

Harbour Development
Southern Harbour, Placentia Bay, 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 - Eastern and Southern Area

Prepared By: Public Works and Government Services Canada

Date: July 19, 2007

Project No.: 2323419

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1.0 NAME OF UNDERTAKING:

Southern Harbour, NL. Harbour Development (P/N 2323419)

2.0 PROPONENT:

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

- (ii) P.O. Box 5667
St. John's, NL
A1C 5X1

- (iii) Mr. Dan Blundon
DFO, Small Craft Harbours
Regional Engineer
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John Cabot Building
St. John's, NL.
A1C 5X1
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Public Works & Government Services Canada
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3.0 THE UNDERTAKING:

3.1 Purpose of the Project:

Southern Harbour is an active Class B fishing harbour located in Placentia Bay on Newfoundland's Avalon Peninsula. Due to the increased number and size in vessels in recent years, the existing facilities at this harbour are taxed to capacity and cannot accommodate current berthing requirements. During storm conditions, the larger vessels berthed at the fishermen's wharf are not afforded a reasonable level of protection and instances of damage have been reported. Construction of a new basin, in the more protected area of the harbour, will provide much needed protection and additional berthing space for the fleet.

3.2 Components of the Project:

The new construction will consist of:

1. Rubble mound breakwater construction measuring 167.3 metre long consisting of 23000 m³ of rock material covering an area of 4500 m².
2. Wharf construction covers a new 50.3 metre long by 7.62 metre wide treated timber crib and span finger pier. The new wharf will include a 250 mm reinforced concrete deck, new untreated hardwood fenders and ladders, treated coping and wheel guard, mooring cleats and rings, electrical pedestals, utility poles, and site security lighting.
3. Dredging covers the removal of approximately 3400 m³ of Class “B” (cobble, gravel, and sand) material from a 2400 m² area within the berthage area of the new finger pier wharf.
4. Site access and upland development component of the project will require approximately 7200 m³ of rock material to infill an inter-tidal and sub-tidal area of approximately 2400 m².
5. Dredging of approximately 3400 m³ of class ‘B’ (cobble, gravel, and sand) material from a 2700 m² area within the berthage area of the new finger pier wharf.

3.3 Alternatives to the Project:

Several meetings have been held with the local Harbour Authority to address their concerns and discuss the future development of Southern Harbour harbour. The consultation process specifically addressed the following alternatives:

1. **Status Quo:** This would result in the continued threat of damage to vessels and harbour users; the disruption of fishing operations; ongoing high maintenance costs; and the potential for departmental liability.
2. Construct a 167.3 metre armour stone breakwater; a 50.3 metre finger pier; and dredging to create a new protected basin in the more protected area of the harbour. Dredged material would be used to develop upland property thereby providing safe access and a parking & storage area for vehicles and equipment. The cost of this alternative is estimated at \$2.15 Million + HST.
3. Extending the fishermen’s wharf (#401). This was not supported by the HA as the cost would be approximately the same as construction as the new proposed facility (Alternative 2) due to the water depths in the area. In addition, extending the wharf would provide little protection to the larger vessels when winds were from the North to Easterly direction.
4. Construct a 130 metre wharf, protected by armour stone, in the general area where the now demolished HRDC sponsored structure was located. However, due to the high cost and as only one side of the structure could be used for berthage, this alternative was not supported by the HA.

Final Recommendation: Alternative 2, the construction of a new protected basin as this would be the most viable and cost-effective alternative and has the

support of the local fishers. The new structure would significantly increase berthing space and provide needed protection to the fleet. It will also allow for the future removal of the coastal wharf (#402), which is in an advanced state of disrepair and may soon have to be barricaded.

This project represents construction of a new DFO SCH facility to meet the current demands of the home and transient fishing fleets that utilize the Southern Harbour facilities. Other harbours do not provide a viable alternative to fishers.

4.0 DESCRIPTION OF THE UNDERTAKING:

4.1 Geographical Location:

The community of Southern Harbour is located on a narrow, flat, and exposed head of land between Little Southern Harbour and Great Southern Harbour, Placentia Bay, NL. The proposed project site is located on the west side of Little Southern Harbour at coordinates 47° 43' 15'' N and 53° 57' 53'' W.

4.2 Physical Features:

Southern Harbour is an active Class B fishing harbour located in Placentia Bay on Newfoundland's Avalon Peninsula. According to DFO 2005 statistics, Southern Harbour served 52 enterprises operating from 93 vessels with a total length of 773 meters. An additional 11 transient vessels, with a total vessel length of 112 metres, utilized the Southern Harbour DFO SCH facilities in 2005. Vessels reported a total landed weight of 467,386 kgs, representing a landed value of \$ 519,297 in 2005. The Harbour Authority of Southern Harbour manages the DFO SCH Southern Harbour facilities.

The main road through the community of Southern Harbour is located immediately upland of the project site and there are a number of permanent residences in the immediate vicinity of the project site. There is a municipal sewer outfall located approximately 150 metres south of the proposed project site that discharges raw untreated domestic sewage.

According to the Provincial Department of Fisheries and Aquaculture's AquaGIS system, there are no registered aquaculture sites in or near Southern Harbour.

The general upland area is low to moderate slope with a moderate to dense cover of coniferous trees, native shrub, and native grasses. There are no known terrestrial wildlife or animal habitats in the immediate project area. There is no terrestrial vegetation within the project site and aquatic vegetation is also limited. The coastal area is generally characterized as coastal beach comprised of gravel, cobble, small boulder, and small areas of bedrock. Fauna within the project area is limited to near shore fish species such as cunner, tomcod, sculpin, winter flounder, and lobster. The project area is likely seasonally frequented by marine mammals such as seals and whales. While there are a variety of large and small mammals found in the general area, including moose, caribou, fox, snowshoe hare, beaver, shrews, mice, and rats, there are no known significant terrestrial wildlife habitats in the immediate project area. Gulls, crows, turrs, puffins,

eagles, hawks, osprey, and several species of songbirds are common throughout the general project area. There are no known aquaculture sites, scheduled rivers, or fisheries, in the immediate project area.

Southern Harbour is located in the South-eastern Barrens Subregion of the Maritime Barrens Ecoregion, which extends westward across the southern half of the uplands of Newfoundland to the Long Range Mountains. This Atlantic Ocean-influenced boreal ecoregion extends westward across the southern half of the uplands of Newfoundland to the Long Range Mountains. The ecoregion is marked by foggy, cool summers and short, relatively moderate winters along the coast and colder inland. The mean annual temperature is approximately 5.5°C. The mean summer temperature is 11.5°C and the mean winter temperature is -1°C. The mean annual precipitation ranges 1200 to over 1600 mm. This ecoregion is classified as having an oceanic mid-boreal ecoclimate. It is dominated by nearly pure, closed, intermediate stands of balsam fir. Fires have caused widespread destruction of the forests, and the subsequent replacement of fir by stands of sparse black spruce, balsam fir, tamarack, and mixed ericaceous shrubs, along with mosses and lichen. *Kalmia* and sphagnum moss occur on large tracts of blanket and flat bogs. The ecoregion ranges from sea level to about 250 m asl in elevation and is composed predominantly of a mixture of late Precambrian and Palaeozoic sedimentary rocks and granites. Where stream erosion has cut deeply, the uplands are rugged and rocky, but elsewhere they present a rolling terrain of low relief. The surface of the uplands is dominated by rolling to hummocky, sandy morainal deposits and is associated predominantly with Humo-Ferric Podzolic soils. Significant inclusions are acidic rock outcroppings, Ferro-Humic Podzols, peaty Gleysols, and Fibrisols. Characteristic wildlife includes caribou, moose, lynx, black bear, and red fox. Fishing and recreation are dominant activities in this region.

In South-eastern Barrens Subregion the landscape is dominated by heathlands and the forest only occurs in small acreages, which escaped fire. The dominant heath shrub on uplands is *Empetrum nigrum* with *Kalmia angustifolia* forming a dense cover only in protected valleys. The topography is generally undulating with shallow heavily compacted till and numerous large erratics. The Clintonia-Balsam Fir type is most common where the forest is still present. Good forest growth only occurs in a few large protected valleys where the Dryopteris-Balsam Fir type dominates the slopes. Good specimens of Yellow Birch are also found in these stands.

Southern Harbour is located within the distribution range of the Monarch Butterfly placed in the Special Concern category, and the Blue Whale, North Atlantic Right Whale, and Red Crossbill (percna subspecies), placed in the Endangered Category by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). However, the proposed project site is not likely to provide critical or limiting habitat for these species and does not contain any environmental components that are considered to be important, sensitive, threatened or endangered that are likely to be affected by the project.

4.3 Construction:

The breakwater construction component of the project covers the construction of a 167.3 metre long rubble mound breakwater requiring 23000 m³ of rock material covering an area of 4500 m². The rock material will be obtained from a licensed local quarry and trucked to the site where it will be placed using an excavator(s) working from the shoreline or atop the new breakwater. No site blasting is required for this component of the project.

The wharf construction component covers the construction of a new 50.3 metre long by 7.62 metre wide treated timber crib and span finger pier. The new wharf includes a 250 mm reinforced concrete deck, new untreated hardwood fenders and ladders, treated coping and wheel guard, mooring cleats and rings, electrical pedestals, utility poles, and site security lighting. Most of the wharf construction will be carried out using manual labour and conventional power tools assisted by an excavator. All rock crib ballast material will be obtained from a local licensed quarry and trucked to the site where an excavator will place it.

The dredging component of the project covers the removal of approximately 3400 m³ of Class “B” (cobble, gravel, and sand) material from a 2700 m² area within the berthage area of the new finger pier wharf. The dredging will be carried out using a land-based excavator working in the dry from the existing site facilities or a temporary extraction road. This common method of dredging involves using dredge material from within the target dredge area or trucking in suitable pit run material to construct a temporary road and work platform from which the excavator can reach the dredge limits. This temporary road is removed as the excavator works its way back to shore. The successful contractor in consultation with Public Works and Government Services Canada and appropriate regulators will determine the specific dredging methodology. Although bedrock was not indicated in the geotechnical report there were some high n-values reported and the presence of boulders was noted, so it is possible that some rock busting or drilling and blasting could be required to remove boulders or material that might be too difficult to remove otherwise.

The new site access and upland development component of the project will require approximately 7200 m³ of rock material to infill an inter-tidal and sub-tidal area of approximately 2400 m². Subject to regulatory approval, it is proposed to utilize all suitable dredge material in the infill component. Any unsuitable dredge material will be transported in watertight trucks to an approved waste disposal site and used as backfill in routine dump operations. The infilled area will be capped with Class A material and graded for future placement of asphalt, when financial resources permit. Any additional rock infill material will be obtained from a local licensed quarry and trucked to the site where an excavator will place it.

As part of the project’s preplanning process, three (3) marine sediment samples were collected from the general site and submitted for chemical analysis. All three samples complied with CCME Agricultural Guidelines. A copy of the Marine Sediment Analysis Report (*Maxxam Job #: A5C4045, May 29, 2007*) can be provided upon request.

The project is currently scheduled to commence November 2007 with completion estimated for October 2009.

4.4 Operation:

Routine maintenance and repair projects, including repairs or replacement of damaged or deteriorated fenders, wales, wheel guard, chocks, and ladders, will be carried out on an as required basis over the life of the structure. There is no annual or regular dredging program proposed for this Small Craft Harbours site. Minor dredging will be proposed as required.

The operation and maintenance of the facility will be under the control of the Harbour Authority of Southern Harbour with the support of Fisheries and Oceans Canada Small Craft Harbours Branch.

4.5 Potential Resource Conflict:

Listed below are project related activities that have potential to cause environmental issues, and the actions required to mitigate these effects.

4.5.1 Navigation:

Environmental Concern

The new breakwater and wharf construction has the potential to interfere with vessel navigation.

Mitigation

The proposed project was referred to Transport Canada via the CEAA Federal Coordination Regulations for review under the Navigable Waters Protection Act (NWPA). It has been determined that the project will require authorization pursuant to Sub-section 5(1) of the NWPA indicating that the project will result in interference to navigation, requiring the deployment of navigational aids. As part of the NWPA 5(1) process the project will be advertised in the Canada Gazette and two local newspapers, and the plans will be made available for public viewing at the Town of Southern Harbour Town office for a 31-day period.

Any concerns with respect to the effects of the project on navigation or the environment will be resolved to the satisfaction of Transport Canada. Any other requirements such as Notice to Mariners, etc. that might be stipulated by Transport Canada, will also be adhered to. Any activities that could result in temporary interference will be discussed and coordinated with the local Harbour Authority and facility users.

4.5.2 Benthic Habitat:

Environmental Concern

The breakwater, wharf, infilling, and dredging components of the project may result in the harmful alteration, disruption, or destruction (HADD) of fish habitat.

Mitigation

The proposed project was referred via the CEAA Federal Coordination Regulations for assessment by Mr. Jack O'Rourke, Area Habitat Biologist, Oceans and Habitat Management Branch, Fisheries and Oceans Canada.

The proponent is currently awaiting the results of an underwater video survey to determine if the project will result in a HADD, requiring an Authorization under Section 35 (2) of the *Fisheries Act*. The proponent is currently working with staff of Fisheries and Oceans Canada Oceans and Habitat Management Branch to ensure that the project complies with Fisheries and Oceans Canada's Habitat Management Policy. The proponent is committed to the policy objective of "No Net Loss of Fish Habitat".

4.5.3 Marine Water Quality:

Environmental Concern

Placement of the breakwater, infilling, and dredging of the ocean bottom has the potential to conflict with the marine habitat by introducing suspended sediments into the water column.

There is also potential for accidental spills of hydrocarbon products from heavy equipment machinery.

The project has the potential to affect the circulation and dispersal patterns of raw untreated sewage that discharges from a municipal sewer outfall located approximately 150 metres south of the proposed breakwater.

Mitigation

This sedimentation will be short-term and should quickly dissipate due to wave and tidal action.

Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refuelling must be done at least 30m from any water body. Basic petroleum spill clean-up equipment should be on-site. All spills or leaks should be promptly contained, cleaned up and reported to the 24-hour environmental emergencies report system (1-800-563-9089).

The proposed project was referred via the CEAA Federal Coordination Regulations to Mr. Ron Goulding, Design Approval Specialist, Water Resources Management Division, NL Department of Environment and Conservation for assessment.

The proponent will comply with all requirements of the Water Resources Management Division of the NL Department of Environment and Conservation and is committed to ensuring that the project will not negatively affect the circulation and dispersal patterns of the existing sewer outfall.

4.5.4 Health & Safety:

Environmental Concern

Project activities may be a risk to the project construction workers and the general public.

Mitigation

The new site access will be designed to provide unrestricted and safe public access to the new DFO SCH facility.

Access to work areas will be controlled and restricted to construction personnel. The contractor will be required to develop a site-specific safety plan.

Excavator(s) will be used throughout the duration of the construction period. Equipment and construction materials will be transported to the site via the existing road network. Some minor impacts from dump truck traffic due to speed, noise, spillage or traffic congestion are anticipated. Reduced speed limits and appropriate signage will be put in place, if warranted. Local municipal construction bylaws will be adhered to. With appropriate mitigations in place, minimal adverse environmental effects, as a result of construction, are predicted.

The fishery in the project area is seasonal in nature. The project is scheduled for a period when there will be fishing activity, and some disruption to harbour operations and navigation is anticipated. Any construction activities that could result in any significant interference will be discussed and coordinated with the local Harbour Authority. The project was referred to Transport Canada for assessment under Section 5(1) of the Navigable Waters Protection Act. Any requirements such as Notice to Mariners, etc. that might be stipulated by the NWPA, will be adhered to.

No recreational activities are known to take place at the project site. Any activity that could result in conflict or interference with any potential

recreational activities will be discussed and coordinated with local facility users.

As part of the project's pre-planning process, the Harbour Authority of Southern Harbour circulated a petition of residents in the area of Marine Drive, near the proposed harbour development site. A total of twenty residents signed the petition in support of the project (See Appendix D).

4.5.5 Air Quality:

Environmental Concern

Construction activities could result in nuisance impacts due to noise and dust. Noise will originate from the use of heavy equipment (excavator and trucks) throughout the construction period.

Mitigation

All construction equipment must be fitted with standard and well-maintained noise suppression devices. Lower noise levels are anticipated from power tools such as hammers, drills and chainsaws. To mitigate potential effects to local residents, construction activity will be carried out during daylight hours to minimize disturbances and local municipal construction by-laws will be adhered to. There will be no increased level of noise after the completion of the project.

Appropriate dust suppression methods are to be employed if required.

4.5.6 Aesthetics:

Environmental Concern

There is potential for the dredging component of the project to negatively affect local residents and fishers with offensive odours and aesthetics.

Mitigation

The proposed project was referred via the CEEA Federal Coordination Regulations to Ms. Igna Smith of the NL Department of Government Services. The proponent is committed to complying with the terms and conditions of the GSC approval dated July 4, 2007.

The proponent and contractor will discuss potential impacts of the dredging (noise, dredge material handling and storage, odour, aesthetics, trucking, and disposal) with Town officials, Harbour Authority, and local facility users before implementation of the project.

The breakwater will remain low enough as to not permanently hinder the view provided from the shoreline. The contractor is required to restore the site to an acceptable condition prior to the conclusion of the project.

All handling and use of dredge material will comply with the Newfoundland Department of Government Services regulations.

4.6 Occupations:

The following list outlines occupations, which will be employed during the design and construction period.

- 4 – Professional Engineers
- 2 – Engineering Technicians
- 2 – Surveyors
- 1 – Rod and Chainmen
- 1 – Construction Inspector
- 1 – Draftsperson
- 1 – Secretary
- 6 – Laborers
- 2 – Heavy Equipment Operators
- 5 – Truck Drivers
- 2 – Flag People
- 1 – Office Clerk
- 1 – Construction Foremen/Superintendents

4.7 Project-Related Documents:

1. Marine Sediment Analysis Report (*Maxxam Job #: A5C4045, May 29, 2007*)
2. Geotechnical Factual Report (*Fracflow Consultants Inc. FFC File: 454, January 31, 2006*).

5.0 **APPROVAL OF THE UNDERTAKING:**

The following is a list of the main permits, licences and approval 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, Oceans and Habitat Management Branch
Application for Environmental Approval to Alter a Body of Water Water and Sewer Works Approval	NL Department of Environment and Conservation, Water Resources Division
Navigable Waters Protection Approval	Transport Canada
Waste Disposal Approval	NL Department of Government Services Site Owner / Operator
Quarry Permit	NL Department of Mines and Energy
Lease / Permit to Occupy Crown Lands	NL Department of Government Services
Protected Road Zoning and Development Control Approval	NL Department of Government Services

6.0 SCHEDULE:

The project is currently scheduled to commence November 2007 with completion estimated for October 2009.

7.0 FUNDING:

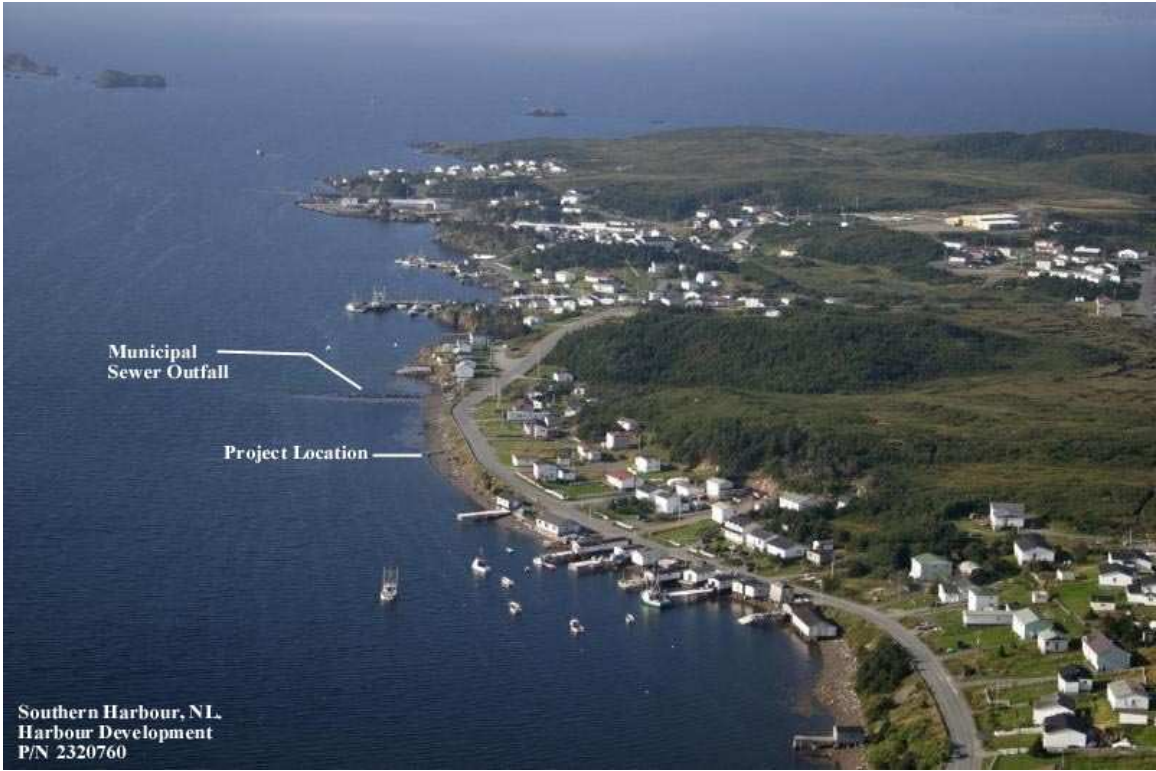
Fisheries and Oceans Canada, Small Craft Harbours Branch will be providing the funding for this project. Approximate capital costs for the undertaking will be in the order of \$2,150,000 + HST.

Date

Signature of SCH Regional Engineer

APPENDIX A

PHOTOS





Project Location

Municipal Sewer Outfall

Southern Harbour, NL.
Harbour Development
P/N 2320760



**Project
Location**

Municipal Sewer Outfall

**Southern Harbour, NL.
Harbour Development
P/N 2320760**

APPENDIX B

SITE PLAN

Public Works and
Government Services
Contract

Thomas Public and
Services governments
Contract

revision
project

date
project

**HARBOUR
DEVELOPMENT
SOUTHERN HARBOUR
NFLD & LAB.**

drawing
sheet

**SITE PLAN
SITE 4 - OPTION 'C'
BREAKWATER/
FINGER PIER**

approved PWSSC

date MAY 07

drawn D.S.

checked MAY 07

approved

checked

approved

checked

approved

checked

approved

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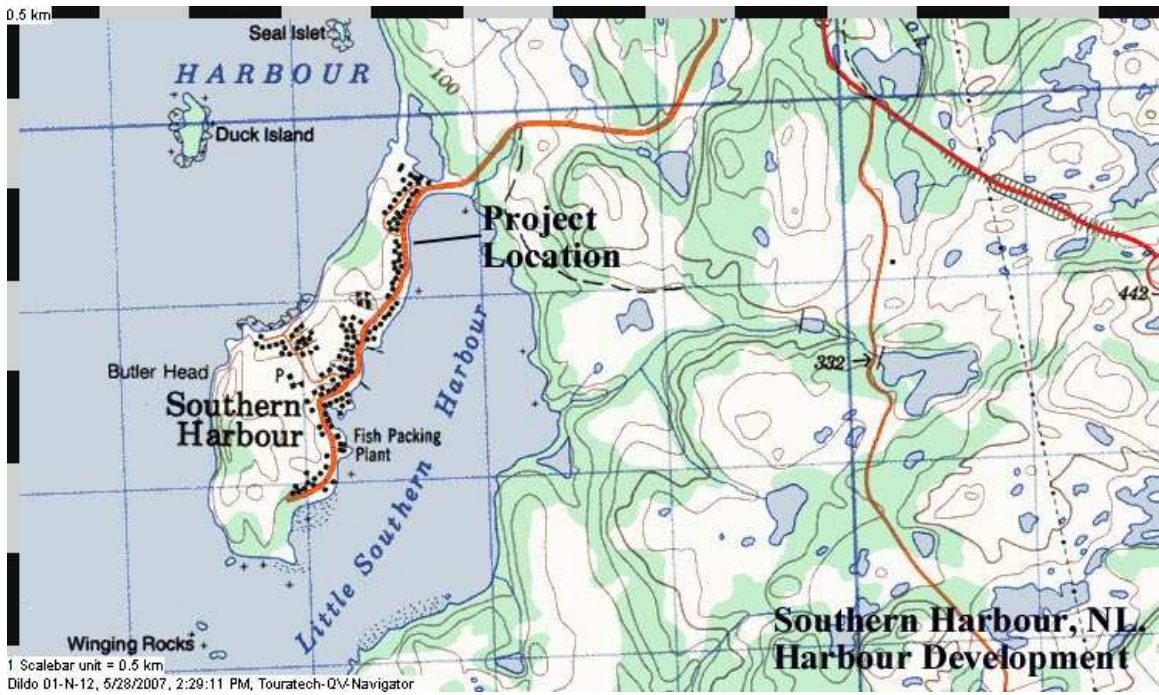


drawing no. 1 OF 3
no. of sheets

E-DRM/CDD-E

APPENDIX C

TOPO MAP



APPENDIX D
PUBLIC PETITION

(A) From Bill Dickey

Harbour Authority of Southern Harbour
P.O. Box 166
Southern Harbour, NL
A0B 3H0

May 23, 2007

We the undersigned residents in the area of Marine Drive, Southern Harbour have been informed of the intentions of the Harbour Authority of Southern Harbour to construct a berthage dock. We DO NOT OBJECT to this construction in this area as we have been informed that this facility will not interfere with our daily routines as this is STRICTLY A TIE UP WHARF ONLY. No offloading of gear or catch will be permitted and also NO GEAR STORAGE will be allowed.

Name	Address
Joseph Embury	Southern Harbour
Joe Bruce	Southern Harbour
Wesley Ryan	S.H.
Tom Ryan	S.H.
Jeffrey Ryan	S.H.
Keith Hicks	S.H.
Renee Hickey	S.H.
Jeddy Murphy	S.H.
Wendy Murphy	S.H.
Catherine Leonard	S.H.
Lynne Grant	S.H.
Lilli Grant	S.H.
Kathleen Leonard	S.H.
Brenda Leonard	S.H.
Maree Leonard	S.H.
Shelly Best	
Maurice Best	

