

**FISHERIES AND OCEANS  
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012  
PROJECT EFFECTS DETERMINATION REPORT**

**GENERAL INFORMATION**

<b>1. Project Title:</b> Back Bay, Harbour Improvements	
<b>2. Proponent:</b> <input checked="" type="checkbox"/> Fisheries and Oceans Canada - Small Craft Harbours Branch (DFO-SCH) <input type="checkbox"/> Other _____ (proponent's name)	
<b>3. Other Contacts</b> (Proponent, Consultant, Contractor or another DFO Sector): n/a	<b>4. Role of each contact:</b> n/a
<b>5. Source of Project Information if project is a referral</b> (DFO sector, company, organization, provincial or federal department): Fisheries and Oceans Canada - Small Craft Harbours Branch	
<b>6. Project Review Start Date:</b> 2015/05/01	
<b>7. PATH No.:</b>	<b>8. DFO-FPP File No:</b> TBD
<b>9. Other relevant file numbers:</b> TC-NPP File No.: TBD	

**BACKGROUND**

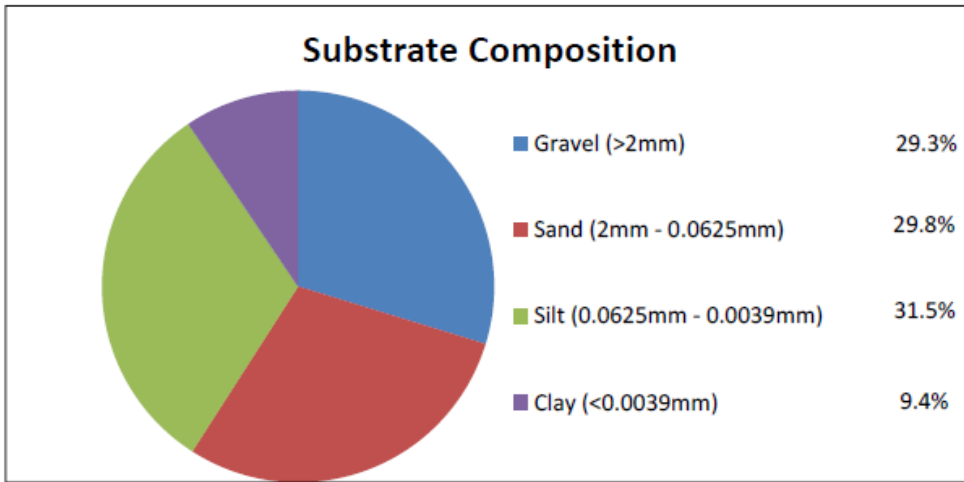
<b>10. Background about Proposed Development (including a description of the proposed development):</b>  <p>The proposed infrastructure construction and dredging activities will take place at a developed and active Small Craft Harbour facility. The harbour is a Class B facility (300 to 900 vessel metres) and is located in Southwestern New Brunswick on the Bay of Fundy. Back Bay is an active harbour servicing both the commercial fishery and the aquaculture industry. The Back Bay Small Craft Harbour facility currently consists of a concrete-deck wharf, a breakwater, floating wharves, a slipway, and a gravel parking/service area.</p> <p>The proposed scope of the Project includes the construction of a marginal wharf, service area, and shore protection as well as basin dredging. The approximate coordinates of the project area are: 45°03'20"N and 66°51'50"W</p> <p>The proposed schedule for the construction activities is for the work to commence in the Fall of 2015 and is expected to be completed by the winter of 2018.</p>
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**PROJECT REVIEW**

<b>11. DFO's rationale for the project review:</b> Project is on federal land <input checked="" type="checkbox"/> and; <input checked="" type="checkbox"/> DFO is the proponent <input type="checkbox"/> DFO to issue <i>Fisheries Act</i> Authorization or <i>Species at Risk Act</i> Permit <input type="checkbox"/> DFO to provide financial assistance to another party to enable the project to proceed <input type="checkbox"/> DFO to issue licence or lease federal land to enable the project to proceed	
<b>12. Fisheries Act Section(s) (if applicable):</b> TBD	<b>13. Species at Risk Act Section(s) (If applicable):</b> n/a
<b>14. Primary Authority:</b> DFO-SCH	<b>15. Primary Authority's rationale for involvement:</b> DFO-SCH is the proponent.

<p><b>16. Other Authorities involved in review:</b></p> <p>Transport Canada</p> <p>DFO - Fisheries Protection Program</p>	<p><b>17. Each Authority's rationale for involvement:</b></p> <p>Approval Requirement: The <i>Navigation Protection Act</i> NPA approval and review process is being conducted for the proposed project. The proponent will comply with all/any conditions of the NPA approval.</p> <p>Permit Requirement: The project was referred to the DFO-Fisheries Protection Program (FPP) and is currently in review. The proponent will comply with all/any of the conditions of the FPP letter/approval.</p>
<p><b>18. Other Jurisdictions involved in review:</b> n/a</p>	
<p><b>19. Other Expert Departments Providing Advice:</b></p>	<p><b>20. Areas of Interest of Other Expert Departments:</b></p>
<p><b>21. Other Contacts and Responses:</b></p> <p>n/a</p>	
<p><b>22. Scope of Project (details of the project subject to review):</b></p> <p><u><b>Project Description</b></u></p> <p>The proposed scope of the Project includes the construction of a marginal wharf and new paving (approx. 60m x 55m = 3,300m<sup>2</sup>), service area (approx. 115m x 55m = 6,325m<sup>2</sup>), and shore protection as well as basin dredging (approx. 115m x 70m = 8,050m<sup>2</sup>). Refer to <b>Figure 4</b> in <b>Appendix A</b> for a plan of the proposed work.</p> <p><u><b>Scheduling</b></u></p> <p>The proposed schedule for the construction activities is for the work to commence in the Fall of 2015 and is expected to be completed by the winter of 2018.</p> <p><b>23. Location of Project:</b></p> <p>The approximate coordinates of the project area are: 45°03'20"N and 66°51'50"W. The proposed project occurs with the existing waterlot of the developed and active Small Craft Harbour facility in Back Bay, Fundy NB. Refer to <b>Figures 1 to 3</b> in <b>Appendix A</b> for maps and an aerial photo showing the proposed project location and surrounding area.</p>	
<p><b>24. Environment Description:</b></p> <p><b>Physical Environment:</b></p> <p>In the project area, the coastline consists of a low shoreline, interspersed with sandy and rocky beaches. The tides in the area range from 6 to 8 m in height seabed in this area of the Bay of Fundy consists of Pre-Quaternary rocks, which are rocks of various lithologies and ages. They are generally weathered and partially disintegrated, with glacially moulded surfaces. It has a veneer of sand, some gravel, silt and rare clay generally less than 0.5 m thick. The soil type in the area is Humo-Ferric Podzolic soil on sandy loam. The terrain is characterized as undulating with slopes of 4 to 9%.</p> <p>The vegetation on site is limited with some grass. The upland areas behind the harbour contain some low shrubs and grass, but is primarily developed with commercial and residential properties. There are no fish processing plants or lobster holding facilities in the project area. Two marine finfish aquaculture sites are located approximately 500-600m to the east and southeast of the Back Bay Small Craft Harbour.</p> <p>A marine sediment sampling program (MSSP) was conducted at the harbor July 15<sup>th</sup>, 2015 within the proposed dredge</p>	

footprint. The sediment grain size distribution was summarized as follows:



The material did not meet the Canadian Environmental Protection Act (CEPA) Disposal at Sea (DAS) guidelines due to metal exceedances. Therefore, the material is planned to be utilized as fill material within the proposed service area. See **Appendix C** for the MSSP report and full sediment chemical analysis results.

Canadian Climate Normals (1971-2000) recorded from the climate station at Pennfield, Charlotte County, New Brunswick (Latitude: 45°6'N and Longitude: 66°43'W), and elevation 22.9 m, indicate an annual daily mean temperature of 5.2 °C, with extremes ranging from -15.5 °C to +25.6 °C. Measurable precipitation averages 1,434.0 mm annually. Extreme daily precipitation has been recorded at 81.0 mm.

#### **Biological Environment:**

The proposed work site is located at a commercial wharf in Back Bay, a harbour along the coast of the Bay of Fundy. The harbour is host to typical north temperate marine vertebrates, invertebrates, and plants. None are present in commercial quantities in the immediate vicinity of the work area.

In the waters of the Bay of Fundy, the area is frequented by migratory fish species such as mackerel (*Scomber scombrus*), herring (*Clupea harengus*), gaspereau (*Alosa pseudoharengus*), flounder (*Paralichthys dentatus*) and American eel (*Anguilla rostrata*) which have an associated fishing industry. Sea-run brook trout (*Salvelinus fontinalis*) and Atlantic salmon (*Salmo salar*) populations exist in the Bay of Fundy; however they are not expected to be observed in the area. Harbour porpoises (*Phocoena phocoena*) and seals (*Phoca vitulina concolor*) are occasional visitors to the area.

A benthic habitat survey was conducted July 24<sup>th</sup>, 2015 by AMEC Foster Wheeler. The survey concluded the following: "Portions of the harbour basin with predominantly silt substrates supported little life with moderate algal cover. These areas would be considered to be generally poor habitat. The areas of the basin with hard substrate, mainly the upper subtidal and intertidal zones showed a moderate level of cover via patchy instances of rockweed and bladderwrack. These areas would be considered to be of mediocre habitat. The intertidal portions of the armourstone breakwater have a high degree of cover and refuge and provide a small area of quality habitat." See **Appendix B** for report.

A search of the Atlantic Canada Conservation Data Centre (ACDC) database was conducted within a 5 km radius of the proposed project location (ACDC 2014). The search yielded 16 species of concern with documented sightings within the search area; two of these species have a provincial S1 designation; Northern Rough-winged Swallow (*stelgidopteryx serripennis*) and the Black Headed Gull (*Chroicocephalus ridibundus*). The S1 species noted above were cross-referenced with the Species at Risk Schedule 1 and no species were found to have SARA Schedule 1 status. There were no observations of any species of concern within the proposed project footprint.

**25. Scope of Effects Considered (section 5(1) and 5(2)):**

**Table 1: Potential Project / Environment Interactions Matrix**

Project Phase / Physical Work/Activity	As per Section 5(1)			Section 5(1c)				Section 5(2)			Due Diligence						
	Fish (Fisheries Act)	Aquatic Species (SARA)	Birds (MBCA)	Health and Socio economic	Physical and cultural heritage	Land use	HAPA * Significance	Health and Socio economic	Physical and cultural heritage	HAPA * Significance	Water (ground, surface, drainage, etc)	Wetlands	Terrestrial / Aquatic Species	Fish	Birds	Soil	Air Quality
<b>Construction and Installation of Floating Wave Breaks</b>																	
Transportation of material and equipment	-	P	P	P	-	-	-	P	-	-	-	-	P	-	P	-	P
Construction and dredging	P	P	P	P	-	-	-	P	-	-	-	-	P	P	P	-	P
<b>Operation / Maintenance</b>	-	-	P	P	-	-	-	P	-	-	-	-	-	-	P	-	P
<b>Decommissioning / Abandonment</b>	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	P

\*structure, site or thing that is of historical, archaeological, paleontological or architectural significance

**Evaluation of Environmental Effects**

The VECs selected in Table 1 are addressed in Sections 26 and 27 of the PED. The physical works/activities and required mitigation measures are detailed. The following ratings are based on:

- information provided by the proponent;
- a review of project related activities;
- an appraisal of the environmental setting, and identification of resources at risk;
- the identification of potential impacts within the temporal and spatial bounds; and
- personal knowledge and professional judgment of the assessor.

The significance of project related impacts was determined in consideration of their frequency, the duration and geographical extent of the effects, magnitude relative to natural or background levels, and whether the effects are reversible or are positive or negative in nature. These criteria are indicated in Table 2.

Direct effects on navigation are not considered in the Project Effects Determination (PED) report, but any measures necessary to mitigate direct effects will be included as terms and conditions associated with any work approved or permitted pursuant to the *Navigation Protection Act*.

**Table 2: Assessment Criteria for Determination of Significance**

<b>Magnitude</b>	Magnitude, in general terms, may vary among Issues, but is a factor that accounts for size, intensity, concentration, importance, volume and social or monetary value. It is rated as compared with background conditions, protective standards or normal variability.	
	Small	Relative to natural or background levels
	Moderate	Relative to natural or background levels
	Large	Relative to natural or background levels
<b>Reversibility</b>	Reversible	Effect can be reversed
	Irreversible	Effects are permanent
<b>Geographic Extent</b>	Immediate	Confined to project site
	Local	Effects beyond immediate project site but not regional in scale
	Regional	Effects on a wide scale
<b>Duration</b>	Short Term	Between 0 and 6 months in duration
	Medium Term	Between 6 months and 2 years
	Long Term	Beyond 2 years
<b>Frequency</b>	Once	Occurs only once
	Intermittent	Occurs occasionally at irregular intervals
	Continuous	Occurs on a regular basis and regular intervals

**Methodology**

The environmental effects evaluation methodology used in this report focuses the evaluation on those environmental components of greatest concern. The Valued Ecological Components (VECs) most likely to be affected by the project as described are indicated in Table 1. VECs were selected based on ecological importance to the existing environment (above), the relative sensitivity of environmental components to project influences and their relative social, cultural or economic importance. The potential impacts resulting from these interactions are described below.

**Scoping**

This environmental effects evaluation considers the full range of project / environment interactions and the environmental factors that could be affected by the project as defined above and the significance of related impacts with mitigation.

**26. Environmental Effects of Project:**

Potential Project/Environment Interactions and their effects are outlined below.

**Transportation of material and equipment:**

- Project activities may result in debris/material entering the marine environment.
- Potential adverse effects to migratory birds during site access.
- Use of heavy machinery may cause short-term elevated noise levels and emissions at the site.

**Construction and dredging:**

- Project activities may result in debris/material entering the marine environment.
- Potential adverse effects to migratory birds during site access.
- Potential to enhance populations of predators in the harbour area for the duration of all project phases.
- Activities may result in construction related debris or toxic materials affecting marine water quality.
- Potential for suspended solids/sediments and turbidity immediately adjacent to the project site affecting fish/fish habitat.
- Potential for introduction of invasive species into the marine environment.
- Noise and dust generated as a result of the construction activities.
- Use of heavy machinery may cause short-term elevated noise levels and emissions at the site.
- Potential Impacts to fish habitat due to in-filling for service area.
- Safety hazards to workers during construction.

**Operation/Maintenance:**

- Safety hazards to workers during operation/maintenance.

**Decommissioning/Abandonment:**

- Safety hazards to workers during decommissioning/abandonment.

**27. Mitigation Measures for Project (including Habitat Compensation if applicable):**

<u>Potential Effect</u>	<u>Mitigation</u>
<b>Construction and dredging</b>	
<b><u>Reversible, immediate</u></b> degradation of groundwater/marine water quality and fish/fish habitat occurring <b><u>once</u></b> and over the <b><u>short term</u></b>	<ul style="list-style-type: none"><li>• A request for review has been submitted to DFO-FPP. The project will incorporate the recommended mitigation once an approval/letter of advice is received.</li><li>• Any equipment that has been in the marine environment will be cleaned of any sediments, plants or animals and washed with freshwater and/or sprayed with undiluted vinegar prior to being mobilized to the project site.</li><li>• If a marine mammal (specifically whales or porpoises) is identified within the vicinity of the project, work shall stop until the animal is gone.</li><li>• Waste materials are not to be buried on site. Demolition debris and waste materials will be disposed of in accordance with Provincial Waste Management Regulations.</li><li>• Activities must be completed in such a way as to minimize the amount of fines and organic debris that may enter nearby aquatic environments.</li><li>• Marine equipment may be inspected by PWGSC or DFO to ensure invasive species are not introduced to the marine environment.</li><li>• No construction or infill material may be obtained from any coastal feature, namely a beach, dune, or coastal wetland.</li><li>• Onsite crews must have emergency spill clean-up equipment, adequate for the activity involved, must be on-site. Spill equipment will include, as a minimum, at least one 250L (i.e., 55 gallon) overpak spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly</li></ul>

	<p>contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633).</p> <ul style="list-style-type: none"> <li>• Visual monitoring of the turbidity will be required in the vicinity of the project to ensure that the turbidity is limited. If excessive change occurs in the turbidity that differs from the existing conditions of the surrounding water body (i.e., distinct colour difference) as a result of the project activities, the work will stop and DFO-Fisheries Protection Program (FPP) will be contacted (506-851-2824).</li> </ul>
<p><b><u>Small, immediate</u></b> disturbance of birds/bird habitat over the <b><u>short term</u></b></p>	<ul style="list-style-type: none"> <li>• All machinery must be well muffled. If necessary, trucks may be required to avoid the use of “hammer” braking along specific sections of the route.</li> <li>• Adherence to the regulations set out by the <i>Migratory Birds Convention Act</i>.</li> <li>• Contractors must ensure that food scraps and garbage are not left at the work site.</li> <li>• Concentrations of seabirds, waterfowl, or shorebirds must not be approached when accessing the project site by water, or when ferrying supplies.</li> <li>• All equipment must be maintained in proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products.</li> <li>• With the exception of blasting/dredging and related equipment, refueling operations will take place at least 30 metres from any watercourse and harbour and the refueling will take place on a prepared impermeable surface with a collection system.</li> <li>• All equipment to be used in or over the marine environment is to be free from leaks or coating of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks.</li> <li>• Construction activities will be carried out during times acceptable to local authorities.</li> <li>• All construction waste material will be disposed of in a provincially approved manner.</li> </ul>
<p><b><u>Small, immediate</u></b> disturbance to territorial/aquatic species over the <b><u>short term</u></b></p>	<ul style="list-style-type: none"> <li>• Wetlands or sensitive coastal habitats (i.e., any area in which plant or animal life or their habitats are either rare or especially valuable) must not be accessed nor used as staging areas.</li> <li>• All vessels and machinery should be well muffled, and maintained in proper working order and must be regularly checked for leakage of lubricants or fuel.</li> <li>• Waste or any miscellaneous unused materials must be recovered for either disposal in a designated facility or placed in storage. Under no circumstances will materials be deliberately thrown into the marine or terrestrial environment.</li> </ul>
<p><b><u>Immediate</u></b> reduction in air quality due to noise and dust occurring <b><u>once</u></b> and over the <b><u>short term</u></b></p>	<ul style="list-style-type: none"> <li>• Construction activities must be carried out during times acceptable to local authorities and smaller, less disturbing equipment will be used where possible.</li> <li>• Dust suppression by the application of water must be employed when required. The project authority shall determine locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil must not to be used for dust control under any circumstances.</li> </ul>
<p><b><u>Significance of Adverse Environmental Effects:</u></b> Although the potential exists for short-term environmental effects during the project, the implementation of recommended mitigation measures will result in insignificant impacts. DFO concludes that this project will not likely contribute to significant adverse environmental effects, provided that the above recommended mitigation measures are applied.</p>	

## Operation/Maintenance, Decommissioning/Abandonment

**Immediate** worker health and safety hazards over the **short term**

- Site access must be restricted to construction personnel and authorized visitors.
- All personnel involved with activities must be adequately trained and utilize appropriate personal protective equipment.

***Significance of Adverse Environmental Effects:*** Although the potential exists for short-term environmental effects during the project, the implementation of recommended mitigation measures will result in insignificant impacts. DFO concludes that this project will not likely contribute to significant adverse environmental effects, provided that the above recommended mitigation measures are applied.

### 28. Description of any Significant Adverse Environmental Effects of the project (after applying mitigation):

Significant adverse environmental effects are unlikely, taking into account mitigation measures.

### 29. Other Considerations (Public Consultation, Aboriginal Consultation, Follow-up)

#### **Public Consultation**

The harbor improvements at Back Bay Harbour will increase the overall operational capacity and safety of the harbour and for harbour users (harbour for fishers, aquaculture, recreational users, and tourists) to conduct harbour activities, allowing the harbour to continue being a viable resource to the commercial fishery. The proposed project will increase the sustainability of the commercial fisheries at this location. No negative public concern is expected as a result of this project. In addition, the Harbour Authority consultation indicated that no fishermen, individuals, or groups disapprove of the proposed project.

#### **Aboriginal Consultation**

PWGSC, on behalf of DFO-SCH, carried out an Aboriginal Assessment at Back Bay Harbour in accordance with DFO-SCH's Preliminary Duty to Consult Assessment Guide. This Guide is intended to provide basic information to DFO-SCH in the Maritimes and Gulf Regions and to assist its Program Managers in making informed, prudent decisions that take into account statutory and other legal obligations, as well as policy objectives, related to Aboriginal and treaty rights.

The Supreme Court of Canada has held that the Crown has a duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Aboriginal or treaty rights. While there may be other reasons to undertake consultations (e.g. good governance, policy-based, etc.), three elements are required for a legal duty to consult to arise:

1. There is contemplated or proposed Crown conduct;
2. The Crown has knowledge of potential or established Aboriginal or treaty rights; and
3. The potential or established Aboriginal or treaty rights may be adversely impacted by the Crown

The Back Bay Harbour Authority advised that there are five Aboriginal vessels that fish lobster, urchin and scallops commercially from the Back Bay wharf, but to their knowledge, the SCH facility is not utilized for Aboriginal traditional, food or ceremonial fisheries. The proposed project site was also reviewed for archaeological potential with known archeological sites (pre-contact, historic, burial) in the area of the site, the scope and type of work to be conducted to deduce a residual archaeological potential. The DFO Area Aboriginal Programs Coordinator was also consulted during the Duty to Consult (DTC) assessment process. As a result of the DTC assessment, aboriginal consultation was pursued further for this project as there may be impacts on potential or established Aboriginal or Treaty Rights. Letters will be sent to all aboriginal communities operating from the harbour.

#### **Government Consultation**

Federal and provincial authorities likely to have an interest in the project were consulted by Public Works & Government Services Canada, Environmental Services during the course of this assessment. A project description was distributed to the following federal and provincial authorities: Fisheries and Oceans Canada - Fisheries Protection Program, Transport Canada – Environmental Affairs and Aboriginal Consultation Unit, Transport Canada – Navigable Protections unit, New Brunswick Department of Environment – Environmental Impact Assessment group.



**Accuracy and Compliance Monitoring**

Site monitoring (accuracy and compliance monitoring) may be conducted to verify whether required mitigation measures were implemented. The proponent must provide site access to Responsible Authority officials and/or its agents upon request.

**30. Other Monitoring and Compliance Requirements (e.g. Fisheries Act or Species at Risk Act requirements)**

n/a

**CONCLUSION**

**31. Conclusion on Significance of Adverse Environmental Effects:**

The Federal Authority has evaluated the project in accordance with Section 67 of *Canadian Environmental Assessment Act (CEAA), 2012*. On the basis of this evaluation, the department has determined that the project is not likely to cause significant adverse environmental effects with mitigation and therefore can proceed using mitigative measures as outlined.

**32. Prepared by:**

**33. Date:** August 12, 2015

**34. Name:** Jason Keys

**35. Title:** Environmental Specialist, PWGSC

**36. Approved by:** \_\_\_\_\_

**37. Date:** \_\_\_\_\_

**38. Name:** Raymond Losier

**39. Title:** DFO-SCH Senior Project Engineer, NB

**DECISION**

**40. Decision Taken**

- The project is not likely to cause significant adverse environmental effects, and DFO may exercise its power, duty or function.
- The project is likely to cause significant adverse environmental effects, and DFO has decided not to exercise its power, duty or function.
- The project is likely to cause significant adverse environmental effects, and DFO will ask the Governor in Council to determine if the significant adverse environmental effects are justified in the circumstances

**41. Approved by:** \_\_\_\_\_

**42. Date:** \_\_\_\_\_

**43. Name:** Raymond Losier

**44. Title:** DFO-SCH Senior Project Engineer, NB

**46. References:**

ACCDC (Atlantic Canada Conservation Data Centre). ACCDC data response for Back Bay, New-Brunswick. Accessed at PWGSC Atlantic region GIS <http://gis2.gisatl.ca/ceaaflex/index.html> in August 14, 2015.

Harbour Authority Consultation – Personal Communication with Larry Cook, June 11, 2015

Environment Canada. 2014a. Canadian Climate Normals 1971-2000. Pennfield, New Brunswick. Accessed June 30, 2015 at: [http://www.climate.weatheroffice.ec.gc.ca/climate\\_normals/index\\_e.html](http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html).

Environment Canada. 2014b. Species at Risk Registry. Accessed June 30, 2015 at <http://www.sararegistry.gc.ca>.

# **Appendix A**

## Figures

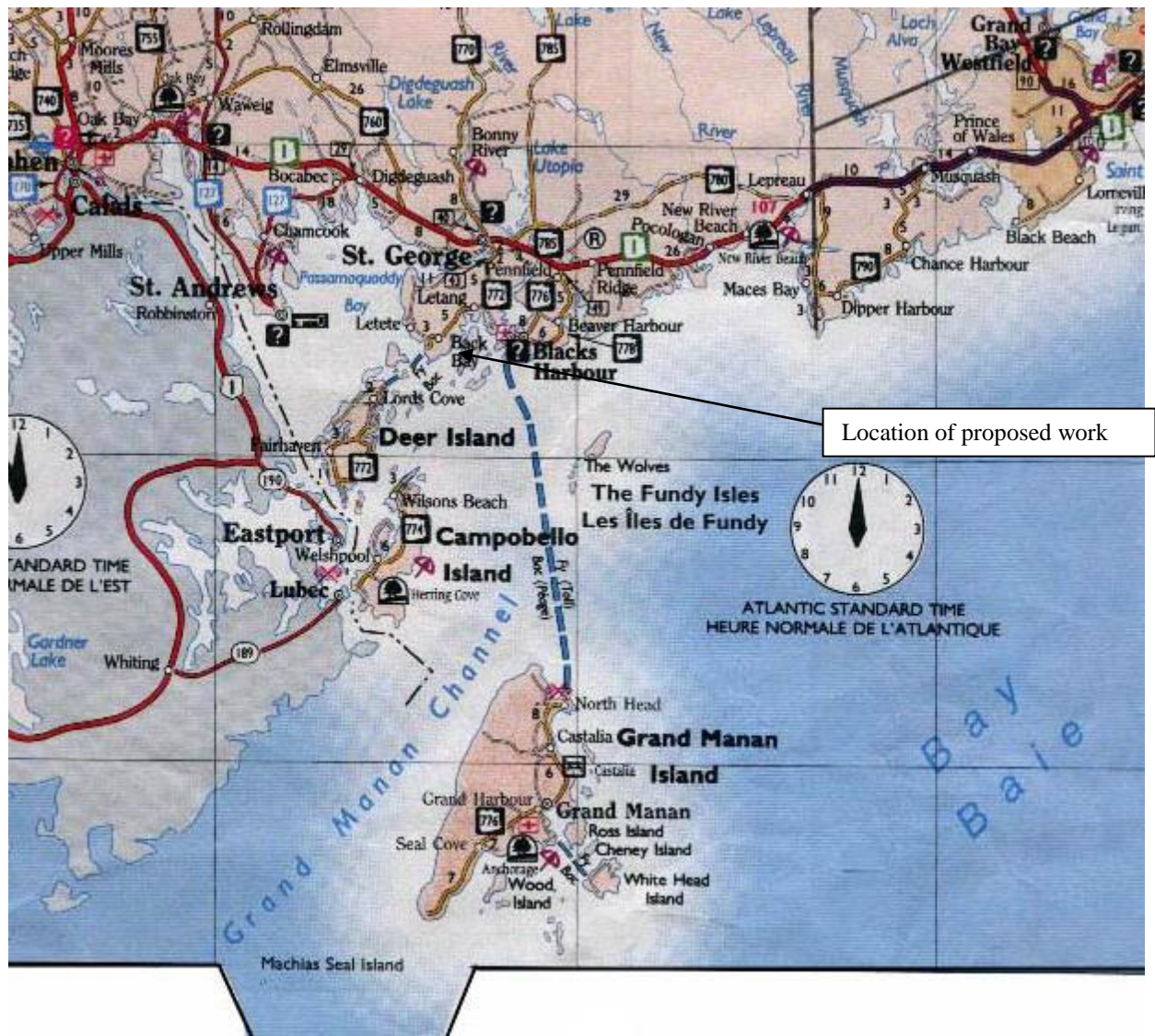


Figure 1: Map of New Brunswick showing the location of the proposed project in Back Bay Harbour.

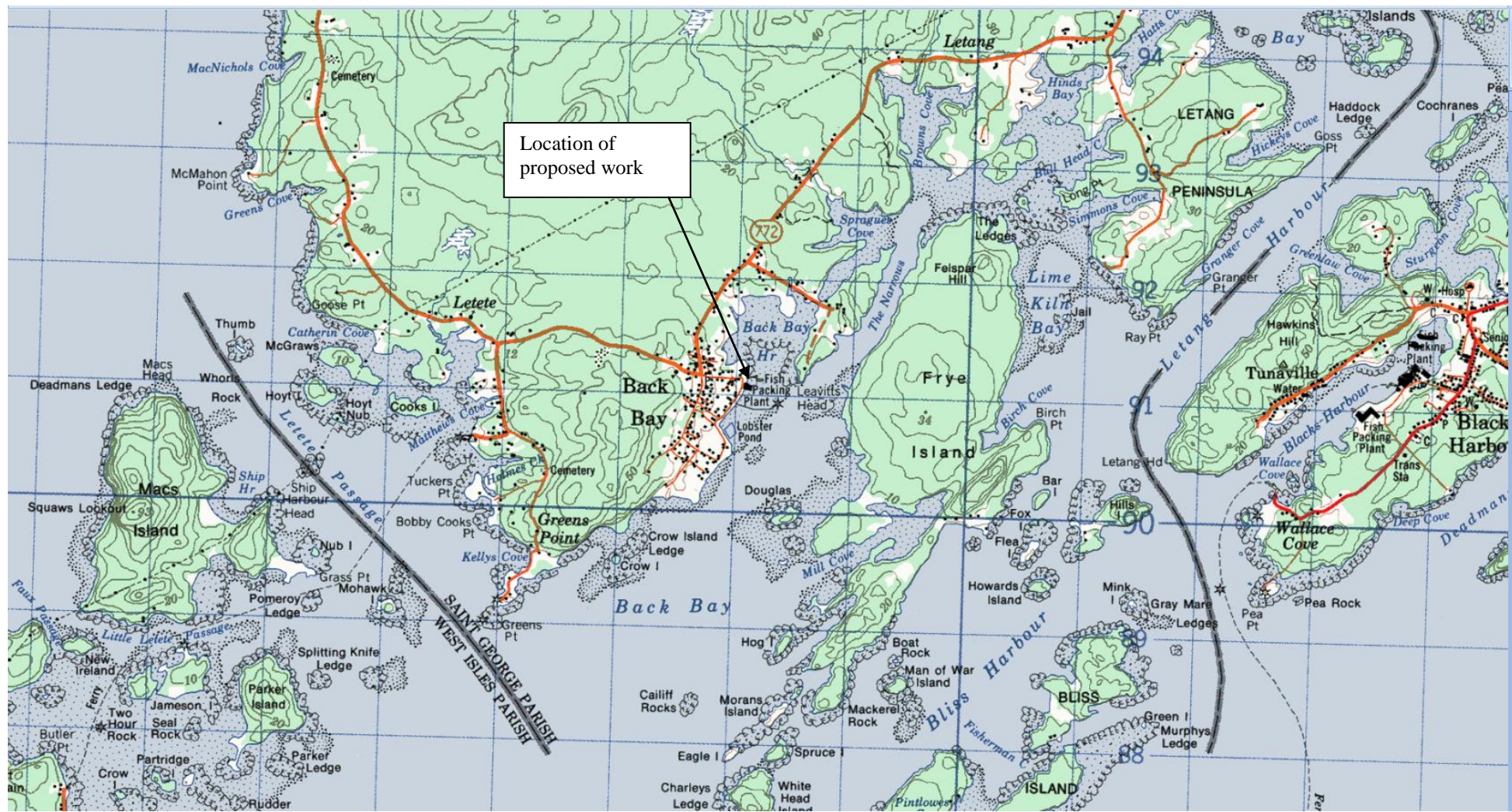


Figure 2: Topographic map indicating proposed project site, Back Bay Harbour, Charlotte County, New Brunswick.



**Figure 3:** Oblique aerial photo of Back Bay Small Craft Harbour, Charlotte County, New Brunswick.

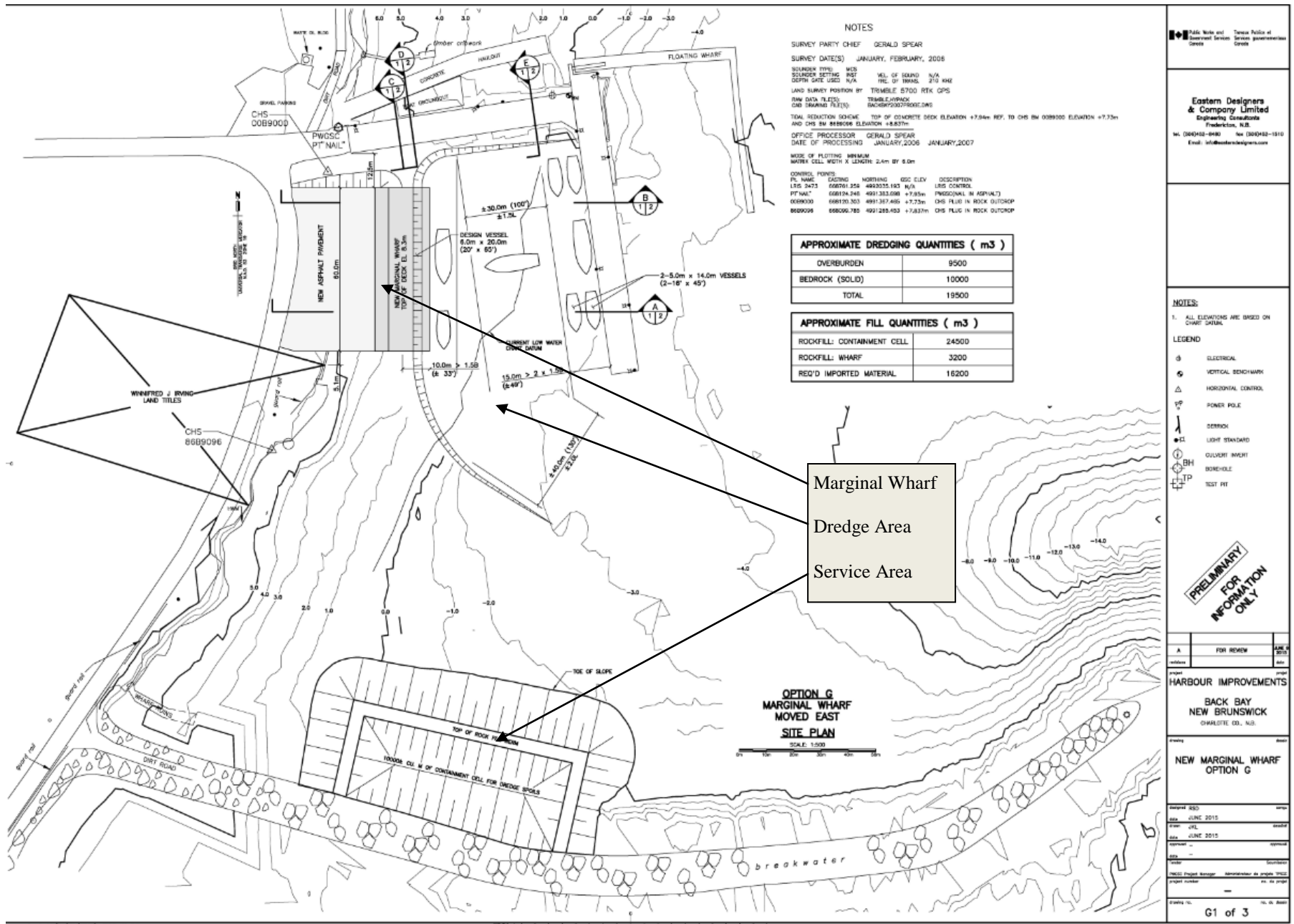


Figure 4: Site plan showing proposed marginal wharf, dredging and service area at Back Bay Harbour, Charlotte County, N.B

## **Appendix B**

### Underwater Benthic Habitat Survey



# **Appendix C**

## **Marine Sediment Sampling Program Back Bay**