Breakwater Construction

Harbour Breton, NL

Environmental Registration Document

Submitted to the Government of Newfoundland and Labrador

Department of Environment and Conservation

Environmental Assessment Division

Prepared For:	**Fisheries and Oceans Canada** **Small Craft Harbours Branch - Southern Area**
Prepared By:	**Public Works and Government Services Canada**
Date:	**August 2010**
Project No.:	**R.042295.001**

TABLE OF CONTENTS

1.0 NAME OF UNDERTAKING: 3

2.0 PROPONENT: 3

3.0 THE UNDERTAKING: 3

3.1 Nature of the Undertaking: 3
3.2 Purpose/Rationale/Need for the Undertaking: 3

4.0 DESCRIPTION OF THE UNDERTAKING: 3

4.1 Geographical Location: 3
4.2 Physical Features: 4
4.3 Construction: 5
4.4 Operation: 5
4.5 Occupations: 6

5.0 APPROVAL OF THE UNDERTAKING: 6

6.0 SCHEDULE: 7

7.0 FUNDING: 7

LIST OF APPENDICES

Appendix A Site Photo
Appendix B Site Plan
Appendix C Topo Map

1.0 NAME OF UNDERTAKING:

Breakwater Construction, Harbour Breton, NL (P/N R.042295.001)

2.0 PROPONENT:

(i) Fisheries and Oceans Canada
Small Craft Harbours Branch – Southern Area

(ii) 1144 Topsail Road
Mount Pearl, NL
A1N 5E8

(iii) Mr. John Doody
DFO, Small Craft Harbours
Area Manager – Southern
1144 Topsail Road
Mount Pearl, NL
A1N 5E8
Phone: (709) 772-4340 Fax: (709) 772- 2659
E-mail: john.doody@dfo-mpo.gc.ca

(iv) Cathy Martin
Environmental Services
Public Works & Government Services Canada
The John Cabot Building, 10 Barter's Hill
St. John's, NL
A1C 5T2
Phone: (709) 772-5852 Fax: (709)772-0916
E-mail: cathy.martin@pwgsc-tpsgc.gc.ca

3.0 THE UNDERTAKING:

3.1 Nature of the Undertaking:

The proposed undertaking represents the construction of a 125-meter rubblemound breakwater in Harbour Breton, Newfoundland and Labrador.

3.2 Purpose/Rationale/Need for the Undertaking:
The new breakwater is need in Harbour Breton to reduce wave action in the harbour, and ensure protection of the existing wharf infrastructure, which is considered essential to the fishing industry in the area.

4.0 DESCRIPTION OF THE UNDERTAKING:

4.1 Geographical Location:

The proposed project site is located along south coast of Newfoundland. Approximate NAD coordinates of the project site are 47° 28’ 40” N, 55° 49’ 13” W. Access to the site is provided by provincial Route 360

4.2 Physical Features:

The proposed breakwater will measure approximately 125m (long) by 40 m (wide), for a total footprint, along the seabed below LNT of 4500 m^2. The breakwater structutre will be constructed using a variety of materials including core stone, filter stone and armour stone of varying sizes, which will be imported to site. The area upland to the proposed breakwater will be levelled to provide access to the site as well as to develop a laydown / service area (see Appendix A & B). Construction activities will be carried out using an excavator, dump trucks, and manual labour. Construction activities will be carried out using an excavator, dump trucks, and manual labour.

The breakwater is required in this location to dissipate wave action in the harbour before it reaches the existing harbour infrastructure, therefore alternative locations were not considered.

Commencement of this project is subject to DFO SCH operational priorities and funding, as well as regulatory approval.

Physical and Biological Environment

Harbour Breton (47° 28’ 40” N, 55° 49’ 13” W) is located on the Connaigre Peninsula of Newfoundland’s south coast and is accessible by provincial Route 360. The site is located along a steep, rocky hillside, which will have to be excavated to access the site. There is no known terrestrial wildlife or animal habitats in the immediate project area and aquatic and terrestrial vegetation is also very limited. Fauna within the project area is generally limited to near shore fish species such as cunner, tomcod, and winter flounder. Marine mammals may frequent the general area, but not likely the immediate project site. The general area is characterized, as coastal beach comprised of cobble and bedrock outcrops. There are a variety of large and small mammals found in the general area. Mammals found in the forest and shrub habitats are moose, black bear, snowshoe hare, and caribou in the higher elevations between forest and upland tundra. Other mammals include whales, seals, and a wide variety of sea and shore birds. According to the Environment Canada SARA there are no identified Species at Risk recognized under the Species at Risk Act (SARA) located on the site. Given that the proposed project site is developed, it is not likely to contain any environmental components that are considered to be important, sensitive, threatened or endangered that are likely to be affected by the project

Harbour Breton is within the boundries of the South Coast Barrens Subregion of the Maritime Barrens Ecoregion of Newfoundland. The South Coast Barrens Subregions includes the higher elevations along the south coast and a few small outliers on the isthmus of Avalon and the Hawke Hills that are up to 300m in elevation. Snow cover is shallow and arctic-alpine plants occur locally. Yellow Birch is present in valleys. The Maritime Barrens Ecoregion extends from the east coast of Newfoundland to the west coast through the south central portion of

the island. This ecoregion has the coldest summers with frequent fog and strong winds. Winters are relatively mild with intermittent snow cover particularly near the coastline. Annual precipitation exceeds 1250 mm. The landscape pattern consists of usually stunted, almost pure stands of Balsam Fir, broken by extensive open heathland. Good forest growth is localized on long slopes of a few protected valleys. The development of the extensive heath landscape was precipitated by indiscriminate burning by European settlers. Railways in the nineteenth century also had a significant impact on fire frequency in the eastern part of the region. The heaths are dominated by *Kalmia angustifolia* on protected slopes where snow accumulates and by cushions of *Empetrum nigrum* or *Empetrum easmesii* on windswept ridges and headlands. Attempts to afforest these heaths with *Picea sitchensis* have been unsuccessful, but Eastern larch and Scots Pine may have potential for fuelwood stands (Hall 1986). However, site selection is critical because the historical removal of forest has deflected the natural tree line to low elevations. Wind, lack of protective snow cover and soil frost disturbance are important factors limiting plantation establishment in this ecoregion.

4.3 Construction:

Commencement of this project is subject to DFO SCH operational priorities and funding.

Construction of the breakwater is expected to require 5 months to complete. Commencement of the proposed project is tentatively scheduled for the 2011/2012 fiscal year.

The most probable sources of potential pollutants are related to the use of heavy equipment. Accidental spills of heavy equipment fuel, engine oil, and hydraulic fluids are a possibility. Short-term sedimentation as a result of the placement of rock material into the marine environment can also be anticipated.

An active fishery is executed from the project area. The duration of the construction phase of the proposed project is likely to extend into the fishing season. As a result, minor disruptions to harbour and fishing operations can be anticipated.

4.4 Operation:

Routine maintenance and repair projects will be carried out on an as-required basis over the estimated fifty (50) year life of the structure.

Reasonably foreseeable pollutants occurring during the operational phase of the proposed project are limited to accidental discharges of vessel fuels, engine oils, and fishing industry related refuse.

The operation and maintenance of the facility will be under the control of the Harbour Authority of Harbour Breton with the support of Fisheries and Oceans Canada, Small Craft Harbours Branch. Potential resource conflicts are not anticipated as a result of the operation of the proposed project.

4.5 Occupations:

Construction of the breakwater is expected to require 5 months to complete. Commencement of the proposed project is tentatively scheduled for the 2011/2012 fiscal year.

The following list outlines occupations that may be employed during the design and construction period. Please note that this list represents only an approximation of the number and type of occupations that may be produced as a result of the proposed project. Actual occupations created as a result of the proposed project will ultimately be determined by the successful contractor. Occupations are expected to be comparable to those created for similar construction projects throughout the Province.

2 – Professional Engineers - 0211 - entire project
2 – Engineering Techs - 2231 - entire project
1 – Surveyors - (1)-2113 and (1)-2154 - construction only
1 – Rod and Chainmen - 7612 - construction only
1 – Construction Inspector - 2264 - construction only
1 – Draftsperson - 2253 - 2 months work
1 – Secretary - 1241 - entire project
6 – Laborers - 7217 - construction only
2 – Heavy Equipment Operators - 7217 - construction only
5 – Truck Drivers - 7217 - construction only
2 – Flag Persons - 7611 - construction only
1 – Office Clerk - 1211 - 1 for construction and 1 for engineering
1 – Construction Foremen/Superintendents - 7217 - construction only

5.0 APPROVAL OF THE UNDERTAKING:

The following is a list of the likely permits, licences and approvals required for this project.

Approvals/Certificate/Permits	Regulatory Authority
NL Environmental Assessment Registration	NL Department of Environment and Conservation, Environmental Assessment Division
Fish Habitat Approval	Fisheries and Oceans Canada, Habitat Protection Division
Application to Alter a Body of Water	NL Department of Environment and Conservation, Water Resources Division
Navigable Waters Protection Approval	Transport Canada
Quarry Permit	NL Department of Mines and Energy
Lease / Permit to Occupy Crown Lands	NL Department of Government Services

6.0 SCHEDULE:

The proposed project could commence at the earliest in the spring of 2011. This timeline would allow for completion of a federal environmental assessment prior to initiating a call for tender. Depending on the responses provided by the abovenoted regulators, commencement of the project could be delayed by up to 6 months to a year.

7.0 FUNDING:

The total cost estimate for all phases of the proposed project, as provided by the proponent, is approximately $1.4 million. Funds will be provided by Small Craft Harbours Branch, Fisheries and Oceans Canada.

July 30, 2010
Date

Environmental Assessment Representative

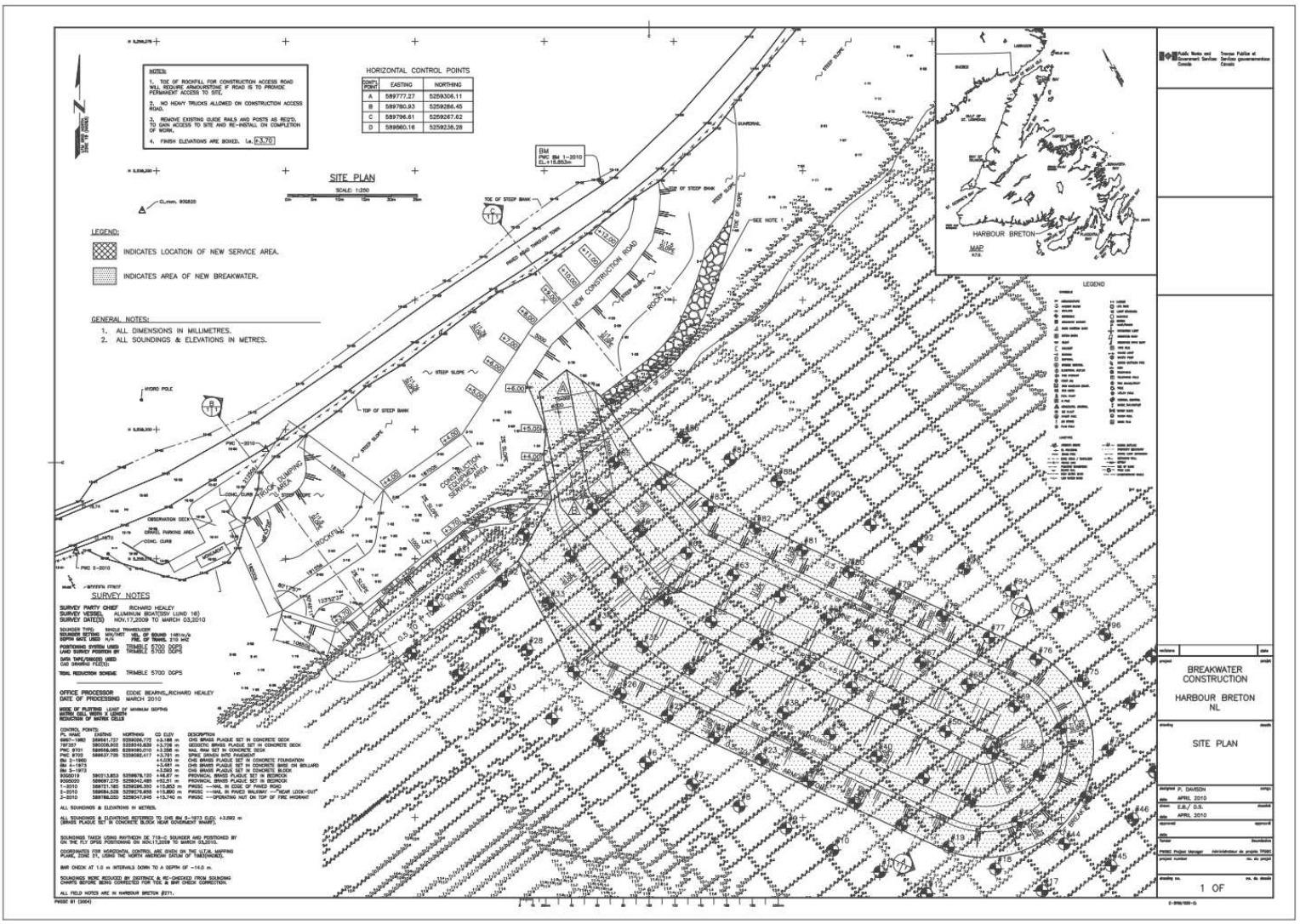
APPENDIX A

PHOTOS

Appendix A-1. Location of proposed project

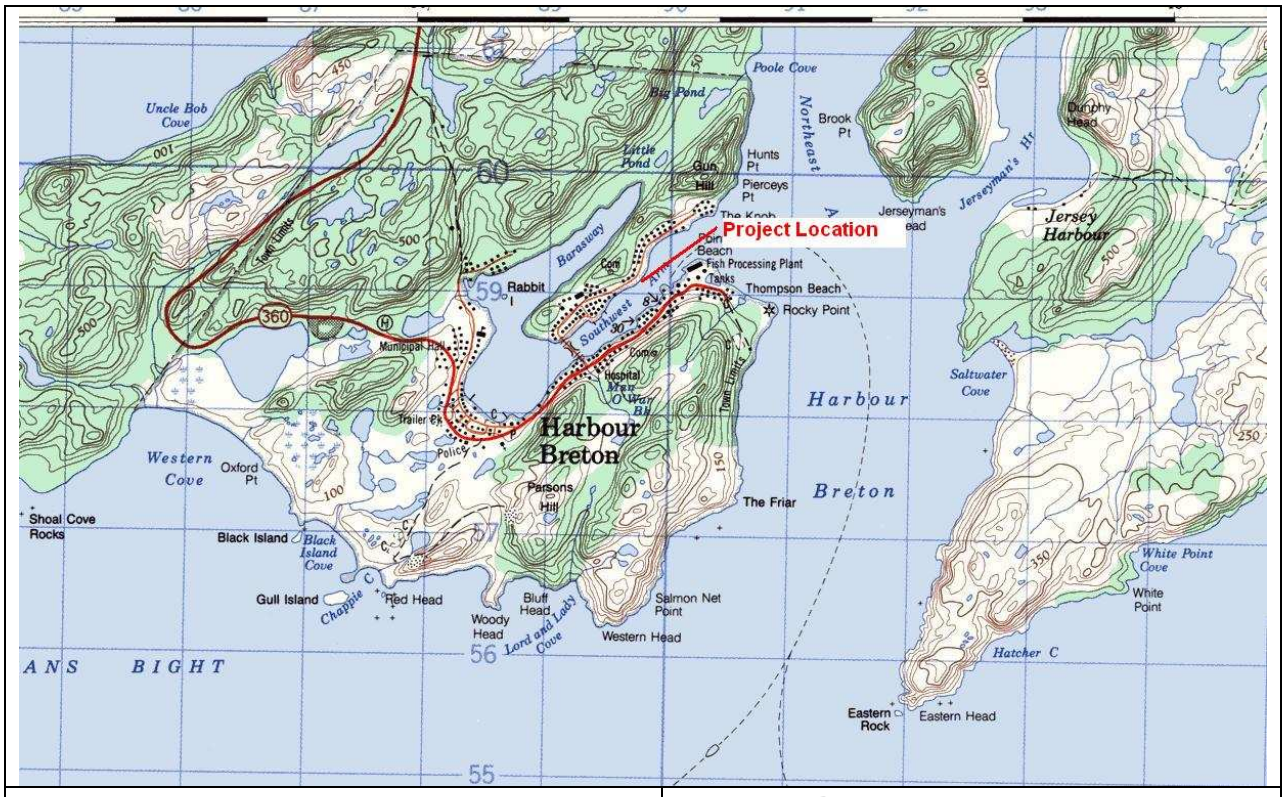
APPENDIX B

SITE PLAN


NOTES:
1. TOE OF ROCKFILL FOR CONSTRUCTION ACCESS ROAD WILL REQUIRE ARMOURSTONE IF ROAD IS TO PROVIDE PERMANENT ACCESS TO SITE.
2. NO HEAVY TRUCKS ALLOWED ON CONSTRUCTION ACCESS ROAD.
3. REMOVE EXISTING GUIDE RAILS AND POSTS AS REQ'D. TO GAIN ACCESS TO SITE AND RE-INSTALL ON COMPLETION OF WORK.
4. FINISH ELEVATIONS ARE BOXED. i.e. 3.170
HORIZONTAL CONTROL POINTS
POINT
EASTING
NORTHING
A 589777.27 5259306.11
B 589780.93 5259286.45
C 589796.61 5259267.62
D 589660.16 5259238.28
SITE PLAN
SCALE: 1:250
BM PWC BM 1-2010 EL=15.853m
LEGEND:
INDICATES LOCATION OF NEW SERVICE AREA.
INDICATES AREA OF NEW BREAKWATER.
GENERAL NOTES:
1. ALL DIMENSIONS IN MILLIMETRES.
2. ALL SOUNDINGS & ELEVATIONS IN METRES.
NEW CONSTRUCTION ROAD
ROCKFILL
CONSTRUCTION EQUIPMENT SERVICE AREA
ARMOURSTONE
BREAKWATER
HARBOUR BRETON
MAP
LEGEND
SURVEY NOTES
SURVEY PARTY CHIEF RICHARD HEALEY
SURVEY VESSEL ALUMINUM BOAT(SOV LUND 16)
SURVEY DATE(S) NOV.17,2009 TO MARCH 03,2010
OFFICE PROCESSOR EDDIE BEARNS,,RICHARD HEALEY
DATE OF PROCESSING MARCH 2010
CONTROL POINTS:
ALL SOUNDINGS & ELEVATIONS REFERRED TO CHS BM 5-1973 ELEV. +3.092 m
ALL SOUNDINGS & ELEVATIONS IN METRES.
SOUNDINGS TAKEN USING RAYTHEON DE 719-C SOUNDER AND POSITIONED BY
COORDINATES FOR HORIZONTAL CONTROL ARE GIVEN ON THE UTM MAPPING
BAR CHECK AT 1.0 m INTERVALS DOWN TO A DEPTH OF -14.0 m.
SOUNDINGS WERE REDUCED BY ZDFTRACE & RE-CHECKED FROM SOUNDING
ALL FIELD NOTES ARE IN HARBOUR BRETON (E277).
BREAKWATER CONSTRUCTION
HARBOUR BRETON NL
SITE PLAN
1 OF

APPENDIX C

TOPO MAP



Appendix C-1: Topographic Map of Proposed Site
Location: Harbour Breton
Scale 1:50,000
NTS Mapsheet 01-M-05 – Harbour Breton