

APPENDIX C

FISHERIES AND OCEANS
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012

Val Comeau – DFO-SCH
Reconstruction of Structures 401, 402, and 405
PROJECT EFFECTS DETERMINATION REPORT

GENERAL INFORMATION

1. Project Title: Reconstruction of structures 401, 402, and 405, Val Comeau DFO-SCH, Gloucester County, New Brunswick	
2 Proponent: Fisheries and Oceans Canada - Small Craft Harbours (DFO-SCH)	
3. Other Contacts: a) PSPC – Christian Brazeau, Environmental Specialist	4. Role of each contact: a) OGD Consultant
5. Source of Project Information (Contact): Stephen Arsenault – Project Manager, PSPC	
6. Received Date (by PSPC Environmental Services): July 5, 2018	
7. PATH No.:	8. DFO File No:
9. Other relevant file numbers: a) PSPC ES File No. R.100375.001 / PSPC PM File No. R.081898.001 b) NPP File No. 8200-08-2232 c) TCEA File no. NEATS #48547	

BACKGROUND

10. Background about Proposed Development (including a description of the proposed development):

The proposed project will take place at Val Comeau DFO-SCH #2649, an active Small Craft Harbour facility servicing the commercial fishery. The existing T-wharf structure has reached the end of its lifespan and is proposed to be reconstructed and extended. Construction activities will include the extension and reconstruction of the existing wharf structures 401 and 405, and the reconstruction of the existing wharf structure 402. Extensions to existing structures 401 and 405 will consist of pile-supported structures. Most of the existing structure 402 (a timber cribwork wharf) will be removed and replaced by a pile-supported structure. The remaining areas of the existing structures 401 and 405 will be resurfaced with a tie-back bulkhead (aka Berlin wall) structure. The new Berlin wall will increase the footprint of structures 401 and 405 by approximately 1 m on the north and south sides. The new extensions will increase the total footprint by approximately 1,150 m² (see Appendix A).

The project is being proposed in order to maintain the integrity of deteriorating structures for user safety. The structures have reached their service life.

This Project Effects Determination (PED) 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 medium-risk, and is being assessed as such.

PROJECT REVIEW

1. DFO's rationale for the project review:

Project is on federal land ☒ and;

- ☒ DFO is the proponent.
- ☐ DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit.
- ☐ DFO to provide financial assistance to another party to enable the project to proceed.
- ☐ DFO to issue licence or lease federal land to enable the project to proceed.

12. a) *Fisheries Act* Section(s) (if applicable): n/a

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 (FPP)
- b) Transport Canada – Navigation Protection Program (NPP) and Environmental Affairs and Aboriginal Consultation Unit

16. Other Authority's rationale for involvement:

a) *Fisheries Act*

- Permit requirement: The project was referred to the DFO-FPP for review. The Program is of the view that the proposal will not result in serious harm to fish. No formal approval is required from the Program under the *Fisheries Act* in order to proceed with the proposed project.

b) *Navigation Protection Act*

- Approval Requirement: The *Navigation Protection Act* (NPA) approval and review process is being conducted for the proposed project. The proponent will comply with all/any conditions of the NPA approval.

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

- a. DFO Area Aboriginal Program Coordinators (Georges Moore)
- b. Val Comeau Harbour Authority (Rejean Benoit)

Aboriginal Consultation

PSPC, on behalf of DFO-SCH, carried out an Aboriginal Assessment at Val Comeau 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 Coordinator and the Harbour Authority (HA) advised that there are five aboriginal vessels that fish for commercial purposes from the Val Comeau SCH. However, the harbour is not known to be used for Aboriginal traditional, food or ceremonial fisheries. The project is intended to provide adequate berthage at the SCH for commercial fishers including Indigenous use and is not anticipated to adversely impact potential or established Aboriginal or treaty rights. The proposed project site was also reviewed for archaeological potential with known archaeological sites (pre-contact, historic, burial) in the area, but no site was identified in the project area. As a result of the Duty to Consult (DTC) assessment, aboriginal consultation was not pursued further for this project as there are likely no impacts on potential or established Aboriginal or Treaty Rights. Coordination/communication between site users, the project management team and construction activities will be essential to avoid any interference with fishing activities at the harbour.

Public Consultation

The reconstruction activities will improve the integrity of the infrastructure at the harbour. No negative public concern is expected as a result of this project. Therefore, public consultation was not deemed necessary as part of this determination.

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

Project Description

The proposed project includes the extension and reconstruction of the existing wharf structures 401 and 405, and the reconstruction of the existing wharf structure 402. Reconstruction activities will involve the replacement of the current marginal cribwork with a new berlin wall structure and a new reinforced concrete deck (refer to Appendix A for drawings). H-piles will be driven into the substrate approximately 1 m around the perimeter of the existing cribwork. Substrate excavation will be required on approximately 2 m around the existing structure to permit new work. The excavated material will stay on site. The proposed extension to wharf structure 401 will measure approximately 12m in length with a width of 13.5 m. The proposed extension to structure 405 will be approximately 36 m in length by 13.5 m in width. The total footprint of the existing structures will increase by approximately 1,150 m² once the work completed.

Operation

The Environmental Management System (EMS) with an integrated Environmental Management Plan (EMP) for the Harbour Authority of Val Comeau 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 the Val Comeau SCH. As such, environmental effects resulting from the SCH operations are not considered further in this project effects 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

In efforts to keep the facility operational, construction activities will be completed on different phases. Work on section 402 will occur first, followed by either 401 or 405. Construction activities are expected to begin fall/winter 2018 and be completed by November 2022, depending on approvals and funding.

19. Location of Project:

Val Comeau DFO-SCH (harbour code 2649) is located along the eastern coast of New Brunswick, approximately 10 km south of Tracadie near the mouth of the Big Tracadie River, and approximately 3.5 km south of the Ferguson Gully outlet to the Gulf of St. Lawrence (Appendix A – Figures 1 and 2). The approximate coordinates of the project area are Latitude 47°27'53" N and Longitude 64°53'00" W.

20. Environment Description:

1. Physical Environment

The Val Comeau DFO-SCH is located near the mouth of the Big Tracadie River and within a short distance of the Ferguson Gully outlet to the Gulf of St. Lawrence along the eastern shore of New Brunswick (refer to Figures 1 and 2 in Appendix A). At the proposed project site, the range of the tide varies between a minimum of ± 2 ft. to a maximum of ± 10 ft., with a minimum water column depth of approximately 4 ft. during low tide.

This Val Comeau DFO-SCH facility is located within the Atlantic maritime ecozone, inside the maritime lowlands ecoregion which covers a large, triangular-shaped plain extending from south-central New Brunswick to the Gulf of St. Lawrence, including the Northumberland coastline of Nova Scotia (Ecological Stratification Working Group, 1995). This ecoregion, also known as the Eastern Lowlands Ecoregion, is characterised by its low relief which range between 150 m and sea level. Along the southern Northumberland coast, several major rivers, including the Richibucto and Kougibouguac, move languidly eastward, typically merging into lagoons, tidal estuaries or salt marshes before reaching the Northumberland Strait (Zelazny, 2007).

The Eastern Lowlands Ecoregion lies at the intersection of two rain shadow areas. Most moisture from the prevailing westerly winds is intercepted by the Highlands Ecoregion to the west, whereas precipitation from southwesterly storms coming across the Bay of Fundy is intercepted by higher elevations of the Fundy Coast and Central Uplands ecoregions (Zelazny, 2007). Canadian Climate Normals (1981-2010) for nearby Miramichi weather station (47°00'34.090" N and 65°28'04.040" W) indicate that the area receives an average of 1,072.4 mm of precipitation annually and experiences measurable precipitation (> 0.2 mm) 161.7 days per year. Extreme precipitation events of up to 93.0 mm have been recorded. The temperatures range from an extreme minimum of -35.0°C to an extreme maximum of 37.8°C with an annual daily mean temperature of 4.9°C (Environment Canada, 2018a).

Surficial geology maps identify the surrounding land area as being comprised primarily of marine sediments from the late Wisconsinan and/or early Holocene which consist mainly of sand, silt, gravel, and clay; deposited in shallow marine water, locally deep, which submerged coastal areas and sections of many valleys during and following Late Wisconsinan deglaciation (Pronk and Allard, 2003). Blanket soil is generally expected to be 0.5 to 3 m thick. Bedrock in the area of the site consists of Early Jurassic (Caraquet Dyke) (NBDNR, 2008). The property is covered in low growth vegetation, concrete, and asphalt. During a geotechnical study performed at the project site, Gemtec (2013) encountered overburden soils that generally consisted of deposited material over brown silty sand. The overburden soils had an average thickness of 0.3 m. Sandstone bedrock was encountered at approximately -2.33 metres. The bedrock quality was described as generally very poor, consisting of green brown severely fractured sandstone. Loose to compact green brown sand with some sandstone cobbles was observed between the bedrock and the overburden soils.

A marine sediment sampling program (MSSP) indicated that the sediment within the harbour basin was predominantly sand with lesser amounts of silt and clay and small amounts of gravel (Englobe, 2017). The MSSP also included chemical analysis

of sediment in the harbour basin which indicate guideline exceedances for several parameters, however no dredging/removal of this material from the harbour basin is anticipated as a component of the proposed Project.

2. Biological Environment

a) General Ecology

The Val Comeau DFO-SCH is located inside the Caraquet Ecodistrict of the Eastern Lowlands Ecoregion, which is a crescent of land averaging 10 km wide that rims the Acadian Peninsula coastline. It begins at the mouth of the Nepisiguit River, curves around Miscou Island, and ends at the mouth of the Miramichi River (Zelazny, 2007). Human activities along this Ecodistrict have resulted in a dominant forest of intolerant hardwood species: red maple, trembling aspen, and grey birch. Traces of sugar maple, yellow birch, and beech occur only along the inland perimeter (Zelazny, 2007). This Ecodistrict provides habitat for moose, black bear, white-tailed deer, red fox, snowshoe hare, porcupine, fisher, coyote, beaver, ruffed grouse, bobcat, marten, raccoon, and muskrat (Ecological Stratification Working Group, 1995).

b) Aquatic Species

The waters of the Gulf of St. Lawrence surrounding Val Comeau Harbour support several species of fish including Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), Atlantic cod (*Gadus morhua*), Atlantic hake (*Merluccius merluccius*), winter flounder (*Pseudopleuronectes americanus*), rainbow smelt (*Osmerus mordax*), spiny dogfish (*Squalus acanthias*), alewife (*Alosa pseudoharengus*) and striped bass (*Morone saxatilis*). In the vicinity of the harbour, there are also a number of crustaceans and molluscs including Atlantic lobster (*Homarus americanus*), soft-shell clam (*Mya arenaria*), blue mussel (*Mytilus edulis*), American oyster (*Crassostrea virginica*), and quahog (*Mercenaria mercenaria*) (Legault 1998). The Harbour Authority has also confirmed that the area surrounding Val Comeau harbour supports the American eel (*Anguilla rostrata*), and the rock crab (*Cancer irroratus*). Several of the fish species identified are anadromous including alewife, and striped bass. These fish migrate past the project site into the river in the spring. The American eel is catadromous and will exit the river in the fall.

An underwater benthic habitat survey was conducted in the summer 2017 (Englobe, 2017). Dense beds of dead mollusc shells were identified during the survey. These beds were primarily composed of blue mussel (*Mytilus edulis*), horse mussel (*Modiolus modiolus*), moon snail (*Lunatia heros*), and periwinkles (*Littorina* sp.), with common barnacle present on both living and dead shells. Other invertebrates identified during the survey were rock crabs (*Cancer irroratus*) and a benthic shrimp (*Crangon* sp.). The Val Comeau site does not support areas of encrusting, filamentous or leafy macrophytes. The dominant flora is eelgrass (*Zostera marina*), and a dense eelgrass bed is located adjacent to the north and east sides of the project site (see Appendix C – Figure 1). As indicated in Englobe's report, Appendix C – Figure 1 illustrates a green dashed line from which areas on the north and east side are characterized as excellent to good habitat for fish as they have bottoms covered with mollusc shells and live blue mussels, horse mussels, and periwinkles, eelgrass or eelgrass mixed with low relief leafy algae. The yellow arrows and numbers indicate the distances from the existing wharf structures to the start/edge of good-quality habitat. Once extended by 36 m to the east, the extremity of the wharf structure 405 will end at 2 m from this line, and 5 m from the line on the north side. There were no rare or endangered species identified during the survey (Englobe, 2017).

The Val Comeau DFO-SCH is surrounded by a series of Provincially Significant wetlands, the closest being located less than 150 m to the east. Given the project footprint, these wetlands will be avoided and no wetlands are anticipated to be affected by project activities.

c) Migratory Birds

The main faunal interest in the Val Comeau area is provided by the extensive range of coastal and marine habitats, including sandy beaches, dune systems, salt marshes, mud flats, and islands. Offshore, nutrient-rich waters provide food for migratory birds. Val Comeau is located a short distance (< 2 km) from the Point-à-Bouveau Important Bird Area (IBA Canada, 2018). This barrier beach has two swift flowing channels to the north and south. Low-lying sand dune systems are broken by several major breaches with extensive wash-overs. The 1 km² salt marsh Île au Cheval is also included in this site. Pointe-à-Bouveau supports a significant population of the globally vulnerable (nationally endangered) Piping Plover (*Charadrius melodus*). During the 1996 International Piping Plover census, a total of 14 birds were recorded, which represented about 3.3% of the Atlantic Canada Piping Plover population. For the 11-year period, between 1987 to 1997, an average of 13.4 adult Piping Plovers were found at this site. In addition to Piping Plovers, hundreds of staging waterfowl and shorebirds are found at Pointe-à-Bouveau. During the fall migration, several hundred Canada Geese (*Branta canadensis*) and thousands of shorebirds, such as Ruddy Turnstones (*Arenaria interpres*), White-rumped Sandpipers (*Calidris fuscicollis*), Semipalmated

Sandpipers (*Calidris pusilla*) and others are recorded. Point-à-Bouleau also supports a large concentration of foraging Osprey (*Pandion haliaetus*) during the summer (IBA Canada, 2017).

The Maritime Breeding Bird Atlas identifies a total of 89 species of birds in the geographical block which contains Val Comeau (20LT78), 19 of which are listed as confirmed for breeding (Bird Studies Canada, 2018).

d) Species at Risk

The potential for impact of the proposed project on Species at Risk was considered during this assessment. A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted. The ACCDC provided a list of rare/unique species (i.e. plants and animals) within a 5 km buffer zone (standard ACCDC procedure) of the site of the proposed work. All species were cross-referenced with Schedule 1 of the *Species At Risk Act* (SARA) listed as extirpated, endangered and threatened or of special concern, and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Species at risk or of concern identified in the area include:

- **Piping Plover** (*Charadrius melodus*) is listed on Schedule 1 of SARA and by COSEWIC as Endangered. Piping Plovers nest above the normal high-water mark on exposed sandy or gravelly beaches. On the Atlantic Coast they often nest in association with small cobble and other small beach debris on ocean beaches, sand spits, or barrier beaches. They also forage for food on these beaches. The most important limiting factor for Piping Plovers of the *melodus* subspecies is the loss of habitat, mostly caused by human use of beaches, and the consequent human disturbance around nesting sites (Environment Canada, 2012 and 2018b). Piping Plovers may also use non-traditional habitats for nesting, such as parking lots, dredge spoils, or sites with steep embankments. These sites may be less significant than typical habitat because some key feature of the habitat is often missing (e.g., access to feeding areas for chicks). In many cases, these sites will not be formally identified as critical habitat under the *Species at Risk Act*, although the general prohibitions under the *Species at Risk Act* protect the birds and their residences from destruction and harassment. Val Comeau DFO-SCH is located near sensitive environmental areas that provides critical nesting habitat for the Piping Plovers. It is therefore possible to encounter a Piping Plover in the vicinity of the work site. However the probability is low as the project footprint is limited, located approximately 80 m from the Gulf coastline where critical shoreline habitat have been identified on the Environment Canada Recovery Strategy for Piping plover (Environment Canada 2012). In the event a Piping Plover is found nesting during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.
- The **Red Knot Rufa spp.** (*Calidris canutus rufa*) is listed on Schedule 1 of SARA and COSEWIC as Endangered. Red Knots nesting sites are usually located in dry, south-facing locations, near wetlands or lakes, where the young are led after hatching. Red Knots generally feed in damp or barren areas that can be as far as 10 km from the nest. Migratory stopovers and wintering grounds are vast coastal zones swept by tides twice a day, usually sandflats but sometimes mudflats. In these areas, the birds feed on molluscs, crustaceans, and other invertebrates. The species also frequents peat-rich banks, salt marshes, brackish lagoons, mangrove areas, and mussel beds (Environment Canada, 2018b). Taking into consideration the nature of the work, and the spatial and temporal extent of project activities, interaction of the project with this species or its preferred habitat is not anticipated. In the event a Red Knot is found during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment.
- The **Barrow's Goldeneye** (eastern population) (*Bucephala islandica*) is a medium sized diving duck listed on Schedule 1 of SARA and COSEWIC as Special concern. The limits of the range of the eastern population of Barrow's Goldeneye are still unknown. Data indicate that it breeds only in Canada with the only confirmed breeding records are from Quebec. Small numbers of this population winter in the Maritime Provinces and along the northern Atlantic coastline in the United States. In Quebec, the eastern population inhabits the Balsam Fir-White Birch forest regions of the province. More specifically, birds appear to be restricted to small, high elevation lakes north of the St. Lawrence Estuary and Gulf. Barrow's Goldeneye prefers alkaline to freshwater lakes during the breeding season. They have a particular preference for lakes that do not contain any fish. During the non-breeding season, the species spends time in the coastal waters of the St. Lawrence Estuary and Gulf. In eastern Canada, there has been a significant reduction in the amount of suitable breeding habitat due to logging and fish introduction. There has also been a reduction in the quality of wintering habitat along the St. Lawrence corridor, stemming from contamination of the river's sediments (Environment Canada 2018b). Taking into consideration the nature of the work and, the

spatial and temporal extent of project activities, Barrow's Goldeneye may be encountered in the area of work, especially during ice free period in late autumn and early spring. In the event a Barrow's Goldeneye is found during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment.

- The **Harlequin Duck** (eastern population) is listed on Schedule 1 of SARA and COSEWIC as Special concern. This small subarctic sea duck spend most of the year in coastal marine environments, but they move inland each spring to breed along fast-flowing turbulent rivers. During the winter, the Harlequin Duck are often associated with offshore islands, headlands, and rocky coastline where the surf breaks against rocks and ice buildup is minimal. These ducks feed close to rocky shorelines or rock skerries. The primary cause of the decline of the Harlequin Duck is not clearly known, however, over-hunting could be an important cause. Although hunting of this population of Harlequin Ducks has not been permitted in recent years, the birds remain extremely vulnerable to hunters because of their tameness, their tendency to feed close to shore, and the resemblance of the female and immatures to ducks of other species which may be legally hunted. In addition, the contamination, destruction, and alteration of their habitat are considered important factors for the decline of the eastern population of the Harlequin Duck (Environment Canada 2018b). Taking into consideration the nature of the work and, the spatial and temporal extent of project activities, Harlequin Duck may be encountered in the area of work, especially during ice free period in late autumn and early spring. In the event a Harlequin Duck is found during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment.
- The **Gulf of St. Lawrence Aster** is listed on Schedule 1 of SARA and COSEWIC as Threatened. This fleshy annual plant is limited to the Gulf of St. Lawrence region and is found only in Quebec, New Brunswick and Prince Edward Island. 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. Competition with other species plays a major role in the dynamics of Gulf of St. Lawrence Aster populations. The reduction of available light due to an increase in plant cover is among the main factors that influence its growth. In addition, natural disturbances caused by waves, ice and storms play a major role in habitat maintenance. In particular, fluctuations in high-tide levels can flood populations and storms can bury them completely in sand, causing their disappearance. In addition, disturbances caused by man, such as the construction of cottages and backfilling operations, completely destroy this species' habitat (Environment Canada 2018b). Taking into consideration the spatial extent of project activities in a sub-tidal environment not suitable for this plant, and nature of the work, interaction by the species with the project is therefore not anticipated.
- **Olive-sided Flycatcher** (*Contopus cooperi*) is listed under Schedule 1 of SARA as Threatened and by COSEWIC as Special Concern. The Olive-sided Flycatcher is most often associated with open areas containing tall live trees or snags for perching. These vantage points are required for foraging. This species generally forages from a high, prominent perch from which it sallies forth to intercept flying insects and then returns to the same perch. Open areas may be forest clearings, forest edges located near natural openings (such as rivers or swamps) or human-made openings (such as logged areas), burned forest or openings within old-growth forest stands; these forests are characterized by mature trees and large numbers of dead trees. Generally, forest habitat is either coniferous or mixed wood. In the boreal forest, suitable habitat is more likely to be in or near wetland areas (Environment Canada 2018b). There are no expected interactions between the Olive-sided Flycatcher and the project due to lack of suitable habitat at the site.
- **Barn Swallow** (*Hirundo rustica*) is listed on Schedule 1 of SARA and by COSEWIC as Threatened. Barn Swallows nest largely 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 (Environment Canada 2018b). In the event a Barn Swallow is found nesting within the project site during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.
- **Bank Swallow** (*Riparia riparia*) is listed under Schedule 1 of SARA and 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) (Environment Canada, 2018b). In the event a Bank Swallow is found nesting during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.

Although not listed in the ACCDC search, nor on Schedule 1 of the SARA, the following species are highly mobile and may occur near the project site:

- Populations of **Atlantic salmon** (*Salmo salar*) inhabit rivers as well as smaller brooks in New Brunswick. Individuals would be found seasonally in the lower river sections and coastal zone both as smolts migrating to feed in the sea, and as adults returning to rivers to spawn. The salmon of this area are part of the Gaspé-Southern Gulf of St. Lawrence Designatable Unit and identified as Special Concern by COSEWIC. The Gaspé-Southern Gulf of St. Lawrence Designatable Unit has no status as yet under the SARA (Environment Canada 2018b).
- The **striped bass** (*Morone saxatilis*) is listed as endangered in Atlantic Canada. Note that this listing is by COSEWIC, the recommending body for additions to the SARA. At present, the species has not been listed under SARA. The striped bass is highly mobile in spring, summer, and autumn. Canadian striped bass overwinter in deep freshwater lakes in Atlantic Canada. They are voracious predators and can grow to over 20 kilograms in weight. They have specific spawning habitats, requiring very long estuaries in which the eggs and larvae, suspended in the turbulence and currents, can drift slowly from fresh through brackish to saline waters. Young-of-the-year and yearling bass inhabit deeper waters in estuaries and bays. Post yearling bass range in schools along the coast. Their early diet is chiefly invertebrates, but they switch to fish as they grow, following prey species into bays and estuaries. Larger striped bass can be highly migratory and move hundreds of kilometers in a season (Environment Canada 2018b).
- The **American eel** (*Anguilla rostrata*) is listed as Threatened by COSEWIC (Environment Canada 2018b). This eel is classed as a catadromous fish, which means that on attaining sexual maturity, adult eels migrate downstream to the sea where ultimately they spawn. Spawning migration occurs between August and December, with downstream movement is most active at night, during the first several hours after sunset. Peak migration activity usually occurs during September and October. Yellow eels (sexually immature adult stage) may also be found migrating seaward in the autumn but they are believed to be moving to overwintering sites within the river or estuary. Yellow eels are generally active at night, retiring to burrows in muddy bottoms or to other cover during daylight. Temperature influences the degree of seasonal activity and eels become noticeably less active when the water temperature drops below 11°C in autumn. During winter, eels hibernate in the bottom mud. Eels are voracious carnivores and consume a variety of fishes and invertebrates such as insects, crayfish, snails and worms (DFO, 2014).

e) Environmentally Significant Areas and Wetlands

In addition to the above-mentioned Point-à-Bouleau IBA, a search of the ACCDC database yielded the following sensitive environmental areas in the vicinity of the Val Comeau DFO-SCH:

- **Val Comeau Provincial Park** is located on a dune approximately 1 km north-east of the work-site. This park is bordered on the west by the Great Tracadie River and on the east by the Gulf of St. Lawrence. It includes a campground and a beach.
- **Le Breton Nature Conservancy of Canada (NCC)** which sandy beaches provide critical nesting habitat for the nationally endangered Piping Plovers. There are no listed wildlife species or critical habitats (including wetlands) that will likely be affected by the project activities as there is no critical or limiting habitat at the proposed work site other than those already discussed above.

The closest Environmentally Significant Areas (ESAs), designated by the Nature Trust of New Brunswick, include:

- **Val Comeau Sandpit** (approximately 1.6 km from project site): the site is at the northern end of the peninsula beyond the provincial park boundary. The peninsula extends from Val Comeau and separates the mouth of the Big Tracadie River from the Gulf of St. Lawrence. This is an elevated flat open cobble beach with sparse vegetation. Since 1979, one pair of Piping Plover has traditionally nested at the northern tip of the beach; none nested in 1993.

The channel between the park and Ile au Cheval is dredged annually, causing concern that Plover nests will be damaged by the placement of dredge material. The dunes have been damaged over time by vehicles and sand quarrying, and to some extent by the dredging operations. Fishermen have increasingly used the site for the storage of lobster traps. This is one of only two sites in the province for the endemic Gulf of St. Lawrence Aster. This population consists of approximately 100 individuals. The species' total population is about 1000 plants scattered over 13 sites in the Gulf of St. Lawrence (Nature Trust of New Brunswick 2018).

- **Pointe de l'île Marsh** (approximately 1.3 km from project site): this narrow strip of coastal wetland appears to be an important feeding area for wildlife. Pointe de l'île hosts a large number of Sharp-tailed Sparrow. The site has not been investigated in detail (Nature Trust of New Brunswick 2018).
- **Grand Lac/Pointe a Barreau** (approximately 2.8 km from project site): a brackish lake and salt water marsh area with beach dune system and intertidal zone. There is a likelihood of several Osprey nests in the nearby woods. Numerous waterfowl use this wetland complex. Rare bird sightings include Harlequin Duck and Eurasian Teal (*Anas querquedula*); one of very few records in North America (Nature Trust of New Brunswick 2018).

There are three provincially significant wetlands located near the project site, adjacent to the shoreline: one at 90 m east of the project site, and the two others at approximately 279 m west and 335 m east of the site. No regulated wetland have been identified (Government of New Brunswick 2018). The proposed project activities will not impact the identified wetlands.

3. Human Environment

The Val Comeau DFO-SCH is located in Gloucester County, New Brunswick. The Harbour is directly accessible from the Rue du Quai which provides access to the harbour from Chemin du Parc de Val Comeau.

First documentation indicating the development of a wharf at Val Comeau dates back to 1956. Presently, this active commercial fishing harbour is comprised of breakwater, two timber cribwork wharves, a wharf approach, a boat haulout, two marginal wharves, a dredge spoils containment cell/service area, harbour authority building, ice house, as well as several storage gear/bait sheds. There is one fish processing plant located at the harbour and operates a lobster holding tank. Water intake for this tank and the discharge pipes are not localised near the project site. DFO-SCH has been told by the fish plant owner that any pipes in the way of construction can be removed/decommissioned during project activities as they are not active and have not been in use for some time.

The Harbour Authority, through a lease agreement with DFO-SCH, manages the property and its facilities. The Val-Comeau DFO-SCH serves commercial and recreational users, and the harbour is currently homeport of approximately 48 full-time commercial fishing vessels and 20 recreational vessels. Commercial fisheries at this harbour include:

- Lobster (from May 1 to June 30)
- Herring (April)
- Halibut (July)
- Rock crab (from August to September)
- Snow crab (boats unload catch at Shippagan harbour)
- Scallop (from early July to August 15)
- Mackerel (in May for bait then from July to September)

Based on the Harbour Authority there is one small aquaculture site located close to the harbour. This site is used primarily for mussels and oysters but also use boxnets for eels, gaspereau, and smelt. This site (MS-0804) was confirmed as located approximately 350 m east of the harbour by the Marine Aquaculture Site Mapping Program (published online by the New Brunswick Department of Agriculture, Aquaculture and Fisheries (NBDAAF, 2015)).

A Phase I-II Environmental Site Assessment (ESA) noted the presence of private water wells on the property. The ESA noted that the water was potable but the harbour is not located in a well field protected area (JWL, 2005).

According to the Val-Comeau Harbour Authority and DFO Aboriginal Program Area Coordinator, there are five Aboriginal fishers operating from the Harbour. This harbour is not known to be used for Aboriginal food, social, and ceremonial purposes, and there is no communal commercial fishing known to be occurring from the harbour (R. Comeau, pers. comm., 2018; G. Moore, pers. comm., 2017). Due to the temporal scope of the project (i.e., work is to be undertaken outside of fishing seasons), disruption or disturbances to Aboriginal fishers is not anticipated.

The land in the immediate vicinity of the Harbour has been developed to serve the general fishing industry and by some residential properties. The nearest full-time residential properties are located ~ 250 m to the harbour on Rue du Quai. The Val Comeau Provincial Park is also located at the northern tip of the peninsula, approximately 800 m northeast of the harbour.

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 Val Comeau is considered high potential for heritage and archaeological resources. There is one Precontact site located on the shoreline of Big Tracadie River approximately 500 m southwest of the SCH (CiDf-1c) and another approximately 750 m northeast of the SCH (CiDf-1b) (New Brunswick Department of Tourism, Heritage and Culture, 2013).

There are no known heritage and archaeological sites, hazard lands, municipal lands or zoning designations that will be affected by this proposed project.

21. Scope of Effects Considered (section 5(1) and 5(2) of CEEA 2012)

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						
				Aboriginal Interest													
	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
Wharf Reconstruction and Extension																	
Transportation of material and equipment	P	P	P	P	-	-	-	P	-	-	P	-	P	P	P	P	P
Re-decking and installation of Berlin wall	P	P	P	P	-	-	-	P	-	-	P	-	P	P	P	P	P
Construction of wharf extensions	P	P	P	P	-	-	P	P	-	P	P	-	P	P	P	P	P
Operation/Maintenance	The operation/maintenance phase is covered by the EMP/EMS as stated in Section 18 and is not considered further in the PED.																
Decommissioning/ Abandonment	There are no plans to decommission/abandon the facility.																
*structure, site or thing that is of historical, archaeological, paleontological or architectural significance P = possible interaction “-“ = no interaction																	

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:

a) General effects

Given the developed and disturbed nature of the project site, it is unlikely that any of the species at risk would be found at or near the project site, as the habitat is unsuitable. However, Barn Swallows are known to take advantage of nesting sites offered by various man-made structures, such as under bridges, culverts and wharves. Therefore, a site visit and/or nest survey will be required prior to any construction activities slated to occur between mid-April to late August.

Noise caused by this project is expected to be similar to noise levels when the wharf is operating at the peak of the commercial fishing season. The proposed construction schedule for the Project is during the winter and spring, prior to the peak fishing and summer tourism season. Work is to be carried out during times acceptable to the local authorities to mitigate any disturbance to Val Comeau Harbour users and nearby residents. The proposed project will improve the overall aesthetics and safety of the harbour.

Disturbance to fish, invertebrates and loss of fish habitat in the immediate project area will be minimal since this area within the harbour is continually disturbed by fishing boat and dredging activities altering the substrate. Given the limited geographic extent, spatial and temporal footprints, and limited magnitude of the proposed project, no significant adverse residual effects are anticipated. The proposed project will not disrupt any wetlands. No heritage/archaeological sites, or other sensitive elements have been identified that would be adversely affected by the project. Sediment and potential contaminants re-suspension during the excavation activities, required to install the new berlin wall, will be minimal since any excavated material along the existing wharf structures will stay on site. This activity will be a one-time disturbance; the potentially contaminated bottom sediment would be stirred up (re-suspended) naturally during storm events and boat traffic activities.

b) Surrounding fish habitat

The area adjacent to the project site (covered with mollusc shells, live molluscs, periwinkles, eelgrass or eelgrass mixed with low relief leafy algae species) is considered as excellent to good habitat for fish. Eel grass beds are highly productive areas of primary production and are an important contributor to the base of the coastal food web. The reconstruction and extension to the wharf structures will generate a future need to increase the dredging area for boat traffic, more specifically at the extremity of the structure 405 extension (where the depth is currently at 0.5 m). Any future dredging project will have to go through a distinct environmental assessment which will involve a review (and potential authorization) under the DFO-FPP.

c) Impacts of underwater vibrations

The potential impacts of vibrations and/or shock waves from pile driving on fish and marine mammal populations have been considered in recent wharf construction projects in New Brunswick (e.g. Lamèque SCH in 2018, Cap-des-Caissie SCH in 2017, Val Comeau SCH in 2017). A review of the literature and EIA studies have shown that it is becoming increasingly clear that the most significant consequences to aquatic populations resulting from pile driving are likely to occur as behavioral responses (e.g. foraging, mating, avoidance, migration) rather than direct physical injury or mortality due to the sound (Dahl 2015; Ellison et al., 2012; Kastelein et al. 2013). However, because of a lack of data, the current impact assessment methods are still largely based on expert judgment (Thompson et al., 2013; Harwood et al., 2014).

The level and duration of exposure that cause tissue damage and loss of hearing varies widely and can be affected by factors such as repetition rate of the sound, pressure level, frequency, duration, size and life history stage of the organism. Effects of sound on hearing and physiology also depends in part on the local environment, such as channel morphology, depth of water, and tidal conditions.

While more data are required to evaluate the impacts of underwater noise and vibration from pile-driving activities on fish and marine mammal populations, the proposed construction activities at Val Comeau SCH will be temporary, and localized within a harbour where commercial vessels and recreational boats are already producing high levels of underwater sounds. No aquatic Species at Risk have been identified within the project area. Fish habitat within the harbour and the project site are considered of poor value due to their disturbed nature. It is expected that loud noises from the mobilization of construction equipment (e.g. barge and heavy equipment on the wharf), and construction activities (e.g. in-water excavation along the existing wharf), will temporarily repel fish and marine mammal species from the project area. However, due to the close proximity of excellent to good fish habitat, pile-driving activities generating underwater vibrations and/or shock waves should be avoided during the fish spawning season (generally from June 1st to September 30).

Based on this literature review, on local species and habitat quality, and on the intermittent/temporary nature of the proposed project activities, impacts of pile-driving shall be minimal if the all mitigation measures are followed.

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

Wharf Reconstruction:

- Potential construction-related debris and sediments entering the marine environment and affecting marine water quality;

- Potential impact on nesting species (such as Barn Swallows);
- Potential accidental release of toxic materials entering the marine environment;
- Potential for introduction of invasive species into the marine environment;
- Food scraps could enhance populations of predators during construction period;
- Potential reduction in air quality due to equipment/vehicle emissions;
- Potential elevated noise levels may occur at the harbor;
- Potential impact of vibrations/shock-waves on marine species from pile-driving activities;
- Interaction with commercial fishing activities;
- Interaction with recreational use (including fishing) of the harbour during construction;
- Potential safety hazards to workers during construction.
- Potential impact to roadway users during transportation of materials and equipment to/from the project site.
- Potential for direct effects to navigation.

23. Mitigation Measures for Project:

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

Wharf Reconstruction and Extension	
<u>Effect</u>	<u>Recommended Mitigation Measures</u>
<p>Potential increase in suspended solid/sediments and turbidity adjacent to project site that may impact marine water quality, fish and fish habitat</p> <p><i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Visual monitoring for suspended solids shall occur on a daily basis. 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. • Keep the clearing of riparian vegetation necessary for access to the construction site to a minimum. Use existing trails and roads wherever possible as access routes to avoid disturbance to the riparian vegetation. Preserve trees, shrubs and grasses near the shoreline. • Vegetate any disturbed areas by planting and seeding with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring. • Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved. • Heavy machinery will not be allowed in the water. Machinery shall be operated on land above the high water mark, in a manner that minimizes disturbance to the banks and bed of the waterbody. • Any excavated sediment will be stored in a contained storage area to prevent runoff into the harbor. • 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). • Erosion and sediment controls will be visually monitored throughout the life of the project, and repaired immediately if necessary. • Conduct work in a manner that prevents the release of debris (e.g. cribbing, ballast, sediment, etc.) or any deleterious substance into any body of water. • Conduct work during low wind, wave and tidal conditions.
<p>Potential construction-related debris that may impact fish and birds</p> <p><i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • All construction debris will be disposed of in a provincially approved manner. Ensure that there will be no adverse impact on water quality associated with his operations and activities by: ensuring that there will be no debris dumped or left floating in a watercourse; taking necessary action to prevent any fine materials from entering a watercourse; using clean aggregates and stone, free from organics, mud, and excessive fines in the work, where such materials may

	<p>come in contact with a watercourse; taking all necessary measures to prevent surface runoff of fine materials into any watercourse.</p> <ul style="list-style-type: none"> • All construction material/debris entering the marine environment will be immediately retrieved and disposed of in a provincially approved manner. • Any waste (demolition materials, recyclables, and hazardous) shall be removed and placed into suitable lidded containers or bins as it is generated. Bins are to be clearly labelled. No temporary storage of waste outside of approved container will be allowed • During the transportation of wastes, bins must be covered to ensure that wastes do not escape and pollute roadways, public lands or private property • At no time shall waste and/or volatile materials (including but not limited to mineral spirits, oil or paint thinner) be disposed of into waterways, storm or sanitary sewers • After completion of Project construction activities, the Contractor shall remove any trash and debris from the work site and areas to be restored. This includes all man-made materials and construction debris (e.g. concrete washout, wire, hardware, metal, plastic, glass, ceramic, rubber, etc.) that may be left on site. • Cut, seal and stain all lumber away from the water using only products that are approved for use by the Pest Management Regulatory Agency, Health Canada. All sealed and stained lumber should be completely dry before being used near water. • Use concrete that is pre-cast and cured away from the water if possible. Where this is not feasible pour concrete in place only using industry approved techniques and applicable standards (e.g., Tremie Process in accordance with CSA A23.1) and all available measures (e.g., watertight molds, sheet piles, properly sealed chutes and funnels, site dewatering, wave and current protection, etc) to ensure there is no seepage/spillage of concrete or concrete residues into the marine environment. • Concrete waste: <ul style="list-style-type: none"> ○ Do not discharge residual or rejected concrete on site ○ Immediately clean any accidental release of concrete on site prior to solidification ○ Do not wash and clean concrete vehicles on site ○ Perform dumping of residual material and truck cleaning operations only at the concrete plant • Removal of creosote-treated timber: <ul style="list-style-type: none"> ○ Remove any piles using a slow steady pull to minimize the disturbance of the substrate and avoid bringing contaminated sediments to the surface. Vibratory extraction would be the preferred method for pile removal. Direct pull may be appropriate depending on substrate type, pile length, and structural integrity of the piling ○ A reasonable attempt should be made to remove entire piles. Depending on the sensitivity of the habitat at the site, if a pile breaks off it may not be advisable to dredge the remainder out
<p>Potential accidental release toxic materials entering the marine environment and affecting marine water quality, fish and fish habitat (Small to Large, Reversible, Local, Short Term, Once)</p>	<ul style="list-style-type: none"> • Ensure Contractor has an emergency response plan to control any fuel spills, which will include having on site appropriate spill response equipment readily available for immediate deployment. All spills and releases must be reported to the relevant federal, provincial, or territorial government departments. The emergency response plan must include the appropriate phone number for reporting releases in the area as well as phone numbers for local authorities (Police or Fire departments). • Ensure Contractor has on hand emergency phone numbers for the Harbour Authority and any fish processors or buyers or other operators to alert them to possible contamination of the harbour should a spill occur, so as to shut down or divert water intakes and sources. • All construction material used must be clean and non-toxic (free of fine sediment, fuel, oil, grease, and/or any contaminants). • All hazardous substances (any substance that is poisonous, exhibits

	<p>flammability, corrosive, reactive or toxic) shall be stored and handled in a manner which is not harmful to human life and will not pollute the environment.</p> <ul style="list-style-type: none"> On-site crews must have emergency spill clean-up equipment, adequate for the activity involved, on-site. Spill equipment will include, as a minimum, at least one 250L (i.e., 55 gallon) overpak spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). Machinery must be checked for leakage of lubricants or fuel. Refueling must be done at least 30 m from any water body. Toxic materials must be kept in a contained storage area, at least 30 m from any water body. Machinery will not be allowed in the water, where required machines will operate from the shore or a barge. If using a barge, the following must be followed: <ul style="list-style-type: none"> Vessels should be compliant with all <i>Canada Shipping Act, 2001</i>, 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.
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, Once</i>)	<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. Provide, upon request, a record of assurance (i.e., dates of cleaning, type of cleaning, location of last mobilization, type of cleaning material used, etc.) indicating that the mitigation measures, as per DFO guidelines for invasive species, has occurred. Vessels should be compliant with all <i>Canada Shipping Act, 2001</i>, 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.
Potential reduction in air quality due to equipment/vehicle emissions (<i>Small, Reversible, Local, Short Term, Intermittent</i>)	<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. Ensure that there will not be any excessive dust produced from vehicles travelling on gravel surfaces that will have an impact on adjacent residences and businesses.
Potential noise disturbance affecting birds, fish and land use activities (<i>Small, Reversible, Local, Short Term, Intermittent</i>)	<ul style="list-style-type: none"> All equipment and vehicles are to be kept in a good state of repairs. Best practices to minimize noise including equipment muffling. Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents.
Potential disturbance to fish and loss of fish habitat in the immediate project area (<i>Small, Reversible, Immediate, Short Term, Intermittent</i>)	<ul style="list-style-type: none"> Time the work to prevent disruption to sensitive fish life stages by adhering to any appropriate fisheries timing windows. In general, project activities should be conducted outside the June 1 to September 30 window. The contractor shall be monitoring fish death in the vicinity of the project site, and halt pile-driving work if any mammals are observed within at least a 1-km

	<p>radius, or fish deaths are detected within the harbor.</p> <ul style="list-style-type: none"> • In the event that unexpected fish spawning is discovered in the project area (ie. herring), work should be stopped and the PSPC Project Manager be contacted immediately for further direction. • 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.
<p>Potential increased predators from presence of food scraps that may affect fish and birds</p> <p><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 period.</p> <p><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. • The CWS Birds and Oil Response Plan Guidance will be followed in the event of a petroleum spill in or near the water.
<p>Potential disturbance to terrestrial/aquatic species.</p> <p><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. • Ensure that concentrations of seabirds, waterfowl, or shorebirds not be approached when accessing the construction site, accessing wharves, or transporting supplies. • Ensure that wetlands or other sensitive coastal habitats (i.e., any area in which plant or animal life or their habitats are either rare or especially vulnerable) be avoided and not used as staging /storage areas • If a nest is found during vegetation clearing activities, the nest site and neighbouring vegetation must be left undisturbed until nesting is completed. Construction activities must also be minimized in the immediate area until nesting is completed • 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. Should construction be planned between April and August, a site visit and/or nest survey shall be conducted to ensure no impact to migratory birds or species at risk (e.g Barn Swallows). Should additional migratory birds or species at risk be identified on or near the project site, additional mitigation measures (e.g. timing or buffers) and federal/provincial coordination may be required • The Canadian Wildlife Service (CWS) Birds and Oil Response Plan Guidance will be followed in the event of a petroleum spill in or near the water • The contractor shall be monitoring marine mammal activities in the vicinity of the project site, and halt pile-driving work if any mammals are observed within at least a 1-km radius, or fish deaths are detected within the harbor. • 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.

<p>Potential disruption or loss of heritage/archaeological resources.</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 construction activities to the construction supervisor. Ensure care is taken to observe for evidence of archaeological deposits while work is being completed. • 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 the site superintendent and the Departmental Representative. • If an archaeological resource is discovered, and archaeological curator at the New Brunswick Department of Tourism, Culture and Heritage (Provincial Archaeological Services) shall be contacted at: 506-453-2738. • Work will only resume in the vicinity of the discovery when authorized by the project manager and the 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 a burial site, work will immediately cease and the nearest law enforcement agency will be contacted immediately by the project manager and/or the construction supervisor.
<p>Potential interaction with commercial fishing activities and recreational harbour users due to restricted harbour use</p> <p><i>(Small, Reversible, Immediate, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents. The Harbour Authority will coordinate all construction/vessel activities within the harbour for the duration of the project so as to avoid unnecessary interference with fishers/aquaculture operations. Any and all stipulations of federal, provincial, or municipal authorities or their officers must be strictly followed.
<p>Potential disruption to local land owners from construction activities and roadway users during transportation of materials and equipment to/from the project site.</p> <p><i>(Small, Reversible, Local, Short Term, Intermittent)</i></p>	<ul style="list-style-type: none"> • Vehicles and equipment will be maintained in good working order. • 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. • Excessive idling of motorized equipment/vehicles will not be permitted. • The contractor shall obtain all necessary permits (e.g., Access Permit/Certificate of Setback, Highway Usage Permit, Special Permits) and adhere to applicable legislation (e.g., Community Planning Act, Highway Act (Transfer of Administration and Control), Provincial Motor Vehicle Act) for transportation over public roadways. • Seasonal weight restrictions will be strictly adhered to. • Accidental spillage that occurs during hauling will be promptly removed from the highway following appropriate safety procedures. • The NBDTI District Engineer will be contacted immediately in the event of a road, bridge, culvert or other transportation-related issue.
<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). • Ensure that all trucks are road worthy, and that drivers observe all speed and weight limits on site. • Site access must be restricted to authorized visitors.
<p>Potential direct effects to navigation</p> <p><i>(small, reversible, immediate, short term, intermittent)</i></p>	<ul style="list-style-type: none"> • 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.

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

With the implementation of recommended mitigation measures, no significant adverse environmental effects are anticipated. Monitoring and reporting of underwater sound levels during pile driving activities should be considered in all projects to improve our understanding of their potential impacts on marine fauna.

25. Other monitoring and Compliance Requirements (i.e. Fisheries Act or Species at Risk Act):

n/a

CONCLUSION**26. Conclusion on Significance of Adverse Environmental Effects:**

The Federal Authorities have evaluated the project in accordance with Section 67 of the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012) and have determined that the project is not likely to cause significant adverse environmental effects with the implementation of recommended mitigation measures. DFO-SCH may proceed with the project as proposed.

27. Prepared by:

Brazeau,
Christian

Digitally signed by Brazeau,
Christian
Date: 2018.11.20 09:49:17
-0400

28. Date: November 20, 2018

29. Name: Christian Brazeau

30. Title: Environmental Specialist

31. Approved by:

32. Date: NOV 23 / 2018

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: DEC 3 / 2018

38. Name: Patrick Mazerolle

39. Title: DFO-SCH Senior Project Engineer

40. Transport Canada

Project Title:	DFO-SCH #2649 VAL-COMEAU, NB - WHARF RECONSTRUCTION	
TC File No.:	48547	
NPP File No.:	8200-08-2232	
PED Decision:	Taking into account the implementation of any mitigation measures that Transport Canada considers appropriate, the project is not likely to cause significant adverse environmental effects and, as such, Transport Canada may exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.	
Recommended by:	J. Jason Flanagan Senior Environmental Assessment Officer	
Signature:		Date: December 4, 2018
Mailing Address:	95 Foundry Street, Heritage Court PO Box 42 Moncton, New Brunswick E1C 8K6	
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: December 6, 2018

40. References:

- Bird Studies Canada. 2018. Maritimes Breeding Bird Atlas – Summary Sheet for Square 20LT78. Available online at: <http://www.mba-aom.ca/jsp/map.jsp>. Accessed September 20, 2018.
- Dahl, P.H., de Jong, C.A.F., and Popper, A.N. 2015. The Underwater Sound Field from Impact Pile Driving and its Potential Effects on Marine life. *Acoustics Today* 11(2), 18-25.
- DFO. 2014. Recovery potential assessment of American Eel (*Anguilla rostrata*) in eastern Canada. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2013/078.
- Ecological Stratification Working Group (1995) A National Ecological Framework for Canada. Agriculture and Agri-Food Canada, Research Branch, Centre for Land and Biological Resources Research and Environment Canada, State of the Environment Directorate, Ecozone analysis Branch, Ottawa/Hull. Report and national map at 1:7 500 000 scale. Accessed August 14, 2018 at: <http://ecozones.ca/english/zone/AtlanticMaritime/ecoregions.html>.
- Ellison, W. T., Southall, B. L., Clark, C. W., and Frankel, A. S. 2012. A new context-based approach to assess marine mammal behavioral responses to anthropogenic sounds. *Conservation Biology* 26, 21–28.
- Englobe. 2017. Marine Sediment Sampling Program and Underwater Benthic Habitat Survey. Val Comeau, DFO-SCH, New Brunswick, DRFP #23550.
- Environment Canada. 2012. Recovery Strategy for the Piping Plover (*Charadrius melodus melodus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada. Ottawa. v + 29 pp.
- Environment Canada. 2018a. Canadian Climate Normals 1981-2010. Miramichi Climate Station, New Brunswick. Accessed August 13, 2018 at: http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?searchType=stnProv&lstProvince=NB&txtCentralLatMin=0&txtCentralLatSec=0&txtCentralLongMin=0&txtCentralLongSec=0&stnID=6232&dispBack=0
- Environment Canada. 2018b. Species at Risk Public Registry – Species Profiles. Accessed online February 12, 2017 at: http://www.registrelep-sararegistry.gc.ca/species/default_e.cfm.
- Gemtec. 2013. Geotechnical Investigation at the Val Comeau Wharf. Prepared for PWGSC. Project No. 6489.17-R01.
- Important Bird Areas Canada (2018) Map Viewer. Retrieved from IBA Canada website: <http://www.ibacanada.ca/mapviewer.jsp?lang=en>
- Government of New Brunswick. 2018. Accessed online on October 3, 2018 at: <http://geonb.snb.ca/geonb/>.
- Harwood, J., King, S., Schick, R., Donovan, C., and Booth, C. 2014. A Protocol for Implementing the Interim Population Consequences of Disturbance (PCoD) Approach: Quantifying and Assessing the Effects of UK Offshore Renewable Energy Developments on Marine Mammal Populations. Report Number SMRUL-TCE-2013-014, Scottish Marine and Freshwater Science 5(2).
- JWL (Jacques Whitford Limited). 2005. Final Phase I-II Environmental Site Assessment Val Comeau Small Craft Harbour, Gloucester County, New Brunswick. 179 p.
- Kastelein, R. A., van Heerden, D., Gransier, R., and Hoek, L. 2013. Behavioral responses of a harbor porpoise (*Phocoena phocoena*) to playbacks of broadband pile driving sounds. *Marine Environmental Research* 92, 206-214.
- Legault, John A. 1998. Traditional Fisheries Knowledge Resource Mapping Series.
- Nature Trust of New Brunswick. 2018. List of Environmentally Significant Areas.
- NBDAAF (New Brunswick Department of Agriculture, Aquaculture and Fisheries). 2015. Marine Aquaculture Site Mapping Program. Accessed on August 13, 2018 at: <http://www2.gnb.ca/content/gnb/en/departments/10/aquaculture/content/masmp.html>

NBDNR (New Brunswick Department of Natural Resources) .2008. Bedrock Geology of New Brunswick. Minerals. Policy and Planning Division. Map NR-1 (2008 Edition) Scale 1:500 000. (Revised December 2008).

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

Pronk A.G., and S. Allard. 2003. Landscape map of New Brunswick, New Brunswick Department of Natural Resources and Energy; Minerals, Policy and Planning Division, Map NR-9. (scale 1:770 000).


Thompson, P. M., Hastie, G. D., Nedwell, J., Barham, R., Brookes, K. L., Cordes, L. S., and McLean, N. 2013. Framework for assessing impacts of pile-driving noise from offshore windfarm construction on a harbor seal population. Environmental Impact Assessment Review 43, 73–85.

Zelazny V.F. 2007. Our Landscape Heritage: The Story of Ecological Land Classification in New Brunswick. New Brunswick, Dept. of Natural Resources, 359 p.

APPENDIX A

Site Location and Drawings



 Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	project	N.P.P. DFO – SCH VAL COMEAU (2649) GLOUCESTER COUNTY, NB	project	Drawing title AERIAL PHOTOGRAPH (6 MAY 2013)	Titre du dessin no. du projet	designed drawn TM approved	conçu dessiné date Aug, 2018	date
Tender PWGSC Project Manager PWGSC L1 (2004)		Soumission Administrateur de projets TPSGC		project number no. du projet		drawing no. no. du dessin		FIG 2	

E-DRM/GDD-E:

Figure 2. Aerial photo of Val Comeau DFO-SCH.

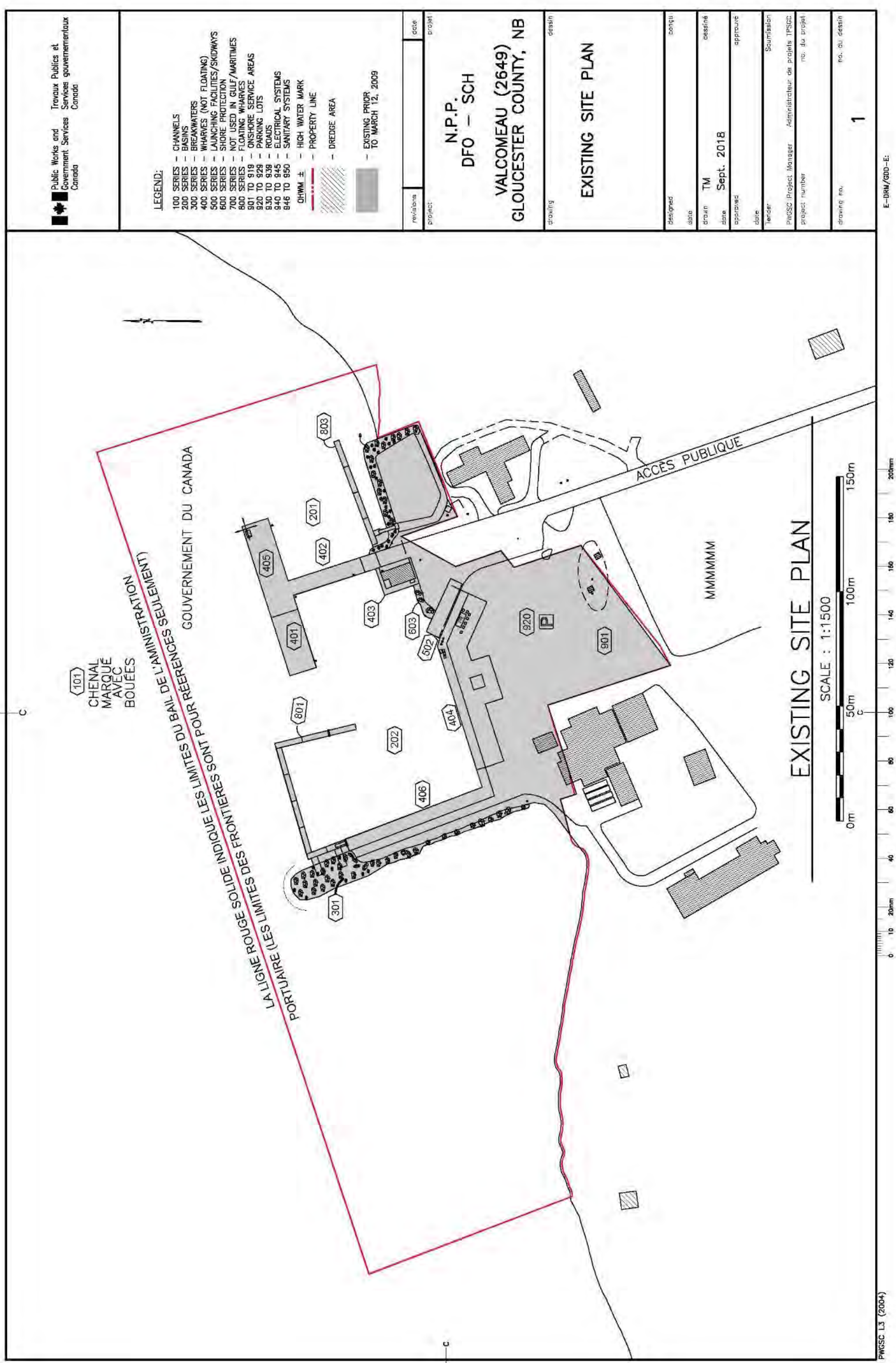
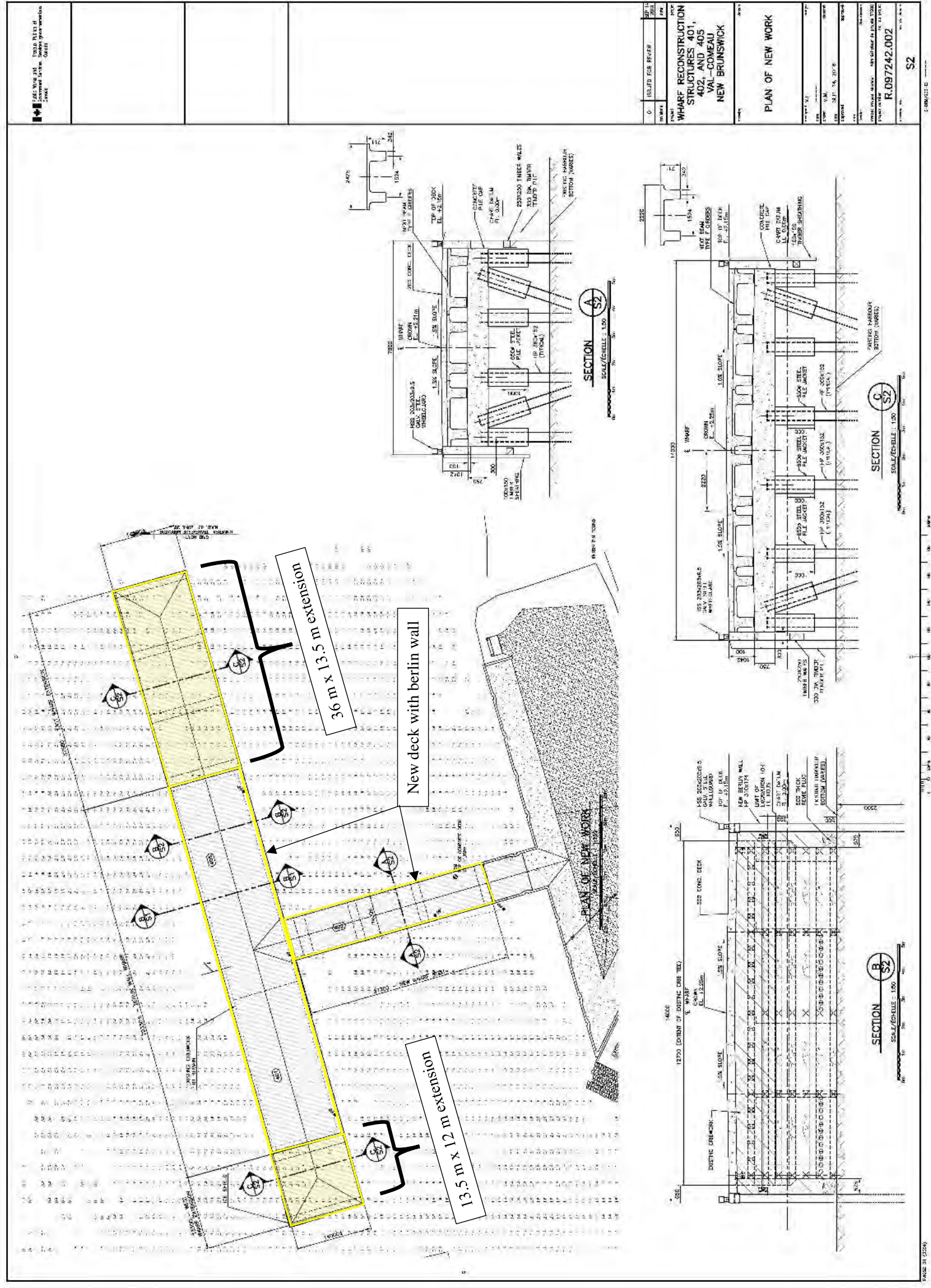


Figure 3. Existing Site Plan.



APPENDIX B

Site Photographs

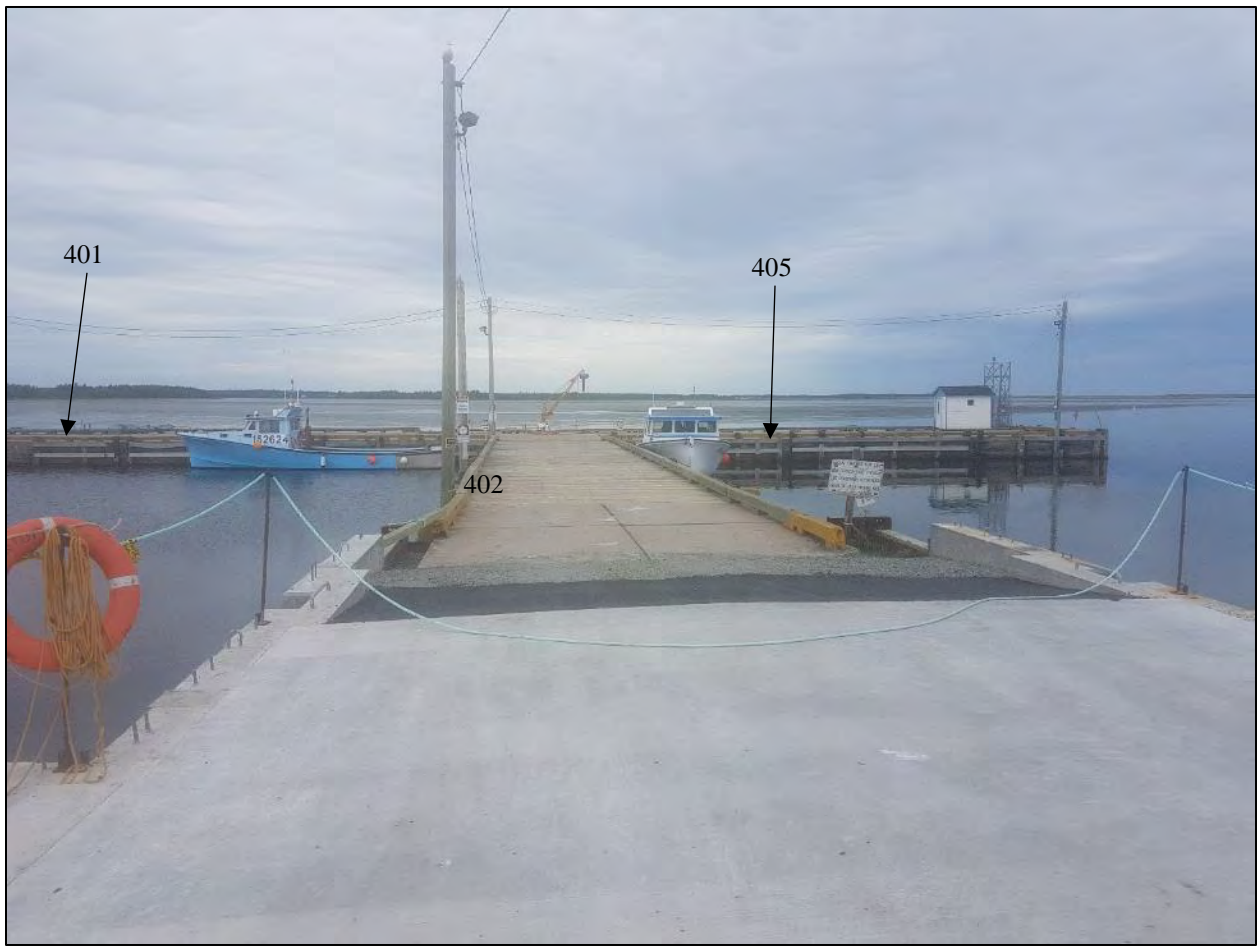


Photo 1. Wharf structures 401, 402 and 405.

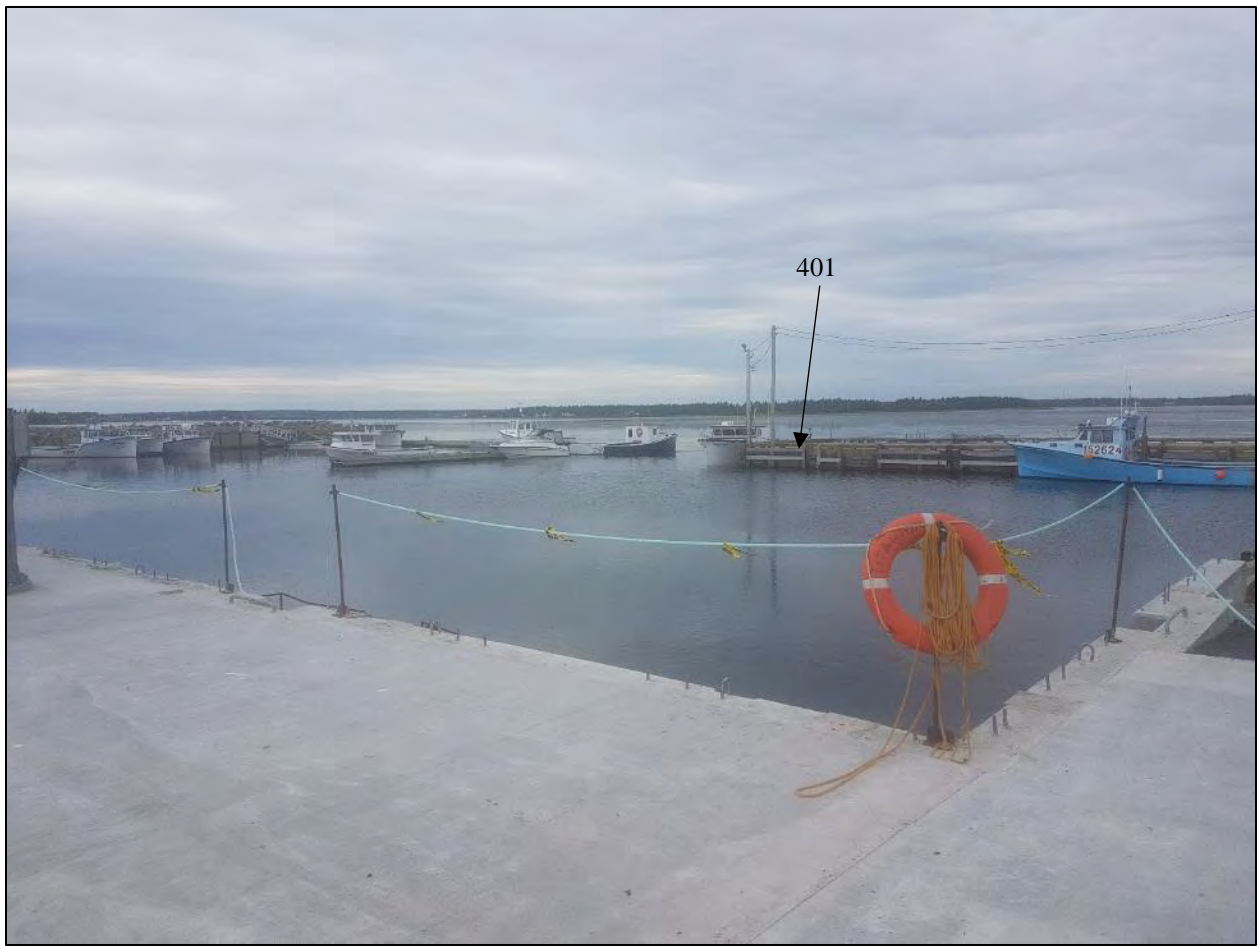


Photo 2. Wharf structure 401.



Photo 3. Wharf structure 405.



Photo 4. Wharf structures 401 and 402.



Photo 5. Wharf structure 401.



Photo 6. Wharf structure 405.



Photo 7. Wharf structure 402, looking south.



Photo 8. Looking north at the eelgrass bed from structure 401/405.

APPENDIX C

Eelgrass Habitat near the Project Site

