VALUED ENVIRONMENTAL COMPONENTS AND MITIGATION MEASURES

Terrain and Topography

- Visual monitoring for suspended solids and turbidity is required during dredging, containment cell construction, and ramp modification activities. 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.
- Movement of machinery on land should be via existing roads, access points (i.e. wharf or service areas) wherever possible to avoid disturbance to vegetation near the shoreline.
- Machinery will be stationed on land most of the time and should operate in the dry in a manner that minimizes disturbance to Marsh Island (i.e., minimize tracking of equipment by using the same pathway as much as possible).
- Re-seeding with local, native plants, flora in areas disturbed on Marsh Island following construction activities.

Marine Sediments and Marine Water Quality

- As for Terrain and Topography, as well as:
- The containment cell will be lined with filter fabric to reduce the potential for suspended sediments to leave the containment cell.
- Armour stone will be installed along the outer perimeter and top of the containment cell to reduce potential for overtopping and damage to the cell caused by extreme weather events.
- Bulky debris such as wooden beams, scrap metal, cable, fishing gear, etc. recovered during dredging operations will not be placed within the containment cell. Such material will be disposed of in accordance with provincial waste management regulations.
- Construction related vessels will comply 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.
- Construction related 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 the project.
- 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.
- To minimize the possibility of fish habitat contamination and the spread of aquatic invasive species, all construction equipment that will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must

be cleaned and washed to ensure that they are free of marine growth and invasive species prior to mobilization to the site.
    - Equipment shall include boats, barges, scows, cranes, excavators, haul trucks, pumps, pipelines and other all miscellaneous tools and equipment previously used in a marine environment.
- Cleaning and washing of equipment shall be performed immediately upon their arrival at the site and before use in or over the water body.
- Conduct cleaning and washing operations as follows:
    - Scrape and remove heavy accumulation of mud and dispose appropriately.
    - Wash all surfaces of equipment by use of a pressurized fresh water supply.
    - Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.
    - Check and remove all plant, animal and sediment matter from all bilges and filters.
    - Drain standing water from equipment and let fully dry before use.
    - Upon removal from the water, drain standing water from equipment and let fully dry before removal off the site.
- Clean, drain, decontaminate and fully dry all gear and equipment (including waders, nets, buckets, tools, boats, and trailers) before transferring from one body of water to another to prevent the transfer of disease and non-native organisms.
- Record of Assurance Logbook:
    - Maintain an on-going log of past and present usage and washdowns of all equipment to illustrate mitigation measures undertaken against fish habitat contamination by aquatic invasive species.
    - Write data in a hard cover bound logbook to include the following:
        a. Date and location where equipment was previously used in a watercourse or wetland;
        b. Type of work performed.
        c. Dates of wash down for each piece of equipment;
        d. Cleaning method and cleaning agent(s) used.
- Keep Record of Assurance Logbook updated from project to project. Upon request, submit logbook to Departmental Representative for review.
    - The Departmental Representative has the right to request a video inspection of the equipment, including hulls, to ensure that they are free of marine growth and invasive species prior to mobilization to the site.

Air Quality and Other (noise)

- Dust suppression by the application of water must be employed, when required. Apply dust control measures to roads, parking lots and work areas. The Departmental Representative shall determine locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil or any other petroleum products must not to be used for dust control under any circumstances.

- Spray surfaces with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust control during the entire course of the work.
- To reduce emissions of air contaminants and greenhouse gas, implement an idling policy that includes:
    - Diesel construction equipment will be turned off when not in active use.
    - Vehicles idling more than 5 minutes will be turned off.
    - Morning vehicle warm-ups will be restricted to 3-5 minutes.
    - A staging zone will be established for trucks that are waiting to load/unload to minimize public exposure to emissions.
- Idling restrictions will not apply when:
    - The engine is required to power auxiliary equipment (e.g., hoist, lift, computers, safety lights, etc.).
    - Extreme weather conditions (-10˚ Celsius or below / +30˚Celsius or above) or any other circumstance where heating or air conditioning is required for worker's health and safety.
    - The original equipment manufacturer specifically recommends a longer idling period for normal and efficient operation of the motor vehicle in which case such recommended period shall not be exceeded;
    - Vehicle/equipment maintenance and diagnostic purposes.
    - Where the unit is not expected to restart due to mechanical issues.
- Work equipment and machinery must be equipped with adequate muffling capacity to reduce noise on site to lowest possible level. Always maintain mufflers in good operating condition.
- Sounds such as whistle blasts and horns will be limited or replaced, to the extent possible, with radio communications.
- Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents. Any and all stipulations of federal, provincial, or municipal authorities or their officers must be strictly followed.
- Excessive idling of motorized equipment/vehicles will not be permitted.
- The Contractor shall obtain all necessary permits and adhere to applicable legislation for transportation over public roadways.
- Seasonal weight restrictions will be strictly adhered to.
- Contractor to coordinate with the local Harbour Authority prior to commencement of the work such that the schedule with the least possible conflicts will be implemented. The contractor will be required to schedule project construction such that it does not interfere with fishing activities carried out by harbour users.

Wetlands

- A Dredge Material Management Plan will be developed for the management of the Containment Cell.

- The containment cell will be allowed to revegetate naturally during periods between dredging events (5 – 10 years) and should provide some foraging opportunities in years when there is no dredging and disposal within the cell.
- Do not place fuel storage tanks and store fuel or other petroleum products within a 30 metre buffer zone of watercourses and wetlands. Do not fuel or lubricate equipment within this 30 metre buffer zone. Do not washdown equipment or perform cleaning within this 30 metre buffer zone. Obtain approval from Departmental Representative of acceptable location on site for fuel storage and equipment service.
- Conduct work wetland in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.
    - Maintain appropriate production speed and momentum of the construction equipment. Make adjustments as required and as approved by Departmental Representative.

Species at Risk and Migratory Birds

- As for Terrain and Topography, Marine Sediments, Marine Water Quality, Air Quality, Other (noise), and Wetlands, as well as:
- Contractors should familiarize themselves with ethe birds of importance noted in this EEE (Bank Swallows, Piping Plovers, and Barn Swallows and should become knowledgeable with and abide by the *Migratory Birds Convention Act* regarding the protection of migratory birds, their eggs, nests and their young encountered on site and in the vicinity.
- Daily reconnaissance of the area should be undertaken and any observations of the birds noted above (or others) should be documented.
- Minimize disturbance to all birds on site and adjacent areas during the entire course of the work.
- Do not approach concentrations of seabirds, waterfowl and shorebirds when anchoring equipment, accessing wharves or ferrying supplies.
- During nighttime work, position flood lights in opposite direction of nearby bird nesting habitat.
- Ensure that no litter (including food wastes) is left in and around the site.
- Do not use beaches, dunes, coastal wetlands and other natural previously undisturbed areas of the site to conduct work unless specifically approved by the Departmental Representative.
- Should nests or chicks of migratory birds or raptors be encountered during work, immediately stop work in that area and notify Departmental Representative for directives to be followed.
- Do not disturb nest site and neighbouring vegetation until nesting is completed.
- Minimize work immediately adjacent to such areas until nesting is completed.
- Protect these areas by following recommendations of Canadian Wildlife Service (CWS).
- Maintain a minimum distance of 300 m from all areas occupied by concentration of seabirds and waterbirds. Travel at steady speeds when close to seabird and waterbird colonies, moving parallel to the shore, rather than approaching the colony directly. Avoid any sharp or loud noises, do not blow horns or whistles, and maintain constant engine noise levels. Do not pursue seabirds or waterbirds swimming on the water surface and avoid concentration of these birds on the water.

Fish and Fish Habitat

- As for Terrain and Topography, Marine Sediments, Marine Water Quality, Air Quality, and Other (noise), as well as:
- A copy of the *Fisheries Act* Authorization 24-HGLF-00436 should be on hand and reviewed by the contractor. All conditions of the Authorization must be strictly followed.
- Limit impacts on fish habitat components to those approved under the *Fisheries Act* Authorization 24-HGLF-00436 for the works, undertakings and activities.
- The duration of in-water work will be reduced to the extent practicable.
- In the event that pelagic fish are observed spawning or migrating in the project area during pile driving, work must be stopped and the Project Manager or contractor on site shall ensure that fish leave the area before resuming work.
- Monitor and assess weather forecast on a daily basis to determine the risk of extreme weather. Avoid work during periods for which Environment and Climate Change Canada had issued rainfall, storm surge or other weather warnings for the work area.
- Ensure that building material used in the watercourse is handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.
- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage.

Navigation

- Any measures necessary to mitigate direct effects will be included as terms and conditions associated with work approved under the *Canadian Navigable Waters Act* (CNWA)

Health and socio-economic impacts and Historical or archaeological sites

- As for Terrain and Topography, Air Quality, and Other (noise), as well as:
- All construction personnel will be responsible for reporting any unusual materials unearthing during construction activities to 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 Project Manager.
- If there are any findings of cultural, archaeological or paleontological significance, all work must immediately come to a halt, the provincial archaeologist (Christian Theriault: 902-368-6895) is to be contacted, as per PEI's Archaeology Act and Archaeology Act Regulations, and further consultation with the Epekwitnewaq Mi’kmaq must be undertaken.
- 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 PEI Department of Fisheries, Tourism, Sport and Culture/ Archaeology and Paleontology.

- In the event of the discovery of possible human remains or possible evidence of human burials, the work will immediately cease. If the discovery is potential, but not positively human remains, contact the Project Manager as well as the provincial Archaeological Services Unit. If the materials discovered are undoubtedly human remains, the nearest law enforcement agency will be contacted immediately by the Project Manager and/or the Construction Supervisor. Until determined otherwise, the possible human remains should be treated as evidence in a criminal investigation. If the possible human remains are found in the bucket of heavy equipment, the bucket should not be emptied as physical evidence may be destroyed by that action. The area should immediately be designated as "Out of Bounds" to all personnel and the public. Depending on the weather and other conditions, the potential human remains should be provided with non-intrusive protection, such as covering with a cloth or canvas tarp (non-plastic preferred). Curiosity seekers should be kept off the site.

Accidents and Malfunctions

- As for all Valued Components (VC) noted above.