Appendix 1: Enhanced Self-Assessment Decision Record Form

Project Title	Petit Shippagan – Wharf Reconstruction – Structure 404				Box No.
PATH File No.					
Project Location	Latitude and Longitude	47° 52’58” N 64° 34’ 32” W	Harbour Name	Petit Shippagan DFO-SCH	
Waterbody Name	Gulf of Saint Lawrence				
Brief description of Project	Activities associated with the proposed project include the reconstruction of the wharf, consisting in the replacement of the existing marginal cribwork with a new berlin wall structure and a new reinforced concrete deck. H-piles will be driven into the substrate approximately 1m outside the perimeter of the existing cribwork. Substrate excavation will be required on approximately 2 m along the existing structure to permit new work. The excavated material will stay on-site adjacent to the new wall. The new berlin wall face will be approximately 115 m long, increasing the total footprint of the wharf by approximately 115 m^2. The substrate in front of the existing structure will be impacted on approximately 230 m^2 (i.e. 115 m long by 2 m wide). The project is being proposed in order to maintain the integrity of deteriorating structures for user safety. The structure has reached its service life.				
	Indicate if the criteria below apply to your project by checking the true, false or not applicable (N/A) box.				
☒ **True** ☐ **False**	There are no aquatic species at risk, critical habitat or residence present in impacted area.				Box 1
☒ **True** ☐ **False**	The project will be conducted during low risk periods by scheduling water work to respect timing windows that are designed to protect fish (including egg and juvenile stages) and the organisms upon which they feed.				Box 2
☒ **True** ☐ **False**	The project is not likely to cause the death of fish that will result in localized effects to fish populations in the vicinity.				Box 3
☒ **True** ☐ **False** ***see comments section below**	The project is not likely to generate noise, pressure effects, shock waves or vibrations (e.g., blasting or pile driving) that could cause the death of fish that will result in localized effects on fish populations in the vicinity or harm or harassment of marine mammals.				Box 4
☒ **True** ☐ **False**	The fish habitat that will be impacted by the project is characterized as low or average.				Box 5
☒ **True** ☐ **False** ☐ **N/A**	The habitat is characterized as low and the total scale of impact is less than 500 m^2.				Box 6
	Description of habitat	Disturbed habitat consisting of a sandy and silty substrate.			

	Scale of impact	The project will increase the total footprint of the wharf by approximately 115 m^2. The substrate in front of the existing structure will be impacted on approximately 230 m^2.	
☐ **True** ☐ **False** ☒ **N/A**	The habitat is characterized as average and the total scale of impact Is less than 250 m^2.		Box 7
	Description of habitat		
	Scale of impact		
Comments	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 the maritimes (e.g. SCH Lamèque in 2018, SCH Cap-des-Caissie in 2017, SCH Val Comeau in 2017). Mitigation measures proposed by Fisheries and Oceans Canada, and listed on the Request for Reviews submitted to the Fisheries Protection Program for projects involving pile driving, have always been limited to the following: • Time work in water to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed; • Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows; • Minimize duration of in-water work; • Visual monitoring for suspended solids should occur daily. If any changes occur in turbidity of the water in the vicinity of the work area as a result of construction activities, the work should immediately stop to determine if further mitigation measures are required; • Any construction debris/material that enters the marine environment should be removed immediately and be disposed of in a provincially approved manner; • Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on-site; • Remove all construction materials from site upon project completion; • Ensure that machinery arrives on-site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds; • Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water. These measures will be implemented during the construction phase. A review of the literature and EIA studies shows that it is becoming increasingly clear that the most significant aquatic population consequences of 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 et al. 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 vary 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 SCH Petit Shippagan will be temporary, 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. In addition, the breakwater situated approximately 150 m north of the proposed pile-driving site, and the L-shaped wharf facing the project site, will potentially reduce the impact of vibrations/shock waves on marine species outside the harbour. 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 above-mentioned mitigation measures are followed. In addition, the contractor shall be monitoring fish death and 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 harbour. Monitoring and reporting of underwater sound levels during pile driving activities should be considered in future projects to improve our understanding of their potential impacts on marine fauna.		
Decision	☒ There is no need for FPP review ☐ Recommendation to send to FPP for review		
Completed by:	Christian Brazeau	**Position:** Environmental Specialist - PSPC	
Signature	Brazeau, Christian Digitally signed by Brazeau, Christian Date: 2018.08.10 14:00:59 -03'00'	**Date:** August 10, 2018	
Approved by:	Patrick Mazarolle	**Position:** Senior Project Engineer – DFO-SCH	
Signature		**Date:** 2018/08/15	