

FISHERIES AND OCEANS
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012
POINTE-SAPIN CONTAINMENT CELL EXPANSION & BASIN DREDGING
PROJECT EFFECTS DETERMINATION REPORT

GENERAL INFORMATION

1. Project Title: Pointe-Sapin Containment Cell Expansion & Basin Dredging	
2. Proponent: Fisheries and Oceans Canada - Small Craft Harbours (DFO-SCH)	
3. Other Contacts:	4. Role of each contact:
a) Jay Carr, Environmental Specialist, PSPC	a) OGD consultant
5. Source of Project Information (Contact): Jean Girouard, PSPC Project Manager	
6. Received Date: April 23, 2018	
7. PATH No.:	8. DFO File No:
9. Other relevant file numbers:	a) PSPC File No. – R.089709.001
	b) NPA File No. – 8200-94-2105

BACKGROUND

<p>10. Background about Proposed Development (including a description of the proposed development):</p> <p>The proposed project will take place at Pointe-Sapin DFO-SCH #2609, an active Small Craft Harbour facility servicing the commercial fishery. The project involves the expansion of an existing containment cell located in the western end of the Small Craft Harbour property. A significant portion of the expansion will be situated below the High Normal Tide (HNT) mark. The northern wall of the current containment cell will be built up to an elevation of 3.0 meters above HNT and will be connected to the existing armour-stone breakwater structure #302, which will act as the eastern wall of the new cell. The remaining two sides of the new cell will be built up to the desired elevation (4.5 meters above chart datum, 3.0 meters above HNT) to complete the construction of the new cell (see Appendix A).</p> <p>The cell is being expanded in anticipation of dredging that is required in the basin at Pointe-Sapin Harbour. The water depth within sections of the harbour basin has become a safety concern for safe passage to and from the wharf. Closing and/or relocating the harbour facility is not a viable option (both socio-economically and environmentally), and the “do nothing” option does not address the issue, therefore dredging the basin and disposal of the dredge material are being considered as the only viable alternative.</p> <p>Upon completion of the containment cell, the basin at Pointe-Sapin will be dredged, with the dredged material disposed in the new cell. The western half of the basin was last dredged in 2000 by a land-based excavator, with the 9,920 m³ of dredge material hauled to an upland disposal site (Loggie’s Pit). The east basin was last dredged in 2012 by a cutter suction dredge. A total of 25,800 m³ of material was dredged and disposed both at sea (approximately 10,200 m³) and in the current containment cell on site (approximately 15,600 m³). The total area for the upcoming dredge project is approximately 32,000 m², with a total dredge volume of approximately 28,000m³.</p> <p>Various disposal options for the basin material have been considered, however a marine sediment sampling program carried out in the fall of 2017 indicated that disposal options for the basin material are limited. The material is not suitable for Disposal at Sea and has significant restrictions for land-based disposal as well. The dredge disposal options were compared to the hierarchy of waste management options, specifically 1) beneficial use (ie. beach nourishment); 2) off-site recycling, or in the context of this project, recycling within the littoral drift system (Disposal at Sea); and 3) disposal in the marine environment or disposal in the upland environment. Due to the presence of various contaminants in the basin material, none of the aforementioned options may be considered. The dredge material must be managed as a waste material and due to the large quantity of material that must be disposed of, managing the dredge material on site is the most viable option.</p> <p>The Department of Fisheries and Oceans – Fisheries Protection Program will assess the impacts of the proposed project and determine if Authorization is required as per Section 35(1) of the <i>Fisheries Act</i>. To offset the loss (permanent destruction) of fish habitat, DFO-FPP may require compensation be paid to ensure there will be no net loss of fish habitat.</p>

This Project Effects Determination report is being conducted to fulfill the requirements under Section 67 of the *Canadian Environmental Assessment Act*, 2012. A review of the DFO-SCH Project Environmental Risk Assessment Form determined that this project is considered High-risk, and is being assessed as such.

PROJECT REVIEW

11. DFO's rationale for the project review:

Project is on federal land and:

- DFO is the proponent
- DFO to issue *Fisheries Act* Authorization, *Species at Risk Act* Permit or other regulatory permit
- DFO to provide financial assistance to another party to enable the project to proceed
- DFO to lease or sell federal land to enable the project to proceed
- Other

12. a) *Fisheries Act* Section(s) (if applicable): 35(1)

b) *Species at Risk Act* Section(s) (if applicable): n/a

13. Primary Authority: DFO-SCH

14. Primary Authority's rationale for involvement:

- Primary Authority is the proponent.
- Primary Authority to provide financial assistance to enable the project to proceed.
- Primary Authority to provide a licence or an interest in land.
- Primary Authority to issue a regulatory permit, approval or authorization.

15. Other Authorities involved in review:

- a) DFO-Fisheries Protection Program
- b) Transport Canada – Environmental Affairs and Aboriginal Consultation Unit (TCEA), and Navigation Protection Program (NPP)
- c) NB Department of Environment & Local Government

16. Other Authority's rationale for involvement:

- a) Request for Review/*Fisheries Act Authorization*
- b) *Navigation Protection Act (NPA)*
- c) Provincial EIA Registration

17. Other Contacts and Responses (Government Agencies, Other Organizations, Harbour Authority, etc.):

- a. Rachel Friolet - DFO Area Aboriginal Program Coordinator
- b. Ernest Mazerolle – Pointe-Sapin Harbour Authority
- c. NB Department of Energy & Resource Development – Quarry Permit required as per *Quarriable Substance Act*
- d. NB Department of Transportation & Infrastructure – Various permits/authorizations required

Aboriginal Consultation

PSPC, on behalf of DFO-SCH, carried out an Aboriginal Assessment at Pointe-Sapin 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.
- 3. The potential or established Aboriginal or treaty rights may be adversely impacted by the Crown.

Through the Duty to Consult (DTC) process, the DFO Area Aboriginal Program Coordinators advised that there are 6 aboriginal vessels that fish commercially from the Pointe-Sapin DFO-SCH facility. Although the proposed project is not expected to have any interactions with traditional Aboriginal fisheries, consultation with Indigenous groups in the province of New Brunswick will be pursued.

Public Consultation

Project information will be advertised in the local newspaper(s) upon the EIA registration with the New Brunswick Department of Environment and Local Government.

18. Scope of Project (details of the project subject to review):

Project Description

The project involves the expansion of an existing containment cell located in the western end of the Pointe-Sapin Small Craft Harbour property (see figures 1-3 for project location). The existing cell is approximately 3000 m². The expanded cell, once complete, will cover approximately 11,200 m² and have capacity to hold approximately 30,000 m³ of material. A significant portion of the expansion will be situated below the High Normal Tide (HNT) mark.

The northern wall of the current containment cell will be built up to an elevation of 4.5 meters above chart datum (3.0 meters above HNT) and will be connected to the existing armour-stone breakwater structure #302, which will also be built up to 4.5 meters above chart datum (see figures 4 and 5 for details). A base for the remaining two walls will be constructed with core stone to establish the perimeter of the cell and to provide a dry working platform. These walls will then be built up with filter and armour stone to the final elevation of 4.5 meters above chart datum. This design takes into consideration larger than normal tides and storm surges associated with future sea-level rise projections. Some minor excavation will be required at the base of the final 2 walls in order to "toe-in" the base of the armour stone to prevent scouring. The excavated material will be incorporated into the cell walls.

There is an existing access road to the project site, therefore no temporary road construction is required. Excavators and dump trucks used during construction will carry out the work from the dry, constructing a core stone base for the 2 walls below the HNT mark to establish a dry working platform.

Upon completion of the containment cell, the entire basin will be dredged to 1.8 m below Low Normal Tide (LNT), covering an area of approximately 32,000 m², with a total dredge volume of approximately 28,000 m³. Historically, dredging at Pointe-Sapin SCH has been carried out with either a cutter suction (floating plant), land-based equipment (long-reach excavator) or a barge mounted excavator. The type of dredge equipment used for this project will depend on the dredging contractor. A cutter suction rig would pump the dredge material directly to the containment cell, while “land-based” equipment would transfer the dredge material to a truck for transport to the cell.

It is anticipated that the containment cell will be used to contain material from future dredge projects as well. Before the cell can be emptied in the future, any material in it will be analyzed to determine suitable disposal options.

Operation

The Environmental Management System (EMS) with an integrated Environmental Management Plan for the Harbour Authority of Pointe-Sapin covers operational aspects of the environmental management and is the mitigation measure for the environmentally responsible aspects of harbour operation (fueling, waste disposal, activities on the property, and water). The proposed Project will not affect continued operations at Pointe-Sapin SCH, therefore operations are not considered further in this Determination.

Decommissioning

This facility is not presently planned to be decommissioned. At the time of decommissioning, DFO-SCH will develop a site specific re-use or reclamation plan that is appropriate for the applicable environmental legislation and Fisheries and Oceans Canada policies.

Scheduling

The expansion to the containment cell is expected to commence in fall of 2018 and is anticipated to be completed by March 31, 2019, pending funding and approvals. Basin dredging will take place once cell is complete, however may be delayed to accommodate lobster fishing season.

19. Location of Project:

Pointe-Sapin SCH is located along the eastern shore of New Brunswick on the Gulf of St. Lawrence in Kent County. The approximate coordinates of the project area are Latitude 46°57'37"N and Longitude -64°49'57"W. Refer to **Figures 1 to 3** in **Appendix A** for maps and an aerial photo showing the proposed project location and surrounding area.

20. Environment Description:

Physical Environment

The coastline at the harbour is typical of the area with low, eroding sandstone sea cliffs. The beach north of the harbour is wide and isolated. To the south of the harbour, the beaches are eroded and sand is deficient. The area upland of the SCH consists of a narrow band of low coastal plain backed by extensive wetlands and peat bogs. The tides in the area generally range from less than 0.5 m to 1.5 m in height.

Based on available surficial geology maps, the native surficial soils likely consist of loamy lodgment till, minor ablation till, silt, sand, gravel, and rubble, generally less than 0.5 m thick (Rampton et. al. 1984). Geological mapping of the area indicates that the site is underlain with red to grey sandstone, conglomerate and siltstone of Pennsylvanian or younger age (New Brunswick Department of Natural Resources and Energy 2000).

Under the National Ecological Framework of Canada, the Maritime Lowlands ecoregion lies within the Atlantic Maritime Ecozone. This ecoregion has warm summers with mild, snowy winters. The mixed-wood forests are typically composed of red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), red maple (*Acer rubrum*), eastern hemlock (*Tsuga canadensis*), and eastern white pine (*Pinus strobus*) with occasional sugar maple (*Acer saccharum*) and yellow birch (*Betula alleghaniensis*) in elevated areas. Extensive wetlands are found throughout the ecoregion (Agriculture and Agri-Food Canada 2013).

A Marine Sediment Sampling Program (MSSP) was carried out in the basin in September 2017. Ten core samples were collected from the east basin, while 15 core samples were collected from the west basin, with one duplicate sample collected from each basin. The sample analysis indicated that the east basin is comprised mainly of sand (46%), with lesser amounts of clay (33%) and silt (20%), and trace amounts of gravel (1%). The west basin is comprised of 46% sand, 32% clay, 19% silt, and 3% gravel.

The MSSP indicated that the Canadian Environmental Protection Act (CEPA) disposal at sea guidelines for metals were exceeded in three samples collected from the east basin and four samples collected from the west basin, therefore the basin material is not suitable for ocean disposal. The analysis also indicated various exceedances to the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (SoQGs) for metals and the CCME SoQGs for Polycyclic Aromatic Hydrocarbons (PAHs), therefore upland disposal option for the basin sediment are also limited. It should also be noted that the sodium adsorption ratio (ranging from 20.2 to 67.2) and conductivity levels (ranging from 7.44 to 62.3 mS/cm) exceeded the Loggies Pit Dredge Material Acceptance Criteria, therefore if this material is to be removed from the containment cell in the future (transported to Loggies Pit), additional analysis will be required to assess its suitability.

Regional surface drainage (assumed groundwater flow direction) appears to be to the south towards the Gulf of St. Lawrence. Surface drainage at the site is anticipated to drain by infiltration and/or overland flow and follow the slope of the property to the south towards the Gulf of St. Lawrence.

Canadian Climate Normals (1981-2010) for the Rexton climate station (46° 40' 00.000" N, -64° 52' 00.000" W), the station located closest to the project, indicate a mean annual temperature of 5.6 °C with extremes ranging from -39.4 °C to 39.4 °C. Measurable precipitation per year is approximately 1,104 millimetres (mm). Extreme daily precipitation of up to 125 mm has been recorded (Government of Canada, nd).

Biological Environment

Historical information from Traditional Fisheries Knowledge mapping (Legault 1998) indicates that in the waters surrounding the harbour are rock crab (*Cancer irroratus*) and American lobster (*Homarus americanus*) fishing areas approximately 0.5 km to 30 km offshore. Lobster spawning areas are located from 0.25 to 10 km offshore. Atlantic herring (*Clupea harengus harengus*) fishing grounds can be found 0.25 to 10 km offshore while spawning grounds can be found 0.25 to 7 km from the harbour. Spawning season for herring is from mid-April to mid-May. Winter flounder (*Pseudopleuronectes americanus*) is found in the area approximately 0.25 to 4 km offshore. Located 8 to 15 km offshore are spiny dogfish (*Squalus acanthias*), Atlantic mackerel (*Scomber scombrus*), Atlantic bluefin tuna (*Thunnus thynnus*), and Atlantic deep-sea scallop (*Placopecten magellanicus*). Species located 15 to 20 km offshore include northern moon snail (*Euspira heros*), periwinkle (*Littorina* sp.), and quahog (*Mercenaria mercenaria*). There are also migrating alewife (*Alosa pseudoharengus*), striped bass (*Morone saxatilis*), and rainbow smelt (*Osmerus mordax*) in the waters off Pointe-Sapin. Irish moss (*Chondrus crispus*) beds occur

on the sea bottom in the Pointe-Sapin harbour area. Fish species that also migrate through this area include shad (mid-May through June) and smelt (fall and winter).

The Maritime Breeding Bird Atlas identifies a total of 53 species of birds in the geographical block which contains Pointe-Sapin Harbour (20LT60), 9 of which are listed as confirmed for breeding (Bird Studies Canada n.d. [a]). The outer limits of the closest Important Bird Area (IBA) are approximately 1.5 km northeast of the harbour. The Kouchibouguac NP Sand Islands IBA is an important area for breeding common terns as well as the endangered piping plover. Other birds nesting in the area include red-breasted mergansers, herring gulls, ring-billed gulls, and great black-backed gulls (Bird Studies Canada n.d. [b]).

The nearest regulated wetland is located approximately 600 m northwest of the harbour (Government of New Brunswick n.d.). The vegetation on site is limited with some grass. The upland area is mostly comprised of grass and developed with harbour infrastructure and residential properties.

A search of the Atlantic Canada Conservation Data Centre (ACDC) database was conducted via the PSPC Species at Risk Information System (SARIS). SARIS provides a list of rare/unique species (i.e. plants and animals) within a 5 km buffer zone of the site of the proposed work. All species were cross-referenced with Schedule 1 of the *Species at Risk Act* (SARA) and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Species identified in the search are listed below:

The **Piping plover** (*Charadrius melodus melodus*) is listed on Schedule 1 of SARA and by COSEWIC as Endangered. The piping plover is a North American bird that breeds along the Atlantic coast, from South Carolina to Florida, and in the Caribbean (Cuba, Bahamas). In Canada, the *melodus* subspecies breeds on the Magdalen Islands of Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland. Piping plovers nest above the normal high water mark on exposed sandy or gravelly beaches. Along the Atlantic coast, they often nest in association with small cobble and other small beach debris on ocean beaches, sand spits, or barrier beaches (ECCC, 2018). They also forage for food on these beaches. According to the Recovery Strategy, there is critical habitat for this species listed for Pointe-Sapin, however, it is understood that there is a lack of suitable habitat within the proposed project footprint, and the noted critical habitat is located greater than 1 km north of the harbour. Surveys for Piping plovers are completed at Pointe-Sapin annually in association with annual channel dredging and disposal at sea activities. To date, no Piping plovers have been observed nesting on the beaches near the harbour facility.

The **Leatherback Sea Turtle** – Atlantic population (*Dermochelys coriacea*) is listed on Schedule 1 of SARA and by COSEWIC as Endangered. Leatherback sea turtles are widely distributed in Atlantic Canada, inhabiting both coastal and offshore waters in the Gulf of St. Lawrence. This species utilizes both terrestrial (nesting) and marine habitats. They nest on ocean beaches with coarse-grained sands that are deep and generally free of rocks, coral, or other abrasive materials. Satellite telemetry studies and sightings indicate this species is present in Canadian waters between April and December with highest densities occurring between July and September. Atlantic Canada hosts one of the highest densities of foraging Leatherback Sea Turtles in the North Atlantic during the summer, in large part due to a predictable abundance of jellyfish prey. All life-stages of this species feeds on gelatinous organisms including jellyfish, comb jellies, and tunicates. Critical habitat has not yet been identified for this species (ECCC, 2018). Due to the lack of suitable habitat in the immediate project area, there are no expected interactions between the leatherback sea turtle and the project. However, in the event that a leatherback sea turtle is encountered during the project, activities in the area of the siting are to cease and the project manager consulted immediately for further direction.

The **Beluga whale** - St. Lawrence Estuary population (*Delphinapterus leucas*) is listed on Schedule 1 of SARA and by COSEWIC as Endangered. This species of whale occurs mainly in the St. Lawrence River estuary, with concentrations in the summer months centered around the Saguenay River mouth extending from Île aux Coudres (located approximately 100 km downstream of Quebec City) and up the Saguenay River to Saint-Fulgence. Little is known about the species' winter distribution; however, there appears to be an increase in the use of the downstream areas. Beluga whales generally occur only in seasonally ice-covered parts of Arctic and sub-Arctic seas and the distribution of the St. Lawrence population represents the southern limit of the species' worldwide range. Their habitat is ice-covered in winter, while the species inhabits warmer, shallow, turbid waters of Arctic river mouths in the summer (ECCC, 2018). Critical habitat has been identified for this species, however, the project is not located within the designated area (Canada Gazette 2016). There are no expected interactions between the beluga whale and the project.

The **Olive-sided Flycatcher** (*Contopus cooperi*) is listed on Schedule 1 of SARA and by COSEWIC as Threatened. The Olive-sided Flycatcher breeds in scattered locations throughout most of forested Canada and in the western and northeastern United States. It is most often associated with open areas containing tall live trees or snags for perching, including forest clearings, forest edges, burned forest, or openings in old-growth stands. In winter, it is found mainly in

Panama and the Andes Mountains, from Venezuela to Peru and Bolivia (ECCC, 2018). The project site does not provide any suitable habitat for the Olive-sided flycatcher, therefore no interactions between this species and the project activities are expected.

The **Barrow's Goldeneye** - Eastern population (*Bucephala islandica*) is designated as a species of special concern on Schedule 1 of SARA and by COSEWIC. This species of diving duck primarily breeds and winters in Canada, west of the Rocky Mountains and to a lesser extent in Alberta and southern Yukon. The limits of the range of the Eastern population of Barrow's goldeneye are still unknown; however, small numbers of this population winter in the Maritime provinces and along the northern Atlantic coastline into the United States. The eastern population inhabits balsam fir/white birch forest regions of Quebec and appear to be restricted to small, high-elevation lakes north of the St. Lawrence Estuary and Gulf of St. Lawrence. During the non-breeding season, the species spends time in the coastal waters of the Estuary and Gulf. Critical habitat has not yet been identified for this species (ECCC, 2018). There are no expected interactions between the Barrow's goldeneye and the project, however in the event that Barrow's Goldeneye is encountered during construction activities, the mitigation measures listed in Section 22 should minimize any impacts to the species.

The **Barn Swallow** (*Hirundo rustica*) is listed on Schedule 1 of SARA and by COSEWIC as Threatened. It is known to breed in all provinces and territories. It is a long-distance migrant and winters through Central and South America. They nest mainly in and on artificial structures, including barns and other outbuildings, garages, houses, bridges, and road culverts. Barn Swallows prefer various types of open habitats for foraging, including grassy fields, pastures, various kinds of agricultural crops, lake and river shorelines, cleared rights-of-way, cottage areas and farmyards, islands, wetlands, and subarctic tundra (ECCC, 2018). The project site does not provide any suitable habitat for the Barn swallow, therefore no interactions between this species and the project activities are expected.

The **Bank Swallow** (*Riparia riparia*) is listed on Schedule 1 of SARA and by COSEWIC as Threatened. The Bank swallow breeds in all Canadian provinces and winters primarily in South America. It nests in a wide variety of natural and artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil. Sand-silt substrates are preferred for excavating nest burrows. Breeding sites tend to be somewhat ephemeral due to the dynamic nature of bank erosion. Breeding sites are often situated near open terrestrial habitat used for aerial foraging (e.g., grasslands, meadows, pastures, and agricultural cropland) (ECCC, 2018). The project site does not provide any suitable habitat for the Bank swallow, therefore no interactions between this species and the project activities are expected.

Gulf of St. Lawrence Aster (*Symphytotrichum laurentianum*) is listed on Schedule 1 of SARA and by COSEWIC as Threatened. All known Gulf of St. Lawrence Aster populations occur in coastal habitats such as beaches, lagoons, dunes, dune slacks and dry stretches of salt marshes. This annual grows in moist, mostly sandy soil where flooding only occurs during extremely high tides and storms. It grows in slightly sloped, open terrain near sea level in areas where the dunes provide a fair degree of shelter from the wind (ECCC, 2018). The nearest known population is found in Kouchibouguac National Park, approximately 3.5 km to the southwest of the project site, therefore there is no expected interaction between the Gulf of St. Lawrence Aster and project activities.

The Kouchibouguac National Park is located within 5 km to the south of Pointe-Sapin Harbour. It is managed by Parks Canada and consists of a saltmarsh ecosystem, significant sand dune-beach complex, old growth forest, and endangered species nesting site (i.e., piping plover) measuring approximately 20,000 hectares in size.

The following Environmentally Significant Areas (ESA) designated by the Nature Trust of New Brunswick are located in the vicinity of the project:

- Pointe-Sapin Dune ESA runs north from the mouth of the Portage River to the northern boundary of Kouchibouguac National Park. Golden dock (*Rumex maritimus* var. *persicarioides*) grows on the beach next to the bank in wet sand from bog outflow, approximately 0.1 miles north of the mouth of Portage River. The dune has also supported one nesting pair of piping plover off and on since 1982 (Nature Trust of New Brunswick 2018).
- Kouchibouguac Northern Lagoon ESA is located in the northern portion of the Kouchibouguac National Park. This salt marsh with enclosed lagoon is surrounded on three sides by bog, and on the east with a beach-sand dune complex which is gradually invading the marsh. This is one of the least disturbed salt marshes in the province, despite evidence of historical hay cutting. Several species of small birds nest in the area and waterfowl use the area during migration. It serves as a staging area for many thousands of Canada Geese and Scoters. (Nature Trust of New Brunswick, 2018).

An Underwater Benthic Habitat Survey (UBHS) was conducted in the area of the proposed cell in July 2018. This survey found the substrate type to be 100% sand. There was a low abundance of macrofaunal life within the study area. Organisms encountered within the study area during the survey included one hermit crab (*Pagurus sp.*), one American lobster (*Homarus americanus*), Atlantic rock crabs (*Cancer irroratus*), and Periwinkles (*Littorina sp.*). The macrofloral life encountered was also very minimal and included Brown algae (*Desmarestia sp.*), Irish moss (*Chondrus crispus*), Sea lettuce (*Ulva lactuca*), Kelp (*Laminaria saccharina*), and Red algae (*Porphyra umbilicalis*). Macrofloral debris was noted along each transect. Live eelgrass (*Zostera marina*) beds were not observed within the study area (Dillon Consulting Limited, 2018b).

Human Environment

The Pointe-Sapin DFO-SCH is located along the eastern coast of New Brunswick in the Gulf of St. Lawrence. The harbour is directly accessible from NB Route 117.

Commercial fishing and peat moss industries support the majority of residents in the local community. There are approximately 100 registered fishers at the Pointe-Sapin SCH. Fishing occurs offshore of Pointe-Sapin at depths greater than 2 m (approximately 0.5 km to 1 km from the wharf). Lobster and herring are the main species fished at the harbour. Lobster (May 1 to June 30) and herring (mid-April to mid-June) are both fished in the spring, and herring is also fished in the late summer. The peak lobster fishery occurs in the late summer and fall (August 10 to October 10). According to the Harbour Authority, the following fisheries operate out of the harbour:

- American lobster –2 seasons: May to June and August to October
- Atlantic herring –mid-April to mid-June and late summer

Although there are no fish processing plants occurring at the harbour, there is a fish processing plant and lobster holding facility located approximately 1.6 km south of Pointe-Sapin harbour, as well as a fish processing facility located approximately 2 km south of the harbour. There are no aquaculture sites located near the harbour (New Brunswick Department of Agriculture, Aquaculture and Fisheries 2018).

Land in the immediate vicinity of the harbour has been developed to serve the general fishing industry and residential properties. The nearest residential property is located less than 100 m north of the wharf. A peat moss plant is located in the backup area of Pointe-Sapin.

According to the DFO Aboriginal Program Area Coordinators, there are 6 Aboriginal fishers operating out of the Point-Sapin DFO-SCH. There are no known Aboriginal fisheries for food, social, or ceremonial purposes known to be occurring at the harbour at this time.

Lands adjacent to the coastlines in the Maritimes tend to have high archaeological potential given their historic importance and proximity to transportation routes and fishing resources. The shoreline around and including Pointe-Sapin is considered high potential for heritage and archaeological resources; however, there are no registered archaeological sites located within 5 km of the project site. Two cemeteries are located in the community of Pointe-Sapin, approximately 750 m southwest of the project site (New Brunswick Department of Tourism, Heritage and Culture 2013).

21. 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 / Marine Sediments	Air Quality
Containment Cell Expansion and Basin Dredging																	
Transportation of Material and Equipment	-	-	P	-	-	-	-	P	-	-	-	-	-	-	P	P	P
Expansion of containment cell	P	P	P	-	P	-	P	-	P	P	P	-	P	P	P	P	P
Basin dredging	P	P	P	P	-	-	-	P	-	-	P	-	P	P	P	P	P
Disposal of dredge material in cell	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	P
Removal of Equipment	-	-	P	-	-	-	-	-	-	-	-	-	-	-	P	P	P
<p>*structure, site or thing that is of historical, archaeological, paleontological or architectural significance</p> <p>P = possible interaction</p> <p>"-" = no interaction</p>																	

Evaluation of Environmental Effects

The Valued Ecological Components (VECs) selected in Table 1 are addressed in Sections 22 and 23 of the PED. The physical works/activities and required mitigation measures are detailed. The assessment is 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 described in Table 2 and used in Section 23.

Table 2: Assessment Criteria for Determination of Significance

Magnitude	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
Reversibility	Reversible	Effects can be reversed
	Irreversible	Effects are permanent
Geographic Extent	Immediate	Confined to project site
	Local	Effects beyond immediate project site but not regional in scale
	Regional	Effects on a wide scale
Duration	Short-term	Between 0 and 6 months in duration
	Medium-term	Between 6 months and 2 years
	Long-term	Beyond 2 years
Frequency	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 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.

22. Environmental Effects:

Potential Project/Environment Interactions and their effects are outlined below. The effects are described for each project phase.

Containment Cell Expansion and Basin Dredging:

- Potential increased suspended solid/sediments and turbidity adjacent to the project site during dredging and cell construction may affect marine water quality in the vicinity of the project.
- Construction activities may result in construction related debris or toxic material entering the water and affecting marine water quality.
- Potential for introduction of invasive species into the marine environment during construction and dredging activities.
- Potential reduction in air quality due to emissions from construction related vehicles.
- Elevated noise levels may occur at the harbour. This could cause disruption to nesting or migration of birds or disruption to local land users
- Disturbance to fish and destruction of fish habitat in the immediate project area.
- Disturbance to terrestrial/aquatic species during transportation, construction, and dredging activities.
- Food scraps could enhance populations of predators during construction period.
- Disturbance of birds during construction and dredging activities.
- Interaction with commercial fishing activities during dredging.
- Interaction with recreational use (including fishing) of the harbour during construction and dredging activities.
- Potential discovery and disturbance or loss of heritage/archaeological resources during cell construction.
- Worker health and safety during construction activities.

Navigation Consideration:

- Environmental effects of the project on navigation are taken into consideration as part of the Project Effects Determination (PED) only when the effects are indirect, i.e. resulting from a change in the environment affecting navigation. Direct effects on navigation are not considered in the PED, but any measures necessary to mitigate direct effects will be included as terms and conditions associated with work approved or permitted pursuant to the *Navigation Protection Act*.

23. Mitigation Measures for Project:

Table 3: Potential Project/Environment Interactions and Recommended Mitigation Measures

Containment Cell Expansion and Basin Dredging	
<u>Effect</u>	<u>Recommended Mitigation Measures</u>
Potential increase in suspended solid/sediments and turbidity adjacent to project site that may impact marine water quality, fish and fish habitat <i>(Small, Reversible, Local, Short Term)</i>	<ul style="list-style-type: none"> • Visual monitoring for suspended solid must occur daily. If any changes occur in the turbidity of the water in the vicinity of the work area as a result of construction activities, the work must be immediately stopped to determine if further mitigation measures are required. • Weather conditions are to be assessed on a daily basis to determine the potential risk of weather on the project. Work is to be scheduled to avoid periods of heavy precipitation and to prevent erosion and release of sediment and/or sediment-laden water during the construction phase. • Activities must be completed in such a way as to minimize the amount of fines and organic debris that may enter nearby aquatic environments. • All exposed soils must be stabilized as soon as possible in order to control sediment runoff during and after construction.
Potential construction-related debris may impact fish & birds or affect marine water quality <i>(Small, Reversible, Local, Short Term)</i>	<ul style="list-style-type: none"> • All construction debris will be disposed of in a provincially approved manner. • All construction material/debris entering the marine environment will be immediately retrieved and disposed of in a provincially approved manner. Waste materials are not to be buried onsite.
Potential accidental release of toxic materials entering the marine environment, affecting marine water quality, birds, fish and fish habitat <i>(Small to Large, Reversible, Local, Short Term)</i>	<ul style="list-style-type: none"> • All construction material used must be clean and non-toxic (free of fuel, oil, grease, and/or any contaminants). • Machinery must be checked for leakage of lubricants or fuel daily. Onsite crews must have emergency spill clean-up equipment, adequate for the activity involved, onsite. Spill equipment will include, as a minimum, at least one 250L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from

	<p>spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-hour Environmental Emergencies Report System (1-800-565-1633).</p> <ul style="list-style-type: none"> • The proponent must ensure that all precautions are taken by the contractors to prevent fuel leaks from equipment, and that a contingency plan in case of oil spills is prepared. The proponent should ensure that contractors are aware that under the Migratory Birds Regulations, “no person shall deposit or permit to be deposited oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.” Biodegradable alternatives to petroleum-based chainsaw bar oil and hydraulic fluid for heavy machinery are commonly available from major manufacturers. Such biodegradable fluids should be considered for use in place of petroleum products whenever possible, as a standard for best practices. Fueling and servicing of equipment should not take place within 30 metres of environmentally sensitive areas, including shorelines and wetlands. • Toxic materials must be kept in a contained storage area, at least 30 m from any water body. Under no circumstances should oil or waste products be dumped overboard. • 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. • Where practicable, machinery shall be operated from a platform or on land above the high-water mark, in a manner that minimizes disturbance to the banks and bed of the waterbody.
<p>Potential for introduction of invasive species into the marine environment that may affect fish, fish habitat, birds, and aquatic species <i>(Small, Reversible, Local, Short Term)</i></p>	<ul style="list-style-type: none"> • To minimize the possibility of fish habitat contamination and the spread of aquatic invasive species, all construction equipment which will be immersed into the harbour, or has the possibility of coming into contact with such water during the course of the work, must be cleaned to ensure that they are free of marine growth and invasive species. Equipment may include vessels, cranes, excavators, haul trucks, pumps, pipelines and other miscellaneous tools and equipment previously used in a marine environment. A record of cleaning must be provided prior to beginning of construction. • Vessels should be compliant with all Canada Shipping Act, 2001, requirements for inspection, which includes certification of the vessel and adequate training and appropriate certificate of competency for the operators. • Ensure that all vessels will have procedures in place to ensure safeguards against marine pollution: awareness training of all employees, means of retention of waste oil on board and discharge to shore based reception facilities, capacity of responding to and clean-up of accidental spill caused by vessels involved in any particular project.
<p>Potential reduction in air quality due to equipment/vehicle emissions <i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • All equipment and vehicles are to be kept in good state of repair. • Idling of equipment and vehicles is to be limited to the extent necessary. • Construction activities must be carried out during times acceptable to local authorities and smaller, less disturbing equipment will be used where possible.
<p>Potential disturbance to fish and loss of fish habitat in the immediate project area during construction and dredging <i>(Small, Reversible, Immediate, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows. • Where required, measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry. • Where possible, install site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., excavation, dredging). • A Request for Review will be submitted to DFO-FPP. The project will adhere to mitigation measures proposed by DFO-FPP in a letter of Advice. If a Paragraph 35(2)(b) <i>Fisheries Act</i> Authorization is deemed required, measures proposed by DFO-SCH and accepted by DFO-FPP to offset serious harm to fish must be adhered to. • Ensure all work stops if unexpected fish spawning (e.g., herring and capelin etc.) is found in the area.

	<ul style="list-style-type: none"> • Minimize duration of in-water work. • To minimize the possibility of fish habitat contamination, all construction equipment that is to be immersed into a waterbody, or that may come into contact with these waters during the work must be cleaned and washed to ensure it is free of any plant growth and aquatic invasive species. Equipment includes vessels, cranes, excavators, transport trucks, pumps, pipelines, and any tools or various apparatus used previously in a waterbody. Cleaning and washing of equipment is to be performed immediately upon their arrival at the site and before use in or over the waterbody. • If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment. • Place rocks on the bed of the waterbody, rather than dropping or dumping, to limit any further encroachments and re-suspension of sediment
<p>Potential increased predators from presence of food scraps that may affect fish and birds <i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Contractors shall ensure that food scraps and garbage are not left at the work site. • In the event food scraps and garbage are found on site, they will immediately be disposed of in a properly secured waste receptacle.
<p>Potential disturbance of birds during construction and dredging periods <i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Concentrations of seabirds, waterfowl, or shorebirds shall not be approached when anchoring equipment, accessing wharves, or ferrying supplies. • All work to be conducted in accordance with the <i>Migratory Birds Convention Act</i>, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project. • If works is to be conducted during times of migratory bird nesting season, a pre-construction nest survey will be conducted in the vicinity of the project. If active nests are identified the area will be buffered and activities in the immediate area will be minimized until nesting is complete and chicks have naturally migrated from the area. • Construction activities must be carried out during times acceptable to local authorities and smaller, less disturbing equipment will be used where possible. • All machinery must be well muffled at all times. Contractors should avoid any sharp or loud noises (e.g., not blow horns or whistles) and should maintain constant noise levels. If necessary, trucks may be required to avoid the use of “hammer” braking along specific sections of the route, while radio communication should replace whistle blasts and horns. • Lights are to be shielded and aimed downwards and in the opposite direction of bird nesting habitats. • Project staff and/or contractors shall not access beaches, sand spits, dunes, mud flats, or sand flats during any stage of the project. • If the project construction extends beyond the anticipated timelines (beyond March 31, 2019) regular inspections should be carried out to confirm the presence and activities of piping plovers.
<p>Potential disturbance to terrestrial/aquatic species during construction activities <i>(Small, Reversible, Immediate, Short-term, Intermittent)</i></p>	<ul style="list-style-type: none"> • 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. • 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. • Construction 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. • Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents.

<p>Potential disruption or loss of heritage/archaeological resources during construction</p> <p><i>(Moderate, Irreversible, Immediate, Short-term, Once)</i></p>	<ul style="list-style-type: none"> • All construction personnel will be responsible for reporting any unusual materials unearthed during project activities to the Construction Supervisor. • In those situations where the find is believed to be an archaeological resource, the Construction Supervisor will immediately stop work in the vicinity of the find and notify his/her immediate supervisor and the PSPC Project Manager. • Work in the area will be stopped immediately and an archaeological curator at the New Brunswick Department of Tourism, Culture and Heritage – Provincial Archaeological Services will be contacted at 506-453-2738. • Work can only resume in the vicinity of the find when authorized by the PSPC Project Manager and Construction Supervisor, after approval has been granted by the New Brunswick Department of Tourism, Culture and Heritage. • In the event of the discovery of human remains or evidence of burials, the excavation work will immediately cease and nearest law enforcement agency will be contacted immediately by the PSPC Project Manager and/or the Construction Supervisor.
<p>Worker health and safety</p> <p><i>(Medium-term, other criteria not applicable)</i></p>	<ul style="list-style-type: none"> • Site access must be restricted to authorized workers only. • Workers in contact with hazardous materials must be provided with and use appropriate personal protective equipment. • Proper safety procedures must be followed for the duration of the project as per applicable municipal, provincial and federal regulations. • Employees will be trained in health and safety protocols (i.e., safe work practices, emergency response).
<p>24. Description of any Significant Adverse Environmental Effects of the project (after applying mitigation):</p> <p>Although the potential exists for short-term environmental effects during the Project phase, including potential disruption to fisheries and the destruction of fish habitat, the implementation of recommended mitigation measures should minimize impacts of the project on the environment.</p>	
<p>25. Other monitoring and Compliance Requirements (i.e., <i>Fisheries Act</i> or <i>Species at Risk Act</i>):</p> <p>TBD – Fisheries Act review under way.</p>	

CONCLUSION

26. Conclusion on Significance of Adverse Environmental Effects:

The Federal Authorities have evaluated the project in accordance with Section 67 of *Canadian Environmental Assessment Act (CEAA), 2012*. On the basis of this evaluation, the departments have determined that the project is not likely to cause significant adverse environmental effects with mitigation and, therefore can proceed as proposed.

27. Prepared by: _____ 28. Date: _____

29. Name: Jay Carr

30. Title: Environmental Specialist, PSPC

31. Approved by: _____ 32. Date: _____

33. Name: Patrick Mazerolle

34. Title: DFO-SCH Senior Project Engineer

DECISION

35. 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

36. Approved by: _____ 37. Date: _____

38. Name: Patrick Mazerolle

39. Title: DFO-SCH Senior Project Engineer

40. Transport Canada

Project Title:	DFO-SCH #2609 Pointe-Sapin, NB Containment Cell Construction	
TC File No.:	NEATS #46475	
NPP File No.:	8200-94-2105	
Environmental Review Decision:		
Reviewed by:	J. Jason Flanagan Senior Environmental Assessment Officer Environmental Affairs and Aboriginal Consultation Unit	
Signature:		Date:
Mailing Address:	95 Foundry Street	
Tel:	506-227-8257	
Fax:	506-851-7542	
Email:	jason.flanagan@tc.gc.ca	
Approved By:	Kevin LeBlanc Regional Manager Environmental Affairs and Aboriginal Consultation Unit	
Signature:		Date:

41. Fisheries & Oceans Canada – Fisheries Protection Program

Project Title:	Containment Cell Expansion and Basin Dredging, Pointe-Sapin Small Craft Harbour, NB	
DFO File No.:		
Environmental Review Decision:		
Recommended by:		
Title:		
Signature:		Date:
Mailing Address:	343 Universite Ave, Moncton, NB. E1A 9B6	
Tel:		
Email:		
Approved by:		
Title:	Regi	

Signature:		Date:

41. References:

Agriculture and Agri-Food Canada. 2013. National Ecological Framework. Available online at: <http://sis.agr.gc.ca/cansis/nsdb/ecostrat/index.html>. Accessed March 14, 2018.

Bird Studies Canada. No date (n.d.) [a]. Maritimes Breeding Bird Atlas – Summary Sheet for Square 20LT60. Available online at: <http://www.mba-aom.ca/>. Accessed on March 15, 2018.

Bird Studies Canada. No date (n.d.) [b]. IBA Site Summary - Kouchibouguac NP Sand Islands, Kouchibouguac, New Brunswick. Available online at: <http://www.ibacanada.com/site.jsp?siteID=NB003>. Accessed on March 15, 2018.

Canada Gazette. 2016. Description of critical habitat of the Beluga Whale (*Delphinapterus leucas*), St. Lawrence Estuary population, in the Île aux Basques Bird Sanctuary and the Îles de l'Estuaire National Wildlife Area. Available online at: http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/g1-15020.pdf. Accessed on August 10, 2018.

Dillon Consulting Limited. 2018a. Marine Sediment Sampling Program (MSSP) (Final) Pointe-Sapin (DFO-SCH), Kent County, New Brunswick.

Dillon Consulting Limited. 2018b. Underwater Benthic Habitat Survey (UBHS), Pointe-Sapin DFO-SCH, Kent County, New Brunswick.

Environment and Climate Change Canada (ECCC). 2018. Species at Risk Public Registry website accessed on May 2, 2018 at: https://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm

Government of Canada. No date. Canadian Climate Normals 1981-2010 Station Data – Rexton, New Brunswick. Available online at: http://climate.weather.gc.ca/climate_normals/index_e.html. Accessed on March 15, 2018.

Government of New Brunswick. No date (n.d.). GeoNB. Available online at: <http://geonb.snb.ca/geonb/>. Accessed on March 15, 2018.

Legault, John A. 1998. Traditional Fisheries Knowledge Resource Mapping Series. Available upon request.

Nature Trust of New Brunswick. 2018. Environmentally Significant Areas in New Brunswick. Personal Communication August 10, 2018

New Brunswick Department of Agriculture, Aquaculture and Fisheries. 2018. Marine Aquaculture Site Mapping Program. Available online at: <http://www2.gnb.ca/content/gnb/en/departments/10/aquaculture/content/masmp.html>. Accessed on March 15, 2018.

New Brunswick Department of Natural Resources and Energy. 2000. Bedrock Geology of New Brunswick. Minerals and Energy Division. Map NR-1 (2000 Edition). Scale 1:500 000.

New Brunswick Department of Tourism, Heritage and Culture. 2013. Archaeological Resource Mapping. Query including Pointe-Sapin, New Brunswick. Mapping produced by the New Brunswick Department of Tourism, Heritage and Culture – Archaeological Services Unit.

Rampton, V.N., A.A. Seaman, and K.J. Mersereau. 1984. Surficial Geology. New Brunswick. Geological Survey of Canada. Map 1594A (scale 1:500 000).

APPENDIX A

Figures

Location of proposed work –
Pointe-Sapin DFO-SCH



Figure 1: Map of New Brunswick showing the location of the proposed project in Pointe-Sapin Harbour, Kent County, New Brunswick

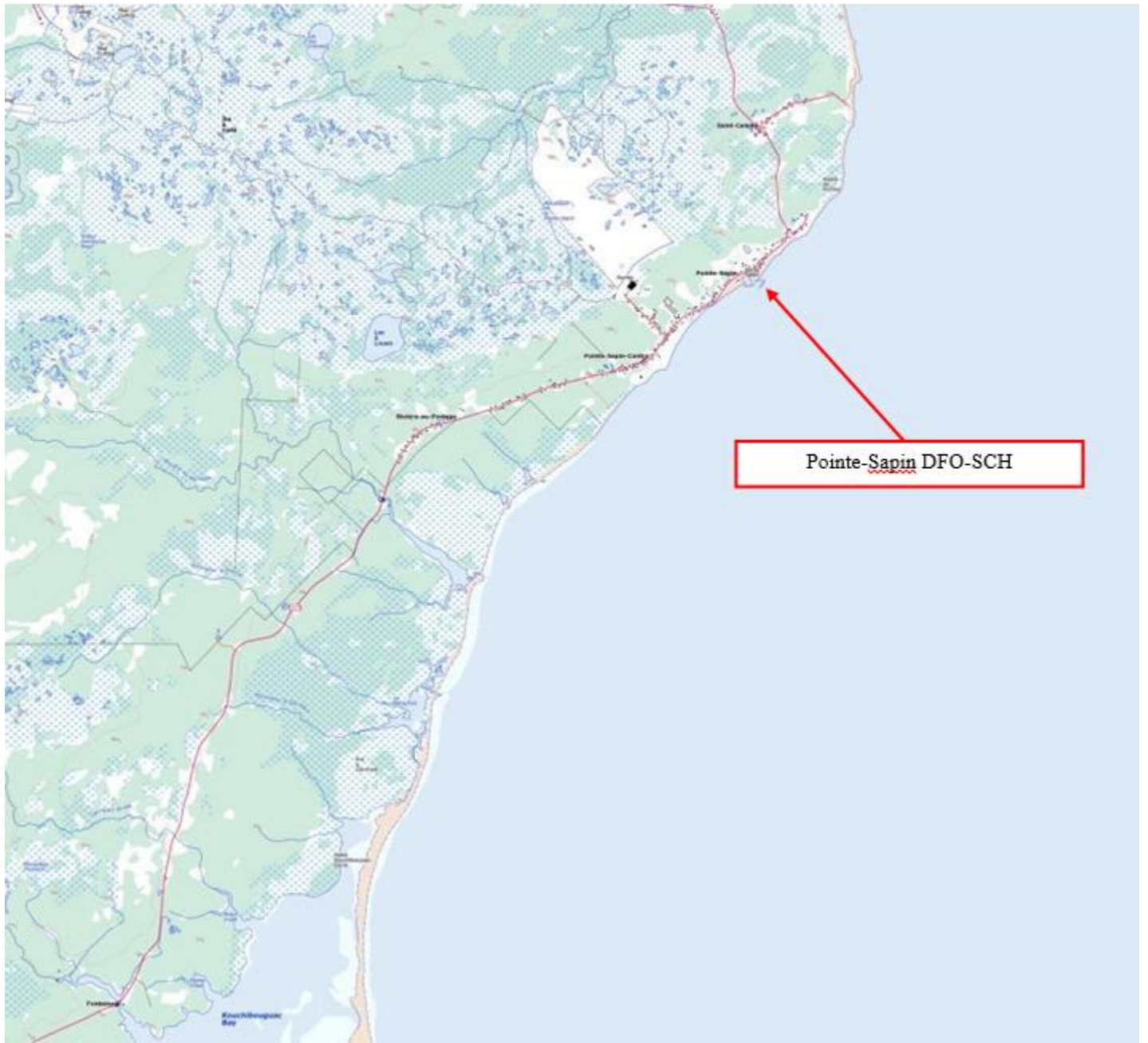


Figure 2: Topographic map indicating proposed project site, Pointe-Sapin Harbour, Kent County, New Brunswick.



Figure 3: Aerial view of Pointe-Sapin SCH with location of proposed containment cell indicated in red.

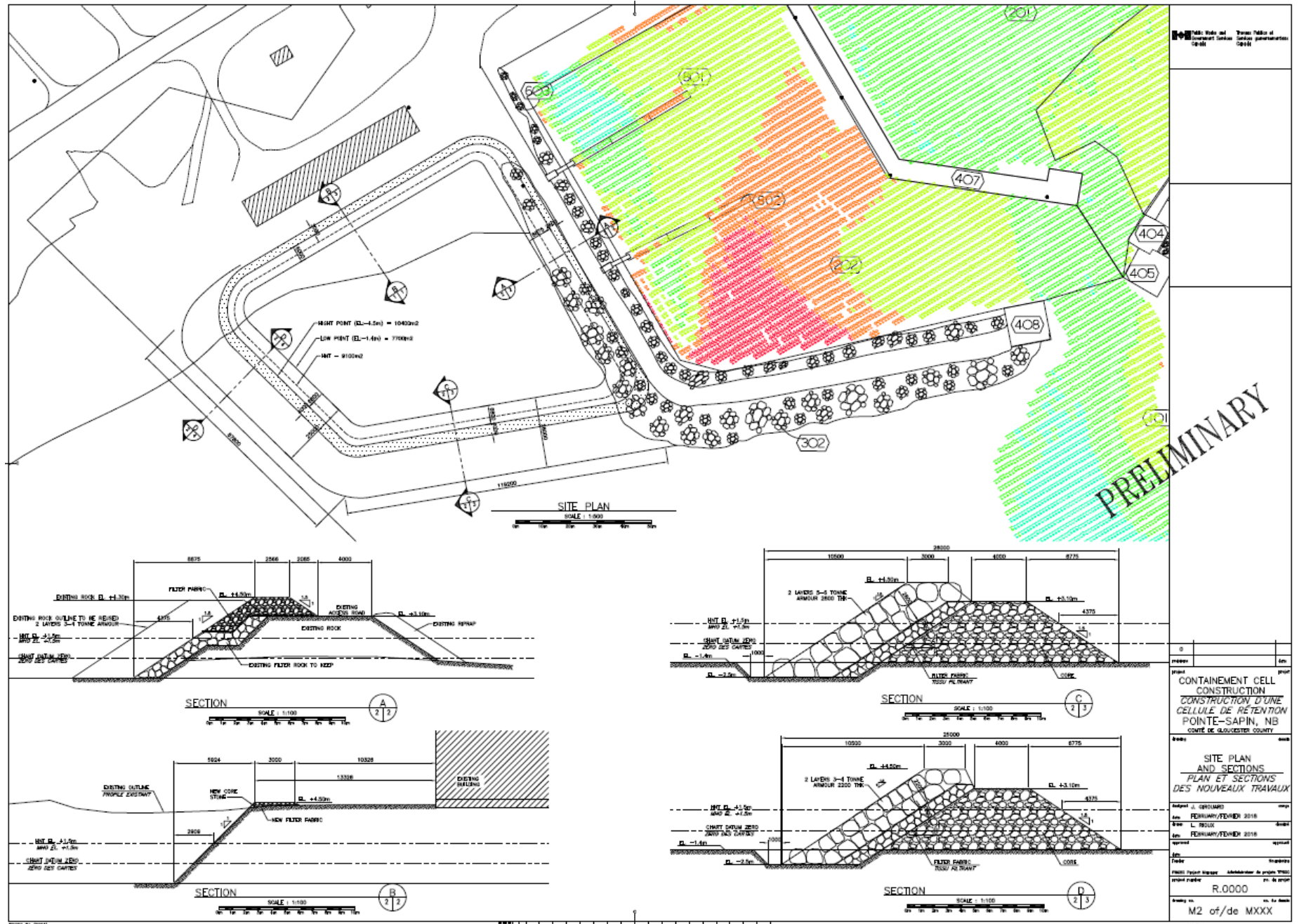


Figure 4: Design drawings of proposed containment cell at Pointe-Sapin SCH.

