east and discharges into the Bay of Fundy near the city of Saint John, New Brunswick, Canada. The Saint John River is a freshwater river. The Saint John River flow is measured at the U.S. Geological Survey (USGS) Gauging Station at Fort Kent; the gauging station is approximately 12 miles upstream of the study area. The flow in the Saint John River is fairly constant, ranging between 5,667 and 15,420 cubic feet per second. The average annual discharge over a 90-year period of record is 9,842 cubic feet per second (USGS, 2016).

The water quality of the Saint John River upstream of Martin Brook is designated as Class B. Class B waters are defined to be (Maine Legislature, 2018) (Exhibit 3.3):

“of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired” [Title 38, Chapter 3, Section 465].

Discharges to Class B waters are allowed, if no detrimental changes occur to the resident biological community (Title 38, Chapter 3, Section 465). The Twin Rivers paper mill is identified by the MDEP as a “significant point source” of wastewater discharge to the Saint John River (MDEP, 2018).

The water quality of the Saint John River downstream of the International Bridge is designated as Class C (Maine Legislature, 2018). The designated uses of Class C waters are fishing; drinking water supply after treatment; recreation in and on the water; industrial processes and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, Section 403; navigation; and as a habitat for fish and other aquatic life (Title 38, Chapter 3, Section 465).

Exhibit 3.3 - Maine Standards for Classification of Fresh Surface Waters

Classification	Class	Designated Uses	Habitat	Aquatic Life/Bacteria	Discharge of Pollutants
1	AA	drinking water after disinfection, fishing, recreation and navigation, habitat for aquatic life	Free flowing and natural	as naturally occurs	none allowed, except storm water
2	A	all uses of AA, hydroelectric power generation, industrial process and cooling water supply	natural	as naturally occurs	permitted only if effluent will be equal to or better than the water quality of receiving waters
3	B	same as Class A	unimpaired	mean amount of bacteria of human origin may not exceed 64 ppm	receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water
4	C	same as Class A	unimpaired	mean amount of bacteria of human origin may not exceed 142 ppm	may cause some changes to aquatic life, but receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water

Source: Maine Legislature. Standards for Classification of Fresh Surface Waters. Title 38, Chapter 3, Section 465.

Generally, Class C waters may not have a dissolved oxygen content of less than 5 parts per million (ppm) or 60 percent of saturation, whichever is higher. In salmon spawning areas, the water quality must remain at the existing higher standards. From May 15 through September 30, the amount of *Escherichia coli* (*E. coli*) may not exceed a geometric mean of 142 per 100 milliliters or an instantaneous level of 949 per 100 milliliters. Discharges to Class C waters can cause some changes to aquatic life, provided the receiving waters can still support indigenous fish species and maintain the structure and function of the resident biological community (Title 38, Chapter 3, Section 465).

Martin Brook is approximately 0.75 mile long. It flows almost directly north through Madawaska and discharges into the Saint John River. Martin Brook is a Class B water (Maine Legislature, 2018).

The study area is not in the coastal zone and not subject to the regulations governing coastal zone management. The Saint John River is not classified as a wild or scenic river (NPS, 2018).

TMDL Waters

There are 21 streams in Maine that are listed as impaired in the “Maine Statewide Total Maximum Daily Load (TMDL) for Nonpoint Source Pollution” (MDEP, 2016b). The nonpoint source pollution is due to anthropogenic activities from stormwater runoff (sediment, fertilizer, manure, and petroleum products) and nutrients (nitrogen and phosphorus). The impaired streams do not meet the criteria in Maine’s water quality standards (WQS) for aquatic life protection. The TMDL is the maximum load of pollution that a waterbody can receive without exceeding the WQS. There are three waterways listed for nonpoint source pollution TMDL within the Saint John River basin; however, none are in the study area (MDEP, 2016b).

According to MDEP, the Saint John River at Madawaska is impaired for recreational uses due to *E. coli* (MDEP, 2016a) (Exhibit 3.4). Martin Brook does not have a TMDL assigned to it. Waters in Maine are impaired by atmospheric deposition of mercury, and the EPA approved a regional mercury TMDL in December of 2007 (MDEP, 2016a).

The Saint John River in Madawaska is classified by the MDEP as a sensitive or threatened region or watershed. This means that, for a project that creates more than

Exhibit 3.4 - Rivers and Streams with Impaired Use Other than Mercury, TMDL Completed

Segment Name	Location	Cause	Segment Size	TMDL Number	Comments
Saint John River at Madawaska	Variable, combined sewer overflow affected	E. coli	0	37779	Recreational use impairments

Source: MDEP, 2016a

three acres of impervious area, a “Site Location or Development” permit would be required (MDEP, 2018).

Stormwater Requirements

According to Section 438 of the Energy Independence and Security Act of 2007 (EISA):

“... the sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the pre-development hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”

The intent of the EISA is to require federal agencies to develop and redevelop facilities in a manner that maintains or restores stormwater runoff to the maximum extent technically feasible. Until recently, stormwater programs established to address water quality objectives have been designed to control traditional pollutants that are commonly associated with municipal and industrial discharges (e.g., nutrients, sediment, and metals). Increases in runoff volume and peak discharge rates have been regulated through state and local flood control programs. Although these programs have merit, knowledge accumulated during the past 20 years has led stormwater experts to the conclusion that conventional approaches to control runoff are not fully adequate to protect the nation’s water resources (MPdL Studio, 2018).

In addition, the design of the LPOE and International Bridge should accommodate guidelines and design criteria identified in the *Maine Stormwater Management Design Manual*, dated March 2016. This manual provides specific stormwater management objectives and associated design considerations as well as landscape designs to enhance stormwater treatment (MDEP, 2016c).

As the build alternatives for the LPOE are advanced and the stormwater collection and conveyance systems are designed, green infrastructure and low impact development systems and practices would be implemented to reduce stormwater runoff, increase evapotranspiration, and protect water quality. Stormwater would be conveyed through pipes and drainage structures to the bioretention/infiltration basin. Overflow from the basin would exit the site of the LPOE to Martin Brook and the Saint John River (MPdL Studio, 2018).

The stormwater runoff for LPOE Alternatives A, B, and C was calculated based on impervious areas for each. The area reserved for the bioretention basins for LPOE Alternatives A, B, and C was conceptually designed to safely store and convey the stormwater runoff from the 100-year rain event of 4.91 inches (NOAA, 2017). The bioretention basin would store the largest 3-day precipitation event (2.1 inches)

per season by the end of the century. Additionally, the bioretention basin would be designed to infiltrate the largest 3-day precipitation event within 48 hours (MPdL Studio, 2018).

A stormwater collection and conveyance system would manage stormwater from buildings, access roads, and parking areas, and would be designed to maintain or reduce peak runoff rates and volume to match existing conditions, meet the required discharge temperature, and minimize the duration of discharge. Catch basins would collect stormwater runoff throughout the site of the LPOE and subsurface piping would convey the runoff to the infiltration basin. The stormwater infiltration basin would be designed to retain the 95th percentile rainfall event on the site of the LPOE. Larger storm events would experience partial infiltration, with the noninfiltrating stormwater to receive peak discharge flow control through retention in the basin and a discharge structure. The catch basins would be supplemented with rain gardens where possible throughout the site of the LPOE for stormwater pretreatment and landscaping (MPdL Studio, 2018).

Erosion and sedimentation control measures would be developed and incorporated into the final design of the International Bridge and implemented during construction, in accordance with Section II of the MaineDOT's *Best Management Practices Manual for Erosion and Sedimentation Control* (MaineDOT, 2008).

The stormwater management system for the International Bridge would be designed in accordance with the MDEP/MaineDOT/Maine Turnpike Authority Memorandum of Agreement (MOA), Stormwater Management, June 27, 2017. Under the MOA, the MaineDOT would be required to meet the General Standards under Chapter 500 to the extent practicable (MaineDOT, MTA, and MDEP, 2017).

The No-Build Alternative would not impact surface waters or water quality. Current conditions of the Saint John River and Martin Brook would remain.

LPOE Alternatives A, B, and C would not directly impact the water quality of the Saint John River or Martin Brook. Construction of the LPOE would observe a 75-foot setback from Martin Brook, and there would be no construction activities for the LPOE within or near the Saint John River. Development of the LPOE would increase impervious land cover and increase the volume of stormwater runoff, increase the peak flow of runoff, extend the duration of stormwater discharge, increase pollutant loads, and increase the temperature of the stormwater discharge from the site of the LPOE (MPdL Studio, 2018). The GSA would limit disturbance and the impact to the quality of the receiving surface waters by managing stormwater runoff and treating the quality of runoff in accordance with the EISA and the MDEP stormwater management standards (MPdL Studio, 2018).

Bridge Alternatives 1, 2, and 3 would not impact Martin Brook. Bridge Alternatives 1, 2, and 3 are not within or near Martin Brook.

Bridge Alternatives 1, 2, and 3 would adversely impact the Saint John River from the construction of bridge piers within the river and the operation of the International Bridge. Under Alternative 1, two piers would be constructed within the Saint John River. Under Alternative 2, three piers would be constructed within the Saint John River. Under Alternative 3, four piers would be constructed within the Saint John River. The size of the piers would be determined during final design. The piers would be constructed using 30-by-50-foot cofferdams, resulting in a temporary impact for each alternative: 3,000 square feet for Alternative 1; 4,500 square feet for Alternative 2; and 6,000 square feet for Alternative 3. The cofferdams would be removed when construction is completed. The permanent impact for each alternative would be less than the temporary impact.

The construction area for each pier would be accessed by temporary work trestles, constructed perpendicularly outward from each side of the riverbank. Alternative 1 would require two trestles, Alternative 2 would require three trestles, and Alternative 3 would require up to four trestles. The dimensions of and materials used for the trestles would be determined during final design. The trestles would be removed when pier construction is completed.

Under Bridge Alternatives 1, 2 and 3, the existing International Bridge would likely be removed. Two 30-by-50-foot cofferdams would be used to remove the two existing bridge piers. The two piers would be accessed by two temporary work trestles, constructed perpendicularly outward from each side of the riverbank. The bridge deck would be removed prior to removal of the piers. Removal of the existing International Bridge piers from the Saint John River would temporarily impact water quality due to sedimentation. Sedimentation would cease once removal is complete. Removal of the existing International Bridge and piers from the Saint John River would result in a positive impact to the Saint John River.

The construction of LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would have a temporary impact on the water quality of a portion of the Saint John River due to an increase in erosion and sedimentation. Following construction, the portion of the Saint John River used during construction would be restored to a condition similar to the existing conditions. These impacts are temporary and would end shortly after construction is completed. Prior to construction, MaineDOT will apply to the MDEP for a Clean Water Act Section 401 Water Quality Certificate (Exhibit 1.8). Erosion and sedimentation control measures would be developed and incorporated into the final design of the International Bridge and implemented during construction in accordance with Section II of the MaineDOT's *Best Management Practices Manual for Erosion and Sedimentation Control* (MaineDOT, 2008). Prior

to construction, a site dewatering, erosion, and sedimentation control plan would be prepared and submitted to the MDEP for review and approval.

b. Aquatic Habitats and Fisheries

Wild and Scenic Rivers

There are no wild or scenic rivers within the study area (NPS, 2018).

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact wild and scenic rivers.

Aquatic Habitats and Fisheries

There are 53 species of fish within the Saint John River basin. Species common in the study area are the central mudminnow, lake chub, muskellunge, rainbow trout, and smallmouth bass. Several fish species are either extirpated from the area or are rarely encountered. Additionally, amphibians, reptiles, and macroinvertebrates also have habitat within the Saint John River and Martin Brook (CRI, 2011).

The No-Build Alternative and the LPOE Alternatives A, B, and C would not permanently impact aquatic habitats and fisheries of Martin Brook. Construction of the LPOE would avoid impacts to Martin Brook by observing the 75-foot setback for the resource protection zone. The Bridge Alternatives 1, 2, and 3 are not within or near Martin Brook.

Bridge Alternatives 1, 2, and 3 would adversely impact the aquatic habitat and fisheries of the Saint John River due to the construction of bridge piers within the river and operation of the International Bridge. Under Alternative 1, two piers would be constructed within the Saint John River. Under Alternative 2, three piers would be constructed within the Saint John River. Under Alternative 3, four piers would be constructed within the Saint John River. The size of the piers would be determined during final design. The piers would be constructed using 30-by-50-foot cofferdams, resulting in a temporary impact for each alternative: 3,000 square feet for Alternative 1; 4,500 square feet for Alternative 2; and 6,000 square feet for Alternative 3. The cofferdams would be removed when construction is completed. The permanent impact for each alternative would be less than the temporary impact.

The likely removal of the existing International Bridge and piers from the Saint John River would result in a positive impact to aquatic habitat.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may have temporary construction impacts on aquatic habitat and fisheries of the Saint John River and Martin Brook due to erosion and sedimentation during construction as well as the likely removal of the existing International Bridge. To reduce the amount of pollutants transported into and down streams, the Maine Department of Inland Fisheries and Wildlife (MDIFW) recommends following construction

best management practices and performing instream work between July 15 and October 1 (MDIFW, 2018a). During final design of the International Bridge, the MaineDOT would coordinate with MDIFW on the timing of work to be performed in the Saint John River.

The MaineDOT would reduce direct impacts to fish and fisheries habitat by using best management practices recommended by MDIFW. During final design of the International Bridge, the MaineDOT would coordinate with MDIFW on the best management practices to be used when working in the Saint John River.

c. Floodplains

Federal protection of floodplains is afforded by EO 11988, "Floodplain Management" and by implementation of federal regulations at 44 CFR 9. These regulations direct federal agencies to undertake actions to avoid impacts to floodplains.

According to FEMA, the area along the Saint John River downstream of the International Bridge is prone to inundation by a 100-year flood (i.e., a flood with a one percent probability of occurring in any given year). FEMA maps indicate that the 100-year flood is contained upstream of the International Bridge within the steep banks along the Saint John River. Martin Brook does not have a floodplain (FEMA, 1985).

In accordance with EO 11988, the impacts on floodplains and floodplain encroachments were considered for the No-Build and Build Alternatives. Encroachments are considered significant by EO 11988 if at least one of the following factors is applicable:

- It has a significant effect on natural and/or beneficial floodplain values;
- It would increase the risk of flooding that could result in loss of life or property; and/or
- It would significantly impact or otherwise disrupt vital services, facilities, or travel routes.

The No-Build Alternative and LPOE Alternatives A, B, and C would not impact the floodplain of the Saint John River. Construction of the LPOE would observe the 75-foot setback from Martin Brook, and there would be no construction activities for the LPOE within or near the 100-year floodplain of the Saint John River.

Bridge Alternatives 1, 2, and 3 would impact the 100-year floodplain of the Saint John River. Bridge Alternatives 1, 2, and 3 would impact less than 3,000, 4,500 and 6,000 square feet, respectively, within the 100-year floodplain of the river through the construction of bridge piers. The impacts from these piers on the floodplain of the Saint John River would not meet the criteria to be considered significant. The likely removal of the existing International Bridge and piers from the 100-year

floodplain of the Saint John River would result in a positive impact to the floodplain of the Saint John River.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may have a temporary construction impact on the floodplain of the Saint John River due to minor vegetation removal and erosion and sedimentation during construction.

d. Wetlands

Wetlands are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USACE, 1987).

The National Wetland Inventory is a program administered by the USFWS for mapping and classifying wetlands in the United States. The USFWS has classified the Saint John River as a riverine, lower perennial, unconsolidated bottom, permanently flooded water. Martin Brook, a tributary to the Saint John River, is classified as a riverine, unknown perennial, unconsolidated bottom, permanently flooded water. Riverine systems include freshwater wetland and deepwater habitats contained within a channel.

No palustrine wetlands were identified on National Wetland Inventory mapping in the study area (USFWS, 2018b). The term palustrine refers to a system of wetlands which consists of “all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent” (Mitsch and Gosselink, 2007). Historic or traditional names for palustrine wetlands include marsh, swamp, bog, fen, and prairie, as well as other water bodies such as ponds (USFWS, 1979). A reconnaissance of the study area was performed; no palustrine wetlands were observed.

One locally listed hydric soil was identified within the study area. Located along the steep slopes between the Saint John River and the MNR, mixed alluvial soils are listed as a local hydric soil for Aroostook County (USDA and NRCS, 2018b). No state or federally listed hydric soils were identified within the study area.

During final design of the LPOE and International Bridge, the GSA and MaineDOT would request a jurisdictional determination from the USACE to assist in determining whether a permit will be required from the USACE for the discharge of dredged or fill material into the Waters of the United States, which includes wetlands.

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact wetlands. There are no wetlands in the study area.

3. Vegetation

The majority of the study area is developed and sparsely vegetated. Approximately 6.5 acres of the study area adjacent to Martin Brook and the Saint John River are vegetated with deciduous trees and shrubs. The vegetated area is primarily inside a resource protection zone set 75 feet back from Martin Brook and governed by Madawaska's Shoreland Zoning Ordinance (Town of Madawaska, 2009).

The MNAP maintains records of natural communities that contain habitat conducive to rare or uncommon plant communities (see Chapter 3.B.5.b.).

The No-Build Alternative would not impact vegetation. Current conditions would remain the same without construction of the LPOE or new International Bridge.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would impact approximately 2.5 acres of deciduous trees and shrubs near Martin Brook and the Saint John River. Removal of the trees and shrubs to prepare the site would increase stormwater runoff and erosion. The increased impervious area and stormwater would be addressed during final design to help reduce erosion and sedimentation caused by construction of the LPOE and new International Bridge.

Erosion and sedimentation control measures would be developed and incorporated into the final design of the International Bridge and implemented during construction in accordance with Section II of the MaineDOT's *Best Management Practices Manual for Erosion and Sedimentation Control* (MaineDOT, 2008).

4. Wildlife Habitats and Wildlife

a. Wildlife Habitats

The study area is largely developed with industrial, commercial, residential, and transportation uses. However, there are species of wildlife that thrive in urban environments and live in residential areas such as backyards. According to the MDIFW, species that can commonly encounter humans are: fox, opossum, white tailed deer, beaver, chipmunks, skunks, raccoons, weasels, woodchucks, porcupines, squirrels, bats, sparrows, pigeons, starlings, bobcats, coyotes, hares and rabbits, moles, muskrats, otters, geese, owls, robins, swallows, woodpeckers, snakes, bear, and moose (MDIFW, 2018a).

The No-Build Alternative would not impact wildlife habitat. Current conditions would remain if the proposed action is not constructed.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would impact habitat for wildlife. LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would require the removal of approximately 2.5 acres of deciduous trees and habitat adjacent to Martin Brook and the Saint John River.

b. Regulated Wildlife Habitat and Significant Habitats Protected under the NRPA

A NRPA Permit is required from the MDEP for projects in, on, over, or adjacent to protected natural resources (38 MRSA 480B). Protected resources are coastal wetlands, great ponds, rivers, streams, essential habitat, waterfowl habitat, deer wintering areas, significant wildlife habitat, and freshwater wetlands. According to the MDIFW, there are no mapped Essential or Significant Wildlife Habitats or fisheries habitats that would be directly affected by the proposed action (MDIFW, 2018a).

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact Regulated Wildlife Habitat or Significant Habitats protected under Maine State Law or the NRPA (MDIFW, 2018a).

5. *Endangered and Threatened Species*

Endangered and threatened species and habitat receive federal and state protection to help repair previous damage to populations and attempt to return a species population to self-sustaining levels.

a. Federal Endangered and Threatened Species

The ESA, as amended, provides protection for those species that are listed as endangered or threatened under the ESA. The ESA grants the USFWS prime responsibility in administering the species designations and protections granted under the Act. “Endangered” means that a species is in danger of extinction throughout all or a significant portion of its range. “Threatened” means that a species is likely to become endangered in the foreseeable future.

According to the USFWS, the Canada lynx and the northern long-eared bat (NLEB) could be found in the study area. Both species are listed as threatened. There are no critical habitats mapped within the study area (USFWS, 2018a).

Critical habitat for the NLEB is not currently designated. The NLEB is dependent on forests, using trees as summer and maternity roosts. Specific NLEB summer and maternity roost location information is unavailable for Maine, but the USFWS asserts that NLEB roosts occur throughout the entire state and, therefore, could be present in the area.

According to the USFWS, the primary federal species of concern would be the NLEB and habitat within the study area. The NLEB 4(d) rule prohibits an incidental take that may occur from tree removal activities within 150 feet of a known occupied maternity roost tree during the pup season (June 1 to July 31) or within a 1/4 mile of a hibernation site, year-round. There are no maternity roost trees or hibernation sites in the study area (GSA and USFWS MEFO, 2018).

The MaineDOT would prepare and submit the NLEB 4(d) Rule Streamlined Consultation Form to the USFWS; the USFWS would determine if there would be impacts to NLEB habitat and complete consultation (GSA and USFWS MEFO, 2018).

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). The nearest recorded Bald Eagle nests are approximately seven miles to the east of the study area (USFWS, 2014). According to the USFWS, the Evening Grosbeak, a bird of conservation concern throughout its range in the continental United States and Alaska, could be present in the study area during the breeding season (USFWS, 2018a).

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact federally listed or proposed endangered and threatened species (GSA and USFWS MEFO, 2018).

b. State Endangered and Threatened Species

In the State of Maine, “endangered” is defined as rare and in danger of being lost from the state in the foreseeable future or is federally listed as endangered. “Threatened” is defined as rare and, with further decline, could become endangered, or is federally listed as threatened (MNAP, 2018a).

Three species of bat (*Myotis*) are protected under MESA and are afforded special protection under 12 M.R.S. 12801 – 12810. The three species are the little brown bat (threatened), NLEB (endangered), and eastern small-footed bat (threatened). Five bat species are listed as special concern: big brown bat, hoary bat, red bat, silver-haired bat, and tri-colored bat. According to the MDIFW, it is likely that several of the bat species occur in the study area during migration and/or the breeding season. According to the MDIFW, impacts to bat species from the proposed action are not anticipated (MDIFW, 2018a).

According to the MNAP, there is a rare Rivershore Outcrop natural community on the Saint John River that provides habitat for several rare plants (Exhibit 3.5). The calcareous substrate provides habitat for the rare plants that occur on these ledges and outcrops. MNAP recommends a site visit by a qualified botanist to determine the easterly extent of this natural community (MNAP, 2018b).

The No-Build Alternative would not impact state listed or proposed endangered and threatened species.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may impact habitat used by bats by removing trees and shrubs. The GSA, FHWA, and MaineDOT would remove trees during winter months to avoid potentially impacting bats or habitat that would be used by bats for migration and/or breeding habitat.

Exhibit 3.5 - Rivershore Outcrop on the Saint John River

Feature	State Status ¹	State Rank ⁴	Global Rank ⁷	Occurrence Rank ¹⁰	
Rivershore Outcrop	N/A	S2 ⁵	G3 ⁸	B ¹¹	Good
Alpine Milk-vetch	Special Concern ²	S3 ⁶	G5 ⁹	H ¹²	Historical
Alpine Rush	Special Concern	S3	G5	C ¹³	Fair
Alpine Sweet-broom	Special Concern	S3	G5	A ¹⁴ B	Excellent-Good
Black Sedge	Special Concern	S2S3	G5	BC	Good-Fair
Few-flowered Spikerush	Special Concern	S2	G5	C	Fair
Garber's Sedge	Special Concern	S2	G5	C	Fair
Huron Tansy	Special Concern	S2S3	G5	AB	Excellent-Good
Mistassini Primrose	Special Concern	S3	G5	AB	Excellent-Good
Mountain Timothy	Threatened ³	S2	G5	B	Good
Soft-leaf Muhly	Special Concern	S3	G5	C	Fair

Source: MNAP, 2018b

Notes:

- ¹ State legal status is defined according to Title 12 Section 544, and Title 12 Section 544 B which mandate the Department of Agriculture, Conservation and Forestry to produce and biennially update the official list of Maine's Endangered and Threatened plants (MNAP, 2018a).
- ² Any species of fish or wildlife that does not meet the criteria as Endangered or Threatened but is particularly vulnerable, and could easily become, an Endangered, Threatened, or Extirpated species due to restricted distribution, low or declining numbers, specialized habitat needs or limits, or other factors (MNAP, 2018a).
- ³ A species of fish or wildlife that has been determined by the commissioner as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and that is listed as a state threatened species under Section 12803, Subsection 3 (MNAP, 2018a).
- ⁴ State Rarity Ranks are determined by the MNAP (MNAP, 2018a).
- ⁵ Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline (MNAP, 2018a).
- ⁶ Rare in Maine (20-100 occurrences) (MNAP, 2018a).
- ⁷ Global Ranks are determined by NatureServe (MNAP, 2018a).
- ⁸ Globally rare (20-100 occurrences) (Hammerson, et al., 2008).
- ⁹ Demonstrably secure globally (Hammerson, et al., 2008).
- ¹⁰ Element occurrence ranks provide a succinct assessment of the estimated viability (probability of persistence) of occurrences of a given species. They provide an estimation of the likelihood that, if current conditions prevail, a species occurrence will persist for a period of time (Hammerson, et al., 2008).
- ¹¹ Occurrence exhibits favorable characteristics with respect to population size and/or quality and quantity of occupied habitat; and, if current conditions prevail, the occurrence is likely to persist for the foreseeable future (i.e., at least 20-30 years) in its current condition or better (Hammerson, et al., 2008).
- ¹² Recent field information verifying the continued existence of the occurrence is lacking. Examples of this rank include occurrences based only on historical collection data, or occurrences that previously were ranked A, B, C, D, or E but that are now, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area (Hammerson, et al., 2008).
- ¹³ Occurrence characteristics (size, condition, and landscape context) are non-optimal such that occurrence persistence is uncertain under current conditions, or the occurrence does not meet A or B criteria but may persist for the foreseeable future with appropriate protection or management, or the occurrence is likely to persist but not necessarily maintain current or historical levels of population size or genetic variability (Hammerson, et al., 2008).
- ¹⁴ Occurrence exhibits optimal or at least exceptionally favorable characteristics with respect to population size and/or quality and quantity of occupied habitat; and, if current conditions prevail, the occurrence is very likely to persist for the foreseeable future (i.e., at least 20-30 years) in its current condition or better (Hammerson, et al., 2008).

During final design of the International Bridge, the FHWA and MaineDOT would use a qualified professional to perform a botanical survey to map the eastern extent of the Rivershore Outcrop to avoid impacting protected species within the natural community during construction.

c. Other Special Protection Areas

The riparian corridors of the Saint John River and Martin Brook are resource protection zones according to the Madawaska Shoreland Zoning Ordinance. The Town of Madawaska Shoreland Zoning Map shows that the Saint John River is located within the 250-foot General Development District (intensely developed area) between Martin Brook and Gagnon Brook and has a 25-foot development setback. Martin Brook is within the 75-foot Stream Protection District (land areas within 75 feet of the normal high-water line of a stream) and has a 75-foot development setback. Vegetation removal within a General Development District is allowed (Town of Madawaska, 2018).

During final design of the International Bridge, the MaineDOT would use a qualified professional to perform a botanical survey to map the eastern extent of the Rivershore Outcrop to avoid impacting protected species within the natural community during construction.

The No-Build Alternative would not impact Shoreland Zones protected by the Town of Madawaska zoning ordinances. Current Shoreland Zone conditions would remain the same.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would impact the riparian area along the Saint John River from the construction of the LPOE and International Bridge. The area of construction for the LPOE and International Bridge has been previously disturbed and is primarily dedicated to industrial uses.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would be outside the 75-foot buffer along Martin Brook and would not impact it. The GSA would work with the Town of Madawaska to preserve the corridor along the resource protection zone of Martin Brook adjacent to LPOE Alternatives A, B, and C.

C. Atmospheric Environment

1. Climate and Resiliency

The climate of the area (see Chapter 3.B.1.a.) and a changing climate can affect the development of the LPOE and International Bridge. The two most notable forms of a changing climate for the development of the LPOE and International Bridge are changes in temperature and precipitation.

Temperature volatility and extremes could have long-term effects on the durability of the pavement of the LPOE and International Bridge. Extreme and extended periods of heat could cause premature deterioration and damage to the bituminous

asphalt, resulting in rutting and subbase damage. Extreme and extended periods of cold could result in extending depths of the freezing of the subbase and subgrade, causing heaving and premature deterioration to the bituminous asphalt and subbase (MPdL Studio, 2018).

Changes in precipitation frequency, intensity, and duration could have long-term effects on the durability of the site of the LPOE and could potentially disrupt the access to the site of the LPOE. Extreme and intense precipitation events could overwhelm the stormwater collection and management system and cause erosion and structural damage. More frequent and intense precipitation events could cause erosion of the bank of the Saint John River (MPdL Studio, 2018).

To provide increased resiliency to extreme temperatures, during final design of the LPOE and International Bridge, GSA and MaineDOT would consider (MPdL Studio, 2018):

- Ensuring adequate soil cover over utilities for frost protection.
- Providing additional soil cover for utilities below paved or dense soil areas.
- Providing locations for increased storage of snow.
- Using pavement types that are more resilient to hot or cold temperature extremes.

To provide increased resiliency to extreme precipitation, during final design of the LPOE and International Bridge, GSA and MaineDOT would consider (MPdL Studio, 2018):

- Reducing runoff.
- Minimizing the area of impervious surfaces on site.
- Using porous asphalt pavement for parking stalls.
- Using permeable concrete for pedestrian walkways.
- Installing underground stormwater storage systems below parking areas.
- Providing ample space for snow storage.
- Managing runoff and improving water quality with green infrastructure.
- Providing gravel-based infiltration trenches.
- Providing grass swales or bioswales
- Providing raingardens.
- Providing stormwater tree plantings.

2. Air Quality

The 1990 Clean Air Act Amendments (CAAA) and the Maine SIP require that a proposed project not cause any new violation of the National Ambient Air Quality Standards (NAAQS) or increase the frequency or severity of any existing violations, or delay attainment of any NAAQS.

The CAAA divided Maine into attainment and non-attainment areas, with classifications based upon the severity of their air quality problems. Aroostook County is designated as being in attainment for all pollutants (EPA, 2018a).

The No-Build Alternative would not impact air quality.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not impact air quality. LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may result in a slight positive impact on air quality as queuing times for vehicles entering Madawaska would be reduced, decreasing idling emissions.

3. Noise

The study area was divided into noise sensitive areas (NSAs) (Exhibit 3.6). Noise measurements were taken at seven locations in these NSAs in November 2005 (Exhibit 3.7). Measurements were generally 20 minutes in duration and taken at representative locations potentially affected by traffic noise generated by the operation of the new Madawaska LPOE. Measurements were taken with a Bruel & Kjaer Model 2230 Type I precision integrating sound level meter in accordance with techniques described in the FHWA Report Number FHWA-PD-96-046, Measurement of Highway Related Noise (FHWA, 1996).

Noise levels are A-weighted hourly equivalent noise levels in decibels – Leq(h) dBA. The hourly Leq, or equivalent sound level, is the level of constant sound, which in an hour, would contain the same acoustic energy as the time-varying sound. Thus, the fluctuating sound levels of traffic noise are represented in terms of a steady-state noise level of the same energy constant. A-weighting simulates the response of the human ear to noise.

The following is a description of the existing noise conditions within each NSA.

NSA-1 represents a cluster of residences north of West Main Street along 18th Avenue and three residences north of West Main Street along Vital Drive. The existing noise environment is influenced by distant traffic on West Main Street and railroad and storage yard activities to the north and east of the measurement sites. Two measurements were taken in NSA-1: at Measurement Site 1 (MS-1), next to a parking area at 154 Maple Street, the measurement was 50 dBA; and MS-2, next to the residence at 91 Vital Drive and closer to West Main Street, was measured at 57 dBA.

NSA-2 represents a residential area south of the Twin Rivers mill along Mill Street including the residences along North 14th, North 15th, and North 16th Avenues. This area is affected primarily by noise from traffic on Mill Street and traffic accessing West Main Street via North 15th Avenue. Noise from activities at Twin Rivers mill contributed a steady background level from 59 to 60 dBA. The measured noise level at MS-3, at 86 North 16th Avenue, was 65 dBA.



Legend

- Study Area Boundary
- USA-owned Property
- **MS-1** Measurement Site
- **R-1** Receptor
- NSA-1** Noise Sensitive Area

Exhibit 3.6 - Noise Measurement and Modeling Locations

0 500 1,000 1,500 2,000 Feet

Exhibit 3.7 - Noise Measurements

Measurement Site		Setback from Edge of Near Roadway (feet)	Time ¹	Measured Noise Level Leq dBA	Total Hourly Traffic During Measurement Period
Number	Location				
MS-1	154 Maple Street	500	8:19 AM	50.3	456
MS-2	91 Vital Drive	280	2:45 PM	56.8	720
MS-3	86 North 16th Avenue	25	9:44 AM	65.2	204
MS-4	South Side of West Main Street between North 14th Avenue and North 15th Avenue	25	7:36 AM	64.8	609
MS-5	97 Bridge Street	21	9:12 AM	64.2	126
MS-6	American Legion Post at Corner of East Main Street and Legion Street	25	6:50 AM	65.1	351
MS-7	82 North 7th Avenue	>500	11:09 AM	52.3	See Note 2

Notes:

¹ All measurements were 20 minutes in duration except at Measurement Site 2 (5 minutes) and Site 7 (10 minutes).

² Traffic on Main Street was not visible from the measurement site. MS-7 was removed in 2018 because it was outside the study area.

Leq = Equivalent noise level measurements taken on November 3, 2005

NSA-3 represents residences and some commercial businesses along both sides of West Main Street west of Bridge Avenue. Setbacks to these residences from West Main Street are relatively close and generally range from approximately 25 to 50 feet from the edge of the road. Traffic on West Main Street is the dominant source of noise. Background noise from the Twin Rivers mill was generally in the low 50s dBA. The measured noise level at MS-4, a parking area across the street from 236 West Main Street, was 65 dBA.

NSA-4 represents several residences along the west side of Bridge Avenue to the north of West Main Street. Traffic on Bridge Avenue is a substantial source of noise, however the mechanical equipment on the roof of the Twin Rivers mill generated a constant background noise of approximately 63 dBA. Receptors along Bridge Avenue in this area have a direct line of sight to the roof and the mechanical equipment. The measured noise level at MS-5, along the sidewalk at 97 Bridge Avenue, was 64 dBA.

NSA-5 represents a mostly commercial section with residences (and possible second floor apartments) along both sides of East Main Street to the east of Bridge Avenue. To the east of Legion Street, residences are more prevalent. As in NSA-3, residences in this area are close to East Main Street, with many as close as 25 feet from the edge of the road. East Main Street traffic is the primary source of noise. However, in the absence of traffic, noise from the Twin Rivers mill mechanical equipment was measured in the range of 51 to 52 dBA. The measured noise level at MS-6, the American Legion Post 197, was 65 dBA.

NSA-6 was removed from the study because it is no longer within the study area.

To determine if traffic noise levels are compatible with adjacent land uses, the FHWA has developed noise abatement criteria (NAC) and procedures for highway planning and design (Exhibit 3.8). The FHWA noise regulations are promulgated in Title 23 of the Code of Federal Regulations, Part 772. For residences (NAC Activity Category B), a noise impact exists if the 67 dBA NAC level is approached or exceeded, or if existing noise levels are exceeded by a substantial amount. “Approached” is generally interpreted as within one dBA of the NAC, or 66 dBA for Activity Category B sites. Maine DOT defines a substantial noise level increase as 15 dBA or more above existing noise levels.

Noise levels were predicted using Version 2.5 of the FHWA Traffic Noise Model® (TNM). The FHWA TNM was validated using the noise measurements and concurrent traffic data (Exhibits 3.9 and 3.10). Speeds used in modeling were developed by driving with traffic several times to determine speeds based on other automobiles and trucks; actual speeds, speed limits, and traffic flow restrictions were noted. An average speed of 35 miles per hour was estimated and used for modeling.

Peak hour noise predictions were estimated at 12 locations in the study area for the existing conditions (using 2005 traffic data), and the No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 for the year 2040 (Exhibit 3.11). The future traffic volumes used in the noise analysis reflect the projected trends for a general increase in truck traffic and a decrease of auto traffic.

Exhibit 3.8 - FHWA Noise Abatement Criteria (Hourly dBA)

Activity Category	Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Residential
C	67 (Exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-----	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-----	Undeveloped lands that are not permitted.

Source: 23 CFR Part 772 – Procedures for Abatement of Highway Traffic Noise and Construction Noise, July 13, 2010

Exhibit 3.9 - FHWA Traffic Noise Model® Calibration

Measurement Site	Road	Hourly Traffic Based on Extrapolation of Counts Taken During Measurement Period			Measured Leq in dBA	Modeled Leq(h) in dBA	Difference	Comments
		Autos	Medium Trucks	Heavy Trucks				
MS-3	Mill St. WB	117	6	12	65.2	60.8	4.4	59 to 60 dBA background interference from mechanical equipment. A truck idling for 2 minutes increased noise level to approximately 67 dBA.
	Mill St. EB	63	0	6				
MS-4	West Main St. WB	231	3	0	64.8	62.9	1.9	
	West Main St. EB	360	12	3				
MS-5	Bridge St.	123	0	3	64.2	55.9	8.3	Background rooftop noise was approximately 63 dBA.
MS-6	East Main St. WB	168	9	6	65.1	62.2	2.9	
	East Main St. EB	162	0	6				

Notes:

Leq = Equivalent noise level, Leq(h) = Hourly equivalent noise level

Measurement Sites MS-1 and MS-2 were too far from, or too obscured from, the primary road source to conduct calibration.

The results of the noise analyses indicate minor changes (ranging from a decrease of 2 dBA to an increase of 3 dBA) in noise levels for the LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 as compared to either the existing conditions or the future No-Build Alternative (Exhibit 3.11). With the exception of receptors R-1, R-3, and R-6 (to the east, south, and west of the USA-owned property), all receptors analyzed are predicted to experience no change in noise levels or a slight decrease in noise levels as compared to either the existing conditions or the future No-Build Alternative. The predicted noise level increases at receptors R-1, R-3 and R-6 range from 1 to 3 dBA, with resultant noise levels of 49 and 62 dBA, respectively. These results are well below the 66 dBA criteria level that would require the consideration of abatement.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would have no effect on noise within the study area as a 3 dBA change in noise level is barely perceptible to a human with normal hearing. No analysis sites are predicted to have noise levels at or above 66 dBA or exceeding existing levels by 10 dBA or more.

Exhibit 3.10 - Hourly Traffic Volumes

Road	Direction of Travel	Hourly Traffic Volumes											
		Existing Conditions-Year 2005			No-Build Alternative-year 2040			Build Alternatives Year 2040					
		Autos	Heavy Trucks	Total Vehicles	Autos	Heavy Trucks	Total Vehicles	Autos	Heavy Trucks	Total Vehicles			
West Main St., west of Mill St.	Eastbound	425	13	438	223	15	238	223	15	238	15	238	
	Westbound	417	13	430	219	15	234	219	15	234	15	234	
West Main St., Mill St. to N. 15th Ave.	Eastbound	399	12	411	209	14	223	244	12	257	12	257	
	Westbound	323	10	333	170	12	182	236	12	248	12	248	
West Main St., to N. 15th Ave. to Bridge St.	Eastbound	524	16	540	276	19	295	276	19	295	19	295	
	Westbound	323	10	333	170	12	182	236	12	248	12	248	
East Main St., east of Bridge St.	Eastbound	407	13	420	214	15	229	214	15	229	15	229	
	Westbound	407	13	420	214	15	229	214	15	229	15	229	
Bridge St., West Main St. to Mill St.	Northbound	164	6	170	87	7	94	19	7	26	7	26	
	Southbound	204	12	216	137	14	151	57	25	82	25	82	
Bridge St., north of Mill St.	Northbound	204	12	216	137	14	151	58	14	72	14	72	
	Southbound	129	0	129	67	0	67	32	0	32	0	32	
North 15th Ave.	Northbound	94	6	100	50	7	57	117	7	124	7	124	
	Southbound	131	12	143	68	14	82	98	14	112	14	112	
Mill St., W. Main St. to Facility Entrance	Eastbound	94	6	100	50	7	57	38	18	56	18	56	
	Westbound	131	12	143	68	14	82	26	14	40	14	40	
Mill St., Facility Entrance to N. 15th Ave.	Eastbound	94	6	100	50	7	57	38	18	56	18	56	
	Westbound	260	12	272	137	14	151	58	14	72	14	72	
Mill St., N. 15th Ave. to Bridge St.	Eastbound	0	0	0	0	0	0	92	11	103	11	103	
	Westbound	0	0	0	0	0	0	92	11	103	11	103	
New Connection, Bridge to Facility	Eastbound	0	0	0	0	0	0	92	11	103	11	103	
	Westbound	0	0	0	0	0	0	92	11	103	11	103	

Exhibit 3.11 - Summary of Impacts

Noise Analysis Site		Modeled Hourly Leq Values in dBA					
		2005 Existing Conditions	No-Build Alternative Year 2040		Build Alternatives Year 2040		
Receptor	Location		Noise Level	Change From Existing	Noise Level	Increase Over Existing	Change From No-Build Alternative
R-1 (MS-1)	154 Maple Street	46	46	0	49	3	3
R-2	South Side of West Main Street between 17th and 18th Avenues	66	65	-1	65	-1	0
R-3 (MS-2)	91 Vital Drive	53	53	0	55	2	2
R-4	South Side of West Main Street between 15th Avenue and 16th Avenue	63	61	-1	62	-1	0
R-5	East Side of Mill Street between West Main Street and Facility Entrance	62	62	0	62	0	0
R-6	South Side of Mill Street at North 16th Avenue	61	61	0	62	1	1
R-7	North Side of West Main Street at North 16th Avenue	64	63	-1	63	-1	0
R-8	North 15th Avenue between West Main Street and Mill Street	57	56	-1	56	-1	0
R-9	South Side of West Main Street between North 13th Avenue and North 14th Avenue	65	64	-1	64	-1	0
R-10 (MS-5)	97 Bridge Street	59	58	-1	57	-2	-1
R-11	South Side of East Main Street at 10th Avenue	66	64	-1	64	-1	0
R-12	North Side of East Main Street at Legion Street	65	64	-1	64	-1	0

Notes: *() indicate noise measurement site

Leq = Equivalent noise level

All values calculated to the tenth of a dBA and then rounded for presentation purposes.

D. Transportation Facilities and Operations

The transportation facilities in the study area consist primarily of the LPOE and the roadways leading to it, a railroad, and the International Bridge.

1. Madawaska Land Port of Entry

The Madawaska/Edmundston Border Crossing is open 24 hours a day, 7 days a week to commercial vehicles, passenger vehicles, and pedestrians and is the 15th busiest crossing along the U.S. – Canadian border (USBorder.com, 2016) (Exhibit 1.3).

The Madawaska LPOE was constructed in 1959 and consists of a single-story brick building with two traffic lanes for inbound traffic and three canopy-covered secondary inspection lanes for inbound traffic; inbound commercial traffic uses the easternmost inspection lane (Exhibit 1.4). The LPOE does not provide lanes for frequent traveler clearance programs (such as FAST, NEXUS, or Ready Lane services) (EZBorderCrossing, 2017).

Currently the Madawaska LPOE is a “permit port”; commercial vehicles must have the required permits to transport cargo in the U.S. and must verify those documents at the LPOE. A new LPOE would be a permit port.

The No-Build Alternative would result in continued adverse impacts to the flow of traffic in the study area because the existing LPOE property is very small and the areas for the inspection of vehicles are close to the International Bridge, limiting the amount of space for sorting and processing vehicles inbound to Madawaska, causing traffic to back up onto the streets of Edmundston. Over time, as traffic volumes slowly increase, the existing delays in processing inbound trucks and passenger vehicles would increase.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in a variety of positive impacts to the flow of traffic in the study area (see Chapter 3.D.2.).

2. Roadway Facilities and Operations

Major roads in the study area are U.S. Route 1 (Main Street), Mill Street, and Bridge Avenue (Exhibit 1.3).

Main Street is a two-lane east-west road through the Town of Madawaska and the study area. In the Town of Madawaska, Main Street serves as the downtown central business district. A portion of Main Street in the Town of Madawaska to the east of Bridge Avenue is part of the U.S. National Highway System (NHS) (USDOT, 2018). The purpose of the NHS is to provide an interconnected system of principal arterial highways serving major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities; meet national defense requirements; and serve interstate and interregional travel.

Mill Street is a local street providing two-way traffic between Main Street and Bridge Avenue.

Bridge Avenue is oriented in a north-south direction from Main Street across the International Bridge and is classified by the MaineDOT as a federal-aid highway. Bridge Avenue provides two-way traffic across the International Bridge with one lane of travel in each direction.

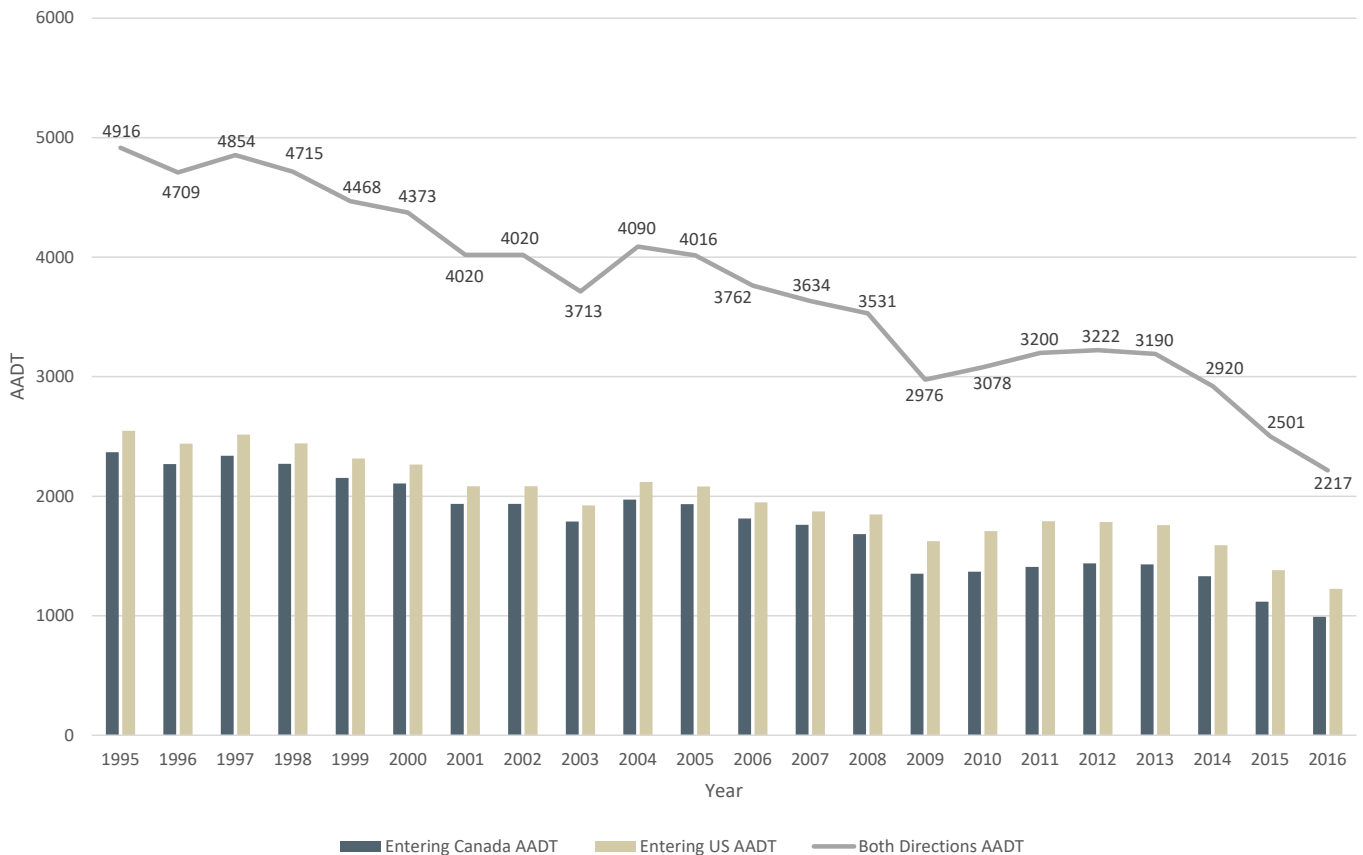
a. Historical Traffic Volumes

Historical traffic volume data for the roads in the study area were prepared by the MaineDOT with input from the CBP. Historical daily traffic volumes, representing average annual daily traffic (AADT) conditions, were available dating to 1995 (Exhibit 3.12). Based on a review of the historical traffic data, traffic volumes (AADTs) across the border during the 21-year period between 1995 and 2016 have decreased by almost half (MaineDOT, 2017c).

Traffic volumes entering Madawaska from Edmundston were lower in 2016 than in 2004 for all modes of traffic (Exhibit 3.13). While the decrease has been steady overall, the last three years have shown a greater decrease in traffic volumes than prior years (MaineDOT, 2017c).

Twin Rivers (formerly Fraser Papers) accounts for a large portion of the daily commercial truck traffic across the International Bridge (Exhibit 3.14). The reduction in traffic in 2009 and 2010 correlates to the closing of the former Fraser Papers mill in 2009 and the opening of the Twin Rivers mill in 2010; otherwise, truck traffic follows the same trends as the rest of the traffic (MaineDOT, 2017c).

Exhibit 3.12 - AADTs from 1995-2016



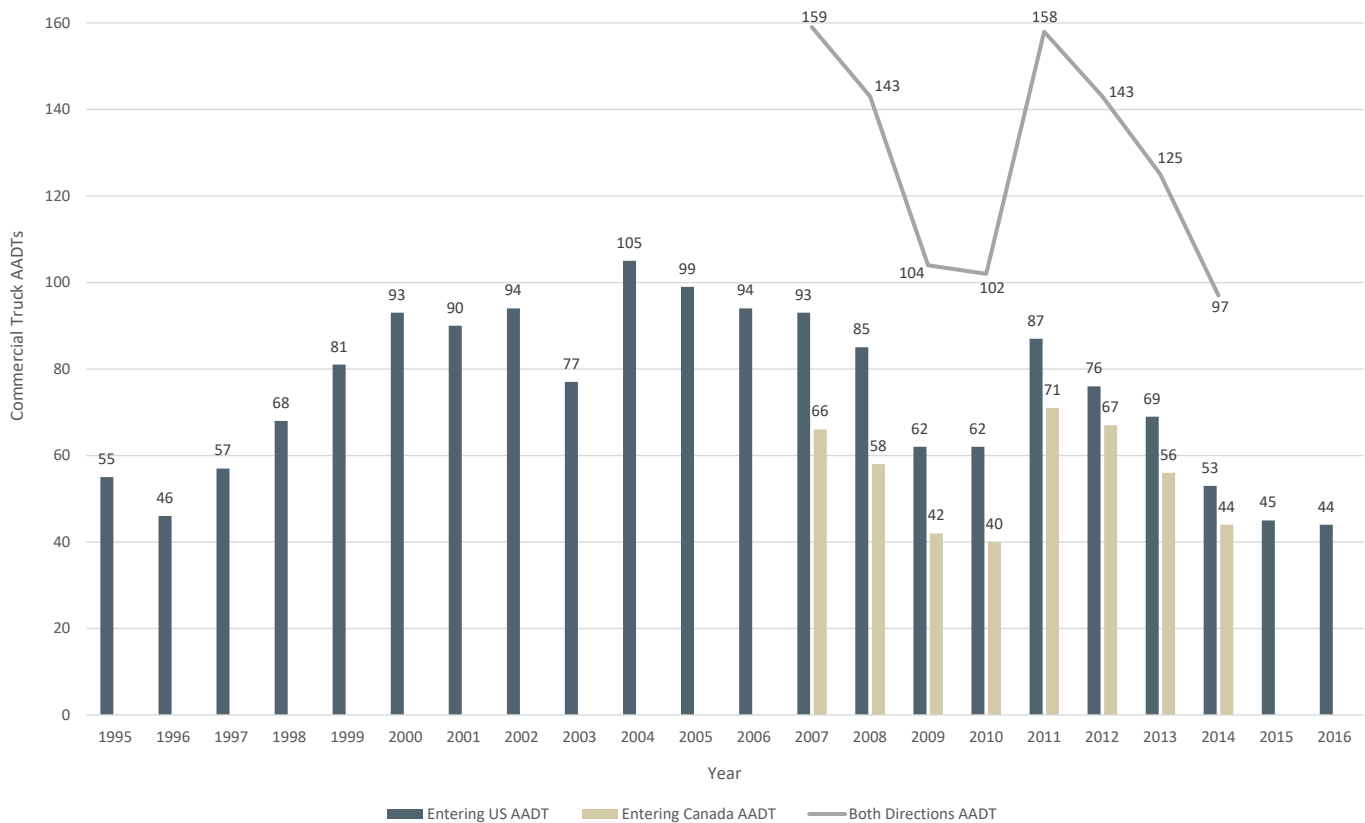
Source: MaineDOT, 2017c

Exhibit 3.13 - AADT for all Modes, 2004 – 2016

Year	Commercial Vehicles	Buses	Personal Vehicles	Pedestrians	AADT
2004	38,291	120	737,141	9,258	2,137
2005	36,043	115	723,548	8,208	2,093
2006	34,142	163	677,150	6,684	1,960
2007	33,832	171	649,387	4,185	1,883
2008	31,105	142	644,667	2,973	1,862
2009	22,464	91	570,182	1,576	1,633
2010	22,617	80	601,125	1,752	1,719
2011	31,859	72	621,773	2,227	1,801
2012	27,764	57	625,216	1,777	1,799
2013	25,241	45	616,924	1,503	1,769
2014	19,238	52	561,103	5,952	1,599
2015	16,421	58	488,127	1,134	1,390
2016	16,226	52	431,903	1,251	1,235

Source: MaineDOT, 2017c

Exhibit 3.14 - Commercial Truck AADTs from 1995-2016



Source: MaineDOT, 2017c

b. Future Traffic Volumes

MaineDOT used its Statewide Travel Demand Model to forecast future traffic volumes to the year 2040. Travel Demand Models are used to forecast traffic flows on the transportation system; a travel demand model is a program or set of computer programs and data which are assembled and run by professionals who specialize in travel forecasting. The MaineDOT Statewide Travel Demand Model forecasts a five percent increase in Madawaska/Edmundston cross-border traffic volumes by the year 2040 (Exhibit 3.15) (MaineDOT, 2017c). The GSA estimated future traffic volumes inbound into Madawaska for the year 2035. The results of MaineDOT’s and the GSA’s traffic forecasts are similar.

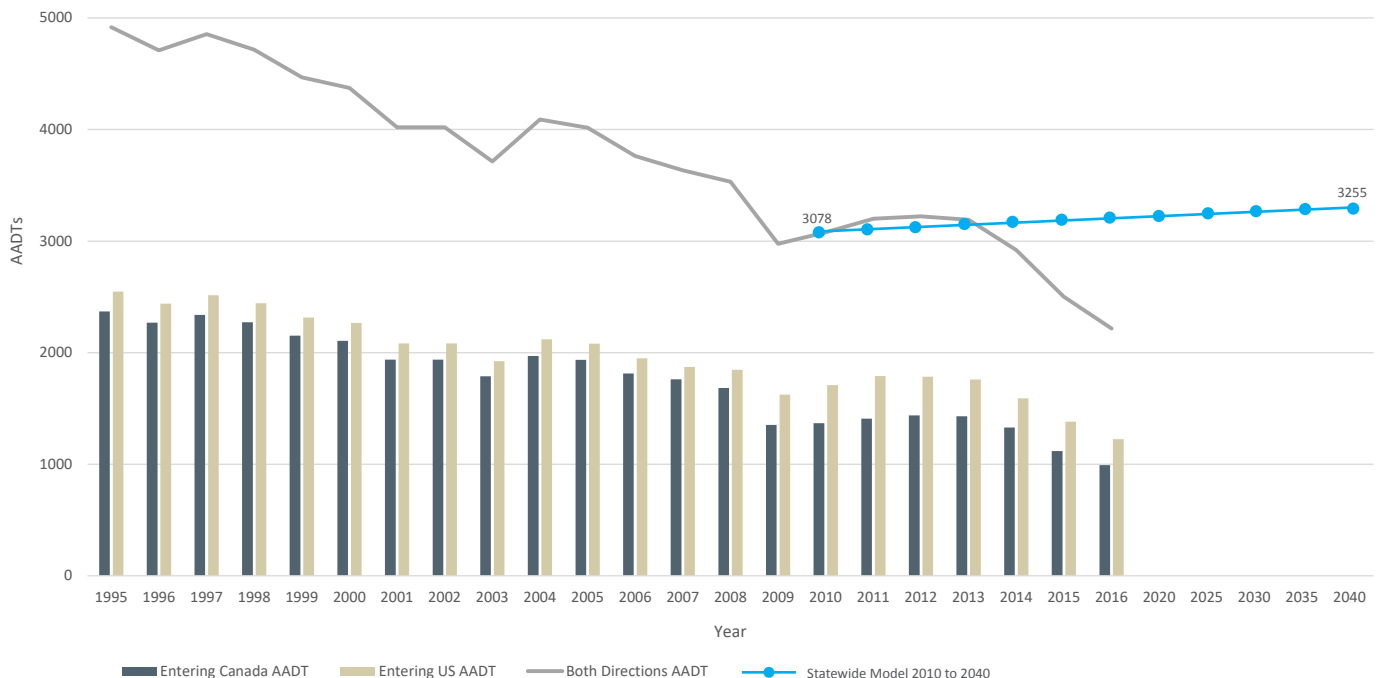
c. Snowmobiles

Border crossings by snowmobiles are infrequent and only permitted for occasional special events.

d. EMS Vehicles and Services

The Town of Madawaska and City of Edmundston entered into a mutual emergency aid agreement in 2012 for fire and emergency protection services. In the event of a fire or other emergency, fire departments from either the Town of Madawaska or City of Edmundston could be asked to respond (Town of Madawaska and City of Edmundston, 2012). If the Town of Madawaska or City of Edmundston fire

Exhibit 3.15 - AADTs from 1995-2040



Source: MaineDOT, 2017c

department is asked to respond, responders would have used the International Bridge, prior to posting the International Bridge to five tons.

e. Impacts

The No-Build Alternative would result in continued adverse impacts to the flow of traffic in the study area because the LPOE property is very small and the areas for the inspection of vehicles are close to the International Bridge, limiting the amount of space for sorting and processing vehicles inbound to Madawaska, causing traffic to back up onto the streets of Edmundston. Over time, as traffic volumes slowly increase, the existing delays in processing inbound vehicles would increase. Commercial and other large trucks that formerly used the Madawaska/Edmundston border crossing would need to continue to take detours to use the other border crossings at Fort Kent/Clair to the west (approximately 40 miles roundtrip) or Van Buren/Saint Leonard to the east (approximately 48 miles roundtrip), increasing operating costs for companies such as Twin Rivers.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in a variety of positive impacts to the flow of traffic in the study area. As part of the construction of the LPOE, the portions of Mill Street and Main Street adjacent to the LPOE may be reconstructed or reprofiled to provide smooth ingress and egress to the LPOE.

Traffic Volumes and Inspection Times

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not result in an increase in traffic volumes over the No-Build Alternative for traffic crossing the border at Madawaska. Since Madawaska is a permit LPOE and is expected to remain a permit LPOE in the future, LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not generate additional commercial truck traffic over the increases expected for the No-Build Alternative.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in positive impacts on inbound traffic compared to the No-Build Alternative. With a larger LPOE and an International Bridge that allows sorting of vehicles as drivers approach the primary inspection lanes, LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in shorter vehicle queues and faster processing times for inbound vehicles. The separation of passenger vehicles from commercial trucks and buses would greatly reduce queuing that occurs with the No-Build Alternative when more than one truck is present for processing. Traffic backups into the City of Edmundston would be substantially reduced as a result of the additional primary inspection lanes with the increased area for sorting and queuing vehicles under Bridge Alternatives 1, 2, and 3.

Traffic Movements

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in minor changes in traffic patterns on roads in the study area.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in minor decreases in traffic volumes on Bridge Avenue, North 15th Street, and Mill Street between Bridge Avenue and the entrance and exit to the LPOE. LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in minor increases in traffic volumes on Main Street between Bridge Avenue and the entrance and exit to the LPOE on Main Street. Main Street can accommodate these minor increases in traffic volumes created by the change in travel patterns with the LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3.

In general, outbound traffic destined for Edmundston traveling from the east on Main Street would continue west on Main Street, past Bridge Avenue, and turn right at the entrance to the LPOE. Vehicle traffic destined for Edmundston from the east would incur an increase in travel distance of about 0.6 mile. With LPOE Alternative C, some outbound commercial and passenger vehicles could choose to use Mill Street.

Outbound traffic destined for Edmundston traveling from the west on Main Street would turn left at the entrance to the LPOE. Vehicle traffic destined for Edmundston from the west would incur a decrease in travel distance of about 0.6 mile. With LPOE Alternative C, some outbound commercial and passenger vehicles could choose to use Mill Street.

Inbound traffic would continue to use the Bridge Alternatives 1, 2, and 3, over the MNR tracks, to LPOE Alternatives A, B, and C. Once through the LPOE, traffic would exit to Main Street. LPOE Alternatives B and C would permit commercial vehicles destined for Twin Rivers to exit to Mill Street. Inbound traffic to eastbound Main Street would have an increase in travel distance of 0.6 mile. Inbound traffic to westbound Main Street would have a decrease in travel distance of 0.6 mile.

Pedestrians

The No-Build Alternative would not impact pedestrians or their inspection.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would impact pedestrians. In general, inbound and outbound pedestrian traffic to and from the east on Main Street would have an increase in travel distance of 0.6 mile. In general, inbound and outbound pedestrian traffic to and from the west on Main Street would have a decrease in travel distance of 0.6 mile.

Snowmobiles

The No Build Alternative; LPOE Alternatives A, B and C; and Bridge Alternatives 1, 2, and 3 would not impact snowmobiles. Snowmobiles are not currently permitted

on the existing International Bridge, except for occasional special events. Under the No Build Alternative, conditions for snowmobiles would not change. Under LPOE Alternatives A, B and C, and Bridge Alternatives 1, 2, and 3, snowmobiles would continue to be restricted from using the bridge, except for occasional special events.

Reclassification of Mill Street

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in the likely reclassification of Bridge Avenue and Mill Street from federal-aid highways to local streets. State and federal maintenance funds for federal-aid highways are based on the length of the road. In the event Bridge Avenue and Mill Street are reclassified as local streets, MaineDOT would coordinate with the Town of Madawaska and develop specific details for the reclassification during final design.

Agreements

The No-Build Alternative would continue to prevent the Town of Madawaska and City of Edmundston from fulfilling the mutual emergency aid agreement for fire and emergency protection services.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would allow the Town of Madawaska and City of Edmundston to resume fulfilling the mutual emergency aid agreement for fire and emergency protection services.

During final design, the requirements of the MaineDOT for access to the International Bridge for continued maintenance through the LPOE would be fully determined, and agreements between the GSA and MaineDOT for access would be developed.

3. Railroads

The MNR operates in the study area proximate to the LPOE; railroad shipments are not inspected as the Madawaska/Edmundston Border Crossing is not an international rail crossing.

MNR, a subsidiary of New Brunswick & Maine Railways, owns the rail lines located to the south of the Saint John River extending from Frenchville south to Van Buren. MNR's facilities located within the study area consist of one mainline track, several sidings, and the Madawaska Rail Yard located immediately east of Twin Rivers. Numerous spur tracks and several sideline tracks in the vicinity of Twin Rivers are owned by others including the State of Maine and Twin Rivers (MNR, et al., 2017).

MNR operates two freight trains per day that pass through the Madawaska area. This service is regular and consistent day-to-day. Local shuttling operations between Twin Rivers facilities are completed to move goods and materials between the mill facilities on either side of Bridge Avenue (MNR, et al., 2017). Local representatives from the LPOE estimate a total of six trains pass by the LPOE on a daily basis. While

several spur lines at Twin Rivers are infrequently used, there are reportedly no plans to reduce the number of lines around the mill (HNTB and CBP, 2018).

MNR reports that no expansion of their facilities is planned within the study area (MNR, et al., 2017).

The No-Build Alternative would not impact the track structure or operations of the MNR at Madawaska because no changes to the track structure or operations would occur.

The LPOE Alternatives A, B, and C would not adversely impact the track structure or operations of the MNR. The LPOE Alternatives A, B, and C may improve the operations of the MNR when the existing LPOE is removed from service and traffic is removed from the portion of Bridge Avenue north of Mill Street.

Bridge Alternatives 1, 2, and 3 would not adversely impact the track structure or operations of the MNR. The alternatives would bridge over the MNR mainline track, maintaining the horizontal and vertical clearances required by the AREMA (Exhibits 2.12, 2.13, and 2.14).

MaineDOT and GSA would coordinate construction activities and schedule with MNR to avoid or minimize disruption to MNR operations. Construction would not result in MNR service interruption for an extended period.

4. International Bridge

The International Bridge is a 928-foot-long four-span thru truss bridge carrying Bridge Avenue over the Saint John River into Edmundston. Originally built in 1920, each span measures 232 feet long with a roadway width of 20 feet, 8 inches (MaineDOT, 2017a). The International Bridge has a 6-foot sidewalk on the western (upstream) side which provides shared use for pedestrians and bicyclists. The International Bridge was most recently rebuilt in 1961 (MaineDOT, 2017a) (see Chapter 1.A.3.b.).

The MaineDOT and NBDTI posted the International Bridge at five tons (the equivalent of a passenger vehicle) in October 2017.

The No-Build Alternative would not change the traffic volumes or traffic patterns approaching the International Bridge or impact the flow of traffic across the International Bridge, as the posting of the bridge would remain in effect.

The LPOE Alternatives A, B, and C would not change the traffic volumes using the International Bridge or the flow of traffic across the International Bridge destined for Edmundston as no changes to the Edmundston POE would occur. The LPOE Alternatives A, B, and C would not change the traffic volumes using the International

Bridge. LPOE Alternatives A, B, and C would improve the flow of traffic across the International Bridge destined for Madawaska because a modern LPOE would be equipped with additional primary inspection lanes and ancillary facilities to process more vehicles within the same amount of time.

Bridge Alternatives 1, 2, and 3 would result in positive impacts on inbound traffic compared to the No-Build Alternative. With a bridge that allows sorting of vehicles as drivers approach the primary inspection lanes, Bridge Alternatives 1, 2, and 3 would result in shorter vehicle queues and contribute to faster processing times for inbound vehicles.

E. Land Use and Cultural, Social, and Economic Environments

1. Land Use

a. Land Use and Land Cover

The study area contains a mix of industrial, transportation, commercial, and residential properties, with some undeveloped lands present along the Saint John River and Martin Brook (Exhibit 1.3). The Twin Rivers mill facility is the single largest land use in the study area. The paper mill has been in its present location since the early 1930s (R.W. Gillespie & Associates, 2005). The MNR railroad tracks parallel the Saint John River in the study area. There are railroad sidings adjacent to the Twin Rivers mill on its west and east sides. The area bordered by Mill Street, Bridge Avenue, and Main Street includes commercial and residential properties, as well as vacant land for Twin Rivers employee parking. Commercial properties primarily line Main Street. The LPOE is at the southern end of the International Bridge.

The Town of Madawaska completed *Grand Plan Madawaska: Strategic Plan for Madawaska 2018-2028* in December 2017. The plan calls for increasing and strengthening cross-border connections with New Brunswick and Quebec.

The Madawaska Comprehensive Plan (2000) goals include keeping development within the urban area of the town and making efficient use of available public services, providing for a more efficient transportation network, and promoting an economic climate that increases job opportunities.

The No-Build Alternative would not impact land use. The existing LPOE would continue operations at its existing location and would not require acquisition of additional land. The No-Build Alternative would not support the 2018 Strategic Plan for Madawaska because it would not improve the ease of travel between Madawaska and Edmundston.

LPOE Alternative A would not impact land use because land for the new LPOE is already owned by the USA.

LPOE Alternatives B and C would result in impacts to land use. LPOE Alternatives B or C would result in the acquisition of approximately 2.0 acres of private property (1.0 acre of commercial land, and 1.0 acre of residential land) and the conversion of residential and commercial land use to government use.

LPOE Alternatives A, B and C would support the 2018 Strategic Plan for Madawaska by reducing travel delays between Madawaska and Edmundston. LPOE Alternatives A, B, and C are consistent with the goals of the 2000 Madawaska Comprehensive Plan.

Bridge Alternatives 1, 2, and 3 would impact land use by moving the bridge from its current location to a point approximately 0.2 mile upstream. Bridge Alternatives 1, 2, and 3 would support the 2018 Strategic Plan for Madawaska by providing an improved transportation corridor between the U.S. and Canada.

b. Land Acquisition

The No-Build Alternative and LPOE Alternative A would not require private property acquisition.

Bridge Alternatives 1, 2, and 3 would not require private property acquisition. It is anticipated that Bridge Alternatives 1, 2, and 3 would require an aerial easement or rights over the MNR and likely require temporary construction easements on property owned by the MNR and Twin Rivers. Additionally, MaineDOT would require some form of permanent easement on the LPOE.

LPOE Alternatives B and C would require the following private property acquisitions, two of which would include the displacement of people from their residence or business: (a) the McDonald's commercial property on Main Street; (b) an owner-occupied residential property on Vital Drive; and (c) two vacant residential properties on Vital Drive.

GSA would acquire private property and provide relocation assistance to displaced people pursuant to the policies and provisions set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, 42 U.S.C. 4601 and the regulations for implementing the act contained in 49 CFR Part 24. A displaced person is defined as any person (individual, family, partnership, association or corporation) who moves from real property, or moves personal property from real property, as a direct result of the acquisition of real property as part of the LPOE project.

GSA would notify each property owner of its intent to acquire, its appraisal obligations, and other useful information. GSA will determine the amount of just compensation to be offered for the private property; this amount will not be less than the fair market value established by an approved appraisal.

Further, any displaced person (defined above) would be offered relocation assistance services. Relocation services and payments will be explained in accordance with each displaced person's eligibility.

Lastly, GSA would continue to offer relocation assistance services to Twin Rivers as it transitions its operations off the USA-owned property. Twin Rivers has continued to operate on the USA-owned property since it was sold to GSA in 2011.

c. Future Land Use and Zoning

The Town of Madawaska *Land Use and Development Code* (2016) establishes seven zoning designations: Rural Farm and Forest; Low, Medium, and High Density Residential; Resource Protection; Commercial; and Industrial.

The study area is zoned for industrial and commercial uses, except for the land bordering the Saint John River and Martin Brook, which is in a resource protection zone governed by Madawaska's Shoreland Zoning Ordinance. The resource protection zone prohibits most structures except for single family residences, which are allowed by special exception (Town of Madawaska, 2009). Consequently, the land in the resource protection zone is the only land in the study area that has not been cleared and developed.

The 2018 Strategic Plan for Madawaska establishes a goal to update the zoning map and rewrite the land use code by 2020. The Town of Madawaska's priorities for future land use and the zoning update include: 1) exploring the repurposing of Midtown Shopping Center as a multi-use hub, 2) phasing out residential use of commercial street front buildings, and 3) focusing on preserving the character and integrity of Madawaska's natural environment, including visual and physical access to the Saint John River (Town of Madawaska, 2017).

The No-Build Alternative would not impact future land use and zoning.

LPOE Alternatives A, B, and C would not impact Madawaska's future land use goals and activities or zoning. Located primarily in an industrial zone, the conversion of land to government use as a LPOE is generally consistent with local zoning.

LPOE Alternatives A, B, and C would not impact the locally designated resource protection zone along Martin Brook. A 75-foot setback from Martin Brook has been established, which corresponds to the designated resource protection zone. No buildings or roads are proposed within the setback area.

Bridge Alternatives 1, 2, and 3 would not impact Madawaska's future land use goals and activities or zoning.

d. Neighborhoods

There are two residential areas in the study area. To the southeast, a residential area is bounded by Mill Street, Main Street, and Bridge Avenue. To the southwest of the proposed site, a residential area is bounded by Martin Brook, 19th Avenue, and Main Street.

The No-Build Alternative would not impact neighborhoods.

LPOE Alternatives A, B, and C would introduce new lighting to the area and require more lighting than the No-Build Alternative. Lighting quality is an important consideration in the planning and design of LPOEs; insufficient lighting or glare would inhibit accurate assessment and can cause fatigue. Lighting needs to be sufficient to allow accurate identification of vehicle color and passenger identification. The safety of personnel is a concern especially during twilight or darkness. Some lighting of the site of the LPOE already exists from nearby commercial facilities.

Lighting from LPOE Alternatives A, B, and C may impact neighboring residences to the southwest and southeast. LPOE Alternatives A, B, and C are approximately 20 feet lower than the elevation of the neighboring residences; the change in topography would provide some shielding from lighting. Lighting placement, fixtures, and levels as part of LPOE Alternatives A, B, and C would be designed in accordance with the requirements of the CBP to provide sufficient lighting to intended areas and reduce the amount of light to unintended areas. Typically, light poles are approximately 20 feet tall. Details of the lighting plan would be developed by the GSA during final design. The lighting plan would include planting vegetation to provide additional shielding.

Bridge Alternatives 1, 2, and 3 would not impact neighborhoods.

e. Parks and Recreation Lands

There are no parks or recreation areas in the study area.

The Madawaska Department of Parks and Recreation maintains five indoor and outdoor facilities in the town. These facilities are (Town of Madawaska, 2018b):

- Multi-Purpose Building on 7th Street: The Multi-Purpose Center is a 30,800 square feet building on approximately 8 acres. The building has two indoor tennis courts, a basketball court, and three activity rooms on the 1st floor. During the winter months, the center is converted into an indoor skating rink. The 2nd floor consists of two offices and storage space for recreational equipment. The surrounding site has a youth baseball diamond, a regulation baseball diamond, one volleyball court, two horseshoe courts, two soccer fields, and a nature studies area.
- Bi-Centennial Park on the corner of 11th Street and Saint Thomas: The park holds many events throughout the year. A large gazebo is in the center with

a brick fireplace. A Vietnam veteran's memorial statue is a site of interest for many visitors.

- Dionne Park on Fox Street: A 2 1/2-acre park landscaped with trees and shrubs. It features a children's playground, two horseshoe courts, and a basketball court.
- Fraser Park on 11th Street: This park features a regulation soccer field, an elementary school soccer field, a softball field, four tennis courts, and a 775 square feet building, which is also used by the boy scouts.
- Birch Point Beach at Long Lake: A beach on Long Lake, this 20-acre site features a picnic area, a sand volleyball court, tetherball, and playground equipment. A bathhouse with restrooms is open from sunrise to sunset in May through September.

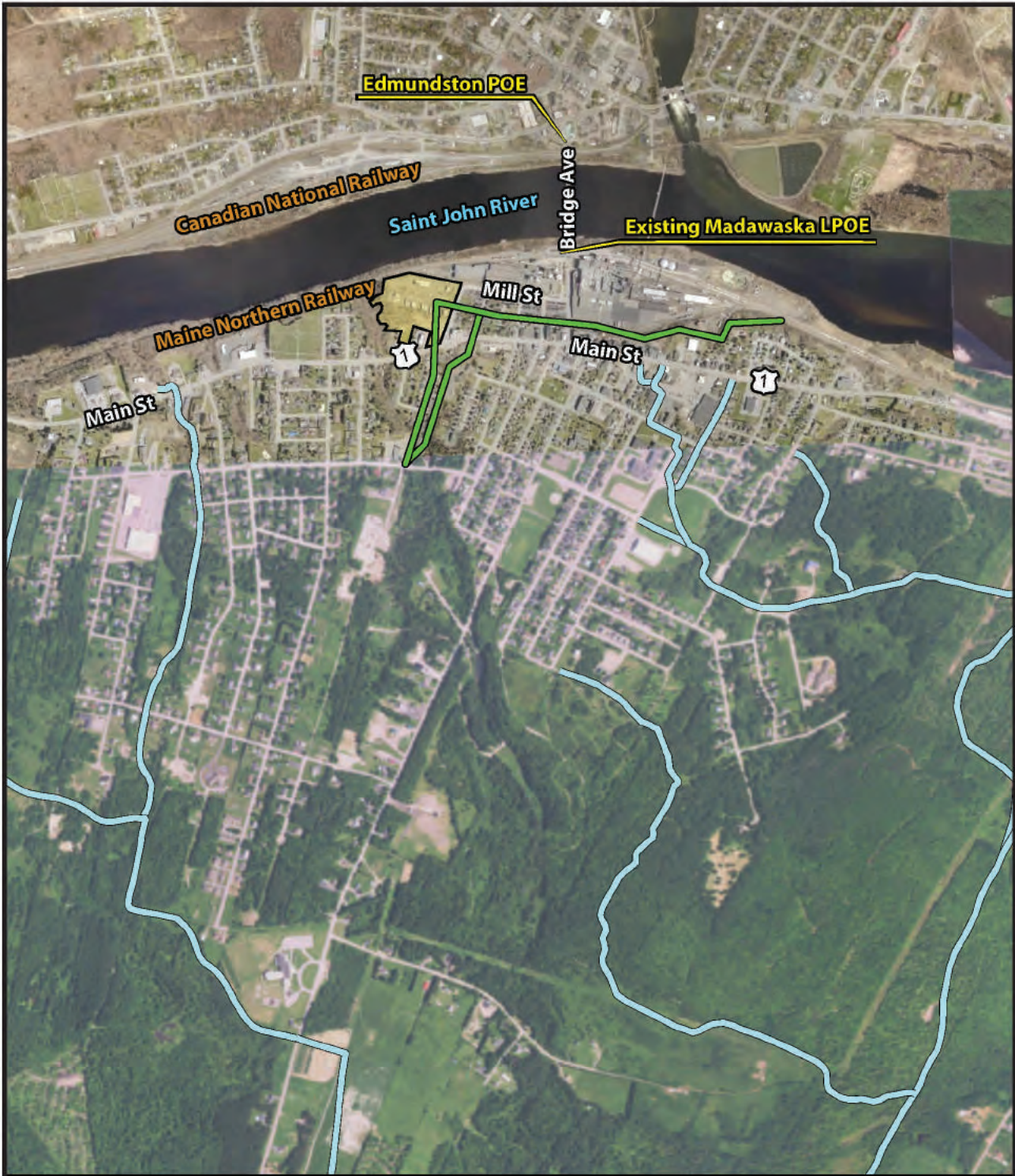
The non-profit Madawaska Four Corners Park Association owns and manages the Madawaska Four Corners Park on Main Street. Madawaska serves as one of the "Four Corners" of the U.S., as it is the most northeasterly town in the country, and as such, serves as one of the checkpoints for motorcyclists competing in the U.S.A. Four Corners Tour. The park honors Four Corners Tour finishers and motorcyclists that have come to Madawaska. The park contains paved paths, a granite monument, water fountain, and picnic seating (Town of Madawaska, 2018b).

In addition to local parks, there are a variety of other cultural/recreational events in Madawaska and the surrounding area that are important to the region (Town of Madawaska, 2018b):

- The International Snowmobile Festival is held in February. It features events in both the U.S. and Canada, and many snowmobiles cross the International Bridge to ride area trails.
- The Top O' Maine Trade Show in April features more than 75 exhibitors displaying products and services from a number of different trades.
- The annual week-long Acadian Festival, which features a re-enactment of the first Acadian landing in northern Maine, traditional cultural displays, a golf tournament, and a festival parade.

These important cultural and recreational events attract visitors to the area and can result in additional vehicular and pedestrian traffic volumes at the LPOE for short periods of time.

Snowmobiling is a popular recreational and tourism activity in the region. Aroostook County has nearly 2,300 miles of groomed snowmobile trails. The Interconnecting Trail System includes routes within Madawaska and the surrounding areas (Exhibit 3.16). More than 40 snowmobile clubs are active within Aroostook and Penobscot Counties (Town of Madawaska, 2018b).



Legend

- Existing Snowmobile Trails
- Town of Madawaska Proposed Snowmobile Trails
- USA-owned Property

Exhibit 3.16 - Snowmobile Trails

0 750 1,500 2,250 3,000 Feet

Source: Town of Madawaska, 2018c

Recreation on the Saint John River includes boating and sport fishing during the spring/summer months. Regional public boat access sites are located in Van Buren, Fort Kent, St. Francis, and Allagash (MDIFW, 2018).

The No-Build Alternative would not impact parks and recreation facilities or recreation activities.

LPOE Alternatives A, B, and C would have minor beneficial impacts on local festivals as the proposed LPOE would be better equipped to process vehicles, resulting in shorter queues and congestion on the International Bridge.

LPOE Alternatives A, B, and C and Bridge Alternatives 1, 2, and 3 would not impact parks and recreation facilities or recreation activities.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not impact snowmobiles. Snowmobiles are not currently permitted on the existing International Bridge, except for occasional special events. Under LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3, snowmobiles would be permitted to use the shoulder to cross the new International Bridge.

f. Visual Resources and Aesthetics

The architecture in the study area is dominated by two stylistic types: large, imposing, metal-clad mill buildings and industrial holding tanks, and two- and three-story brick commercial buildings that are typical of main streets in small, New England towns. The existing International Bridge is a thru truss bridge constructed of built-up members composed of angles, channels, and plates and a dominant feature in the study area as it is visible from both upstream and downstream.

The No-Build Alternative would not affect visual resources and aesthetics because the existing LPOE and International Bridge would continue operations at their existing locations.

LPOE Alternatives A, B, and C would have an overall beneficial effect on the visual environment. The disparity between the scale and architectural style of the two existing building types provides an opportunity for creativity in finding an architectural style for the LPOE design that is compatible with both. LPOE Alternatives A, B, and C would include the construction of a perimeter fence around the proposed LPOE. The architectural characteristics of the LPOE would be developed during final design.

Bridge Alternatives 1, 2, and 3 would impact visual resources and aesthetics by removing the existing historic bridge and constructing a new bridge approximately 0.2 mile upstream. Existing views from the neighboring residential area to the southeast, which are primarily of industrial, commercial, and transportation land uses, would not change substantially (Exhibits 2.12, 2.13, and 2.14).

2. Cultural Environment**a. Tribal Lands**

There are no tribal lands in the study area.

Notification of the intent to construct the New Madawaska LPOE and the new International Bridge was sent to the five Maine tribal governments in December 2017. Two letters were received in response to the notice.

The Passamaquoddy Tribe indicated that the project would not have any impact on cultural and historic concerns of the Passamaquoddy Tribe (Soctomah, 2017).

The Houlton Band of Maliseet Indians noted that there were no immediate concerns regarding the project (Young, 2018).

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact tribal lands.

b. Historic Resources

The NHPA established a program to preserve historic properties throughout the country. Section 106 of the NHPA, as amended, requires that federal agencies review undertakings for their impact on significant historic resources. The term historic includes architectural, archaeological, and landscape resources. A significant historic resource is one that is either listed or determined eligible for listing on the NRHP. The NRHP is the federally maintained list of properties recognized for their significance in American history, architecture, archaeology, engineering, and culture. The criteria for evaluating the eligibility of properties for inclusion on the NRHP are established by the Secretary of the Interior.

The International Bridge is a two-lane, bidirectional highway and pedestrian bridge constructed in 1920. The bridge is part of the NHS and is classified as a principal arterial.

The 928-foot-long bridge consists of four riveted Pennsylvania thru truss spans. The trusses are constructed of built-up members composed of angles, channels, and plates. There is a cantilevered sidewalk with metal lattice railings on the west side. The floor beams and stringers are rolled sections. A new, open steel grid deck and stringers were placed in 2001. The substructure consists of concrete abutments and piers with a cutwater detail on the upstream face. The bridge seat on the Maine abutment was strengthened in 2001.

The International Bridge is considered eligible for listing on the NRHP because 1) “it is a significant example of its type and design as it is the oldest, extant, riveted field connection Pennsylvania thru truss bridge in the state;” and 2) “it aided materially in the development of Madawaska and the region’s pulp and paper industry”

(MaineDOT, 2003). There are no other historic resources in the study area. No further investigation is required (MHPC, 2018).

Based on current guidelines, the bridge is deficient in roadway width and load capacity, and in poor condition (see Chapter 1.A.3.b.). MaineDOT has determined that the bridge has no preservation potential because further attempts to repair or rehabilitate the bridge would not restore the full capacity of the bridge to meet today's load requirements or geometric standards (see Appendix A, Draft Programmatic 4(f) Evaluation).

On December 13, 2017, MaineDOT (on behalf of FHWA) sent a letter to the Town of Madawaska inviting participation as a consulting party and requesting information or knowledge of, or concerns with, historic properties in the study area. No response was received. At the public meeting held on January 30, 2018, it was noted that the Madawaska International Bridge is eligible for listing on the National Register of Historic Places. No comments related to the historic nature of the bridge or other resources were received. On September 25, 2018, MaineDOT (on behalf of FHWA) sent a letter with information regarding historic resources in the study area to the Madawaska Historical Society. On October 25, 2018 MaineDOT posted a preliminary determination of effects to historic properties from the project to the MaineDOT website and published a public notice requesting review and comment on the potential effects to historic properties. The comment period ended November 14, 2018. MaineDOT also provided the preliminary determination of effects to the Maine Historic Preservation Officer with a request for concurrence.

The No-Build Alternative would not affect historic resources.

LPOE Alternatives A, B, and C would not affect historic resources.

Bridge Alternatives 1, 2, and 3 would result in an adverse effect to the International Bridge. Under these alternatives, a new bridge would be constructed, and the existing International Bridge would likely be demolished. A MOA would be prepared between the FHWA, MaineDOT, and Maine Historic Preservation Commission (MHPC) (Maine State Historic Preservation Officer) to document the mitigation measures for the adverse effect.

c. Archaeological Resources

GSA coordinated with the MHPC in 2006 to determine the potential for archaeological resources at the proposed LPOE. The MHPC determined that no archaeological resources were present, and no further investigation was required (MHPC, 2006).

The No-Build Alternative would not impact archaeological resources.

In 2018, MaineDOT and GSA coordinated with the MHPC to determine whether there was a change in the potential for archaeological resources in the study area. According to the MHPC, the LPOE Alternatives A, B, and C would not impact archaeological resources and no further investigation is required (MHPC, 2018).

According to the MHPC, Bridge Alternatives 1, 2, and 3 would not impact potential archaeological resources. The river bank within the study area has been previously reconstructed for railroad and other industrial use and undisturbed soil is not present (MHPC, 2018).

3. Social Environment

a. Population and Demographics

Madawaska is in Aroostook County, which is Maine's northernmost county, bordered to the east, west, and north by New Brunswick, Canada. The county is predominantly rural, accounting for less than 6 percent of the state's population (69,405 of 1,329,923 persons) but approximately 22 percent of the state's total land area. The Town of Madawaska is the fourth largest incorporated area in Aroostook County, with a population of 3,889 persons (U.S. Census Bureau, 2017) (Exhibit 3.17).

From 1980 through 2016, the population of Madawaska fell approximately 26 percent. Aroostook County's overall population decreased by approximately 23 percent. In contrast, the State of Maine's population grew by approximately 34 percent (Exhibit 3.17).

More recent population trends between 2010 and 2016 show that population continues to decline in Madawaska and Aroostook County, while remaining stable in Maine overall. From 2010-2016, Madawaska and Aroostook County's populations decreased by 4 and 3 percent, respectively, while Maine's population grew by 0.1 percent. Downtown area trends are similar to Madawaska and Aroostook County; population declined 3 percent in the study area from 2010-2016 (Maine State Planning Office, 2018).

Exhibit 3.17 - Population

	1980	1990	2000	2010	2016	% Change 2010-2016	% Change 1980-2016
Study Area	--	--	619	511	495	-3%	--
Madawaska	5,282	4,803	4,534	4,035	3,889	-4%	-26%
Aroostook County	90,609	89,494	85,838	71,870	69,405	-3%	-23%
Maine	993,722	1,125,043	1,227,900	1,328,361	1,329,923	0.1%	34%

Note: The study area encompasses Block Group 2, Census Tract 9503 in Aroostook County.

Source: U.S. Census Bureau, 2017

Madawaska’s population is projected to continue declining from 2016-2024 at a rate of approximately 1.5 percent. Aroostook County’s population is also projected to decline by approximately 1.4 percent over the period (Maine State Planning Office, 2018).

The age distribution of a population is a key factor which can affect population growth and the type of services required for residents. The median age of Madawaska residents is 52.9 years, which is substantially older than the median age of residents in Aroostook County (46.9 years), and the state (44.0 years). More than one-third of the population of Madawaska is composed of residents 60 years of age or older (U.S. Census Bureau, 2017).

The No-Build Alternative would not result in impacts to population and demographics.

LPOE Alternatives A, B, and C would not result in impacts to population and demographics. None of the alternatives would require substantial changes in staffing levels that would impact the area’s population and demographics.

Bridge Alternatives 1, 2, and 3 would not impact population and demographics.

b. Community Characteristics and Conditions

Madawaska has a rich cultural heritage. It was founded by Acadians (primarily French immigrants who settled portions of Canada in the early 1700s) who settled Madawaska after fleeing from their Nova Scotia homeland in 1785 to avoid being deported by the British. The town has maintained its cultural identity with more than 1,922 of the 3,889 residents being of Acadian, French, or French-Canadian descent, most of whom speak fluent French. The 2016 Census indicates that 579 people age five or over in Madawaska speak English less than “very well,” and 2,256 speak another Indo-European language (French) at home (U.S. Census Bureau, 2017).

The statewide levels of educational attainment are higher than the attainment levels in Aroostook County and Madawaska. The percentages of people who have completed high school or the equivalent are similar for Madawaska and Aroostook County, but both lag behind the state level. The percentages of persons who have earned college or graduate degrees are lower in Madawaska and Aroostook County than in the state (Exhibit 3.18) (U.S. Census Bureau, 2017).

Exhibit 3.18 - Educational Attainment by Percentage of Population 25 Years and Older

Jurisdiction	High School Diploma/ Equivalent	Associate/Bachelor Degree	Graduate/Professional Degree
Madawaska	87.9%	25.2%	4.8%
Aroostook County	87.5%	22.8%	5.3%
Maine	92.0%	28.6%	10.5%

Source: U.S. Census Bureau, 2017

In 2016, Madawaska contained a total of approximately 2,407 housing units, of which 79.9 percent were occupied, and another 9.3 percent were reserved for seasonal or recreational use. Madawaska contains a higher concentration of multi-family housing (28.2 percent) than surrounding areas. However, single-family dwellings are predominant (71.8 percent). Mobile homes make up approximately 6.6 percent of the occupied housing stock. The percentage of mobile homes is lower in Madawaska than in Aroostook County (9.8 percent) and the state (8.5 percent) (U.S. Census Bureau, 2017).

The majority of the housing stock in Madawaska (64.4 percent) was built before 1980. The rate of new housing construction has decreased in Madawaska during the period from 1990 to the present. New housing construction rates from 2000-2016 are lower for Madawaska than for Aroostook County and the state (U.S. Census Bureau, 2017).

A strong degree of community cohesion is present between the communities of Madawaska and Edmundston, New Brunswick. The two communities border either side of the Saint John River and share an Acadian cultural heritage. Cultural events reinforce cohesion between the two communities. The annual Acadian Festival, celebrated for more than 30 years, is a week-long festival that features a re-enactment of the first Acadian landing in northern Maine, traditional cultural displays, a golf tournament, and festival parade. The International Snowmobile Festival features events on both the U.S. and Canadian sides of the river, and many snowmobiles cross the International Bridge to ride the trails in the area. The two communities are also linked economically. Twin Rivers, the major regional employer, has production facilities on both sides of the river (Town of Madawaska, 2018a).

The No-Build Alternative would impact community characteristics and conditions. Under the No-Build Alternative, the existing International Bridge would continue to be posted, prohibiting vehicles weighing more than five tons.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would have a beneficial impact on community cohesion between Madawaska and Edmundston by improving the ease of travel between the two communities.

The No-Build Alternative; LPOE Alternatives A, B, and C; and Bridge Alternatives 1, 2, and 3 would not impact snowmobiles. Snowmobiles are not currently permitted on the existing International Bridge, except for occasional special events. Under the No-Build Alternative, conditions for snowmobiles would not change. Under LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3, snowmobiles would continue to be restricted from using the bridge, except for occasional special events.

c. Community Facilities and Services

There are no community facilities or services in the study area. Medical facilities in Madawaska include the Acadia Family Health Center located on Main Street, and

the Madawaska Outpatient Center on St. Thomas Street. Regionally, the general hospital in Caribou (the Cary Medical Center), the Aroostook Medical Center in Presque Isle, and the Northern Maine Medical Center in Fort Kent serve citizens in Madawaska (U.S. Census Bureau, 2017).

Two educational facilities are in Madawaska: the Madawaska Elementary School and the Madawaska Middle/High School. Three churches, two charitable organizations, a public library, and the Madawaska Historical Society are also present (U.S. Census Bureau, 2017).

The Madawaska Safety Complex is situated east of the study area on Main Street and contains the police station, fire department, and a full-time ambulance service.

The Town of Madawaska and City of Edmundston entered into a mutual emergency aid agreement in 2012 for fire and emergency protection services. In the event of a fire or other emergency, fire departments from either the Town of Madawaska or City of Edmundston could be asked to respond (Town of Madawaska and City of Edmundston, 2012). If the Town of Madawaska or City of Edmundston fire department is asked to respond, responders would have used the International Bridge, prior to posting the International Bridge to five tons.

The No-Build Alternative would impact community facilities and services. Under the No-Build Alternative, the City of Edmundston and the Town of Madawaska would not be able to fulfill their mutual emergency aid agreement for services as the existing International Bridge would continue to be posted, prohibiting vehicles weighing more than five tons.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in a positive impact to community services. LPOE Alternatives A, B, and C would remove or substantially reduce traffic queues that extend across the International Bridge, improving the ability of emergency services to respond in times of need. Emergency service providers for the Town of Madawaska and the City of Edmundston would be able to travel across the new bridge in response to emergencies, in fulfillment of their mutual aid emergency service agreement.

4. Economic Environment

a. Labor Force

More than half of the residents 16 years and older in Madawaska were in the labor force in 2016. Madawaska had a total labor force of approximately 1,775 persons or 52.7 percent of persons 16 years and older (U.S. Census Bureau, 2017).

In 2016, the unemployment rate in Madawaska was 3.4 percent. This rate was lower than Aroostook County (6.2 percent) and the state (6.0 percent) (U.S. Census Bureau, 2017).

Madawaska's per capita income was approximately 17 percent below the state average in 2016. However, Madawaska residents had a 5 percent higher per capita income level in comparison to Aroostook County overall (Exhibit 3.19). The rate of income growth in Aroostook County has consistently lagged behind the state as a whole. In 2016, Aroostook County had the fourth lowest per capita income among Maine's 16 counties.

In 2016, the median household income for Madawaska was \$39,412, approximately 23 percent below the state average of \$50,826. Although substantially lower than the state average, Madawaska's median household income was greater than Aroostook County overall (\$38,087) (Exhibit 3.19).

b. Employment and Industry Trends

The manufacturing sector is the largest employment sector in Madawaska (Exhibit 3.20). Twin Rivers in downtown Madawaska employs approximately 500 area residents (Twin Rivers, 2018). Other major employment sectors are education, health care, and retail trade.

Exhibit 3.19 - Income

	Per Capita Income (2016 \$)	Median Household Income (2016 \$)
Madawaska	\$23,603	\$39,412
Aroostook County	\$22,483	\$38,087
Maine	\$28,473	\$50,826

Source: U.S. Census Bureau, 2017

Exhibit 3.20 - Employment by Industry, Madawaska

Industry	Percent Employed
Agriculture, forestry, fishing, and hunting	3%
Construction	7%
Manufacturing	23%
Retail trade	22%
Transportation and Warehousing	5%
Information	3%
Finance and insurance	3%
Professional, scientific, and technical services	3%
Administrative and support, waste management, and remediation services	2%
Educational services	11%
Health care and social assistance	11%
Accommodation and food services	1%
Other services	4%
Public administration	3%

Source: U.S. Census Bureau, 2017

Note: Table sums to 101% due to rounding.

Agricultural sector employment has been in decline in Madawaska and Aroostook County over the past several decades, a trend consistent with most of the United States. However, the agricultural community in Madawaska has retained a strong identity, largely based on the Maine potato industry. The agricultural sector supports employment related to processing, wholesaling, and transporting locally grown crops (U.S. Census Bureau, 2017).

c. Economic Development and Initiatives

Aroostook County is designated a Historically Underused Business Zone by the U.S. Small Business Administration. This federal designation assists small businesses in qualified zones to gain preferential access to federal procurement opportunities (SBA, 2018). At the state level, Aroostook County is designated a Pine Tree Zone. Maine offers business incentives including financing, tax reimbursements, credits, and exemptions to qualifying businesses located in designated zones. The Northern Maine Development Commission (NMDC) and Aroostook Partnership for Progress are partner economic development agencies for the Pine Tree Zone (NMDC, 2017).

Madawaska also links economic development investments with its sister, the City of Edmundston, New Brunswick, by providing international events in leisure, tourism, and recreation.

Aroostook County, in conjunction with the NMDC, has been working to diversify the area economy. The county is focusing economic development initiatives on the forest products, information processing and other business services, and manufacturing sectors. Recently, the county has also strengthened efforts to develop a tourism industry, especially winter-based recreation and ecotourism activities (Town of Madawaska, 2018a).

The No-Build Alternative would not impact the labor force or income level within the study area. The No-Build Alternative would have a negative impact on area industry because Twin Rivers tractor trailer shipments into Canada would continue to be negatively impacted by the weight restrictions on the existing International Bridge. Since 2017, shipments have been required to detour to the Fort Kent-Clair border crossing, approximately 20 miles southwest of Madawaska.

LPOE Alternative A would not impact the labor force, income level, or industry trends within the study area. LPOE Alternatives B and C would impact the labor force and income level in the study area.

LPOE Alternative A would not require GSA to acquire the McDonalds property. LPOE Alternatives B and C would require GSA to acquire the McDonald's property, and would cause the displacement of the business. GSA would offer relocation assistance services and payments in accordance with the policies and provisions in the Uniform Act.

LPOE Alternatives B and C could result in a slight reduction in commercial property tax revenue if the McDonald's closes temporarily, or if the McDonald's does not relocate in the area.

During construction, LPOE Alternatives A, B, or C would result in a short-term stimulus of the local economy through the purchase of goods and services.

Bridge Alternatives 1, 2, and 3 would not impact the labor force, income level, or industry trends within the study area.

Twin Rivers noted that their operations are financially sensitive to disruptions in production and transport (HNTB and Twin Rivers, 2017). The MaineDOT and GSA would coordinate construction activities and schedule with Twin Rivers to avoid or minimize disruption to Twin Rivers' operations from construction of the LPOE and International Bridge and likely demolition of the existing facilities.

Twin Rivers noted that current traffic queues are an operational issue for their facility (HNTB and Twin Rivers, 2017). LPOE Alternatives A, B, and C would have a beneficial impact on Twin Rivers' commercial operations by reducing traffic queues in the study area. This includes eliminating the vehicle/rail conflict at Bridge Avenue by abandoning the portion of Bridge Avenue that bisects the MNR mainline track. Twin Rivers uses the MNR track to move materials between the mill facilities on either side of Bridge Avenue.

Twin Rivers tractor trailer shipments into Canada have been negatively impacted by the weight restrictions on the existing International Bridge. Since 2017, shipments have been required to detour to the Fort Kent/Clair border crossing, approximately 20 miles southwest of Madawaska. Bridge Alternatives 1, 2, and 3 would result in a long term beneficial impact to Twin Rivers' operations by reducing travel time and distance for commercial shipments to Canada when the new International Bridge is completed.

F. Uncontrolled Petroleum and Hazardous Waste

Two Phase I environmental site assessments were performed: the first, in February 2005 for the existing LPOE and property, and the second, in November 2005 for the USA-owned property prior to acquisition. Each environmental site assessment consisted of database searches, visual inspections, and limited sampling of soils and groundwater (R.W. Gillespie & Associates, 2005).

The visual inspections of the existing LPOE and the USA-owned property did not identify any areas of concern on the properties. A database search for hazardous materials spills and releases identified four facilities in proximity to the existing LPOE and USA-owned property with a potential to negatively affect the sites. The four identified facilities were considered to be minimal potential threats due to a

lack of groundwater impacts identified by MDEP. Four properties within a quarter mile of the existing LPOE and USA-owned property, including the LPOE itself, were identified as having USTs. Of the four properties identified, only the existing LPOE had a record of spills related to the USTs. The LPOE had two spills identified 15 years prior to the environmental site assessment. Due to the time that had elapsed and the small quantity of the releases, it was determined that impacts to the LPOE property were minimal. The groundwater and soil sampling yielded low to non-detectable concentrations of volatile organic compounds (VOCs) in the groundwater, and no evidence of contamination to the soil. It was determined that the low levels of VOC contamination in the groundwater were not an environmental concern. Both reports found no evidence of uncontrolled petroleum, hazardous, toxic, or radioactive wastes (R.W. Gillespie & Associates, 2005).

A third Phase I environmental site assessment was conducted in July 2009 focusing solely on the USA-owned property. The environmental site assessment consisted of interviews with landowners, reviews of historic topographic maps and aerial photographs, visual inspection of the site, soil and groundwater sampling, reconnaissance of the surrounding properties, and a review of relevant regulatory databases. The database reviews determined that petroleum products and hazardous materials were present on the site and there had been several documented releases of hazardous substances at the site. In addition, several nearby or adjoining properties were identified as potential threats to the site. The soil and groundwater sampling indicated low levels of VOCs at the site, but identified exceedances of arsenic, chromium, and lead in the groundwater. Visual inspection of the site did not identify any areas of concern. Reconnaissance of the surrounding properties indicated that the MM&A railroad (now MNR) and Fraser Papers (now Twin Rivers) properties posed potential threats to the USA-owned property. The 2009 environmental site assessment concluded that further environmental investigation and monitoring should be performed during construction of the new LPOE (GZA GeoEnvironmental, Inc., 2009b).

The No-Build Alternative would not impact uncontrolled petroleum and hazardous, toxic, and radioactive wastes.

The construction of the LPOE Alternatives A, B, and C would not impact uncontrolled petroleum and hazardous, toxic, and radioactive wastes.

The operation of LPOE Alternatives A, B, and C could create a small increase in the amount of hazardous materials used or generated on the site of the LPOE if x-ray technology for commercial vehicle contents is added to the LPOE in the future. The construction of an x-ray technology facility or mobile unit has the potential to result in impacts from hazardous wastes or materials. Construction activities would follow legal requirements for storage, handling, use, and disposal of hazardous materials and wastes. Operation and maintenance of an x-ray technology facility or mobile unit has little potential impact associated with hazardous materials and wastes.

Refueling of a mobile x-ray technology unit would follow legal requirements for storage, handling, use, and disposal of hazardous materials and wastes. Hazardous materials generated would be collected and disposed of in accordance with federal and state regulations (CBP, 2004).

The CBP prepared a programmatic environmental assessment on the effects to human health from radiation emission from inspection equipment. It concluded that (CBP, 2004):

“As promulgated by the Nuclear Regulatory Commission in Title 10 CFR Part 20, the maximum permissible level of radiation dose to the general public in unrestricted areas is 100 mrem (100,000 µrem) per year. CBP has chosen this same radiation dose standard as the maximum permissible level for Customs Inspectors. Based upon CBP’s chosen criterion of 2000 hours per year as the time of exposure, neither Customs Inspectors nor the general public will experience a dose greater than 0.05 mrem (50 µrem) per hour above natural and man-made background radiation.”

The radiation dose from an x-ray technology facility or mobile unit will be limited to no more than 0.05 mrem (50 µrem) per hour through the establishment of radiation safety exclusion zones (CBP, 2004). The CBP further concluded that use of an x-ray technology facility or mobile unit will not substantially affect physical, cultural, or socioeconomic environments.

Bridge Alternatives 1, 2, and 3 would not impact uncontrolled petroleum and hazardous, toxic, and radioactive wastes.

G. Environmental Justice

In the U.S., Environmental Justice is defined by the EPA’s Office of Environmental Justice as:

“...the fair and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies” (EPA, 2017).

Approximately 2.4 percent of the population in Madawaska consisted of minority persons in 2016. Of these minority residents, approximately 2.1 percent were American Indian/Alaska Native, 0.1 percent were African American, and 0.2 percent

of the population defined themselves as belonging to two or more races. In Aroostook County, 4.8 percent of the population consisted of minority persons, and in Maine overall, the minority population was 5.2 percent in 2016 (U.S. Census Bureau, 2017).

Within the study area (a subset of Madawaska defined for the socioeconomic analysis as Block Group 2, Aroostook County Census Tract 9503), 11 percent of the population consists of American Indian/Alaska Native residents, a higher proportion than Madawaska, Aroostook County, or the state. Other minority groups were not present in the downtown area in 2016 (U.S. Census Bureau, 2017).

The number of residents living below the poverty level in the downtown area was 11.7 percent, similar to the poverty level in Madawaska overall (10.4 percent). Poverty levels in Aroostook County (17.7 percent) and the state (13.5 percent) were higher than in Madawaska (U.S. Census Bureau, 2017).

The No-Build Alternative would not impact minority and disadvantaged populations within the study area.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 may result in a minor positive impact on minority and disadvantaged populations by removing a small amount of traffic that currently passes through the neighborhood from North 13th through North 16th Streets.

H. Navigation

According to the USACE, the Saint John River is a non-navigable waterway, and is therefore not subject to Section 10, Rivers and Harbors Act jurisdiction (USACE, 2006).

The International Bridge Act of 1972 requires that the location and plans for bridges over navigable waters of the United States be approved by the USCG prior to construction. According to the USCG, the portion of the Saint John River in the study area is considered a navigable waterway of the United States and a bridge permit would be required from the USCG prior to the construction of a new bridge (USCG, 2018).

The existing International Bridge is a fixed highway bridge on the Saint John River at mile 232.0 with a horizontal clearance of 228 feet and a vertical clearance, at low water, of 60 feet and, at high water, 34 feet. The International Bridge was opened to traffic in 1921.

The portion of the Saint John River in the study area is occasionally used for recreation. Recreation on the Saint John River includes boating and sport fishing. Regional public boat access sites are located in Van Buren, Fort Kent, St. Francis, and Allagash (MDIFW 2018).

The No-Build Alternative would not impact the navigation of the portion of the Saint John River in the study area.

The LPOE Alternatives A, B, and C would not impact the navigation of the portion of the Saint John River in the study area.

Bridge Alternatives 1, 2, and 3 may result in a minor positive impact to the navigation of the portion of the Saint John River in the study area. The new International Bridge would have a greater vertical height above the river than the existing International Bridge. The new International Bridge would have horizontal openings between the piers that are equal to or greater than the existing International Bridge. In coordination with the USCG, MaineDOT would determine the vertical and horizontal clearances for the International Bridge during final design. The vertical and horizontal clearances for the International Bridge would be analyzed through the USCG's bridge permitting process and is a separate process from the NEPA process.

Construction of Bridge Alternatives 1, 2, and 3 and the likely removal of the existing International Bridge could temporarily impact the navigation of the portion of the Saint John River in the study area through the use of cofferdams (to construct the new piers and remove the existing ones) and temporary work trestles in the river.

I. Indirect and Cumulative Impacts

1. Indirect Impacts

Indirect (or secondary) impacts are defined as reasonably foreseeable future consequences to the environment that are caused by the proposed action but that would occur either in the future (i.e., later in time) or in the vicinity of but not at the exact location as direct impacts associated with the build alternative. In the Council on Environmental Quality regulations, indirect impacts are defined as those that are "... caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts include growth-inducing impacts and other impacts related to induced changes in the pattern of land use, population density or growth rate, and related impacts on air and water and other natural systems, including ecosystems" (40 CFR 1508.8b).

The No-Build Alternative would not result in indirect impacts.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in indirect impacts to the water quality of the Saint John River and changes in traffic patterns in the study area.

The construction of the new International Bridge and likely removal of the existing International Bridge would temporarily impact the water quality of a portion of the Saint John River in the study area due to an increase in erosion and sedimentation. Following construction, the portion of the Saint John River used during construction

would be restored to a condition similar to the existing conditions. These impacts are temporary and would end shortly after construction is completed.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would result in changes in traffic patterns. Outbound traffic to Edmundston would no longer use Mill Street and Bridge Avenue; outbound traffic would use Main Street and Mill Street. Inbound traffic would no longer use Bridge Avenue and Mill Street; inbound traffic would use Main Street and Mill Street.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would not result in other indirect impacts.

2. Cumulative Impacts

Consideration of cumulative effects entails an assessment of the total effect on a resource or ecosystem from past, present, and future actions that have altered the quantity, quality, or context of those resources within a broad geographic scope. Under the Council on Environmental Quality regulations, cumulative effects are defined as "...the impact on the environment which results from the incremental impact of the actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). The cumulative effects analysis considers the aggregate effects of direct and indirect impacts – from federal, non-federal, public, or private actions – on the quality or quantity of a resource.

The intent of the cumulative effects analysis is to determine the magnitude and significance of cumulative effects, both beneficial and adverse, and to determine the contribution of the proposed action to those aggregate effects. Contributions to cumulative effects from the build alternatives on resources is limited to those that are substantially impacted. Because no resources in the study area were substantially impacted by LPOE Alternatives A, B, and C, or Bridge Alternatives 1, 2, and 3, no further detailed analysis of potential cumulative effects was performed.

The LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would contribute to a cumulative impact to the water quality of the Saint John River. The construction of the new International Bridge and likely removal of the existing International Bridge would temporarily impact the water quality of a portion of the Saint John River in the study area due to an increase in erosion and sedimentation. Following construction, the portion of the Saint John River used during construction would be restored to a condition similar to the existing conditions. These impacts are temporary and would end shortly after construction is completed.

The cumulative impact of the proposed action to climate change was considered. Because LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would

result in a slight reduction of carbon dioxide emissions (see Chapter 3.C.2.), no further analysis was conducted.

The cumulative impact from LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 to the water quality of the Saint John River would not be substantial.

J. Summary of Transboundary Impacts

The NEPA requires the consideration of transboundary impacts of federal actions. Transboundary impacts can be defined as effects extending across the U.S. border and affecting another country's environment. The consideration of transboundary impacts of federal actions is guided by the Council on Environmental Quality in their memorandum "Guidance on NEPA Analysis for Transboundary Impacts" dated July 1, 1997 and EO 12114 Environmental Effects Abroad of Major Federal Actions.

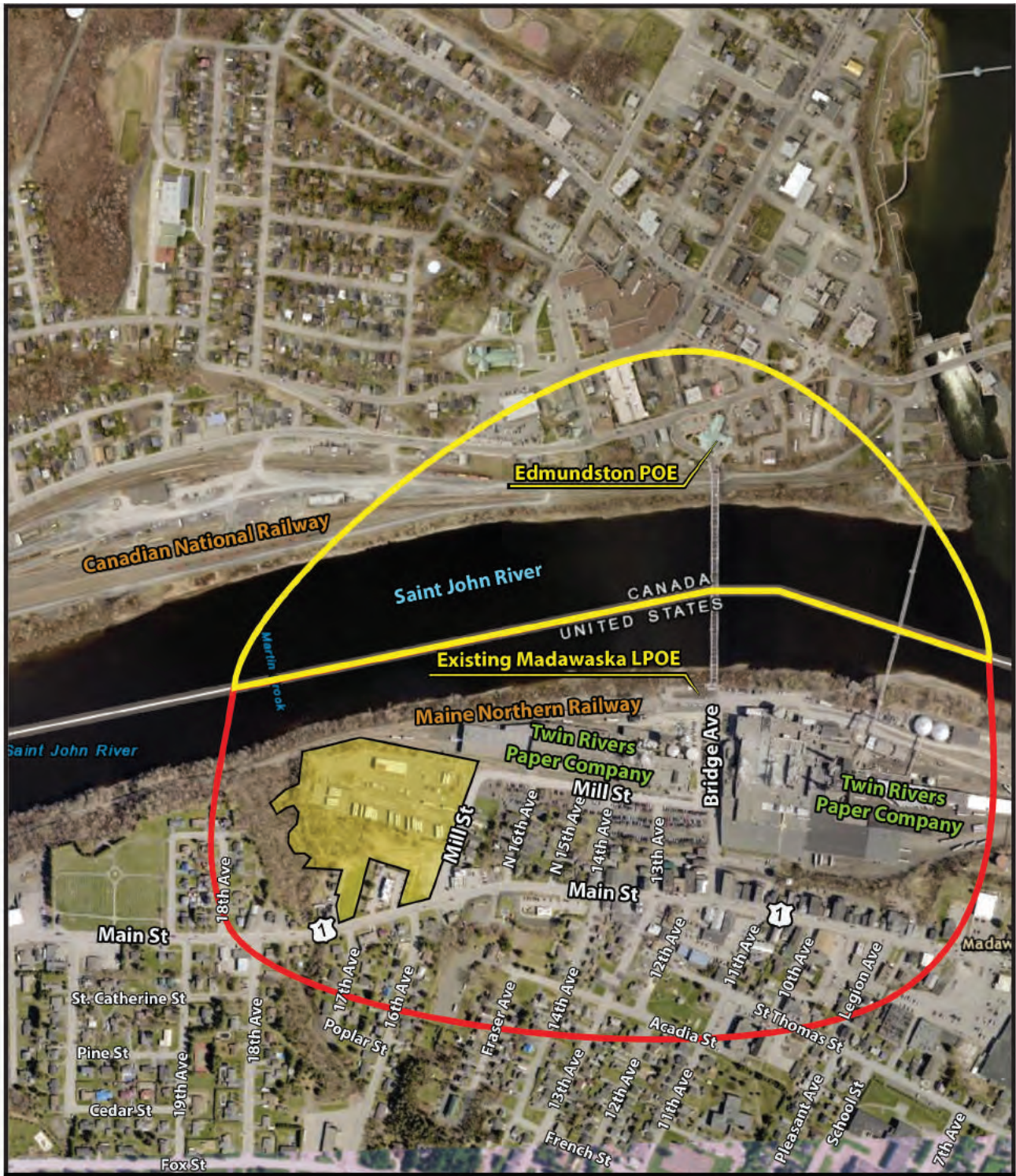
To accomplish the proposed action's overall purpose and satisfy the need (see Chapter 1.A.3.), the construction of a portion of the new International Bridge and small changes to the POE in the City of Edmundston would be required. The changes to the POE would consist of replacement of the existing abutment supporting the existing International Bridge, changes to the existing pavement and curbing, and disturbance to areas necessary to construct them. Following construction of the new International Bridge, the existing International Bridge would be removed. An area encompassing the potential transboundary impacts from the construction of the proposed action in the City of Edmundston was identified (Exhibit 3.21). Throughout the planning, design, and analysis of the new LPOE and International Bridge, the GSA, FHWA, and MaineDOT worked closely with the NBDTI, PSPC, and the CBSA to avoid and minimize adverse impacts in both countries.

The potential transboundary impacts from the proposed action in the City of Edmundston are the direct and indirect impacts to the Saint John River through the construction of the new International Bridge, changes to the POE, and the likely demolition of the existing bridge.

The construction of the piers for the new International Bridge would increase the potential for scouring of the Saint John River and ice jams.

The construction of the new International Bridge and the likely removal of the existing International Bridge would temporarily impact the water quality of a portion of the Saint John River in the City of Edmundston. Following construction, the portion of the Saint John River used during construction would be restored to a condition similar to the existing conditions. These impacts are temporary and would end shortly after construction is completed.


The changes to the POE consisting of the replacement of the existing abutment supporting the existing International Bridge, changes to the existing pavement



Legend

- Transboundary Impact Area
- Study Area Boundary
- USA-owned Property

Exhibit 3.21 - Transboundary Impact Area Map



0 500 1,000 1,500 2,000
Feet

Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar

and curbing, and disturbance to areas necessary to construct them, could result in soil erosion and increased sedimentation of a portion of the Saint John River in the City of Edmundston. These impacts are temporary and would end shortly after construction is completed.

K. Relationship between the Short-term Uses of the Human Environment and Enhancement of Long-term Productivity

The No-Build Alternative would have both adverse short-term and detrimental long-term impacts on the long-term productivity of the study area and region because the existing International Bridge would continue to deteriorate and remain posted to vehicles weighing more than five tons (the equivalent of a passenger vehicle), and the existing detour would remain in place indefinitely. Commercial and other large trucks that formerly used the Madawaska/Edmundston border crossing would need to continue to take detours to use the other border crossings at Fort Kent/Clair to the west (approximately 40 miles roundtrip) or Van Buren/Saint Leonard to the east (approximately 48 miles roundtrip), increasing operating costs for companies such as Twin Rivers.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would have a short-term adverse impact on the human environment but would enhance long-term productivity. The proposed LPOE and transportation improvements consider the need for present and future connectivity and traffic requirements within the context of present and future land use development. LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 are similar and would have similar short term impacts. Short-term uses of the human environment would occur during construction. These alternatives would require staging areas, stockpiling areas, roadway construction, and cause a temporary increase in traffic around construction areas. Additional short-term impacts would be air quality degradation from increased emissions from construction activities, noise impacts, and socioeconomic and community impacts from construction effects (e.g., roadway obstruction, traffic detours, and construction debris).

Transportation projects consider state and local comprehensive plans, which acknowledge the present and future traffic requirements based on current and future land use development. The purpose of LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 is to maintain connectivity and contribute to increasing long-term productivity of the area and region. The anticipated reduction in traffic congestion with a modern LPOE and International Bridge is consistent with the maintenance and enhancement of long-term productivity in the study area.

LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 would assist in improving the long-term regional connectivity and the productivity of Northern Maine by linking the Town of Madawaska and U.S. Route 1 with the City of Edmundston and the Trans-Canada Highway.

L. Irreversible and Irretrievable Commitment of Resources

Implementation of LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 consists of a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 is considered an irreversible commitment during the period that the land is used.

Considerable amounts of fossil fuels, labor, and construction materials (e.g., cement, aggregate, and bituminous material) would be expended during construction. Additionally, labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Construction would require a substantial one-time expenditure of both state and federal funds which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region would benefit by improved operational efficiency. The benefits would consist of improved accessibility and safety, savings in time, and greater availability of quality services which are anticipated to outweigh the commitment of these resources.

M. Construction Impacts

The No-Build Alternative would not result in impacts during construction.

The existing LPOE and International Bridge would remain operational during construction of the new LPOE and International Bridge.

Earthwork, including clearing and grubbing, excavating, grading, embankment formation, and stockpiling, would be required during the construction of the LPOE and bridge alternatives. Exposed soils may result in the potential for increased site erosion and sedimentation impacts to nearby water resources. Some of the best management practices that may be implemented are:

- Conducting earthwork activities during a known dry season;
- Diverting stormwater that originates off-site away from the construction area;
- Minimizing the extent and duration of exposed soils by using temporary or permanent seeding or mulching;
- Constructing temporary sedimentation basins;
- Establishing a designated equipment cleaning/washing area with measures for the treatment of runoff prior to discharge; and
- Establishing an emergency response spill contingency plan.

The LPOE and bridge alternatives would result in minor impacts during construction. Short-term impacts would be: temporary air quality impacts from emissions and dust, temporary noise impacts, potential increase in ground vibrations, increased traffic around the construction area and possible minor traffic delays or obstructions, and a temporary visual impact.

Air quality impacts from construction activities would be temporary and are primarily associated with the operation of diesel-powered equipment and the generation of fugitive dust from excavation and earthmoving activities. Air emissions from construction equipment can be minimized by properly maintaining engines. Fugitive dust could be generated as trucks travel to and from the construction site, and from the handling of cement, aggregate, and other materials. The effect of fugitive dust would vary depending on weather conditions during periods of earthmoving activities.

Noise impacts from construction activities are a function of the noise generated by construction equipment, the location of construction, the sensitivity of adjacent land uses, and the timing and duration of the noise-generating activity. The dominant source of noise from most construction equipment is the diesel engine.

Construction can result in varying degrees of ground vibration depending on the equipment and methods employed. Operation of construction equipment causes vibrations that spread through the ground and diminish in strength with distance. Buildings in the immediate vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage to foundations at the highest levels.

Twin Rivers operates equipment in their manufacturing process that is sensitive to ground vibration. Twin Rivers has expressed concern that construction or operation of the new International Bridge could impact their equipment (HNTB and Twin Rivers, 2017). Prior to construction, the GSA and MaineDOT would complete a vibration study, including a description of construction equipment to be used, construction sequencing as it relates to Twin Rivers operations, and whether expected vibration levels from operation of the new International Bridge would be perceptible at the Twin Rivers facility.

Maintenance of traffic and construction staging would be planned and scheduled to minimize traffic delays. Signage could be used to notify motorists of road closures and detours. Access to local residences and businesses near the construction site would be maintained. Temporary disruptions in access would be coordinated with residents and business owners. Residents along designated truck haul routes may experience a temporary increase in truck traffic due to the hauling activities associated with the construction site.

Temporary visual impacts from construction activities would be greatest for those residents immediately adjacent to the construction site. Views of heavy equipment and material stockpiles would be commonplace for the duration of the construction activities. Fugitive dust may impede visual quality.

Particular attention should be given to the maintenance of public safety during the duration of construction, given the normal hazards associated with construction. Public access to construction sites would be prohibited to the extent possible. This can be accomplished with temporary fencing, warning signs, and other safety precautions.

The LPOE and bridge alternatives would result in a short-term stimulus of the local economy through the purchase of goods and services.

N. Mitigation and Commitments

The following is a summary of the mitigation measures and commitments from the GSA, FHWA, and MaineDOT in support of the development of LPOE Alternatives A, B, and C, and Bridge Alternatives 1, 2, and 3 to further avoid and minimize adverse impacts.

- Erosion and sedimentation control measures would be developed and incorporated into the final design of the International Bridge and implemented during construction, in accordance with Section II of the MaineDOT's *Best Management Practices Manual for Erosion and Sedimentation Control* (MaineDOT, 2008).
- The stormwater management system for the International Bridge would be designed in accordance with the MDEP/MaineDOT/Maine Turnpike Authority MOA, Stormwater Management, June 27, 2017. Under the MOA, the MaineDOT would be required to meet the General Standards under Chapter 500 to the extent practicable.
- During final design of the LPOE and International Bridge, the GSA and MaineDOT would request a jurisdictional determination from the USACE to assist in determining whether a permit will be required from the USACE for the discharge of dredged or fill material into the Waters of the United States, which includes wetlands.
- To reduce the amount of pollutants potentially transported into streams during construction, the MDIFW recommends using best management practices and performing instream work between July 15 and October 1 (MDIFW, 2018a). During final design of the International Bridge, the MaineDOT would coordinate with the MDIFW on the timing of work performed in the Saint John River.
- The MaineDOT would reduce direct impacts to fish and fisheries habitat by using best management practices recommended by the MDIFW. During final design of the International Bridge, the MaineDOT would coordinate with MDIFW on the best management practices to be used when working in the Saint John River.

- Mitigation measures would be developed to mitigate the adverse effect to the International Bridge. A MOA would be prepared between the FHWA, MaineDOT, and the MHPC (SHPO) to document the mitigation measures for the adverse effect to the International Bridge.
- The MaineDOT would prepare and submit the NLEB 4(d) Rule Streamlined Consultation Form to the USFWS Maine Field Office; the Maine Field Office would determine if there would be impacts to NLEB habitat and complete consultation (GSA and USFWS MEFO, 2018).
- Property would be acquired by the GSA in accordance with the procedures set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, 42 U.S.C. 4601 and the regulations for implementing the Act contained in 49 CFR Part 24.
- The GSA would work with the Town of Madawaska to preserve the corridor along the resource protection zone of Martin Brook adjacent to LPOE Alternatives A, B, and C.
- During final design of the International Bridge, the MaineDOT would use a qualified professional to perform a botanical survey to map the eastern extent of the Rivershore Outcrop to avoid impacting protected species within the natural community during construction.
- In the event Bridge Avenue and Mill Street are reclassified as local streets, MaineDOT would coordinate with the Town of Madawaska and develop specific details for the reclassification during final design.
- Prior to construction, the GSA and MaineDOT would complete a vibration study, including a description of construction equipment to be used, construction sequencing as it relates to Twin Rivers operations, and whether expected vibration levels from operation of the new International Bridge would be perceptible at the Twin Rivers facility.
- The MaineDOT and the GSA would coordinate construction activities and schedule with Twin Rivers to avoid or minimize disruption to Twin Rivers operations from construction of the LPOE and bridge alternatives.

Throughout the preparation of the 2007 EIS and ROD, the 2018 MEFPS, and this SEIS, the GSA, FHWA, and MaineDOT coordinated and consulted with tribal governments; other federal, state, and regional agencies; stakeholders in the Town of Madawaska; and the public for input into the development of the proposed action and the assessment of potential impacts.

Throughout the preparation of the MEFPS, the GSA and MaineDOT coordinated extensively with the NBDTI, PSPC, CBSA, and stakeholders in the City of Edmundston.

A. Coordination with Tribal Governments and Other Federal and State Agencies

Throughout the preparation of the 2018 MEFPS and this SEIS, the GSA, FHWA, and MaineDOT coordinated and consulted with tribal governments and other federal and state agencies for input into the development of the proposed action and the assessment of potential impacts.

1. Tribal Governments

Notification of the intent to construct the New Madawaska LPOE and the new International Bridge was sent to five tribal governments in December 2017. Two letters were received in response to the notice.

The Passamaquoddy Tribe indicated that the project would not have any impact on cultural and historic concerns of the Passamaquoddy Tribe (Soctomah, 2017).

The Houlton Band of Maliseet Indians noted that there were no immediate concerns regarding the project (Young, 2018).

2. Federal

U. S. Department of State

The Secretary of State has the authority to receive applications for and to issue Presidential Permits for land border crossing facilities and states, in part, that:

“...the proper conduct of the foreign relations of the United States requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities connecting the United States with a foreign country” (DOS, 2018).

This authority applies to all new border crossings and to all substantial modifications of existing crossings at the international border. Working with other agencies, the DOS determines whether a proposed border crossing project is in the U.S. national interest. The DOS coordinates closely with concerned state and local agencies,

Chapter Contents

- 4.A. Coordination with Tribal Governments and Other Federal and State Agencies
- 4.B. Coordination with Stakeholders in the Town of Madawaska
- 4.C. Coordination with Stakeholders in the City of Edmundston
- 4.D. Public Outreach and Issues Identification

Purpose of this Chapter

Chapter 4 summarizes the coordination and consultation activities performed for this study among the federal, state, and local agencies and the public.

consults with tribes, and invites public comment in arriving at this determination (DOS, 2018).

The existing International Bridge was authorized for construction by the U.S. Congress (U.S. Congress, 1919). The FHWA and MaineDOT coordinated with the DOS to clarify 1) the need for a Presidential Permit from the DOS under the International Bridge Act and 2) the extent to which the DOS should be involved in the process of developing and reviewing future agreements between the State of Maine and the Province of New Brunswick and the timing for involvement. According to the DOS, the replacement of the International Bridge does not require a Presidential Permit from the DOS (Koontz, 2018).

3. State

The FHWA and MaineDOT consulted with the MHPC (Maine State Historic Preservation Officer) for requirements for complying with NHPA Section 106 for impacts on historic properties (see Chapters 3.E.2.b. and 3.E.2.c.).

B. Coordination with Stakeholders in the Town of Madawaska

Throughout the preparation of the 2007 EIS and ROD, the 2018 MEFPS, and this SEIS, the GSA, FHWA, and MaineDOT coordinated and consulted with stakeholders in the Town of Madawaska for input into the development of the proposed action. Those contacted were:

- The Town of Madawaska,
- Twin Rivers Paper Company, and
- Maine Northern Railway.

1. The Town of Madawaska

The Town of Madawaska provided the following comments (HNTB and Town of Madawaska, 2017):

- A new International Crossing is desired by the public.
- There is a perception that the International Bridge is unsafe.
- The geometry and capacity of the bridge and both the Edmundston POE and the Madawaska LPOE are substandard.
- The existing bridge and Madawaska LPOE are unattractive.
- There are consistently long wait times and queues in both directions.
- Maintaining a downtown International Crossing is critical to the wellbeing of the Town of Madawaska and City of Edmundston.
- Snowmobile accommodations are desired at the International Crossing.
- Flood elevations of the Saint John River are well below the International Bridge.

2. *Twin Rivers Paper Company*

Twin Rivers is the major employer in the area and maintains operations in the Town of Madawaska and the City of Edmundston. The Twin Rivers property and facilities in the Town of Madawaska are bisected by Bridge Avenue and the existing Madawaska LPOE. Twin Rivers provided the following comments (HNTB and Twin Rivers, 2017):

- Overall, Twin Rivers is concerned that any change to the existing International Bridge or Madawaska LPOE might adversely impact its operations.
 - » Twin Rivers estimates that daily operations are worth approximately \$1 million, and it operates with thin margins. Shipments, by both truck and rail, are made on a constant basis: 24 hours a day, 7 days a week, 365 days a year.
 - » Twin Rivers owns and maintains four utility lines connected to the existing International Bridge, and prefers to retain them as-is where-is. It has no funds to relocate these utility lines.
 - » Nearly all rail lines and spur lines on and around its property are active. Disruption to activity on those lines during construction and/or operation of a new (larger) International Crossing downtown would be very costly.
 - » Vibrations during construction and/or operation of a new (larger) International Crossing may adversely affect the alignment of Twin Rivers equipment.
 - » Regardless of which alternative is chosen, Twin Rivers would prefer the existing International Crossing remain open during construction.
- In discussing potential alternatives, Twin Rivers provided the following comments:
 - » Rehabilitating the existing International Bridge is its preferred alternative, as that would cause the least disruption to its operations.
 - » If the new International Crossing is to be relocated, Twin Rivers would prefer it be relocated outside of the downtown areas of the Town of Madawaska and City of Edmundston as the current queues for vehicles are an operational issue. However, Twin Rivers at the same time prefers that the existing International Bridge also remains as a utility-only structure.
 - » The new International Bridge should not land on, and the new Madawaska LPOE should not be sited on, property owned by the USA and located southwest of the Twin Rivers facility. Siting the International Crossing at this location would adversely impact its operations. Twin Rivers strongly prefers to continue its operations on the USA-owned property rather than continue these operations at another location (Note: In 2011, after the publication of GSA's NEPA EIS and ROD and in furtherance of that project, USA acquired approximately eight acres of land from Twin Rivers [formerly known as Fraser Papers] [the "USA-owned property"] and Twin Rivers has continued to operate on the USA-owned property under a GSA-issued License Agreement).

- » Siting the International Crossing at the USA-owned property would alter the flow of traffic in the area, which may adversely impact its operations.
- There are additional buried utility lines throughout the Twin Rivers property and the surrounding area, some of which are not mapped.

3. *Maine Northern Railway*

MNR is the sole operator on the rail lines south of the Saint John River. MNR provided the following comments (MNR, et al., 2017):

- Two trains per day operate through the Town of Madawaska, with additional local shuttling operations occurring daily between the buildings on Twin Rivers property.
- MNR has plans for approximately \$5.5 million in track and related improvements between 2017 and 2020, including the rail yard on and around Twin Rivers property.
- A new International Crossing will need to maintain the horizontal and vertical clearances required by the AREMA.
- There are currently no plans to expand the railroad.

C. *Coordination with Stakeholders in the City of Edmundston*

Throughout the preparation of the 2007 EIS and ROD, the 2018 MEFPS, and this SEIS, the GSA, FHWA, and MaineDOT coordinated and consulted with stakeholders in the City of Edmundston for input into the development of the proposed action. Those contacted were:

- The City of Edmundston,
- The City of Edmundston Chamber of Commerce,
- The Downtown Edmundston Group, and
- Canadian National Railway.

1. *City of Edmundston*

The City of Edmundston (the City) provided the following comments (MaineDOT, et al., 2018):

- The International Crossing is the key connection point connecting the communities of the Town and the City and their downtown areas.
- If the International Crossing is relocated, it should be as close to the downtown area of the two communities as possible.
- The City is concerned with truck traffic downtown and the geometry entering the Edmundston LPOE. The City has been considering a bypass of the western part of the city to alleviate this traffic.
- A recent inter-modal transportation study noted that other modes of transportation (i.e., pedestrians, snowmobiles, and trains) should be considered in the development and evaluation of alternatives.

2 City of Edmundston Chamber of Commerce

The City Chamber of Commerce (the “Chamber”) provided the following comments (MaineDOT, et al., 2018):

- The Chamber supports the rehabilitation or replacement of the International Crossing.
- It prefers siting the International Crossing in the downtown area, as it is a key economic link to the City and the Town and for the businesses in the region.
- If the International Crossing is relocated, the Chamber would prefer it is sited close enough to maintain a downtown-to-downtown connection: a bridge in the vicinity of Verret/St. Hilaire (west of existing site) more than a bridge in the vicinity of St. Basille (south-east).
- Similar to the City’s comments, the Chamber noted that truck traffic is an issue in the City (issues with street deterioration), and it supports the City truck-bypass.
- The Chamber suggested a second bridge for truck traffic only.
- Similar to the City, the Chamber noted growing interest in the area for snowmobile and ATV transportation and preferred the International Crossing accommodates those modes of transportation in the planning effort.

3 Downtown Edmundston Group

The Downtown Edmundston Group (the “Downtown Group”) is a local interest group in the City. The Downtown Group had the following comments (MaineDOT, et al., 2018):

- Similar to the City and the Chamber, the Downtown Group considers the International Crossing a key economic link to the City and the Town and for the businesses in the region which rely heavily on traffic for customers.
- The Downtown Group also agreed that truck traffic is an issue downtown, and would prefer the existing International Bridge and its approaches, are rehabilitated/redesigned for better truck movement, but maintain the downtown economic link.
- If the International Crossing is relocated, the Downtown Group would prefer it is sited close enough to maintain a downtown-to-downtown connection to the west of the existing location.
- The Downtown Group suggested an inter-modal facility to the west.

4 Canadian National Railway

CNR provided the following comments (MaineDOT, et al., 2018):

- CNR stated it would provide more specific comments as the International Bridge’s location alternatives are narrowed.
- A new International Crossing should avoid adversely impacting its rail yard to the west and all its rail lines in the area.
- Piers should be designed to be protected from derailment impact.
- A new International Bridge will need to adhere to vertical clearance requirements.
- A new International Bridge will need to ensure there are no issues with snow removal or other debris falling onto the rail lines.

D. Public Outreach and Issues Identification

Throughout the preparation of the 2007 EIS and ROD, the 2018 MEFPS, and this SEIS, the GSA, FHWA, and MaineDOT coordinated and consulted with the public for input into the development of the proposed action and the assessment of potential impacts. This section summarizes the issues and concerns that were identified during the public scoping processes for the 2007 EIS and the DSEIS. Scoping is a process for determining the range of issues to be addressed in an EIS and for identifying potentially significant issues associated with the alternatives (40 CFR Part 1501.7). The objectives of the scoping process are to notify interested persons, tribes, other federal, state, and regional agencies, and other groups about the alternatives being considered; solicit comments about important environmental issues, alternatives, and other items of interest; and consider those comments in the preparation of the EIS.

1. 2007 EIS

Scoping for the 2007 EIS began with the GSA issuing its NOI to prepare an EIS, which was published in the Federal Register on January 6, 2006, and continued until the end of the comment period on February 20, 2006. The GSA held a public scoping meeting on January 10, 2006 at the Madawaska Middle/High School; approximately 40 people attended (see Chapter 1.D.). The issues and concerns identified at this scoping meeting were:

- Coordination should be performed with other governmental agencies working on other projects.
- Coordination should be performed with Canadian governmental agencies on the future location for the bridge.
- Consideration should be given to replacing the existing International Bridge.
- Consider the potential impact of the proposed project on public facilities and services and utilities.
- Consider the potential impact of the proposed project on parks, recreation, and festivals.
- Will the new LPOE be upgraded to a commercial LPOE?
- Will the new LPOE increase traffic?
- Will the new LPOE disrupt the railroad or paper company operations?
- How will snow be removed?
- Consider the potential adverse economic impacts to the railroad and paper company operations.
- The new LPOE should be designed to be visible from Main Street and be aesthetically pleasing.
- The existing LPOE lacks security and the new LPOE should be more efficient.
- Will the new LPOE increase employment in the area?
- Will the new LPOE follow local planning and zoning and obtain local permits for construction?

The GSA hosted an open house and public hearing in the Town of Madawaska on August 17, 2006 to receive comments on the DEIS. Fourteen attendees offered comments on the DEIS during the hearing. No comments were received that resulted in major changes to the DEIS. A copy of the comments letters received, the transcript from the public hearing, and GSA's responses to the substantive comments received on the DEIS were included in the 2007 FEIS (GSA, 2007).

2. SEIS

Two public meetings were held in 2017 and 2018 during the preparation of the MEFPS. The second public meeting in January 2018 also served as a public scoping meeting for this SEIS (MaineDOT, et al., 2018).

a. Public Meetings

Public Meeting Number One

On June 28, 2017, public meetings for the MEFPS 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 NBDTI, PSPC, CBSA, MaineDOT, GSA, and CBP (MaineDOT, et al., 2018).

Two separate meetings 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 meetings were 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 (MaineDOT, et al., 2018).

Suggestions and comments received during the meetings were to be addressed in the feasibility and planning study; they primarily consisted of the following (MaineDOT, et al., 2018):

- The replacement of the International Bridge and Madawaska LPOE is critical for the survival of Northern Maine;
- Many attendees stated that the International Bridge and border crossing 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.

Public Meeting Number Two and Public Scoping Meeting for this SEIS

Following the identification, development, and screening of conceptual alternatives, a second set of public meetings was held on January 31, 2018. The meetings were held to present the general findings of the MEFPS as well as the preferred option. The agencies represented at these meetings were the NBDTI, PSPC, CBSA, MaineDOT, GSA, and CBP. The public meeting in the Town of Madawaska also served as a public scoping meeting for this SEIS (see Chapter 1.D.) (MaineDOT, et al., 2018).

The meeting 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 meetings were broken into two parts: one was an open house format with displays and handouts, while the other part consisted of a 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 (MaineDOT, et al., 2018).

Suggestions and comments received during the meetings primarily consisted of the following (MaineDOT, et al., 2018):

- Concern regarding the safety of the existing International Bridge due to the posting of the five-ton weight limit.
- Request for more communication from the project team.
- Concern for Edmundston POE being difficult for turn movements by large trucks.
- Question about how the public can express concerns and provide feedback.
- Request for architectural features on the new proposed bridge as it would be a landmark bridge in the Saint John River Valley.
- Request for an observation/rest area on the new bridge.
- Request for a bridge that allows for scenic viewing of the Saint John River Valley and the two communities.
- Concern over the longer bridge and accessibility for pedestrians during cold weather.
- Concern over traffic congestion, traffic controls, and new patterns around the new Madawaska LPOE.
- Request for snowmobile access to the new International Bridge.
- Suggestion to move the POE to the CNR yard.
- General support for the preferred option that was presented.

b. GSA's Notice of Intent to Prepare the SEIS

On February 5, 2018, the GSA published a NOI to prepare a SEIS in the Federal Register. Two comment letters were received regarding the NOI:

- A resident who lives next to the USA-owned property wrote to voice concerns regarding the project and its potential effects on the resident's property and quality of life (Clavette, 2018).
- An agent for McDonald's Corporation requested more information regarding potential impacts to its restaurant, which is located next to the USA-owned property (Martel, 2018).

c. Other

During the preparation of the 2018 MEFPS, the MaineDOT hosted a study-specific website – <https://www1.maine.gov/mdot/planning/studies/meib/> – to share information about the study; the website provided an opportunity to submit comments directly to those agencies preparing the study (MaineDOT, et al., 2018).

During the preparation of this SEIS, the GSA hosted a website – <https://www.gsa.gov/about-us/regions/welcome-to-the-new-england-region-1/buildings-and-facilities/development-projects/madawaska-land-port-of-entry-madawaska-me> – to share information on the development of the LPOE.

The following people were responsible for preparing this SDEIS:

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Federal Highway Administration		
Birk, Eva	B.S. Environmental Science, Tufts University M.S. Regional Planning, Cornell University 10 years experience providing Clean Water Act, Clean Air Act compliance assistance	Procedural guidance and document review
Martin, Cheryl	B.S. Civil Engineering, University of Maine, 1985 31 years experience in transportation project development, including 28 years in procedural and technical guidance to assure compliance of the environmental analysis with federal requirements	Procedural guidance and document review
General Services Administration		
Kelly, Alexandria	B.A. Environmental Analysis & Policy, Boston University, 1996 2012 GSA Sustainability in Procurement Fellow FAC-P Level III Project Management Certification, FAC-COR Level III Contracting Officer's Representative Certification, FAC-C Level III Contracting Certification, Natural Step Four Principles of Sustainability Certification 22 years experience in sustainability and project management	Capital project planning, project management of capital design & construction, cost management, climate adaptation risk & resiliency strategy
Massarello, Sara	B.S. Communications, Boston University, 2002 International Right of Way Association, Appraisal Institute coursework 14 years experience in real property acquisition, utilization, and disposal	Site acquisition and relocation review
U.S. Customs and Border Protection		
Wiedenfeld, Melissa	B.A. History, Kansas Wesleyan University, 1981 M.A. History, Texas Tech University, 1983 Ph.D. History, Louisiana State University, 1997 34 years experience in NHPA/NEPA compliance	Document Review
Maine Department of Transportation		
Chamberlain, Kristen	B.A Biology with Environmental Science Concentration, 1999 18 years experience in environmental assessment, permitting, and regulatory compliance	Coordination of environmental reviews and documentation

Name	Qualifications	Responsibilities
Howard, Nathan	BFA Creative Writing, Geography, and Environmental Planning and Policy, University of Maine at Farmington, 2000 MPA Public Administration, University of Maine, 2008 18 years experience in transportation planning and environmental assessment	Intergovernmental coordination and planning management
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Alexander, Adam	B.S. Landscape Architecture NHI Noise Fundamentals Course Instructor 17 years experience in noise modeling, analysis, and abatement	Noise Analysis
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Peterson, Sondra	A.S. CAD and Design 19 years experience in noise modeling	Noise Analysis
Plumpton, William M., CEP	B.S. Environmental Resource Management, The Pennsylvania State University, 1984 34 years experience in environmental impact assessment and NEPA compliance Certified Environmental Professional with the National Academy of Board Certified Environmental Professionals	Planning, impacts assessment, documentation, process management
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Vrabel, Laura, PWS	B.S. Environmental Science, Southeast Missouri State University Professional Wetland Scientist (PWS, 2273) 12 years experience in environmental management and natural resource consulting	Natural environment
HNTB Corporation		
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Appendix A

Draft Programmatic Section 4(f) Evaluation

New Madawaska Land Port of Entry and International Bridge Project

*Madawaska, Aroostook County, ME to
Edmundston New Brunswick, Canada*



Draft Programmatic Section 4(f) Evaluation

November 2018



In cooperation with the U.S. General Services Administration and the U.S. Coast Guard

In coordination with U.S. Customs and Border Protection, the New Brunswick Department of Transportation and Infrastructure, Public Services and Procurement Canada, and the Canada Border Services Agency

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Programmatic Section 4(f) Evaluation

I. Introduction and Description of Proposed Action

The Federal Highway Administration (FHWA) and Maine Department of Transportation (MaineDOT) propose to replace the International Bridge connecting Edmundston, New Brunswick and Madawaska, Maine. The existing International Bridge carries vehicle traffic and utility lines operated by Twin Rivers Paper Company (Twin Rivers) across the Saint John River. The proposed action to replace the bridge includes the likely demolition of the existing bridge and relocation of Twin Rivers utility lines. The project also includes the likely demolition or decommissioning of the Madawaska Land Port of Entry (LPOE), and the construction of a new expanded LPOE (Exhibit 1). The existing bridge is a 928-foot-long four-span bridge carrying Bridge Avenue over the Saint John River. Originally built in 1920, each span consists of a Pennsylvania Truss measuring 232 feet long with a roadway width of 20 feet, 8 inches (MaineDOT, 2017a).



The existing International Bridge, from the bank of the Saint John River on the Edmundston Side looking southeast.

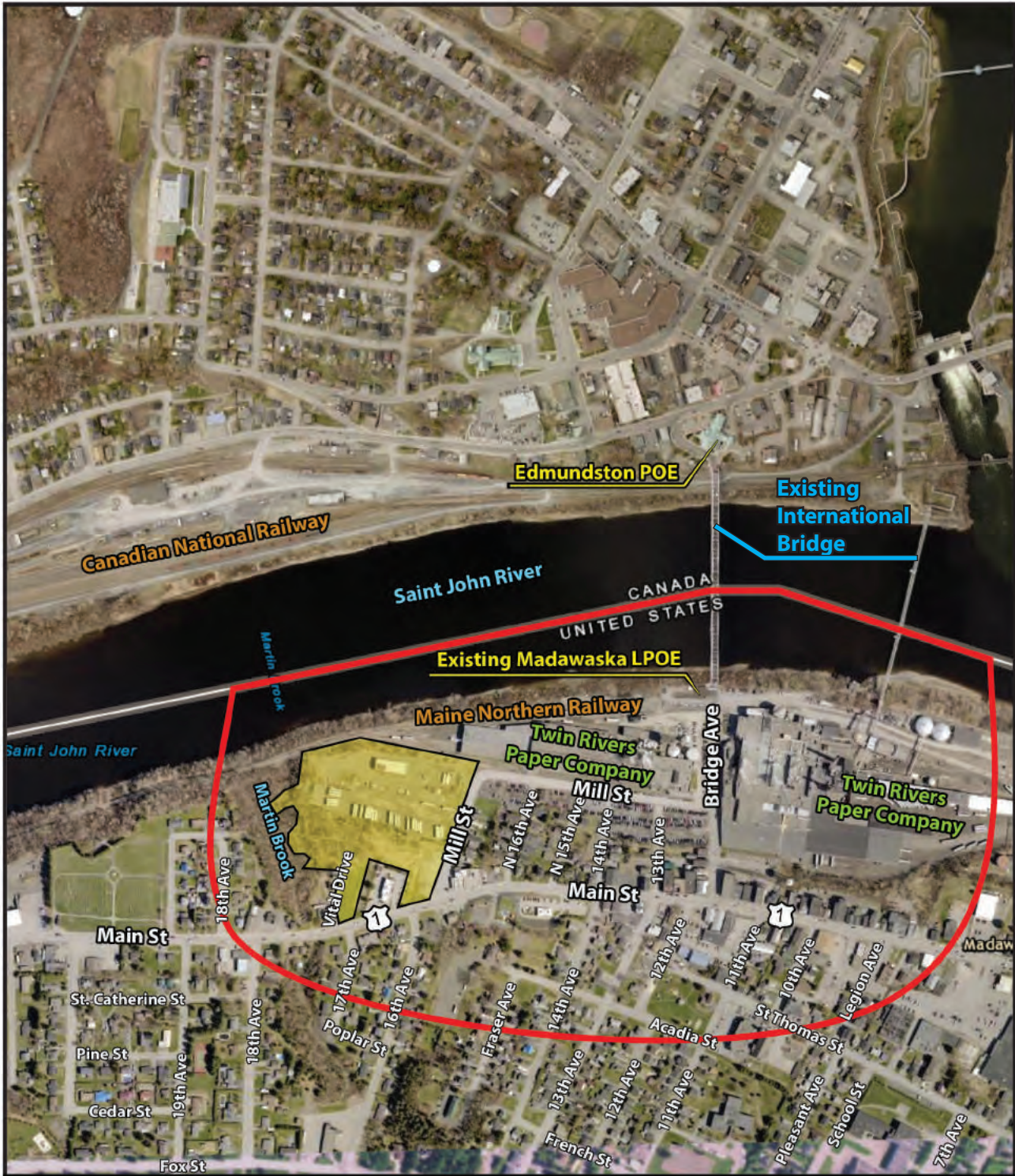
The project has been classified as an Environmental Impact Statement (EIS) under the National Environmental Policy Act, and an EIS is being prepared by the U.S. General Services Administration (GSA), FHWA, and MaineDOT in cooperation with the U.S. Coast Guard. The purpose of this Programmatic 4(f) evaluation is to identify and evaluate location and design alternatives that would avoid or minimize the impacts to Section 4(f) property.

The study area is located within downtown Madawaska in Aroostook County, Maine. The downtown area contains a mix of industrial, transportation, commercial, and residential properties, with some undeveloped lands along the Saint John River and Martin Brook. The Twin Rivers mill facility is the single largest land use in the downtown business zone. The Maine Northern Railway (MNR) tracks parallel the Saint John River in the downtown business zone. There are railroad sidings adjacent to the Twin Rivers mill on its west and east sides. The area bordered by Mill Street, Bridge Avenue, and Main Street includes commercial and residential properties, as well as vacant land for Twin Rivers employee parking. Commercial properties primarily line Main Street. The LPOE is at the southern end of the existing International Bridge.

A. Programmatic Section 4(f) Evaluation Overview

This Programmatic Section 4(f) Evaluation has been prepared pursuant to Section 4(f) of the U.S. Department of Transportation Act of 1966, which is now codified at 49 U.S.C. 303, implementing regulations at 23 CFR 774, and FHWA policies and guidance. Section 4(f) applies to publicly owned land within parks, recreation areas,


New Madawaska Land Port of Entry and International Bridge Project

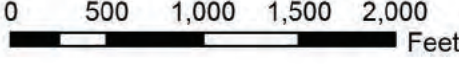


Legend

- Study Area Boundary
- USA-owned Property

Exhibit 1 - Study Area Map





Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

and wildlife and waterfowl refuges, and historic sites, whether publicly or privately owned. For purposes of Section 4(f), historic sites are Section 4(f) properties if they are listed in or determined eligible for inclusion in the National Register of Historic Places (NRHP), which includes historic districts (specifically contributing elements of the district). Except in cases where a *de minimus* impact is determined, the FHWA may approve the use, as defined in 23 CFR 774.17, of Section 4(f) property only if it determines that:

- There is no prudent and feasible avoidance alternative to the use of land from the property; and
- The project includes all possible planning to minimize harm to the property resulting from the use (see 49 U.S.C. 303 [c]).

In general, Section 4(f) “use” occurs with a transportation project or a program when, except as set forth in Section 774.11 and 13:

- Land from a Section 4(f) property is permanently incorporated into a transportation facility;
- There is temporary occupancy of land from a Section 4(f) property that is adverse in terms of the statute’s preservation purpose as determined by the criteria in 23 CFR 774.13(d); or
- Land from a Section 4(f) property is not incorporated into the project, but the proximity effects of the project are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired (i.e., constructive use of the property as determined by the criteria of 23 CFR 774.15).

B. Individual vs. Programmatic Section 4(f) Evaluations

There are two types of Section 4(f) evaluations—an individual evaluation and a programmatic evaluation. A programmatic evaluation may be used only for projects that meet the application criteria of one of the five nationwide programmatic evaluations that have been approved by the FHWA.

This Section 4(f) Evaluation is programmatic in that its approval is covered under the FHWA’s *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects That Necessitate the Use of Historic Bridges*. The historic bridges covered by this Programmatic Section 4(f) Evaluation are unique because they are historic, yet also part of either a Federal-Aid Highway System or a state or local highway system that has continued to evolve over the years. Even though these structures are on, or are eligible for inclusion on, the NRHP, they must perform as an integral part of a modern transportation system. When they do not or cannot, they must be rehabilitated or replaced to assure public safety while maintaining system continuity and integrity (FHWA, 1983).

For the purpose of this Programmatic Section 4(f) Evaluation, a proposed action will “use” a bridge that is on, or is eligible for inclusion on, the NRHP when the action

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will impair the historic integrity of the bridge either by rehabilitation or demolition. This Programmatic Section 4(f) Evaluation may be applied by the FHWA to projects which meet the following criteria:

1. The bridge is to be replaced or rehabilitated with federal funds.
2. The project will require the use of a historic bridge structure which is on or is eligible for listing on the NRHP.
3. The bridge is not a National Historic Landmark.
4. The FHWA Division Administrator determines that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation.
5. Agreement among the FHWA, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation has been reached through procedures pursuant to Section 106 of the National Historic Preservation Act (NHPA) (FHWA, 1983).

The project is expected to meet each of the above criteria.

This Draft Programmatic Section 4(f) Evaluation documents the design alternatives considered and their anticipated social, economic, environmental and cultural impacts. This document also describes the alternatives that were considered to avoid or minimize impacts to the Section 4(f) property.

II. Project Purpose and Need

The purpose of this project is to provide for the long-term safe and efficient flow of current and projected traffic volumes, including the movement of goods and people, between Madawaska, Maine and Edmundston, New Brunswick (MaineDOT, et al., 2018).

The proposed project is needed because: 1) the existing International Bridge is nearing the end of its useful life, and 2) the size and conditions of the existing building and overall site of the Madawaska LPOE are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions (MaineDOT, et al., 2018).



The existing LPOE main building, looking north. Photo shows the lack of an outbound inspection lane.

A. Existing Madawaska Land Port of Entry

In 2007, the GSA published the Final Environmental Impact Statement (FEIS) “Madawaska Border Station, Madawaska, Aroostook County, Maine” and subsequent “Record of Decision for the Construction of a New Border Station in Madawaska, Maine” (ROD) which assessed the potential impacts of the construction of a new Madawaska LPOE. The GSA chose not to advance the replacement of the LPOE due to the high cost of maintaining an elevated roadway along the top of the bank of

the Saint John River connecting to the existing International Bridge. The condition of the existing International Bridge has continued to deteriorate.

The Madawaska LPOE is situated on approximately 0.87 acre and has many deficiencies and physical limitations. The size and conditions of the existing building and overall site are substandard, preventing the agencies assigned to the LPOE from adequately fulfilling their respective missions. The deficiencies with the existing facilities have led to extensive traffic delays for vehicles entering the U.S. Specifically, the deficiencies at the Madawaska LPOE fall into two broad categories (Exhibit 2):

- Building deficiencies
- Overall site layout deficiencies

1. Building Deficiencies

The existing LPOE is a single-story masonry building with a basement that was built in 1959. The 6,000 square feet of building space at the LPOE represents approximately 25 percent of the required gross building area for a medium-sized LPOE. The agencies housed within this building lack adequate office space with no space for expansion. The lower level of the building is not compliant with the Architectural Barriers Act. The U.S. Drug Enforcement Administration and Food and Drug Administration, while not tenants of the building, frequent the port. These agencies do not have designated spaces within the building (GSA, 2007).

2. Overall Site Layout Deficiencies

The site is deficient in primary and secondary inbound inspection areas, outbound inspection areas, parking and delivery areas, and building setbacks required to meet current guidelines and satisfy the needs of the agencies (GSA, 2007).

The site has substantial physical limitations. While the property is approximately 0.87 acre in size, approximately half of the property consists of the steep banks along the Saint John River and is not usable area. The usable portion of the property owned by the GSA is approximately 100 feet wide and 200 feet long (GSA, 2007).

The small size of the LPOE site causes traffic to back up into the City of Edmundston. The two inbound primary inspection lanes are too close to the bridge to allow for the efficient queuing of inbound vehicles. The most significant operational deficiency



Bridge Avenue looking north. Photo shows the long, downhill approach to the LPOE.



The existing LPOE, looking north. Photo shows the lack of space for an inbound traffic queue.

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Legend




-  Inbound Lanes
-  Inspection Lanes
-  Outbound Lane

Exhibit 2 - Existing Conditions

N

150 75 0 150 Feet

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of the existing site is the lack of space available to accommodate the secondary inspection of large commercial vehicles (GSA, 2007).

Adding to poor traffic circulation is the proximity of the primary inspection booth to the MNR railroad tracks that cross Bridge Avenue about 60 feet south of the primary inspection booth. While the train traffic is not heavy, when present, the trains leave little room for queuing and storage of vehicles (GSA, 2007).

B. Existing International Bridge is Nearing the End of its Useful Life

The International Bridge is a 928-foot-long four-span bridge carrying Bridge Avenue over the Saint John River. Originally built in 1920, each span consists of a Pennsylvania Truss measuring 232 feet long with a roadway width of 20 feet, 8 inches (MaineDOT, 2017a). In 2016, the average annual daily traffic using the International Bridge was approximately 2,017 vehicles per day (MaineDOT, 2017c).

After nearly 100 years of service, the overall bridge is in poor condition. Despite efforts to maintain the bridge, the rate of deterioration has accelerated to the point that the end of the useful service life of the bridge is fast approaching. Further attempts to repair or rehabilitate the bridge will not restore the full capacity of the bridge to meet today's load requirements or geometric standards; hence, any substantial investments would be impractical. Extensive repairs will be needed in the future on a more frequent basis to maintain the usefulness of the structure, albeit in a reduced state of functionality.

The specific factors contributing to the overall inadequacy of the bridge are:

- Poor Condition of Structural Members;
- Substandard Load Carrying Capacity;
- Geometric Constraints; and
- Extensive Deteriorating Repairs and Retrofits.

1. Condition of Structural Members

The bridge was inspected in July 2017 in accordance with the requirements of the FHWA's National Bridge Inspection Standards. The existing International Bridge is considered a fracture critical bridge (a fracture critical bridge is defined by the FHWA as a steel member in tension, or with a tension element, whose failure would probably cause a portion of, or the entire bridge, to collapse). A hands-on fracture-critical and routine inspection was completed using an under-bridge inspection vehicle to inspect the underdeck sections of the bridge superstructure and truss, and a standard bucket truck to inspect the upper truss chords and braces.



Span 4 - Floor beam web and top flange section loss adjacent to/above stringer connection.

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Stringers

Stringers are the steel beams which run the length of the bridge and support the open steel grid deck. The stringers in Spans 1 and 2 (spans are numbered 1 through 4 starting on the Canadian side of the bridge) are in poor condition and exhibit significant deterioration in several members. Approximately 50 percent of the stringers in Span 1 and 20 percent of the stringers in Span 2 exhibit significant deterioration. Most of the stringers in Spans 3 and 4 show moderate deterioration. Some stringers have significant deterioration at the connections to the floor beams and, in three cases, have corrosion cracks (MaineDOT, 2017a).

Floor Beams

The floor beams support the stringers and distribute the loads to the trusses. The floor beams exhibit moderate to advanced deterioration throughout, particularly at the stringer connections. The bottom flange and bottom flange cover plate of the floor beams exhibit moderate to advanced deterioration throughout, particularly at the stringers (MaineDOT, 2017a).

Deck

The open steel grid deck in Spans 1 and 2 is in poor condition and exhibits many distressed areas comprised of cracked, failed, or missing sections to the extent that some areas warp under truck weight. There are many deck repairs throughout Spans 1 and 2, and these repairs are weak points which have now failed. Some of these failed repairs have become detached with sharp edges and/or warp under truck weight (MaineDOT, 2017a).

Substructures

The piers exhibit many vertical cracks, some of which extend the full height of the piers, particularly on the east and west faces. These cracks exhibit moderate to heavy discoloration and crystallization, known as efflorescence. The faces of Piers 1 and 2 exhibit cracks along the pier cap and moderate splintering or chipping. At

Piers 2 and 3, the pier column noses exhibit advanced splintering at mid-height due to ice floe collision damage with missing sections of the steel angle, particularly at Pier 3. The north face of the Pier 3 nose is chipped with exposed, debonded, and twisted reinforcement, and a missing section of the steel angle (MaineDOT, 2017a).



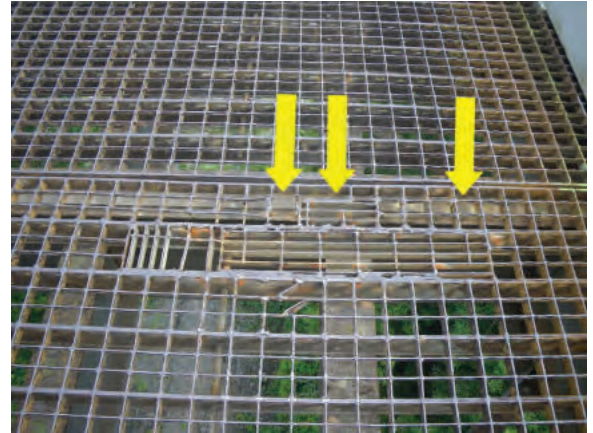
Pier 2 pier wall, south face - Map/vertical cracks with moisture throughout, delamination along pier cap and scattered delaminations, spalls, and scaling.

2. Load Carrying Capacity

Upon completion of the bridge inspection, structural engineers evaluated the bridge in October 2017 in accordance with the Manual for Bridge Evaluation published by the American Association of State Highway and Transportation Officials. This evaluation concluded that extensive deterioration of the stringers and floor beams has significantly decreased the load carrying capacity of the bridge from the standard gross vehicle weight limit of 40 tons. Based on the results of the load

capacity evaluation, the MaineDOT and New Brunswick Department of Transportation and Infrastructure (NBDTI) collectively decided to post the bridge at five tons. This weight limit ensures that the bridge remains safe for passenger vehicles. All vehicles weighing more than five tons, including tractor trailer trucks, box trucks, buses, and fire trucks, are prohibited from crossing the bridge (MaineDOT, 2017b).

In November and December of 2017, NBDTI completed a temporary strengthening initiative including the replacement of four stringers supporting the bridge roadway surface that exhibited critical amounts of deterioration; the cost to replace the four stringers was approximately \$65,000 (CAN). The replacement of these stringers was complex with each stringer replacement requiring approximately two weeks to replace. Currently, an additional 75 deteriorated stringers remain in place; the estimated cost to replace the remaining stringers is approximately \$1.5 million (MaineDOT, 2018). Given the time, effort, and cost required to replace these components, the MaineDOT and NBDTI do not believe it is prudent to replace them. Therefore, the five-ton limit will remain in effect until the bridge is replaced.



Looking south - Cracked transverse welds between the grid deck and floor beam top flange. Note failed repairs.

3. Geometric Constraints

The geometry of the bridge is substandard and limits the accessibility and rideability of the bridge. The width of the roadway is a major contributing factor to the inefficient movement of vehicles, particularly commercial trucks, as they approach and traverse the bridge from either direction. The approach into and out of the LPOE or Edmundston POE is cumbersome and not conducive to smooth traffic flow without affecting the oncoming traffic, especially as trucks leave Edmundston and turn onto the bridge. The roadway width of 20 feet, 8 inches between the curbs is extremely narrow.

The vertical clearance above the bridge is substandard at 14 feet, 3 inches. Several overhead beams appear to have been struck by commercial trucks as indicated by several bent cross-frame members. The vertical clearance above the Canadian National Railway (CNR) tracks is 22 feet and 3/4 of an inch, which is nearly 1 foot less than the required 23 feet of vertical clearance (MaineDOT, 2017a).

4. Extensive Repairs

Many repairs to the bridge have been implemented over the last 60 years; however, the rate of deterioration has begun to exceed the rate of the repair efforts. In 1961, the original timber deck was replaced with an open steel grid deck and the floor beams were strengthened with top and bottom cover plates on the flanges. In the 1980s, concrete repairs were performed on the north abutment, and stone riprap was placed around the footings of Piers 1 and 2.



The approach to the existing International Bridge from the existing Madawaska LPOE.

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A significant rehabilitation effort was undertaken on Spans 3 and 4 in 2001, which consisted of replacement of steel stringers, grid deck, and connection angles between stringers and floor beams. Concrete repairs to the south abutment and Pier 3 were also completed. In 2005, the sidewalk was replaced in Spans 3 and 4 (MaineDOT, 2017a).

C. Proposed Action

The proposed project consists of the likely demolition of the existing Madawaska LPOE and the existing International Bridge; the construction of a new LPOE consisting of a main administration building and support buildings with parking, circulation, and processing areas; and the construction of a new International Bridge. The new LPOE would be designed in accordance with the requirements and criteria of the GSA and the CBP to provide facilities adequate for fulfilling the agencies' respective missions.

The new International Bridge would be designed in accordance with MaineDOT standards with a design life of at least 75 years. Specifically, the proposed project would consist of (Exhibit 1):

Madawaska LPOE:

- Construction of a new LPOE with an administration building and support buildings for processing the movement of people and goods across the border;
- Parking, roadways, and stormwater management facilities; and
- Likely demolition of the existing Madawaska LPOE.

International Bridge:

- Construction of a new International Bridge, consisting of two 12-foot lanes, a 5-foot shoulder, and a 5.5-foot sidewalk with railing; and
- Likely demolition or decommissioning of the existing bridge.

The new International Bridge would be built from a temporary bridge or trestle extending partially across the Saint John River to each pier. Piers in the Saint John River would be built using cofferdams (a watertight enclosure pumped dry to permit construction work below the waterline) or using drilled shafts without separate cofferdams. Once the new International Bridge is complete, the existing bridge would likely be removed using a temporary bridge or trestle and the piers supporting the existing International Bridge would be removed using cofferdams.



The existing International Bridge from Edmundston, looking southeast.

The existing International Bridge carries utility lines operated by Twin Rivers Paper Company (Twin Rivers) across the Saint John River. These lines would be relocated, and the bridge would likely be demolished.

As part of the construction of the new LPOE, the portions of Mill Street and Main Street adjacent to the LPOE may be reconstructed or reprofiled to provide smooth ingress and egress to the LPOE.

III. Identification and Description of Section 4(f) Property

Section 4(f) applies to publicly owned land within parks, recreation areas, and wildlife and waterfowl refuges, and historic sites, whether publicly or privately owned. For the purposes of Section 4(f), historic sites are Section 4(f) properties if they are listed in or determined eligible for inclusion in the NRHP.

Within the study area, the International Bridge has been determined eligible for inclusion in the NRHP (Exhibit 1). Therefore, the bridge is considered a Section 4(f) property and meets the criteria for applicability of a Section 4(f) Evaluation.

The International Bridge is a two-lane, bidirectional highway and pedestrian bridge constructed in 1920. The bridge is part of the National Highway System and is classified as a principal arterial.

The 928-foot-long bridge consists of four riveted Pennsylvania thru truss spans. The trusses are constructed of built-up members composed of angles, channels, and plates. There is a cantilevered sidewalk with metal lattice railings on the west side. The floor beams and stringers are rolled sections. A new, open steel grid deck and stringers were placed in 2001. The substructure consists of concrete abutments and piers with a cutwater detail on the upstream face. The bridge seat on the Maine abutment was strengthened in 2001.

The International Bridge is eligible for the NRHP under Criterion C, as it embodies the distinctive characteristics of a type, period and method of construction. The bridge is a significant example of its type and design as it is the oldest, extant, riveted field connection Pennsylvania thru truss bridge in the state. The bridge is located at a prominent crossing of US 1 into New Brunswick, Canada, and it aided materially in the development of Madawaska and the region's pulp and paper industry. It is one of five riveted Pennsylvania thru truss bridges in Maine built between 1920 and 1929. The International Bridge is one of the earliest and most significant truss bridges designed by the Maine State Highway Commission bridge division under the leadership of Llewellyn Edwards, State Bridge Engineer between 1920 and 1929. It was cited in his biography as one of his most important accomplishments within the department. The bridge replaced a ferry (MaineDOT, 2003).



The existing International Bridge from the bank of the Saint John River on the Madawaska side looking at the substructure.



The existing International Bridge from the bank of the Saint John River on the Madawaska side looking northeast.

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In MaineDOT's 2003 Historic Bridge Management Plan, the bridge was classified as having average preservation priority because it is an example of a bridge (riveted, thru truss) and design that are considered common. There are two remaining Pennsylvania thru truss bridges in the state.

The bridge has no known proximity to other identified cultural resources; therefore, the setting does not have the integrity to be a historic district. The Maine Historic Preservation Commission (MHPC) confirmed in 2018 that there are no other historic resources in downtown Madawaska, and no further investigation is required (MHPC, 2018) (Appendix A).

IV. Alternatives Analysis

The alternatives analysis performed for this Programmatic Section 4(f) Evaluation was undertaken to identify alternatives that completely avoid the use of Section 4(f) properties and to determine whether those alternatives are feasible and prudent. Alternatives are deemed feasible if they can be constructed in accordance with sound engineering practices and are considered prudent if they meet established project needs and if they would not result in unique problems or environmental impacts of an extraordinary magnitude.

Should a feasible and prudent alternative that avoids all impact to Section 4(f) properties exist, it must be selected. This alternative is typically referred to as the "Total Avoidance Alternative." If no feasible or prudent Total Avoidance Alternative exists, then an assessment of the remaining alternatives that impact Section 4(f) properties and that were found reasonable under the environmental review process would be completed. The alternative that would minimize harm to Section 4(f) properties would be identified and selected.

In 2017, the federal, provincial, and state agencies responsible for the movement of people and goods across this international crossing initiated the preparation of the *Madawaska/Edmundston International Bridge and Border Crossing Feasibility and Planning Study* (MEFPS) to identify a preferred location for the rehabilitation or replacement of the International Bridge and Madawaska LPOE.

The alternatives identification, development, and analysis phase began with the MEFPS where natural and social environment features were identified, followed concurrently by the development of project design criteria and a design charrette to identify 12 conceptual alternatives, and a detailed analysis and comparison of the conceptual alternatives. Alternatives included either rehabilitating the existing bridge or building a new bridge on one of several new alignments while maintaining the existing Edmundston POE, and building new border crossing facilities at various locations outside of the downtown business zone (2 upstream and 4 downstream).

Probable costs were developed for six primary construction elements associated with the entirety of this project: Edmundston POE, Madawaska LPOE, bridge demolition, approach roadway, elevated roadway construction, and bridge construction (Exhibit 3). Not all construction elements applied to each alternative. For each alternative, the probable cost of the Madawaska LPOE is assumed to be \$90 million. Except for Alternative 1, the probable cost of bridge demolition is \$4 million. The probable costs for this project were estimated to be \$101 million to \$165 million.

The analysis and comparison of the conceptual alternatives led to the identification of a location for the new LPOE and two corridors for the International Bridge to evaluate further. The study resulted in the identification of a preferred location for the new LPOE and corridor for the International Bridge (MaineDOT, et al., 2018).

Following the identification of a preferred location and corridor, the GSA identified, developed, and analyzed three build alternatives that could potentially satisfy the project's purpose and needs for the LPOE; the FHWA and MaineDOT identified, developed, and analyzed three conceptual build alternatives for the new International Bridge (MaineDOT, et al., 2018).

Section 4(f) requires the selection of an alternative that avoids the use of Section 4(f) property if deemed feasible and prudent. An alternative is deemed feasible if it can be built as a matter of sound engineering judgment. As defined by 23 CFR 774.17, an alternative is not considered prudent if:

Exhibit 3 - Probable Costs of Alternatives

Initial Alternatives Identified	Probable Costs
Alternative 1: Bridge Rehabilitation	\$100,800,000
Alternative 2: New Bridge Immediately Upstream with Elevated Roadway in Madawaska	\$109,900,000
Alternative 3: New Bridge Directly Connecting the POEs	\$103,400,000
Alternative 4: New Bridge with Elevated Roadway in Edmundston	\$105,100,000
Alternative 5: New Bridge with Elevated Roadway in Edmundston	\$101,500,000
Alternative 6: New Bridge with Downtown Property Acquisition	\$102,500,000
Alternative 7: New Border Crossing Upstream of the Downtown Area	\$154,000,000
Alternative 8: Public Works Site	\$139,200,000
Alternative 9: Water Treatment Plant Site	\$164,700,000
Alternative 10: Acadian Cross Trail	\$151,000,000
Alternative 11: Industrial Park Road	\$138,600,000
Alternative 12: NBDTI District Offices	N/A

Note: The U.S. House Committee on Transportation and Infrastructure and the Senate Committee on Environment and Public Works have authorized prospectus funding for a new U.S. LPOE project in downtown Madawaska, Maine through various Public Laws dating from 2004 to 2009, and totaling approximately \$69.2M. Therefore, the estimated total project cost for each of the downtown U.S. LPOE alternatives reflects this existing funding as authorized by the U.S. Congress. Out of town alternatives for a new U.S. LPOE have been assumed at \$90M to reflect increased CBP program requirements since the enacted Public Laws, as well as to respond to the uncertainties and site constraints of the alternative out of town site locations identified in this study.

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- i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- ii. It results in unacceptable safety or operational problems;
- iii. After reasonable mitigation, it still causes:
 - a) Severe social, economic, or environmental impacts;
 - b) Severe disruption to established communities;
 - c) Severe disproportionate impacts to minority or low income populations;
or
 - d) Severe impacts to environmental resources protected under other federal statutes;
- iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- v. It causes other unique problems or unusual factors; or
- vi. It involves multiple factors in paragraphs (3)(i) through (3)(v) of this definition, that while individually minor, cumulatively cause problems or impacts of extraordinary magnitude.

The FHWA defines the following alternatives as avoiding any use of the historic bridge:

1. Do nothing.
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the NHPA.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

A. *No-Build Alternative*

Under the No-Build Alternative, operation of the existing LPOE and International Bridge would continue at their existing locations and using the existing facilities. Except for regular maintenance and minor repairs to the existing infrastructure and equipment, no new construction or demolition would take place. No new inspection and travel lanes, facilities, or bridge structure would be built (Exhibits 1 and 2). This alternative would not require the acquisition of property. The International Bridge would continue to deteriorate, and the posted weight limit would remain in effect. Over time, the amount of time and cost to maintain the International Bridge would increase.

Feasibility and Prudency. The No-Build Alternative does not satisfy the project's purpose or need because, without new construction, there would be no appreciable improvement to the current operating conditions at the LPOE or International Bridge. The U.S. Customs and Border Protection (CBP) and other agencies' staff would continue to operate with inadequate space to efficiently perform their duties and carry out their agencies' missions. The processing of commercial and other large trucks would continue to be arduous. The small size and inefficient configuration of the facility would result in continued operating inefficiency. The queuing of traffic from the City of Edmundston would not only remain but may increase over time.

Outbound inspection of vehicles and pedestrians would continue to be difficult and hazardous for LPOE staff.

The existing International Bridge would continue to deteriorate, the five-ton weight restriction would remain in effect, the amount of time and cost to maintain the bridge would increase, and, eventually, the bridge would become unsafe for use. The movement of traffic across the border would become increasingly more difficult as the weight limit would be reduced again until the bridge would need to be closed completely. Commercial and other large trucks that rely on the Madawaska/Edmundston border crossing would need to continue to take detours to use the other border crossings at Fort Kent/Clair to the west (approximately 40 miles roundtrip) or Van Buren/Saint Leonard to the east (approximately 48 miles roundtrip) increasing operating costs for companies such as Twin Rivers. The community cohesion between Madawaska and Edmundston would be severed as the bridge conditions worsen and all traffic is prevented from crossing the border at Madawaska/Edmundston.

For these reasons, the No-Build Alternative was not carried forward.

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B. Consideration of a New Structure at a Different Location without Affecting the Historic Integrity of the Existing Bridge

1. Alternative 2

Alternative 2 proposed building a new bridge immediately upstream of the existing International Bridge, moving the Madawaska LPOE to the USA-owned parcel, and building a 1,500-foot-long elevated roadway over the railroad, connecting the bridge to the new LPOE (Exhibit 4).

During the identification, development, and screening of alternatives, the following attributes were noted:

Pros:	Cons:
<ul style="list-style-type: none">• Studied extensively.• Allows for current POE operations to continue during construction.• Bridges over MNR reducing vehicle conflicts and interference.• Minor impacts to the Edmundston POE.• Opportunity to correct the bridge entry and exit to better accommodate truck traffic.• Good security line of sight from the Canadian side to the Edmundston POE.	<ul style="list-style-type: none">• Previous studies dismissed this as a viable alternative.• Corner connecting the bridge and elevated roadway is too narrow for transports and tandem trailers to make the turn.• The length and cost of the elevated roadway are prohibitive.• Maintenance and snow removal are problematic and cost-prohibitive.• Poor security visibility on the U.S. side creates border security and safety issues.• Increased security staff would be required to process pedestrians and patrol the bridge and elevated roadway.• Lengthy bridge closures would be required during construction.• MaineDOT would not support this alternative unless GSA owns and maintains the elevated roadway.• Utility lines would need to be moved from the existing bridge to the new bridge.• Most expensive downtown alternative.

The evaluation concluded that Alternative 2 was not feasible and prudent based on the same challenges associated with connecting the new bridge and LPOE cited for Alternative 1. Alternative 2 was dismissed (MaineDOT, et al., 2018).

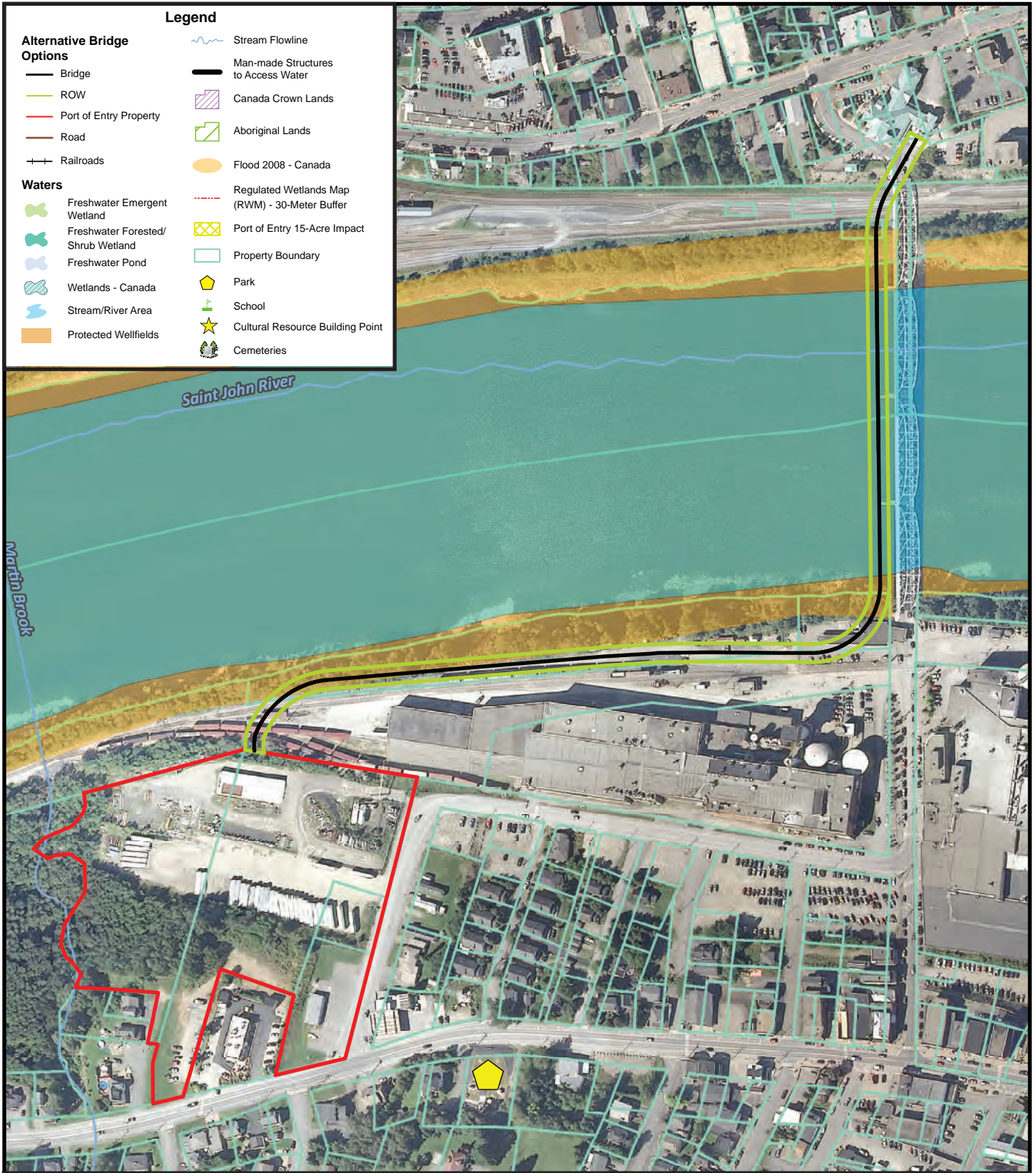
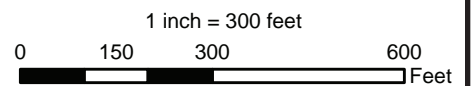


Exhibit 4 - Alternative 2



New Madawaska Land Port of Entry and International Bridge Project

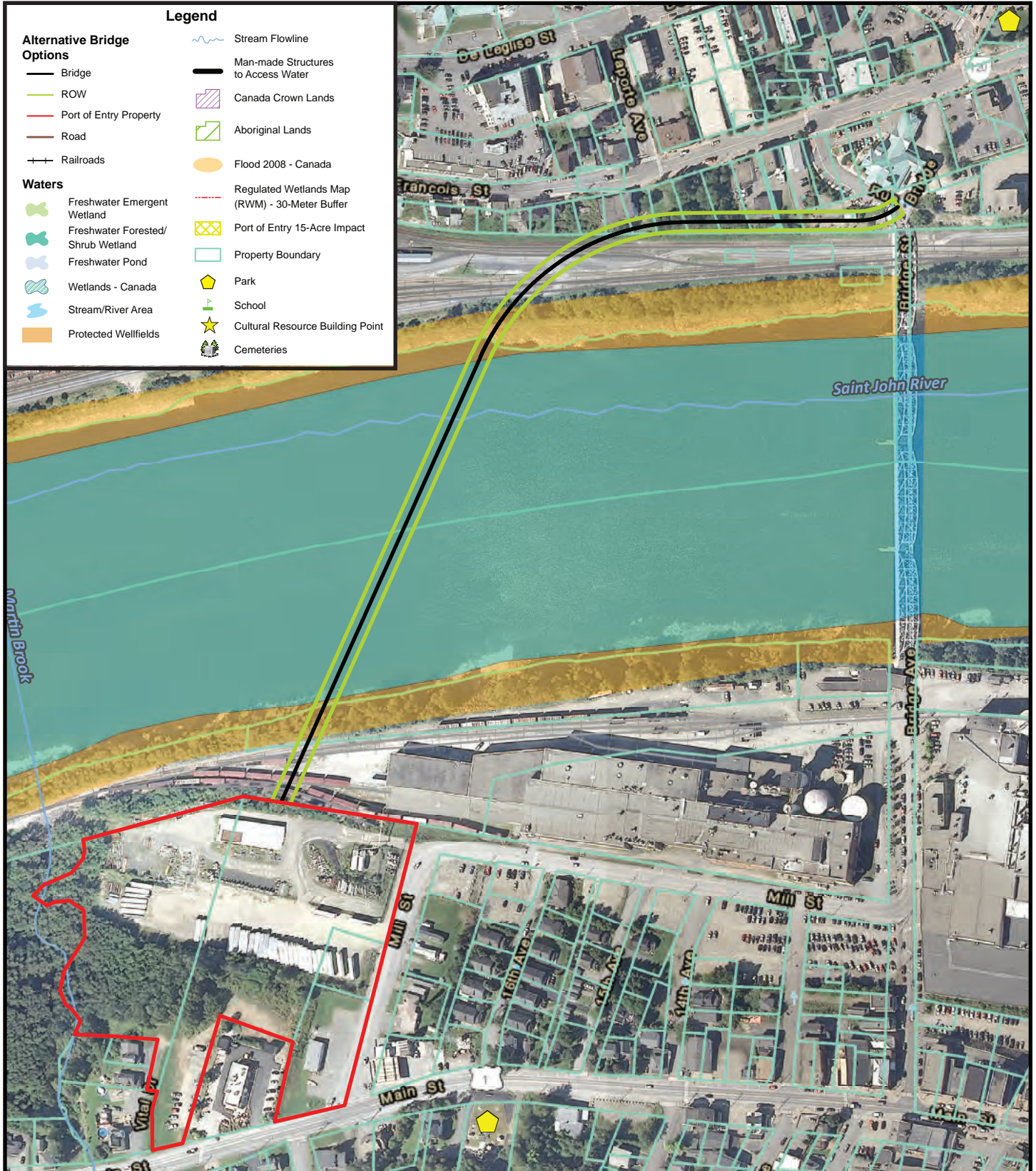
2. Alternative 4

Alternative 4 proposed moving the Madawaska LPOE to the USA-owned parcel and building a new bridge on a skew angle, connecting the existing Edmundston POE via an elevated roadway over the CNR rail line (Exhibit 5).

During the identification, development, and screening of alternatives, the following attributes were noted:

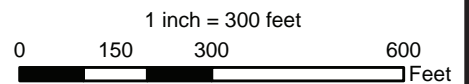
Pros:	Cons:
<ul style="list-style-type: none">• Angle of the bridge allows for best visibility for CBP.• Allows for possible best orientation of bridge landing for preferred building alignments and site circulation for the Madawaksa LPOE.• Allows for current POE operations to continue during construction.• Acquisition of property on the Canadian side may allow for future expansion.	<ul style="list-style-type: none">• Requires a longer bridge span than the existing bridge.• Angle of the bridge reduces visibility approaching the Edmundston POE.• Impacts to businesses and residences on the Canadian side in Edmundston.• Maintenance and snow removal over the CNR tracks and within the Edmundston POE are problematic and potentially cost-prohibitive.• The construction of the retaining wall will increase the cost of the project.• Need for increased security measures and infrastructure approaching the Edmundston POE due to the elevated roadway.• Interference with CNR rail line.• Would displace properties in Edmundston consisting of dentist office, an apartment building, a motel, a private residence, and three vacant lots.

Alternative 4 was retained for further study (MaineDOT, et al., 2018).



- Legend**
- Stream Flowline
 - Man-made Structures to Access Water
 - Canada Crown Lands
 - Aboriginal Lands
 - Flood 2008 - Canada
 - Regulated Wetlands Map (RWM) - 30-Meter Buffer
 - Port of Entry 15-Acre Impact
 - Property Boundary
 - Park
 - School
 - Cultural Resource Building Point
 - Cemeteries
- Alternative Bridge Options**
- Bridge
 - ROW
 - Port of Entry Property
 - Road
 - Railroads
- Waters**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Wetlands - Canada
 - Stream/River Area
 - Protected Wellfields

Exhibit 5 - Alternative 4



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3. Alternative 5

Alternative 5 proposes moving the Madawaska LPOE to the USA-owned parcel and building a new bridge on a skew angle, connecting to the existing Edmundston POE via an elevated roadway over the CNR rail line (Exhibit 7).

During the identification, development, and screening of alternatives, the following attributes were noted:

Pros:	Cons:
<ul style="list-style-type: none"> • Angle of the bridge allows for best visibility for CBP. • Allows for possible best orientation of bridge landing for preferred building alignments and site circulation for the Madawaksa LPOE. • Allows for current POE operations to continue during construction. • Acquisition of property on the Canadian side may allow for future expansion. 	<ul style="list-style-type: none"> • Requires a longer bridge span than the existing bridge. • Angle of the bridge reduces visibility approaching the Edmundston POE. • Impacts to businesses and residences on the Canadian side in Edmundston. • Maintenance and snow removal over the CNR tracks and within the Edmundston POE are problematic and potentially cost-prohibitive. • The construction of the retaining wall will increase the cost of the project. • Need for increased security measures and infrastructure approaching the Edmundston POE due to the elevated roadway. • Interference with CNR rail line. • Would displace properties in Edmundston consisting of an apartment building and two vacant lots. • Unknown impacts to utilities.

Alternative 5 was retained for further study (MaineDOT, et al., 2018).

4. Retain the Bridge as a Utility Only Structure

The MaineDOT and the NBDTI have stated they would not support maintaining the existing bridge in their respective bridge inventories; the agencies cited concerns regarding the deteriorated condition of the structure and the significant and increasing long-term maintenance and operation costs of operating the bridge (CBSA, et al., 2017).

In accordance with Title 23, Chapter 1, Section 144(g)5, prior to demolition of the bridge, MaineDOT and the FHWA would offer the bridge to any group that could legally take possession of the bridge and maintain it at a new location, provided the group assumes all future legal and financial liability. The offer would occur by public notice in a newspaper and by posting to the MaineDOT website. Costs to induce acceptance of the offer of donation may not exceed the cost to dismantle the bridge. FHWA, the Maine State Historic Preservation Officer and MaineDOT would

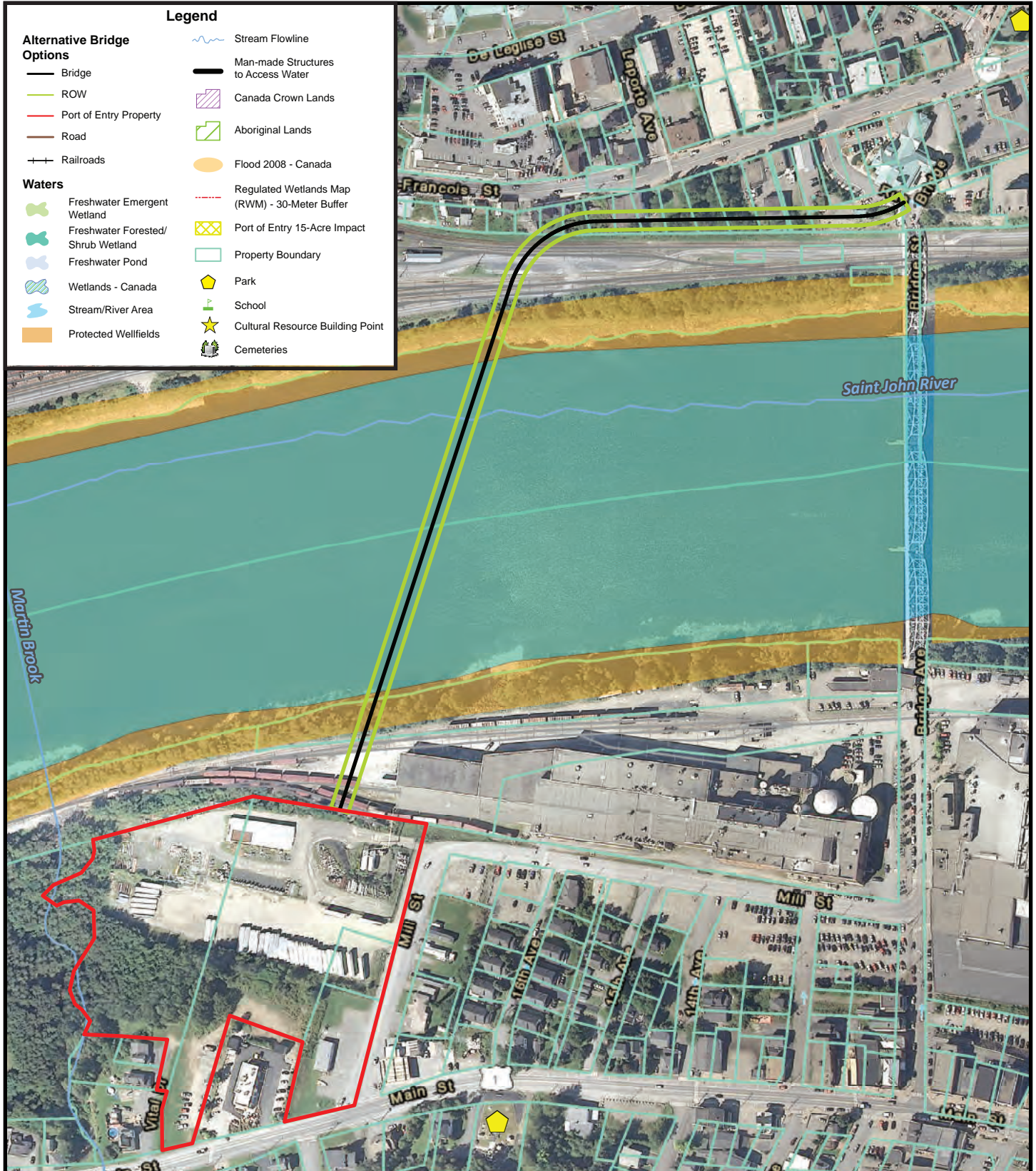
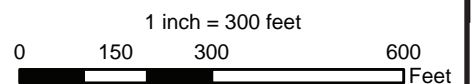


Exhibit 6 - Alternative 5



New Madawaska Land Port of Entry and International Bridge Project

work jointly to determine the most appropriate use of the existing bridge from any proposals received.

If the bridge is to be transferred to another party, the transfer deed may include preservation covenants that require the new owner to preserve and maintain the bridge in accordance with established standards for historic bridges.

The MaineDOT and NBDTI recognize Twin Rivers owns and operates several significant utilities on the existing bridge (see Chapter 2.E.1.). A license was issued to Fraser Companies Limited (currently Twin Rivers Paper Company) in 1925 by the government of Canada to install utility lines on the existing International Bridge. The license has been updated several times, adding an agreement with the State of Maine, and allows (now) Twin Rivers to own and operate several utility lines, attached to the existing International Bridge. The license agreement states that the utility lines can occupy space on the International Bridge; however, installation, maintenance, and removal costs would be the sole responsibility of Twin Rivers (GOC, 1925).

The International Bridge currently supports four utility lines — two 24-inch, one 18-inch, and one 16-inch diameter — on the downstream side of the bridge, and one 12-inch diameter utility line as well as a 10-inch-by-10-inch wooden duct bank on the upstream side of the bridge. Only the two 24-inch diameter utility lines are believed to be operational. Therefore, the maintenance or relocation of only these two lines is assumed to be required (HNTB, 2018).

The MaineDOT and NBDTI considered closing the bridge to the public and transferring ownership of the bridge, as well as all responsibility for future maintenance, operations, and demolition, to Twin Rivers.

A limited investigation into maintaining the existing bridge was completed. Upon completion of the new International Bridge, ownership of the existing bridge would be transferred to Twin Rivers. Twin Rivers would become responsible for future bridge inspection, maintenance, operations, and bridge removal costs (HNTB, 2018).

Feasibility and Prudency. A significant investment would be needed to convert the existing bridge into an acceptable utility-only structure. Both the CBP and the Canada Border Services Agency (CBSA) would require that the existing bridge deck be completely removed at one end of the bridge or otherwise rendered impassable to prevent its use as a bridge. Moreover, neither agency has resources available to cover the cost of required security upgrades including cameras, gates, access control, and security monitoring (HNTB, 2018).

Additional concerns include how snow removal operations would impact the Edmundston POE, potential confusion for users unfamiliar with the crossing, and

potential conflicts between the existing bridge and the proposed replacement bridge at the Edmundston POE (HNTB, 2018).

The NBDTI has expressed concerns that allowing the existing bridge to remain would increase the possibility of ice jamming in the river. There is no way to effectively mitigate this concern because it is derived from the proximity, location, and number of piers in the river for the existing and replacement bridges (HNTB, 2018).

Given the significant uncertainty regarding the required bridge modifications and security improvements required for this option, a conceptual cost was not developed. This alternative was dismissed from consideration as not feasible and prudent.

Other options for relocating the two 24-inch bridge-mounted utility lines are:

- Relocation to the downstream utility bridge owned by Twin Rivers,
- Directional drilling of new utilities under the river,
- Direct burial of new utilities under the river, and
- Relocation to the new International Bridge (HNTB, 2018).

These options were analyzed within the *New Madawaska Land Port of Entry and International Bridge Project Draft Supplemental Environmental Impact Statement* (DSEIS). The two relocation alternatives that appear to be the most feasible are relocation of the utility lines to the existing downstream utility bridge (\$3 million) and relocation to the proposed new bridge (\$6 million). The remaining options present significant challenges with respect to cost, constructability, security, and long-term maintenance and operations (MaineDOT, et al., 2018).

New Madawaska Land Port of Entry and International Bridge Project

C. Rehabilitate the Historic Bridge Without Affecting the Historic Integrity of the Structure

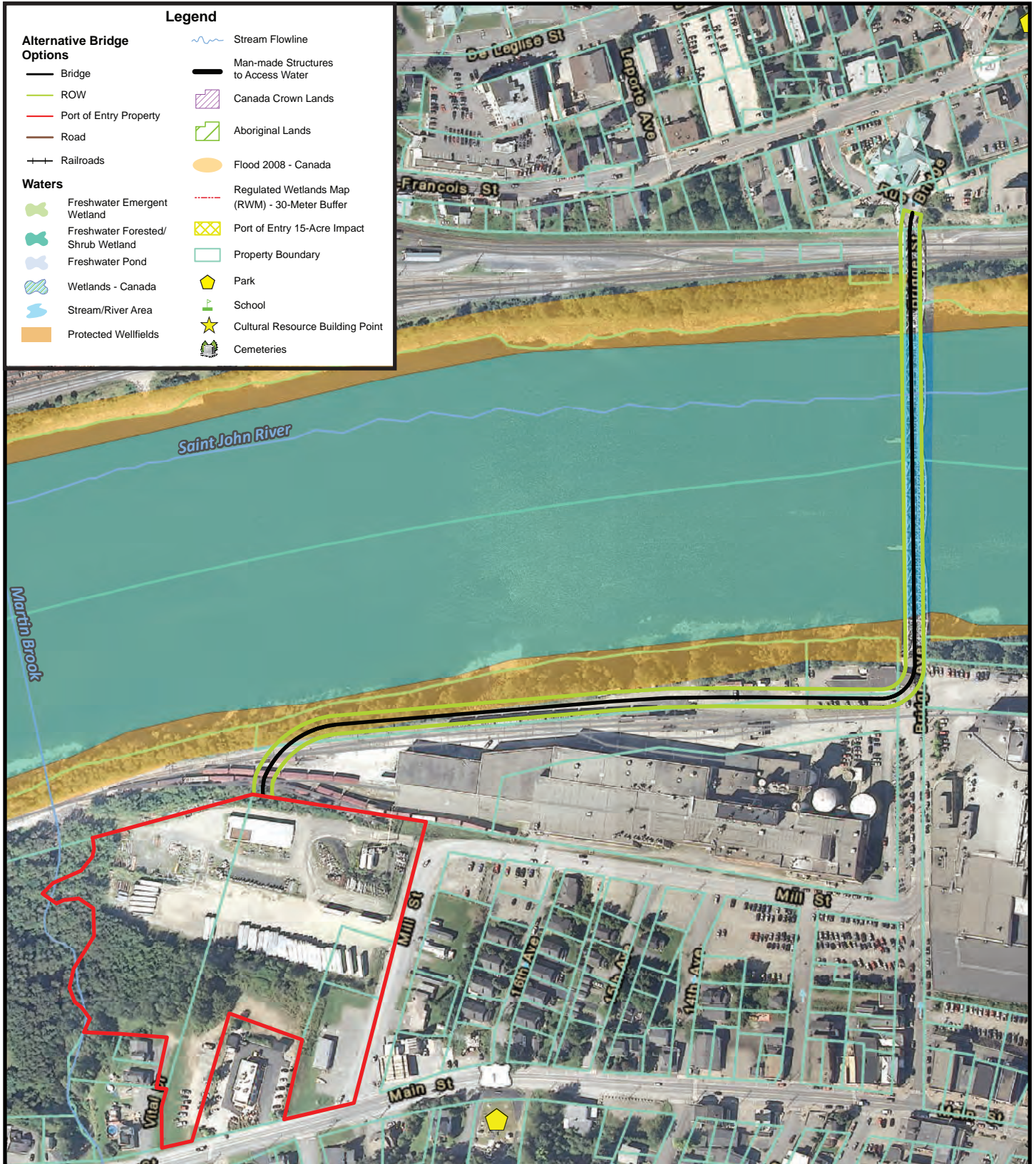
Alternative 1 proposed rehabilitating the existing International Bridge, moving the Madawaska LPOE to the USA-owned parcel, and building a 1,500-foot-long elevated roadway over the railroad, connecting the bridge to the new LPOE (Exhibit 7).

During the identification, development, and screening of alternatives, the following attributes were noted:

Pros:	Cons:
<ul style="list-style-type: none"> • Studied extensively. • Allows for current port of entry (POE) operations to continue during construction. • Improved traffic flow across the bridge could result in improved economic development opportunities. • Bridges over the MNR tracks reducing vehicle conflicts and interference. • Maintains utilities on the bridge. Shortest construction time frame. • A rehabilitated bridge could be implemented in about 3 years. 	<ul style="list-style-type: none"> • Previous studies dismissed this as a viable alternative. • Corner connecting the bridge and elevated roadway is too narrow for transports and tandem trailers to make the turn, making this alternative ineffective. • The length and cost of the elevated roadway are prohibitive. • Maintenance and snow removal are problematic and cost-prohibitive. • Poor security visibility on the U.S. side creates border security and safety issues. • Increased security staff would be required to process pedestrians and patrol the bridge and elevated roadway. • Significant interference with railroad and Twin Rivers operations. • Lengthy bridge closures would be required. • MaineDOT would not support this alternative unless GSA owns and maintains the elevated roadway. • Service life of the rehabilitated bridge would be approximately 30 years, much less than a new bridge. • The cost for this alternative with a rehabilitated bridge is commensurate with the cost of other alternatives with new bridges and much longer service life.

Reasonableness, Feasibility, and Prudency. Based on the analysis of the conceptual alternative alignments, the MaineDOT and NBDTI dismissed Alternative 1, the rehabilitation of the existing International Bridge. The evaluation concluded Alternative 1 was not feasible and prudent based on:

- **Bridge Condition:** A detailed inspection and assessment of the existing bridge, completed in July 2017, identified numerous areas of advanced deterioration and corrosion. Following the inspection, a structural evaluation of the bridge was completed. The evaluation concluded that the observed deterioration significantly decreased the load carrying capacity of the structure. Based on the evaluation results, a load restriction was placed on the bridge, limiting traffic to vehicles weighing five tons or less (MaineDOT, et al., 2018).



Legend

Alternative Bridge Options	Stream Flowline
Bridge	Man-made Structures to Access Water
ROW	Canada Crown Lands
Port of Entry Property	Aboriginal Lands
Road	Flood 2008 - Canada
Railroads	Regulated Wetlands Map (RWM) - 30-Meter Buffer
Waters	Port of Entry 15-Acre Impact
Freshwater Emergent Wetland	Property Boundary
Freshwater Forested/Shrub Wetland	Park
Freshwater Pond	School
Wetlands - Canada	Cultural Resource Building Point
Stream/River Area	Cemeteries
Protected Wellfields	

Exhibit 7 - Alternative 1

N

1 inch = 300 feet

0 150 300 600 Feet

New Madawaska Land Port of Entry and International Bridge Project

Following the inspection and evaluation of the bridge, the NBDTI attempted to repair some damage on the northern end of the bridge in an effort to increase or raise the weight restriction on the bridge. The NBDTI replaced four stringers supporting the bridge deck that exhibited the most critical amounts of deterioration; the cost to replace the four stringers was approximately \$65,000 (CAN). The replacement of these stringers was complex, and each stringer took about two weeks to replace. There are approximately 75 stringers that are limiting the capacity of the bridge; the estimated cost to replace the remaining stringers is approximately \$1.5 million (MaineDOT, 2018).. Given the time, effort, and cost required to replace the four stringers, the MaineDOT and NBDTI decided it was not prudent to continue to replace them (MaineDOT, et al., 2018).

Rehabilitating the bridge to safely carry heavier loads was deemed impractical given the widespread level of deterioration, the lengthy bridge closures required to complete the work, and the significant financial investment required to address structural deficiencies (MaineDOT, et al., 2018).

- **Bridge Geometry:** The geometry of the existing bridge is narrow, does not meet current standards, and limits traffic operations. The narrow roadway and tight turns at each end of the structure do not accommodate the turning movements of large trucks (MaineDOT, et al., 2018).
- **Connectivity with new Madawaska LPOE:** The new LPOE will be approximately 1,500 feet to the southwest of the existing LPOE. If rehabilitation of the bridge in its existing location were pursued, construction of an elevated roadway along the bank of the Saint John River linking the existing bridge with the new LPOE would be required. The construction of a elevated roadway would add significant cost to the construction of the LPOE; result in significant impacts to Twin Rivers and MNR during construction; significantly impact paper mill and railroad operations after construction; significantly increase the long-term maintenance, operations, and security costs for the LPOE; and hinder the CBP from safely and effectively securing the border (MaineDOT, et al., 2018).

D. Construct a New Bridge

1. Alternative 3

Alternative 3 proposed moving the Madawaska LPOE to the USA-owned parcel and building a new bridge on a skew angle, directly connecting the existing Edmundston POE to the new Madawaska LPOE (Exhibit 8).

During the identification, development, and screening of alternatives, the following attributes were noted:

Programmatic Section 4(f) Evaluation

<i>Pros:</i>	<i>Cons:</i>
<ul style="list-style-type: none">• Bridge alignment offers the prerequisite line of sight and approach distances on both sides of the border.• Provides opportunity for visibility across the Twin Rivers property from the new LPOE.• Allows for current LPOE operations to continue during construction.• Does not require Public Services and Procurement Canada, CBSA, or NBDTI to acquire land.• Minor impacts to the Edmundston POE.	<ul style="list-style-type: none">• Requires a longer bridge than the existing bridge.• Largest number of piers in the Saint John River of all the downtown alternatives considered.• Higher operation and maintenance costs.• Unknown impact to utilities.

Alternative 3 was retained for further study (MaineDOT, et al., 2018).

E. Other Alternatives Considered but Dismissed from Consideration

Alternative 6 proposed acquiring land in downtown Madawaska to the south of the existing LPOE (Exhibit 9). This alternative was dismissed from further study because it would require significant land acquisition, create border security and safety issues, disrupt surrounding businesses and residences during construction of the LPOE, and reduce traffic circulation (MaineDOT, et al., 2018).

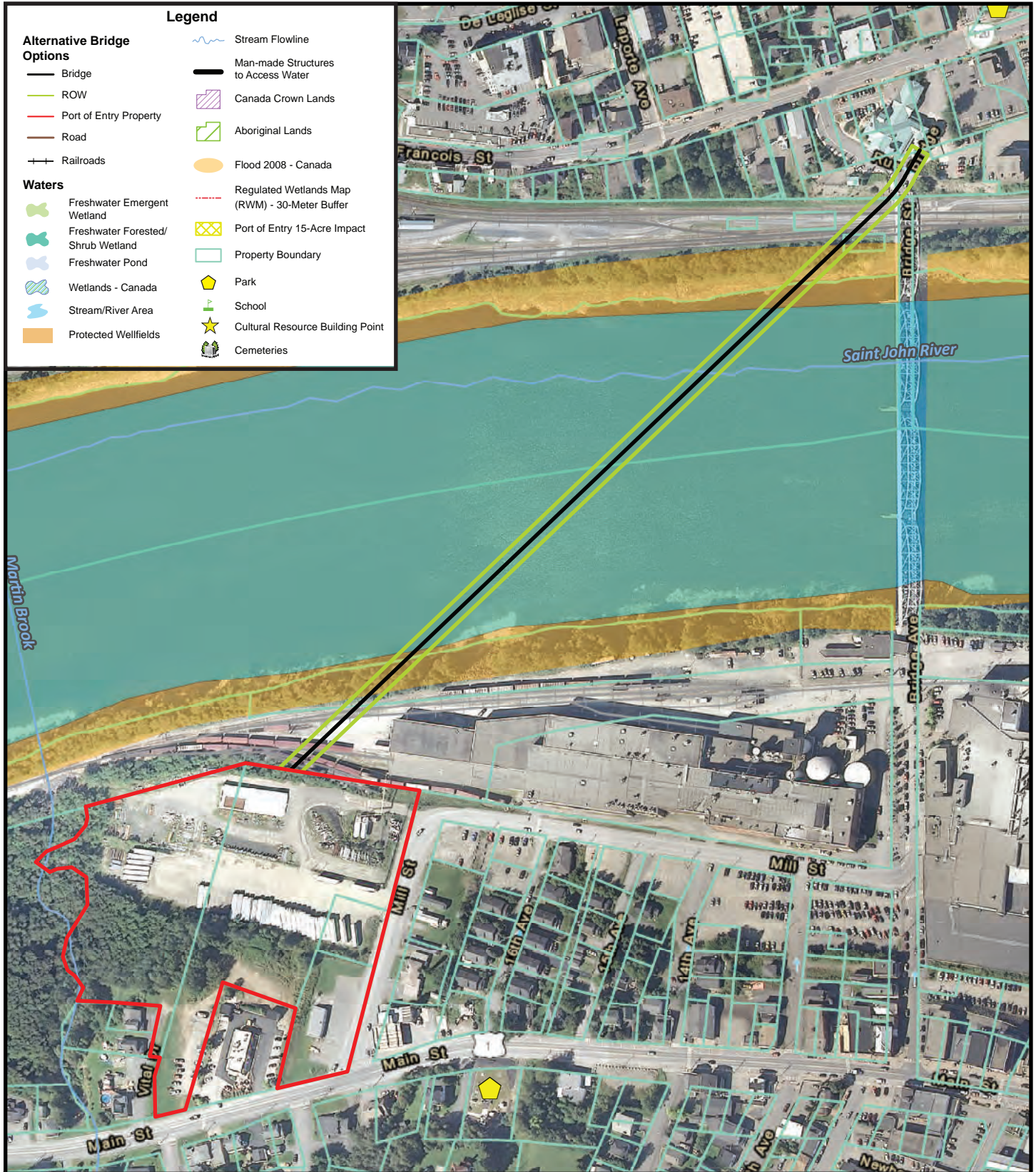
Alternatives 7 through 12 would move the border crossing and related facilities out of the downtown business zone. Moving the border crossing out of downtown would require constructing two new POEs (U.S. and Canada) and a new bridge (MaineDOT, et al., 2018).

Alternatives 7 through 12 would include more space for the POEs, improved traffic circulation on the POE sites, few to no direct impacts to Twin Rivers facilities and railroad lines, and would not cause the existing border crossing to shut down during construction. The new border crossing facilities would be constructed on land that would need to be acquired, increasing the overall cost, construction timeframe, and environmental impacts when compared to the downtown business zone alternatives. In addition, PSPC and CBSA have no plans or funding for a new POE.

The probable costs of the out of downtown alternatives range from approximately \$139 million to \$164 million, and would be contingent on concurrent federal funding authorization and appropriation of both the United States and Canadian governments for a new LPOE and POE, respectively, further risking delayed opening of a new border crossing.

MaineDOT and NBDTI have agreed that if any of the out of downtown alternatives would be constructed, the existing bridge and border crossing facilities in the downtown business zone would be removed from service. Removing the existing border crossing would reduce community cohesion between Madawaska and Edmundston, causing significant disruption to the community, and significantly

New Madawaska Land Port of Entry and International Bridge Project



- Legend**
- Stream Flowline
 - Man-made Structures to Access Water
 - Canada Crown Lands
 - Aboriginal Lands
 - Flood 2008 - Canada
 - Regulated Wetlands Map (RWM) - 30-Meter Buffer
 - Port of Entry 15-Acre Impact
 - Property Boundary
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Wetlands - Canada
 - Stream/River Area
 - Protected Wellfields
 - Park
 - School
 - Cultural Resource Building Point
 - Cemeteries

Exhibit 8 - Alternative 3

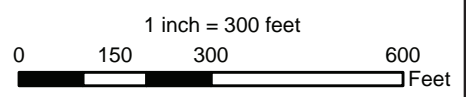
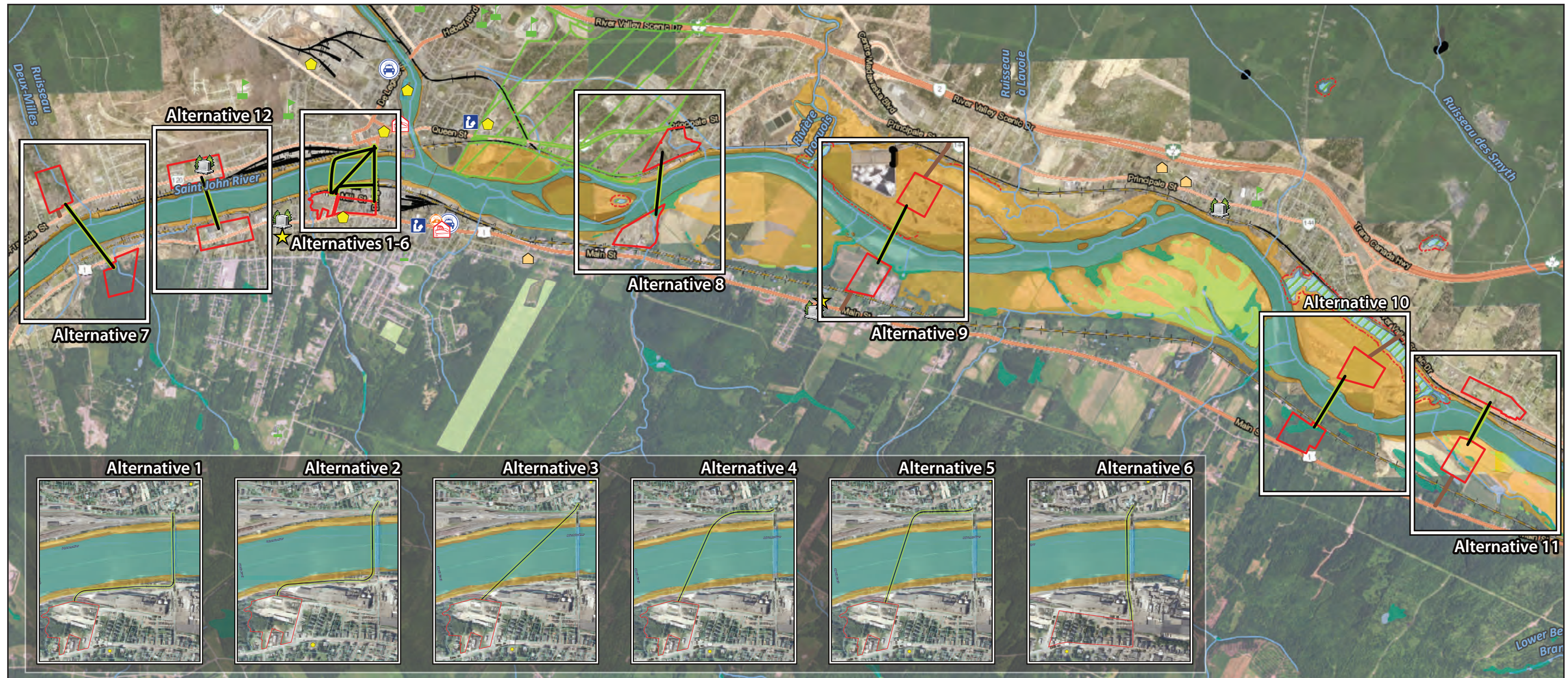
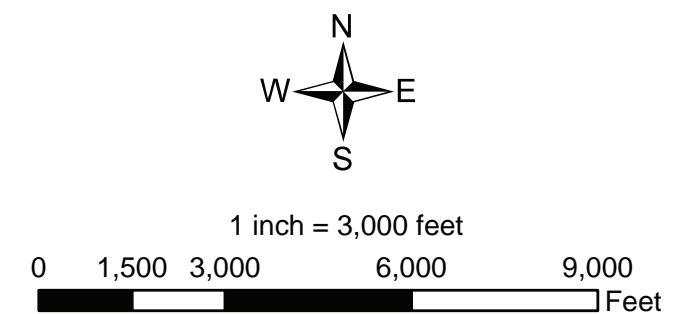


Exhibit 9 - Alternatives Summary Map



Legend

- | | | | |
|------------------------------------|-----------------------------------|--|-------------------------------------|
| ★ Cultural Resource Building Point | 🚓 Police | 🌊 Stream Flowline | 🌿 Freshwater Emergent Wetland |
| 📖 Libraries | 🏠 Nursing Homes | 🔴 Regulated Wetlands Map (RWM)-30-meter Buffer | 🌳 Freshwater Forested/Shrub Wetland |
| 🚒 Fire Station / EMS | Alternative Bridge Options | 🛤️ Man-made Structures to Access Water | 🌊 Freshwater Pond |
| 🏪 Cemeteries | 🛤️ Bridge | 🏠 Canada Crown Lands | 🌿 Wetlands - Canada |
| 🚑 Ambulance | 🟢 Bridge ROW | 🏠 Conserved Lands - ME | 🌊 Stream/River Area |
| 🎓 School | 🔴 Port of Entry Property | 🏠 Aboriginal Lands | |
| 🏡 Park | 🛤️ Road | 🟡 Flood 2008 - Canada | |
| | 🛤️ Railroads | 🟠 Protected Wellfields | |



Inset images of Alternatives 1 through 6 not to scale

Source: MaineDOT, 2018

New Madawaska Land Port of Entry and International Bridge Project

increasing overall commute time between Madawaska and Edmundston. The increased travel time would increase shipping costs to businesses such as Twin Rivers Paper Company which operates on both sides of the border.

Alternatives 7 through 12 were dismissed from further consideration. The reasons for dismissing Alternatives 7 through 12 and choosing to focus attention on the alternatives in the downtown business zone were overall practicality, adverse impacts to people and natural resources, cost, and schedule:

- Keeping the border crossing in the downtown business zone respects the needs and requests of PSPC and the CBSA to use the existing Edmundston POE in its present form to the extent possible;
- It maintains the direct connectivity and community cohesion that exists between Madawaska and Edmundston business zones;
- Many of the out of downtown locations would have resulted in prohibitive impacts to wetlands, floodplains, or both and would not have received approval from the federal, provincial, or state agencies charged with their protection;
- The overall cost of the project – considering the new bridge, POEs, and roadway connections – is substantially lower in the downtown business zone than at an out of downtown location;
- A new border crossing in the downtown business zone can be delivered several years sooner than an out of downtown location.

F. Alternatives Retained for Further Consideration

Alternatives 3, 4, and 5 were retained for further consideration.

The similarity between Alternatives 4 and 5 was discussed and evaluated. It was concluded that the radius of Alternative 5 was likely smaller than desirable, and the radius of Alternative 4 was likely larger than desirable. Based on this assessment, Alternatives 4 and 5 were dismissed and a new Alternative, Alternative 4.5, was created representing a hybrid of the two (MaineDOT, et al., 2018).

A more refined evaluation of the two remaining alternatives, Alternatives 3 and 4.5, was conducted. Alternative 4.5 was refined to minimize property impacts in Edmundston. Alternative 3 was refined to provide a more desirable angle of entry into the Madawaska LPOE and the Edmundston POE (MaineDOT, et al., 2018).

Detailed evaluation of Alternatives 3 and 4.5 included the development of conceptual horizontal and vertical roadway geometries, discussions with the MaineDOT and NBDTI regarding bridge type, conceptual bridge pier and abutment layouts, establishment of conceptual limits of retaining walls and slope grading, completion of initial assessments of constructability and utility impacts, and development of refined construction cost estimates. The construction cost estimates were developed assuming Alternative 3 would be a five-span segmental concrete structure. The use of segmental concrete was assumed to allow for longer span lengths which, in

turn, minimizes both the number of piers in the river and ice jamming potential. Alternative 4.5 was assumed to include construction of a seven-span steel plate girder or steel tub girder structure due to the shorter bridge and span lengths required (MaineDOT, et al., 2018).

Reasonableness, Feasibility, and Prudence. The MaineDOT and the NBDTI considered both alternatives in detail, and lists of positives and negatives of each alternative were created (MaineDOT, et al., 2018):

Alternative 3

<i>Pros:</i>	<i>Cons:</i>
<ul style="list-style-type: none"> • Direct line of sight for CBSA officers; • Less property impacted in Edmundston; • Minimizes the number and size of retaining walls in Edmundston; and • Does not require significant modifications to the Edmundston POE. 	<ul style="list-style-type: none"> • Cost is greater than Alternative 4.5; • Approach angle of bridge creates an inefficient orientation for the Madawaska LPOE; • Very little queueing area between bridge and inspection booths at the Edmundston POE; • Constructability in Edmundston could add cost and/or require additional property acquisition; and • More piers required unless a bridge type with longer spans is used.

Alternative 4.5

<i>Pros:</i>	<i>Cons:</i>
<ul style="list-style-type: none"> • Lower initial cost; • Approach angle of bridge allows for more effective orientation of the Madawaska LPOE; • Approach roadway allows for longer queueing area for vehicles and potential for two lanes between bridge and inspection booths; • Improved constructability – larger laydown area in Edmundston; and • Fewer piers. 	<ul style="list-style-type: none"> • Size of retaining wall in Edmundston; • The use of closed-circuit television would be required to offset the loss of line of sight of CBSA personnel; • Greater property impacts in Edmundston; and • A pier would be required within CNR’s rail yard.

G. Identification of a Preferred Corridor for the International Bridge

Further discussion and analysis of Alternatives 3 and 4.5 identified several concerns associated with Alternative 4.5. Alternative 4.5 provided the lowest-cost solution of the two remaining alternatives; however, it would also result in more significant property impacts in Edmundston and require an extensive retaining wall along the property owned by CNR. Additionally, the alternative was undesirable for the CBSA because it would not provide adequate line of sight for their officers, require the installation of a closed-circuit television system, and require additional security measures along the access road which would parallel Rue Saint François (MaineDOT, et al., 2018).

New Madawaska Land Port of Entry and International Bridge Project

An analysis of Alternative 3 identified a potential improvement for this alternative consisting of the addition of curvature to both ends of the bridge as they pass over the CNR and MNR tracks. The modification could allow for a more desirable orientation approaching both POEs and improved line of sight for border security personnel; additional evaluation of this modification would be performed during preliminary design of the bridge (MaineDOT, et al., 2018).

Following detailed evaluation and review, the modified Alternative 3 was identified as the preferred location alternative. Considering the conceptual nature of the work and uncertainty surrounding the final layout of the Madawaska and Edmundston POEs, a 150-foot-wide corridor (extending 75 feet left and right of the anticipated bridge centerline) was created (Exhibit 10) (MaineDOT, et al., 2018).

The corridor illustrates the anticipated bridge alignment while recognizing that future coordination, design, environmental, and constructability assessments may necessitate minor changes to bridge skew, curvature, and location of abutments. No significant modifications to the rail infrastructure owned by CNR or MNR would be required. Coordination would be required during the design phase of the International Bridge regarding design details (e.g., the inclusion of crash walls at abutments and piers), track outages, and temporary access required for construction.

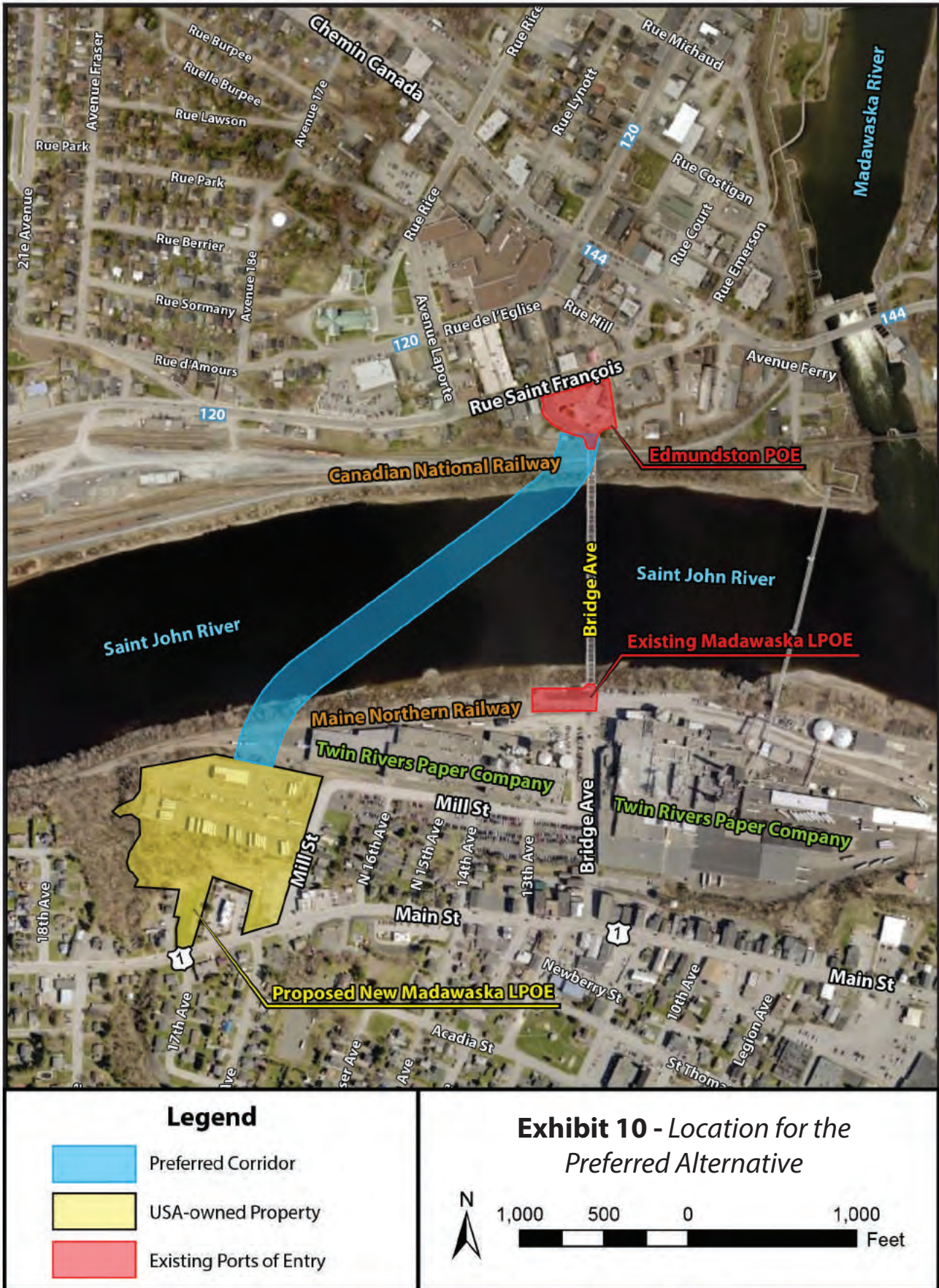
H. Bridge Alternatives Retained for Detailed Study

Following the identification of the preferred corridor for the International Bridge, the GSA, FHWA, and MaineDOT agreed to eliminate the horizontal curvature from each end of the bridge to allow for the construction of a straight bridge, thereby reducing the complexity of design and construction of it and lowering the cost of constructing it, while still maintaining security and line of sight.

Conceptual bridge alternatives were developed and evaluated. This evaluation consisted of limited assessments of geotechnical conditions, hydrology and hydraulics, bridge horizontal and vertical alignments, span configuration, foundation and substructure type, and superstructure type.

It is recognized that bridges with fewer spans have greater girder/concrete depths. These larger structure depths may unacceptably reduce clearances over the MNR and CNR rail lines. Conversely, increasing the number of spans would require the construction of additional piers which would increase in-stream construction, the potential for ice jams, and construction costs.

Based on these considerations, the construction of a steel girder or segmental concrete bridge with either five, six, or seven spans was selected. Additional options consisting of steel tub girders and precast segmental concrete were briefly considered but dismissed after being judged less desirable based on the proposed bridge size, geometry, and constraints during construction.



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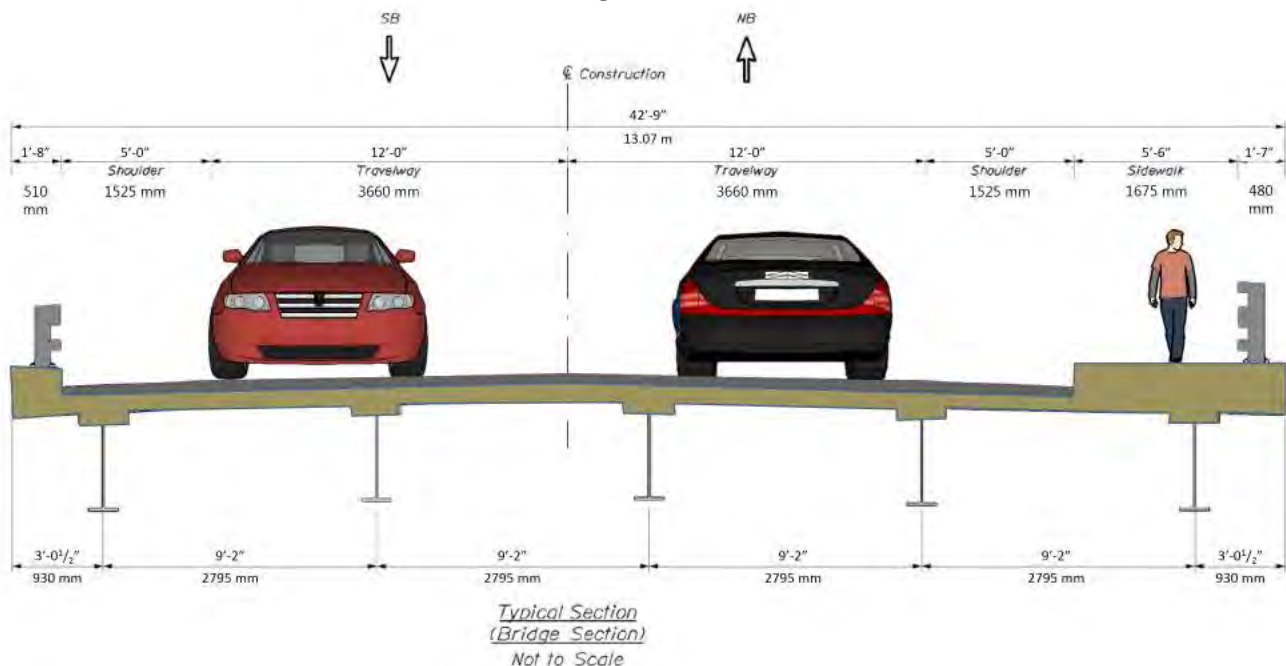
Each of the bridge alternatives share the following features:

- The bridge typical section (Exhibit 11).
- The horizontal bridge alignment.
- The vertical alignment for the bridge decreases from north to south, maintaining the minimum vertical clearance required over the rail lines.
- Stub or cantilever abutments between the LPOE and POE facilities and the adjacent railroad tracks.
- Portions of the bridge ends would be flared to accommodate the turning movements of large trucks.
- Access roads along the banks of the Saint John River and temporary work trestles traversing portions of the river would be necessary to complete construction of the piers and portions of the superstructure.

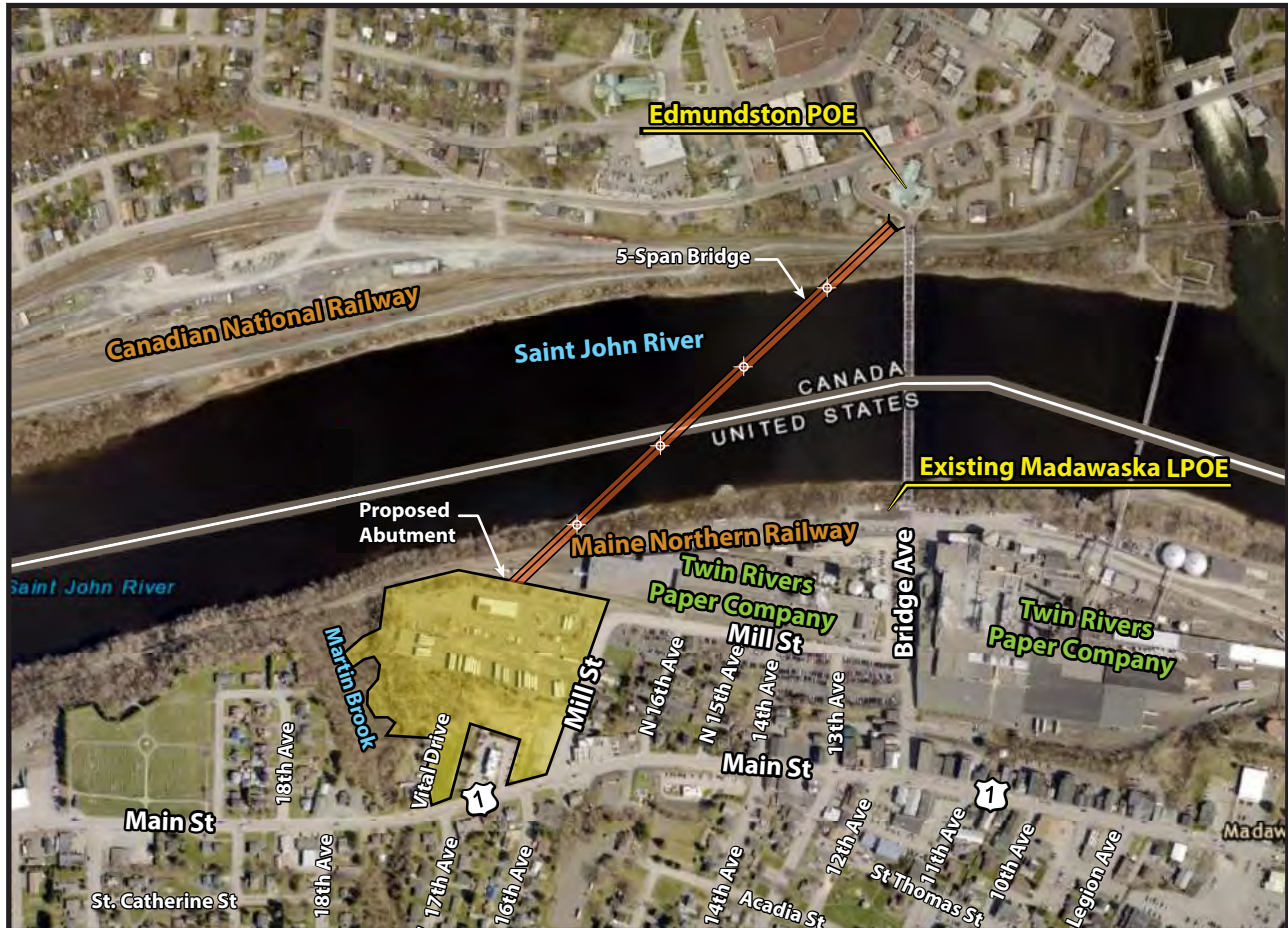
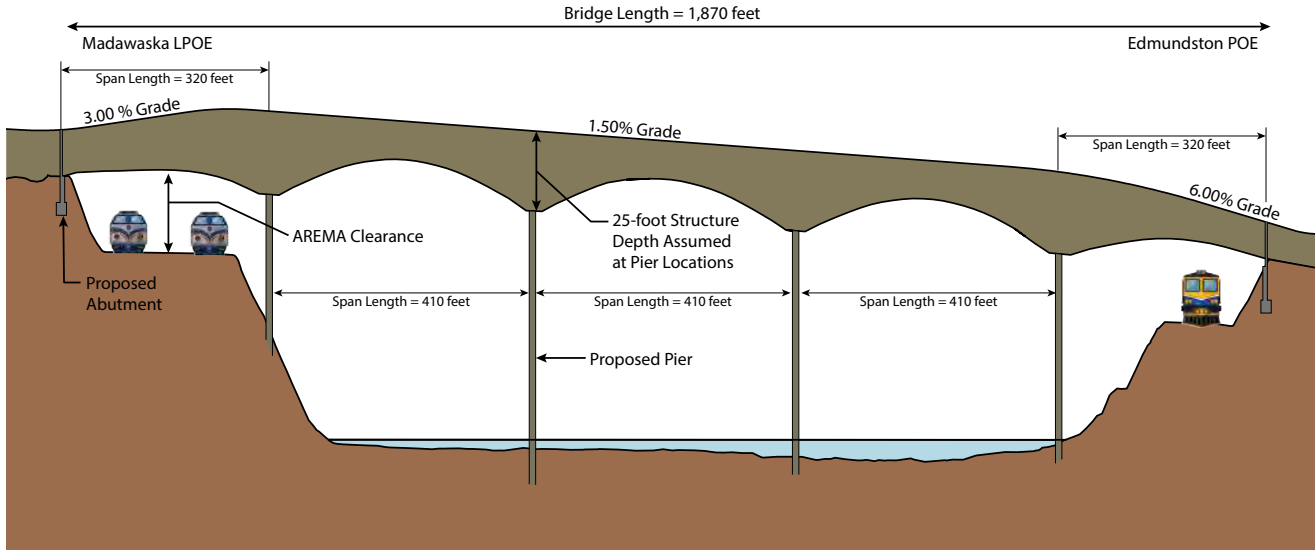
1. Bridge Alternative 1: Cast-in-place segmental concrete bridge with five spans
Bridge Alternative 1 consists of the construction of a cast-in-place segmental concrete bridge with five spans (Exhibit 12). Bridge Alternative 1 is approximately 1,870 feet in length with two 320-foot spans at either end and three 410-foot interior spans. Of the four piers needed, one would be on the bank of the Saint John River in Madawaska, two would be in the Saint John River, and one would be near the bottom of the riverbank in Edmundston.

The vertical profile for Bridge Alternative 1 is governed by the required clearance over the MNR and CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

Exhibit 11 - Cross Section of the International Bridge



Programmatic Section 4(f) Evaluation



Legend	
Pier (Type to be Determined)	Bridge
USA-owned Property	

Exhibit 12 - Bridge Alternative 1

Plan and Profile

Not to Scale

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2. Bridge Alternative 2: Steel plate girder bridge with six spans

Bridge Alternative 2 consists of the construction of a steel girder bridge with six-spans (Exhibit 13). Bridge Alternative 2 is approximately 1,840 feet in length with two 260-foot spans at either end and four 330-foot interior spans. Of the five piers needed, one would be near the top of the riverbank in Madawaska, three piers would be in the river, and one would be near the bottom of the riverbank in Edmundston.

The vertical profile for Bridge Alternative 2 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

3. Bridge Alternative 3: Steel plate girder bridge with seven spans

Bridge Alternative 3 consists of the construction of a steel girder bridge with seven spans (Exhibit 14). Bridge Alternative 3 is similar to Bridge Alternative 2 but has an additional pier and span to reduce span lengths, reduce girder depths, and generally improve the shipment and erection of the steel girders. Bridge Alternative 3 is approximately 1,870 feet in length with a span of 180 feet connecting to the new Madawaska LPOE, a span of 215 feet connecting to the Edmundston POE, and five 295-foot interior spans. Of the six piers needed, one would be positioned between the MNR railroad tracks in Madawaska, four piers would be in the river, and one would be on the riverbank in Edmundston.

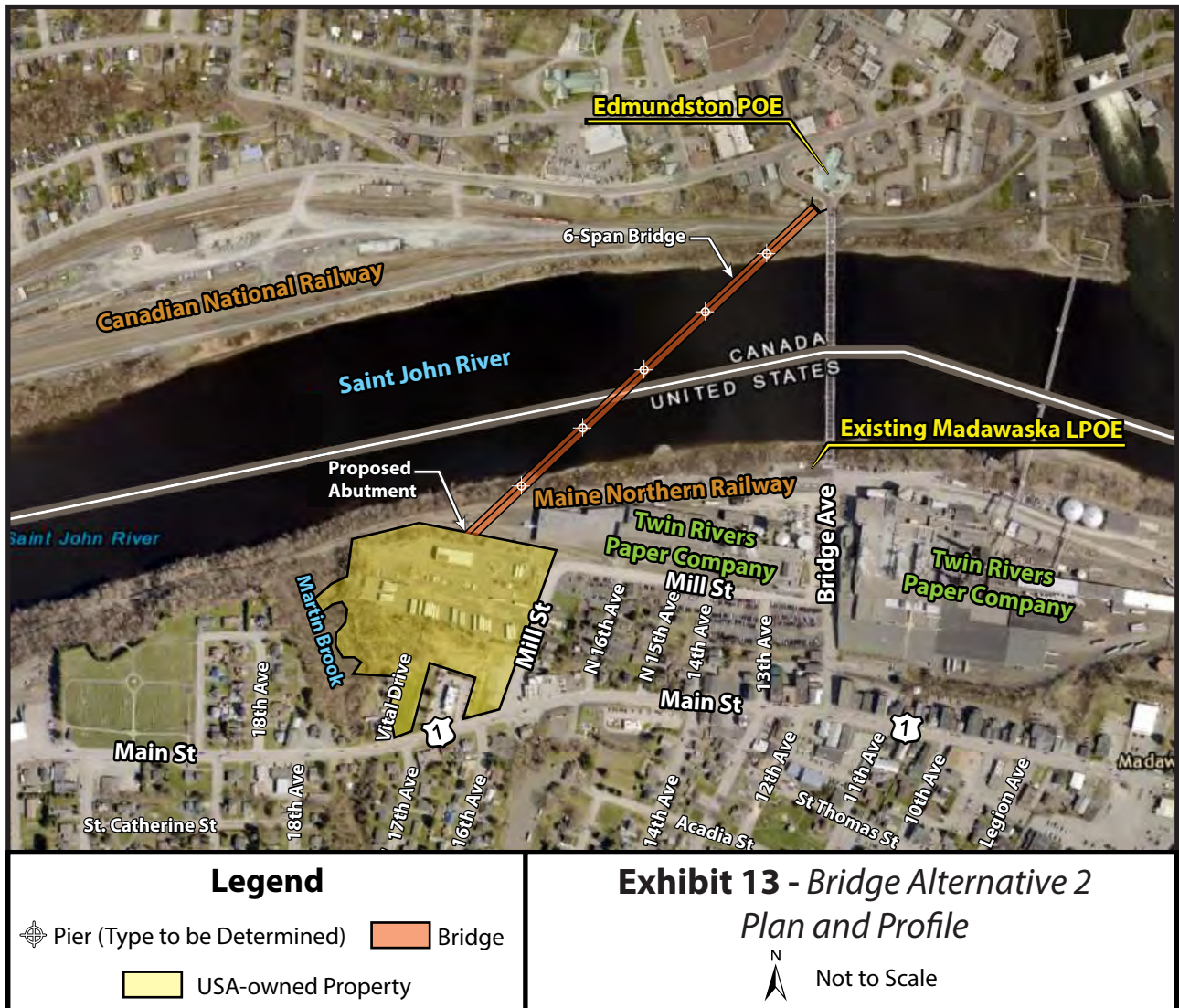
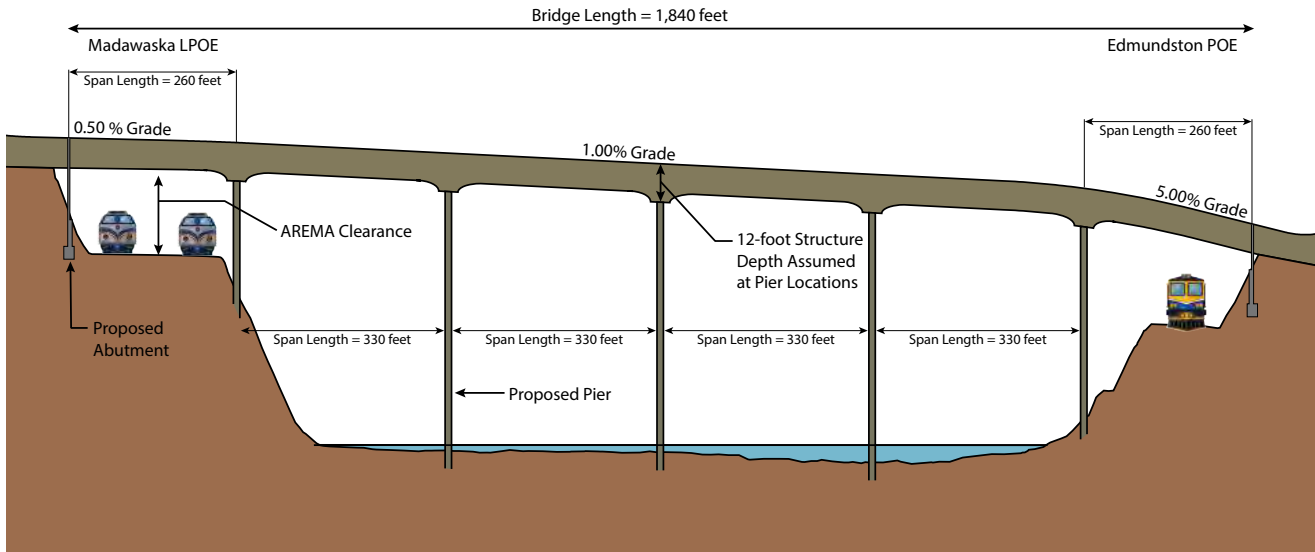
The vertical profile for Bridge Alternative 3 is governed by the required clearance over the CNR rail lines and the need to tie into the new Madawaska LPOE and the existing Edmundston POE.

Environmental and Community Impacts. Bridge Alternatives 1, 2, and 3 would require vegetation removal (approximately 2.5 acres), removal of the existing International Bridge piers, and earthmoving activities that would result in minor impacts to the water quality of the Saint John River. The MaineDOT would limit disturbance and water quality impacts by using temporary sediment basins, managing stormwater runoff, and treating the quality of runoff in accordance with the Energy Independence and Security Act of 2007 and the Maine Department of Environmental Protection stormwater management standards.

Bridge Alternatives 1, 2, and 3 would permanently impact the aquatic habitat and fisheries of the Saint John River due to the installation and construction of bridge piers within and on the banks of the river. The likely removal of the existing International Bridge and piers from the Saint John River would create aquatic habitat.

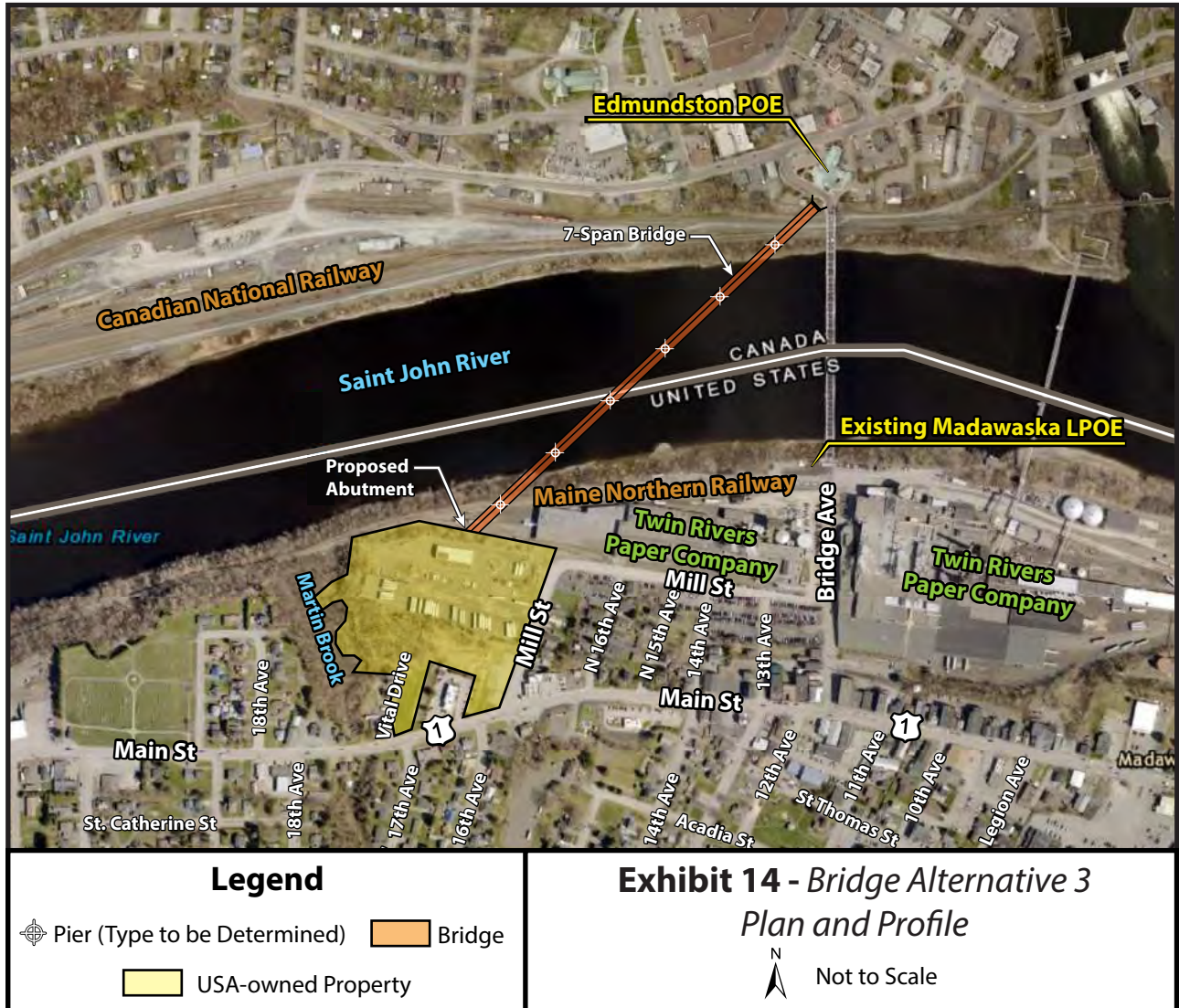
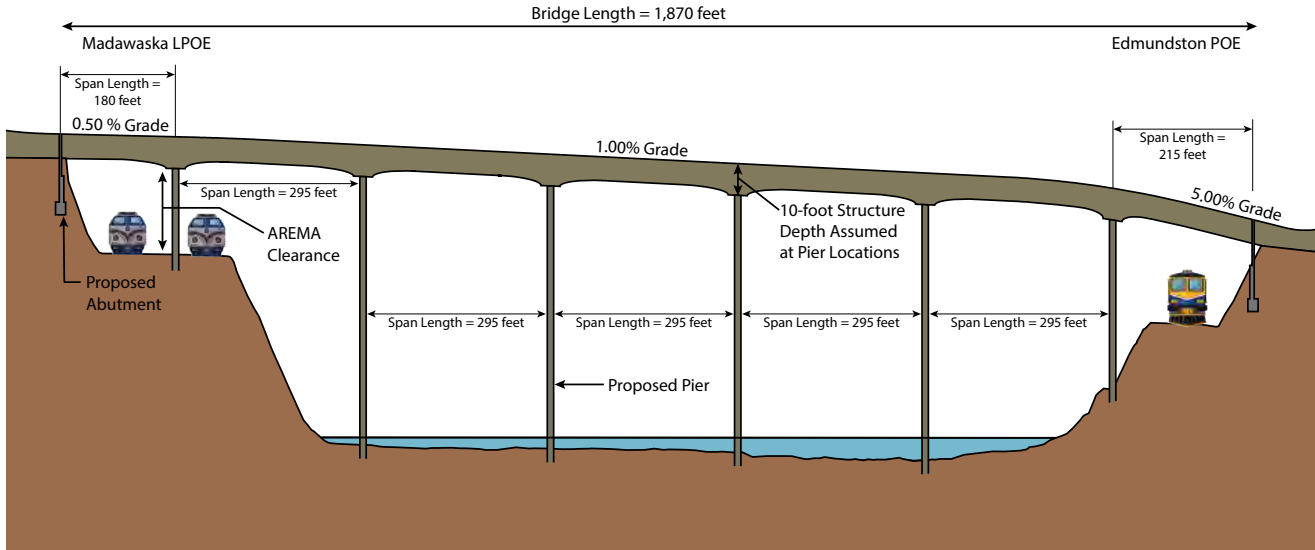
Bridge Alternatives 1, 2, and 3 would result in a variety of positive impacts to the flow of traffic in the study area, including shorter vehicle queues and faster processing times for vehicles inbound to Madawaska. The alternatives would result in minor changes in traffic patterns on roads in the study area, and increase inbound and outbound pedestrian travel distance to and from the east on Main Street by 0.6 mile.

Programmatic Section 4(f) Evaluation



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Bridge Alternatives 1, 2, and 3 would allow the Town of Madawaska and City of Edmundston to resume fulfilling the mutual emergency aid agreement for fire and emergency protection services and have a beneficial impact on community cohesion between Madawaska and Edmundston by improving the ease of travel between the two communities.

According to the MHPC, Bridge Alternatives 1, 2, and 3 would not impact archaeological resources (MHPC, 2018) (Appendix A).

Section 4(f) impacts. Bridge Alternatives 1, 2, and 3 would result in the likely demolition of the International Bridge, a NRHP eligible resource. This would result in a Section 106 adverse effect and a Section 4(f) use. The bridge cannot remain in place due to: 1) the deteriorated condition of the structure and the significant and increasing long-term maintenance and operation costs, and 2) safety concerns related to increased ice jamming with two bridges in close proximity.

Reasonableness, Feasibility, and Prudency. Bridge Alternatives 1, 2, and 3 would address the structural deficiency need by replacing the deteriorated bridge with a new bridge. The alternatives would also meet the purpose of the project to provide for the long-term safe and efficient flow of current and projected traffic volumes, including the movement of goods and people, between Madawaska, Maine and Edmundston, New Brunswick. The alternatives would address the geometric constraints and substandard load carrying capacity needs by designing a new bridge to meet current standards. Therefore, the alternatives would meet the project purpose and needs, and are reasonable under the environmental review process. Bridge Alternatives 1, 2, and 3 were therefore carried forward.

Mitigation Measures. Mitigation measures to minimize harm to Section 4(f) property will be developed in consultation with the MHPC (Maine State Historic Preservation Officer) and included in a Memorandum of Agreement between FHWA, MaineDOT and MHPC.

I. Land Port of Entry Alternatives

The GSA and CBP previously considered replacing the Madawaska LPOE. In 2007, after completing its Madawaska Border Station FEIS, the GSA issued a ROD. It had determined that the Madawaska LPOE should be relocated to land south and west of Twin Rivers and Mill Street. The U.S. Government purchased properties from Twin Rivers and the Aroostook Medical Center as the future site of the LPOE. As part of the MEFPS in early 2018, the GSA and CBP reviewed the FEIS and ROD site determination and considered other possibilities in the downtown business zone within a reasonable distance upstream and downstream of the Edmundston POE. The GSA and CBP ultimately reaffirmed the decision in the FEIS and ROD because:

New Madawaska Land Port of Entry and International Bridge Project

- Other sites in the downtown business zone are too small and would not provide sufficient space, are too costly, and/or too disruptive to the operations of Twin Rivers.
- Constructing the new LPOE on this site away from the existing LPOE would allow CBP operations to continue during construction.
- Constructing the new LPOE on this site would provide better traffic circulation, shorter traffic queues, and faster processing times than the other alternatives considered in the downtown business zone.

Following the preparation of the 2018 MEFPS, the GSA began further study of the USA-owned property and developed alternatives for the LPOE. The build alternatives were designed to meet several key building, processing, and parking area requirements (MPdL Studio, 2018):

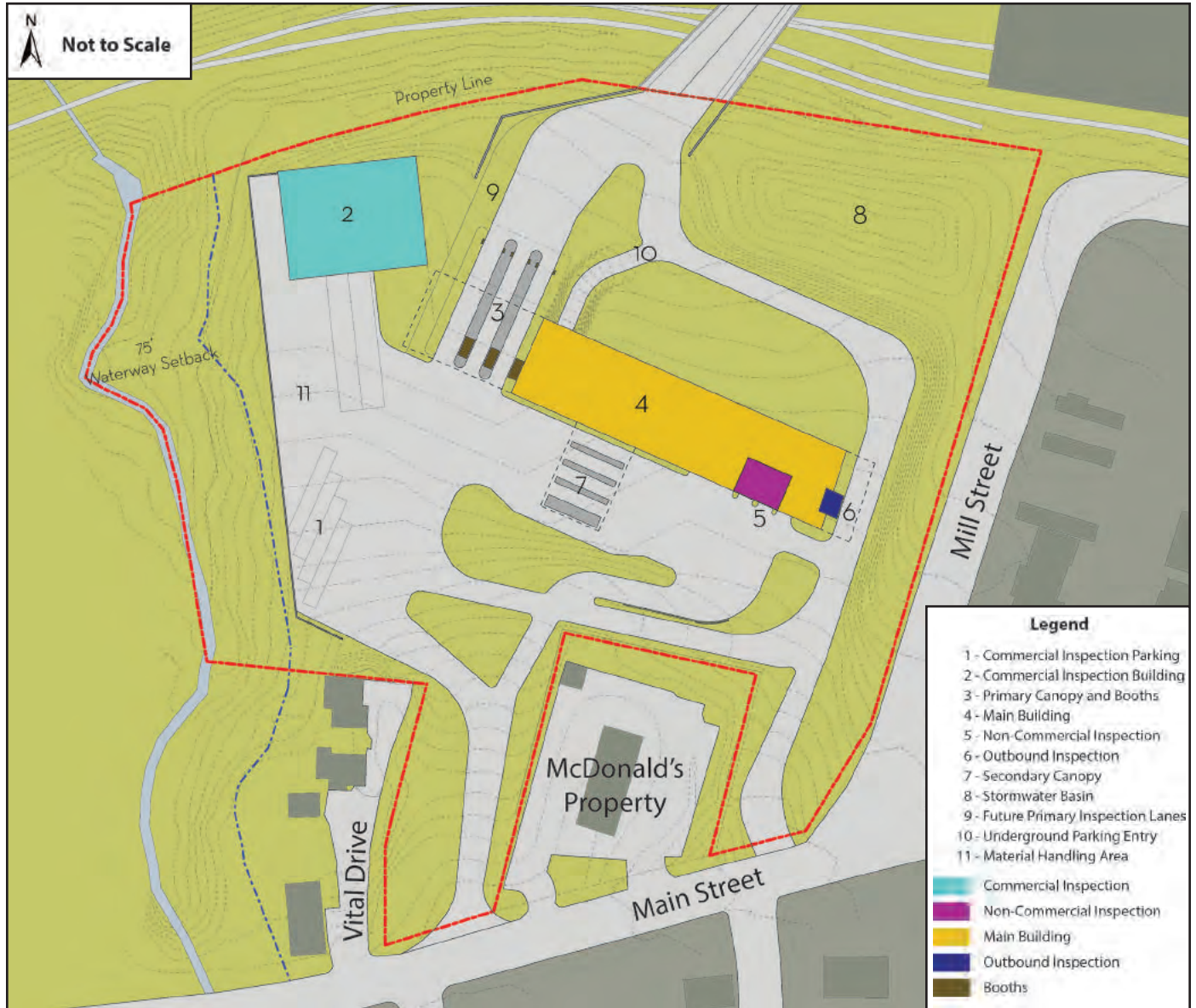
- A consolidated administration building.
- Primary inspection areas for commercial traffic (trucks), passenger vehicles, and buses.
- Secondary inspection areas for trucks, passenger vehicles, and buses.
- Adequate number and location of parking spaces.
- Adequate space to accommodate security measures.

Each of the build alternatives was designed to follow the sequential circulation of traffic flow for a LPOE, which requires certain buildings be adjacent to one another. For instance, the primary inspection areas must precede secondary ones. Administration should be consolidated to the extent possible in one building. Parking for visitors and employees should be in a convenient location in proximity to the buildings they serve (MPdL Studio, 2018).

The GSA identified three build alternatives for the new Madawaska LPOE: Alternative A (Exhibit 15), Alternative B (Exhibit 16), and Alternative C (Exhibit 17). Alternative A was developed on the existing USA-owned property with no additional property. Alternatives B and C would require the acquisition of the McDonald's property and the three residential properties on Vital Drive (MPdL Studio, 2018).

Section 4(f) Impacts. The LPOE alternatives would not result in a Section 4(f) impact and are not discussed further in this analysis.

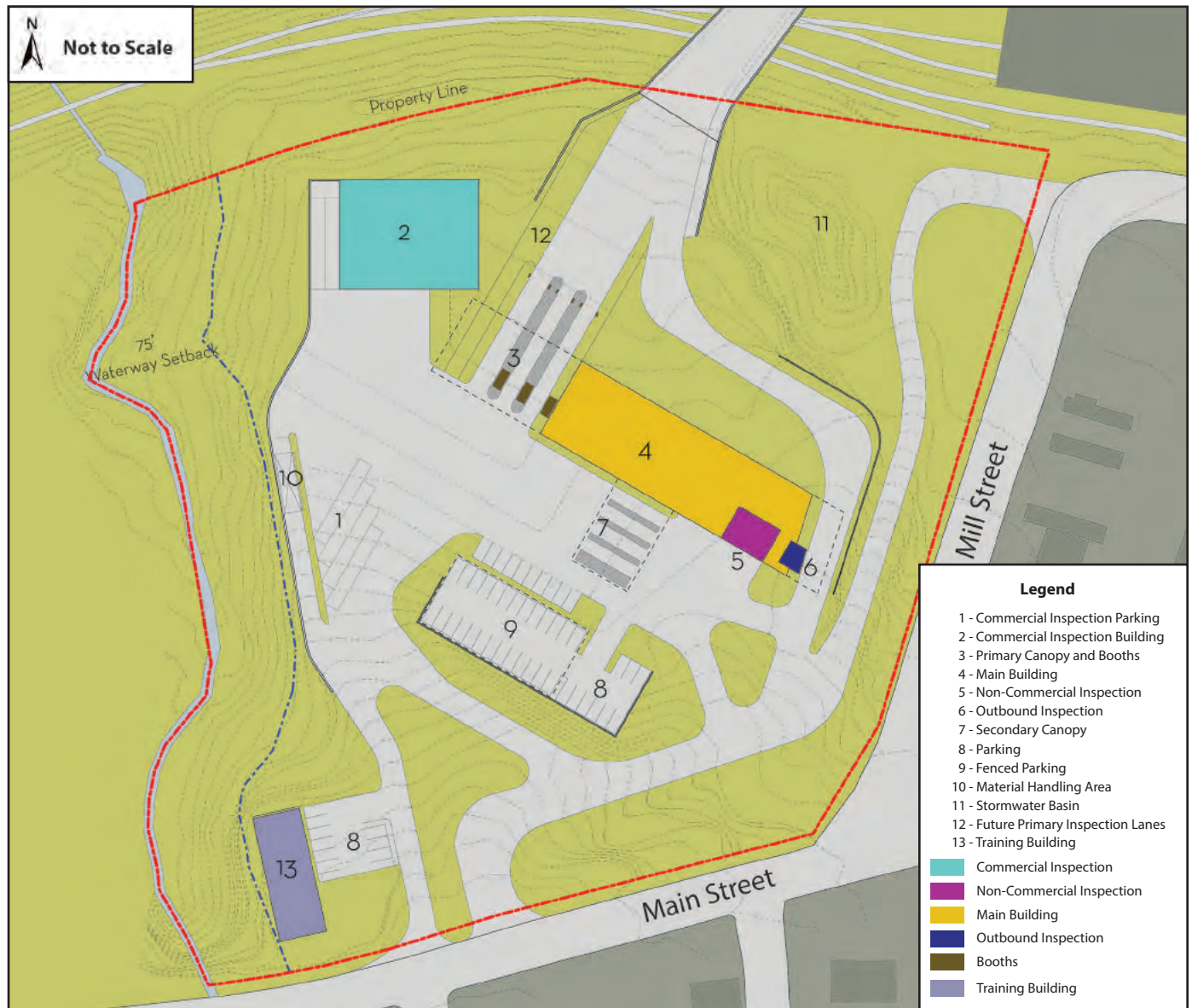
Exhibit 15 - Madawaska LPOE Alternative A



Source: MPdL Studio, 2018

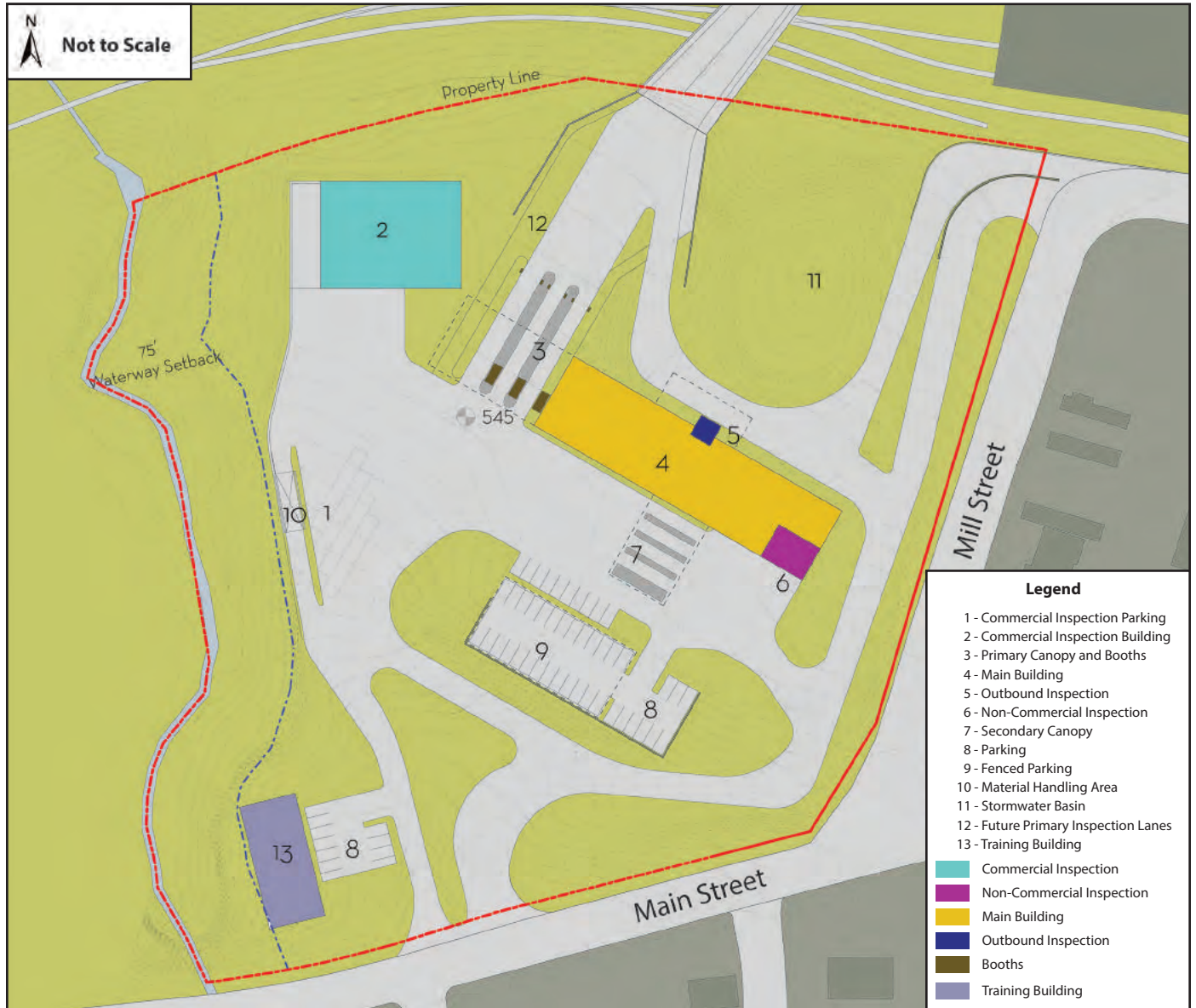
New Madawaska Land Port of Entry and International Bridge Project

Exhibit 16 - Madawaska LPOE Alternative B



Source: MPdL Studio, 2018

Exhibit 17 - Madawaska LPOE Alternative C



Source: MPdL Studio, 2018

V. Coordination with Agencies with Jurisdiction over the Section 4(f) Properties

Coordination with the MHPC, the agency that has jurisdiction over the Section 4(f) property, and others was undertaken during the GSA's preparation of the Madawaska Border Station EIS in 2006, during the preparation of the MEFPS in 2017-2018, and during the preparation of the preliminary design for the Madawaska – Edmundston International Bridge SEIS in 2018 (Appendix A).

In 2006 during the GSA's preparation of the Madawaska Border Station EIS, the MHPC noted that the development of the LPOE on property owned by the U.S. government would not affect historic properties. The MHPC further noted that the existing International Bridge was recognized as being eligible for nomination to the NRHP (Appendix A).

In the event the existing International Bridge would be demolished, MaineDOT and the FHWA would offer the bridge to any group that could legally take possession of the bridge and maintain it at a new location, provided the group assumes all future legal and financial liability. The offer would occur by public notice in a newspaper and by posting to the MaineDOT website. Costs to induce acceptance of the offer of donation may not exceed the cost to dismantle the bridge. FHWA, the Maine State Historic Preservation Officer and MaineDOT would work jointly to determine the most appropriate use of the existing bridges from any proposals received.

If the bridge is to be transferred to another party, the transfer deed may include preservation covenants that require the new owner to preserve and maintain the bridge in accordance with established standards for historic bridges.

On December 13, 2017, MaineDOT (on behalf of FHWA) sent a letter to the Town of Madawaska inviting participation as a consulting party and requesting information or knowledge of or concerns with historic properties in the study area. No response was received. At the public meeting held on January 30, 2018, it was noted that the Madawaska International Bridge is eligible for listing on the National Register of Historic Places. No comments related to the historic nature of the bridge or other resources were received. On September 25, 2018, MaineDOT (on behalf of FHWA) sent a letter with information regarding historic resources in the study area to the Madawaska Historical Society. On October 25, 2018 MaineDOT posted a preliminary determination of effects to historic properties from the project to the MaineDOT website and published a public notice requesting review and comment on the potential effects to historic properties. The comment period ends November 14, 2018. MaineDOT also provided the preliminary determination of effects to the Maine Historic Preservation Officer with a request for concurrence.

VI. Conclusion

Findings presented in the above analysis clearly support the three tests for coverage under a Section 4(f) historic bridge programmatic evaluation. First, the No Build Alternative was studied and dismissed because it would not meet the purpose and need of this project, i.e., to correct the situation that causes the bridge to be both structurally deficient and deteriorated. Normal maintenance would not be adequate to correct the situation. Second, investigations have been conducted to construct a bridge on a new location or parallel to the old bridge (allowing for a one-way couplet), but it was determined that preservation of the historic bridge was not feasible or prudent. The bridge is beyond rehabilitation for a transportation or alternative use, and no responsible party has been located to maintain the bridge. Finally, studies have been conducted of rehabilitation measures, but this alternative was determined not to be feasible and prudent. The bridge is so structurally deficient that it cannot be rehabilitated to meet minimum acceptable load standards without affecting the historic integrity of the bridge. The bridge is also seriously deficient geometrically and cannot be widened to meet the minimum capacity of the highway system without affecting the historic integrity of the bridge.

New Madawaska Land Port of Entry and International Bridge Project

VII. References

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- National Park Service (NPS). 2018. National Wild and Scenic River System: Maine. Accessed January 2018. <https://www.rivers.gov/maine.php>
- U.S. General Services Administration (GSA). 2007. "Madawaska Border Station Final Environmental Impact Statement." Augusta, ME: GSA.
- U.S. General Services Administration (GSA), Federal Highway Administration (FHWA), Maine Department of Transportation (MaineDOT), and the U.S. Coast Guard (USCG). 2018. *New Madawaska Land Port of Entry and International Bridge Project: Draft Supplemental Environmental Impact Statement*. Augusta, ME: GSA.

Appendix A
MHPC Correspondence



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOV. INOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

May 5, 2006

William M. Plumpton, CEP
Gannett Fleming, Inc.
P.O. Box 67100
Harrisburg, PA 17106-7100

Project: MHPC #0174-06 - proposed new border station; Lots 7A, 88, 87 & 164
Town: Madawaska, ME

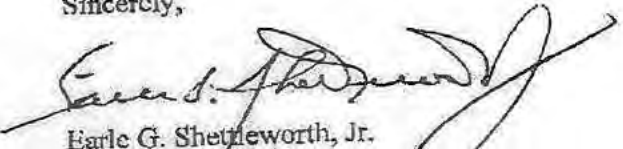
Dear Mr. Plumpton:

In response to your recent request, I have reviewed the information received April 5, 2006 to continue consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Based on the information provided, I have concluded that the existing Border Patrol Station is not eligible for nomination to the National Register of Historic Places. Additionally, while the adjacent bridge over the St. John River is eligible for nomination to the National Register, I have determined that there will be no historic properties [architectural or archaeological] affected by the proposed undertaking.

Please contact Mike Johnson of this office if we can be of further assistance in this matter.

Sincerely,


Earle G. Shettleworth, Jr.
State Historic Preservation Officer





JOHN ELIAS BALDWIN
COMMISSIONER

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

August 3, 2006

William M. Plumpton
Gannett Fleming
P.O. Box 67100
Harrisburg, PA 17106-7100

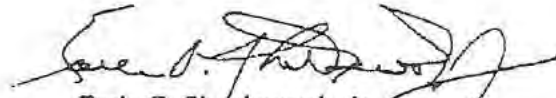
Project: MHPC #0174-06 - DEIS for Madawaska Border Station replacement project
Town: Madawaska, ME

Dear Mr. Plumpton:

In response to your recent request, I have reviewed the above referenced Draft Environmental Impact Statement received July 24, 2006 to continue consultation pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

While I concur with all of the DEIS assessments regarding effects to historic properties and archaeological sites, I would recommend that the nearby International Bridge be recognized as being eligible for nomination to the National Register of Historic Places, as was indicated in our letter of May 5, 2006. Please contact Mike Johnson of my staff if we can be of further assistance in this matter.

Sincerely,


Earle G. Shettleworth, Jr.
State Historic Preservation Officer





MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

PAUL R. LEPAGE
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

February 14, 2018

To: Ms. Julie Senk, MDOT/ESD

From: Arthur Spiess, Senior Archaeologist

Subject: WIN 21736.00, International bridge #2399, Madawaska, new bridge alignment and CBP facility (MHPC 1814-17)

After reviewing our archaeological survey records and maps, including historic maps and surficial geology maps, and examining the *proposed conceptual alternative 3E sent* with your email of February 8th, we find that no archaeological fieldwork is necessary for this project alternative, based on the project location and general project description information. Any bridge design on that alignment that avoids placing a pier in the river levee (bank) would likely not need archaeological work. The proposed Customs and Border Protection facility (9 acres) has already been developed and its ground heavily modified, so it does not need archaeological survey. It is extremely unlikely that an archaeological site would be affected by this project, in our opinion.

In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we **recommend a finding "that there will be no archaeological properties affected by the proposed undertaking."**



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

PAUL R. LEPAGE
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

September 26, 2018

To: Ms. Julie Senk, MDOT/ESD

From: Arthur Spiess, Senior Archaeologist

Subject: WIN 21736.00, Madawaska, new international bridge LPOE facility, (MHPC 1814 -17)

I have viewed the drone aerial video of the project area, provided by link by Kristen this morning. Various views of the river bank in the project area were extremely helpful in making the determination that the river bank has been heavily reconstructed for railroad and other industrial use. There is a vanishingly small chance of undisturbed soils surviving. I also double checked some historic maps of the area.

Based on this recent information, we find that no archaeological fieldwork is necessary for this project, based on the project location and general project description information received with previous memos. It is extremely unlikely that an archaeological site would be affected by this project, in our opinion.

In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we **recommend a finding "that there will be no archaeological properties affected by the proposed undertaking."**