



Memo

To **Tricia Jarratt (ASNB)** File no **TE171010-1**
From **Darcy J. Dignam (Amec FW)** cc **Bill Borland (Horizon Mgmt. Ltd.)**
Tel **(506) 471-6284** **Janet Blackadar (Amec FW)**
Fax **(506) 450-0829**
Date **June 23, 2017**

Subject: Preliminary Results and Recommendations for the Preliminary Studies Conducted for The Ashburn Road Development Project (AFRP 2017NB53)

Introduction

Preliminary Archaeological Impact Assessment (AIA) studies have been conducted for this project under Archaeological Field Research Permit (AFRP) 2017NB53. These preliminary investigations conducted to date have included an initial desktop review and a field examination of two distinct project areas: Area A and Area B (see attached Figures 1, 2 and 3). The following is a brief summary of the results of these investigations and the recommendations for any further archaeological work to meet regulatory requirements. Essentially, this document serves as a preliminary report, with the final detailed AFRP report to be submitted prior to March 31, 2018.

Results

Area A

The desktop review indicated that there are no registered archaeological sites located within the project Area A. The closest documented site is an historic site, located 125 metres (m) northwest of the project area, by the shoreline of Drury Cove (BhDm-24). The closest registered pre-contact sites (pre-1604) are located by the Saint John Harbour and the mouth of the St. John River, over five km to the south (BhDm-1 to BhDm-7, BhDm-9, and BhDm-41). There are no registered Historic Places identified within project Area A.

The field examination of Area A included the proposed impact area identified in Figure 4, excluding the provincially regulated wetland (Figure 5). The survey identified that, except for the western most portions of Area A (west of Ashburn Road) and the construction materials used to elevate Route 1 to the east, the entirety of Area A is marshland. The Little Marsh Creek, running through the centre of the property is a marshland channel, with low potential for archaeological resources. The mapped linear tributary running west-east from the bend in Little Marsh Creek is "man-made", with the excavated materials deposited to the north of the trench. This trench pre-dates 1945, as it is apparent in a 1945 aerial photograph of the area (1945-A8391-59). While a few cultural features were identified within the high-ground area (non-

marshland) in the southwest part of Area A by Hunters Cove Road, no archaeological features or artifacts were identified during the visual survey of Area A. All of Area A, including the shorelines of Little Marsh Creek (a wetland channel), is assessed to have low potential for both historic and pre-contact archaeological resources.

Area B

There are no documented archaeological sites located within project Area B. The closest documented historic site is located approximately 2 km east of Area B, on the shore of Little River (BhDm-21). The nearest registered pre-contact sites to Area B are those previously mentioned in regards to Area A, by the Saint John Harbour and the mouth of the St. John River. There are no registered Historic Places identified within the project Area B.

The field examination of Area B included the area depicted in Figures 1 and 3. While there are low-lying marshland areas within Area B, the overall area appears to be relatively well drained grasslands, which drain into Marsh Creek. Marsh Creek runs along the entire west side of this project area and empties into Courtenay Bay, which is only 2 km to the south. This watercourse, which is approximately 10 m wide, is a principal watercourse in this area. At several locations in from the shoreline of the watercourse, “berm” features were observed during the survey. These historic features could potentially be dyke features, the result of past dredging activities, or features associated with the railway line on the property. Further research may provide an answer. Other than the berm features, no archaeological resources were observed along the shoreline of Marsh Creek. However, the shoreline of Marsh Creek has been assessed to have high potential for archaeological resources. Much of the remainder of Area B appears to have been disturbed from past railway use. There is an abandoned railway line (and a spur), which is now overgrown with trees and brush, that runs north-south through the centre of the property. This linear feature is evident on the present-day aerial photograph of the area (Figure 3). This feature is almost certainly an historic portion of the railway yard, which is no longer in use. With the exception of the shoreline of Marsh Creek, Area B has low potential for archaeological resources.

Recommendations

Area A

Area A is the proposed development area for the project. At present, this development will include both excavation and fill activities throughout the area. Therefore, the entire survey area can be considered to be the project impact area (Figure 2). Included in the presently proposed development plan is a realignment of Little Marsh Creek and its man-made tributary (Figure 6). However, regardless of the proposed development plan, the entire Area A has been assessed to have low potential for archaeological resources. Therefore, no further archaeological investigations or mitigation is recommended prior to or during the development of Area A.

Area B

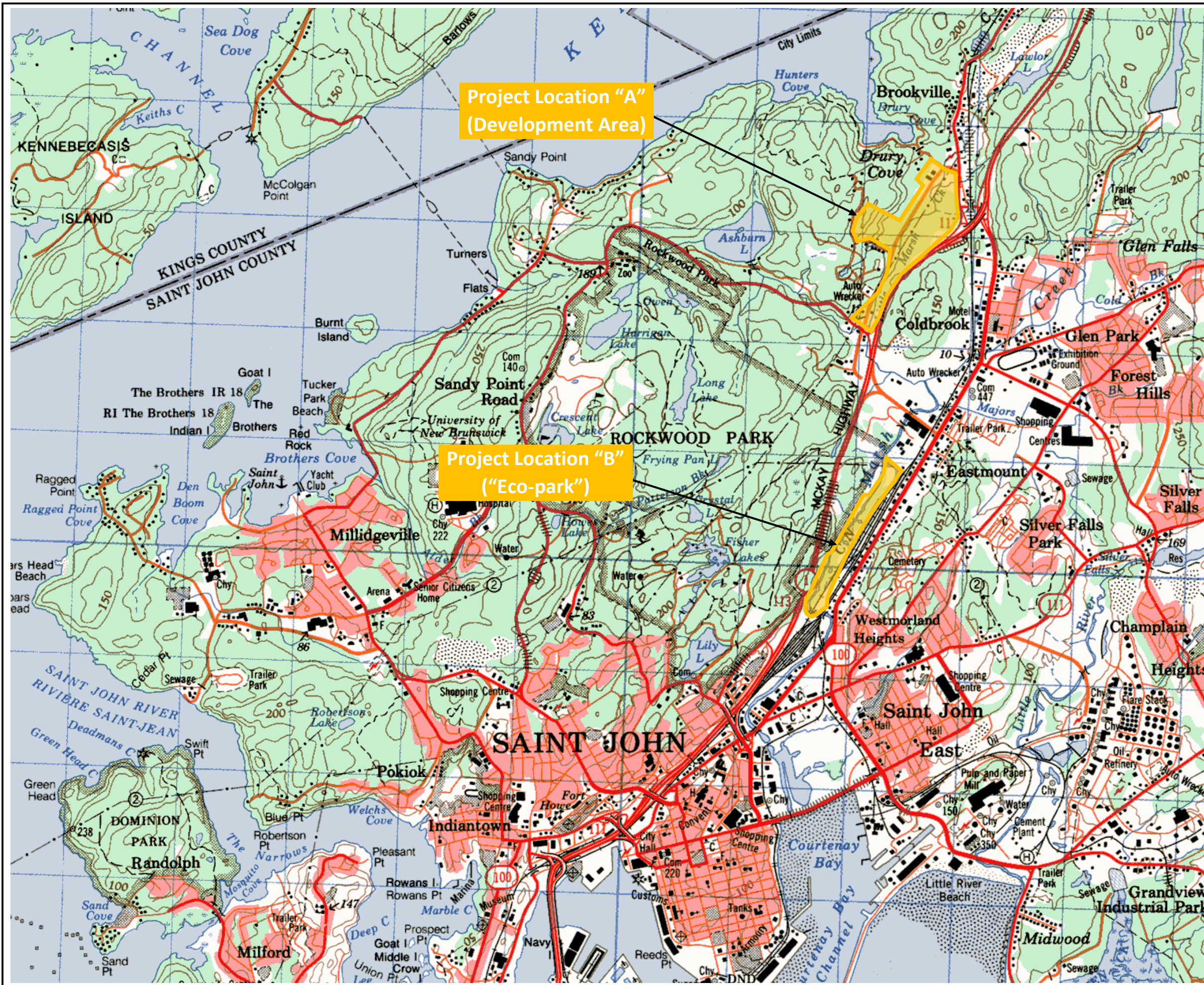
At present, Area B is not slated for any development or ground-disturbing activities. Therefore, the impact area is not presently known. Consequently, the entire study area will be considered as a potential impact area (Figure 3). Based on the results from the preliminary investigations, the one Elevated Potential Area (EPA) for archaeological resources for Area B is the shoreline of Marsh Creek. In accordance with the provincial *Guidelines*¹, an 80 m archaeological buffer

¹ Archaeological Services New Brunswick. 2012. Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick.

along the shoreline of this watercourse should be imposed. This would mean that any ground disturbing activities conducted within the 80 m buffer would require additional archaeological field activities, which might include field-testing and/or construction monitoring. As property impacts are not yet known, no additional archaeological investigations for Area B are presently recommended. However, any future development of this property should adhere to the 80 m archaeological buffer of Marsh Creek, to avoid future archaeological investigations. Should future development of this area include ground disturbing activities within this buffer, additional archaeological work would be required.

Closing

If you would like to discuss the findings and recommendations presented above, we would be happy to meet with you. If you are in full agreement with these findings and recommendations, please acknowledge this via email. In accordance with regulatory requirements, a final detailed AFRP report will be submitted for this project prior to March 31, 2018.



Project Location "A"
(Development Area)

Project Location "B"
("Eco-park")



Project Locations



CLIENT:
New Brunswick Department of Transportation and Infrastructure



PROJECT:
"The Crossing" Ashburn Road Development Project

TITLE:
Project Location

DATUM: NAD 1983	DWN BY: DJD	DATE: 29/05/2017
PROJECTION: NB Stereographic	CHK'D BY: DJD	SCALE: N/A
PROJECT NO: N/A	REV NO: DJD	FIGURE NO: FIGURE 1

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Figure 2: Area A: Proposed Development Area



Figure 3: Area B: Proposed "Green Space" Area



Figure 4: Area A: Conceptual Design with Regulated Wetland



Figure 5: Area A: Regulated Wetland (GeoNB)

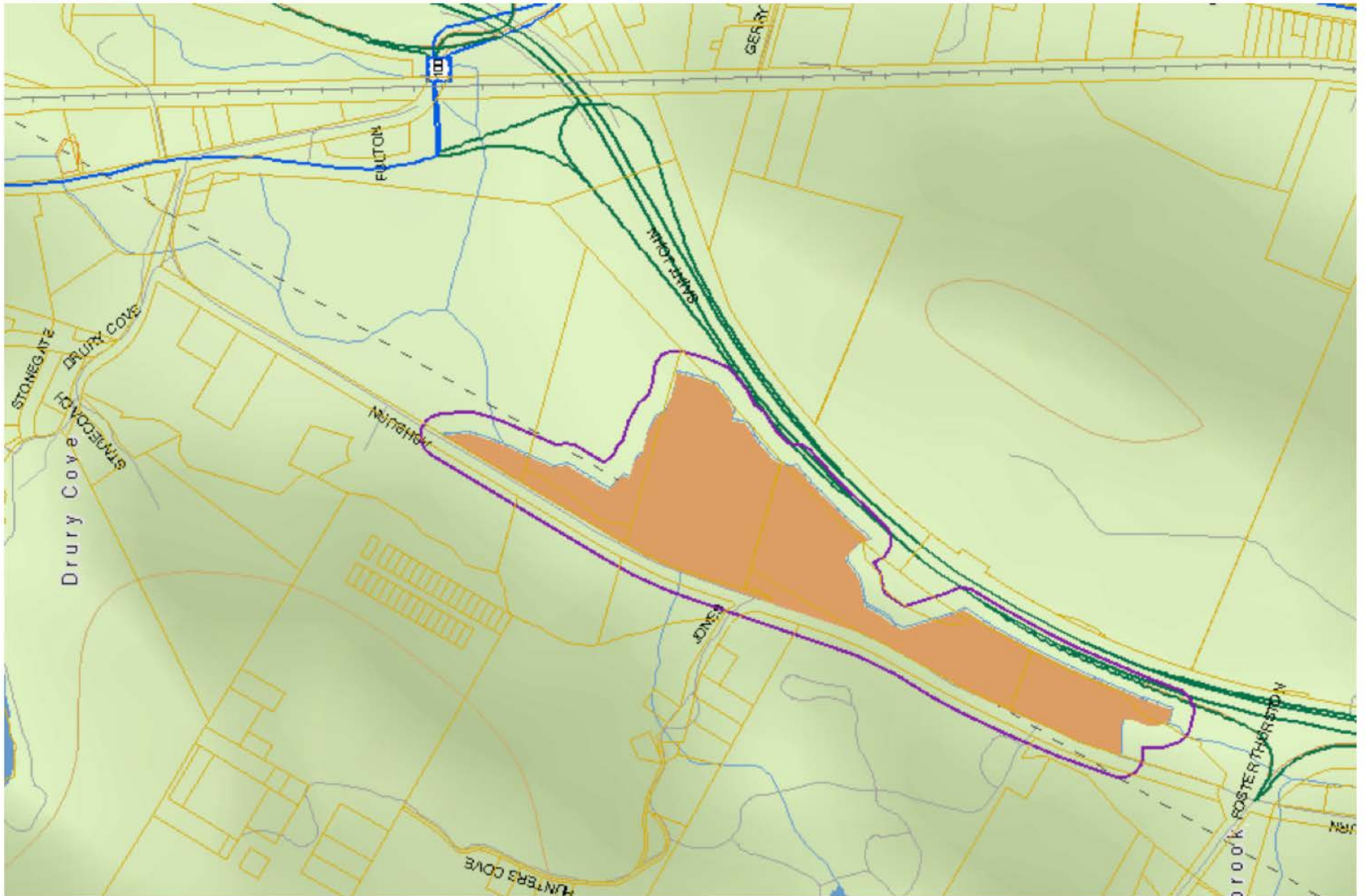
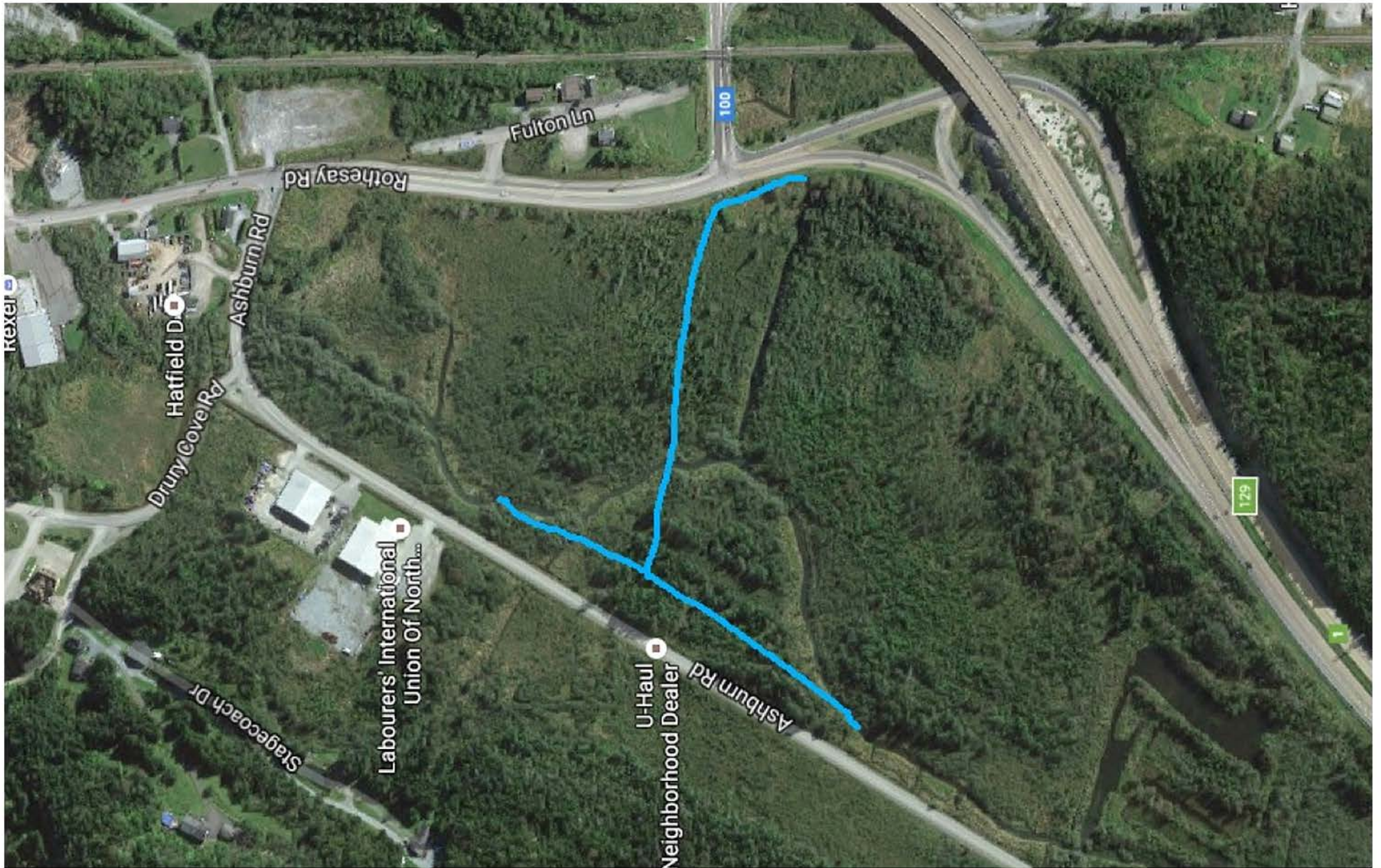


Figure 6: Area A: Realignment of Creek and Drainage Ditch





**Archaeological Impact Assessment
“The Crossing” Ashburn Road Development Project
Saint John, Saint John County,
New Brunswick**

Final Report

Submitted to:

Horizon Management Ltd.

Saint John, New Brunswick

&

Archaeological Services Branch

New Brunswick Department of Tourism, Heritage and Culture

Fredericton, New Brunswick

Submitted by:

Amec Foster Wheeler Environment & Infrastructure,

A Division of Amec Foster Wheeler Americas Limited

Fredericton, New Brunswick

April 2018

Archaeological Field Research Permit: 2017NB53

Amec Foster Wheeler Project: TE171010



amec
foster
wheeler

April 20, 2018

TE171010

Ms. Tricia Jarratt

Manager - Archaeological Regulatory Unit, Archaeological Service Branch
New Brunswick Department of Tourism, Heritage and Culture
225 King Street, Andal Building
Fredericton, NB E3B 5H1

Dear Ms. Jarratt:

Re: Final Report: Archaeological Impact Assessment “The Crossing” Ashburn Road Development Project Saint John, Saint John County, NB (Permit 2017NB53)

Please find enclosed a copy of the final permit report for the above-noted project. The archaeological program for this project included a desktop review and an archaeological field examination of the project impact areas.

The project study area included two distinct parcels of land, which were labeled Area A and Area B, for investigative purposes. Area A is the proposed development area, while Area B is not slated for development, but may be considered for possible future development or wetland compensation. Desktop investigations determined that there were no documented archaeological or heritage sites within boundaries of either of the proposed project areas. Based on the results of the field visual surveys and the initial desktop review, it was determined that the proposed development area (Area A) has low potential for archaeological resources, while Area B has potential for these resources along the shorelines of Marsh Creek. Therefore, no further archaeological investigations or mitigation are recommended prior to or during the development of Area A. As no development of Area B is presently scheduled, no additional archaeological investigations for this area are presently recommended. However, should the project design change, to include some development of Area B, additional archaeological work within this area is recommended.

Should you have any questions, or wish to discuss any aspect of this project, please do not hesitate to contact me.

Sincerely,

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TE171010_HorizonMgmt_ASNB_Permit_Report_FR_April2018

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Appendix F	Archaeological Services New Brunswick Geographic Information System (GIS) Mapping

1.0 INTRODUCTION

Horizon Management Ltd. (Proponent) is proposing to develop a 49 hectare (ha) property on Ashburn Road, in Saint John, New Brunswick. This proposed development, entitled "The Crossing", will be "a mixed-use commercial and residential development" (Horizon Management Ltd. 2016). The proposed project will potentially include the development of: highway services, food and hospitality services, business and commercial areas, retail services, residential areas, recreational areas, and green spaces (Project) (Ibid.). The proposed development area is located on the east side of Saint John, alongside Route 1, and is well situated for access by traffic entering and exiting the City. Within the proposed Project area is Little Marsh Creek and a section of provincially regulated wetland. It is presently proposed that these natural elements will be incorporated into the development through their transformation "into a meandering Urban Wetland by expanding the banks of the existing stream to create a habitat similar to a Ducks Unlimited Naturalized Storm Water Pond" (Horizon Management Ltd. 2016). The intent is to enhance the wetland features of the existing site by creating an urban wetland setting within the commercial and residential development.

Pursuant to Section 5(2) of the Environmental Impact Assessment Regulation 87-83 of the *Clean Environment Act*, the Proponent is required to conduct an Environmental Assessment (EA) to obtain regulatory approvals to proceed with this Project. One component of an EA is an Archaeological Impact Assessment (AIA). Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited (Amec Foster Wheeler) has been retained by Horizon Development Ltd. to provide archaeological consulting services in the form of AIA investigations, in support of the registration of the Project under the New Brunswick EIA process.

In 2017, under Archaeological Field Research Permit (AFRP) 2017NB53, Amec Foster Wheeler conducted preliminary AIA investigations for the Project. These investigations included a background desktop review of documents and databases of historical, heritage, and archaeological data associated with the proposed Project area, and a field examination of two defined Project impact areas, which were labeled "Area A" and "Area B" for investigative purposes. Area A is the proposed development area, while Area B is not slated for development, but as possible wetland compensation. Initial desktop investigations determined that there were no documented archaeological or heritage sites within boundaries of either of the proposed Project areas. However, pre-historic and historic use of the general study area, in addition to the presence of mapped watercourses, indicated that there may be potential for undocumented archaeological resources within these Project areas. Therefore, a visual field survey was required to evaluate the potential for archaeological resources. On June 14 and 15, 2017, Amec Foster Wheeler archaeologists conducted visual surveys of both Area A and Area B. Based on the results of these surveys and the initial desktop review, it was determined that the proposed development area (Area A) has low potential for archaeological resources, while Area B has potential for these resources along the shorelines of Marsh Creek. Therefore, no further archaeological investigations or mitigation is recommended prior to or during the development of Area A. As no development of Area B is presently scheduled, no additional archaeological investigations for this area are presently recommended. However, should the Project design

change, to include some development of Area B, additional archaeological work within this area is recommended.

The following report presents the methodology, findings, conclusions, and recommendations resulting from the AIA investigations conducted for the Project by Amec Foster Wheeler. In accordance with regulatory requirements (Archaeological Services New Brunswick (ASNB 2012)), this report includes Selected Photographs (Appendix A), all Project Photographs and Photograph Catalogue (Appendix B), the Field Survey Global Positioning System (GPS) Track Log (Appendix C), Field Notes (Appendix D), a Limited Personal Information Release Form (Appendix E), and Archaeological Services Geographic Information System (GIS) Mapping that includes the Project area (Appendix F).

1.1 Project Location

As indicated in Figures 1.1, 1.2, and 1.3, the Project is located on the east side of the City of Saint John, Saint John County, New Brunswick. There are two separate areas associated with this Project, which for investigative purposes have been labeled "Area A" and "Area B". Area A is the proposed development area (Figure 1.2), while Area B is not slated for development, but may be used for possible EIA wetland compensation or for a future eco-park environment area (Figure 1.3).

1.1.1 Project Area A

The proposed Project development area (Area A) is 49 ha area bounded on the east side by Route 1, with Ashburn Road running through it. Area A consists of three definable sub-sections, with one on the north side of Ashburn Road and two on the south side (Figure 1.4). This proposed development area includes a portion of Little Marsh Creek and two mapped minor tributaries. As indicated in Figure 1.5, the presently proposed Project includes a realignment of existing watercourse channels that presently run through the Project area. A notable attribute of the proposed development area is that a large portion of it (10.6 ha), located north of Ashburn Road, is regulated wetlands (Figure 1.6). The remainder of this proposed development area is primarily a green space composed of coniferous dominated marsh areas, grasses, immature hardwood stands, and mature mixed woods. The PIDs included in Project Area A include 00432203, 55100325, 55003222, 55029074, 00296673, 00053025, 00052985, 00053017, 55155378, 00357327, 00297143, 00297895, and 00418160.

1.1.2 Project Area B

The second parcel of land associated with the Project is a 17.3 ha green space, which runs parallel to Route 1, and is bounded by the CN Rail yard on the northwest side and Rothesay Avenue to the southeast. This site is isolated with very limited access (Figure 1.3). This property (PID 55189385) has Marsh Creek flowing through it.

LEGEND:



Project Locations



CLIENT:

Horizon Management Ltd.



PROJECT:

“The Crossing” Ashburn Road Development Project

TITLE:

Project Location

DATUM:
NAD 1983

DATE:
29/05/2017

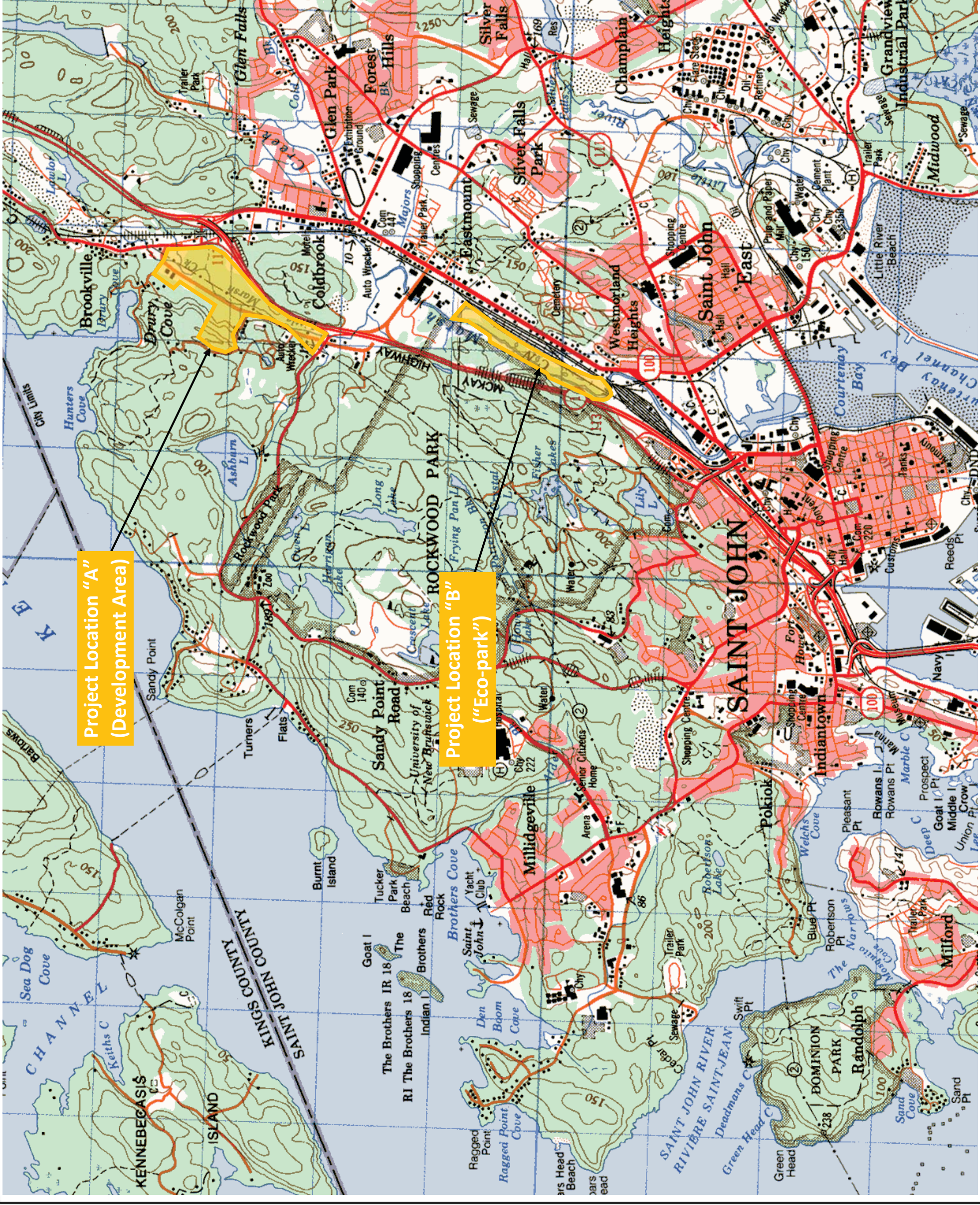
PROJECTION:
NB Stereographic

SCALE:
N/A

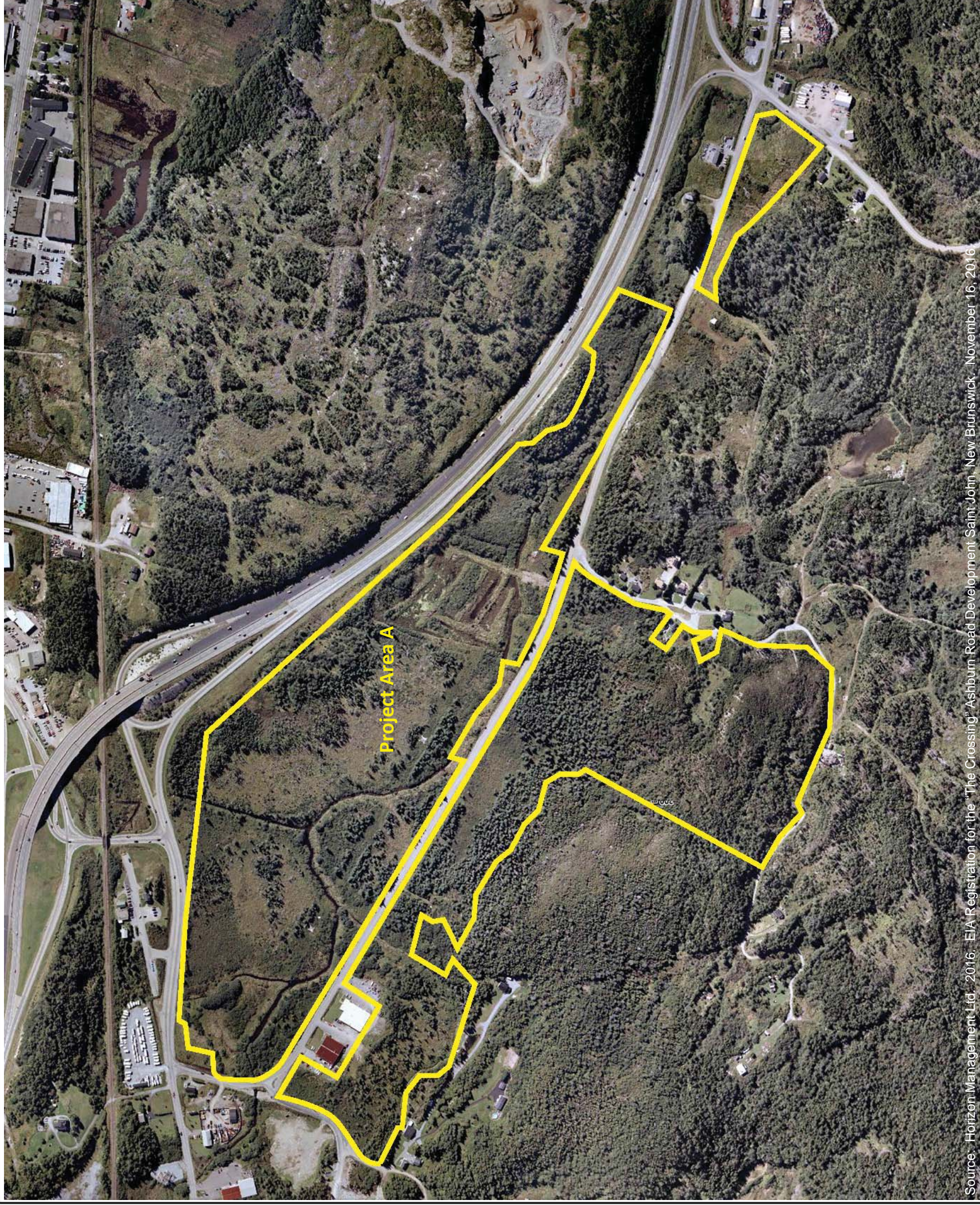
PROJECT NO:
N/A

REV NO:
DJD

FIGURE NO:
FIGURE 1.1



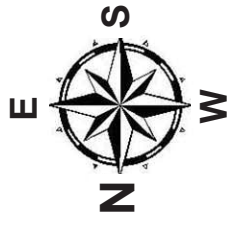
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LEGEND:



Project Area A



CLIENT:

Horizon Management Ltd.



PROJECT:

"The Crossing" Ashburn Road
Development Project

TITLE:

Project Area A:
Development Area

DATUM:	N/A	DWN BY:	DJD	DATE:	03/03/2018
PROJECTION:	N/A	CHK'D BY:	DJD	SCALE:	1:5,950
PROJECT NO.:	TE171010	REV NO.:	DJD	FIGURE NO.:	FIGURE 1.2

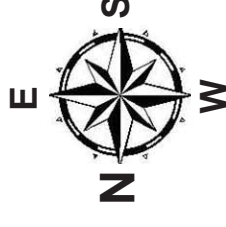
Source: Horizon Management Ltd., 2016. EIA Registration for the "The Crossing" Ashburn Road Development Saint John, New Brunswick. November 16, 2016.

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LEGEND:



Project Area B



CLIENT:

Horizon Management Ltd.



PROJECT:

"The Crossing" Ashburn Road
Development Project

TITLE:

Project Area B: Possible
Future Eco-Park Area

DATUM:

N/A

DATE:

03/03/2018

DWN BY:

DJD

PROJECTION:

N/A

SCALE:

1:5,950

CHK'D BY:

DJD

PROJECT NO.:

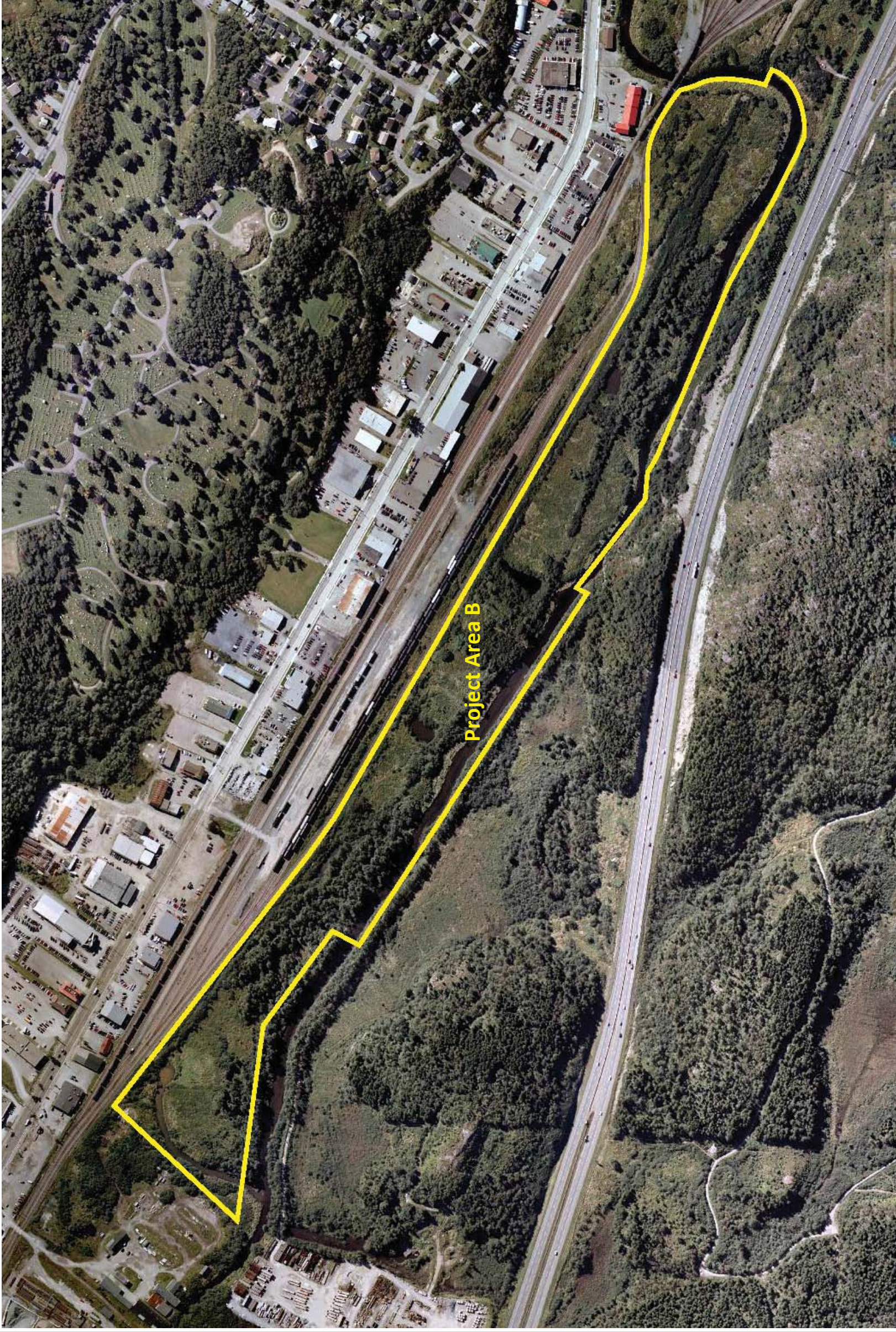
TE171010

REV NO.:

DJD

FIGURE NO.:

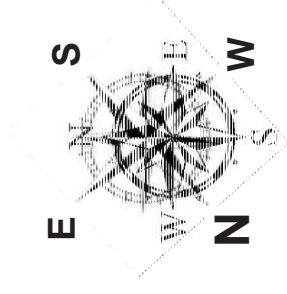
FIGURE 1.3



Source: Horizon Management Ltd. 2016. EIA Registration for the "The Crossing" Ashburn Road Development Saint John, New Brunswick. November 16, 2016.

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LEGEND:



CLIENT:

Horizon Management Ltd.



PROJECT:

"The Crossing" Ashburn Road
Development Project

TITLE:

Project Area A: Development
Area Conceptual Rendering

DATUM:

N/A

DWN BY:

DJD

DATE:

03/03/2018

PROJECTION:

N/A

CHK'D BY:

DJD

SCALE:

1:5,400

PROJECT NO.:

TE171010

REV NO.:

DJD

FIGURE NO.:

FIGURE 1.4



Source: Horizon Management Ltd. 2016. EIA Registration for the "The Crossing" Ashburn Road Development Saint John, New Brunswick. November 16, 2016.

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LEGEND:



Proposed Watercourse
Channel Realignment



CLIENT:

Horizon Management Ltd.



PROJECT:

"The Crossing" Ashburn Road
Development Project

TITLE:

Project Area A: Proposed
Watercourse Channel
Realignment

DATUM:

N/A

DWN BY:

DJD

DATE:

03/03/2018

PROJECTION:

N/A

CHK'D BY:

DJD

SCALE:

1:2,785

PROJECT NO.:

TE171010

REV NO.:

DJD

FIGURE NO.:

FIGURE 1.5



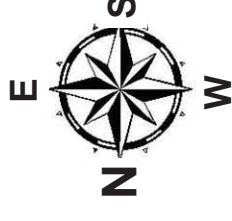
Source: Horizon Management Ltd. 2016. EIA Registration for the "The Crossing" Ashburn Road Development Saint John, New Brunswick. November 16, 2016.

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LEGEND:



- Provincially Regulated Wetland Area
- Wetland Area 30 Metre Buffer



CLIENT:

Horizon Management Ltd.



PROJECT:

“The Crossing” Ashburn Road Development Project

TITLE:

Project Area A: Mapped Provincially Regulated Wetland

DATUM:

N/A

DWN BY:

DJD

DATE:

03/03/2018

PROJECTION:

N/A

CHK'D BY:

DJD

SCALE:

1:5,900

PROJECT NO.:

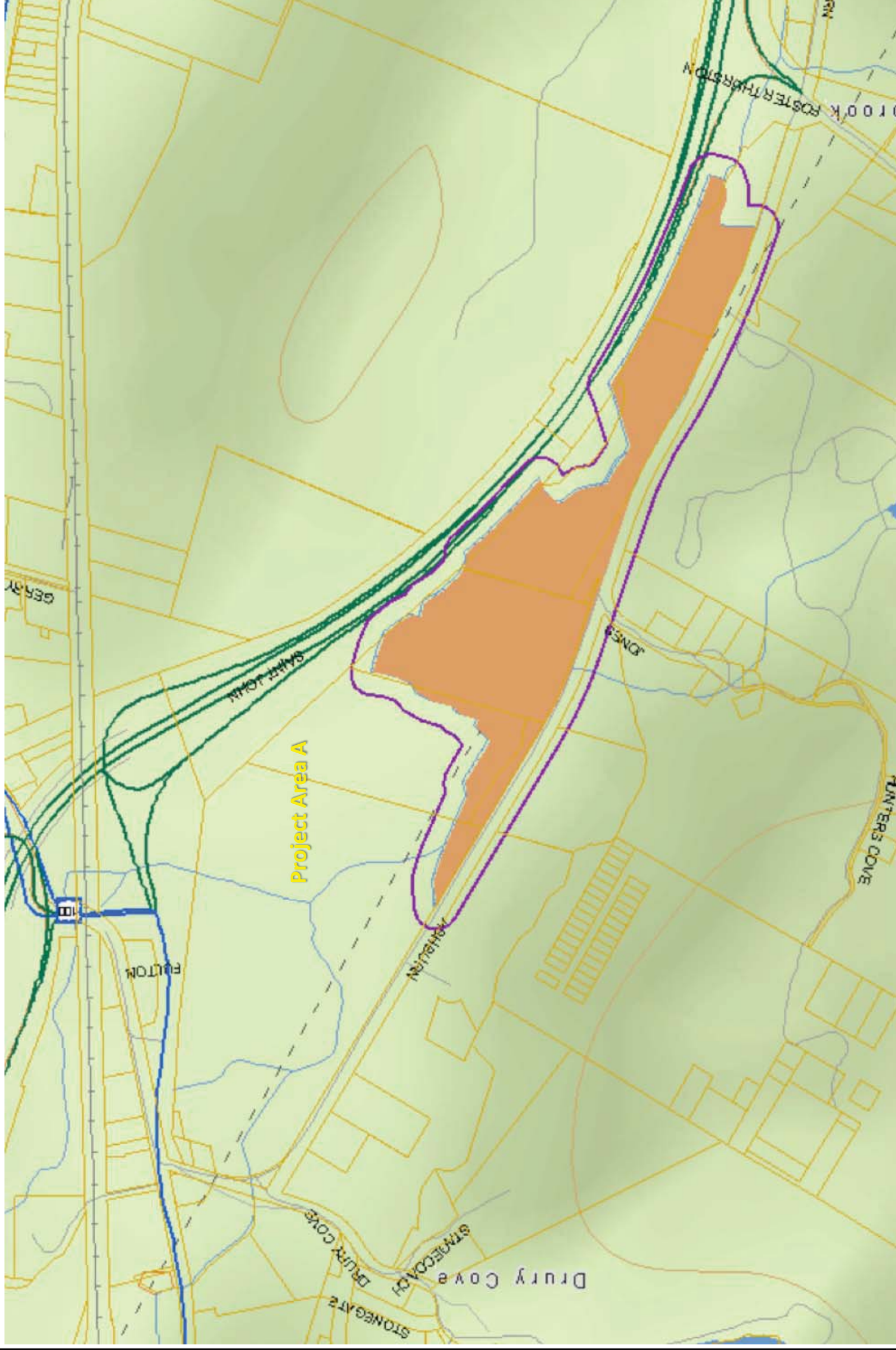
TE171010

REV NO.:

DJD

FIGURE NO.:

FIGURE 1.6



Source: Horizon Management Ltd. 2016. EIA Registration for the “The Crossing” Ashburn Road Development Saint John, New Brunswick. November 16, 2016.

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1.2 Project Description and Schedule

The following is a description of the proposed construction schedule as presented in the EIA Registration document for the Project, provided to Amec Foster Wheeler (Horizon Management Ltd. 2016):

It is proposed that construction would commence during the Spring of 2017 with the construction of the main access road; an extension of the connector from Rothesay Avenue to Rothesay Road. It is also intended to move the previously mentioned drainage ditch to parallel this access road. Some realigning of the existing stream is proposed, i.e., straightening the loop in the middle of the site (Figure 1.5).

Initial development will take place from a hub in the middle of the property PID 00432203, and generally spread outward. The full development...will be carried out over a period of several years as dictated by ongoing market conditions and demands (Figure 1.4).

The initial construction process, site preparation, will involve tree removal, limited grubbing, laydown of a geotextile material, overlaid with local aggregate to form an aggregate mattress.

For much of the length of the site, the banks of Little Marsh Creek will be expanded to create an Urban Wetland through the commercial site. The added material will be made up of soils from the site to allow for revegetation with appropriate and available plants consistent with the existing wetland. This approach would be consistent with the Ducks Unlimited development of a Naturalized Storm Water Pond and serve many of the same purposes.

1.3 Project Environment

1.3.1 Biological Environment

The general Study Area is located within the Fundy Coast Ecodistrict (NBDNR, 2007a), where vegetation communities are strongly influenced by the unique coastal climate. Milder temperatures both in Summer and Winter, and frequent fog and overcast conditions bring about reduced growing season, soil temperature, and fire frequency, while promoting vegetation communities that are more boreal in nature. The mature forest habitat is composed of spruce (mainly *Picea rubra*), fir (*Abies balsamea*), with lesser amounts of sugar maple (*Acer saccharum*), and yellow birch (*Betula papyrifera*, *B. allegheniensis*) with occasional cedar (*Thuja occidentalis*) on calcareous soils. Where forests are regenerating from timber harvesting or other past disturbances, the composition is dominated by red maple (*Acer rubrum*), white birch, and grey birch (*Betula populifolia*). Old apple orchards and fields are covered with 10 to 30 years' growth of mountain ash (*Sorbus americanus*, *S. decora*), cherry (*Prunus pensylvanica*, *P. virginiana*), alder (*Alnus viridis*, *A. incana*), and willows (*Salix bebbiana*, *S. humilis*). Herbaceous vegetation under coniferous forest stands is typically boreal including bunchberry (*Cornus canadensis*), blueberry (*Vaccinium myrtilloides*), yellow clintonia (*Clintonia borealis*), wintergreen (*Gaultheria procumbens*), indian pipe (*Monotropa uniflora*), with large carpets of terrestrial mosses. On ridge tops, under temperate hardwood stands, the herb layer is dominated by sarsaparilla (*Aralia nudicaulis*), wood ferns (*Dryopteris* sp.), starflower (*Trientalis borealis*), rose twisted-stalk

(*Streptopus lanceolatus*), large-leaf aster (*Aster macrophyllus*), and common speedwell (*Veronica officinalis*).

Area A is dominated by a 10.6 hectare Regulated Wetland, which occupies a large portion of the southern part of the area (Figure 1.6). In addition to wetland habitat, the Project Area A is composed primarily of coniferous dominated marsh areas, grasses, immature hardwood stands, and sections of mature mixed woods. Area B is a green space parcel of land appears to have once been a rail yard, which has reverted to grasslands, with sections of immature hardwood stands and sections of mixed woods. This parcel of land is located within the Marsh Creek Watershed.

1.3.2 Geological Environment

The bedrock underlying Project Area A differs from that under Project Area B, according to provincial bedrock mapping (NBDNR 2008). Area A consists of sedimentary rock formations from the Early to Middle Neoproterozoic periods (carbonates and evaporites), primarily from the Green Head Group. Most of the bedrock in Area A is from the Early Neoproterozoic Ashburn formation, which is described as "White to grey and light green, generally banded and locally stromatolitic marble, black to brown pelite, massive spotted hornfels and white to grey, fine-grained quartzite: minor marble-pebble conglomerate and mica schist" (Johnson et al. 2005). A small section of Area A, on the east side, is comprised of Middle Neoproterozoic Brookville Gneiss, which is described as:

Dark grey to pinkish grey, fine- to medium-grained, banded, and locally migmatitic paragneiss with minor calc-silicate, marble, or quartzite layers: grey, medium-grained granodioritic to tonalitic orthogneiss with locally abundant biotite schlieren and amphibolite: the gneisses are locally intruded by granodiorite, pegmatite, and diabase" (Ibid.).

The bedrock geology of Area B is reportedly comprised of igneous plutonic intrusions from the Late Neoproterozoic-Early Cambrian period (felsic) of the "Golden Grove Plutonic Suite" (Coldbrook Group). This is the McBrien Lake Formation, which is described as "Grey to green, locally flow-banded dacite: minor duff, tuffaceous sandstone, rhyolite and basalt" (Ibid.). Relevant to archaeological resources considerations, fine-grained lithic materials such as the above-mentioned quartzite have been used prehistorically for tool manufacture. These materials may have been exposed or pieces transported within the Project areas by ice or water movement during the Quaternary Period, providing a possible lithic source for the prehistoric inhabitants of this area.

2.0 METHODOLOGY

An AIA is an assessment of archaeological and heritage resources, which include prehistoric and historic archaeological sites, historic structures, places, landscapes, events, and people associated with a specific geographic area. The objectives of an AIA are to identify, inventory, and evaluate all sites of archaeological and historical significance within the Project impact area(s) and to assess the potential impact on both known and potential archaeological and heritage resources. These objectives are accomplished via a four-phase process:

- Phase 1: Background desktop review (documentary research, Regulator consultation).
- Phase 2: Field examination (visual surface survey).
- Phase 3: Field evaluation (archaeological field survey).
- Phase 4: Significance determination, impact assessment, mitigation, and contingency plan (including archaeological monitoring).

This four-phase process is usually approached sequentially and involves decision points along the way. While these steps are initially addressed in a linear fashion, they are iterative as circumstances commonly arise during investigations that require previous phases to be revisited. The methodology used for each phase is usually determined based upon the results obtained in the preceding phase. Phase 1 and 2 investigations are required to develop appropriate Phase 3 methodologies, if required. The preliminary investigations (Phases 1 and 2) have been conducted for this Project.

2.1 Background Desktop Review

A Phase 1 background desktop review was undertaken for the proposed Project areas to identify and assess the existence of known and/or potential archaeological resources for the Project areas. This research was conducted by a permitted archaeologist under AFRP 2017NB53 and included the following activities:

- reviewing present day and historic aerial photographs and topographic maps;
- reviewing previous archaeological surveys conducted in the area;
- reviewing documentation on existing identified archaeological sites in the vicinity;
- reviewing the New Brunswick Register of Historic Places;
- reviewing the Canadian Register of Historic Places;
- reviewing the Directory of Designations of National Significance of Canada;
- conducting a review of archaeological literature sources;
- identifying any Nationally or Provincially designated historic sites in the area;
- conducting a review of historical literature sources;
- reviewing geological surficial and bedrock mapping of the area;
- consulting with Archaeological Services New Brunswick (ASNB); and
- reviewing the requisite ASNB GIS mapping for the Project area.

2.2 Field Examination

The second phase of the AIA includes a surface examination of the Project impact areas and immediate vicinity. The objective of the field examination (visual surface survey) is to obtain first-hand exposure to the geography and topography of the Project impact areas to aid in the early identification of existing and potential archaeological and heritage resources. The archaeological visual survey was conducted on June 14th and 15th, 2017 under AFRP 2017NB53 by Amec Foster Wheeler Archaeologists Darcy Dignam and Jesse Webb. The field examination included both proposed Project impact areas (Area A and Area B). In accordance with provincial requirements (ASNB 2012), this surficial survey included all the accessible portions of the Project areas (i.e. wetlands were not surveyed). The surficial survey was conducted on foot by the two Amec Foster Wheeler archaeologists, traversing each area at regular transects. Each field archaeologist used a hand-held Global Positioning System (GPS) device and collected line, point, and track log GIS data to identify areas of interest and to track the survey route (Appendix C: Field Survey GPS Track Log). The survey involved a close examination of the surface of the proposed impact areas and vicinity, with particular attention to subsurface exposures, watercourse erosional faces, forest clearings, and other areas that could indicate elevated potential for archaeological resources from the archaeological potential modelling and desktop review.

The initial background desktop review (Phase 1) and the visual survey of the proposed Project impact areas (Phase 2) have been completed for this Project. No Phase 3 field evaluation activities have been conducted.

3.0 FINDINGS

3.1 Background Desktop Review

3.1.1 General Project Study Area

Past and present transportation routes and habitation areas are considered to be high potential areas for archaeological and heritage resources. Watercourses were the primary transportation routes of the past, while roads are the primary transportation routes of the more recent past and present. Prehistoric peoples (Native) and European settlers (Acadians, New England Planters, and United Empire Loyalists) utilized the river systems of New Brunswick as transportation routes and settlement areas. Therefore, shorelines of the primary river systems of the province have high potential for archaeological and heritage resources from all of these periods. In addition, since watercourses change over time, prehistoric Holocene Period shorelines hold potential for Palaeoindian archaeological resources (12,900-10,200 years before present (YBP)). Gravel deposits located near present day watercourses and shorelines are potentially part of prehistoric shorelines once inhabited by Palaeoindians (Dignam and Blair 2011, Dignam et al 2012). Away from the watercourse shorelines, trails and roads are potentially historical transportation routes and are indicators of prehistoric portage routes and historic habitation locations. Elevated terraces, strategic vistas, and plateaus also hold potential for Native archaeological sites, as they may have been used during prehistoric times as lookout sites for travel, hunting, and habitation.

3.1.1.1 Potential Prehistoric Heritage Resources

The southernmost section of the Project study area (Area B) is located less than 2 km from the Saint John Harbour (Courtenay Bay); while the northern most section (Area A) is less than 200 m from the shoreline of Kennebecasis Bay (Drury Cove). Both Courtenay Bay and Drury Cove are part of the Saint John River system, the largest watershed that flows into the Atlantic Ocean between the St. Lawrence and the Susquehanna (Blair 2004). The Saint John River was utilized extensively as an avenue of travel and a source of subsistence in prehistoric times (Ibid.). The river, its tributaries, and the adjacent lands were the traditional territory of the Wolastoqiyik (Maliseet) people (Ibid). The Project impact area is situated at an ecological "crossroads" between the rich waters of the Bay of Fundy and the Saint John River.

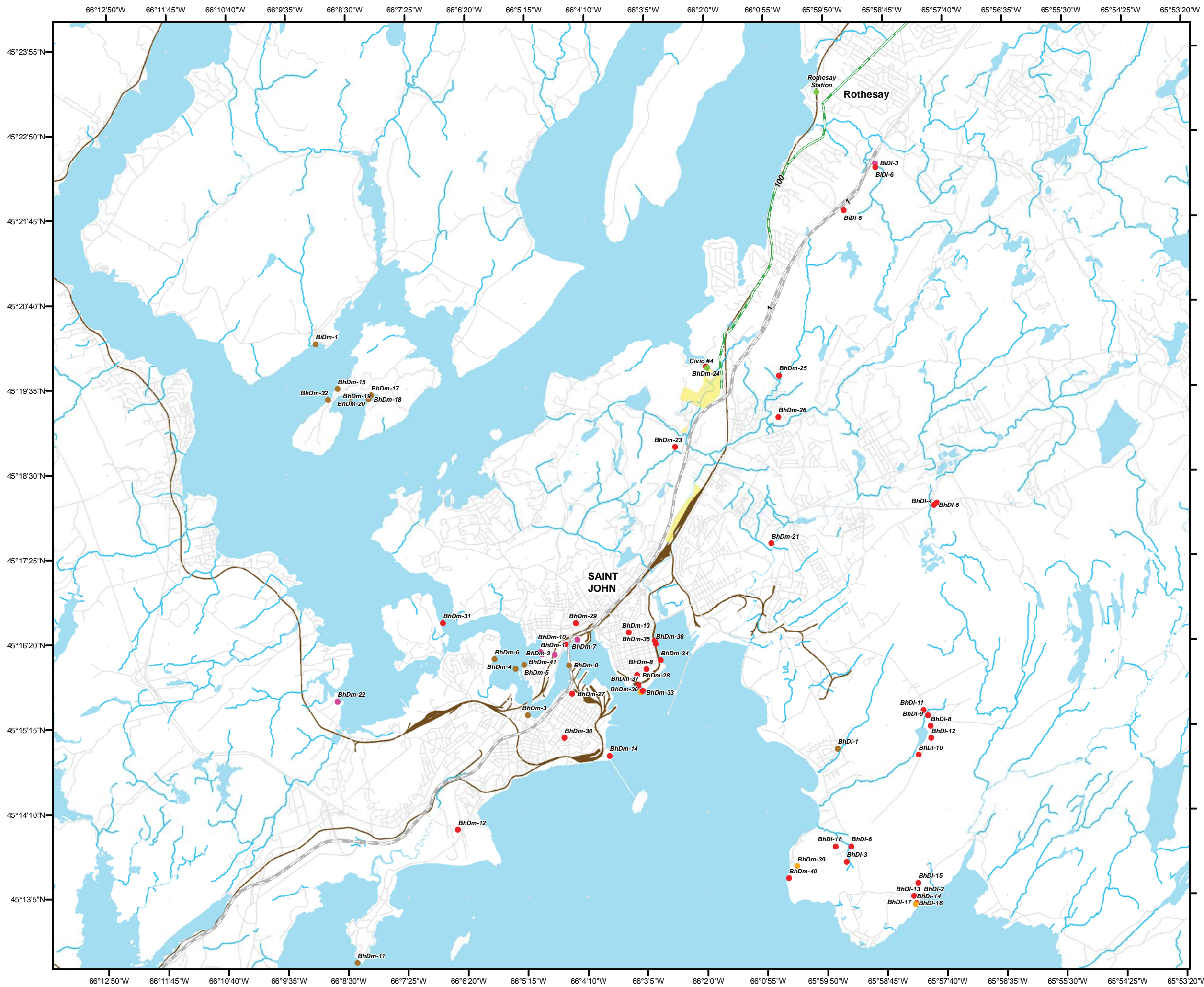
Documentary sources attest to the present-day Saint John area as being a locus for Indigenous Peoples (Native) activity. Early French explorers describe a settlement, located on Navy Island (by the Saint John "Toll" Bridge) and the adjacent mainland, called "*Ouigoudi*" (New Brunswick Historical Society 1984, Ganong 1899). This site was reportedly home of the foremost Wolastoqiyik chief and strategically positioned to take advantage of water traffic coming from the coast or interior (Ibid). In addition, two First Nations portages were located in the vicinity of the City of Saint John, one from Mill Cove on the Harbour to Marsh Creek (the route of the railway line) and the other from Marble Cove to "nearly opposite Navy Island" (Ganong 1899:240, Squires 1941). Ganong (1899) makes reference to another portage which directly intersects the Project study area. He writes: "On Wilkinson's map Drury Cove on the Kennebecasis is marked "Portage," which no doubt marks a much-used portage to the Marsh Creek, and a route thence to Courtenay Bay" (Ganong 1899:240). There is currently no reported physical evidence of these

portages, which have likely "...been obliterated by settlement or by roads [or railway lines] which follow them" (Ganong 1899:237).

To date, no prehistoric archaeological sites have been identified within the Project study area. However, there are 61 archaeological sites registered within 10 km of the Project area. Of these 61 sites, 15 are exclusively Native sites, 6 are multi-component sites (Native and Historic), 37 are exclusively Historic sites, and 3 are Indeterminate¹ (Figure 3.1). Thus, 21 registered sites have been identified in this area to have Native components. As indicated on Figure 3.1, these archaeological sites are clustered on shorelines of the Saint John River and within the Saint John Harbour. Seven of these sites are located west of the Project impact area, across the Kennebecasis Bay (BhDm-15, BhDm-17, BhDm-18, BhDm-19, BhDm-20, BhDm-32, and BiDm-1). These sites were identified based on the shoreline recovery of single lithic artifacts (usually a flake, but a biface was found at site BhDm-15). While there is one Native site located six km north of the Project area (BiDI-3), by a tributary of the Kennebecasis Bay, the rest of the registered archaeological sites with Native components are located south of the Project area near the mouth of the Saint John River and near the Saint John Harbour (Figure 3.1). Seven registered prehistoric sites could broadly be considered to be located on shorelines within the Saint John Harbour, outside the Reversing Falls (BhDm-2, BhDm-3, BhDm-7, BhDm-9, BhDm-11, BhDI-1, and BhDI-2). Within the mouth of the Saint John River, upriver of the Reversing Falls, there are presently six registered archaeological sites with identified Native components (BhDm-1, BhDm-4, BhDm-5, BhDm-6, BhDm-22, and BhDm-41). The land, and particularly the shorelines, within the present-day City of Saint John have been impacted by several hundred years of European settlement. As a result of these historic activities, the identified Native archaeological sites have all experienced a degree of disturbance, with some having been completely destroyed. In particular, a lone flake was the only artifact recovered from the Navy Island site (BhDm-9); the rest of the site was presumably destroyed by the construction of the Harbour Bridge. In addition, the Island site (BhDm-4) was deemed by Burley (1976) to be "not worthy of testing", as a result of historic disturbance, and only two flakes were recovered from the Lower Falls site (BhDm-3). The designations of both Dennison's Point (BhDm-6) and the Prospect Point (BhDm-5) sites were based solely on the reports of an amateur collector (Ibid).

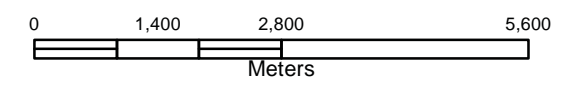
There are three sites in the Saint John area that have contributed significantly to the archaeological record of the area (BhDm-1, BhDm-2, and BhDm-7). Both the Marble Cove (BhDm-1) and Bentley Street (BhDm-2) sites lie on a recorded Native portage, which bypassed the Reversing Falls (Squires 1941). The artifact assemblage at Marble Cove (BhDm-1) featured a mixture of Native (some Archaic) and European artifacts. The Portland Point site (BhDm-7) is considered to be the most extensive and significant archaeological site in this area. Four interpreted components of this site represent Native use over an extended period. The first is a Late Archaic period red ochre cemetery dating to approximately 4,000 YBP, the second is a "camp site" with artifacts characteristic of the Susquehanna tradition within the Terminal Archaic Period (4,000-3,200 YBP), the third is a Late Woodland Period occupation dating to just before European

¹ An Indeterminate Site may be a reported site or physical feature that may not have any supporting evidence to identify it as either Native, Historic, or both.



- ### Legend
- Registered Historic Site
 - Historic Building
 - Registered Indeterminate Site
 - Registered Multi-Component Site
 - Registered Native Site

- Site Boundary(s)
- SNB Waterbody(s)
- Watercourse(s)
- Route 1
- Route 100
- Secondary Road(s)
- Railroad(s)



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CLIENT:
Horizon Management Ltd.



PROJECT:
**The Crossing
Ashburn Road Development Project**

TITLE:
**Documented Archaeological
Sites in Project Area**

DATUM:	DWN BY:	DATE:
NAD 83 CSRS	RE	3/23/2018
PROJECTION:	CHK'D BY:	SCALE:
NB Sterographic	DD	1:85,737
PROJECT NO:	REV NO:	FIGURE NO:
TE171010	A	3.1

Path: H:\PROJECTS\TE171010_Horizon_Ashburn_Rd_SaintJohn_ARCH\MXD\20180321_TE171010_Figures1_ArchSites.mxd User: rene.essiembre Date: 3/23/2018

contact in 1604, and the fourth represents a post-contact (Protohistoric) Native burial which, like Marble Cove, included some European trade goods (Harper 1956). The Marble Cove (BhDm-1) and Portland Point (BhDm-7) sites documented multi-component assemblages of both Native and European artifacts may possibly be a result of the Historic European fur trade (Burley 1976). In addition to the well documented archaeological sites BhDm-1, BhDm-2, and BhDm-7, there are three more registered archaeological sites within a 10 km radius of the Project area, which have both Pre-historic and Historic components (BiDI-3, BhDm-22, and BhDm41). The archaeological record in the City of Saint John shows an interesting transition between First Nations and European occupation.

Both archaeological potential modeling along with the archaeological record provide a considerable amount of data that corroborates Native occupation and land use near the Saint John Harbour and near the Project area. However, there are no recorded Native archaeological sites located within either of Project Area A or Area B.

3.1.1.2 Potential Historic Heritage Resources

The region was first officially visited by French explorers Sieur de Monts and Samuel de Champlain in 1604. Within decades, French missionaries and Acadian immigrants moved into the area. In 1631-2 Charles de Saint-Étienne, Sieur de la Tour, built a fortification atop Portland Point. In 1635 the French Crown granted the mouth of the Saint John, including the Project area, as a Seigniorship to la Tour (Ganong 1899). In 1672, after the destruction of Fort La Tour by the English, the mouth of the Saint John River was divided between two Seigniorships: the west to Martin D'Arpentigny, Sieur de Martignon, and the east to Pierre de Joibert, Sieur de Marson et de Soulanges. The harbour was granted as a Seigniorship to Sieur de Joibert (Ibid). However, the three were primarily occupied with the fur trade and did not extensively develop the area (Dictionary of Canadian Biography Online 2017).

The Acadians were expelled from the area by the English in 1755, and in the 1760s permanent English settlement began in the area with an influx of settlers from New England, the “New England Planters”. Three of these men (William Hazen, James White, and James Simonds) rose to prominence in the region. After the expulsion of the French, they relocated from the Boston-Newburyport area and established a trading post on the east side of the Saint John (Fort La Tour Development Authority et al. 1992). Two foundation features from the trading post were uncovered during archaeological investigations in the 1950s along with historic ceramic, metal, and lithic artifacts (Harper 1956). It was between the years 1765 and 1784, when New Brunswick was still considered part of Nova Scotia, that the land comprising the Project study area was granted by the English Crown to William Hazen, James White, James Simonds, and Richard Simonds. These were very extensive land grants, which totaled 15,000 acres (PANB 2017a).

After the end of the American Revolutionary War, thousands of United Empire Loyalists (Loyalists) flooded into New Brunswick (New Brunswick Historical Society 1984), establishing themselves on the east side of the harbour (Parr Town) and on the west side (Carleton) (Hamilton 1996). In 1785 this city was renamed Saint John. The City of Saint John served as a staging ground for their migration into the province. Many opted to settle in the region, and have defined its character

ever since. Immigration in the nineteenth century by other European groups has also contributed greatly to the heritage of this region, but has not been well attested to archaeologically (Blair pers. comm. 2008). In addition to being a gateway into the New World for European settlers, the Saint John Harbour was an important seaport for trade. As a result, from as early as the 17th century and into the 20th century, the military defence of the harbour has been a continuous concern (Facey-Crowther 2006).

As previously stated, the first defence structure built was Fort La Tour in 1632 on Portland Point. Prior to 1783, a succession of frontier forts were constructed opposite Portland Point (1648 to 1758) and Fort Howe was constructed (1778) inland from the site of Fort La Tour. From 1632 until the mid-20th century, a recorded 17 military installations have been built in the Saint John harbour. This “Saint John Harbour Defensive Network”, which was designated as a provincial Historic Place in 2000, “collectively ring Saint John River Harbour” (NB Register of Historic Places 2017), with many of the individual installations being registered National Historic Sites, and a few registered as archaeological sites (BhDm-14 (Fort Dufferin), BhDm-27 (Forts Charnisay, Martignon, St. Jean, Menagouche, Frederick), BhDm-29 (Fort Howe), and BhDm-30 (Martello Tower)).²

There is a total of 37 registered archaeological sites within a radius of 10 km of the Project area, which have exclusively Historic components. As presented in Figure 3.1, these registered Historic sites are located around the Saint John Harbour, the mouth of the Saint John River, and along historic land travel routes and settlement areas, including the present-day City of Saint John. As previously stated, some of these sites are related to the military history of the area, however, the majority of these are remnants of historic occupation, which includes the Old Loyalist Burial Ground (BhDm-13) in downtown Saint John. There are 5 registered Historic archaeological sites within 2.5 km of the Project area (BhDm-21, BhDm-23, BhDm-24, BhDm-25, and BhDm-26). All that is reported on site BhDm-21 is the collection of several 19th-20th century artifacts. Site BhDm-23 was identified through the identification of foundation and a well feature (AMEC 2010), likely dating back to the early 19th century. Sites BhDm-24, 25, and 26 were all surficial historic artifact scatters, dating to the late 18th to early 19th centuries (Ibid.). While there are no historic sites identified within either Project Area A or Project Area B, site BhDm-24 (circa 1870) is just over 100 m northwest of the northwest corner of Project Area A. While close, the proximity of this Historic site to the Project area does not impact the Project.

² Included in the 17 installations are: Fort La Tour (1631), Fort D’Aulnay (1648, in succession referred to as Fort Villebon 1698, Fort Boishebert 1750 and Fort Frederick 1758), Fort Howe (1778), Lower Cove Battery (1793), Prince Edward Battery (1793), Grave Yard Battery (1793), Mortar Battery (1793), Dorchester Blockhouse (1793), Partridge Island Battery (1800), Carleton Martello Tower (1812), Drummond Blockhouse (1812), Johnson Blockhouse (1813), Southeast Battery (1813), Red Head Battery (1864), Negro Point/Fort Dufferin (1864), Courtenay Bay Breakwater Battery (1939) and Fort Mispec (1940) (Facey-Crowther 2006).

There are numerous significant historic events that took place in Saint John, which pertain to regional history. However, one notable international historical event occurred at Marsh Creek in 1851; this was the building of the sailing ship, the Marco Polo. This uniquely designed three-masted ship was built by James Smith and was considered to be “the fastest ship in the world” and was named the Queen of the Seas in 1852 (GNB 2017). James Smith’s Marco Polo revolutionized the design and construction of tall ships and put Canada, and particularly Saint John, at the forefront of ship building at that time (Marco Polo II 2017).

There are no documented nationally or provincially designated historic sites in the Project impact area. However, the New Brunswick Register of Historic Places (NBRHP) has 366 entries for the Saint John area (NBRHP 2017). While these “hits” included places such as Fort LaTour, Partridge Island, the Bentley Street Archaeological Site (BhDm-2), and Green Head Fossil Provincial Heritage Place, all the remaining 363 are historic buildings in Saint John proper. None of these registered Historic Places are located within either of the Project areas. The Canadian Registry of Historic Places (CRHP) identifies 579 historic places in the Saint John area, including the Saint John Harbour Defensive Network, Fort Howe National Historic Site of Canada, Fort Charnisay National Historic Site of Canada, Carleton Martello Tower National Historic Site of Canada, Riverview Memorial Park, Partridge Island Quarantine Station National Historic Site of Canada, Fort LaTour National Historic Site of Canada, with the remainder being historic buildings (CRHP 2017). The Canadian Inventory of Historic Buildings (CIHB) mapping identifies 20 historic buildings, outside downtown Saint John, in the areas of Drury Cove, Brookville, Glen Falls, and Coldbrook. This inventory of historic structures, created in the 1970s-1980s, identifies 8 possible structures along Ashburn and Drury Cove Roads, and the remainder along Route 100. In previous field investigations conducted in 2009, only a scatter of historic artifacts was observed, where, in 1970-80 an historic structure stood (site BhDm-24) (AMEC 2010). As previously stated, this site is the closest to the Project area, however its proximity does not affect the Project. Immediately north of the Project area, on Rothesay Road in Brookville area, there are six heritage structures were observed during a visual field survey conducted in 2009 (AMEC 2010). One of these is the Lighthouse of Faith Church (CIHB 25; circa 1870), while the rest are all residential structures. One of the residential structures on the west side of the road (civic # 1107) was reportedly built prior to 1873 (Anonymous pers. comm. 2009). The others identified in this area appear to be from the same era. According to Mr. J. Gauley, Heritage Development Officer with the City of Saint John, the buildings at civic numbers 1107 and 1120 (in this area) have been designated as part of the Torryburn Heritage Conservation Area (Gauley pers. comm. 2009). The closest identified heritage structure, located just outside Project Area A, is a residential building on Stagecoach Drive (Civic #4) at the intersection with Old Drury Cove Road (Figure 3.1). While not identified in heritage structure databases, this building was identified during a 2009 field survey (AMEC 2010). None of the built historic structures identified in the desktop research will be negatively impacted by the proposed Project. Neither historic mapping, dating back to the mid-18th century to the mid-19th century, nor aerial photographs dating back to the 1920s, indicated the presence of historic structures located within either Project Area A or Area B.

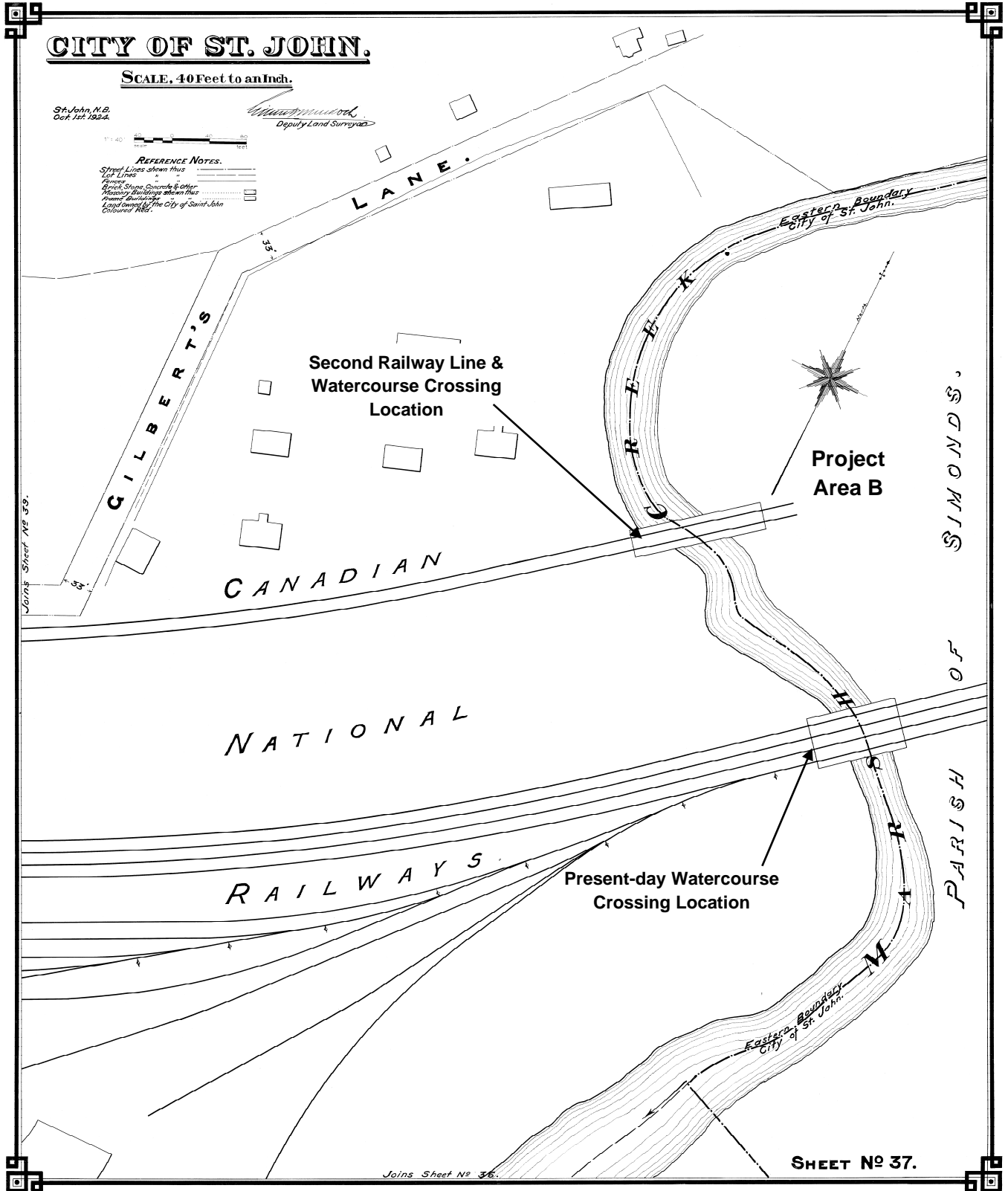
The Project study area has been exploited for its mineral deposits, chiefly limestone, as far back as the early 1700s (Martin 1990). It was reportedly extracted around Lawlor Lake and Drury Cove (Ibid). Brookville Lime is presently in operation approximately 625 m northeast of Project Area A and Debly Resources Inc. operates a quarry south of Area A and north of Area B. Another important historic industrial development in the region was the introduction of the railway to this area. This railway line, and associated mapped spur lines, is a predominant feature in Project Area B. The construction of railway lines was prevalent throughout Canada in the 1850s (PANB 2017b). The railway line originating on the east side of the Saint John River began construction in 1853 and ran north towards Shediac, parallel to the Kennebecasis Bay/River. This line was known as the "Eastern Extension". This private endeavour went bankrupt in 1856, but was taken over by the colonial government of New Brunswick in 1857 under the European and North American Railway Company (E&NA). The portion of the line between Saint John and Hampton opened in 1859 (Canadian Encyclopedia 2017, Wikipedia 2017). The historic Rothesay station, which is still standing and located approximately 7 km north east of the Project area, is a registered National Historic Site of Canada (CRHP 2017). (This renovated Neo-Gothic building was built between 1858 and 1860, as part of the Eastern Extension of the E&NA.) The Intercolonial Railway (ICR) took over the Eastern Extension from E&NA in 1872. In 1919, this section of railway line was incorporated into the Canadian National Railways Company (CN) (Canadian Encyclopedia 2017). The railway yard south of the Project area, as well as spur lines immediately adjacent to Area B, is still owned by CN, but is presently operated by New Brunswick Southern Railway (NBSR) (New Brunswick Southern Railway 2017). Historic mapping and aerial photographs of the Project study area indicate that the railway line and spur lines that are still in operation adjacent to Area B, are outside the Project impact area. However, these historic documents also indicate that there were historic track alignments located within Project Area B, which are no longer in use. Figure 3.2 is a 1924 map of the southern end of Project Area B, where the present-day railway line crosses Marsh Creek. Apparent on this map is an additional line crossing the watercourse further upstream. This line and watercourse crossing were not depicted in earlier 1875 mapping of the Intercolonial Railway line (Figure 3.3), and do not exist today. This will be considered during the field visual survey.

3.2 Field Examination

3.2.1 Project Area A

The field examination of Area A included the proposed impact area (Figure 1.2), excluding the provincially regulated wetland (Figure 1.6). For field survey purposes, Area A was subdivided into four subsections (A1-A4), as indicated in Figure 3.4.

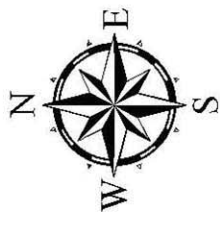
Figure 3.2 1924 Survey Map of South End of Area B



LEGEND:



Project Area B (Approximate)



CLIENT:

Horizon Management Ltd.



PROJECT:

"The Crossing" Ashburn Road Development Project

TITLE:

1875 Roe & Colby Map

DATUM:

N/A

DWN BY:

DJD

DATE:

21/11/2017

PROJECTION:

N/A

CHK'D BY:

DJD

SCALE:

1:14,400

PROJECT NO.:

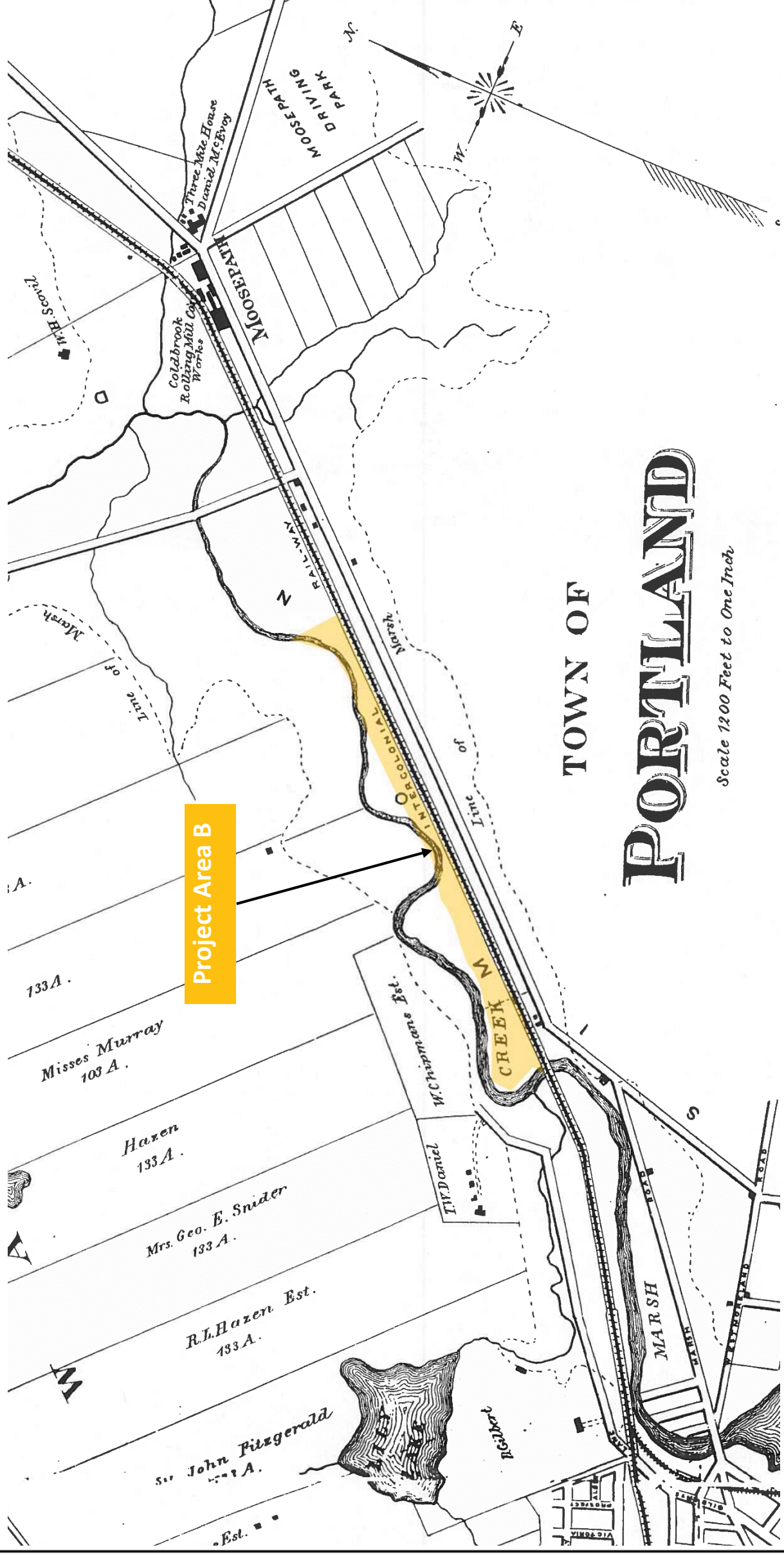
TE171010

REV NO.:

DJD

FIGURE NO.:

FIGURE 3.3



TOWN OF
PORTLAND

Scale 1200 Feet to One Inch

The map shown here has been created with all due and reasonable care and is strictly for use with the Amec Foster Wheeler Project Number identified in the title bar. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Amec Foster Wheeler assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Figure 3.4 Project Area A – Subdivisions for Field Survey Purposes



3.2.1.1 Project Area A1

The field survey began at the north end of Area A1, on the east side of Little Marsh Creek, and covered all of section A1, excluding the south portion, which is a regulated designated wetland area. It was apparent from the start that Area A1 is almost entirely wetland, even though it may not be designated as such. A few areas within Area A1 were observed to be relatively more elevated, with brush and small tree vegetation rather than the ubiquitous wetland grasses. These areas within A1 were located near the roadsides of Route 1, Route 100, and Ashburn Road. This slightly higher elevation appears to be natural at some locations and the result of adjacent road construction at others. The dominant natural feature in the area is the water channel of Little Marsh Creek and the two tributaries, one of which was observed to have been “human-made” and is also evident in the historic 1945 aerial photograph of this area.³

³ This unnaturally straight water channel runs perpendicular to Little Marsh Creek and has a “berm” of excavated material along its north side, which is evidence of excavation.

The dominant cultural features in this area are the powerline, running parallel to Ashburn Road, and the excavated wetland area at the south end, outside the survey area. While no archaeological resources were identified, a number of isolated 20th-21st century cultural features were identified. These observed cultural features are not considered to be heritage resources, but are simply indicators of relatively recent land use in the area. Table 3.1 lists, describes, and provides the locations and photograph numbers for these field identified cultural features, which are also shown on Figure 3.5.

Table 3.1 Area A1 Field Identified Cultural Features

Cultural Feature #	Description	Photo No.	Location	
			Lat.	Long.
CF1	Two logs perpendicular to shoreline	R0023729	45°19'42.87"	-66°01'48.54"
CF2	Possible wooden post	R0023730	45°19'37.38"	-66°01'52.33"
CF3	Excavated "berm" material from watercourse	R0023731	45°19'34.58"	-66°01'50.55"
CF4	"BH3" – Borehole test marker	N/A	45°19'44.58"	-66°01'44.98"
CF5	Golf ball	IMG_0689	45°19'34.22"	-66°01'46.27"
CF6	Roadside ditch	IMG_0690	45°19'32.41"	-66°01'41.43"
CF7	Roadside earthworks – relatively steep slope	IMG_0691	45°19'27.16"	-66°01'46.47"

Datum: NAD83

3.2.1.2 Project Area A2

Area A2 is situated along the west side of Ashburn Road and east of Stagecoach Drive (Figure 3.4). Similar to Area A1, this area is predominantly low-lying marshland. However, a section of the property, in the northwest corner immediately east of Stagecoach Drive, is elevated and rocky with evergreens. As was the case with Area A1, no archaeological resources were identified in Area A2. However, two cultural features were documented in this area. These two features were a tree stump pile and a location with an access road off Ashburn Road and stockpiled pieces of black shale. These observed cultural features are not considered to be heritage resources, but are simply indicators of relatively recent land use in the area. Table 3.2 lists these field identified cultural features, which are also identified on Figure 3.5.

Table 3.2 Area A2 Field Identified Cultural Features

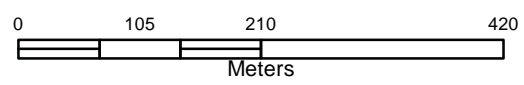
Cultural Feature #	Description	Photo No.	Location	
			Lat.	Long.
CF8	Tree stump/log pile	R0023736	45°19'43.29"	-66°01'58.91"
CF9	Shale extraction location	R0023738	45°19'37.39"	-66°01'59.19"

Datum: NAD83



Legend

- Cultural Feature
- Watercourse Feature
- Site Boundary(s)
- SNB Waterbody(s)
- Watercourse(s)
- Route 1
- Route 100
- Secondary Road(s)
- Railway Line(s)



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CLIENT:
Horizon Management Ltd.



PROJECT:
**The Crossing
Ashburn Road Development Project**

TITLE:
Project Area A Field Survey Results

DATUM:	DWN BY:	DATE:
NAD 83 CSRS	RE	3/27/2018
PROJECTION:	CHK'D BY:	SCALE:
NB Sterographic	DD	1:6,545
PROJECT NO:	REV NO:	FIGURE NO:
TE171010	A	3.5

Path: H:\PROJECTS\TE171010_Horizon_Ashburn_Rd_SanJohn_ARCH\MXD20180321_TE171010_Figure3.5_ArchSite.mxd User: rene.essiembre Date: 3/27/2018

Within Area A2 one watercourse channel was identified at the southern terminus of Stagecoach Drive (45°19'40.82"N, 66° 2'4.30"W), which runs west to east from higher ground down to Little Marsh Creek (Figure 3.5). Most of this watercourse is located along the Project boundary line in Area A2. This field identified, unmapped watercourse appears to be an intermittent first-order watercourse, and is assessed to have low potential for archaeological resources.

3.2.1.3 Project Area A3

Area A3 is located on the west side of Ashburn Road, south of Area A2 (Figure 3.4). The field survey of this section began by walking up the roads on the south and west boundaries of the property (Jones Drive and Hunters Cove Road) and walking north-south transects moving from the west to the east of the section. Area A3 differs significantly from the other sections of Area A, in that it is mostly high ground with a relatively steep slope, with marshland only located near Ashburn Road at the east end. The entire area is similar to the northwest corner of Area A2: elevated and rocky with evergreens. The western portion of this area, which is the high point, is over 30 metres higher in elevation than Ashburn Road. As was the case with both Area A1 and Area A2, no archaeological resources were identified in Area A3. However, a number of cultural features were documented. Table 3.3 lists these field identified cultural features, provides a brief description, their coordinates, and refers to a field photograph. Each of these features is also identified on Figure 3.5.

Table 3.3 Area A3 Field Identified Cultural Features

Cultural Feature #	Description	Photo No.	Location	
			Lat.	Long.
CF10	Hunting blind/tree stand	R0023739	45°19'30.83"	-66°02'21.48"
CF11	Bovine bones	N/A	45°19'28.63"	-66° 2'23.21"
CF12	20 th -21 st Century refuse	IMG_0695	45°19'28.39"	-66° 2'23.75"
CF13	"Test-pit" feature	IMG_0697 IMG_0698	45°19'27.94"	-66° 2'23.92"
CF14	Car seat vista	IMG_0699 IMG_0700	45°19'26.85"	-66° 2'24.48"
CF15	Cut cedar logs	N/A	45°19'25.64"	-66° 2'22.45"
CF16	Hunting blind/tree stand	R0023742	45°19'26.51"	-66° 2'20.15"
CF17	Clearing with apple trees	IMG_0701 IMG_0702	45°19'27.20"	-66° 2'18.70"
CF18	Deer bones	IMG_0703	45°19'25.98"	-66° 2'13.20"
CF19	20 th Century dump site	IMG_0705	45°19'23.32"	-66° 2'12.28"

Datum: NAD83

These observed 20th-21st century cultural features are not considered to be heritage resources, but are simply indicators of relatively recent land use in the area. The cultural features worth noting are: CF13, the "Test-pit" feature; CF17, the Clearing with apple trees; and CF19, the 20th century dump site. The "Test-pit feature" was a square shaped (30x30 cm) disturbance in the surface soils, which appeared to be missing the surface "sod"/root mat. It is unclear why this is here or what purpose it may have served. However, it is relatively recent because of its

association with scattered 20th-21st century refuse materials. The identified clearing with apple trees (CF17) also appeared cleared in the 1945 aerial photograph of the area. While the presence of apple trees can be an indicator of historic habitation, there were no physical indications of there being building structures in this area, in 1945 or at the time of the field survey. This area may have been cleared in historic times, but it does not appear to have been used for habitation. Feature CF19, the "20th century dump site is located just north of Jones Drive, and is a common New Brunswick roadside feature, resulting from common practice of people dumping their refuse at the side of a country road.

A minor first-order watercourse was identified at the bottom of a slope, which formed part of a developed property boundary (45°19'25.30"N, 66° 2'13.80"W). This field identified, unmapped watercourse appears to be an intermittent first-order watercourse, and is assessed to have low potential for archaeological resources.

3.2.1.4 Project Area A4

The field survey of Area A4 began at the south end, at the intersection of Ashburn Road and Foster Thurston Drive (Figure 3.4). Similar to Area A1, this area is predominantly low-lying marshland. The area has been impacted in the recent past as a result of the powerline that runs through it, north to south. As was the case with Area A1, the elevated built-up areas are located at the roadsides, and at the southwest corner, where there is a residential property. The property has a natural boundary along the west side, where the land slopes upward to the west. No archaeological resources were identified in Area A4. However, two cultural features were documented in this area (CF20 and CF21). CF20 was observed to be a 3x3 m pile of broken-up pieces of concrete, clearly dumped there from demolition at another location. The second field identified cultural feature (CF21) is also a dumped pile of 20th-21st century refuse materials, which included pieces of concrete, cinder blocks, red bricks, metal strapping, red chimney flue tile pieces, and wooden pallets. These observed cultural features are not considered to be heritage resources, but are simply indicators that this area has been used in relatively recent times as a dump site. Table 3.4 lists these field identified cultural features, which are also illustrated on Figure 3.5.

Table 3.4 Area A4 Field Identified Cultural Features

Cultural Feature #	Description	Photo No.	Location	
			Lat.	Long.
CF20	Pile of broken concrete pieces	IMG_0706	45°19'2.52"	-66°02'22.44"
CF21	20 th century trash pile - concrete, bricks, etc.	IMG_0707	45°19'3.36"	-66°02'21.57"

Datum: NAD83

3.2.2 Project Area B

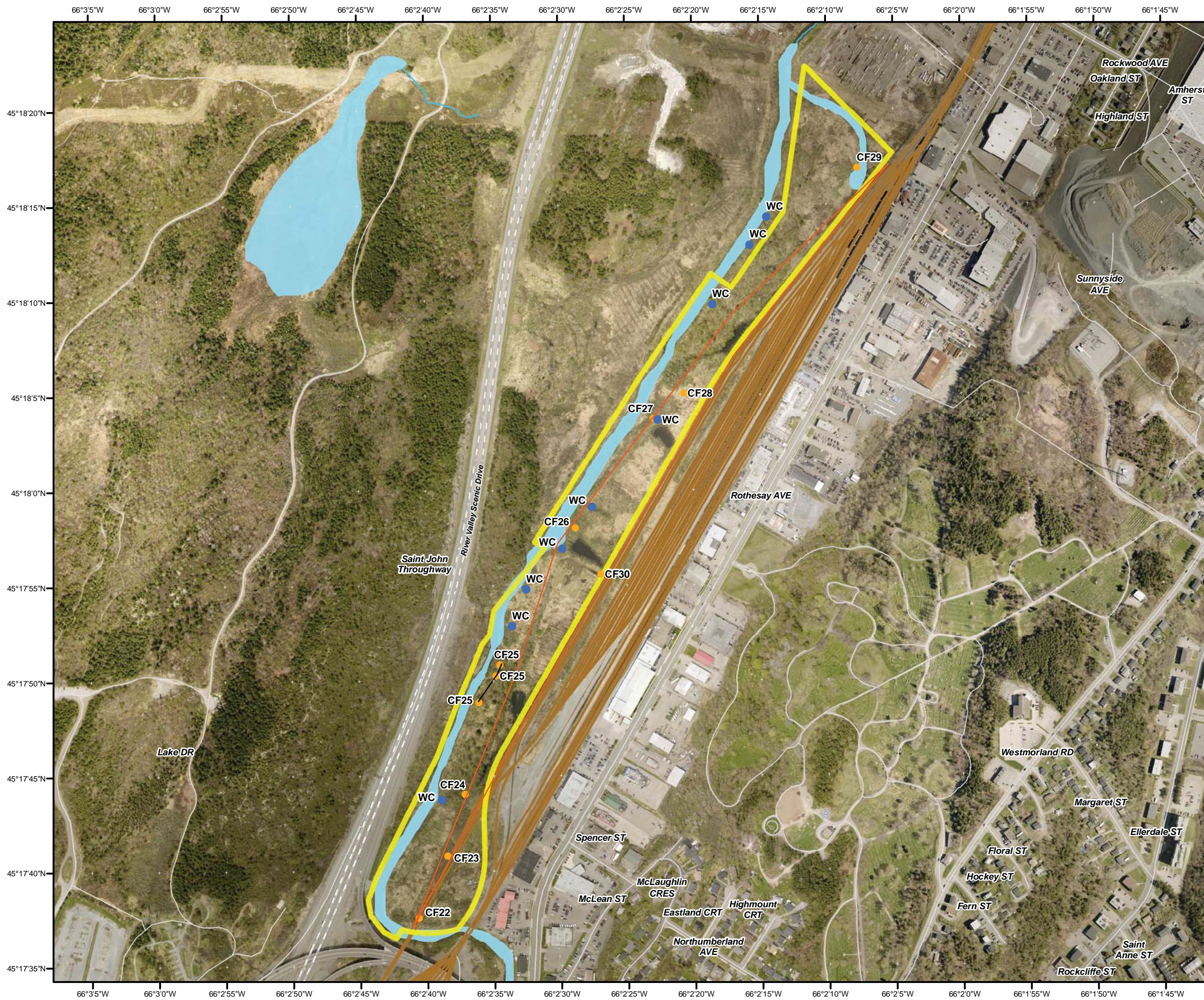
The field examination of Area B included the area depicted in Figure 3.6. The survey began at the south end of the area and proceeded north along the western portion along two transects. Following the completion of the western half of the, a survey was conducted of the eastern portion, from north to south. While there are low-lying marshland areas within Area B, the overall area appears to be relatively well drained grasslands, which drain into Marsh Creek. Marsh Creek runs along the entire west side of this Project area and empties into Courtenay Bay, which is only 2 km to the south. This watercourse, which is approximately 10 m wide, is a principal watercourse in this area. Earthen "berm" features were observed during the survey, located 15-20 m in from the shoreline of the watercourse (CF25). These historic features could potentially be dyke features, the result of past dredging activities, or earthen works associated with the remnants of the historic railway line on the property. Further historical research may provide an answer. Other than the berm features, no archaeological resources were observed along the shoreline of Marsh Creek. However, the shoreline of Marsh Creek has been assessed to have high potential for prehistoric archaeological resources.

Much of the remainder of Area B appears to have been disturbed from past railway use. There is an abandoned railway line (and a spur), which are now overgrown with trees and brush. These lines run north-south through the centre and along the east side of the property. These linear features are evident on the present-day and historic aerial photographs of the area (Figure 3.6). While there were no remnants of the actual steel rails along these features, the ground remains considerably elevated (built-up), relative to the surrounding area. Table 3.5 lists the field identified cultural features, which are also illustrated on Figure 3.6.

Table 3.5 Area B Field Identified Cultural Features

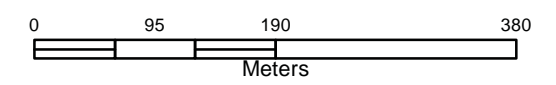
Cultural Feature #	Description	Photo No.	Location	
			Lat.	Long.
CF22	"Dumped" gravel pile (imported material)	R0023745	45°17'37.54"	-66°02'40.63"
CF23	Linear crushed rock	N/A	45°17'40.79"	-66°02'38.49"
CF24	Banking rock – decommissioned railway line	IMG_0708	45°17'44.04"	-66°02'37.16"
CF25	Linear "berm" feature (south end)	R0023748	45°17'48.87"	-66°02'36.09"
	Linear "berm" feature (centre)		45°17'50.27"	-66°02'34.82"
	Linear "berm" feature (north end)		45°17'51.36"	-66°02'34.48"
CF26	Downed wooden "utility" pole #1	IMG_0710 IMG_0711	45°17'58.04"	-66°02'28.85"
CF27	Downed wooden "utility" pole #2	IMG_0712- IMG_0714	45°18'3.77"	-66°02'22.98"
CF28	Modern ground monitoring unit	IMG_0716	45°18'5.10"	-66°02'20.68"
CF29	Wooden bridge remnants	R0023752 IMG_0716- IMG_0718	45°18'16.93"	-66°02'7.70"
CF30	Modern rebar/stake feature	R0023753	45°17'55.60"	-66°02'26.93"

Datum: NAD83



Legend

- Cultural Feature
- Watercourse Feature
- Site Boundary(s)
- SNB Waterbody(s)
- Watercourse(s)
- Route 1
- Route 100
- Secondary Road(s)
- Railway Line(s)
- Historic Railway Line Bed



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CLIENT:
Horizon Management Ltd.



PROJECT:
**The Crossing
Ashburn Road Development Project**

TITLE:
Project Area B Field Survey Results

DATUM:	DWN BY:	DATE:
NAD 83 CSRS	RE	3/27/2018
PROJECTION:	CHK'D BY:	SCALE:
NB Sterographic	DD	1:5,960
PROJECT NO:	REV NO:	FIGURE NO:
TE171010	A	3.6

Path: H:\PROJECTS\TE171010_Horizon_Ashburn_Rd_SanJohn_ARCH\MXD\20180321_TE171010_Figure3.6_ArchSites.mxd User: rene.essiembre Date: 3/27/2018

The majority of the observed cultural features observed during the field survey are associated with these historic railway line remnants: gravel (CF22), crushed rock (CF23), banking rock (CF24), utility poles (CF26 and CF27), and remnants of a wooden bridge (CF29). These features are part of an historic line and railway yard spur. Two recent cultural features (CF 28 and CF30) do not appear to be associated with the historic railway lines, but rather appear to be associated with groundwater monitoring and management in the area.

The field survey identified a number of small "watercourses", all of which run perpendicular to the railway line in the centre of Project Area B (Figure 3.6). The locations of most of these watercourses are human-made and the result of excavated sections of the railway line, which allow the land bound water to drain into Marsh Creek. Those that are not clearly human-made are narrow first-order watercourses, which drain into Marsh Creek. All of the identified intermittent first-order watercourses identified in Area B are assessed to have low potential for archaeological resources.

4.0 SUMMARY AND CONCLUSIONS

4.1 Project Area A

The desktop review indicated that there are no registered archaeological sites located within Project Area A. The closest documented site is historic, located 125 m northwest of the Project area, by the shoreline of Drury Cove. The closest registered prehistoric sites are located over five km to the south, by the Saint John Harbour and the mouth of the St. John River. There are no registered Historic Places identified within Project Area A.

The field examination of Area A identified that, except for the western most portions of the area (west of Ashburn Road) and the construction materials used to elevate Route 1 to the east, the entirety of Area A is marshland. Little Marsh Creek, running through the centre of the property, is a marshland channel with low potential for archaeological resources. The mapped linear tributary running west-east from the bend in Little Marsh Creek is human-made, with the excavated materials deposited to the north of the trench. This trench pre-dates 1945, as it is apparent in a 1945 aerial photograph of the area. While 21 cultural features were identified within the Area A, no archaeological features or artifacts were identified during the visual survey. All of Area A, including the shorelines of Little Marsh Creek, is assessed to have low potential for both historic and prehistoric heritage resources.

4.2 Project Area B

There are no documented archaeological sites located within Project Area B. The closest documented historic site is located approximately 2 km east of Area B, on the shore of Little River. The nearest registered prehistoric sites to Area B are those previously mentioned relative to Area A, by the Saint John Harbour and at the mouth of the St. John River. There are no registered Historic Places identified within Project Area B. There is historic documentation, which indicates that, while the main line of the railway (east of the Project Area B) was established in the mid-1800s, the railway lines identified within the Project area appear to have been constructed later, likely in the early 1900s.

The field examination of Area B identified that, while there are low-lying marshland areas within the area, overall it appears to be relatively well drained grasslands, which drain via partially human-made channels into Marsh Creek. Marsh Creek runs along the entire west side of Area B and empties into Courtenay Bay, which is only 2 km to the south. This 10-m wide watercourse is a principal watercourse in this area and was observed to have a few earthen berm features running parallel to the shoreline. Without further investigations, these shoreline berm features are presently considered to be potential archaeological resources. These historic features could potentially be dyke features, the result of past dredging activities, or features associated with the railway lines on the property. The physical evidence of historic railway lines on this property was overtly apparent during the field survey. Much of Area B appears to have been disturbed from past railway use. In addition to the two, overgrown, elevated, linear earthen/stone features on which the steel lines were once present, fallen down utility poles and bridge remnants were also observed in Area B. With the exception of the shoreline of Marsh Creek, Area B has low potential for archaeological resources.

5.0 RECOMMENDATIONS

5.1 Project Area A

Area A is the proposed development area for the Project. At present, this development will include both excavation and fill activities throughout the area. Therefore, the entire survey area is considered to be the Project impact area. Included in the presently proposed development plan is a realignment of Little Marsh Creek and its human-made tributary. However, regardless of the proposed development plan, the entire Area A has been assessed to have low potential for archaeological resources. Therefore, no further archaeological investigations or mitigation is recommended prior to, or during, the development of Area A.

5.2 Project Area B

At present, Area B is not slated for any development or ground-disturbing activities. Therefore, the impact area is not presently known. Consequently, the entire study area will be considered as a potential impact area. Based on the results from the preliminary investigations, the one Elevated Potential Area (EPA) for archaeological resources for Area B is the shoreline of Marsh Creek. In accordance with the provincial *Guidelines* (ASNB 2012), an 80 m archaeological buffer along the shoreline of this watercourse should be imposed. This would mean that any ground disturbing activities conducted within the 80 m buffer would require additional archaeological field activities, which might include field-testing and/or construction monitoring. As property impacts are not yet known, no additional archaeological investigations for Area B are presently recommended. However, any future development of this property should adhere to the 80 m archaeological buffer of Marsh Creek, to avoid future archaeological investigations. Should future development of this area include ground disturbing activities within this buffer, additional archaeological work would be required.

6.0 REFERENCES

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6.1 Personal Communications

Anonymous. 2009. Land/House Owner of Civic #1107, Rothesay Road., Saint John, NB.

Blair, S. 2008. Associate Professor, Department of Anthropology, University of New Brunswick.
Fredericton, NB.

Gauley, J. 2009. Heritage Development Officer, City of Saint John, Saint John, NB.



APPENDIX A
Selected Photographs



Photograph 1: Area A1 - Wetland Channel to Little Marsh Creek (facing W) (R0023734)



Photograph 2: Area A1 - Excavated Ditch with Elevated North Bank (Human-made Trench) (DJD) (facing SE) (R0023731)



Photograph 3: Area A3 - Tree Stand - Hunting Blind (facing N) (R0023739)



Photograph 4: Area A3 - Square 30x30 cm Depression in Cleared Area (Test-pit?) (facing S) (IMG_0697)



Photograph 5: Area A3 - Vista View Location - car seat (facing N) (IMG_0700)



Photograph 6: Area A3 - Vista View Location – From Car Seat (facing S) (IMG_0699)



Photograph 7: Area A3 - Roadside 20th Century Refuse (facing W) (IMG_0705)



Photograph 8: Area B - Little Meandering Tributary (facing E) (R0023750)



Photograph 9: Area B - Powerline Pole at Side of Historic Railway Line (facing N) (IMG_0709)



Photograph 10: Area B - Wooden Watercourse Crossing Remnants (facing SSW) (R0023752)



APPENDIX B
Photographs & Photograph Catalogue (USB Flash Drive)

ARCHAEOLOGICAL PHOTOGRAPH CATALOGUE							
PROJECT NAME: "The Crossing" Ashburn Road Development Project							
CLIENT: Horizon Management Ltd.							
Archaeological Field Research Permit No.: 2017NB53							
Field Crew: Darcy J. Dignam (DJD), William (Jesse) Webb (WJW)							
Camera	Frame #	Daily Field Notes ID	Date (dd/mm/yy)	Location	Photograph Description	Orientation (Facing)	Photographer Initials
iPhone	IMG_0685	1	June 14, 2017	Area A (A1)	Survey area habitat - marshland	SW	DJD
iPhone	IMG_0686	2	June 14, 2017	Area A (A1)	Survey area habitat - marshland	W	DJD
iPhone	IMG_0687	3	June 14, 2017	Area A (A1)	Watercourse tributary 1	W	DJD
iPhone	IMG_0688	4	June 14, 2017	Area A (A1)	"U-shaped treed area" (slightly higher elevation and less marshy)	SW	DJD
iPhone	IMG_0689	5	June 14, 2017	Area A (A1)	golf ball in treed area ("golfball1")	E	DJD
iPhone	IMG_0690	6	June 14, 2017	Area A (A1)	View from road of man-made wc at E end of survey area	NW	DJD
iPhone	IMG_0691	7	June 14, 2017	Area A (A1)	Terrain change - slope to edge of Route 1	SE	DJD
iPhone	IMG_0692	8	June 14, 2017	Area A (A1)	Survey area viewed from Route 1 ("view from rte 1")	NW	DJD
iPhone	IMG_0693	9	June 14, 2017	Area A (A2)	Identified wc (drainage behind developed roadside properties)	SW	DJD
iPhone	IMG_0694	1	June 15, 2017	Area A (A3)	Survey area "Habitat 1" - undulating treed area	NE	DJD
iPhone	IMG_0695	2	June 15, 2017	Area A (A3)	Clearing - high ground w/ exposed weathered rock	SW	DJD
iPhone	IMG_0696	3	June 15, 2017	Area A (A3)	Clearing - high ground w/ exposed weathered rock	SW	DJD
iPhone	IMG_0697	4	June 15, 2017	Area A (A3)	Square 30x30 cm depression in cleared area (test-pit?)	S	DJD
iPhone	IMG_0698	5	June 15, 2017	Area A (A3)	Square 30x30 cm depression in cleared area (test-pit?)	S	DJD
iPhone	IMG_0699	6	June 15, 2017	Area A (A3)	Vista view location (from car seat)	S	DJD
iPhone	IMG_0700	7	June 15, 2017	Area A (A3)	Vista view location - car seat	N	DJD
iPhone	IMG_0701	8	June 15, 2017	Area A (A3)	"Clearing 1" w/ apple trees and nearby hunting blind	SW	DJD
iPhone	IMG_0702	9	June 15, 2017	Area A (A3)	"Clearing 1" w/ apple trees and nearby hunting blind	SW	DJD
iPhone	IMG_0703	10	June 15, 2017	Area A (A3)	Single deer vertebra on surface	N	DJD
iPhone	IMG_0704	11	June 15, 2017	Area A (A3)	Small wc at bottom of slope by road ("wc2")	SW	DJD
iPhone	IMG_0705	12	June 15, 2017	Area A (A3)	Roadside 20th Century refuse ("dumpsite")	W	DJD
iPhone	IMG_0706	13	June 15, 2017	Area A (A3)	Piled broken concrete pieces	E	DJD
iPhone	IMG_0707	14	June 15, 2017	Area A (A3)	Piled concrete pieces, wood pallets, metal strapping, bricks, etc.	NE	DJD
iPhone	IMG_0708	15	June 15, 2017	Area B	Bank rock construction - edge of historic railway line	NE	DJD
iPhone	IMG_0709	16	June 15, 2017	Area B	Powerline pole at side of historic railway line	N	DJD
iPhone	IMG_0710	17	June 15, 2017	Area B	Powerline pole at side of historic railway line	N	DJD
iPhone	IMG_0711	18	June 15, 2017	Area B	"WC3" running perpendicular to railway line (excavated drainage)	NE	DJD
iPhone	IMG_0712	19	June 15, 2017	Area B	Second powerline pole at side of historic railway line ("tele-pole2")	N	DJD
iPhone	IMG_0713	20	June 15, 2017	Area B	Second powerline pole at side of historic railway line ("tele-pole2")	N	DJD
iPhone	IMG_0714	21	June 15, 2017	Area B	Second powerline pole at side of historic railway line ("tele-pole2")	N	DJD
iPhone	IMG_0715	22	June 15, 2017	Area B	"WC4" running perpendicular to railway line (excavated drainage)	NE	DJD
iPhone	IMG_0716	23	June 15, 2017	Area B	Recent plastic "monitoring unit" location identification marker	S	DJD
iPhone	IMG_0717	24	June 15, 2017	Area B	Remnants of wooden wc crossing at NE corner of survey area ("bridge")	SE	DJD

AshburnRd_Photo_Cat.xlsx

Camera	Frame #	Notes ID	(dd/mm/yy)	Location	Photograph Description	(Facing)	Initials
iPhone	IMG_0718	25	June 15, 2017	Area B	Remnants of wooden wc crossing at NE corner of survey area ("bridge")	SE	DJD
GPS#5	R0023727	3727	June 14, 2017	Area A (A1)	Small tributary of Little Marsh Creek	SSE	WJW
GPS#5	R0023728	3728	June 14, 2017	Area A (A1)	Little Marsh Creek - wide and open	WSW	WJW
GPS#5	R0023729	3729	June 14, 2017	Area A (A1)	Two pieces of wood perpendicular to bank	SE	WJW
GPS#5	R0023730	3730	June 14, 2017	Area A (A1)	Wooden post (?) on west bank	WSW	WJW
GPS#5	R0023731	3731	June 14, 2017	Area A (A1)	Excavated ditch with elevated north bank (human-made trench) (DJD)	SE	WJW
GPS#5	R0023732	3732	June 14, 2017	Area A (A1)	Beaver dam/hutch on Little Marsh Creek	NE	WJW
GPS#5	R0023733	3733	June 14, 2017	Area A (A1)	Little Marsh Creek south of beaver dam/hutch	W	WJW
GPS#5	R0023734	3734	June 14, 2017	Area A (A1)	Wetland channel to Little Marsh Creek	W	WJW
GPS#5	R0023735	3735	June 14, 2017	Area A (A1)	Wetland draing to Little Marsh Creek	SW	WJW
GPS#5	R0023736	3736	June 14, 2017	Area A (A2)	Log pile	NNE	WJW
GPS#5	R0023737	3737			Deleted Image		
GPS#5	R0023738	3738	June 14, 2017	Area A (A2)	Access road delimited with pile of shale	WSW	WJW
GPS#5	R0023739	3739	June 15, 2017	Area A (A3)	Tree stand - hunting blind	N	WJW
GPS#5	R0023740	3740	June 15, 2017	Area A (A3)	Vegetation on west face of ridge	NE	WJW
GPS#5	R0023741	3741	June 15, 2017	Area A (A3)	Viewshed of the valley	S	WJW
GPS#5	R0023742	3742	June 15, 2017	Area A (A3)	Another tree stand - hunting blind	E	WJW
GPS#5	R0023743	3743	June 15, 2017	Area A (A3)	Base of slope with bolders	WNW	WJW
GPS#5	R0023744	3744	June 15, 2017	Area B	Initial Area shot of Area B	NNW	WJW
GPS#5	R0023745	3745	June 15, 2017	Area B	"Dumped gravel" pile	NE	WJW
GPS#5	R0023746	3746	June 15, 2017	Area B	Small watercourse tributary	WNW	WJW
GPS#5	R0023747	3747	June 15, 2017	Area B	Terrace edge	NNE	WJW
GPS#5	R0023748	3748	June 15, 2017	Area B	Possible dyke feature of remnants of historic railway line	NE	WJW
GPS#5	R0023749	3749	June 15, 2017	Area B	Straight drainage ditch at side of possible historic railway line	SSE	WJW
GPS#5	R0023750	3750	June 15, 2017	Area B	Little meandering tributary	E	WJW
GPS#5	R0023751	3751	June 15, 2017	Area B	Small dry runoff channel	WNW	WJW
GPS#5	R0023752	3752	June 15, 2017	Area B	Wooden wc crossing remnants ("bridge")	SSW	WJW
GPS#5	R0023753	3753	June 15, 2017	Area B	Rebar "feature" - recent land use element (DJD)	NE	WJW









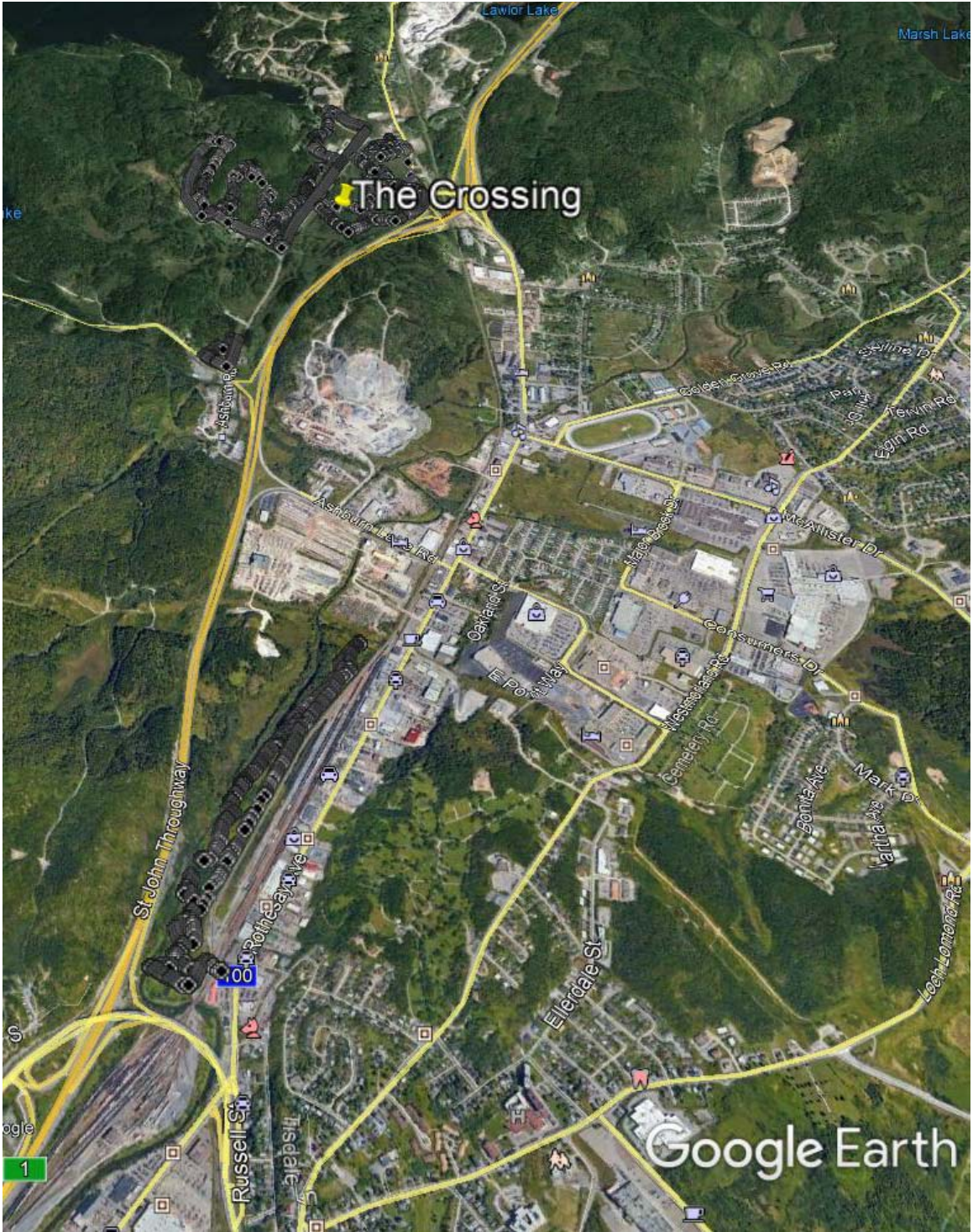








APPENDIX C
Field Survey GPS Track Log (USB Flash Drive)



The Crossing

Google Earth

1



APPENDIX D
Field Notes

Archaeological Daily Field Record

Project: Ashburn Rd. Dev. Project

Name: DJ DIGIANAM

Location(s): TE171010 AREA A

Permit #: 2017NB53

Date: June 14 2017

	Index
- Beginning with Area A, north end. (Area A1)	
- begin walking south on east side of Little Marsh creek, J. Webb along shoreline, DJ Dignam zig-zag from WC shoreline to east area of Area A2 ... to cover survey area.	
- ident. "BH3" location in field - pt taken on TRIMBLE approx. 7369965.88N 2536911.75mE	"BH3"
- notice WC trib of "Little Marsh Creek" very evident in field + Aerial photo - Note for Project	WC TRIB
- description - North area of A-1 is marshy grasses with shrubs + trees by Little Marsh Creek	
- note: JWS w/ GPS camera, JWS with iPhone camera + Trimble and Garmin	Photos
- Habitat Photos: DJD#1 - A1 grassland-marsh area (FSW)	DJD1
DJD#2 - brush in A1 north by WC (FW)	DJD2
- WC Trib ("1") ident. as on aerial, - pt on Trimble.	
DJD#3 - w/trib1 FW - 4m wide, not crossable on foot	w/trib1 Pnt
- ident "beaver" sign - cut vs. wood!	DJD3 photo
- evidence of "clearing" activities along Downer line ROW	
- ident "u-shaped Tread Area" as on Aerial	
- area a little higher elevation so diff veg.	
- pt on Trimble -> DJD4 photo - (FSW)	"u-shaped Tread Area" Photo# DJD4
- evidence of historic logging - stumps and skidder tracks ... on east side of "u-shaped tread area"	
- this area is still "marsh lands"	
- As per JW notes - "straight WC" running E-W from Little Marsh river" at "bump area" is clearly excavated man-made trench w/ mound on each side	
- trench as 5m wide at West end + mound/barr as 5m wide / 1.5m high	
- all overgrown - at least 10 years old (10x25)	
- "golf ball 1" - photo # DJD5 (FE)	"golfball 1" DJD5
- Trimble pt + photo #6 ("ditch at road") (FW)	DJD#6
- still wide ditch + "barr" on north side ... all the way	
- slope highest near Rte 1 (Pt on Trimble) "slope note" i.e. change in terrain (DJD#7 FSE)	Rte 1

Archaeological Daily Field Record

Project: Ashburn Rd Dev Project

Name: DJ Dignam

Location(s): AREA A.

Permit #: 2017NB53.

Date: June 15 2017

	Index
Begin where left off yesterday... at AREA A3	
- started at "top" (east) of section and worked (zig-zag) (N-S) towards west extent of area.	"Habit 1"
- This is high ground... not marsh lands.	
- All high ground at beginning	
- Trumble Pt for "Habit 1" and DJD photo #1 (today)	Photo 1
- bovine bones (cut in collar, joint bones (ankle)) (ENE)	
Garmin Pt - N 45.32467, W 066.03978. (5.6m)	bovine bones
(Trumble did not get enough satellites...)	
- "clearing firepit"?? Trumble print and photos	
DJD #2+3 (FSW) NOT fire burn on rocks natural	"clearing firepit"??
- lots of plastics in area, an "mound" is elevated	DJD
know, rocks look grass burn, but not definitive.	2+3.
- rusted tin can too.	
- ident on another high area what looks like a T-p	
~ 30x30 square depression in soil	
- same vintage as grass firepit	
- Trumble pt "test pit"?? and DJD #4+5 photos	DJD
(FS)	4+5
- "carport" view, with beer bottle pr + scallop shell - Great view	
- Trumble pt + photos DJD 6+7	DJD
#6 - view from seat. (FS)	6+7.
#7 - carport (FN)	
- "clearing 1" w/ apple trees, deer poo	
(see JW hunting blind deer in nearby)	
- Trumble pt and photos #8+9 (FSW)	DJD
- no cultural features in clearing, other than apple trees	8+9
- Deer vertebra ident at bottom of slope at edge of marsh on survey	
- Trumble pt taken - DJD #10 photo "deer bone" (FN)	DJD
- Small "WC?" ident - DJD #11 (FSW)	#11
- WC seems to come from Rd.	"WC2"
- gravel bed < 1m wide, < 5cm deep. fast + flowing.	
- Not High Potential	
- no cult. mat. ident.	

Archaeological Daily Field Record

Project: Ashburn Rd Dev. Project
TE 171010

Name: D J Dignam

Location(s): AREA A.

Permit #: 2017 NB53

Date: June 15 / 2017

	Index
- still AREA A3	
"dump site" (Trumble pt) ident at bottom of slope. extends at least 20m along slope edge (E-W). (Edge of Road !!)	"dump site"
- tires, steel barrels, plastics, coal pcs, glass jars. all 20th c. not collected.	photo #12
- DSD #12 (FINE)	
- began small AREA A4. - started @ south end of Road intersection.	AREA A4
- "concrete pile" pcs (facin E) photo #13 (not important, just a cultural feature.)	photo 13
- Trumble pt taken @ 3x3 m in size.	
- Also - "trash pile" a little later under power lines. (Trumble pt taken.)	
- concrete blocks, bricks, metal strapping, chimney red inner tiles, wood pallets, etc. photo #14 (FINE)	photo 14
- Done AREA A4 and All of AREA A.	
<u>AREA B</u>	AREA B
- called Chris O'Hanley from NB Southern re: crossed Railway line to get to property.	
- walked across - began @ South end of property, and walked North along w. (west side of property)	
- ident evidence of property line by RLW lines (not recorded)	
- higher ground than Property A & AREA A wetlands: tall grasses, not wet, trees also (see aerial)	
- not initially clear what evident "tree line" is (on aerial) in field. higher ground. line. over older RLW line Route?	
- "old" gas can, golf ball, other 20th relict ident. See Hered	
- slow line of crushed rock @ Trumble "crushed rock" pt.	
- "Bank rock" construction on Trumble - to the west is DSD #15 (FINE) land "natural" land and to east is higher (+2m) ground... with dirt + rocks @ interface	"Bank" rock photo #15
- Bank on east side to - walking on high ground (low feature 4yrs must be previous railroad line !! Trumble line feature)	

Archaeological Daily Field Record

Page 1 of 3

Project: Ashburn Rd. Dev. Project

Name: W J Webb

Location(s): TE171010 AREA A

Permit #: 2017 NB 53

Date: June 14/2017

	Index
<p>- Proceeding southward along east bank of Little Marsh Creek. Area is relatively wet marsh with tall grasses and alder shrubs. Banks of creek feature abundant willows (?) Creek itself appears shallow, perhaps maximum 50 cm depth, although difficult to tell w/ all the algae-choked vegetation. Creek is perhaps 5-10m wide, depending on how it meanders. Small fish observed within.</p> <p>• Photographed small tributary which runs N-S east of Little Marsh Crk. Perhaps 1.5m wide, 30 cm depth.</p> <p>Photo # _____ GPS _____</p> <p>• Two pcs. of wood jutting fr. east bank @ N 45. 22852° ± 5.4° One pc. catted cedar ca. 20 cm diameter W066. 03014° ± 7.4° Other smaller, possibly beaver or beaver modified. Not likely of cultural significance.</p> <p>• Proceeding along the survey, several aspects of the area are apparent. First, there are many more tributaries in Area A than the aerial mapping may lead one to believe. A particularly large one, several metres across and impassable by foot except near to the southeastern road, will be evident by a large southeastern deviation in the track log (noted by DJD). There are several others similar to the one described and photographed earlier in the survey. Second, many animal trackways are visible, as well as some piles of muck apparently brought up from the creek. Together with some gnawed alders, these suggest beaver activity. Little Marsh Creek deepens as it flows southward, perhaps as deep as 1m. The sediment where I could examine it, consists of a dark organic-rich muck. This whole area probably could be considered a wetland, really, with the creek and its tributaries representing relatively stable drainage/runoff channels. As such, I would be inclined to consider Area A to be of low archaeological potential and not worthy of extensive archaeological testing.</p> <p>• A single, badly rotted wooden post, which may have been square once upon a time, was noted on the bank opposite of N 45.32702° W066. 03116° ± 7.6m. It is unclear what significance, if any, this might have.</p>	

Archaeological Daily Field Record

Project: Ashburn Rd. Dev. Project
TE171010

Name: WJ Webb

Location(s): AREA A.

Permit #: 2017NB53

Date: June 14/2017

	Index
<ul style="list-style-type: none"> • @ N 45.32621°, W 066.03064°, a watercourse intersects with Little Marsh Creek. This WC proceeds approx. due S. with very straight banks. The E bank is mounded approx. 2-2.5m above present water level. This would appear to be an artificial drainage channel excavated with machinery, the backdirt having been piled to the east. It appears to run all the way to the road to the south. Approx. 5m wide, depth difficult to determine but too deep to traverse by foot. GPS photo 3731. Leads to a large culvert in the road. Impassable to this point. There are numerous secondary drainage ditches entering this large one from the east and west. Beavers have also created a lodge in the berm. • A beaver dam crosses Little Marsh Creek @ N 45.32608°, W 066.03094° ± 5.8m. The dam has been breached in the middle with running water and has not been repaired. Curiously a dead female duck and duckling are present on the periphery. • South of the beaver dam, the creek becomes narrower and shallower, with a discernable central channel. • I followed Little Marsh Creek until it intersected with a watercourse connected to some open wetland to the southwest of Area A (clearly visible in aerial photograph). The channel connecting the open water to Little Marsh Creek appears to be quite linear with relatively straight banks. To the east, there appears to be a shallow berm along the bank, similar to the previously identified channel but not so high. It appears that this wetland area has been artificially modified. A mother duck and six ducklings (<i>Anas spi.</i>) and a great blue heron were observed here. There is ample evidence for beaver activity, as well as tiny fish. Two photographs: 1: 3734 (facing W) Channel 2: 3735 (facing SW) Wetland • Stark elevation change @ N 45.32341° W 066.03199° ± 8.9m. Steep-ish bank becoming 145°+ slope with many boulders visible. Probably built up for road construction. Levels off @ N 45.32323, W 066.03191 • After lunch, continued onto Area A.2 fr NE. 	

Archaeological Daily Field Record

Project: Ashburn Rd Dev Project
TE 171010

Name: W J Webb

Location(s): AREA A

Permit #: 2017NB 53

Date: 06/15/2017

	Index
<ul style="list-style-type: none"> • Began walkover of Area A.3 with DJD, beginning on the northern-most upland section. 	1st traverse
<ul style="list-style-type: none"> • A tree stand for hunting, consisting of a few boards nailed to trees as a ladder and some plywood on the ground @ N 45.32523 W066.03930° ± 7.4m Photo # 3739 facing N. 	
<ul style="list-style-type: none"> • The west face of the ridge in the northern part of Area A.3 is characterized by an abrupt vegetation change to almost completely cedar. The trees are thick and generally < 2m tall. This point also affords a wide viewshed of the valley in which Rte 1 is placed and Pottery / SS. For instance, the Castro is viewable from here. Photo # 3740 facing NE of vegetation. General point: N 45.32430° W066.03970° ± 6.2m. Photo # 3741 facing South view of valley. 	
<ul style="list-style-type: none"> • Small area near western border of area where small cedars have been cut, piled, with the larger trees left standing N 45.32379° W066.03957° ± 8.9m. No photo 	
<ul style="list-style-type: none"> • Another hunting tree stand located @ N 45.32403 W066.03893 ± 6.4m. Consists of a crude platform emplaced in a natural split in the tree approx. 5m from the ground. A few boards, presumably the remnants of a ladder, rest among the branches. Many branches were cut to accommodate construction and lay scattered about many broken beer bottles litter the ground. Photo # 3742 facing east. 	2nd traverse
<ul style="list-style-type: none"> • Not far past the tree stand, my second traverse of A.3 followed the toe of the slope of the ridge where the ground began to level off. The base of the slope is strewn with boulders which have moved down the hill. Photo # 3743 facing WNW. 	

Archaeological Daily Field Record

Project: Ashburn Rd Dev. Project

Name: WJ Webs.

TE171010

Location(s): AREA B.

Permit #: 2017 NB 53

Date: June 15/2017

NW

NNE

SSE

	Index
Area B	
• DJB and I. crossed the rail line and decided to do two transects each. My first transect will consist of walking along the bank of Marsh Creek.	
• Initial observations; there is generally a low-lying grassy area along the creek about 10m in width rising 2 m in elevation afterward. Photo # 3744 facing NNW indicates the elevation change	
• Large area of what appears to be dumped gravel @ N 45.29378° W 066.04462 ± 6.3 m Photo # 3745 facing NE. Gravel is virtually identical to that in rail bed.	
• @ N 45.29549 W 066.04414° ± 5.7m small tributary stream of Marsh Creek Photo # 3746 facing NNW	
• After this point the small floodplain area disappeared; instead, the elevated bank plunged directly and steeply into the Creek. The terrace is elevated ca. 3-4m above the water. Thick alders prevent walking along the shore. Instead, I will walk along the terrace edge. Photo # 3747 facing NNE	
• A large berm, perhaps 2m high and 5m wide begins @ N 45.29692° ± 9m ends @ N 45.29760° ± 5.8m W 066.04335° ± 9m W 066.04291° ± 5.8m	
Situated about 10m from bank slope. Follows parallel to bank. Not certain whether it's a dyke, spoil piles from dredging or railroad-related. Photo # 3748 facing NE. After this, the land plunges into a little gully, possibly a former channel.	
• Straight drainage ditch @ N 45.29802° W 066.04266° ± 6.2m Photo # 3749 facing SSE	
• Little meandering tributary @ N 45.29855° W 066.04237° ± 6.2m Photo # 3750 facing E	
• Small, dry runoff channel @ N 45.30271° W 066.03848° ± 6.4m Photo # 3751 facing NNW. Another @ N 45.30358° W 066.03770° ± 6.4m and N 45.30399° W 066.03748° ± 5.6	

Ultimately, these small runoff or erosion channels were so frequent that I decided to no longer record them. They are readily identifiable in the field; however, they indicate that the slope of the banks have been impacted by erosion.

• At the northwestern terminus of the transect along the bank, I encountered a berm similar to the one previously described. I suspect it is a continuation of the rail/telegraph line that DJD has been following. It ends @ N45.30561°

W066.03669° ± 5.0m. No photograph taken.

Actually, this berm forms a "V" with another one heading in a southwesterly direction. Looking about, I see many other discontinuous berms. I suspect this area has been highly disturbed by industrial development.

• The remnants of footings for an old bridge are present at the northeast end of the Area B. It consists of eight large posts, four on each side of the watercourse. They stand upright and are sawn off at the same level. The northern side features some horizontal logs. One of the posts has a large, vertically oriented board attached to it. Several large, square-ended bolts with square washers are on the posts. The structure appears to have been abandoned for some time, as the wood appears to be quite decayed.

→ Trimble point "bridge" photo # 3752 facing SSW
A small drainage channel (dry) is present just to the north of the feature.

Trimble
"pt
"bridge"

Field Photograph Catalogue

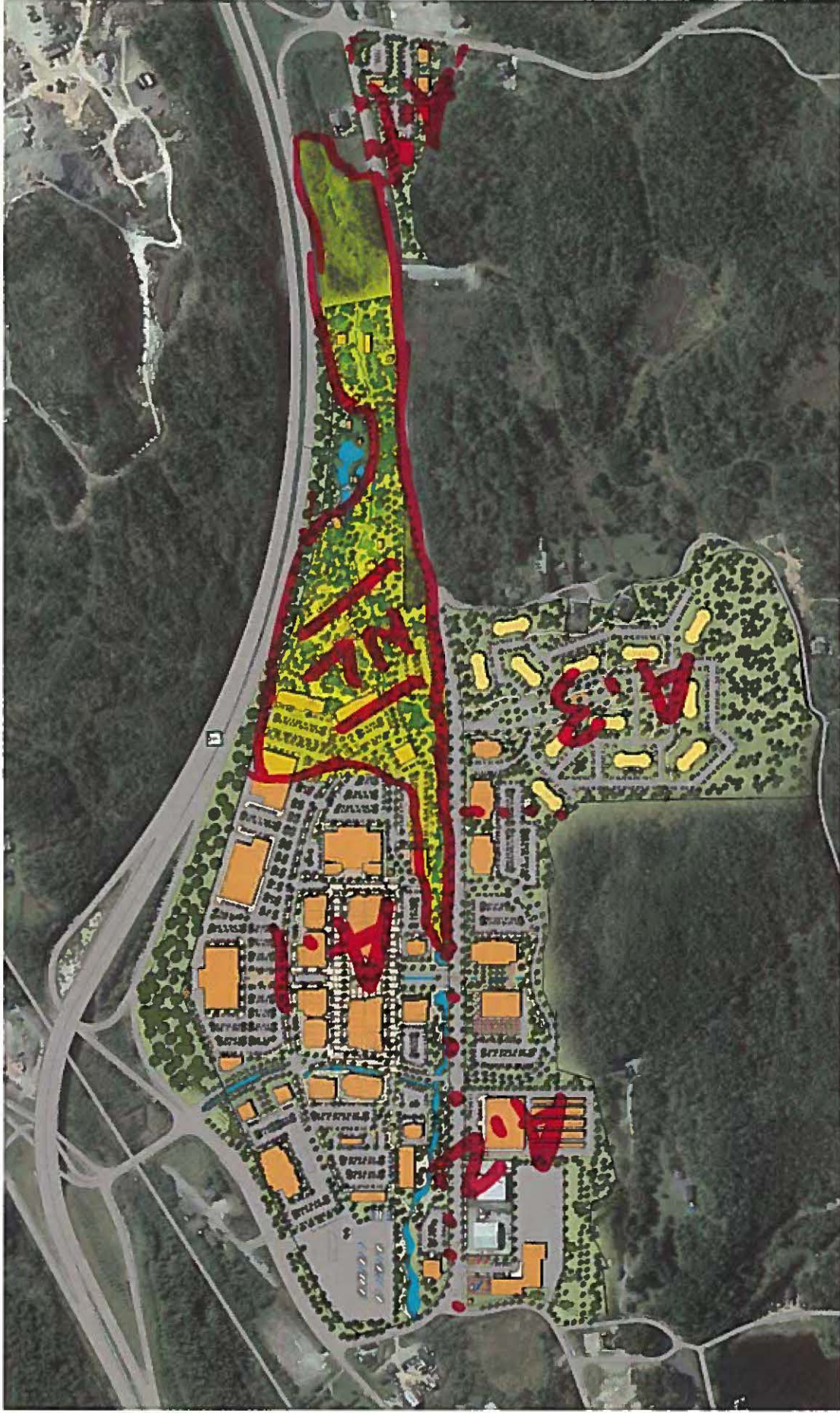
Project: Ashburn Rd. Development Project
TE171010

Permit #: 2017NB53

Date: 06/14/2017

Camera	Photo-No.	Location	Test-Pit #	Description	Orientation	Date (mm/dd/yyyy)	Initials
GPS # 5	100-3727	Area A	N/A	Small tributary of Little Marsh Creek	SSE	06/14/2017	WJW
GPS # 5	100-3728	Area A	N/A	Little Marsh Creek - wide and open	WSW	06/14/2017	WJW
GPS # 5	100-3729	Area A	N/A	Two pos. mounds perpendicular to bank	SE	06/14/2017	WJW
GPS # 5	100-3730	Area A	N/A	Wooden post (?) on west bank	WSW	06/14/2017	WJW
GPS # 5	100-3731	Area A	N/A	Excavated ditch w/ elevated N bank	SE	06/14/2017	WJW
GPS # 5	100-3732	Area A	N/A	Beaver dam on Little Marsh Creek	NE	06/14/2017	WJW
GPS # 5	100-3733	Area A	N/A	Little Marsh Creek south of beaver dam	W	06/14/2017	WJW
GPS # 5	100-3734	Area A	N/A	Wetland channel to Little Marsh Creek	W	06/14/2017	WJW
GPS # 5	100-3735	Area A	N/A	Wetland draining to Little Marsh Creek	SW	06/14/2017	WJW
GPS # 5	100-3736	Area A.2	N/A	Log pile	NNE	06/14/2017	WJW
GPS # 5	3738	Area A.2	N/A	Access road delimited with shale	WSW	06/14/2017	WJW
	3739	Area A.3		Tree stand	N	06/15/2017	
	3740	"		Vegetation on west face of ridge	NE		
	3741	"		Viewshed at the valley	S		
	3742	"		Another tree stand	E		
	3743	"		Rise of slope w/ boulders	WNW		
	3744	AREA B		Initial Area split of AREA B.	NNW		
	45			"Dumped gravel"	NE		
	46			Small WC - tributary	WNW		
	47			Terrace edge	NNE		
	48			Dike? Run line?	NE		
	49			Straight drainage ditch (WC)	SSE		
	50			Little meandering tributary	E		
	51			Small Dry run-off channel	WNW		
	52			"Bridge" remnants (Timber Pt)	SSW		
	53			Rebar "feature" DTD recorded	NE		

Figure 4: Conceptual Rendering with Regulated Wetland



AREAS



No bridge rems
Just cut thru

Figure 3: Aerial Photo of "Green Space" Site

PARK?

Surplus furniture

Dobson Dodge





APPENDIX E
Limited Personal Information Release Form



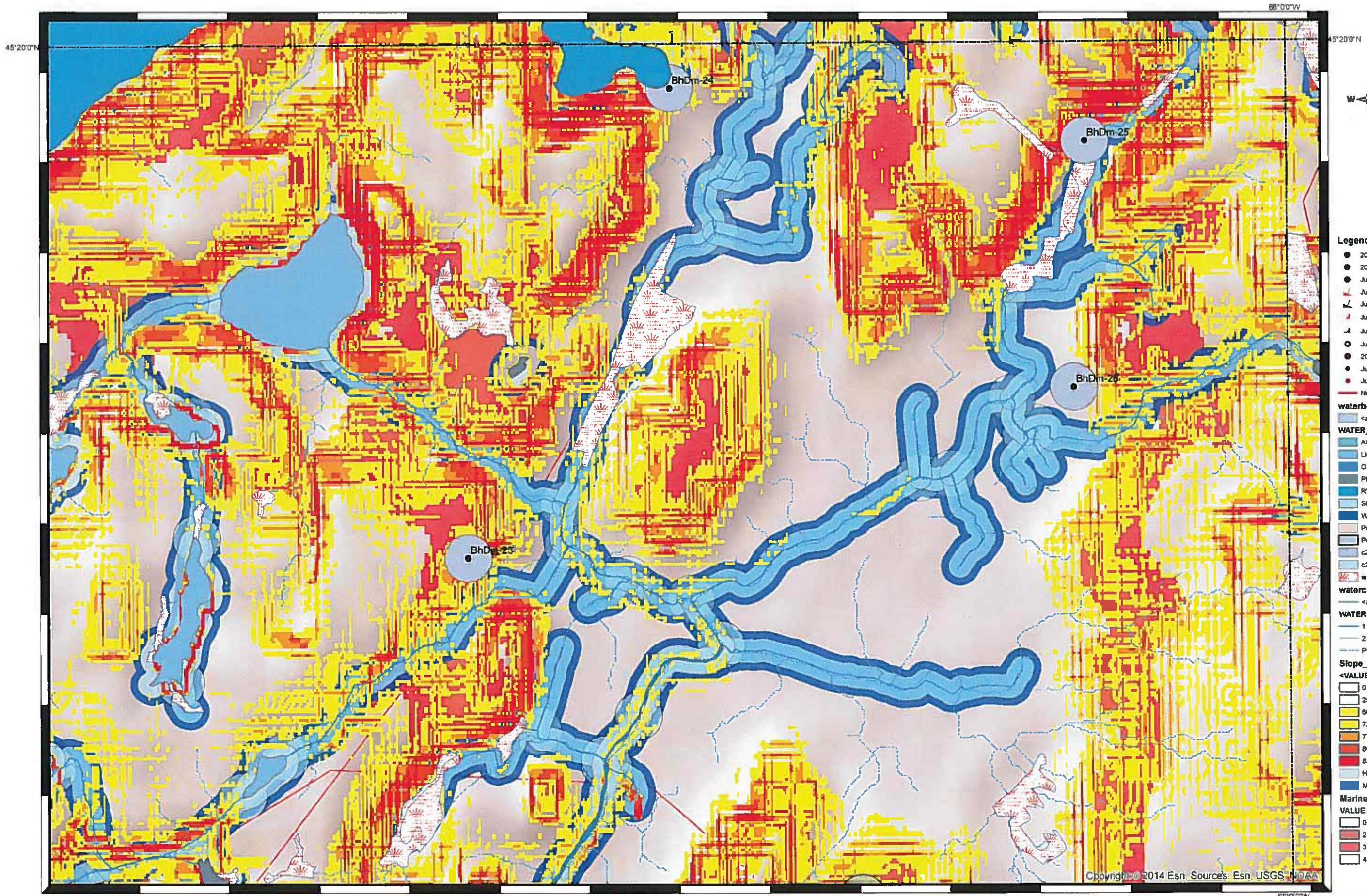
Limited Personal Information Release Form

I hereby give my consent to Archeological Services Branch, New Brunswick Department of Tourism, Heritage and Culture to release to the public my personal information (limited to name, initials, photographic images, audio clips, and video) contained in any and all reporting documentation associated with "The Crossing" Ashburn Road Development Project conducted in 2017 by Amec Foster Wheeler Environment & Infrastructure, a division of Amec Foster Wheeler Americas Limited under Archeological Field Research Permit Number 2017NB53.

Name	Signature	Date
Darcy J. Dignam		August 10, 2017
William (Jesse) Webb		August 10, 2017



APPENDIX F
Archaeological Services New Brunswick GIS Mapping



- Legend**
- 2017 Historic
 - 2017 Precontact
 - June52012UndefinedSites
 - ▲ June52012SuspectedShipwrecks
 - ▲ June52012Shipwrecks
 - ▲ June52012SuspectedPlaneCrash
 - ▲ June52012RecordedPlaneCrash
 - June52012ProtoHistoricSite
 - 2014PrecontactSites
 - June52012HistoricSites
 - June52012Cemeteries
 - New Brunswick Portage Routes
- waterbody**
- <all other values>
- WATER_CODE**
- AQ
 - LK
 - ON
 - PN
 - RV
 - SL
 - WA
 - PortageBuffer4
 - PortageBuffer
 - c2017Historic_Buffer1
 - c2017Precontact_Buffer1
 - wetland
- watercourse**
- <all other values>
- WATERCOURS**
- 1
 - 2
 - Predicted Flow Channel
- Slope_demnb2**
- <VALUE>**
- 0 - 25 36652904
 - 25 36652905 - 60 23010614
 - 60 23010615 - 72 92877099
 - 72 928771 - 77 50883873
 - 77 50883874 - 80 67965486
 - 80 67965487 - 83 85047099
 - 83 850471 - 89 83979034
 - High Potential1
 - Medium Potential1
- MarinePaleoShoreline**
- VALUE**
- 0 - 26
 - 26 00000001 - 38
 - 38 00000001 - 48
 - 48 00000001 - 610



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