

**MARINE ARCHAEOLOGICAL ASSESSMENT
BACKGROUND RESEARCH AND
GEOTECHNICAL SURVEY
FOR THE
GIBRALTAR POINT EROSION CONTROL
PROJECT
LAKE ONTARIO SHORELINE ON THE LAKEWARD
SIDE OF THE TORONTO ISLANDS
ENVIRONMENTAL ASSESSMENT
CITY OF TORONTO**

Prepared for

**Toronto and Region Conservation Authority
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North York, Ontario M3N 1S4
and
Ministry of Tourism, Culture and Sport**

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Executive Summary

The Gibraltar Point Erosion Control Project (the “Project”) will investigate the possibility of developing erosion control infrastructure along Lake Ontario shoreline in the area of Gibraltar Point, Toronto Islands. While the entire Project includes a land based portion as well, the marine archaeological assessment focused on the approximately 600 metre long shoreline and in-water areas. For the purposes of the marine archaeological assessment, the limits of the Project area will be confined to the in-water and previously lakefilled areas. The marine archaeological assessment is comprised of background research and in-water archaeological assessment extending 250 m into Lake Ontario.

TRCA with support from the City of Toronto, completed an Environmental Study Report (ESR), in accordance with Conservation Ontario’s Class Environmental Assessment for Remedial Flood and Erosion Control Projects (Class EA) to develop a long-term solution to address the shoreline erosion around Gibraltar Point (TRCA, 2008). Work was conducted under a marine archaeological license (2016-13) held by Scarlett Janusas. The field portion of the archaeological assessment was conducted over a period of days in September and October of 2016 under good conditions.

Background research indicated that there was a high possibility of locating historic marine resources in the area based on archival records of shipwrecks in the area, archaeological reports of adjacent properties, and one reported shipwreck in the study area. The relatively shallow nature of the majority of the Project area required different field survey methodologies. For the nearshore areas, a snorkel survey and shoreline walk was conducted, and complemented by the offshore side scan sonar and magnetometer survey. In addition, where possible “targets” identified by side scan sonar and magnetometer were ground truthed using video and high resolution sonar. Some magnetometer targets could not be ground truthed as they were buried beneath the sediments.

A total of 126 targets were located with the side scan sonar, magnetometer or by visual assessment. There were three targets identified as cultural: these were two located through the shoreline and snorkel survey (crib and ship’s hanging knee), and the third was located through side scan survey (Target S48), which was an area of three cut pilings. The crib was determined to be of relatively recent vintage and not deemed to have any cultural heritage value or interest. The three cut pilings were believed to be part of an early attempt to stabilize the shoreline in this area, and there may be additional pilings located beneath the 20 metres of armourstone starting at the shoreline and extending lakeward. The three pilings themselves are not deemed to have significant cultural heritage value or interest. The third cultural find is a ship’s hanging knee. A determination was made that this knee might be from the **Jane Ann Marsh** of 1868. Her tonnage of 257 could meet the criteria of the bolt size, however, it is possible (albeit a slim possibility) that another ship of similar dimensions was also wrecked in this area and not reported. It is a possibility that the remains of the

ship may be buried either on land, beneath the armourstone, or buried under lakebed sediments within 100 metres of where the knee was found during this assessment.

The magnetometer survey (as expected based on historic background research) had many targets. While some of these are small targets (based on gradient), other targets have large areas located in the southeast end of the magnetometer survey and also along the shoreline in the northeast area of the area. It is possible that buried ship material lies beneath the buried lake sediments in these areas. It is also possible that these targets reflect construction debris or refuse, rather than cultural material, or that buried sediments contain a high degree of ferrous material which caused the magnetometer readings to be so high. The burial of these targets makes it impossible to determine which of the above, or combinations of the above, are valid.

Based upon the background research of the study area and a buffer, the following is recommended:

- The Marine Archaeological Study Area (MASA) (where magnetometer readings are high) may contain buried cultural material. If development in any of these areas is proposed where bottom sediments will be disturbed, (placement of stone would be considered development), these activities would require archaeological monitoring; and if there is to be spoil removed from the area, that the archaeologist observe the spoil for possible cultural materials;
- If cultural materials are located through observation, as detailed in the above recommendation; it is recommended that development activities may be required to be halted to review the material, and any possible exposed material on the lakebed; and to make additional recommendations based on new observations;
- The hanging knee has been transferred to the City of Toronto, Museums and Heritage Services. It is recommended that the hanging knee be retained by the City of Toronto as the possible remnant of the 1868 ship, the **Jane Ann Marsh**;
- Additional areas are considered clear of any features of significant heritage or cultural interest. It is recommended that those MASA's be considered clear of archaeological concerns, and that no additional archaeological investigations of those areas of the MASA are warranted;
- Compliance regulations must be adhered to in the event that archaeological resources are located during the project development.

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18.

Table of Contents

Executive Summary	ii
Project Personnel	vi
1.0 INTRODUCTION	1
1.1 Project Description	1
1.2 Indigenous Community Engagement	5
2.0 STUDY METHODS	6
2.1 Background Research	6
2.2 Field Work	6
2.3 Geotechnical Survey	6
2.4 Snorkel Survey and Shoreline Walk	8
3.0 RESULTS – Historic and Archaeological Context	9
3.1 Background Research	9
3.1.1 Current Environment	8
3.1.2 Prehistoric Shorelines	9
3.1.3 Historic Shorelines	9
3.1.4 Bathymetry	12
3.2 Potential for Indigenous Archaeological Resources	12
3.2.1 Prehistory of the Project Area	12
3.2.2 Native Historic Period	15
3.2.3 Euro-Canadian Period	15
3.2.4 Previously Known Archaeological Resources and Assessments	15
3.3 Historic Marine Background	16
3.3.1 Marine Disasters on the Shoreline of the Project Area	18
3.3.2 The Disasters	23
3.3.3 The Lighthouse	32
3.4 Fieldwork Results	40
3.4.1 Side Scan Targets	43
3.4.2 Magnetometer Targets	43
3.4.3 Visual Observations	45
4.0 DETERMINATION OF ARCHAEOLOGICAL POTENTIAL	56
5.0 COMPLIANCE LEGISLATION	58
6.0 RECOMMENDATIONS	59
7.0 REFERENCES CITED AND CONSULTED	60
FIGURES	
1. Marine Archaeological Study Area	2
2. Preliminary Concept Plan	3
3. 2017 Concept Plan	4
4. 1993 Illustration of Pipelines Adjacent to Project	10

5. Dredged Trench and Intake Pipe near Project Area	11
6. Prehistoric Lake Ontario	11
6. Historic Shorelines	13
7. 2009 Bathymetry of MAA Area	14
8. Stage 1 and 2 Land Archaeological Assessment	16
9. 1790 Bouchette Map of Study Area	19
10. Smith's 1817 Map	20
11. Bayfield's 1828 Map	21
12. Bonnycastle 1833 Map	22
13. 1854 Map of Study Area	24
14. Hodder's 1857 Map	25
15. 1906 Map of Study Area	25
16. Ca. 1914 View of Lighthouse	34
17. Aerial View of Lighthouse and Buildings 1919	35
18. Ca. 1940 View of Lighthouse	36
19. 1955 View of Lighthouse, Lighthouse Keepers House and Marconi Station	36
20. The Wireless Station	37
21. The Lake Light Plaque	38
22. Heritage Toronto 2008 Plaque	38
23. Area of Stage 2 Land Based Archaeological Assessment	39
24. Location of Cultural Finds	44
25. Target S48	45
26. Ship's Knee as Found in Area	46
27. Measurements of the Ship's Knee	46
28. Cribwork	48
29. Cribwork	48
30. Pipeline Extending from Shore	49
31. Side Scan Targets – 1	50
32. Side Scan Targets – 2	51
33. Magnetometer Targets – 1	52
34. Magnetometer Targets – 2	53
35. Magnetometer Targets – 3	54
36. Magnetometer Targets – 4	55
37. Areas of Archaeological Concern	57
TABLES	
1. List of Targets by Survey Method and Cultural Value	40
APPENDICES	
A. Gibraltar Point Geotechnical/Archaeological Assessment	70

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MARINE ARCHAEOLOGICAL ASSESSMENT BACKGROUND RESEARCH AND GEOTECHNICAL SURVEY FOR THE GIBRALTAR POINT EROSION CONTROL PROJECT LAKE ONTARIO SHORELINE ON THE LAKEWARD SIDE OF THE TORONTO ISLANDS ENVIRONMENTAL ASSESSMENT CITY OF TORONTO

1.0 INTRODUCTION

1.1 Project Description

The Gibraltar Point Erosion Control Project (the “Project”) Study Area in its entirety (land and water) extends from the southwestern tip of the Toronto Islands from Gibraltar Point to the Western Gap (near Billy Bishop airport). This area is largely “parkland”. The Project study area includes terrestrial Environmentally Significant Area and an Area of Natural and Scientific Interest, as well as Provincially Significant Wetlands. Also within the parkland is Hanlan’s Point Beach, a public washroom structure; picnic areas, and paved bicycle and pedestrian pathways. The Gibraltar Point Centre for the Arts and Gibraltar Lighthouse are located outside the study area to the east.

A Class EA was completed in 2008 and proposed remedial action is a sand management plan, recognizing that form of constructed, offshore protection will be required in order to render the sand management plan sustainable. Prior to construction of the proposed remedial action, TRCA will review the project in accordance with the planning and design process of the Class EA, and issued an addendum for approval by the Ontario Ministry of Environment and Climate Change (MOE CC), as required by Section 6 of the Class EA for projects where approval has been granted, but construction has not been initiated within five years of that project’s approval. Followed by this, TRCA will finalize the detail design of the proposed remedial action. Figure 2 illustrates a preliminary concept plan and Figure 3 illustrates the 2017 concept plan. The concept plan is subject to change based on new factors, existing factors, or other variables.

“The proposed preferred alternative will require lakefilling for the construction of offshore erosion control structures....Preferred alternative works from the 2008 Class EA include: an offshore, emerged breakwater; a shore-tied groyne; and adaptive sand management at Gibraltar Point and the southern limits of the shoreline, to the southwest of Gibraltar Point” (Toronto Region and Conservation Authority (TRCA) 2016: 21).

The Marine Archaeological Study Area (Study Area or MASA) included 600 metres of shoreline extending east of the washroom building towards Hanlan’s Point (to a maximum of 250 metres offshore or the 4 metre contour depth). The

MASA is presented in Figure 1 and is confined to the in-water and previously lakefilled areas. The MASA is comprised of background research and an in-water archaeological assessment extending 250 m into Lake Ontario.

Figure 1: Marine Archaeological Study Area (TRCA 2016: Figure 10)



Figure 2: Preliminary Concept Plan (from RFP: Figure 9)

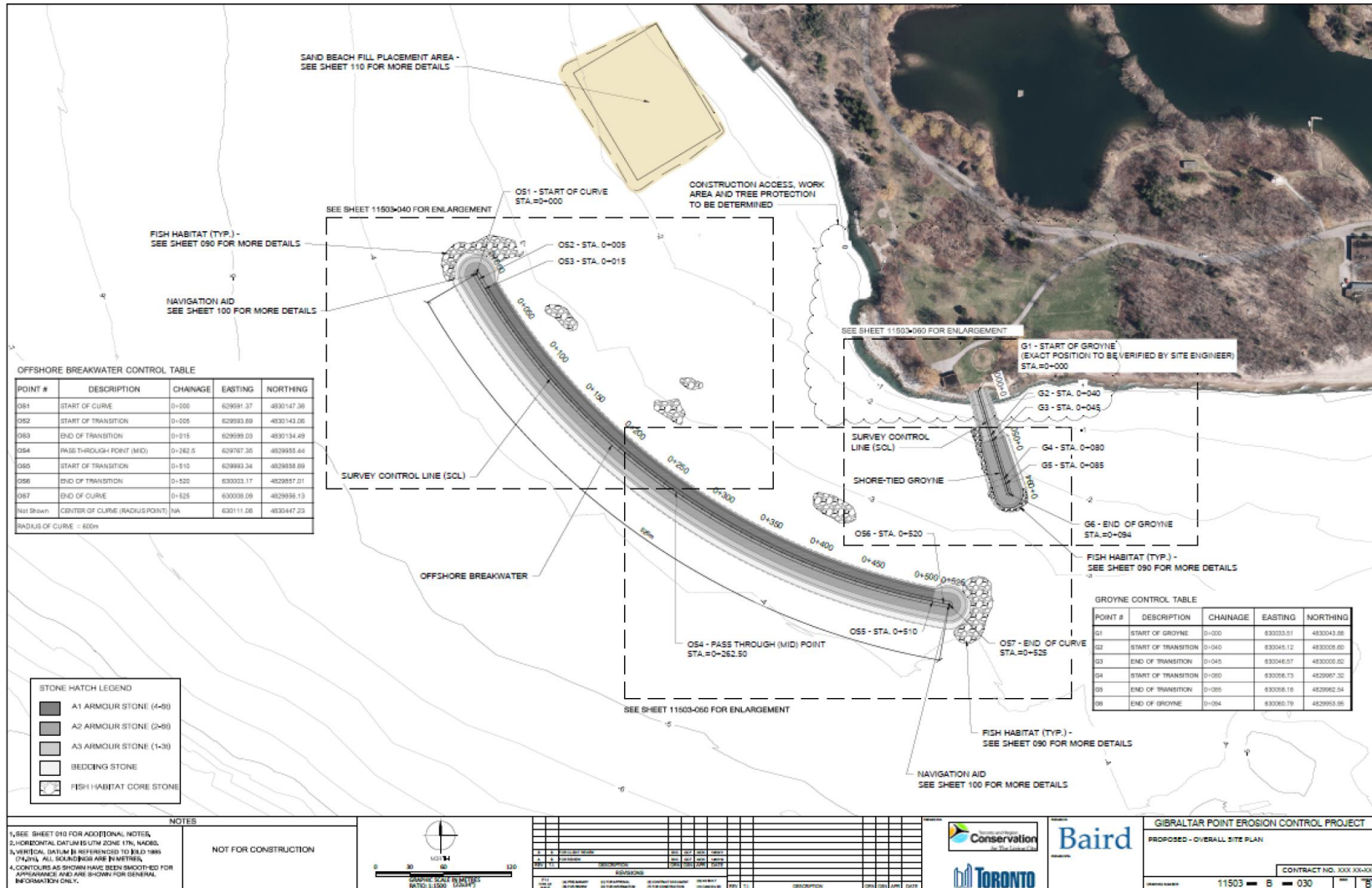
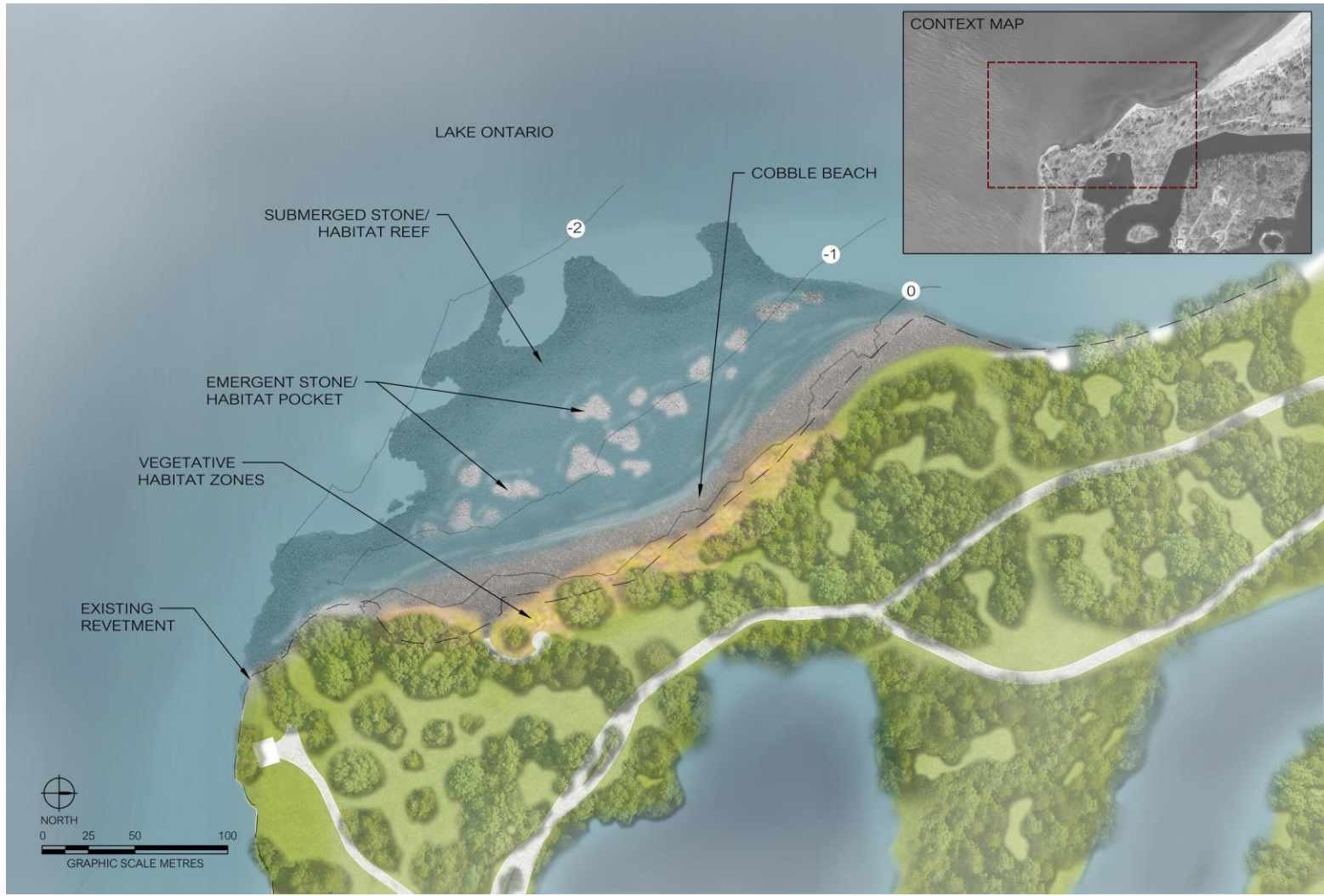


Figure 3: 2017 Concept Plan (2014 Bathymetry and 2016 Aerial)



Work was conducted under a marine archaeological license (2016-13) held by Scarlett Janusas. The field portion of the archaeological assessment was conducted over a period of days in September and October under good conditions.

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1.2 Indigenous Community Engagement

The Study Area as well as the MASA “is located within the traditional territory of the Mississaugas of the New Credit First Nation (MNCFN). Their traditional territory extends from the Rouge River Valley in the east, across to the headwaters of the Thames River, down to Long Point on lake Erie, and back along the shores of Lake Erie, the Niagara River, and Lake Ontario to the Rouge River Valley. It encompasses present-day London, Hamilton and Toronto,…” (TRCA RFP: 19).

The MNCFN “expressed and asserted to the federal government, unextinguished aboriginal title to all water in their traditional territory. MNCFN will be submitting a claim to Canada and Ontario to all water, land under water and floodplains, in their traditional territory.

The Williams Treaty First Nations have also expressed an interest in the Study Area, but at this time, have not submitted a claim.” (ibid)

The Toronto and Region Conservation Authority has initiated engagement with Indigenous groups for the Project. SJAI has not conducted any Indigenous engagement directly, but has been informed by TRCA that no issues have been brought forward to date from Indigenous communities.

2.0 PROJECT METHODS

2.1 Background Research

As part of the background research, an examination of the following was conducted:

- the Site Registration Database (maintained by the Ontario Ministry of Tourism, Culture and Sport) was examined for the presence of known archaeological sites in the project area and within a radius of one kilometer of the project area by contacting the data coordinator of the Ministry of Tourism, Culture and Sport;
- reports of previous archaeological fieldwork near the property;
- topographic maps at 1:10 000 (recent and historical) or the most detailed map available;
- historic settlement maps such as the historic atlases;
- Sessional papers;
- Surveyor's notes;
- Charts;
- available archaeological management/master plans or archaeological potential mapping;
- any other avenues that assist in determining archaeological potential were examined.

The detailed background research of the MASA area was conducted including the area immediately surrounding Gibraltar Point.

The Toronto and Region Conservation Authority has in-house archaeologists who have conducted the Stage 1 and Stage 2 archaeological assessment for parts of the Project Study Area.

2.2 Field Work

Field work was conducted by SJAI and Shark Marine during September and October of 2016 under good weather conditions. Water was either completely flat or had chop to it. Conditions were considered favourable to conduct the geotechnical portion of the project. Near shore water visibility ranged from 40 to 60 cms for the snorkel survey.

2.3 Geotechnical Survey

A geotechnical/archaeological survey, supervised by a licensed archaeologist (Scarlett Janusas, license number 2016-13), was comprised of a side scan sonar survey sonar and magnetometer survey. The purpose of the survey was to determine if there were any objects or structures that may be of archaeological or cultural significance within the MASA area, and to offer appropriate mitigation recommendations.

The scope of the work included:

- Side scan sonar mapping to locate any object or structure on bottom and also to aid in identifying geographic features (intervals were primarily conducted at 30 m, with a total scan width of 60 m);
- Magnetometer survey to locate any objects in search area with ferrous content (intervals were conducted at 10 m intervals);
- Snorkel survey of nearshore areas was conducted in September 2016 with two snorkelers. Some areas could be walked as they were very shallow at the shoreline.
- Visual confirmation of any targets or anomalies detected (if not buried) using a drop camera system.

Equipment used included the survey craft (boat). It was a 22' boat equipped with a data network and mounting points allowing for "plug and play" addition of survey specific hydrographic equipment. For this survey, the vessel was equipped with a GPS compass, Side Scan Sonar, Magnetometer and "Barracuda" Remotely Operated Vehicle.

GPS Compass Specifications:

Accuracy:	<1 metre
Data Range:	10 Hz
Heading Accuracy:	<0.75° RMS
Pitch/Roll Accuracy:	<1.5° RMS

The side scan sonar provides a detailed image of the bottom. A Tritech Starfish model 425f was used, with real time acquisition through Shark Marine DiveLog software. The side scan sonar was mounted to the survey vessel and ran along a predetermined grid set to 10 meter line spacing to match the magnetometer. The side scan was set to a 30 meter range (60 m total swath) providing full coverage of the survey area. Data recorded with the side scan sonar was mosaicked and made into a geo tiff and .kml file (found on the accompanying usb stick). Information on targets marked with side scan sonar can be found in the Target Report of Appendix A, but the cultural features are presented here as well. An .html version of the target report featuring full resolution screenshots of each target can also be found on the accompanying usb stick.

The side scan sonar specifications are:

Frequency	450 nominal
Ranges	up to 300 m

A magnetometer is capable of measuring very small variations in the Earth's magnetic field allowing ferrous objects to be detected as "anomalies". A Shark Marine ProMAG was used for this survey. The magnetometer was towed along a 10 metre grid throughout the survey area behind the survey vessel to prevent any ferrous components on the vessel from influencing its readings.

Data collected by the magnetometer can be viewed on Google Earth using the .kmz file accompanying this report or the charts found in Appendix A.

There are differences in the colour scales on the completed magnetic charts resulting from the deployment of two magnetometers being used as well as possible differences in atmospheric conditions and solar activities between deployments (site visits) causing different scales to be used.

Magnetometer specifications are:

Sensitivity	0.02 nT
Accuracy	0.01 nT
Gradient Tolerance	over 10,000 nT/meter

Visual Inspection was hindered by the shallow depths of the survey area. Ground truthing therefore was conducted using a remote operated vehicle (Barracuda). It also had a mechanical arm which could be used to remove vegetation covering targets.

Barracuda specifications are:

Camera 1: HD
Lighting: 2x 1850 lumen LED lights
Depth Rating: 300 m
Forward looking Sonar
Frequency 900/2250 kHz
Range: up to 60 m

The Barracuda ROV was used to ground truth targets detected throughout the survey area using its camera and imaging sonar. The ROV was deployed from the survey vessel and programmed to approach the target locations. Once in proximity of a target, a technician took over control of the ROV and gathered video and sonar data.

Video from the survey can be found on the accompanying USB stick. Video segments for each target can also be viewed on the .html Diverlog target report (Appendix A). Video titles are listed on page 10 of Appendix A.

A detailed description of the equipment used for the marine archaeological assessment, field methodology and results are presented in Appendix A of this report (Geotechnical Report of Shark Marine).

2.4 Snorkel Survey and Shoreline Walk

Snorkel survey of nearshore areas and a shoreline walk was conducted on September 27th, 2016. One snorkeler was used a safety along the shoreline and the other snorkeler paralleled the shoreline in the shallow areas of the MASA. Some nearshore areas were shallow enough to walk (sandy beach areas).

3.0 RESULTS – Historic and Archaeological Context

3.1 Background Research

3.1.1 Current Environment

The MASA (Figure 1) includes 600 metres of shoreline extending east of the washroom building towards Hanlan's Point (to a maximum of 250 metres offshore or the 4 metre contour depth).

There are “two water intake pipes constructed between the late 1950s and the early 1960s are located east of GP [Gibraltar Point]. The west intake (no. 1) extends about 500 m offshore to a depth of about 20 meters. The east intake (no. 2) extends to a depth of 10 m (Figure 3 in this report). Each intake pipe is located between two parallel steel sheet pile walls. Measurements taken from a diving survey in June 1993 revealed that long sections of the steel sheet piles were exposed with between 0.3m and 3m of wall protruding above the lake bed. The east intake also features a 14m long groyne formed by steel sheet pile walls infilled with concrete. These intakes, were exposed, act as partial barriers to sediment moving along the lakebed and at the east intake, along the shore.

In 2003, trenching for the Deep Lake Water Cooling intake pipes was undertaken (Figure 4 in this report) and then the pipes were submerged into place. Initially the trench was not backfilled. Spoils from the dredging in the nearshore were placed in the nearshore to the west of the trench and in deeper water to the east of the pipelines. Subsequently, the trench was backfilled to some extent” (TRCA RFP 2016: 15).

3.1.2 Prehistoric Shorelines

Coleman's map (Figure 5) (Coleman 1937a) shows the Lake Ontario shoreline in the area of the project. The MASA was, in fact, underwater during Lake Iroquois.

3.1.3 Historic Shorelines

Lake levels are influenced by geological, atmospheric and anthropogenic influences. The waters of Lake Ontario can fluctuate up to .5 m on an annual basis, with low and high water levels occurring in December and June. The average water level is 74.5 m.

The historic shorelines reflect the following years: 1913, 1951, 1980, 1999, 2005-06, 2007, 2009 and 2013. These are recent historic shorelines, and are illustrated in Figure 6. The year 1913 appears to have been of very low water, given the distance of the shoreline from the current shoreline, although exact numbers for 1913 are not available.

Figure 3: 1993 Illustration of Pipelines Adjacent to Project

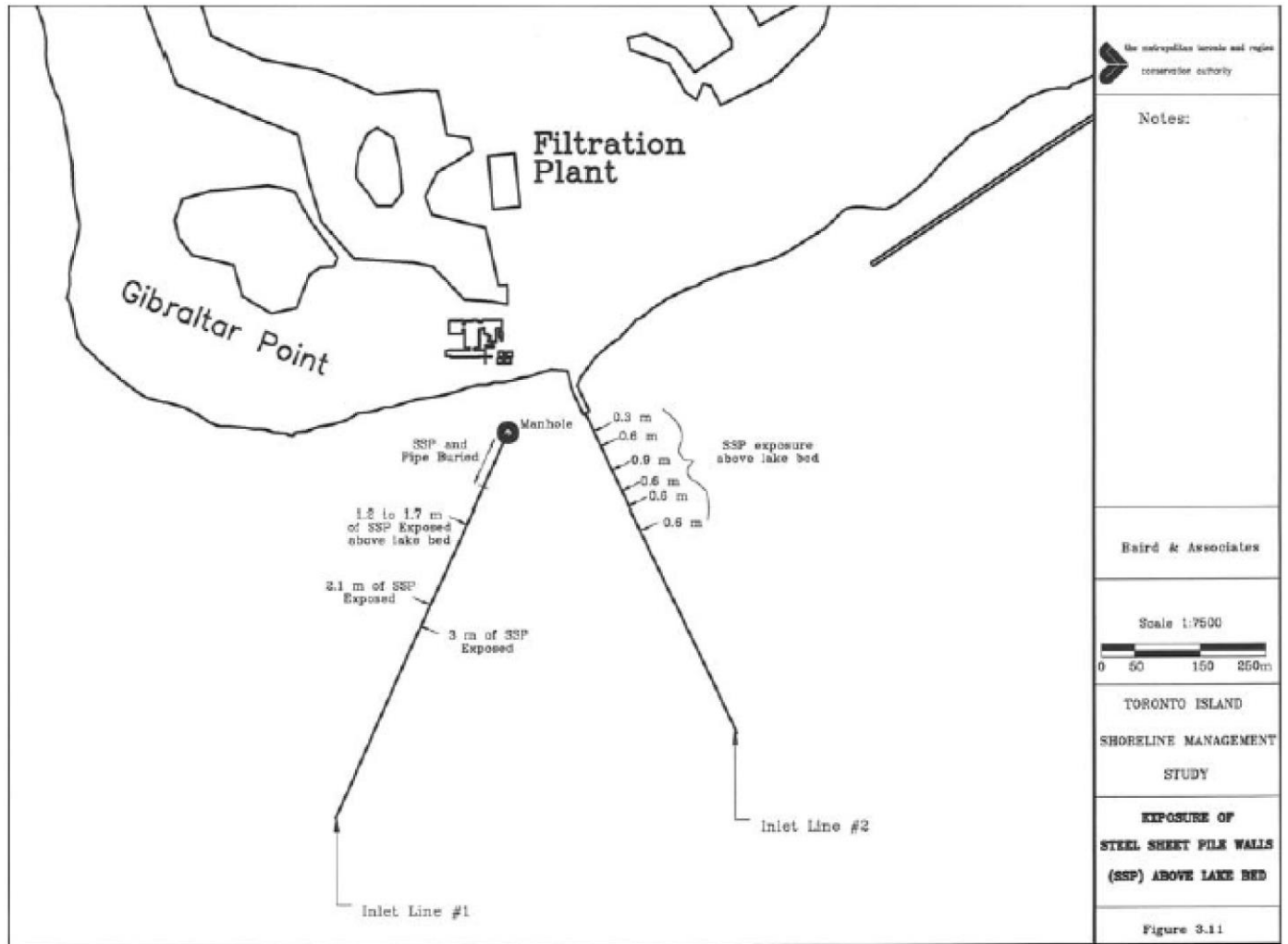
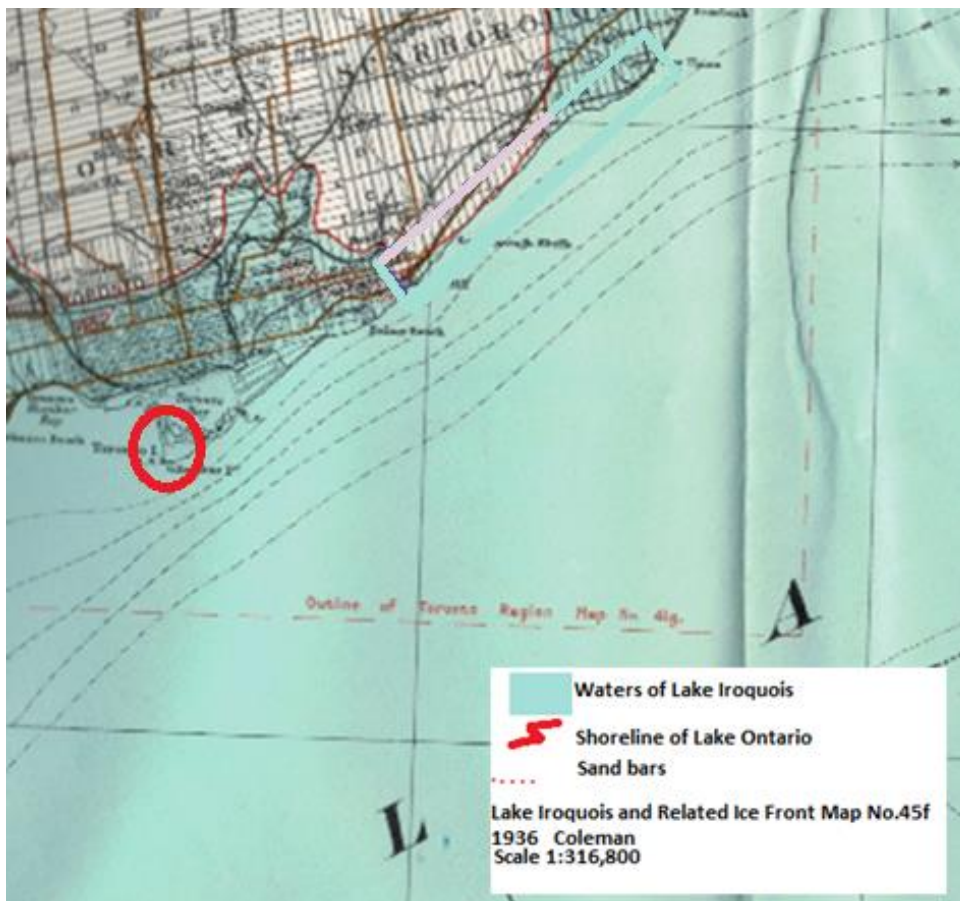


Figure 4: Dredged Trench and Intake Pipe near Project Area



Figure 5: Prehistoric Lake Ontario



3.1.4 Bathymetry

The 2009 bathymetry shows the Project area (Figure 7) to be very shallow. This is not surprising given its historic context as an area where a lighthouse was constructed to warn off ships from the shallows and dangerous rocks and sand.

3.2 Potential for Indigenous Archaeological Resources

The potential for discovery of Indigenous archaeological resources in the MASA area are low to moderate based previous inundation of the area during Palaeo times, however, there may be incidences of accidental canoe upsets, or sacred sites related to the geographic configuration of the area (juts into Lake Ontario).

3.2.1 Prehistory of the Study Area

Prior to any human occupation, glaciers covered much of Southern Ontario. As these glaciers retreated, they left behind large meltwater lakes and streams and a landscape of barren tundra interspersed with open forests. This environment supported large mammals such as moose, elk and large herds of caribou and left the waters teeming with fish. The first human inhabitants probably moved into this region of Ontario approximately 11,000 years ago following the retreat of the Laurentide Ice Sheet. Nomadic Paleo-Indian hunters usually maintained a band level society while living in small camps, moving often as they followed the various herds across the area. Their population was small and they did not stay in the same place for long, making evidence of their existence somewhat scarce. However, some Paleo-Indian campsites have been found along the shorelines of glacial waters where a number of their stone tools and weapons have been found.

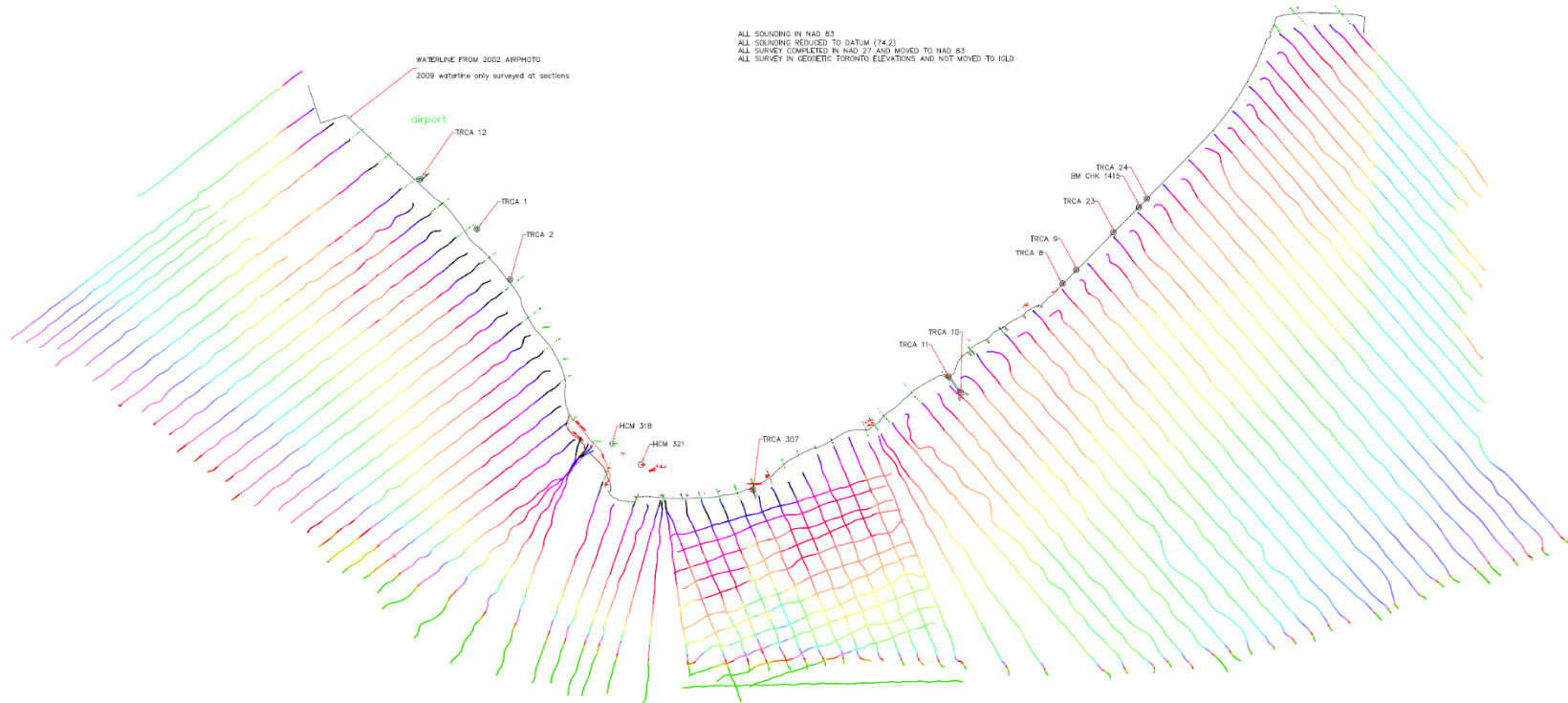
There is no evidence of Palaeo-Indian occupations along the shoreline of the project area, as it was submerged by Lake Iroquois during the Palaeo period and it is unlikely that there would be any evidence in water of Palaeo period sites.

People of the early and middle Archaic periods (7000BC-2500BC) lived similar lives to those of the Paleo-Indians. They remained in small nomadic groups, often moving further inland during the winters as they followed the caribou herds. However, their stone tools and weapons became more advanced as the level of their skill and craftsmanship progressed, often adding ornamentation and intricate carved details to their items. By the late Archaic period (2500BC-1000BC) they were involved in trade networks for sought after raw materials such as tobacco and also engaged in burial ceremonies.

Although daily life probably remained relatively the same, there were at least two changes earmarking the subsequent early Woodland period (1000-400BC).

Figure 6: Historic Shorelines



Figure 7: 2009 Bathymetry of MAA Area

During this period, ceramics appear to have come into use and very elaborate burial practices made an appearance that included the burial of precious and ornate objects with the dead. The Middle Woodland period saw an increase in the trading of these objects and limited agricultural practices coupled with longer site occupations made an appearance during the transitional Woodland period (900-600AD).

During the Late Woodland or Iroquoian period (900AD-1650AD), there was a major shift to agriculture as well as the establishment of more permanent camps and villages. The social structure of communities also changed with the development of political systems based on families and the need for alliances with other groups of people. The early villages were small with a series of longhouses surrounded by wooden palisades. Later villages housed as many as two thousand people and had very entrenched political structure.

Prehistoric lake activities include the use of dugout canoes, and later birchbark canoes. The organic nature of these types of watercraft more often than not do not survive time unless buried in anaerobic environments (Janusas 2000: 5).

3.2.2 Native Historic Period

Southern Ontario lay virtually vacant for a period of about 15 years of native populations following the dispersal of the Petun and Huron by the Iroquois in 1650. The Iroquois, during the mid-1660s, established a number of villages along the north shore of Lake Ontario. The Mississauga moved into the area in the early 1700s, and established themselves in current Etobicoke and Mississauga. The Mississauga were semi-nomadic, and utilized resources found in watersheds and along the lakeshore.

3.2.3 Euro-Canadian Contact Period

During the late 16th and early 17th centuries, European explorers sailed along the north shore of Lake Ontario and likely camped in the area later to become Toronto, enroute to other locations.

3.2.4 Previously Known Archaeological Resources and Assessments

Stage 1 and Stage 2 archaeological assessment for part of the land portion of the Project Study Area was conducted by in-house archaeologists at Toronto and Region Conservation Authority (2016) adjacent to the site (Figure 8). No cultural material or sites were located using the standard test pitting methodology. It is likely that deeply buried cultural material relating to shipwrecks in the area may still be present, and using a ground penetrating radar methodology would assist in determining the presence or absence of the same.

Figure 8: Stage 1 and 2 Land Archaeological Assessment (TRCA 2016: Map 9).



A shipwreck was located northeast of the Project Study Area just before commencement of the Project. Communication with the City of Toronto’s staff person, Susan Hughes, indicated that the ship had been reclaimed by the sands of the lakebed and that it was once again buried. No further information on this shipwreck is currently available.

3.3 Historic Marine Background

Lake Ontario has served both Indigenous people and Euro-Canadians. Lake Ontario is the direct extension of the St. Lawrence gateway to the Great Lakes area, and the lake was a vital artery for the French and British for well over two centuries (Janusas 2000: 4). Water transportation was the most effective means of moving both people and goods.

“The schooner era on the Lakes has been extensively researched. Unfortunately, much less attention has been given to the near shore water activities that were of enormous importance over a far greater span of time” (ibid: 5).

“Prior to major canal development between the lakes, lake schooners could be compared in importance, with the air services of today. But for every large schooner, or fur trade canoe, there were at least 100 bateaux and dozens of Durham boats operating shuttle services along the shore; serving functions similar to those of our major highways, and rail systems of today. In addition, bulk and passenger transport, the watercraft provided much of the communications for western New France and Upper Canada. In 1793, Elizabeth Simcoe, wife of the first Lieutenant Governor, was anxious to receive more regular mail to and from her family in England. As a result, a small postal service was initiated from Kingston to York (now Toronto).

The near shore routes were never easy ones. Propelling heavy-laden craft with oars or paddles, especially with any head wind, meant only about 15 to 30 miles progress per day. There was the need for stops at navigable rivers that serviced inland centres, or led to the upper lakes. Lake Ontario could be subject to changing weather conditions that could happen without any warning. For all the inshore transport services, “put-in havens” were essential to passenger, crew, mail and cargo survival. The mouths of every river, creek or other protected inlet provided for both overnight and emergency stopovers. Some of these havens would later evolve into the equivalent of service centres on highways, or bus and rail stations. Those well placed grew to become settlements.....

Small craft did occasionally venture across the lake; but from all the historical records researched it appears that offshore work was left to schooners and other larger vessels, while the small open boats generally took the long route, following the shoreline, around the western perimeter to reach Niagara” (ibid: 5).

Because of the building boom in Toronto, there was an acute shortage of foundation stone. Stone-hookers would unload rock in this crib by day and steal them by night for sale to builders in Toronto the next day.

These boats towed a low barge to carry the rocks that were “hooked” out of the shallow water with a grappling device. So prevalent was this practice that serious erosion problems occurred. An act was passed by the Legislature forbidding stone hooking within three “perches” [a perch is 17 ½ feet] of the low water line. This act prevented stone hooking by day but it still went on by night (no author, n.d.: 74)” (Janusas 2000: 66-7).

Stone hooking lasted from the 1830s right into the period of the First World War (1914-1918) along the shoreline of the Project area. The stone hookers were characteristically shallow draft schooners able to work near shore, and crews would harvest the stone using poles with bent tines to lift the stone from the bottom and place it onto a floating raft towed behind the ship. By the 1830s, upwards of 43,000 tons of rock were harvested along the shoreline of Lake Ontario.

Stone hooking may have occurred around Gibraltar Point, but as it was a recognized dangerous area with reefs, it is probable that this area was by passed by stone hookers.

3.3.1 Marine Disasters on the Shoreline of the Project Area

To identify potential shipwreck sites with the Project Area, a thorough examination of detailed marine casualty reports, available from the period 1817 to 1956, was undertaken. These included the important compilation so the Board of Lake Underwriters (appearing at year's end in the newspapers of Buffalo, New York), those of the Canada Department of Marine & Fisheries, and the post-season summaries published in the marine trade papers; **Marine Record** and **Marine Review**. While annual recapitulations of lost vessels do occasionally exist for the years between 1815 (the end of the War of 1812) and the middle of the 1840s, decades during which commercial shipping on Lake Ontario matured, the records were generally sparse. However, contemporary accounts of major storms, e.g. those of 1835, 1838, and 1842, which caused serious losses, were reviewed.

The plan of York harbour in 1790 (Bouchette 1790) (Figure 9) shows that there were no improvements in the study area.

In considering a history of marine disasters occurring at or in the vicinity of Gibraltar Point, it is necessary to clarify what was referred to as "Gibraltar Point" in the historic record. In 1799, it was defined by name as "the western extremity of a sand bank, which forms the harbour of York, and upon which blockhouses [are] erected for its defence (no author 1799: 81, Robertson 1911: 210). Smith's 1817 map (Figure 10) illustrates Gibraltar Point and the lighthouse, as does Bayfield's 1828 map (Figure 11). This designation further clearly shown on the "Plan of the Town and Harbour of York of 1833 (Bonnycastle 1833) (Figure 12).

Figure 9: 1790 Bouchette Map of Study Area

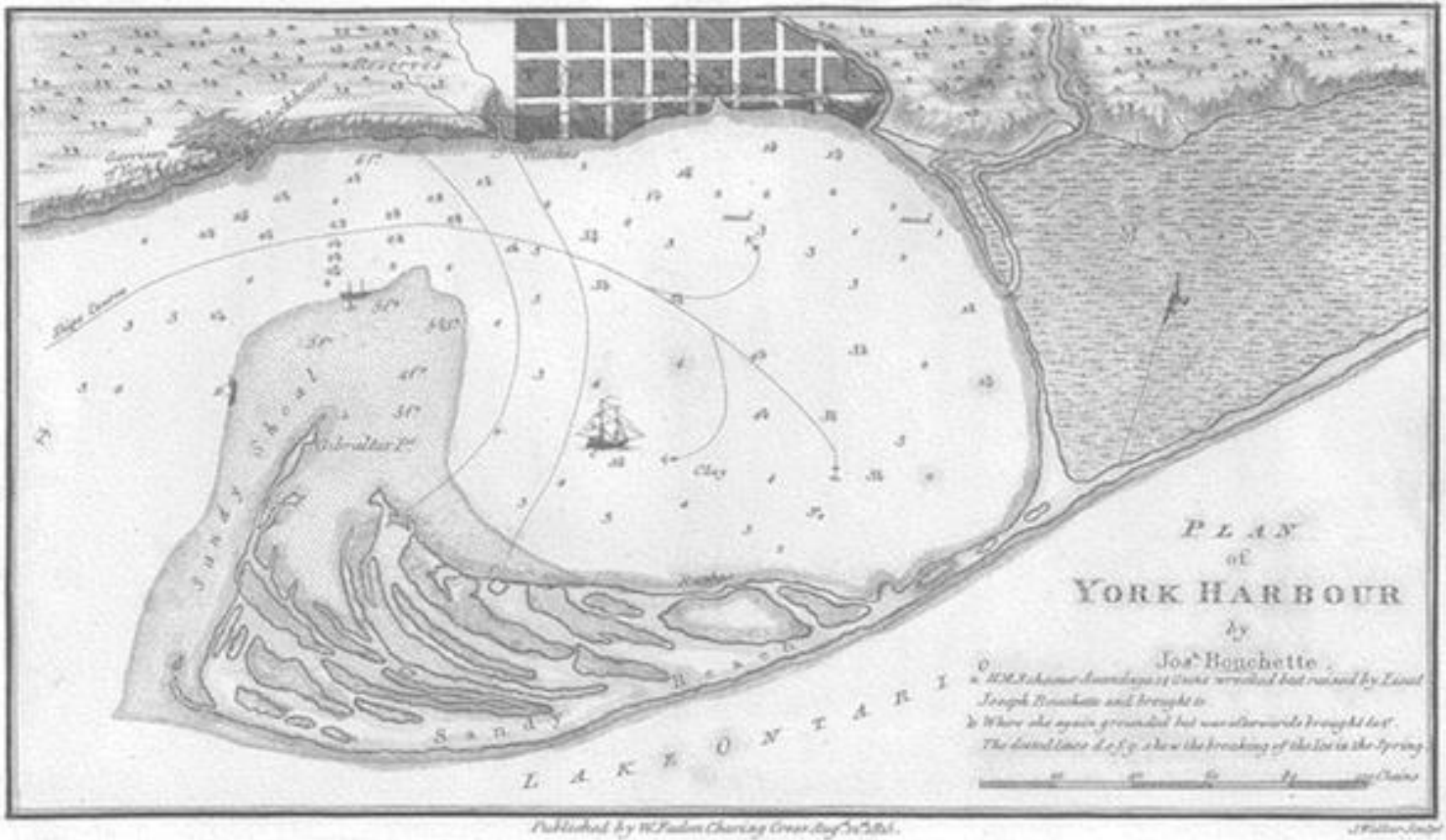


Figure 10: Smith's 1817 Map

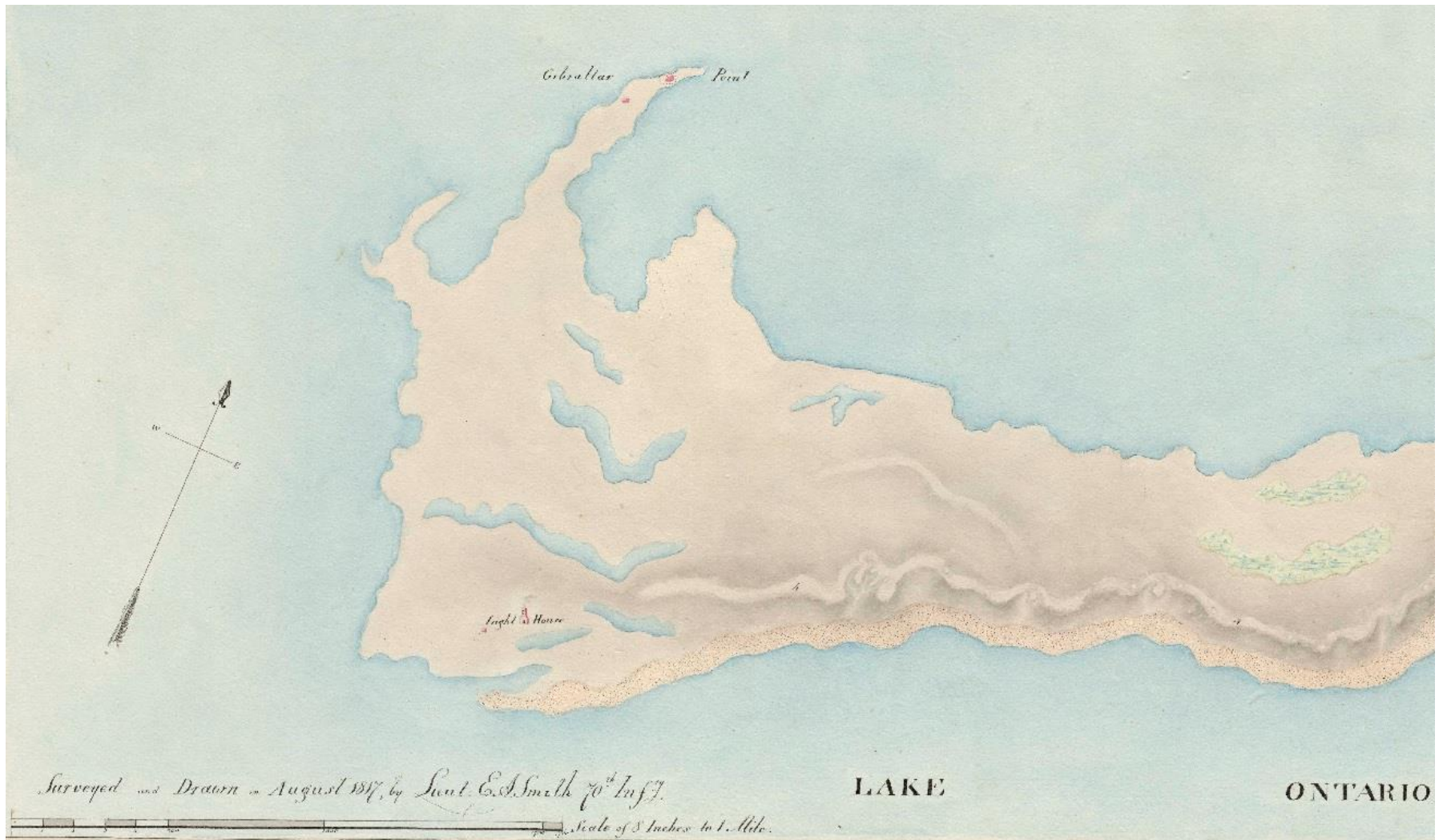


Figure 11: Bayfield's 1828 Map

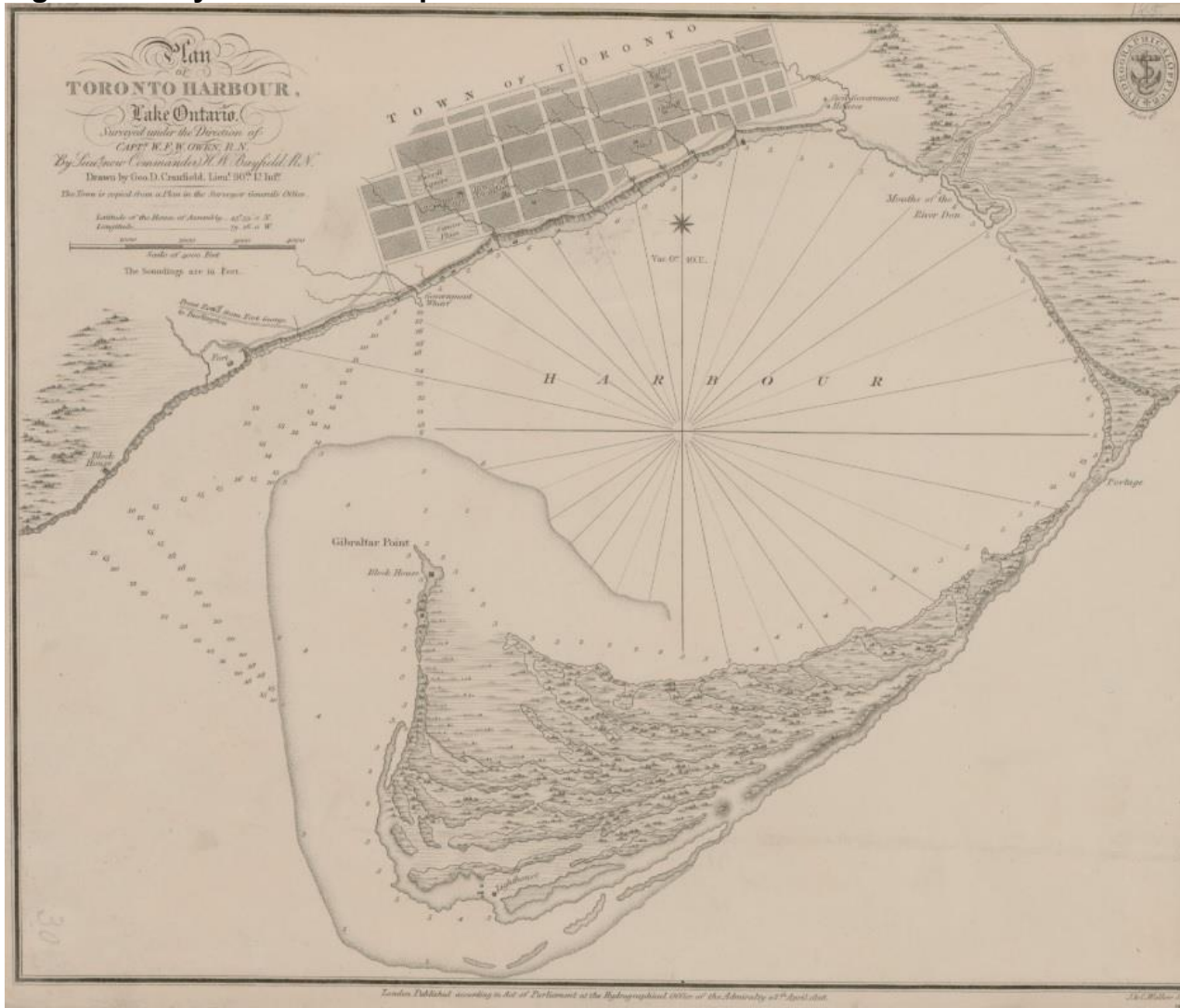
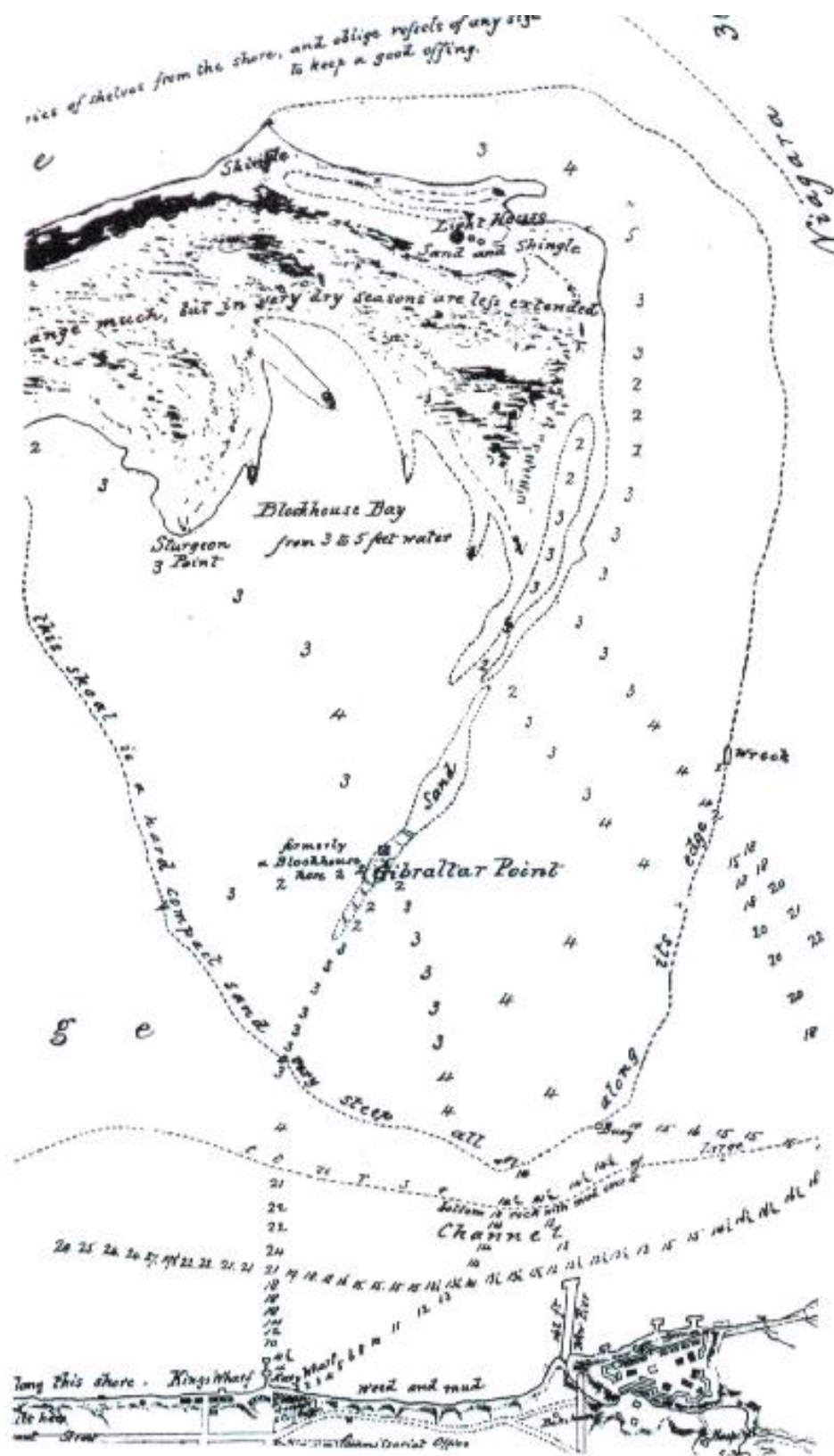


Figure 12: Bonnycastle 1833 Map



However, the name was also applied to the particular location of the lighthouse established in 1808 (Firth 1952: 153; Upper Canada Gazette (York) August 5th, 1809). Although the name seems to have been applied in general to the shore between the lighthouse and the entrance into York harbour, by the middle of the nineteenth century it was restricted to the point of land at the lighthouse (that is, the southern limits of the Project Study Area). There is no specific designation noted in the 1854 Commissioners of Toronto Harbour. The lighthouse appears merely as a dot on the map (Figure 13). It is also identified as the same in 1857 (Hodder 1857: 5) (Figure 14).

By 1906 (Figure 145) the area was known as “Lighthouse Point” (Gibraltar).

3.3.2 The Disasters

Toronto, 1811 and **Toronto**, 1817:

Between 1799 and 1817, two Lake Ontario schooner-rigged vessels bore, in sequence, the name **Toronto**. Ironically, they also shared a common fate in being lost at Gibraltar Point (the original designation for Gibraltar Point (named by Gov. Simcoe) was as shown on the 1833 map and is so noted in Mrs. Simcoe’s diary and on the 1793 A. Aitkin’s ‘Plan Of York Harbour. However, by the time of the loss of the first ‘Toronto’ Gibraltar Point is fixed to the location of the lighthouse), the first in 1811, and the second, in 1817. Their respective tonnage and dimensions are unknown, although neither were likely more than 80 feet of keel length.

The **Toronto**, or the **Toronto Yacht**, as it was frequently called, was launched by John Dennis at York in 1799. He had served at Kingston as a shipwright but took up land in York in 1796. The *Upper Canada Gazette*, 14 September 1799, reported that under Captain William Baker the **Toronto** would “in the course of a few days, be ready to make her first trip. She is one of the handsomest vessels, of her size, that ever swam upon the Ontario” and “she bids fair to be one of its swiftest sailing vessels. She is well calculated for the reception of passengers, and can, with propriety, boast of the most experienced officers and men.”

The **Toronto** was constructed on the Humber River. That Dennis had his shipyard there is referenced in an accusation sworn before a Justice of the Peace, November 2, 1799, in which he accused one Reuben Riggs, of York garrison, of stealing planks and iron fastenings from his shipyard on the Humber (Firth 1952: 153; Upper Canada Gazette (York) February 8th, 1800).

In anticipation of the **Toronto** entering service, Upper Canada’s Lieutenant-Governor Peter Hunter directed (August 28th, 1799) that the new vessel would have a master, mate, four seamen and a cook. As the “government yacht” the employment of the **Toronto** was to be overseen by John McGill, Commissary for Stores and Provisions for Upper Canada. Whereas supplies destined for the

garrison at York or belonging to officers of the civil government were to be transported without charge, private merchandise or freight could be carried for a fee when space was available (Library and Archives Canada, Record Group 10, Volume 789, pp. 6777-6778, "Instructions to John McGill Esquire for the direction

Figure 13: 1854 Map of Study Area (Commissioners of Toronto Harbour)

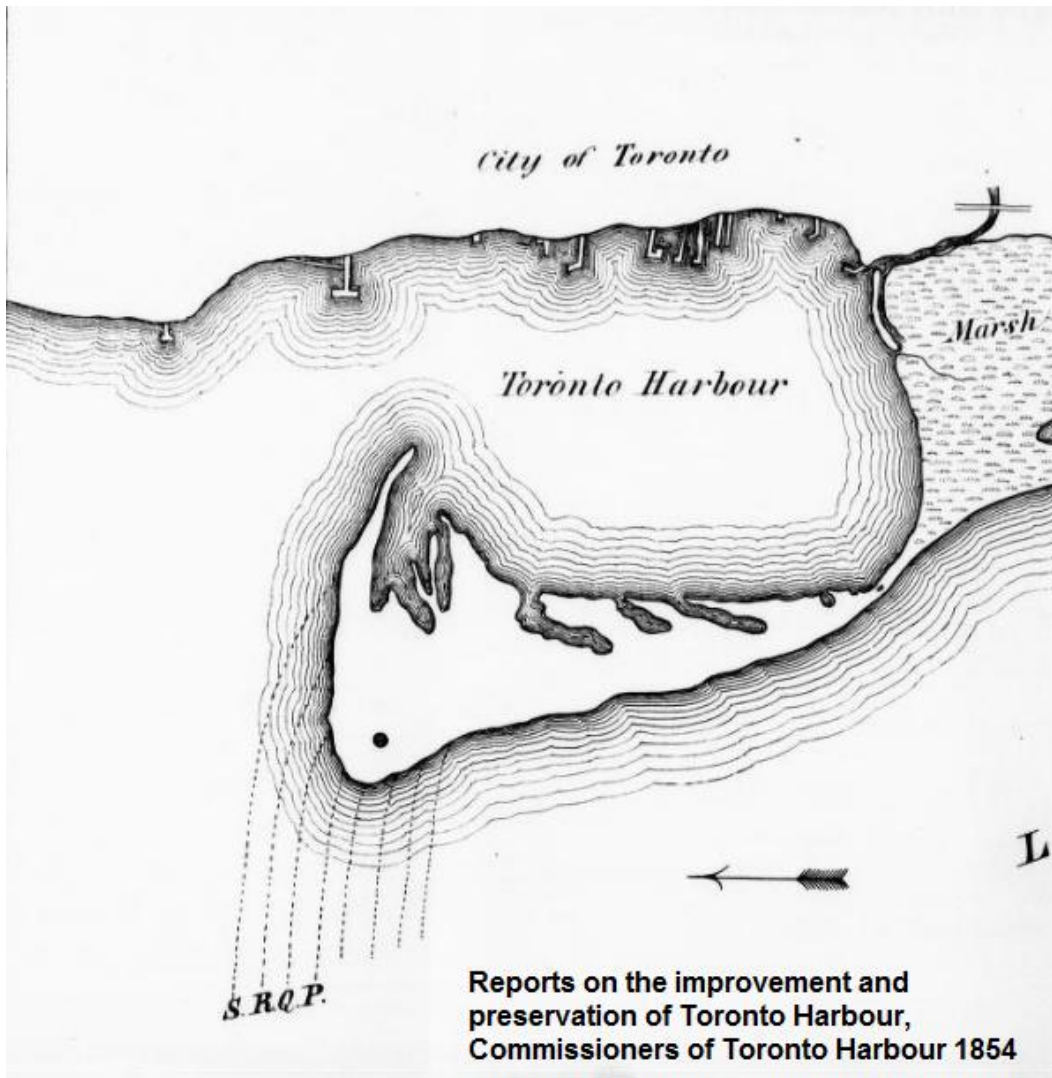


Figure 14: Hodder's 1857 Map

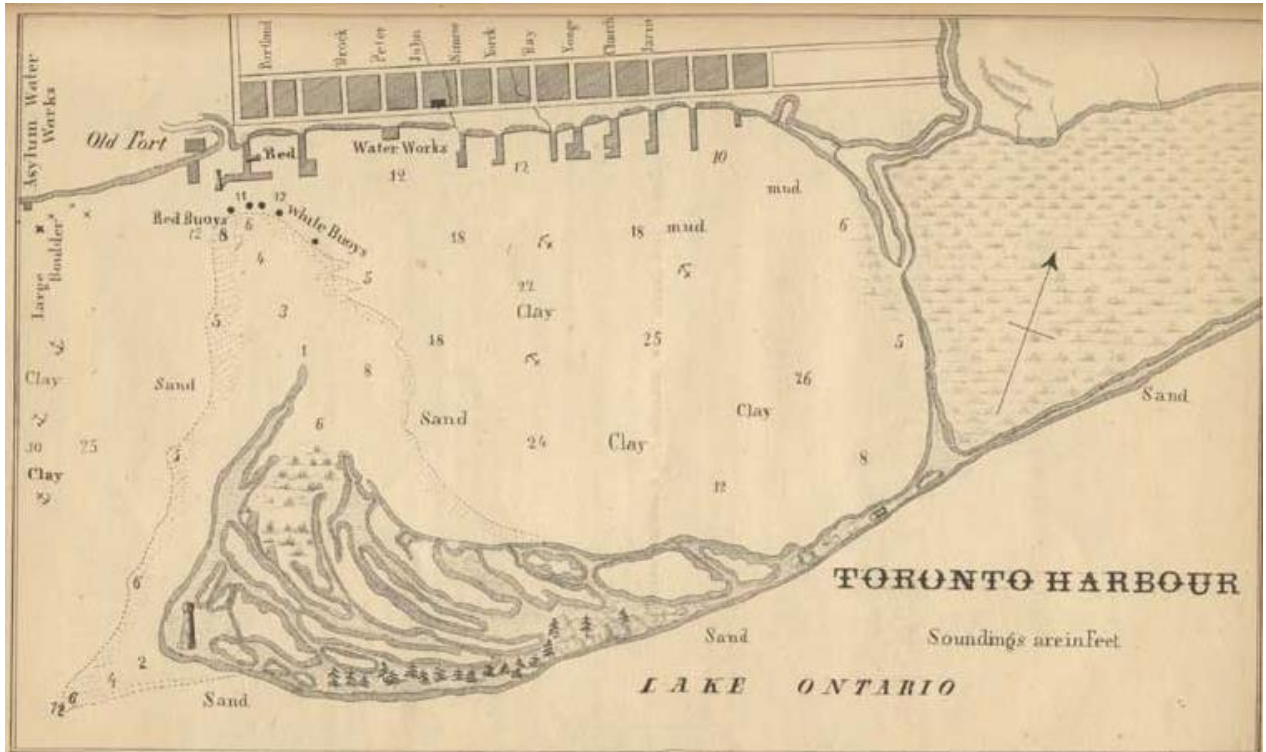
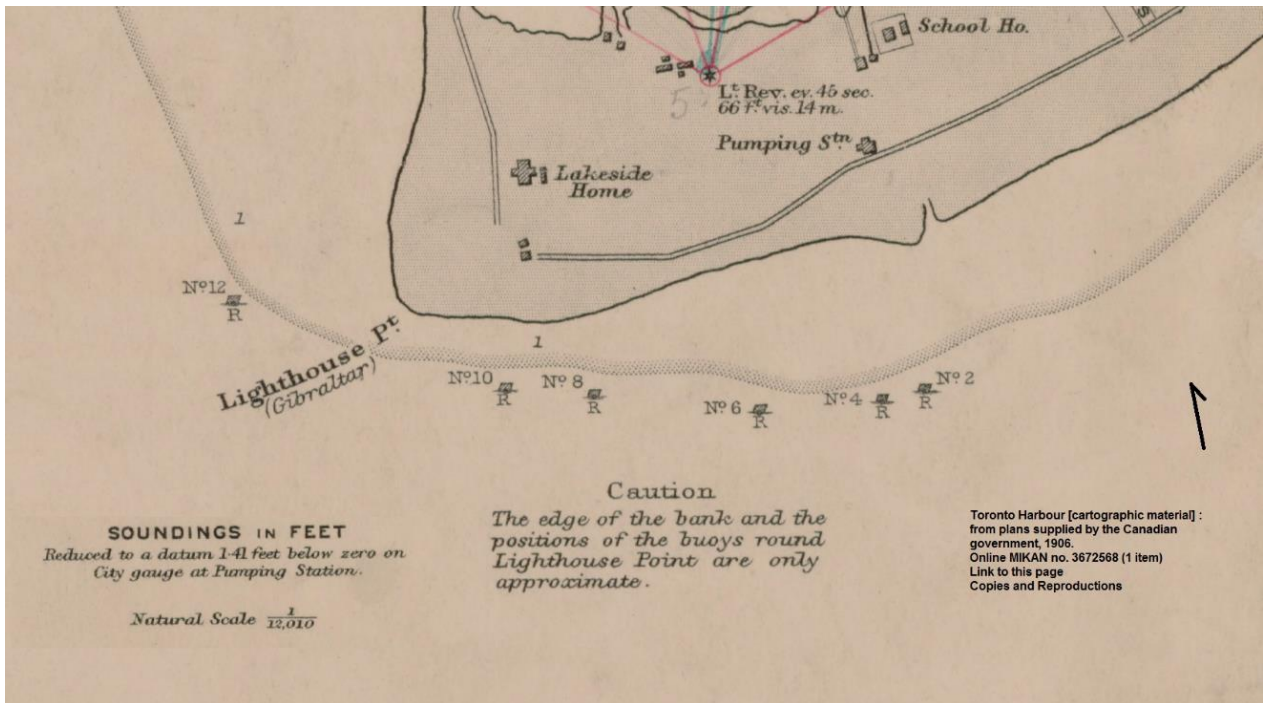


Figure 15: 1906 Map of Study Area



and management of the Government Yacht the *Toronto*”, Lieutenant-General Peter Hunger, York, August 28th, 1799).

William Baker was succeeded in 1800 by Lieutenant Hugh Earle, who had commanded the Provincial Marine’s **Caldwell** in 1793 (Library and Archives Canada, Volume 789, page 6752, James Green, Military Secretary, York, to William Ross, Commissariat, Kingston, June 21, 1800).

The **Toronto** continued to serve through the first decade of the new century. Then, in 1811, she was apparently wrecked in the vicinity of Gibraltar Point. No contemporary account of the incident has come to light and her fate is not mentioned until it was noted in Henry Scadding’s *Toronto of Old* published in 1873 (Scadding, 1873: 534). However, that the career of the **Toronto** had indeed ended in 1811 is confirmed in a letter by Captain Andrew Gray, the Acting Quartermaster-General, at York, of 29th January 1812, in which he reported, “The **Toronto** having broken up here, furnishes an immediate supply of Iron Work, and a variety of other articles that may be worked up in the new vessel” (Library and Archives Canada, Record Group 10, Record Group 8, C Series, Volume 728, pp. 77-78, Captain Andrew Gray, Acting Quartermaster-General, York, to General George Prevost, January 29th, 1812). The identity of the “new vessel” is not given, but most likely it was the **Prince Regent** (12 guns) launched in July at York.

There is no mention of another **Toronto** again until August of 1814 when a Lieutenant Fish of the Provincial Marine was appointed to command “the **Toronto**, schooner” (Library and Archives Canada, Record Group 8/C, Volume 733, page 62, Lieutenant General Gordon Drummond, Fort Erie, to Captain Fraser, Military Secretary, Quebec, August 31, 1814). In 1815, the **Toronto** like its predecessor of the same name, was employed by the Quartermaster-General’s Department. That December there was a request from Lieutenant-Governor Francis Gore for a vessel to be placed at his disposal. Lieutenant-General Sir Gordon Drummond, administrator of Upper Canada was willing to supply the **Toronto** (Library and Archives Canada, RG 8/C, Volume 738, pp. 47-48, Sidney Beckwith, Quartermaster-General, Quebec, to Captain, W.F.W. Owen, Acting Commander on the Lakes, December 12, 1815). This scheme seems to have come forward, but was short-lived. A year later Gore accepted an offer from the Royal Navy to provide such transport as he needed for the “Civil Government” and so decided to reduce the “Expensive Establishment of the Provincial Schooner, *Toronto* and deliver her over to other Navy, discharging her Officers and Crew, from the period of their Engagements”. (Library and Archives Canada, Colonial Office 42, Volume 357, page 366, Lieutenant-Governor Francis Gore, York, to Earl Bathurst, December 7th, 1816). Among the redundant was Robert Irwin who had served in the Provincial Marine, been wounded, and captured at the Battle of Lake Erie in 1813. Postwar he was appointed a Naval Storekeeper and then to the command of the **Toronto**. When the schooner was “seconded over to the navy” Irwin was “paid off”, on February 24th, 1817 (Library

and Archives Canada, RG 8/C, Volume 740: 56-57, John McGill, Commissary for Stores & Provisions, York, to Major D. Fowles, Military Secretary, Quebec, November 17th, 1819).

In the spring of 1817 the Indian Department required the transportation of supplies and presents held at Fort George, at the mouth of the Niagara River, to Burlington Bay. There, offloaded and taken inland to the “Heights”, they were to be distributed to members of the Grand River band. This was an annual event meant to reinforce Indian loyalty to the Crown. The necessary arrangements were made with the navy by the Quartermaster-General’s Office to have H.M.S. **Toronto** (the abbreviated title now indicating its Royal Naval status) proceed to Fort George and embark the Indian Department’s shipment (Library and Archives Canada, Record Group 10, Volume 34: 19854-56; Lieutenant-Colonel Cockburn, Quartermaster-General’s Office, Upper Canada, to Major James Givens, Indian Department, York, May 26, 1817). When the **Toronto** reached the Niagara River on May 31st, Joseph B. Clench, the Department’s clerk and storekeeper, oversaw the loading. Just after 4 o’clock in the afternoon of June 2nd, the **Toronto**, Lieutenant Sherlock in command, sailed from Fort George. Clench, who was responsible for the cargo, was on board.

Even before the stores were fully taken on, Sherlock had said that he would first sail to York and there await a more favourable wind before proceeding to Burlington Bay. Perhaps, also realizing that getting underway late in the afternoon would have meant anchoring at nightfall in an exposed roadstead, he decided on a safer strategy of reaching the Bay.

The voyage to York proceeded normally until, according to Clench, a little after 9 o’clock in the evening, the **Toronto** suddenly, without warning, went hard aground. During the night a “violent Storm of Rain & wind” arose and before dawn, water “was discovered making its way rapidly into the body of the Vessel, which increased notwithstanding every exertion was made with the Pump & Bucketts to diminish its progress”. At daylight, it was revealed that the **Toronto** “yards from the Shore & one hundred north of it” (Library and Archives Canada, Record Group 10, Volume 34: 19862, Joseph B. Clench, “Gibraltar Point York Light House”, to Major James Givens, Superintendent, Indian Affairs, York, June 6th, 1817). By 9 o’clock, Clench wrote, “our situation became very alarming, the Vessel being completely Stranded and all on board holding fast to the Upper side & rigging.” The **Toronto’s** yawl boat was launched and its occupants raised the alarm. Two rescue boats were able to take all the crew and passengers off and remove them to the York garrison and village.

The rough weather did not abate until the evening of the 5th. By then there was no hope of getting the **Toronto** off. Saving the cargo became the priority instead. William Hand, the Indian Department’s clerk at York, with a man named Gruet, went to the lighthouse to save what they could from the vessel. No mention is made in the contemporary accounts of what role the lighthouse played in the

accident, whether it was lit or otherwise; nor is keeper William Hollaway mentioned in the account (Bush 1975: 62-63; no author 1891b:55; Wright 2006: 51). On the 7th of the month, Hand reported that he had been “examining and drying the few Articles Saved, as well as endeavouring to Save Others from the Wreck” (Library and Archives Canada, RG 10, Volume 34: 19875-76, William Hand, York, to Major James Givens, June 7, 1817). Several soldiers of the 70th Regiment, belonging to the York garrison, arrived at the lighthouse to stand guard over such items as had been retrieved from the lake. The hull of the **Toronto** must have breached for “a large quantity of Goods” had washed out of the wreck and drifted ashore between the Humber River and Sixteen Mile Creek, where the local inhabitants were reaping a windfall (Library and Archives Canada, RG 10, Volume 34: 19908-09, Givens to William Claus, Deputy Superintendent-General of Indian Affairs, Fort George, June 9, 1817).

Clench, with several Indian helpers, returned to the wreck for, as he wrote, “the purpose of Diving to recover Stores which is Supposed remained in the Hull of the vessel.” They were equipped with hooks and spears and had not long begun the salvage when several seamen (evidently of the **Toronto’s** crew) and a sergeant of the 70th Regiment came alongside in a boat. They ordered Clench off the wreck, “Saying that is was contrary to Orders for any Person to approach the Vessel without being attended by a Naval Officer and also used abusive language” (Library and Archives Canada, RG 10, Volume 34:19917-18, Clench to Givens, June 10, 1817). The intruders seized the tools and attempted to retrieve articles they declared to be their own. And on the 28th, Clench complained that two soldiers of the 70th, supposedly stationed at the lighthouse to protect the salvaged stores, had paid a nighttime visit to the wreck with implements to steal what they could from the hold. “It appears very Extraordinary to me, “he wrote, “that the Guard has power to approach the **Toronto** in the Night when I am deprived that liberty in open day.” (Library and Archives Canada, RG 10, Volume 34: 19947-48, Clench to Givens, June 28, 1817).

In the meantime, on the 21st of June, a Board of Survey had been convened at the lighthouse “to examine the Indian Presents produced by the Store Keeper [Joseph Clench] as the total of those Saved from the Wreck of His Majesty’s Schooner **Toronto**.” The Board, consisting of Lieutenants Smith and McKiver and Fort Adjutant Fitzgerald, all of the York garrison, compared the tally of recovered items with the requisition filled at Fort George. Articles were simply listed as “incomplete” or “deficient” in their quantities. Some entered as “deficient” were lost through pilferage or as parcels or bundles that had been buoyant enough to become flotsam in the lake. Of the latter, the textiles were the most vulnerable. Clench would note in his letter of the 28th that such articles remaining in the hold “must be completely damaged”. Fabrics were always prominent in the inventories of the Indian Department and their variety is reflected in the types lost in the **Toronto** – blankets, broad cloth, printed calico, striped cotton, Irish linen, silk ferreting [tape], worsted, flannel, ratten, molten

[melton], Russia and Scotch sheeting, blue and black stroud, serge, penistone, handkerchiefs, thread (14 lbs), and 123 “plain hats”.

Of heavy cargo unaccounted for, there was 3,000 lbs of ball and shot; 300 lbs of bar iron; 150 lbs of rod iron; 50 lbs of steel; 1,400 lbs of gunpowder; 750 gunflints; 40 chiefs guns, 50 common guns; 72 gun worms; 1 gun lock; 4 saddles with bridles; 5 frying pans; 6 nests of brass kettles; 4 nests of copper kettles; 4 nests of tin kettles; 2 dozen butcher knives; 2 dozen clasp knives, and 1,896 lbs of tobacco. There was among the smaller items “deficient” or lost, 100 pairs of shoes; 3 caddies or tea boxes; 32 ivory and horn combs; 308 pairs of “earlobes” [earrings]; 600 sewing needles; 45 “looking glass” [mirrors]; and, a number of scissors and awls (Library and Archives Canada, RG 10, Volume 34: 19933-34, “Report of a Board of Survey held 21st June 1817 by Order of Captain Nolan 70 Regiment Commanding the Garrison at York, on Sundry Indian Presents Shipped on Board His Majesty’s Schooner Toronto at Fort George, which was wrecked off York Light House, on the Evening 2nd June...York 23 June 1817). Because of the Rush-Bagot Agreement of April 1817, the **Toronto** would have carried no cannon except possibly a small signal gun.

In the wake of the Board of Survey’s examination, Captain Babington Nolan, the York garrison commander, informed Clench that he, Clench, was now responsible for the goods at the lighthouse (Library and Archives Canada, RG 10, Volume 34: 19936-37, Clench to Givens, June 23, 1817). Yet, as noted, the guard was still present on the 27th when they were detected pilfering the wreck. Clench had problems securing a batteau and assistance to remove the salvaged cargo. Requisitions had to be made and passed through several offices of the civil, military, and naval establishments, and it was probably not until midsummer that the task was accomplished.

The wreck of the **Toronto** was left to the vagaries of wind, waves, and the shifting sands of Gibraltar Point. In October of 1817, Deputy Storekeeper Robertson in Quebec inquired of Robert Hall, Assistant Storekeeper at York, as to the state of the wreck and its cargo and it is was still practical to save any of the latter (Library and Archives Canada, RG 10, Volume 34: 20144, W. Robertson, Deputy Storekeeper General, Storekeeper General’s Office, Quebec, to Robert Hall, Assistant Storekeeper General, York, October 4, 1817). Some weeks later, on November 15th, Hall wrote to William Claus at Fort George, asking in essence what was to be done regarding the same (Library and Archives Canada, RG 10, Volume 34: 20143, Robert Hall, York, to William Claus, Fort George, November 15, 1817). Claus’ response is unknown but the matters seems to have been dropped. In December, the wreck was described as “now entirely under water”, though there was some interests in attempting further recovery if the help of the York garrison could be obtained (no author 1817). Such a hope appears to have been abandoned and no subsequent reference to the **Toronto** appears in the records of the Indian Department. H.M.S. **Toronto** simply disappears from notice, at least in official records.

Sir John Colborne, 1832

Because it is marked so prominently on the “Plan of the Town and Harbour of York” (Bonnycastle 1833) (Figure 11)(and notwithstanding that the location does not fall within the immediate Project Area), it is necessary to comment on this unidentified wreck.

It is almost certainly that of the York schooner **Sir John Colborne** lost on December 18th, 1832. The **Colborne** was proceeding from Twelve Mile Creek (Bronte) to York at night and in consequence of the lighthouse not showing a light “struck on the bar which stretches northward from Gibraltar Point” and in the heavy weather then prevailing became a total loss (Upper Canada House of Assembly 1834: 220).

On December 24th, Freeman Bray, the owner and master, petitioned the Lieutenant-Governor for compensation on the basis that the lighthouse failed in its role as a guide to navigation. The loss of the **Colborne** had left him, as he said, ruined (Upper Canada House of Assembly 1832: 219). The civil government eventually conceded (February 13th, 1834) Bray’s claim and awarded him £150 for is loss.

Young Leopard, 1856

A schooner of unknown tonnage, the **Young Leopard**, with a cargo of coal and salt, “grounded on Toronto bar and capsized” become a total loss, about the 2nd of December 1856 (December 8th, 1856).

Eliza Wilson, 1863

The schooner **Eliza Wilson** was wrecked “on Gibraltar Point” (the one currently associated with the lighthouse) in October of 1863 (United States Coast Guard 1874). Owned by Hedley & Hall of Wellington Square (Burlington), the **Eliza Wilson** was on a voyage from the Bay of Quinte with a cargo of wood for Toronto. Of 70 tons, she had been built at “Port Nelson” (little more than a pier on the lake shore in Nelson Township east of Burlington) in 1855.

W.A. Glover, 1867

The schooner **W.A. Glover**, 162 tons, was bound from Hamilton to Montreal with a cargo of wheat and peas when driven ashore in a gale “off Lighthouse Point” on October 4th, 1867 (British Whig, October 8th, 1867). “The vessel bursts in several places from the swelling of the grain,” and became a total loss, though much of the damaged cargo was salvaged the next day when the sea went down (Post October 8 1867).

The **Glover**, which was owned by Charles Roe of Montreal, was of long service having been built as the **Velocity** at Buffalo, New York, in 1842 by C. Stevens. It was probably on being rebuilt in 1862 that the **Velocity** was sold into Canada and renamed the **W.A. Glover**. (Board of Lake Underwriters, 1864: 45).

Admiral 1867

The schooner **Admiral**, 167 tons, cleared the Northern Railway Wharf in Toronto harbour on the evening of November 3rd, 1867, with 200,000 feet of lumber for Oswego, New York. Entering open water she was struck by a heavy gale and only got as far as the lighthouse “when the wind struck her broadside and drove her on a sand bar, projecting into the lake a distance of several hundred yards” (Globe November 5 1867). The sea was running so high that the **Admiral** was carried into the beach “within a short distance of the lighthouse”, where normally there was only three feet of water. By midnight, the schooner had started to break up and although the lightkeeper heard the cries of the crew for help, he could do nothing. In trying to reach shore one of the seamen, a man named Kelly, was drowned. The rest eventually managed to get to ashore safely. The **Admiral** was a complete wreck.

The **Admiral** had been built at Port Hope in 1852 by Stevens. In her last year she was sailing out of Toronto and was owned by Myle Brothers.

Jane Ann Marsh 1868

The schooner **Jane Ann Marsh**, 257 tons, bound from Hamilton to Toronto with 150 cords of wood, was wrecked between Gibraltar Point and the Eastern Gap on December 4th, 1868. The uncertain location is simply reported as “on the Island west of the Gap”, and “about 300 yards from shore (Globe December 7 1868)”.

The **Marsh** was launched at Port Hope in 1848 by Collins. It is not to be confused with the **Caroline Marsh** or the **Sarah Ann Marsh**, both constructed by Collins in the 1850s.

Ann Bell Chambers 1873

The **Ann Bell Chambers** was a small schooner of 40 tons owned by Bell Chambers of Frenchman’s Bay. Late in the afternoon of October 29th, 1873, the **Chambers**, Captain William Edwards, left the Bay for Toronto with a load of cordwood. It was dark by the time the approach to the unlit Eastern Gap was made and Edwards hove to while a crewman was sent ashore to arrange for illuminated buoys in the entrance (Mail October 31, 1873). Before this could be accomplished, Edwards decided to round Gibraltar Point and reach the western channel of the harbour. A southeast gale set in and, as he subsequently testified, “When we were about half-way up the Island, the waves were washing into the vessel and she filled and settled over on her beam-ends. Seeing our

condition I let go the anchor with the view of keeping her out in the lake, but we had not chain enough. We put out the anchor before she turned over” (Mail, November 1, 1873). [Edward’s statement was made at the inquest held two days later on the body of his son Joseph and was reported verbatim in the newspaper Mail).

The remaining crew – Captain Edwards, his son Joseph, aged 15, and Peter Young – lashed themselves to the rigging. As the wreck was driven ashore, “opposite the lighthouse”, a rescue party was able to wade through the surf and climb on board. Captain Edwards, unconscious, and the body of his son, dead from exposure, were cut loose. Edwards was carried to the cottage of a lightkeeper George Durnan where he recovered. Young was washed off the wreck and lost.

When an inquest on the body of Joseph Edwards was held at William’s Hotel, West Market Street, on the 31st, Captain Edwards gave a final assessment of the little schooner: “The vessel now lies quite close in-shore. She is all broke up.”

Other Possibilities

Other total losses in the vicinity of Gibraltar Point during the heyday of sail and steam on Lake Ontario in the nineteenth century cannot be ruled out. A number of ships are recorded as lost near Toronto or wrecked on Toronto Island. But the chronicle is sketchy, and detail lacking. Of the additional possibilities one may note the schooner **Duke of Darlington**, 57 tons, cargo of pig iron, sunk off Toronto with all hands (Upper Canada Gazette), in July of 1854 (Democracy February 28, 1855), and the scow **Cornelia** (or **Cornella**) wrecked on Toronto Island December 14th, 1856 (Globe January 1, 1857).

3.3.3 The Lighthouse

The Gibraltar Point lighthouse was authorized by the Upper Canada Assembly on May 1st 1808, and completed that year. Constructed of hewn limestone, the hexagonal tower was approximately 67 feet in height; and an extension of 15 feet was added in 1832 (Bush 1975: 62-63). Initially, the light was probably a single Argand wick lamp using whale oil. Modifications were made to the light over the decades. By the 1870s, the beacon consisted of a “catoptric” apparatus of multiple lamps with parabolic reflectors. In 1891, it showed a revolving white light visible 18 miles in clear weather (no author 1891b: 55). The lighthouse was electrified in 1917, altered again in 1945 to show a fixed green light, and superseded by a light atop tubular tripod tower (Wright 2006: 51).

Gibraltar Point was complemented in 1886 by a steam fog alarm. The wood, fog-signal building was situated southwest by south from the lighthouse and contained the steam-powered apparatus.

In 1913, a wireless station, operated by the Canadian Marconi Company for the federal government, was built adjacent to the lighthouse. It was comprised of two 185-foot stepped aerial masts, a generator building, and a staff residence. The last is often mistaken (Wright 2006: 50) as the home of the lighthouse keeper.

“Toronto Island. New Station. – An excellent site having been secured on the Marine and Fisheries reserve at Toronto island, a complete new station, consisting of a type No. 3 operating-house, 40 by 30 feet, two 185-foot housing masts and a duplicate 10-horsepower 5 1/2 – k.w. radiotelegraph equipment, was established during the year at a total cost of \$22,352.76.

Public tenders were invited for the erection of two masts and the operating and dwelling-houses, and the contract was awarded to Messrs. McFarlane, Pratt & Hanley of Toronto, who submitted the lowest tender of \$12,650.

The radiotelegraph equipment consists of two motor-driven 5 1/2 – k.w. 240 cycle, synchronous disc transmitters, with all necessary auxiliary apparatus, together with a gasoline engine to be used as an emergency source of power, and a complete receiving equipment. The contract for the installation of the above apparatus was awarded to the Marconi Wireless Telegraph Company of Canada, Limited, for the sum of \$6,964.

Owing to the small elevation of the site above the maximum lake level, it was necessary to commence the foundations practically on the surface, and a large amount of grading was required to protect the foundations and give a finished appearance to the buildings. It is proposed to sod this grading during the coming year.

Work was completed and the station placed in commission in January, 1914” (Canada Sessional Papers 1915: 88).

The Marconi station began operation (call letters VBG) in January of 1914, and continued in use into World War II. The development of the VHF marine radio eventually made the station obsolete (Dubreuil, 1998: 76-77). In 1967, there were also four private 100-foot radio transmission masts, in a line 400 feet apart, extending south, southeastward from Gibraltar Point (Canadian Hydrographic Service 1967: 77). Figure 16 illustrates the lighthouse and one of the aerial masts.

Remnants of the wireless station and masts may be still be present on land. An almost exact wireless station as that shown in Figure 17 (Canadian Postcard Company 1919) exists in Tobermory, Ontario. The latter is currently privately owned and rented out as accommodation. The mast footings still exist in the Tobermory location and this may bode well for their discovery at Gibraltar Point. Additional historic views are illustrated in Figures 18 - 20.

Figure 16: Ca. 1914 View of Lighthouse (Ontario Archives 1002481)



Figure 17: Aerial View of Lighthouse and Buildings 1919

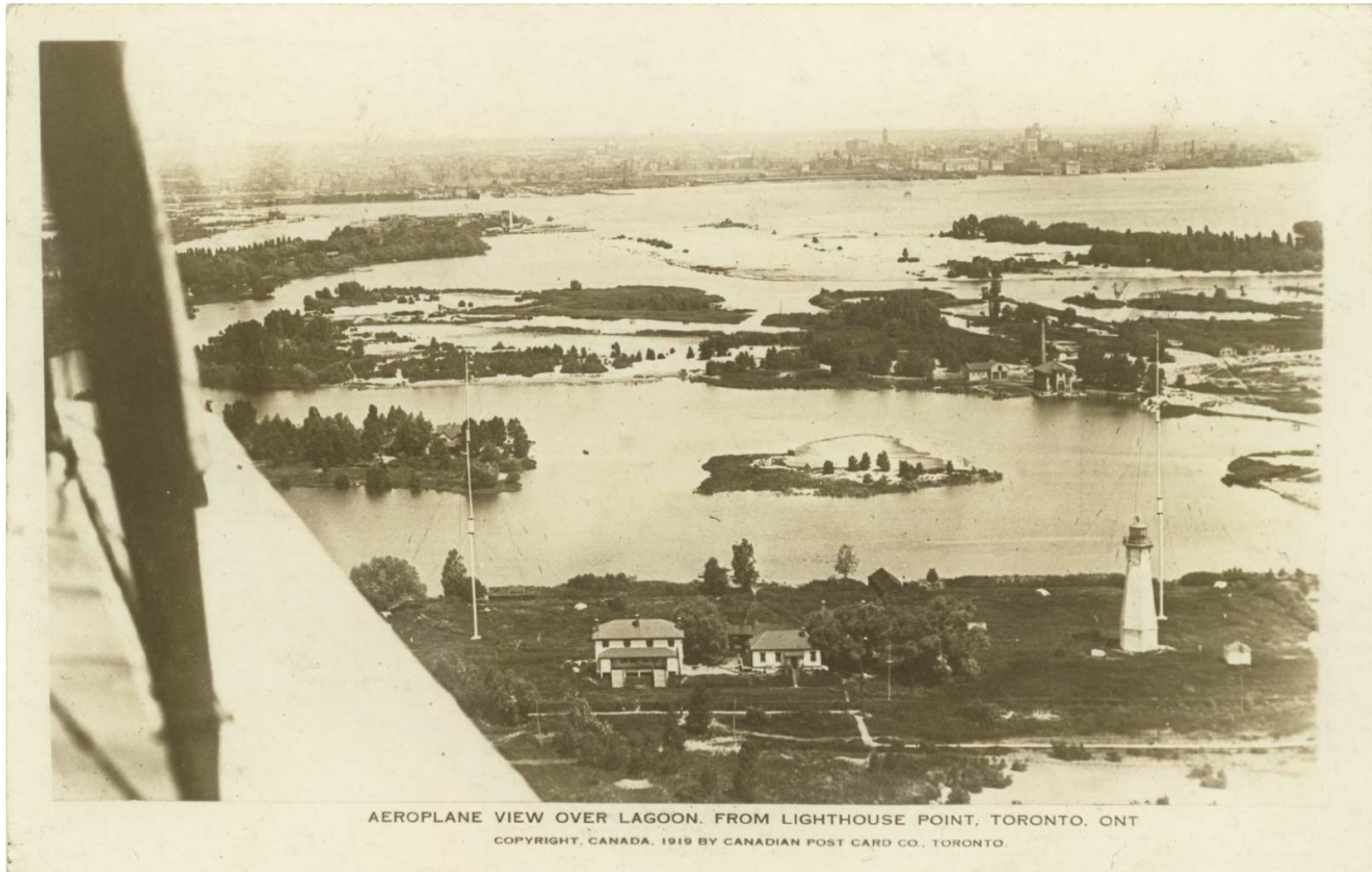


Figure 18: Ca. 1940 View of Lighthouse (Ontario Archives 1001374)



Figure 19: 1955 View of Lighthouse, Lighthouse Keepers House and Marconi Station (Ontario Archives 10014003)



Figure 20: The Wireless Station



There are numerous plaques (two illustrated in Figures 21 and 22) that refer to the lighthouse and its historical and architectural importance. It is a landmark, and has a large history written up on several places. It is listed on the Toronto Heritage Inventory, but it is not designated. Given its importance in history, a consideration for designation is recommended. It should be pointed out again that the name Gibraltar Point was also used for the area north of the lighthouse, and should not be confused with that of the Project Study Area. There is a plaque for Gibraltar Point but it refers to the area of the former blockhouse, and not the area of the lighthouse.

As part of the marine background research, an evaluation of heritage significance of the lighthouse is also included in this report. This is not considered to be a cultural heritage assessment as no direct observations have been made of the lighthouse exterior or interior, and the evaluation has only been made with archival information. It is only referenced here as it relates to the importance of the marine related resources. There are no other structures in the area that have any heritage value or significance to the study area.

Cultural heritage values (Ministry of Tourism, Culture and Sport 2014) are described below.

Figure 21: The Lake Light Plaque



Figure 22: Heritage Toronto 2008 Plaque



Design Value or Physical Value: i) is a rare, unique, representative or early example of a style, type, expression, material or construction method; ii) displays a high degree of craftsmanship or artistic merit; or, iii) demonstrates a high

degree of technical or scientific achievement. All of the above apply to the lighthouse.

Property has Historical Value or Associative Value: i) has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community; ii) yields, or has the potential to yield, information that contributes to an understanding of a community or culture; iii) demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community. The lighthouse has direct associations with the early marine theme of the area, and contributes to the understanding of the early marine culture and importance of marine transportation, in general, to the City of Toronto.

Property as contextual value: i) is important in defining, maintaining or supporting the character of an area; ii) is physically, functionally, visually or historically linked to its surroundings; iii) is a landmark. The lighthouse is a landmark on Toronto Island.

In the above context, the lighthouse appears to have sufficient heritage value to be considered an important structure in the City of Toronto. The property, as mentioned earlier, is currently listed on the City of Toronto Heritage Inventory, and the status might be upgraded to designation under Part V of the Ontario Heritage Act.

In addition, a Stage 1 and Stage 2 archaeological assessment of the southwestern limits of Toronto Island (Figure 8) was completed under PIF P303-0401-2016. No cultural material or features were located in the Project Study Area, and the report recommended no further archaeological work in the Project Study Area. Archaeological assessment completed by TRCA in 2011 under PIF P338-020-2011 identified and registered a EuroCandian site AjGu- 069 immediately north of the lighthouse (outside the Project Study Area).

Within the area of the 2016 TRCA archaeological assessment, it is possible that buried shipwreck remains may have been washed ashore, and may also still be present on land. Traditional test pitting (Stage 2) may not be sufficient to discover these, and alternative methodologies such as metal detectors, and ground penetrating radar, might be more productive.

3.4 Fieldwork Results

Appendix A presents the full report on the marine geotechnical/archaeological assessment conducted by Shark Marine, under the license and direction of Scarlett Janusas, marine archaeologist (license number, 2012-13). Assessment consisted of side scan survey, magnetometer survey, ground truthing, and snorkel survey of nearshore shallow areas.

A total of 126 targets (four of these identified the pilings, and the first five listed on the tables were boundary markers for the survey) were identified either by side scan sonar, magnetometer or a combination of both, or through snorkel survey. Table 1 presents a list of the targets, indicating the methodology they were located with, and a description, where possible, also indicating whether the target was considered to be cultural or non-cultural. Figures 24 to 36 illustrate the location of the targets located by side scan sonar and/or magnetometer.

Three cultural targets were identified during the marine archaeological assessment. Two of these were located during the visual assessment, and the third, is a group of three pilings, still in situ just off the headland. The latter was located using side scan sonar. The snorkel/visual survey located a ship's knee and a stone filled crib. The former is not *in situ* and has limited cultural heritage value or interest, as there is no associated additional structural ship remnants located in the area. The crib, stone filled, is also of limited cultural heritage value or interest, and given its isolated and limited nature, probably reflects a temporary dock or wharf area. Its construction is not unique, and is the typical wooden structure infilled with rock. The three pilings are located in front of the headland, and suggest that this might at one time have been used to support a larger wharf or landing area. A search was conducted in the area for additional pilings, but no evidence of them was apparent. It is quite possible that additional pilings are buried under the armour stone that fills in this area of shoreline. The three pilings themselves have been documented, but have no significant cultural heritage value or interest. Figure 24 illustrates the location of the three cultural finds.

Table 1: List of Targets by Survey Method and Cultural Value

Target	Side Scan	Snorkel Survey	Magnetometer	Non-cultural	Buried/unknown	Cultural
S1				Boundary		
S2				Boundary		
S3				Boundary		
S4				Boundary		
S5				Boundary		
S6	Yes			Construction debris		
S7			Yes	Pipeline		
S8			Yes		Buried	
S9	Yes			Geophysical		
S10			Yes		Buried	

Target	Side Scan	Snorkel Survey	Magnetometer	Non-cultural	Buried/unknown	Cultural
S11			Yes		Buried	
S12			Yes		Buried	
S13	Yes		Yes	Wire		
S14			Yes	Pipeline		
S15			Yes	Pipeline		
S16			Yes		Buried (small)	
S17			Yes		Buried (small)	
S18	Yes			Pipeline		
S19			Yes	Pipeline		
S20			Yes		Buried	
S21			Yes	Pipeline		
S22	Yes			Sand formation		
S23	Yes			Related to pipeline		
S24			Yes	Pipeline		
S25	Yes			Sand formation		
S26			Yes	Pipeline		
S27			Yes		Buried	
S28			Yes	Pipeline		
S29			Yes	Pipeline		
S30			Yes	Pipeline		
S31	Yes			Rock formation, possibly discarded armour stone		
S32			Yes	Pipeline		
S33			Yes		Buried	
S34			Yes		Buried	
S35			Yes	Pipeline		
S36			Yes		Buried	
S37			Yes		Buried	
S38	Yes			Cable wire		
S39			Yes	Pipeline		
S40			Yes		Buried (small)	
S41			Yes		Buried	
S42			Yes	Pipeline		
S44			Yes		Buried	
S45			Yes		Buried	
S46			Yes		Buried	
S47			Yes		Buried	
S48	Yes			One rock		3 pilings
S49			Yes		Buried (small)	
S50			Yes		Buried (small)	
S51			Yes		Buried	
S54			Yes		Buried (small)	
S55			Yes		Buried	
S56			Yes		Buried (small)	
S57			Yes		Buried	
S58			Yes		Buried	
S59			Yes		Buried (small)	
S60			Yes		Buried	
S62			Yes		Buried (small)	
S63			Yes		Buried	
S65			Yes		Buried	

Target	Side Scan	Snorkel Survey	Magnetometer	Non-cultural	Buried/unknown	Cultural
S66			Yes		Buried	
S67			Yes		Buried	
S68			Yes		Buried	
S69			Yes		Buried	
S70			Yes		Buried	
S71	Yes			Rocks and patches of biomass		
S72	Yes			Wire cable		
S73			Yes		Buried (small)	
S74	Yes			Patches of biomass and sand		
S75			Yes		Buried	
S76			Yes		Buried	
S77			Yes		Buried	
S78			Yes		Buried (small)	
S79			Yes		Buried	
S80			Yes		Buried (small)	
S81	Yes			Patches of biomass and sand		
S82			Yes		Buried (small)	
S83	Yes			Barrel or open pipe		
S84			Yes		Buried	
S85	Yes			Sand formation		
S86			Yes		Buried (small)	
S87	Yes			Rocks		
S88	Yes			Sand formation		
S89			Yes		Buried (small)	
S90	Yes			Sand formation		
S91			Yes		Buried	
S92			Yes		Buried (small)	
S93			Yes		Buried (small)	
S94					Buried (small)	
S95			Yes		Buried (small)	
S96			Yes		Buried (small)	
S97			Yes		Buried (small)	
S98			Yes		Buried (small)	
S99			Yes		Buried (small)	
S100			Yes		Buried (small)	
S101			Yes		Buried	
S102			Yes	Pipeline (visible on shore as well)		
S103			Yes		Buried (small)	
S104			Yes		Buried (small)	
S105/S48	Yes					pilings
S106/S48	Yes					Pilings
S107			Yes		Buried	
S108			Yes		Buried	
S109			Yes		Buried	
S111			Yes		Buried	
S112			Yes	Pipeline		
S113/S48	Yes					pilings
S114			Yes		Buried	

Target	Side Scan	Snorkel Survey	Magnetometer	Non-cultural	Buried/unknown	Cultural
S115			Yes		Buried	
S116			Yes		Buried	
S117			Yes		Buried (small)	
S118			Yes		Buried (small)	
S119			Yes		Buried (small)	
S120			Yes	Pipeline		
S121			Yes		Buried (small)	
		Yes				Ship's knee
		Yes				Stone filled crib
		Yes		Pipeline		
		Yes		Pipe		
		Yes		armourstone		

3.4.1 Side Scan Targets

A total of 22 targets were identified with side scan sonar (Table 1). Of these 22 targets, the majority were geophysical changes in the bottom, a rock or rocks, construction debris (armourstone or wire cable) or pipeline. There was only one target identified as cultural. This target (Target S48) was also captured through sidescan as targets S105, S106 and S113), which consisted of three cut pilings (Figure 25). These three pilings were located at the headland (where the shoreline swing from a north-south orientation to an approximately west-east orientation). They are located just off the edge of the armourstone which spills underwater from the shore for a distance of about 20 metres. There may well be additional pilings buried under the armourstone. The pilings were probably an early attempt to try and stabilize and protect the shoreline. The pilings are not considered to have significant cultural heritage value or interest.

3.4.2 Magnetometer Targets

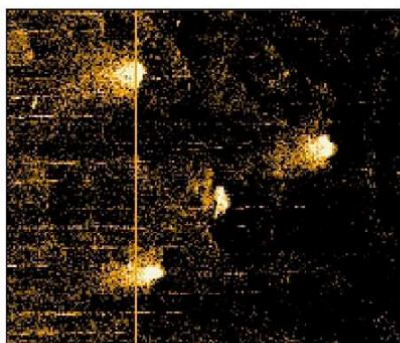
A total of 88 targets were located with magnetometer. A total of 29 of these targets had small gradients and were buried. They could be either metal construction debris, garbage or cultural. As they were all buried, none could be verified as to actual use/function. An additional 41 of the targets had much higher gradient readings. Again, as these were buried, function/identity of the targets could not be identified. They could be products of a large mass of ferrous material, a geological feature with high ferrous content or other interference with the sensor. Other targets captured by the magnetometer include a pipeline running in an approximate north-south orientation off the headland. The buried magnetometer hits could not be identified as to cultural heritage value or interest. The pipeline is not considered to have cultural heritage value or interest.

Figure 24: Location of Cultural Finds

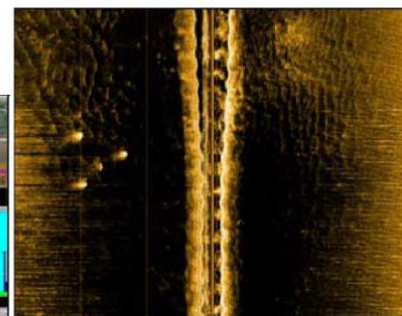
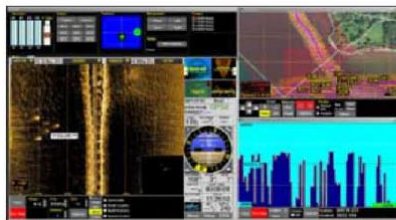


Figure 25: Target S48

Target S48 - Pilings



Group: Group 1
Description: S48 was located using side scan sonar, and could also be seen from the surface. S48 is made up of 3 pilings and a rock.
Latitude: 4336.7151,N
Longitude: 07923.3785,W
Depth: --- m
Created: 14/OCT/2016, 11:26:54
Position Set: 14/OCT/2016, 11:26:40
Dive Number: N/A
Diver/Operator Name: Boat



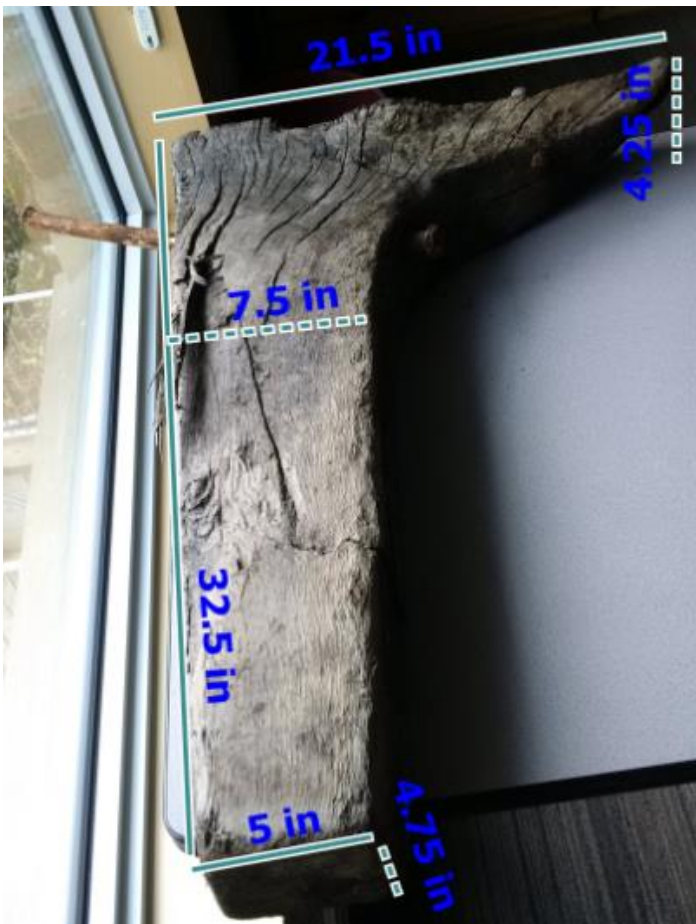
3.4.3 Visual Observations

The snorkel survey did not detect any nearshore cultural features, other than the one that was partially onshore (crib). The shoreline walk, however, did locate not only the stone filled crib but also a ship's knee (Figure 24, 26 and 27). The latter was not *in situ*, however, based on its' weight, it is likely that it came from an area not more than 100 metres distant. There was no indication of any additional ships parts in the area, which might indicate they have already been removed, or are buried either on land or under the lakebed sediments. The location of the

Figure 26: Ship's Knee as Found in Area



Figure 27: Measurements of the Ship's Knee (courtesy of TRCA)



knee was noted (43° 36' 45.17"N, 79° 23' 23.13"W). Along its two length's, the ship's knee measured approximately 32.5" by 21.5" (note: inches are used as the imperial system of measurement was used to construct ships). On each of the flat sides there is an iron bolt. There are presumably additional bolt holes in the knee for additional bolt placement. The bolts were driven through the wood, with a head at one end (the outside) and the other "clenched" that is a washer or flat ring that is placed on that end and the end then hammered over. Small bolts or spikes could be clenched by bending/hammering the sharp end over. But usually what is seen on Great Lake wrecks are the washered end hammered over to achieve a tight fastening. According to the "Rules Relative To The Construction of Lake Sail and Steam Vessels (Board of Lake Underwriters 1866) bolts for knees on vessels of 50 – 200 tons would be 5/8" diameter, and 3/4" diameter for vessels of 250-300 tons. Knees were to be "fastened with a bolt every seven inches, the bolts in the arms to be driven through and clenched (ibid: 8). "All through-bolts must be driven from the outside and clenched. Locust tree-nails may be substituted for through-bolts, and they must be driven through and wedged" (ibid: 12). TRCA personnel recovered the knee and transferred it to the City of Toronto, Museums and Heritage Services for permanent curation. This particular knee has metal bolts. As to the type of wood used for the construction of the knees, these were usually made of white oak or tamarack. The 1876 version of the "Rules" (International Board of Lake Underwriters 1876: 44) states that all wooden knees were to be of roots or limbs [it is likely that the traditional crook of a tree limb may have been in limited supply by 1876], or "of machine-bent manufacture [suggesting steamed wood]. This knee appears to have been constructed from the crook of a natural tree, and is probably constructed of white oak. The 1876 Rules further states that diameter of knee bolts for different ship tonnage: for ships of 100 tons had knee bolts measuring 5/8" diameter; 175 tons – 3/4" diameter; 275 tons – 3/4" diameter; and 400 tons – 7/8" diameter. The diameter of the knee bolts from the recovered knee is .8", with a head diameter of 1.2". This fits with a ship of about 350 tons. It should be noted that the "Rules" pertain to both American and Canadian ships. The long side of the knee is the vertical outside face. There is no information in either the 1866 or 1876 "Rules" with regards to the thickness of the knee, but the overall size of the piece, definitely defines it as a hanging knee. The configuration of the knee and the bolt size suggest that it comes from a vessel of substantial size, possibly upwards of 130' in length. The only vessel with recorded lengths in the marine background research with similar dimensions is the **Jane Ann Marsh** of 1868. Her tonnage of 257 could meet the criteria of the bolt size, however, it is possible (albeit a slim possibility) that another ship of similar dimensions was also wrecked in this area and not reported. The relationship between tonnage and bolt size is supported by tables in Desmond's (1919: 21) book on wooden ship building.

The crib was located at 43° 36' 55.09"N, 79° 23' 29.04"W (Figure 24, 28 and 29) The crib was marked by two pilings that were at the lakeward end of the crib with a wood face and long wooden sections along both of the sides of the crib, and

Figure 28: Cribwork



Figure 29: Cribwork (courtesy of TRCA)



filled with stone. The crib did not extend beyond the single crib, and it was located at the interface of the beach and water, and extended slightly into the water. There was no evidence of any additional crib work further out into the water. There was no evidence of the superstructure in the area. Earlier google earth imagery dating from September of 2009 does not show a crib in this area, however, given the nature of the shifting sands, it may have been buried then.

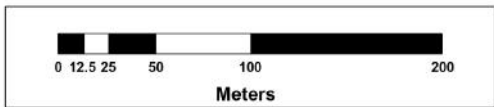
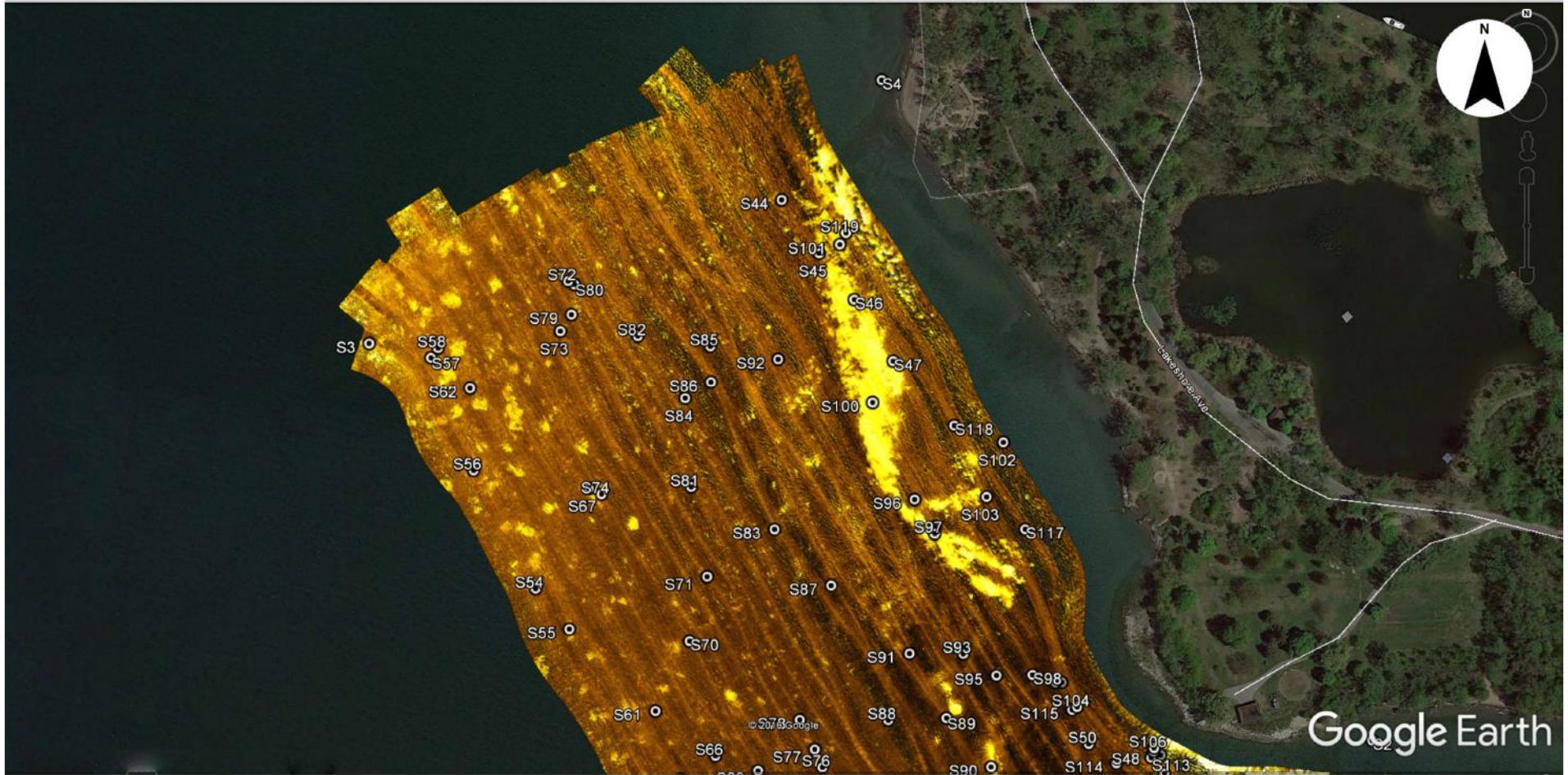
Figure 29 however shows very sharp wood edges, which would, if the structure was of an early date, have shown water wear (smooth edges). The date of the crib is possibly late, however, as a date cannot be ascertained through historic maps of the area, as a minimum, obtaining accurate drawings of the crib is recommended.

In addition to the two cultural finds near or onshore, two pipes were also observed. These were partially buried and extended from onshore into the water and was buried. The exposed interface was located at 43° 36' 43.43"N, 79° 23' 18.44"W (Figure 30). The pipeline is considered to have no cultural heritage value or interest.

Figure 30 – Pipeline Extending from Shore



Figure 32: Side Scan Targets – 2



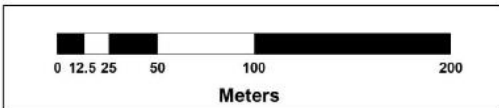
Gibraltar Point Assessment
Side Scan Mosaic 2

Survey Conducted - Oct 2016

Drawing by: Mike Aitken

SHARK
SHARK MARINE
TECHNOLOGIES INC.
23 Nihan Drive, St Catharines,
Ontario, Canada, (905) 687-6672

Figure 34: Magnetometer Targets – 2



Gibraltar Point Assessment
Magnetic Gradient 1

Survey Conducted - Oct 2016

Drawing by: Mike Aitken

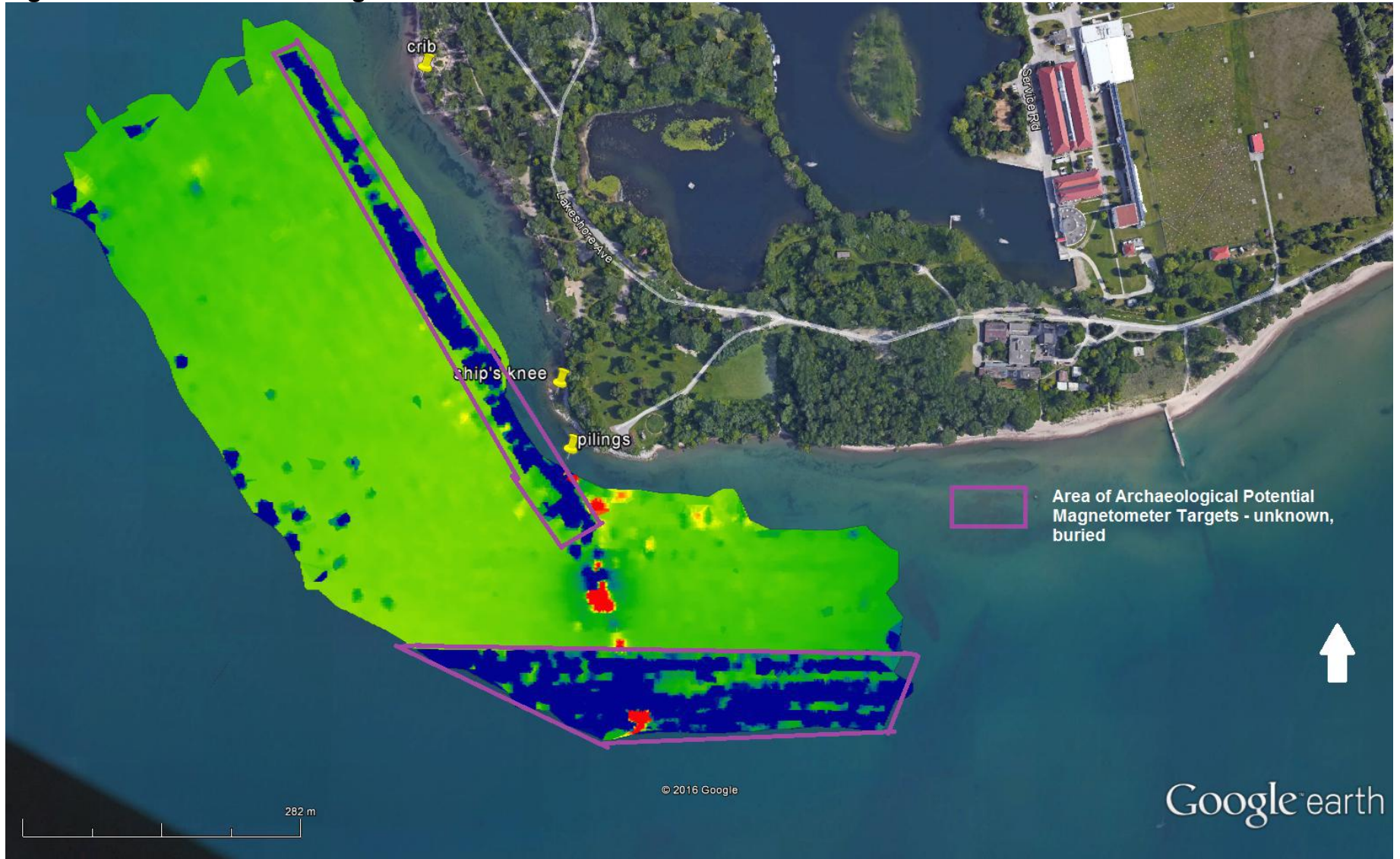
SHARK
SHARK MARINE
TECHNOLOGIES INC.
23 Nihan Drive, St Catharines,
Ontario, Canada, (905) 687-6672

4.0 DETERMINATION OF ARCHAEOLOGICAL POTENTIAL

The Project area was considered to exhibit archaeological potential for both prehistoric and historic sites, albeit low to moderate for prehistoric sites based on the background research. The geotechnical/archaeological survey and the snorkel survey located a total of 126 targets. There were three targets identified as cultural: these were two located through the shoreline and snorkel survey (crib and ship's hanging knee), and the third was located through side scan survey (Target S48), which was an area of three cut pilings. No date could be attributed to the crib, and it is recommended that accurate drawings of the crib be rendered which might contribute additional information, which may lead to an evaluation of the crib having cultural heritage value or interest. The three cut pilings were believed to be part of an early attempt to stabilize the shoreline in this area, and there may be additional pilings located beneath the 20 metres of armourstone starting at the shoreline and extending lakeward. The three pilings themselves are not deemed to have significant cultural heritage value or interest. The third cultural find is the ship's knee. Based on some measurements, a determination was made that this hanging knee might be from the **Jane Ann Marsh** of 1868. Her tonnage of 257 could meet the criteria of the bolt size, however, it is possible (albeit a slim possibility) that another ship of similar dimensions was also wrecked in this area and not reported. The relationship between tonnage and bolt size is supported by tables in Desmond's (1919: 21) book on wooden ship building. The knee, while not *in situ*, was heavy and could not have been moved far without extreme exertion. It is a possibility that the remains of the ship may be buried either on land, beneath the armourstone, or buried under lakebed sediments within 100 metres of where the knee was found during this assessment.

The magnetometer survey, as expected based on historic background research, has many targets. While some of these are small targets (based on gradient), other targets have large areas located in the southeast end of the magnetometer survey (refer to Figures 32 and 33) and also along the shoreline in the northeast area of the area (refer to Figures 34 and 35). It is possible that buried ship material lies beneath the buried lake sediments in these areas. It is also possible that these targets reflect construction debris or refuse, rather than cultural material, or that buried sediments contain a high degree of ferrous material which caused the magnetometer readings to be so high. The burial of these targets makes it impossible to determine which of the above, or combinations of the above, are valid. Figure 36 illustrates the areas of archaeological concern that are addressed in the recommendations. The area closest to shore, running at an approximate orientation of northwest to southeast lies in the 1.5 - 2 metre depth range. This area generally lies offshore about 100 metres. The second area of concern lies from 200 to 260 metres offshore and occupies the 3 to 4 metre depth contour.

Figure 36: Areas of Archaeological Concern



5.0 COMPLIANCE LEGISLATION

According to the 2011 Standards and Guidelines (Section 7.5.9) the following must be stated within this report:

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.

Should previously undocumented archaeological resources be discovered, they may be an archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

The Cemeteries Act, R.S.O. 1990 c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological license.

6.0 RECOMMENDATIONS

Based upon the background research, and the geotechnical archaeological survey of the Project area and a buffer, the following is recommended:

- The Marine Archaeology Study Area (MASA) (where magnetometer readings are high) may contain buried cultural material. If development in any of these areas is proposed where bottom sediments will be disturbed (laying of stone), it is recommended that a licensed archaeologist be present during development construction, and if there is to be spoil removed from the area, that the archaeologist observe the spoil for possible cultural materials (Figure 36);
- If cultural materials are located through observation, as detailed in the above recommendation; it is recommended that development activities may be required to be halted to review the material, and any possible exposed material on the lakebed; and to make additional recommendations based on new observations;
- It is recommended that curation of the hanging knee be managed by the Toronto Region and Conservation Authority as the possible remnant of the 1868 ship, the **Jane Ann Marsh**;
- Additional areas are considered clear of any features of significant heritage or cultural interest. It is recommended that those MASA's be considered clear of archaeological concerns, and that no additional archaeological investigations of those areas of the MASA are warranted;
- Compliance regulations must be adhered to in the event that archaeological resources are located during the project development.

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APPENDIX A
GIBRALTAR POINT MARINE ARCHAEOLOGICAL ASSESSMENT
GEOTECHNICAL/ARCHAEOLOGICAL ASSESSMENT

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