
**CEAA ENVIRONMENTAL
SCREENING REPORT (Revised):**

**Garcelon Civic Center in St.
Stephen, New Brunswick**

Prepared for:



Town of St. Stephen
% Mr. John Ferguson
Chief Administrative Officer
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17 March 2011

Prepared by:

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Project No: 10-7944

EXECUTIVE SUMMARY

Fundy Engineering & Consulting Ltd. (Fundy Engineering) was contracted by the Town of St. Stephen to complete an Environmental Assessment for submission to the Infrastructure Canada (INFC). The Town proposes to construct, operate, and maintain the Garcelon Civic Center (*i.e.*, the Project) on a brownfield site, owned by the Town, near the St. Croix River (~ 93 m distant). Through this development, the Town will transform an existing, but out-dated, commercial and retail development into a vibrant, multi-use recreational civic center facility that is centrally located, accessible, modern, and caters to all residents, young and old, in Greater St. Stephen.



Location, footprint layout, and artist's rendering of the proposed Garcelon Civic Center in St. Stephen, New Brunswick.

The Town's existing ice rink is aged. The ice plant equipment and a piping system in that facility are rapidly reaching the end of its lifespan and serviceability. That facility is not multi-use and does not meet the diverse social and cultural needs of the community. The Garcelon Civic Center represents a socio-economic rebirth of the Town and the Greater St. Stephen area. The 7 026 m² Garcelon Civic Center will be a centre of excellence, comprising:

- an NHL-sized ice arena in providing training, recreation, and regional competitive events that provide skills and healthy sports activities for youth, school, community, and adults in skating, figure skating, and ice hockey and a venue for trade shows and social and cultural events;
- aquatic facilities for training in recreational and competitive swimming, synchronized swimming, diving, and water sports (e.g., polo), training for lifesaving abilities, and skills-training (e.g., SCUBA diving for aquaculture workers, etc.);
- multi-purpose and meeting room space for arts and cultural activities, yoga classes, and fitness classes; and
- a year round wellness walking track that encompasses the entire perimeter of the ice hockey area.

The purpose of this report is for an environmental screening only. The project is not on the Comprehensive Study List regulation and has not been referred directly to a mediation or panel review. Pursuant to Part 5(1) of the *Canadian Environmental Assessment Act*, this Project must undergo an environmental assessment (screening) because it may receive partial financial assistance (i.e., \$6.2 million) from a federal authority (i.e., Infrastructure Canada). Subject to continued favourable environmental and geotechnical due diligence results and pending regulatory approval, the Town proposes to start the anticipated 18 month construction period immediately.

This document provides a summary of the Project description and a narrative on the existing environment before describing potential impacts. Components of the environment that are described include the physio-chemical environment (i.e., climate, air quality, sound levels, topography, hydrology, geology, and hydrogeology), biological environment (i.e., terrestrial and aquatic), and the socio-economic environment (i.e., demographics and labour, transportation, archaeological and cultural resources, traditional uses by Aboriginal Peoples and First Nations, past and present land-use, municipal services and infrastructure, aesthetics, natural resources, protected areas, and recreation and tourism).

Using the baseline environmental data, an impact assessment of the proposed Project on the existing environment was completed. Nine Valued Environmental Components (VECs) were selected based on the spatio-temporal scope of the Project: air quality; sound levels; surface water quantity and quality; groundwater quantity and quality; terrestrial flora and fauna; aquatic flora and fauna; labour and economy; archaeological and cultural resources; and health and safety. Each of the selected VECs were assessed for the Project construction, operation and maintenance, and mishaps, errors, and / or unforeseen events. The assessment was done using a method of impact level assessment analogous to a traffic light. Project green lights are potential impacts that have no considerable / adverse problems associated with them. Yellow lights are potential impacts that do not appear to have any considerable / adverse problems associated with them while red lights are potential impacts that may have significant adverse impacts without the implementation of mitigation measures. Red lights are also impacts that are likely to be permanent.

All told, 126 specific possible environmental impacts were assessed for the Garcelon Civic Center. Of those, 75 % ($n = 94$) yielded green lights (i.e., little to no potential impact), 23 % ($n = 29$) yielded yellow lights (i.e., moderate potential impact), and 2 % ($n = 3$) yielded red lights (i.e., major potential impact). The three potential red lights

obtained were for possible mishaps, errors, and / or unforeseen events, which are incidents that cannot be foreseen with any considerable certainty. If damaged, archaeological and cultural features may lose their prominence, which is the reason for the application of red lights. However, the Town shall develop a Project-specific environmental protection plan that provides mitigation plans for the risks. With respect to archaeological and cultural resources, the Town shall have an archaeologist on site if it is determined that any intrusive works are required (*n.b.*, currently no excavation is planned for the construction, operation, and maintenance of the Garcelon Civic Center).

As an ultimate overall VEC potential impact assessment (*i.e.*, based on the summation of all possible impacts for the nine VECs), the proposed Project is expected to have little to no impact on the environment. No post-mitigation residual effects are expected to result from the Project. Considering the Project is absent of residual effects, there are expected to be no cumulative effects on the environment. No significant, likely, and / or adverse environmental effects are expected to occur as a result of this Project. Therefore, the Project shall proceed as detailed in this environmental assessment and mitigation measures shall be followed as noted within this document and the Project-specific environmental protection plan.

Summary of the overall impact assessment of the proposed Garcelon Civic Center on the Nine Valued Environmental Components.

VEC	Number of Lights				Overall VEC Impact Assessment
	Green	Yellow	Red	Grey	
<u>Physio-Chemical Environment</u>					
Air quality	13	5	0	0	
Sound levels	4	2	0	0	
Surface water quantity and quality	10	5	0	0	
Groundwater quantity and quality	8	4	0	0	
<u>Biological Environment</u>					
Terrestrial vegetation and fauna	14	4	0	0	
Aquatic vegetation and fauna	16	2	0	0	
<u>Socio-Economic Environment</u>					
Labour and economy	4	2	0	0	
Archaeological and cultural features	12	3	3	0	
Health and safety	13	2	0	0	
Ultimate Project Impact	94	29	3	0	

PROJECT SUMMARY

Proponent	Town of St. Stephen 73 Milltown Boulevard, Suite 112 St. Stephen, New Brunswick E3L 1G5
Proponent Contact	Mr. John Ferguson Chief Administrative Officer ☎: 506.466.7700 📠: 506.466.7701 ✉: jferguson@town.ststephen.nb.ca
Project Title	Garcelon Civic Center, St. Stephen, NB
Project Location	Lands between 22 Budd Avenue and 11 Prince William Street (PIDs 01304237, 01305978, 15055569, 15049141, and 15155716; 67°16'27.37"W, 45°11'35"N; refer to Figure 1) in St. Stephen, New Brunswick, which are all owned by the proponent
Project Financials	Town of St. Stephen: \$7.2 million Province of New Brunswick: \$6.2 million Government of Canada: \$6.2 million Total Project Cost: \$19.6 million
Construction Schedule	Construction Start Date: Mid-July 2011 Construction Period: 10 months Project Completion: Mid-May 2012
Federal Involvement	Pursuant to Section 5(1)(b) of the <i>Canadian Environmental Assessment Act</i> , The Project may receive partial funding from the Government of Canada
Environmental Assessment Type	Screening
Lead Responsible Authority	Infrastructure Canada – Regional Operations, Quebec / Atlantic
Provincial Involvement	There is no provincial jurisdiction for this Project
Required Permits, Licenses, and Authorizations	Municipal building permit

Public Consultation Several public meetings have been held within the community to gauge interest and ideas on opportunities within the facility

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
PROJECT SUMMARY	V
TABLE OF CONTENTS	VII
LIST OF TABLES	X
LIST OF FIGURES	XI
LIST OF ACRONYMS	XII
1.0 INTRODUCTION	1
1.1 Project Identification.....	1
1.1.1 Proponent	1
1.1.2 Project Environmental Assessment Contact	1
2.0 PROPOSED PROJECT	3
2.1 Project Name	3
2.1.1 Project Type.....	3
2.2 Project Overview.....	4
2.3 Purpose / Rationale / Need for the Project.....	4
2.3.1 Project Location	4
2.4 Background.....	8
2.4.1 History of Project Location	8
2.4.2 Preliminary Environmental Due Diligence	12
2.4.2.5 Phase I Environmental Site Assessment, January 2007	12
2.4.2.6 Supplementary Soil and Groundwater Sampling Program: Charlotte County Civic Center, June 2009	13
2.4.2.7 Designated Substances Survey, October 2010	14
2.4.3 Underground Storage Tank Removal.....	16
2.4.4 Proper Handling of On-Site Soils	16
2.4.5 Preliminary Geotechnical Due Diligence	16
2.4.6 High-Level Archaeological Assessment	17
2.5 Project Components and Characteristics.....	18
2.5.1 Project Environmental Permitting, Monitoring, and Compliance	18
2.5.2 Floor Plans	19
2.5.2.5 Utilities and Foundations	19
2.5.2.6 Structural.....	24
2.5.2.7 Building Services.....	24
2.5.2.8 Operation and Maintenance	24
2.5.3 Demolition of Existing Structure	25
2.5.4 Decommissioning / Abandonment.....	25
2.5.5 Commitment to Public Involvement.....	26
2.5.6 Mishaps, Errors, and / or Unforeseen Events	28
3.0 EXISTING ENVIRONMENT	29
3.1 Physio-Chemical Environment.....	29
3.1.1 Climate.....	29
3.1.2 Air Quality	30
3.1.3 Sound Levels	31
3.1.4 Topography.....	34
3.1.5 Hydrology	34
3.1.6 Geology.....	37
3.1.7 Hydrogeology	37
3.2 Biological Environment	40
3.2.1 Species of Special Concern	40
3.2.2 Known Occurrences.....	47
3.2.3 Flora and Their Habitat	51
3.2.4 Animals and Their Habitat.....	51
3.2.5 Avians and Their Habitat.....	51

3.2.6	Lepidopterans and Their Habitat	51
3.2.7	Herpetiles and Their Habitat	51
3.2.8	Fishes and Their Habitat	52
3.2.9	Mollusks	52
3.3	Socio-Economic Environment	52
3.3.1	Demographics and Labour	52
3.3.2	Archaeological and Cultural Features	52
3.3.3	Traditional Uses by Aboriginal Peoples and First Nations	52
3.3.4	Past and Present Land-Use	53
3.3.5	Municipal Services and Infrastructure	53
3.3.6	Aesthetics	53
3.3.7	Natural Resources	53
3.3.8	Protected Areas	54
3.3.9	Recreation and Tourism	54
4.0	SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION	56
4.1	Project Impact on the Environment	56
4.1.1	Overview of Valued Environmental Component Assessment	56
4.1.2	Valued Environmental Components Assessed	57
4.1.3	Physio-Chemical Environment	58
4.1.3.5	Air Quality	58
4.1.3.5.1	Potential Impacts	58
4.1.3.5.2	Proposed Mitigation	59
4.1.3.5.3	Potential Post-Mitigation Residual and Cumulative Effects	60
4.1.3.6	Sound Levels	60
4.1.3.6.1	Potential Impacts	60
4.1.3.6.2	Proposed Mitigation	61
4.1.3.6.3	Potential Post-Mitigation Residual and Cumulative Effects	62
4.1.3.7	Surface Water Quantity and Quality	62
4.1.3.7.1	Potential Impacts	62
4.1.3.7.2	Proposed Mitigation	63
4.1.3.7.3	Potential Post-Mitigation Residual and Cumulative Effects	64
4.1.3.8	Groundwater Quantity and Quality	64
4.1.3.8.1	Potential Impacts	64
4.1.3.8.2	Proposed Mitigation	65
4.1.3.8.3	Potential Post-Mitigation Residual and Cumulative Effects	65
4.1.4	Biological Environment	71
4.1.4.5	Terrestrial Flora and Fauna	71
4.1.4.5.1	Potential Impacts	71
4.1.4.5.2	Proposed Mitigation	72
4.1.4.5.3	Potential Post-Mitigation Residual and Cumulative Effects	74
4.1.4.6	Aquatic Flora and Fauna	74
4.1.4.6.1	Potential Impacts	74
4.1.4.6.2	Proposed Mitigation	75
4.1.4.6.3	Potential Post-Mitigation Residual and Cumulative Effects	76
4.1.5	Socio-Economic Environment	79
4.1.5.5	Labour and Economy	79
4.1.5.5.1	Potential Impacts	79
4.1.5.5.2	Proposed Mitigation	79
4.1.5.5.3	Potential Post-Mitigation Residual and Cumulative Effects	79
4.1.5.6	Archaeological and Cultural Features	79
4.1.5.6.1	Potential Impacts	79
4.1.5.6.2	Proposed Mitigation	80
4.1.5.6.3	Potential Post-Mitigation Residual and Cumulative Effects	81
4.1.5.7	Health and Safety	82
4.1.5.7.1	Potential Impacts	82
4.1.5.7.2	Proposed Mitigation	83
4.1.5.7.3	Potential Post-Mitigation Residual and Cumulative Effects	84
4.1.6	Summary of Project Impact on the Environment	88
4.2	Environment's Impact on the Project	90
4.2.1	Precipitation	91
4.2.2	Temperature	93

4.2.3	Earthquake Activity	95
4.2.4	Summary.....	96
5.0	SIGNATURES.....	97
6.0	REFERENCES.....	98
7.0	DECISION RECORD	101
7.1	Infrastructure Canada Approval.....	101
APPENDIX I:	Service New Brunswick Property Reports for PIDs 01304237, 01305978, 15055569, 15049141, and 15155716 located in St. Stephen, New Brunswick.	
APPENDIX II:	Atlantic Canada Conservation Data Centre Data Report, Garcelon Civic Center Site in St. Stephen, New Brunswick.	
APPENDIX III:	Underground Storage Tank Removal Letter for PID 15187651 at 14-22 Budd Avenue in St. Stephen, New Brunswick.	
APPENDIX IV:	Revised Remedial Action Plan for the Lands Proposed for the Garcelon Civic Center in St. Stephen, New Brunswick, NBDENV File Number 6515-4-1154. NBDENV Acknowledgement of Remedial Action Plan Letter.	
APPENDIX V:	Correspondence with the Charlotte County Community Mental Health Service Centre Regarding the Proposed Garcelon Civic Center Construction and Operation in St. Stephen, New Brunswick.	
APPENDIX VI:	Chemicals Acceptable to Environment Canada that may be used by the Town of St. Stephen for the Operation and Maintenance of the Proposed Garcelon Civic Center.	
APPENDIX VII:	Potential Environmental Effects Analysis	
APPENDIX VIII:	Monitoring Plan Submissions	

LIST OF TABLES

Table 1. Historical land-use summary of the property proposed for the Garcelon Civic Center in St. Stephen, New Brunswick.	12
Table 2. Potential and actual environmental concerns associated with the lands proposed for the Garcelon Civic Center in St. Stephen, New Brunswick identified during the 2007 JWEL assessment.	13
Table 3. Designated substance survey completed for the commercial buildings located at 14 to 22 Budd Avenue in St. Stephen, New Brunswick, which are proposed for the Garcelon Civic Center.	15
Table 4. Listing of public meetings held regarding the proposed Garcelon Civic Center in St. Stephen, New Brunswick.	26
Table 5. Maximum PM _{2.5} and O ₃ levels measured at the Sipavik Passamaquoddy Tribal Monitor Station in Indian Township, Maine since January 2009 for PM _{2.5} and May 2005 for O ₃ and the Huntsman Marine Science Center in St. Andrew's, New Brunswick since January 2008.	31
Table 6. Baseline sound levels (all units are in dBA) recorded at four receptor sites near the proposed Garcelon Civic Centre in St. Stephen, NB.	33
Table 7. Average <i>Leq</i> baseline-sound levels as measured near the lands proposed for the Garcelon Civic Center in St. Stephen, New Brunswick.	34
Table 8. Terrestrial flora and fauna listed as at risk under the SARA and by the COSEWIC in southern New Brunswick that could potentially be affected by the proposed Garcelon Civic Centre.	40
Table 9. List of flora and fauna identified by the ACCDC as being observed within 5 km of the Project site in St. Stephen, New Brunswick.	47
Table 10. The Atlantic Canada Conservation Data Centre's Sub-national rarity rank (S-rank) of species and S-rank definitions.	49
Table 11. Summary of municipal services and infrastructure at the proposed Project site in St. Stephen, New Brunswick.	53
Table 12. Fundy Engineering's Valued Environment Component assessment coding method, which is analogous to a traffic light.	56
Table 13. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on air quality.	66
Table 14. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on sound levels.	67
Table 15. Assessment of potential impacts of Garcelon Civic Center in St. Stephen, New Brunswick on surface water quantity and quality.	68
Table 16. Assessment of potential impacts of Garcelon Civic Center in St. Stephen, New Brunswick on groundwater quantity and quality.	70
Table 17. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on terrestrial flora and fauna.	77
Table 18. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on aquatic flora and fauna.	78
Table 19. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on labour and the economy.	85
Table 20. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on archaeological and cultural resources.	86

Table 21. Assessment of potential impacts of the Garcelon Civic Center in St. Stephen, New Brunswick on health and safety.	87
Table 22. Summary of the potential impacts of the proposed Garcelon Civic Center Development in St. Stephen, New Brunswick on selected valued environmental components.	89
Table 23. Potential concerns and mitigation measures of precipitation on the proposed Garcelon Civic Center development, in St. Stephen, New Brunswick.	92
Table 24. Potential concerns and mitigation measures of temperature on the proposed Garcelon Civic Center development, in St. Stephen, New Brunswick.	94

LIST OF FIGURES

Figure 1. Aerial photograph, circa 1999, showing the proximity of the lands in St. Stephen, New Brunswick that are proposed for construction of the Garcelon Civic Center to the St. Croix River.	2
Figure 2. Approximate location of the lands proposed for the Garcelon Civic Center in St. Stephen, New Brunswick.	6
Figure 3. Aerial photograph, circa 1999, showing the parcels of land identified as PIDs 01304237, 01305978, 15055569, 15049141, and 15155716 in St. Stephen, New Brunswick that are proposed for construction of the Garcelon Civic Center.	6
Figure 4. Land-use zoning map (June 2010) for the Town of St. Stephen.	7
Figure 5. Photograph taken on 17 October 2010 showing the existing retail strip mall on the proposed Project site in St. Stephen, New Brunswick. Note: the photograph was taken looking north towards the existing structures from Budd Avenue.	8
Figure 6. Aerial photograph, circa 1962, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.	9
Figure 7. Aerial photograph, circa 1976, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.	10
Figure 8. Aerial photograph, circa 1984, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.	11
Figure 9. Artist's conceptual 3D rendering of the proposed Garcelon Civic Center in St. Stephen, New Brunswick.	19
Figure 10. Preliminary upper floor plan for the proposed Garcelon Civic Center in St. Stephen, New Brunswick.	21
Figure 11. Preliminary lower floor plan for the proposed Garcelon Civic Center in St. Stephen, New Brunswick.	22
Figure 12. Preliminary cross-section of the proposed Garcelon Civic Center in St. Stephen, New Brunswick.	23
Figure 13. Compilation of mean annual ozone and PM _{2.5} as measured at the Huntsman Marine Science Center in St. Andrew's, New Brunswick.	30
Figure 14. Aerial photograph showing the four locations where baseline-sound monitoring was conducted for the proposed Garcelon Civic Centre in St. Stephen, New Brunswick.	32

Figure 15. Photograph of a Quest model 2900 sound meter deployed in the field and used for monitoring baseline-sound levels for the Garcelon Civic Center in St. Stephen, New Brunswick.....	33
Figure 16. Map showing the boundary of the St. Croix Watershed.	36
Figure 17. Groundwater availability map for Saint John, New Brunswick and the surrounding area [<i>Natural Resources Canada, 2005</i>].	38
Figure 18. Boundaries and classification zones of the St. Stephen wellfield in St. Stephen, New Brunswick.	39
Figure 19. Photograph of prototype quillwort, which is listed as species of special concern under the SARA and by the COSEWIC.	41
Figure 20. Photograph of the whip-poor-will, which is listed as a threatened species by the COSEWIC.	42
Figure 21. Photograph of a chimney swift, which is listed as threatened under the SARA and by the COSEWIC.	42
Figure 22. Photograph of the common nighthawk, which is listed as a threatened species under the SARA and by the COSEWIC.	43
Figure 23. Location of Chimney Swift and Common Night Hawk in the Calais, ME area, there are no known occurrences within the project location.	44
Figure 24. The male bobolink, shown in this photograph, is not ranked under the SARA and is ranked as threatened by the COSEWIC.	45
Figure 25. The Canadian warbler, shown in this photograph, is listed as threatened under the SARA and by the COSEWIC.	45
Figure 26. Photograph showing the rusty blackbird which is ranked as a species of special concern under SARA and by the COSEWIC.	46
Figure 27. The monarch butterfly, shown in this photograph, is ranked as a species of special concern under the SARA and by the COSEWIC.	46
Figure 28. Photograph of the wood turtle, a threatened species under the SARA and by the COSEWIC.	47
Figure 29. Map showing the proposed Project location in St. Stephen, New Brunswick site and the data for known observations of rare and endangered flora and fauna within a 5 km radius. Data obtained from the ACCDC.	50
Figure 30. Map showing historical seismicity in a portion of the Northern Appalachians Seismic Zone (NAN). Yellow dots represent activity prior to 1900, orange dots represent activity between 1900 and 1964, and red dots represent activity between 1965 and 2001. The larger the dot, the greater the seismic activity recorded and vice versa. The figure was obtained online from: http://www.seismo.nrcan.gc.ca/historic_eq/nan_e.php	95

LIST OF ACRONYMS

ACCDC:	Atlantic Canada Conservation Data Centre
ACM:	Asbestos-Containing Material
AMSL:	Above Mean Sea Level
AST:	Above-ground Storage Tank
ASU:	Archeological Services Unit
BMP:	Best-Management Practice
CCME:	Canadian Council of the Ministers of Environment

CEAA:	Canadian Environmental Assessment Act
cm:	centimetre
CMA:	Census Metropolitan Area
%:	Care Of
COSEWIC:	Committee On the Status of Endangered Wildlife in Canada
CO ₂ :	Carbon Dioxide
CSO:	Combined Sanitary and storm Outfall
dBA:	deciBels; A refers to relative intensity
DFO:	Department of Fisheries and Oceans
EA:	Environmental Assessment
e.g.:	(<i>exempli gratia</i>) for example
EPP:	Environmental Protection Plan (Project-specific)
ESA:	Environmental Site Assessment
et. al.:	(<i>et alii</i>) and others
etc.:	(<i>et cetera</i>) and so forth
HMSC:	Huntsman Marine Science Center
HVAC:	Heating Ventilation and Air-Conditioning
IJC:	International Joint Commission
INFC:	Infrastructure Canada
IPCC:	International Panel on Climate Change
ISCRWB:	International St. Croix River Watershed Board
i.e.:	(<i>id est</i>) namely / that is
JWEL:	Jacques Whitford Environment Ltd.
kg:	kilogram
km:	kilometre
L:	Litre
Leq:	one hour Level equivalent
Ltd.:	Limited
m:	metre
m ² :	square metres
m ³ :	cubic metres
mg:	milligram
mm:	millimetre
n.b.:	(<i>nota bene</i>) note well / take note
NAAQO:	National Ambient Air Quality Objective
NAPS:	National Air Pollution Surveillance
NB:	New Brunswick
NBDENV:	New Brunswick Department of the ENVironment
NBGIC:	New Brunswick Geographic Information Corporation
NO ₂ :	Nitrogen Dioxide
NO _x :	Nitrogen Oxides
O ₃ :	Ozone
ODS:	Ozone-Depleting Substance
P.Eng.:	Professional Engineer
P.Geo.:	Professional Geoscientist
PAH:	Polycyclic Aromatic Hydrocarbon
PCB:	PolyChlorinated Biphenyl
Ph.D.:	doctorate of Philosophy
PID:	Parcel IDentification number
PM _{2.5} :	Particulate Matter, < 2.5 µm in size
PPE:	Personal Protective Equipment
ppm:	parts per million

Project:	Garcelon Civic Center
RA:	Regulatory Authority
SARA:	<i>Species At Risk Act</i>
SCIWC:	St. Croix International Waterway Commission
SCUBA:	Self Contained Underwater Breathing Apparatus
SO ₂ :	Sulphur Dioxide
UFFI:	Urea-Formaldehyde Foam Insulation
UST:	Underground Storage Tank
VEC:	Valued (socially, economically, culturally, and / or scientifically) Environmental Component
°C:	degrees Celsius
<i>n</i> :	statistical value that refers to the number of observations
%:	percent
µg:	micrograms
µm:	micrometres

1.0 INTRODUCTION

Fundy Engineering & Consulting Ltd. (Fundy Engineering) was contracted by The Town of St. Stephen (the Town) to complete a *Canadian Environmental Assessment Act* (CEAA) Environmental Screening document. The Town is proposing to construct the Garcelon Civic Center (*i.e.*, the Project) on a brownfield site near the St. Croix River (*i.e.*, ~ 93 m distant at its closest point; Figure 1). The Town desires to transform the brownfield site into a vibrant, multi-use recreational facility that will be a tremendous benefit to the community. The civic center is being constructed to increase the social and economic benefits to the citizens of the greater St. Stephen area in addition to providing and promoting opportunities for recreation and health and wellness. The Project location is ideal because it is centrally located and accessible.

1.1 PROJECT IDENTIFICATION

1.1.1 Proponent

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Figure 1. Aerial photograph, circa 1999, showing the proximity of the lands in St. Stephen, New Brunswick that are proposed for construction of the Garcelon Civic Center to the St. Croix River.

2.0 PROPOSED PROJECT

2.1 PROJECT NAME

For the purposes of this *Canadian Environmental Assessment Act* Screening Report, the Project is referred to as the:

THE GARCELON CIVIC CENTER

2.1.1 *Project Type*

Pursuant to paragraph 5(1) of the *CEAA*, a project must undergo an environmental assessment if a federal authority plans to exercise one of the following duties, powers, or functions:

- be the project proponent;
- provide financial support to the project proponent;
- manage federal land and authorize its transfer through sales or lease; and / or
- issue a permit, license, or authorization that is included on the Law List Regulations, which triggers an environment assessment.

Infrastructure Canada, a federal authority, may provide partial financial assistance (*i.e.*, \$6.2 million) for the Project. Therefore, the Project shall undergo a *CEAA* screening in order to move forward. Infrastructure Canada is the lead Responsible Authority (RA) tasked with ensuring that a federal environmental assessment of the Project occurs (*n.b.*, there are no triggers for a provincial environmental impact assessment of this Project). Environment Canada and Health Canada will serve as Federal Authorities (FAs) on this Project and will provide scientific expertise where required.

The Town of St. Stephen shall install and maintain sediment and erosion protection measures throughout the demolition and construction phases of the Project such that fish and fish habitat of the St. Croix River will not be affected by erosion and subsequent sediment runoff. Based on guidance in DFO's document, *A Proponent's Guide to Fisheries Act Reviews for Federally Funded Projects*, implementing the described protection measures will negate a requirement to obtain an authorization from the Department of Fisheries and Oceans (DFO).

Pursuant to paragraph 18(1) of the *CEAA*, the Garcelon Civic Center is subject to a "screening" environmental assessment because it is not included on the comprehensive study list or in the exclusion list regulations. The RAs can only perform their duties if the screening concludes that carrying out the Project is not likely to cause significant negative environmental effects.

As the lead RA, Infrastructure Canada shall ensure that the federal EA of this Project is carried out in accordance with the *CEAA*.

2.2 PROJECT OVERVIEW

The Town of St. Stephen is in need of a centrally located, accessible, modern, and multiple-offering recreational facility and the civic center facility that caters to residents young and old in the Greater St. Stephen region. The existing ice rink is aged and does not offer multi-use. Its ice plant equipment is very near the end of its useful life. This Project represents a social interaction rebirth for the community. The 7 026 m² Garcelon Civic Center will be a recreational centre of excellence, comprising:

- an NHL-sized ice arena in providing training, recreation, and regional competitive events that provide skills and healthy sports activities for youth, school, community, and adults in skating, figure skating, and ice hockey and a venue for trade shows and social and cultural events;
- aquatic facilities for training in recreational and competitive swimming, synchronized swimming, diving, and water sports (e.g., polo), training for lifesaving abilities, and skills-training (e.g., SCUBA diving for aquaculture workers, etc.);
- multi-purpose and meeting room space for arts and cultural activities, yoga classes, and fitness classes; and
- a year round wellness walking track that encompasses the entire perimeter of the ice hockey area.

2.3 PURPOSE / RATIONALE / NEED FOR THE PROJECT

The Garcelon Civic Center will have a substantial impact on the social and economic growth of the greater St. Stephen area. The Project will:

- stimulate urban and community revitalization by making St. Stephen and the surrounding area a place for people to live, work, play, and stay;
- enrich the lives of those impacted by the presence of the civic center through a facility that allows the region to promote its heritage and culture to others and coincident with that permits the community to explore other cultures by attracting immigrants to live in the region and giving them a venue through which to share their own cultural experiences;
- promote recreation, healthy living, and wellness while promoting the development of social and leadership skills and both recreational and competitive sports skills through youth, community, and school sports leagues;
- provide a facility that rejuvenates the area through the promotion of additional social and economic development by attracting new investment to the community; and
- create seven full-time and nine full-time equivalent positions.

2.3.1 Project Location

The location proposed for the civic center is a collection of land parcels at 22 Budd Avenue and 11 Prince William Street in St. Stephen, New Brunswick (NB; Figure 2). The properties are identified by the New Brunswick Geographic Information Corporation (NBGIC) as Property IDentification (PID) numbers: 01304237; 01305978; 15055569; 15049141; and 15155716 (Figure 3). It is the intention of the Town, who owns all of the land, to amalgamate the five properties into a single PID. A copy of the NBGIC PID

Figure 2. Approximate location of the lands proposed for the Garcelon Civic Center in St. Stephen, New Brunswick.

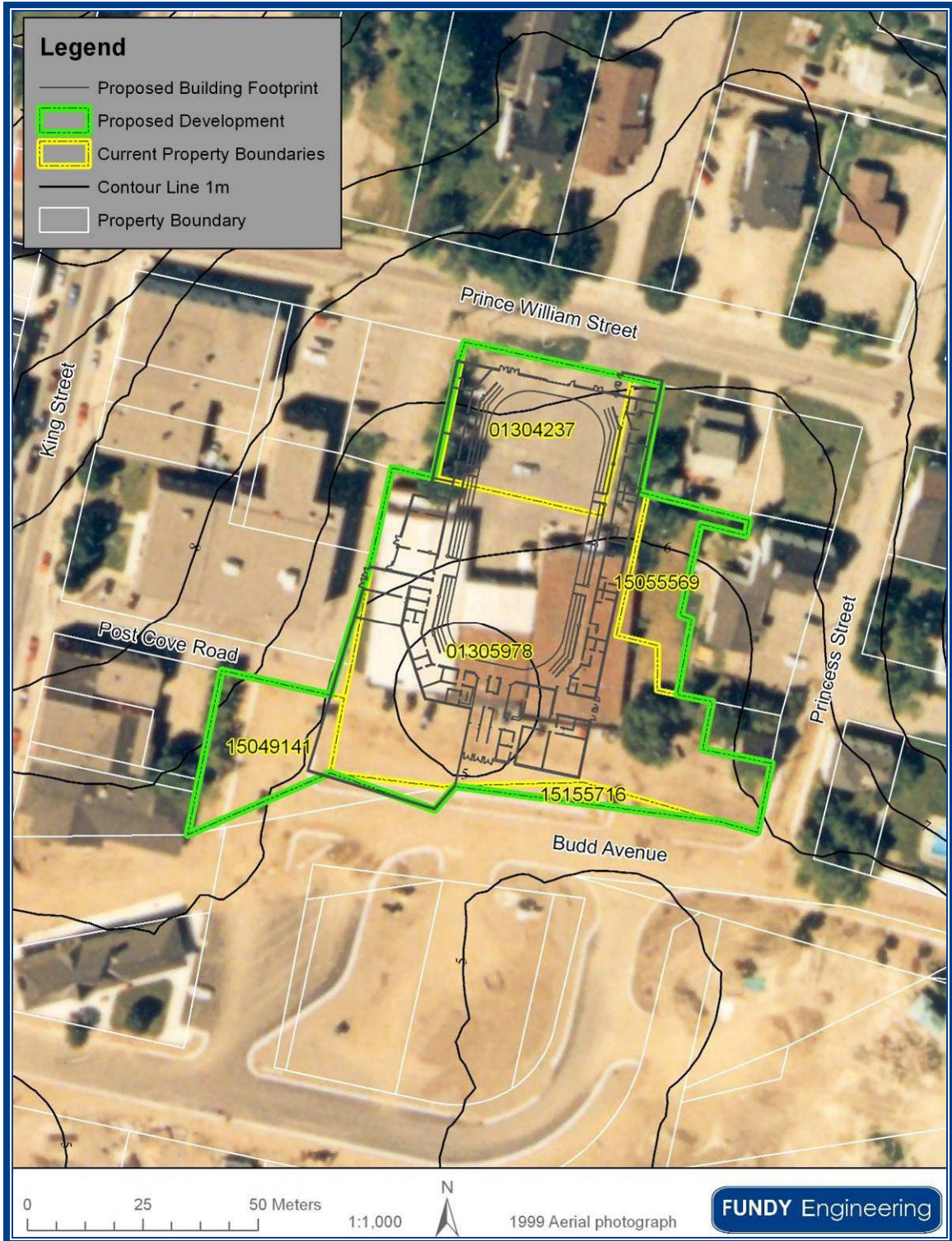


Figure 3. Aerial photograph, circa 1999, showing the parcels of land identified as PIDs 01304237, 01305978, 15055569, 15049141, and 15155716 in St. Stephen, New Brunswick that are proposed for construction of the Garcelon Civic Center.

The property is zoned entirely as commercial (Figure 4) and is located in the eastern section of the downtown business sector. The site can be accessed via Milltown Boulevard or Prince William Street, both major thoroughfares in the Town.

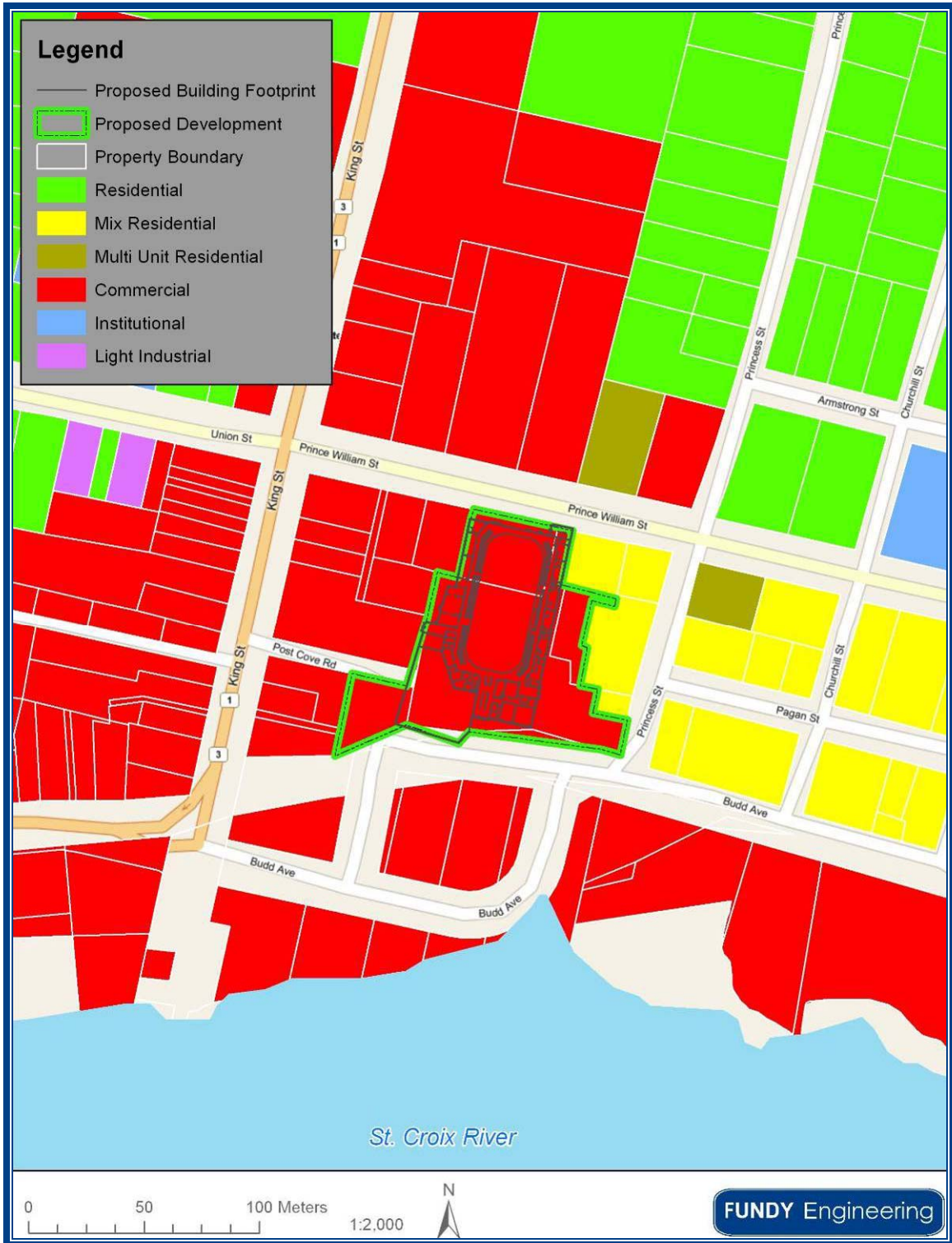


Figure 4. Land-use zoning map (June 2010) for the Town of St. Stephen.

2.4 BACKGROUND

Below are summaries of several assessments completed by Fundy Engineering and other consultants. Those assessments were completed for the proposed development footprint outlined in Figure 3. The work primarily comprised geotechnical and environmental due diligence in relation to the proposed development in light of the existing commercial / retail development at the site (Figure 5).



Figure 5. Photograph taken on 17 October 2010 showing the existing retail strip mall on the proposed Project site in St. Stephen, New Brunswick. Note: the photograph was taken looking north towards the existing structures from Budd Avenue.

2.4.1 History of Project Location

Based on the information gathered during the historical review of aerial photographs (e.g., Figure 6 to Figure 8) and various mapping, the central portion of the site was originally developed for light industrial use prior to 1905. Review of the 1905 *Fire Insurance Plan* indicates that storage tanks associated with a former soap factory were present on the site. That portion of the site appears to have been vacant from the early 1950s to the early 1960s when a portion of the existing retail strip mall was constructed. That portion of the site was further developed in the mid-1960s by expanding the retail strip mall building to its current size.

The 1905 *Fire Insurance Plan* notes the presence of railway spurs and wharfs on the southern portion of the site. The rail spurs existed until the late 1970s or early 1980s at which time they were removed. Based on aerial photographs, the wharfs were likely removed prior to the mid-1940s. The southern portion of the site was vacant until it was developed into its current state in the late 1990s.



Figure 6. Aerial photograph, circa 1962, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.

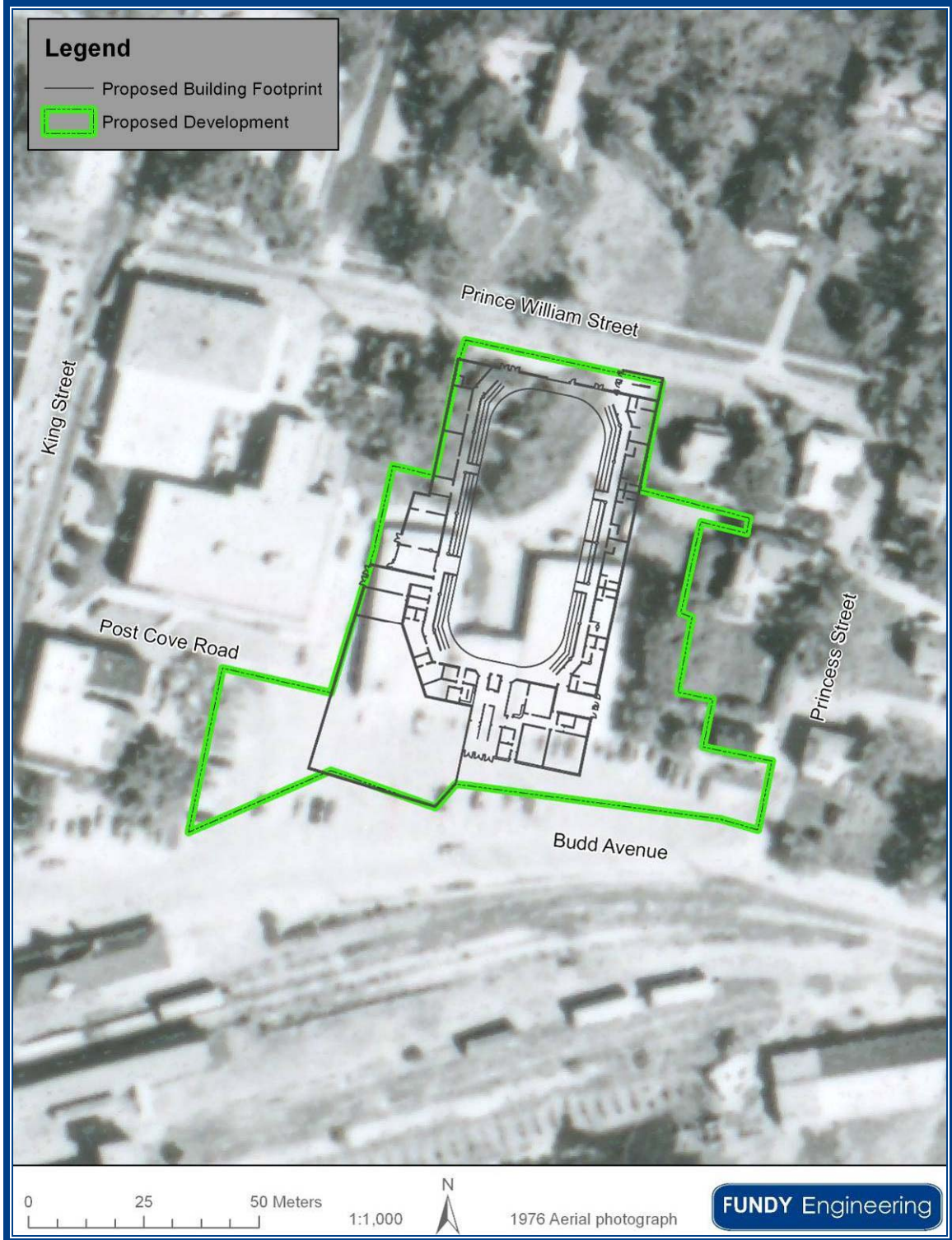


Figure 7. Aerial photograph, circa 1976, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.



Figure 8. Aerial photograph, circa 1984, showing the parcels of land in St. Stephen, New Brunswick that are proposed for locating the Garcelon Civic Center.

Single-family dwellings lined the eastern and western portions of the site beginning at least in the mid-1940s. Residences on the eastern portion of the site only lasted until

the late 1950s or early 1960s when it appears they were removed. The western residences are still present. A brief history of the Project site, which was gleaned from various documents, is provided in Table 1.

Table 1. Historical land-use summary of the property proposed for the Garcelon Civic Center in St. Stephen, New Brunswick.

Date	Information
1905 to the early 1950s	Light industrial / residential – including a railway spur, wharf, a soap manufacturing plant, and single-family dwellings
Early 1950s to early 1960s	Vacant / Commercial / Residential – portion of existing commercial building and single-family dwellings along western portion of the site
From the early 1960s to present	Commercial / Residential – existing commercial building and single family dwellings along western portion of the site

2.4.2 Preliminary Environmental Due Diligence

2.4.2.5 Phase I Environmental Site Assessment, January 2007¹

In 2007, Jacques Whitford Environmental Limited (JWEL) was contracted to complete a Phase I Environmental Site Assessment (ESA) for the proposed Project site². The purpose of the Phase I ESA was to determine if evidence of potential or actual environmental contamination exists in connection with the site, which may be present as a result of current or past activities on the site. As is standard practice, the Phase I ESA did not include any intrusive sampling or testing of air, soil, groundwater, surface water, or building materials.

Based on the information gathered and observations made, the Phase I ESA revealed evidence of potential environmental contamination associated with the site. The concerns noted in Table 2 were identified for the Project lands by JWEL and further assessed by Fundy Engineering.

¹ Jacques Whitford Environmental Limited. January 2007. Phase I Environmental Site Assessment: Proposed Civic Center, Budd Avenue, and Prince William Street, St. Stephen, NB. Project No.: 1000641.

² The assessment completed in 2007 included 15 parcels of land; the Project footprint has since been reduced to include only the five PIDs identified in Section 1.0; the additional PIDs no longer included in the Project footprint are located to the south between the Project footprint and the St. Croix River.

Table 2. Potential and actual environmental concerns associated with the lands proposed for the Garcelon Civic Center in St. Stephen, New Brunswick identified during the 2007 JWEL assessment.

Concern	Details
Active / historical petroleum storage and potential petroleum contamination	<ul style="list-style-type: none"> ➤ According to records on file with the New Brunswick Department of the Environment (NBDENV), underground petroleum storage existed on PID 01305978 within a 2 273 L Underground Storage Tank (UST), which was removed from the rear of the strip mall building in 1989. ➤ Two 910 L Above-ground Storage Tanks (ASTs) are present within the northeastern portion of the strip mall building. ➤ Fill and vent pipes were observed at the southwest corner of the retail strip mall, which may indicate the presence of an UST. Absorbent material was observed on the floor underneath the two AST tanks, which suggests product leakage from the tanks.
Hazardous building materials	<ul style="list-style-type: none"> ➤ Based on the age of the building, hazardous materials may be contained within it including: <ul style="list-style-type: none"> • Asbestos-Containing Materials (ACMs) in insulating materials, such as pipe wrap; • lead-based paints; • Urea-Formaldehyde Foam Insulation (UFFI); • Ozone-Depleting Substances (ODSs), such as coolants and refrigerants; and • PolyChlorinated Biphenyls (PCBs) in materials such as light ballasts.
Fill material of unknown origin	<ul style="list-style-type: none"> ➤ Portions of the site were infilled during or before the construction of the existing strip mall in the early to mid-1960s. ➤ After decommissioning the railway spurs in the late 1970s or early 1980s, fill material was also placed on the site.
Former railway spurs along southern portion of the site	<ul style="list-style-type: none"> ➤ Railway spurs were present on the southern portion of the site prior to 1905 and up until the late 1970s or early 1980s. ➤ Railway operations are often linked to Polycyclic Aromatic Hydrocarbons (PAHs) and metal contamination of soil and groundwater.
Former soap factory	<ul style="list-style-type: none"> ➤ The central portion of the site was developed for light industrial use prior to 1905. ➤ Fire insurance maps indicate the presence of storage tanks associated with a former soap factory. ➤ Manufacturing of soap often includes the use of various metals, solvents, and other hazardous chemicals that have the potential to impact shallow soil and groundwater.

2.4.2.6 Supplementary Soil and Groundwater Sampling Program: Charlotte County Civic Center, June 2009

In June 2009, Stantec, the company that acquired JWEL, completed a Phase I ESA follow-up investigation. A brief description of the results obtained during that investigation is provided below.

The shallow soil profile for the Project site³ was found to generally consist of layers of fill over clay and / or bedrock. The fill varies in thickness from approximately 1 m to > 4 m, and generally includes clayey sand with gravel fill and clay fill. Bedrock was observed or inferred at depths below ground surface ranging from approximately 2 m to 10 m or more.

Construction debris and miscellaneous wastes, including pieces of concrete, lumber, metal, bricks and coal, were observed within the fill across the site to depths of ~ 4 m below existing grade. Timber crib work was also observed in the fill with the top of the crib work at depths ranging between 1.3 m and 2.2 m below grade.

Groundwater was observed in monitoring wells installed at the site to depths ranging from ~ 1 m to 3 m below the ground surface. Deeper groundwater levels were observed in the monitoring well located on the southern portion of the site.

Although the Stantec report concluded that undifferentiated hydrocarbons were detected at relatively low concentrations, all petroleum hydrocarbons met the referenced guidelines for commercial land-use. Trace metals and PAHs were detected in several soil samples, which could restrict re-use or disposal of wastes generated during construction. Management of contaminated soil and groundwater are discussed in later Sections of this document.

2.4.2.7 Designated Substances Survey, October 2010

On 8 October 2010, Fundy Engineering undertook a designated substances survey at the Project site. The purpose of the survey was to identify any potential substances that may require special consideration to protect the health and safety of workers during the demolition of the existing commercial buildings. Fundy Engineering personnel completed a thorough walk over the property, conducted an inspection of the buildings' interior, and collected samples of designated substances (e.g., potential ACMs, lead-based paints, PCBs, etc.).

Table 3 provides details the items observed during the designated substances survey of the commercial buildings on the Project site. Information on the proper handling and disposal considerations for those products is also provided.

³ The assessment completed in 2007 included 15 parcels of land; the Project footprint has since been reduced to include only the five PIDs identified in Section 1.0; the additional PIDs no longer included in the Project footprint are located to the south between the Project footprint and the St. Croix River.