

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
NSDNR-01	Sarah MacKay	<p>The desktop surveys, prioritization methods and inventory standards as applied to species at risk, species of conservation concern and their habitats are appropriate and well described in the document. However, the structure of the document did not facilitate DNR's review for this group as the information was distributed under a number of sections in Terrestrial Habitats (Sections 4.9.1, 4.9.3, 4.9.4) and Marine Mammals and Marine Related Birds (Section 4.14). Furthermore, DNR considers the analysis incomplete as it relates to the information needed in order to assess the impacts and mitigation being considered by the proponent. For example, with respect to vegetation, Figure 4.4 identifies several species of vascular plants that fall on the edge of the proposed development area, yet there is limited discussion on potential impacts or mitigation options provided in Sections 6.1 (last line page 145 and top of page 146), Section 6.4.4.1 (page 150), and Table 10.2 (page 226). DNR suggests that this structure and limited analysis of potential impacts and proposed mitigation will not permit a confident determination of what (if any) impacts may be incurred by species at risk, those of conservation concern, or their habitats. Moreover, DNR requests that the data and analysis for species at risk and those of conservation concern (and their habitats) be consolidated and expanded as a separate valued environmental component (VEC) rather than be included with other VECs under Section 4 (Overview of the Environment) and Section 6 (Environmental Effects Assessment).</p>	<p>Text modified in Section 6.4.4.1.</p> <p>The study team is confident that the mitigation outlined in the EA is technically and economically feasible and sufficient to determine residual environmental effects and their significance. The Environmental Protection Plan will provide further mitigation details in consideration of detailed Project design and conditions of approval.</p>
NSDNR-02	Sarah MacKay	<p>Table 5.1, Wetlands Habitats: The last line under "scoping considerations" should read "If the impacts of the alterations to a wetland..." (Emphasis added).</p>	<p>Text modified in Section 5.2 (Table 5.1)</p>
NSDNR-03	Sarah MacKay	<p>Page 146, paragraph 2: Snapping turtles are no longer included as other harvestable wildlife under the Wildlife Act and its Regulations.</p>	<p>Text modified in Section 6.4.1.</p>
NSDNR-04	Sarah MacKay	<p>Page 146, paragraph 3 (beginning with "In Nova Scotia, wetlands ..."): The Nova Scotia Wetlands Designation Policy (2006) has been replaced by</p>	<p>Text modified in Section 6.4.1.</p>

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		changes to the Environment Act and the Activities Designation Regulations; the Operational Bulletin is still in effect. The last line should be reworded to recognize that an Environmental Assessment (EA) Registration may be triggered if the infill is less than 2 ha, but has impacted 2 ha or more of wetland functions.	
NSDNR-05	Sarah MacKay	Page 150, last paragraph: The impact to wetlands will be greater than the 4.5 ha stated by the proponent as impacts also include wetland processes, not just physical loss. The proponent does note that there are potential impacts beyond the infilled area. The proponent has not provided the information typically provided in an EA Registration by including an assessment of wetland function as detailed in the Operational Bulletin. While DNR recognizes that the proponent will strive to minimize impacts to wetlands, this additional information is required in assessing the impacts of the development and to propose mitigation options and compensation.	New section (4.9.2.1) added to address wetland function. A detailed wetland evaluation will be provided in the Water Approval Application as per standard practice.
NSDNR-06	Sarah MacKay	The Mineral Resources Branch confirms that the project will provide social and economic benefits to the local community and to the Province through direct employment and associated investment in the area. DNR supports the development of the Province's economic infrastructure when such development is conducted in an environmentally and socially responsible manner.	Comment noted.
NSDNR-07	Sarah MacKay	The proposed undertaking will provide substantial long term socio-economic benefits and will contribute significantly to the Province's industrial development	Comment noted.
NSDNR-08	Sarah MacKay	DNR's Library has a different series of air photos dating back to 1939. A review of the 1939 series air photos of the project area appears to show more structures than are noted in the report.	Comment noted. A detailed review of historic land use was conducted by Davis Archeology see Appendix J.
NSDNR-09	Sarah MacKay	DNR's Library also has reports containing information that may be relevant to the current study and do not appear to be referenced in the report. They are: Sea Bottom Analysis; Outer Channel,	Comment noted. It is believed that the reference material used for the purposes of this assessment were sufficient although newly identified material will be reviewed as it come to the study team's attention.

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		Sydney, Nova Scotia, Project 701510, prepared for Public Works Canada by OceanChem Group, Suite 46, 1000 Windmill Road, Dartmouth, NS B3B 1L7; and Depth Soundings and Seismic Profiling Survey, Sydney Harbour prepared for the Cape Breton Development Corporation by the Nova Scotia Research Foundation in 1979.	
NSDNR-10	Sarah MacKay	Sydney Harbour is a federal harbour and there appears to be no provincial submerged Crown land affected by this project. Though there appears to be no provincial submerged Crown land affected, the proponent should note that DNR requires advance notice of dredging, infilling, bridge construction, and wharf construction activities on all submerged tidal lands in Nova Scotia for evaluation and to issue permits pursuant to the Beaches Act, whether such land is Crown owned (provincial or federal) or privately owned. To request a permit, please write to the Manager, Crown Land Disposals & Coastal Permits, Nova Scotia Department of Natural Resources, PO Box 698, Halifax, NS, B3J 2T9, and include maps, together with a description and schedule of the intended work.	The proponent recognize that DNR requires advance notice of dredging, infilling, bridge construction, and wharf construction activities on all submerged tidal lands in Nova Scotia for evaluation and to issue permits pursuant to the Beaches Act.
NSDNR-11	Sarah MacKay	Section 4.1.3: It would be helpful if the features and structures (example: anticlinal axis, limestone ridges, limestone quarries) referenced in the text were also located on a Figure. DNR suggests Map 85-1, Geology Map of the Sydney Basin (Boehner and Giles) as a reference.	Figure 4.2 Base mapping updated to use Map ME 1986-1
NSDNR-12	Sarah MacKay	Figure 4.2: DNR suggests that the Morien, Mabou, Windsor and Horton Groups should be listed in chronological order (youngest to oldest) in the map legend. This would make the age relationships obvious for both Figure 4.2 and Section 4.1.3 (example: references to early and late Carboniferous).	Figure 4.2 updated
NSDNR-13	Sarah MacKay	If the required data is available, an isopach map of unconsolidated sea bottom sediments in the areas of proposed dredging may be beneficial.	Comment noted. It is believed that the bathymetry mapping currently referenced in the EA is sufficient for the purposes of this assessment.

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NSE-01	John Drage	<p>As indicated on page 36 of the draft EA document, one of the concerns raised by the public was the water supply needs of the proposed terminal and the associated potential impact on domestic wells. I would recommend that additional material be added to the EA to address this concern. In particular, an estimate of the water supply needs of the terminal should be provided (i.e., water demand in m3/day) as well as information about the location of the water supply source (i.e., well location or surface water name and location). If the source of the proposed water supply is a wellfield or water well, please provide an assessment on whether or not the additional pumping is likely to cause well interference effects on any nearby domestic wells. This issue may be important to the public because there has been a history of well interference effects associated with the municipal water supply in Sydney. I would recommend that text be added to Section 4.2.5 to clarify the source of the water supply for the terminal. More specifically, the draft EA document currently refers to the proposed water supply in several ways as follows: “existing CBRM central municipal water supply”; “central water supply for the Industrial Park”; and, “the high yield well”. It is not clear if these statements all refer to the same water system. As discussed above, if the proposed water supply is a water well, further discussion should be added to describe how many off-site wells are located nearby and whether or not they are likely to be affected by the increased pumping associated with the terminals water needs.</p>	<p>Section clarified. To reflect that the high yield well and municipal supply are one in the same; the existing water well will be sufficient to supply the future project.</p>
NSE-02	Darrell Taylor	<p>This report is not organized in the traditional, standard format of an EA registration report and therefore provides difficulties in finding relevant information and sections of interest to the reviewer. This is particularly true related to fresh surface water resources, which are only mentioned in passing in various sections or identified on unlabelled maps. Freshwater resources ( in terms of watercourses - ponds and streams) found on or near the project site may not be particularly significant as valued</p>	<p>Text removed from Section 4.1.1 and a new Section (4.2.5) was added. Figure 4.4 has been updated to reflect the two watercourses on the property.</p>

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		ecosystem components, but should nevertheless be suitably identified on maps and addressed in a separate section of text which can be easily found in the table of contents. Inconsistencies in the report include one section of text (page 38) indicating no watercourses are found on the project site, while mapping (Figure 4.1) seems to show otherwise with streams and ponds present. Moreover, on page 67 “freshwater ponds” are mentioned when wetlands are being discussed. Again, freshwater resources would seem to merit its own section or sections in the report.	
NSE-03	Darrell Taylor	Freshwater wetlands have been addressed more comprehensively but are still lumped in with terrestrial aspects. No wetland assessment was done for wetland # 5 although map seems to indicate open water included. An explanation should be given or assessment included.	Wetland assessments were not conducted on Wetland 5, 6 and 7 since they fall outside of the proposed project footprint and will not be impacted as part of project activities. Full assessments will be done on any of the above referenced wetlands should a modification in the project footprint result in alteration to the unassessed wetlands
NSE-04	Darrell Taylor	Fresh surface water has not been considered as a VEC, only “freshwater habitat” (page 101) - that is, fisheries habitat has been considered but no other water use. This seems to be an ongoing shortcoming of recent registration documents, which should be overcome in future by broadening the scope of potential water uses in these assessments.	Comment noted see comment and response noted NSE-02
NSE-05	Darrell Taylor	Other existing water uses, including any withdrawals from nearby watercourses, which could potentially be impacted by this project should be identified more fully. Public water supplies should be identified in particular, with potential for impact assessed, and if necessary avoidance or mitigation measures proposed.	Section 4.2.6 modified. See Comment NSE-01
NSE-06	Darrell Taylor	Project water requirements and location of source waters should be identified and potential impacts of this withdrawal assessed. The “Water Supply” section (page 44) seems unclear and confusing regarding water use and sources.	See John Drage Comment NSE-01
NSE-07	Darrell Taylor	Potential sources of impact from this project to surface waters are fairly well identified, although the	It is agreed that the majority of the assessment covers marine habitats since that is where the majority of environmental effects will occur. However, effects to

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		focus is on marine versus fresh waters. Fresh waters are apparently seen to be so insignificant that they are only included in the Marine Fish and Water Quality section. The report would benefit from a re-organization in this respect- see comment NSE -04 above.	freshwater are discussed in Sections 4.8 and 6.2. Additional detail will be provided in the Watercourse Alteration Approval application in consideration of final site design and conditions of approval.
NSE-08	Darrell Taylor	Acid generation from acid mine drainage is briefly mentioned but not seen as a likely concern.	Comment noted
NSE-09	Darrell Taylor	Proposed mitigation measures are mentioned in generalities only with no specifics given and environmental protection plans to be developed later. Erosion and Sedimentation Control Handbook for Construction Sites is referenced however on page 18.	Comment Noted. Detailed mitigation plans and monitoring plans will be developed upon final project design and receipt of conditions of approval. Detailed erosion and sediment control plans are normally provided for regulatory review in permit applications and environmental protection plans)
NSE-10	Darrell Taylor	Monitoring of surface water quality and quantity of fresh water does not appear to be proposed. Some monitoring near the freshwater wetlands might well be appropriate.	Monitoring of surface water will be undertaken at the direction of NSE and will be provided in the Environmental Protection Plan
NSE-11	Darrell Taylor	Assessing cumulative effects which include any proposed work associated with the Sydney Tar Ponds Clean Up, as indicated in the report, is appropriate.	Comment Noted.
NSE-12	Darrell Taylor	The extent of wetlands being infilled and impacted is increased by the relocation of the container facility to avoid blasting (page 150). The rationale should be included which lead to this option as being preferred, or perhaps reconsider original option so as to impact fewer hectares of wetland.	Marine blasting involves extremely high costs and environmental risk to marine organisms (e.g. fish and mammals). The site plan was carefully developed to minimize impacts to wetlands.
NSE-13	Andrew Paton	Section 2.5.3 - In light of anticipated changes to provincial wastewater regulations, as a result of CCME's - Municipal Waste Water Effluent (MWW) Strategy, wastewater upgrades in CBRM are more likely and hence the opportunity for a partnership may be greater.	Comment noted
NSTCH-01	Heather Marsten	From a tourism perspective the Department does not see any negative implications. The materials brought up through the dredging will be used to create a base upon which the new container terminal will be constructed. The new terminal will be located in an area currently zoned and used for industrial	Comment noted

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		<p>purposes. Incoming cruise ship passengers and those using the Sydney waterfront boardwalk already view the existing industrial site, so viewing will not be further obstructed. This project is in keeping with the Port of Sydney's strategic plan. The Port also manages the development of cruise ship traffic into Sydney.</p> <p>For these reasons the Department of Tourism, Culture and Heritage have no comments for this draft assessment. We look forward to conducting a more comprehensive review of the final document.</p>	
NSE-15	Peter Geddes	The draft registration document refers to "infilling a portion of Barachois Creek" and the project includes wetland infilling, however the "Regulatory and Planning Context" section does not mention any required approvals under Part V of the Environment Act	Text modified in Section 1.5
NSE-16	Peter Geddes	On Page 6 it is indicated that project activities could potentially include a confined disposal facility "CDF" on the adjacent side of South Arm which will serve as a disposal area for dredge materials "unsuitable for construction". Section 2.1.3 seems to indicate that this CDF could be used in "reclaiming and developing" land under authority of Nova Scotia Lands. These statements appear to be contradictory	Text Modified in Sections 2.0. and 2.1.3
NSE-17	Peter Geddes	The draft document does not appear to clearly explain what criteria will determine the need for the CDF on the East Side of South Arm, and when the decision would be made to construct it.	At this time it is unknown whether the second CDF will be required. Its use will depend on a number of factors including the final configuration of the terminal infrastructure, and the requirements of NS Lands. Efforts are underway to identify specific material handling and placement methods that improve the dewatering and consolidation of this material. Sufficient time (e.g., number of years) could allow for proper consolidation of these soft materials, making them suitable for construction.
NSAF-01	Andrew D. Cameron	There are no major agricultural concerns with this proposal. The consultant could enhance the report by more specifically addressing the potential impacts of the Terminal on the small agricultural operations found on the Point Edward Highway. E.G. Impact of noise or light on farm animals or farmers	Comment noted. Noise guideline set forth in Section 6.5.1, and construction and operation effects are discussed in sections 6.5.4.1 and 6.5.4.2. Lighting is discussed in Section 2.8. This assessment of noise and light effects will apply to a variety of nearby land uses.
NSAF-02	Murray Hill	I am pleased to advise that staff have reviewed	Comment noted

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		these documents and have no comment to offer at this time	
NSE-18	Angela Birch	The air quality branch is pleased that the vessels will be connected to the provincial power grid while unloading and loading. This should help reduce air emissions	Comment noted
NSE-19	Angela Birch	We suggest consideration should be given to ways to reduce idling by vehicles that are used in the construction and commissioning phase	Comment noted
NSE-20	Angela Birch	Will the earth-moving activities cause the release of contaminants that were in the soil because of the site's previous uses?	Dust released by earth moving activities is addressed in Section 6.5.4.1. If a contaminated site is identified (e.g. staining, odors) the appropriate Regulatory authorities will be notified and action will be taken as required.
DFO-01		In addition to providing a revised Environmental Assessment (EA) Report as a submission for the Canadian Environmental Assessment (CEAA) screening of the proposed project, it is also requested that the proponent provide either a separate response document or a concordance document to facilitate the review of this project.	This table indicates the concordance between comments from government reviewers and proponent responses.
DFO-02		Sediments in the outer part of Sydney Harbour do not present a major concern as they are composed of 80-90% sand and have low contaminant levels. Dredging of this material would not be expected to release significant amounts of contaminants. Inside the South Bar, sediment texture changes abruptly to mud as bottom stress decreases. This region of Sydney Harbour has accumulated very high levels of contaminants including trace metals, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) with the highest levels found in the area of Muggah Creek (Stewart et al. 2001; TSRI #93). It has been proposed to remove between 1 and 3m of sediment in the South West Arm. It is these sediments that pose the greatest risk to local ecosystem health. There are data available on the contaminant levels in Sydney Harbour. Trace metal values in the surface sediments are documented in Stewart et al. (2001), and trace metals, PAH and PCB levels were measured for approximately 40 cores collected as part of a study within the Toxic	<p>An inventory of contaminants at depth in the sediments of the South Arm will be developed by consulting the paper by Stewart et al. and with data obtained from John N. Smith at BIO. The paper by Stewart et al. is currently under review, and attempts have been made to contact John N Smith at BIO by email and telephone. This information, coupled with further sediment samples that will be taken in advance of the HADD compensation program, will provide the baseline data from which to guide future monitoring and sampling programs in the South Arm.</p> <p>As described in sections 6.1.4.1 of the draft EA report, several mitigation steps have been outlined to reduce the resuspension of sediments during dredging and infilling in the South Arm, including the use of the state-of-the-art suction dredger and the use of silt containment systems during dredging.</p>



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		<p>Substances Research Initiative (TSRI). A draft research paper (Smith et al. in review) has been prepared based on the data from the 40 cores and describes the historical accumulations of contaminants in Sydney harbour. The raw data from this study is accessible through the lead researchers (i.e., Smith et al.) located at the Bedford Institute of Oceanography (BIO). Based on the approximately 40 cores from the area, Smith et al. (in review) showed inventories of PAHs and PCBs down to sediment depths of approx 11.5m, and have found that PAHs and PCBs reach a maximum concentration at depths between 0.5 and 1m. Based on Pb210 and Cs137 geochronologies these depths correspond approximately to dates between 1960-1980 in the area of the proposed dredge site. The results show that PCB/PAH concentrations in this area are on the order of 210 times above the US National Oceanic and Atmospheric Administration Effects Range Median (ERM) level for sediment PCB/PAH. This ERM level corresponds to the level of PCB/PAH in sediment below which adverse biological effects were measured 50% of the time (Jones et al. 1997). A similar pattern is observed for trace metals such as lead. Concentrations of all contaminants decrease near the sediment surface as the more highly contaminated sediment is capped by the deposition of cleaner muddy material that exists within the inner harbour since the closure of industrial sources (Smith et al. in review). Dredging activities in the South West Arm, therefore, may lead to the release of contaminant laden fine grain sediments. An inventory of contaminants at depth in the sediments to be removed during dredging activities in the south arm would support monitoring and mitigation efforts to reduce possible effects that may result from their release and resuspension.</p>	
DFO-03		<p>The sediment transport modeling presented in the draft EA document is sound in relation to the initial deposition of fine-grained sediment released during</p>	<p>Dredging in the South Arm is expected to target sediments from 1 -3m depth. According to TSRI #93, contaminated sediments are "capped" with a layer of relatively cleaner sediments that has accumulated over the past 20 years since</p>

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		<p>dredging. As stated in the draft EA, levels of suspended sediment resulting from dredging can be expected to be similar to those reached during storms and other high stress events. As organisms in this area are subjected to these levels they can be expected to adapt. However, prolonged elevated levels may have adverse effects on the health of benthic organisms. The model predicts a blanket of fine-grain sediment in the south arm of approximately 0.01 - 0.001 m, decreasing as you move away from the dredging near the proposed site of the container terminal. There is a concern that levels of contaminants in this blanket layer could be elevated if they are released from the underlying sediment during dredging. The borehole program presented in the draft EA document collected 9 composite samples, possibly from several depths, that show elevated PAH and PCBs for the area of proposed dredging within south arm. Levels were not as high as those found in the TSRI study, possibly as a result of mixing of contaminated sediment with clean sediment both above and below the region of maximum accumulation (i.e., composite samples). No trace metal analysis was performed on the borehole samples collected for the draft EA. The methods used in the TSRI study might be a more appropriate way of sampling sediments for contaminants. A more complete inventory of contaminant levels at depth within south arm sediments, such as those summarized in Smith et al. (in review), should be documented as the deposition of large quantities of contaminated sediment may pose adverse effects to habitat and benthic species.</p>	<p>heavy industrial mining activity ceased in Sydney. Given this layering of clean and contaminated sediments, any sediment that are resuspended during dredging will likely be a mixture of the cleaner sediments and the contaminated sediments. As such, the strategy taken during the borehole sampling program was to collect composite samples which would more closely resemble the mixed sediments that may be resuspended during dredging.</p> <p>As noted in the response to DFO-02, an inventory of contaminant levels at depth within the South Arm is currently being developed by consulting the appropriate literature and by consulting with John N Smith at BIO with respect to the data in his upcoming paper.</p>
DFO-04		<p>The proposed construction of the terminal will have an effect on tidal currents. Conventionally if you remove a percentage of the cross sectional area of a moving water body and the same volume is required to pass, then the speed of the moving water body will increase linearly. Quick calculations would estimate a removal of approximately 10% of the cross sectional area across the width of the south arm where the proposed container terminal is to be</p>	<p>Increase in cross section would be up to 2% in the Seaward Arm. In the South Arm, contrary to the first impression given by plan drawings, the cross section would actually also increase (up to 8%) because of dredging at the foot of the pier, which has a greater effect than infilling for the pier. The modeling study conducted for engineering design purposes (CBCL 2009) indicates that the Project will not modify currents or the mean Harbour circulation in any significant way. The detailed analyses can be made available to DFO upon request.</p>

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		<p>constructed. However, although local deposition will occur both in front and behind the terminal footprint, within Sydney harbour the supply of fine-grained sediment is limited, thus large amounts of deposition within the south arm are not expected and should remain close to the present values of 0.22cm / yr based on the geochronologies of Smith et al. (in review) and the TSRI report 93. Furthermore, since transport within Sydney harbour is based on estuarine circulation, the direction of transport of material occurs into the Harbour (Petrie et al. 2001). According to Petrie et al. (2001), seiches and storms may be responsible for most of the sediment movement in the south arm, and since the movement of water by these processes in the harbour likely would be affected by the Terminal construction, the Terminal likely would affect the resuspension and deposition of sediments.</p>	
DFO-05		<p>The modeling effort in the draft EA only focuses on the deposition of sediments immediately after dredging and does not address the issue of resuspension. The fine-grained sediments that are recently deposited from dredging activities can be expected to form a fluff layer that can be easily resuspended and transported over large distances even under low shear stress conditions. It has been shown that these flocculated sediments can be resuspended at shear stresses as low as 0.01 Pa which correspond to flow velocities on order of 5cm/s (Law et al. 2008; Milligan et al. in prep). These floc layers have a high affinity for surface reactive contaminants making them available for uptake by suspension feeding organisms (Milligan and Loring 1997). Understanding the exact impacts of these contaminant laden sediments on the benthic communities requires further investigation.</p>	<p>The modeling effort presented in Appendix A focused on the deposition of sediments immediately after dredging. However resuspension is expected to occur, and may be an issue in the South Arm due to contaminant levels. An additional model run was conducted using over a representative range of hydrodynamic conditions (including occurrences of higher seiche currents, estuarine and anti-estuarine circulation events) with critical shear stress for re-suspension lowered to 0.01 Pa. The objective was to investigate the fate of resuspended sediments after dredging operations at the pier. The modeled thicknesses of dredge plume deposits shown on Figure 3 (lower panel – Container Terminal) in Appendix A were assumed as initial conditions (i.e. no deposits outside the South Arm). The results are consistent with earlier analyses, in that resuspension would tend to re-arrange the dredge deposits by moving them further up the South Arm. A very small fraction would also deposit in the Southwest Arm (in the order of 0.05 kg/m<sup>2</sup>). There would be virtually no deposition in the Seaward Arm. Resuspended sediment concentrations in the water column would be less than 2 mg/l in the Seaward Arm, less than 5 mg/l in the Southwest Arm and vary between 2 and 20 mg/l in the South Arm. It is noted that: modeling assumptions and uncertainties described in Appendix A still apply (e.g. constant settling velocity, non-inclusion of flocculation to be conservative) modeling of physical variables (currents, sediments) cannot determine the full (including biological) impact of contaminated sediments on benthic communities.</p> <p>See responses to DFO-02, DFO-12 and EC-02</p>

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			Details on the additional modeling can be made available to DFO upon request.
DFO-06		Cutter suction dredges have in the past been responsible for the release of fine grain material back into the dredged environment during the dredging process either by dewatering or overflow due to filling the catchment area (Kranck and Milligan 1990). New technology as outlined in the Sydport draft EA should rectify this situation during the dredging of the fine grain material but it is essential that no dewatering occurs when occupying regions with high contaminant load. Vessels with sensors that record total suspended solids (TSS) are now routinely used during dredging process and can monitor the release of dredged material which will be included in the Sydport dredging activities. Due to the possible release of contaminants and fine grained material during dredging a monitoring program should be put in place during the dredging process to ensure that levels remain low. There is concern that contaminants associated with the fine grained fraction will be lost during dewatering of the spoils. Monitoring and additional mitigation of contaminant levels in the supernatant released back to the harbour will minimize this risk.	As noted in EA Sections 2.1.3.2 and 6.1.4.1, no vessel dewatering of the dredged material will occur when dredging of silts. Controlled dewatering will occur when the vessel is dredging coarser grained and relatively less contaminated materials as noted in Section 6.1.4.1. Onboard monitoring of turbidity will take place during dewatering. As noted in Sections 2.1.3.2 and 6.1.4.1, monitoring of turbidity will take place during the controlled dewatering of the infilled cell.
DFO-07		The need for maintenance dredging in the outer harbour has not been addressed in the draft EA. Deepening of the channel in this high energy, sand dominated environment could lead to significant infill of the dredged channel over relatively short timescales. One of the MIKE models from DHI or the commonly used CERC equation to calculate long shore drift should give an idea of the time required for the infill of the channel in the outer harbour. Model results should be presented in the draft EA with a list of parameters used to run the model to determine channel infill rates. If maintenance dredging is require, the footprint of the dredge area cannot be consider part of the compensation as the habitat will not be allow to revert to a natural state with continued dredging. Also if maintenance	Based on discussions with two operators at local marine terminal facilities in Sydney Harbour, there has been no maintenance dredging required at these existing berthing facilities (one of which has been operational for over 30 years). Still, the possibility of maintenance dredging in the Outer Harbour has been addressed in the engineering study (CBCL 2009) using the same models as used for the EA. Modeling was conducted for calm conditions, and for the 1-year storm with the same inputs as described in the EA for modeling storm-induced resuspension. The results do not show that the seaward section of the channel would infill faster than that in the South Arm. Most of the sediment movement in the Seaward Arm occurs near the shoreline in the surf zone, e.g. along the South Bar. Additional analyses of historical air photos show that sediment movement at the South Bar, which has largely been contained by groins, is not likely to affect the channel. In summary, based on available data and modeling, maintenance dredging will not likely be required during the life of the project. Still, it will be advisable to monitor the channel depths on a regular basis. The detailed analyses can be made available to DFO upon request.

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		<p>dredging is required, there is a possibility that another Section 35(2) Fisheries Act Authorization will be required at that time (Standard assessment for dredging is that after 5 years would be considered a new HADD and thus require an authorization).</p>	
DFO-08		<p>In general, the information contained within the draft EA is comprehensive; however, it assumes that the zone of impact is limited to the dredging and infilling areas. Issues of concern are related to the potential effect of dredging the channel and infilling to the near shore area, and their potential impact on natural populations of lobster and other species. The limited spatial scope of the EA with regards to potential effects within Sydney Harbour does not take into account connectivity in the marine ecosystem beyond the 10 km x 150 m dredging channel width. Information contained within the draft EA is insufficient to determine that there would be minimal or no disturbance to the lobster population within this area or beyond. Lobster and rock crab fishing takes place within the area (inside and outside Sydney Harbour, excluding the closed area); however, no lobsters were observed during the 2 day underwater survey on 7 and 11 January 2008, it might first appear as if lobster do not use this area. This is confounding because lobsters are known to migrate inshore and to shallow waters in the spring, and they return to deeper waters in the fall. This may be the reason for high catches in the project in the fall of 2008 and why none were observed during the January survey. Furthermore, recently settled juvenile lobsters, and perhaps until they reach 34 years, seem to remain in shallow waters and might occur in the near shore areas adjacent to the channel, but these were not surveyed. There is a lack of information related to seasonal changes of spatial distribution of lobsters, which would be necessary for establishing a baseline to determine long term effects of this project, positive or negative. Suggestions for additional research include a) continue the recent sampling within the proposed dredging channel after the project is initiated, and b)</p>	<p>The issue of seasonal lobster movements within Sydney Harbour was explored in detail during the research program conducted the Bras d'Or Institute for Ecosystem Research of Cape Breton University during the summer and fall of 2008. This research consisted of interviews with local lobster fishers, an experimental lobster fishery in the proposed dredge channel and in the South Arm of the harbour, and a tag and release program to attempt to track lobster movements (Hatcher, 2009).</p> <p>The general conclusion drawn upon completion of this research program was that lobsters tend to migrate from the near shore areas of the Seaward Arm during the Autumn months into the softer sand and mud seabed in the central channels of the harbour. The tag and release program revealed that lobster were highly mobile during this time, and each of the four lobsters that were recaptured had moved further out in the channel toward the mouth of the harbour. While results were not sufficient to determine the precise movements of the lobsters once they leave the channel, it is generally assumed that the lobsters move out into the deeper waters of Sydney Bight for overwintering.</p> <p>A monitoring program will be developed in consultation with DFO to assess the progress and results of the HADD compensation projects. This monitoring program will include lobsters, and will provide additional information on their movements within the harbour and on their response to habitat enhancement projects.</p> <p>Reference: Hatcher, BG, Squires KE, MacCormick EA. 2008. Assessing potential change in the marine ecosystem goods and services provided to Cape Breton fishermen by the construction of a proposed container terminal in Sydney Harbour, Nova Scotia. Bras d'Or Inst. Res. Publ. No. 46, 65pp, Cape Breton University, Sydney, N.S.</p>

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		<p>a lobster collector study for Sydney Harbour and outside the harbour to address lobster settlement rates and biodiversity before and after the project is initiated.</p>	
DFO-09		<p>As often with EA reports, the approach to cumulative effects assessment is flawed. The document takes the approach, "...it is assumed that the existing status or condition of each VEC reflects the influence of other past and current projects and activities occurring within or outside of the Project area." This approach does not reflect the cumulative impacts but is frequently used to minimize the magnitude of impacts in relation to existing impacts. For example, the cumulative effects assessment for noise should consider the impact of noise presently in Sydney Harbour and assess the potential impacts from a predicted increase in noise from the project as well as other proposed projects. The EA does address the current impact but simply states there is noise. The EA goes further to justify the potential increase in noise by stating, "Fish in Sydney Harbour are currently and routinely subject to the noise from passing vessels."</p>	<p>As noted, the existing status of each VEC reflects the influence of other past and present project activities including (in the comment example) present/ ongoing noise in Sydney Harbour from passing vessels. This forms the baseline for cumulative effects assessment. It is agreed that underwater noise impacts were assessed in a qualitative manner given the relatively low vessel traffic (Project and cumulative) and customary exposure of species present in the harbor to both industrial and natural ambient noise. There are no species normally found in Sydney Harbour known to be highly vulnerable to increased levels of industrial noise and therefore a qualitative approach was considered appropriate.</p>
DFO-10		<p>Given the scale of fish habitat destruction and harmful alteration, compensation will be the main form of mitigation for these impacts. Without an understanding of the proponent's ability to compensate for this loss of habitat, it is difficult for DFO to determine the significance of the potential impacts of the project on fish habitat. Some general compensation proposals have been provided, however it does not appear much consideration has been given to the viability of these projects. For example the document states, "The South Arm is a priority area for habitat compensation projects" however there is no consideration whether the soft sediments of the South Arm will support habitat enhancement structures. There are also concerns that hard structures could encourage species to burrow under the structures into contaminated</p>	<p>Project dredging and infilling will result in the harmful alteration, disruption and destruction (HADD) of fish habitat. The proponent is committed to finding and implementing suitable fish habitat compensation. To date, consultants hired by the company, independent consultation, and a study by the Bras D'Or Institute for Ecosystem Research at the University of Cape Breton have identified several opportunities for suitable compensation (see EA Section 6.1.4.1). These opportunities will be further studied and a compensation plan provided to DFO for their consideration as part of the HADD Application and compensation agreement required for DFO project authorization under the Fisheries Act. It is understood that DFO will not issue their authorization for the Project to proceed without this agreement.</p> <p>The EA provides some examples of the potential compensation projects, and additional examples are provided below based on the Bras D'Or Institute draft report (Section 6, Hatcher et al., 2008) that became available at the end of December 2008. This report includes valuable input from the fishing community on the distribution of the fishery and their perspective on habitat compensation needs.</p>

**TABLE K1 Government Comment Disposition Table**

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		<p>sediments. Monitoring should also be further detailed which will include a monitoring period to determine the effectiveness of the compensation projects. Further examination of the possible compensation options needs to be provided.</p>	<p>Further work needs to be done with the ecologists at the University and the fishermen to refine the habitat information they have provided and locate sites within the harbour, as well as to the east and south of the harbour mouth, where habitat features are limiting productivity. It is the opinion of those involved in this work that suitable compensation can be found in the harbour, and it is the expressed view of the fishermen that the work is done in this area. Validation of the potential of specific sites will be done in the next phase of the project and include surveys in the summer months when the habitats are at their most productive and utilization by fish can be seen.</p> <p>Conditions in this industrial harbour present unique challenges for the design of physical habitat rehabilitation and development. While the literature and experience of the consulting team and the University provide many examples and techniques for compensation there is still much to be learned about conditions in the harbour and the results of the compensation works. To this end we will have to do more study before the work is done monitor the results for a period of time. As predicted in the EA the study team is confident that habitat compensation can successfully be undertaken in some configuration, and adverse environmental effects will be mitigated to non-significant levels on a residual basis. The additional study proposed is to help design an effective compensation program and refine mitigative measures.</p> <p>The studies to be done include further dialogue with the fishermen to identify potential sites, diver and video assessment of these areas, and water temperature, salinity and secchi disc measurements over the seasons to define the water parameters, plus information on the bearing capacity of the substrates and siltation rates. With this information effective compensation designs can be done. The resulting plans will form the basis of consultations with DFO on a final plan.</p> <p>The losses of habitat in the infill areas for the terminal and dredge spoils are all in the South Arm where there is no fishing due to contamination of the sediments. Our knowledge of the use of these habitats by the commercially caught species is limited because of the closure. However, the experimental lobster and crab fishery in the fall of 2008 (Hatcher et al., 2008) shows similar densities of these species to those found in the northwest arm. Video of the terminal area and two other sites in the south arm show habitats and food web species suitable for habitats of the commercial species. "Despite its long history of industrial and domestic pollution, the South Arm supports considerable biomass of large animals, possibly because of its longstanding protection from fishing mortality, and also as a result of organic inputs in domestic sewage" (Hatcher et al., 2008).</p> <p>"The most productive fishing zones are located on the margins of the outer reaches of the harbour where the substratum is coarse and the habitats diverse; and in the</p>

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			<p>central channel where the sediments are coarser than clay-silts and well flushed by tidal, wind-driven and estuarine circulations. The north west and South arms of the harbour are characterized by fine mud-clay sediments and produce less catch, but contain 'hot spots' where the bottom is harder or broken that support levels of CPUE (catch per unit of fishing effort) comparable to that of the more productive regions" (Hatcher et al., 2008).</p> <p>The first priority for habitat compensation is "like for like" habitat in the same area and for the same stocks of fish. The South Arm has contaminated sediments that make compensation for benthic habitats in this area difficult since the work may suspend contaminated sediments or encourage lobster to burrow into the sediments more than they do now. Videos in the area show depressions dug in the sediment by lobsters are common so perhaps providing a more attractive habitat with clean burrow area would be a benefit. Design of habitat compensation work in this area would have to address these issues. One advantage of working in the area is that it is considered to be a refuge area for the lobster and crab during the spring through fall months and there are warmer fresher water sites preferred by berried lobster. This area would contribute stock to the overall fishing in the area. The lobster and crab move out of the area in the fall and winter due to cold-water temperatures. Enhancing habitat in a refuge area is very attractive but would require some novel design.</p> <p>The next priority would be to move the compensation work out of the closed area into other parts of the harbour. From the information provided by the fishermen, there are extensive lobster grounds in the outer harbour, as they list every area except the shipping channel as fishing grounds; the fall survey showed the channel would also be a lucrative fishing area at that time of year (Hatcher et al., 2008). These areas may hold the potential for habitat enhancement. Further collaboration with the fishermen to identify habitats in finer detail within these zones along with video transects of the poorer productive areas should identify specific areas for lobster and crab habitat enhancement. The other opportunity is the Northwest Arm that has central areas that are not identified as fishing grounds. Low currents in this arm may result in the central areas being a deposition area, but surveys of the habitats and substrate type should produce opportunities for habitat development along the edge of the existing habitats and as in the outer harbour opportunities for enhancement of the existing habitats especially adjacent to what are termed "hot spots" by the fishermen. This is particularly promising since the fall fishery shows lower densities of lobster and crab here than in the outer parts of the harbour implying a weakness in the habitat that can be enhanced.</p> <p>Compensation for the dredged channel area could also be found in the harbour adjacent to the work. The channel is now a productive habitat and is a migratory</p>



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			<p>route for lobsters moving from summer to winter habitats. It is expected that the habitat productivity in this area will recover quickly since the bottom sediments will be the same and light and depth conditions will still be within the same habitat ranges. Doing compensation work in the channel is conditional on the assurance that the channel will not silt in requiring additional dredging in the future. Habitat compensation is best done where it will continue to increase productivity for the foreseeable future without disturbance by other human activities. Oceanographic modeling has predicted a very low rate of siltation in the developed channel (see response to DFO-07The other aspect is that the channels are not readily available to the fishery and may be subject to disturbance from the shipping traffic. Due to depth and light penetration this area may be less productive than the shallower areas.</p> <p>The scallop beds in the harbour may also present an opportunity for enhancement. While they do support a limited commercial fishery and SCUBA diving fishery, the available information indicates they are of low productivity.</p> <p>A third opportunity is to look at the herring fishing and spawning areas identified by the fishermen. These areas typically have the water circulation properties that attract spawning herring. Spawning success depends of the substrate shape and on plant growth. Habitat enhancement of these areas aimed at providing improved spawning habitat and egg retention conditions would support this important species in the food web.</p> <p>If there is not enough compensation area within the harbour then similar investigation of opportunities outside the harbour to the east and south will be looked at as the water currents indicate a linkage between the harbour and these areas.</p> <p>All of these physical habitat compensation projects have considerable unique aspects to them because of the contamination and circulation properties of this estuary combined with being an industrial harbour. Any physical habitat compensation work in the harbour will require a robust monitoring program to test the efficacy of the physical habitat work and the productivity increase and health of the fish and their suitability for the fishery.</p> <p>The report by Hatcher et al. (2008) has identified several HADD compensation possibilities as proposed by the fishermen and supported by the literature; they are summarized in Table 9 from Hatcher et al., 2008 shown below. The major proposal was the development of artificial reefs. This is basically what is proposed above; that is to provide the hard diverse bottom type to support plant growth and cover for all life stages of benthic fish. The objective is to increase the biodiversity, diversity of physical habitats, and more 3-dimensional shape to the benthic habitat in the lobster/crab areas, shell bottom for scallop settlement, or conditions that retain herring</p>

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Comment No.	Originator	Question/Statement	Response
			<p>spawn.</p> <p>Municipal sewage collectors/treatment from parts of the North Sydney, which are not connected to the sewage treatment plant, would improve the water quality in the harbour. The harbour is closed by Environment Canada for shellfish harvest due to coliform contamination. This is a direct connection between this pollution and the productivity of the fish habitats and, in particular, the availability of shellfish to the fishery. A clean up of the harbour is a potential project if the coliform counts will be reduced significantly.</p> <p>Population enhancements (e.g. lobster hatchery) are low on the hierarchy of DFO preferences for compensation. DFO prefers naturally productive habitats as compensation. This stocking of lobsters would have to be an ongoing effort to compensate for permanent habitat loss.</p> <p>Although enhancement of ecological efficiency of fishing (e.g. fuel reduction methods) may provide general environmental benefits, the improvement to the productivity of the fish habitat would be hard to show.</p> <p>Moving lobsters ahead of dredging operations would be considered as mitigation for the impact of the operation on the lobster. This is considered mitigation to limit direct mortality of these species rather than habitat compensation.</p> <p>It might it be possible to have the dredge remove additional material where silt or contamination has built up, and productivity could be improved by its removal. This is a possibility but there would have to be assurances that the silt buildup or contamination would not just be returned to the site by water currents in the harbour. If it could be shown that the silt build up came from an activity in the past that is not reoccurring this would be an opportunity.</p> <p>Timing of dredge activity is very important to mitigate the impact on the lobster and crab as the experimental fishing indicated and noted in the EA. Additionally, it was noted that it remains unclear whether lobsters might over-winter on the soft bottom. A check to see if the winter water temperatures are below those preferred by over wintering lobster would answer this question. Lobsters were not seen in the winter benthic videos of the channel. It is expected that they move out to even deeper water with better cover.</p> <p>As in all current HADDs, the compensation work will have to be completed before the damage occurs or sufficient funds will have to be provided to a third party to complete the work or a bond will be posted to ensure the work is done including the monitoring.</p>

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			<p><b>Table 9.</b> Some options for compensation of Harmful Alteration, Disruption or Destruction of fish habitat in the Sydney Harbour.</p> <table border="1"> <thead> <tr> <th data-bbox="1119 285 1251 310">OPTION</th> <th data-bbox="1251 285 1570 310">ACTIONS</th> <th data-bbox="1570 285 1688 310">AGENT(S)</th> <th data-bbox="1688 285 1877 310">EXAMPLES</th> </tr> </thead> <tbody> <tr> <td data-bbox="1119 310 1251 435">Mitigation of negative impacts</td> <td data-bbox="1251 310 1570 435">Shift temporal window of dredging operations away from autumn season. Conduct dredging during periods of slow water circulation. Remove &amp; relocate species in path of dredge.</td> <td data-bbox="1570 310 1688 435">Project manager. Dredge contractor. Fishermen.</td> <td data-bbox="1688 310 1877 435">Relocation of lobsters prior to dredging in Casco bay. 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DFO-11		Distribution of macrofauna and habitat descriptions from a visual examination of a 2 day underwater	Additional samples of sediments and species will be taken as part of the HADD compensation program that will be developed in consultation with DFO. This																																

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		<p>video survey (7 and 11 January 2008) was limited to 160 m transects, which are only 10 m broader than the proposed 150 m wide dredging channel. As the project would have an impact on the adjacent habitat, biological information does not match the scope of this project (particularly given its potentially long duration). Broader transects and biological samples of sediment and species to shallow waters on both sides of the dredging channel would have been desirable to establish a baseline for long-term monitoring. The connectivity of the proposed dredging area to the rest of the harbour needs to be considered. Other information available from Hatcher (2008) may provide additional insight. Suggestions include: a) characterization of the macrofauna and habitat for areas outside the dredging and infilling areas within the harbour, and collection of samples from within and outside the harbour to set a baseline of biological diversity for monitoring after development is initiated, and b) lobster mark and recapture studies within and outside the fishing season could provide useful information on connectivity and potential impact.</p> <p>With regard to eelgrass habitat, these seem to be prevalent on the inner Harbour where the infilling would take place. These areas are known to be refuge for many species and perhaps nursery areas for some of the fish (e.g., herring for example) that might use these areas. No information is presented to evaluate its significance and potential impacts of infilling.</p>	<p>information, coupled with the detailed information that is currently provided in the draft EA report, will provide a solid baseline of data from which future sampling and monitoring programs can be developed.</p> <p>The monitoring program developed for the HADD compensation program will include monitoring of lobster response to habitat enhancement projects post-dredge.</p> <p>Based on the results of the underwater video survey conducted in the South Arm of the harbour, eel grass is present primarily in the near shore area on the North side of the proposed terminal site. It is possible that infilling for the terminal will disrupt eel grass habitat in this one particular area. Among other habitat enhancement projects planned for the HADD compensation program, the development of additional eel grass beds has been proposed for the near shore area in the South Arm in order to provide refuge and nursery areas for herring and other fish species. (See comment DFO-010 and Section 6.1.4.1 of the draft EA report)</p>
DFO-12		What are the potential impact to larvae, lobster, rock crab and other fish species?	The potential environmental effects to benthic organisms and marine fish species are assessed in Section 6.1 and 6.2 of the draft EA report.
DFO-13		What TSS and contaminant levels will be acceptable when dewatering sediments?	Several mitigation steps will be put in place to reduce the resuspension of sediments and contaminants during dredging and infilling. As noted in EA Sections 2.1.3.2 and 6.1.4.1, no vessel dewatering of the dredged material will occur when dredging of fine-grained silts. Controlled dewatering will occur when the vessel is dredging coarser grained and relatively less contaminated materials as noted in Sections 2.1.3.2 and 6.1.4.1. Onboard monitoring of turbidity will take place during dewatering. As noted in Sections 2.1.3.2 and 6.1.4.1, monitoring of turbidity will

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
			<p>take place during the controlled dewatering of the infilled cell. The feasibility of using sediment containment curtains or structures during dredging in the South Arm is also being considered and evaluated (see response to EC-01), and several mitigative measures are planned for the dewatering of spoils during the terminal infill (see Section 2.1.3.2 and 6.1.4.1).</p> <p>In addition to these mitigative measures, the relevant government authorities will set guidelines for TSS and contaminant levels and the dredging and infilling operations will comply with those limits.</p>
DFO-14		<p>The report states that infilling of wetlands also results in destruction of fish habitat. The report states that this will be covered off provincially through a wetland compensation package - there is still a requirement for Section 35(2) Authorization and associated compensation under the Fisheries Act.</p>	<p>Comment noted. Any harmful alteration of fish habitat associated with wetland alterations will be addressed through the HADD process.</p>
DFO-15		<p>During operation of the terminal there should be monitoring for invasive species.</p>	<p>If not controlled and managed properly, discharged ballast water from incoming vessels can potentially introduce invasive aquatic species. As noted in Section 6.1.3 of the draft EA report, all Project-related vessels entering Sydney Harbour will be expected to comply with Transport Canada's legislation and regulations, TP 13617 "A Guide to Canada's Ballast Water Control and Management Regulations".</p>
DFO-16		<p>How will Compliance Monitoring be conducted for dredging and how will regulators be informed of the results?</p>	<p>Compliance monitoring will be developed in consultation with regulatory officials and requirements including conditions of approval.</p>
DFO-17		<p>Will the Environment Management Plan form part of the contract for the dredging operation?</p>	<p>Yes.</p>
DFO-18		<p>Consultations with First Nations are in relation to the regulatory approvals rather than the EA.</p>	<p>Comment noted.</p>
DFO-19		<p>What mitigation is available for dewatering if TSS or contaminant levels are found to be unacceptable?</p>	<p>Water is discharged from the CDF through a controlled overflow point similar to the one shown in EA Figure 2.10. The CDF itself will act as a settling pond to control TSS and potential contaminants that may be encountered. It is anticipated that the CDF will remove the majority of TSS simply from settling within the CDF. As an added protection measure, a silt curtain will be installed around the water overflow point to further reduce TSS levels. This silt curtain essentially creates an additional settling pond around the water discharge point. This type of protect measure is regularly and successfully employed on construction project as a means of controlling TSS. One such example was during construction of the Battery Point Barrier installed as part of the Muggah Creek Remediation Project.</p>
DFO-20		<p>Page 131 - Dredging is considered harmful alteration</p>	<p>Comment noted; text changed in Section 6.3.1.</p>

**TABLE K1 Government Comment Disposition Table**

<b>Comment No.</b>	<b>Originator</b>	<b>Question/Statement</b>	<b>Response</b>
		of fish habitat, not loss of habitat.	
DFO-21		Page 134 The EA notes, In Nova Scotia waters there is no commercial or subsistence exploitation of marine mammals." This should be corrected as seals are commercially harvested in Nova Scotia.	Comment noted; text changed in Section 6.3.1.
DFO-22		The EA states on page 197, "Compensation by the Proponent through the HADD process will mitigate these short-term effects on the availability of commercial species." HADD compensation addresses the long term impacts of habitat loss. Given the time required for habitat enhancement to establish them, compensation does not address short-term effects.	Comment noted and text modified
DFO-23		Page 217 states "Fish catch data will be monitored by DFO..." This is different than follow up requirements where the proponent may need to examine the impact of the project on species availability.	Comment noted
DFO-24		If the second CDF is not build, where will the contaminated sediments be sent?	If it is determined that there is no need for the second CDF, all material will be placed in the main CDF
DFO-25		Page 226 There will be monitoring requirements associated with the HADD if an Authorization is issued.	Comment noted
HC-01		Table 4.5 (Ambient Air Quality Monitoring Results for Sydney, NS) - Nova Scotia Maximum Permissible Ground-Level Concentrations that are cited in the report contains acceptable annual concentrations of sulphur dioxide and nitrogen dioxide, which are not presented in the table. In addition, the proposed Canada-Wide Standard guidelines ( <a href="http://www.ccme.ca/ourwork/environment.html?category_id=108">http://www.ccme.ca/ourwork/environment.html?category_id=108</a> ) for ozone and particulate matter (PM2.5) are not presented in the table. In order to compare to potential human health effects, please present all applicable guideline values in Table 4.5.	Table 4.5 has been updated.
HC-02		Section 6.5.4 (Analysis, Mitigation and residual Environmental Effects Prediction - Air Quality) Health Canada would advise that the report compare three predicted air quality scenarios: 1) baseline alone (i.e. no project), 2) baseline plus project alone, and	Baseline air quality scenarios are described in Section 4.4 of the EA report. Baseline plus project air quality scenarios are described in Section 6.5. Cumulative effects scenarios for air quality are described in Section 8.0. One of the distinguishing features of this project is the intended use of shore-based electrical power, rather than ship-based fuel oil-power for the cargo handling and hotelling demands of the

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		<p>3) baseline plus cumulative (i.e. project plus baseline plus all other approved or planned projects). Please provide additional information about project-related changes in air quality parameters to assist Health Canada in determining the potential for human health effects associated with exposure to air contaminants as a result of the construction and operation of the project.</p>	<p>ship. The remaining emission sources are the service vehicles and cranes. A full dispersion analysis of these emissions was not considered necessary because they spatial density of emissions is likely to be comparable, or lower than those of light industrial areas. The displacement of emissions for power generation to the utility grid is a main reason for this. The emissions associated with this displacement have been provided elsewhere in this document. We accept the ability of the utility to provide this power within their regulatory operating permit as evidence that these emissions have not significant environmental or health effects. Construction related emissions are extremely variable, but the equipment and techniques used in the construction of this project are not likely to be significantly different from those released in the construction of a shopping centre, or downtown office complex, highway interchange or subdivision. Most particulate matter is released by mechanical abrasion at construction sites, and is in the coarse range, rather than the fine range that is of Health Canada's concern. The "construction dust" can be well controlled, and is easily monitored visually by on-site staff as well as environment officials. The contaminants that we assume are of interest to Health Canada are the fine particulates, sulphur oxides, and nitrogen oxides, predominantly from diesel engines at construction sites. At a minimum, this equipment will be over 600 m from the nearest residence, and for the most part beyond one kilometre from the nearest residence. In addition, we reiterate that the spatial density of operating equipment would be comparable to any urban construction project. Notwithstanding these factors, the proponent will incorporate provisions into contract documents to ensure that the mitigation of dust, and the use of properly maintained construction equipment is binding on the contractors.</p>
HC-03		<p>Section 4.5 (Acoustic Environment) - The report states that field notes are attached in Appendix C. These field notes are absent from Appendix C. Please provide the additional notes in Appendix C as they may provide more information about the types of noises heard during the sampling events.</p>	<p>The field notes have been added to Appendix C.</p>
HC-04		<p>Section 4.5 (Acoustic Environment) - The document states that the three selected noise monitoring sites "represent some of the nearest residential properties". There is no indication that the three selected noise monitoring sites are representative of the most potentially impacted receptors. In addition to residences, Health Canada also considers other noise receptors as being potentially sensitive, including day-cares, schools, hospitals, seniors' residences, seasonally occupied dwellings and places of worship. Please provide a discussion about</p>	<p>Within about 1 km of the proposed facility, predominantly residences are found. There are two buildings with public uses. The Women's Institute of Nova Scotia Hall and the Church of the Incarnation are on Edwardsville Road, about 700 m from the property boundary of the proposed facility. Other public buildings are separated by at least 2 km from the site. The selected properties for discussion are representative of clusters of homes relatively near the site. In the field, the selection of monitoring locations is always subject to certain constraints. These involve security of the equipment, absence of dogs, willingness of the homeowner, access to external power, and a general sense that the location is "like" the rest of the area. Despite these compromises, it is considered unlikely that locations any nearer the project area would be subject to background sound pressure levels that are significantly</p>



**TABLE K1 Government Comment Disposition Table**

<b>Comment No.</b>	<b>Originator</b>	<b>Question/Statement</b>	<b>Response</b>
		the rationale for selecting the locations of the baseline monitoring and identify if other receptors may be more impacted by project noise than those locations assessed in the baseline sound monitoring.	different from those measured.
HC-05		Section 4.5 (Acoustic Environment) - The document states that the baseline noise monitoring included traffic and natural sounds (including wind in trees, birds, and animals). In order to determine a true baseline sound level, it is important that the proponent clarify the contribution that all significant noise sources have on the baseline sound levels so that the impact by the project on baseline levels is transparent. Please provide clarification as to the contribution of all significant noise sources identified on the baseline sound levels.	It is not possible to fractionate the sound pressure levels and attribute them to all of the sources. This area is influenced by the sounds noted, birds, animals, and wind in the trees. There is also some hum from the urban environment, traffic noise from Sydney, across the harbour, and the contribution of waves breaking on shore, occasional vessels in the harbour. There are no individual sounds that dominate the local acoustic environment. The natural sounds are not seasonally maximized for example by "peepers". The sounds of gunshots were removed from the averaging.
CEAA-01	Derek McDonald	P.5 says that CEAA is the FEAC because the EA is multi-jurisdictional. Although that is the case now, the Agency was the named the FEAC prior to provincial involvement at the request of the RAs.	Comment Noted
CEAA-02	Derek McDonald	The report, when in final form, will serve as the screening report for the RAs. Therefore it will need sign-off pages for TC, DFO and ECBC. The FEAC will ensure that the RAs provide the format for addition to the report.	Comment noted
CEAA-03	Derek McDonald	When finalizing the report, the Public and Aboriginal consultation sections will need to be supplemented to reflect their activity. The FEAC will work with the consultant and the RAs when the time comes and will provide the relevant text for insertion into the report.	Comment noted
CEAA-04	Derek McDonald	there are some typos, etc. in the document (for example, in section 4.7.3 (Biology of Sydney Harbour Sediments), there is reference to a "Mircrotox" (sic) test, which of course should be "Microtox").	Comment noted
TC-01	Carl Ripley	pg. 6 Section 2.0 - Sydport Project activities include: - converting two waterlots to confined disposal facilities (CDF): one extending from the shore of the Sydport undeveloped site which will serve as the terminal foundation, and one potentially on the	Comment noted

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		adjacent side of South Arm which will serve as a disposal area for dredge materials unsuitable for construction; To date, no Application to NWPP has been made for the potential "contingency" disposal site - this site must be applied for and authorized through NWPP prior to use.	
TC-02	Carl Ripley	infilling a portion of Barachois Creek to construct a rail bridge which will provide access to Sydport -- To date, no Application to NWPP has been made for the infilling of Barachois Creek or the Rail Bridge crossing Barachois Creek. The infill and bridge crossing require application to and possibly authorization by NWPP prior to commencing work on these project components.	Comment noted
TC-03	Carl Ripley	pg 20 Section 1.5 - the Canada Border Service Agency needs to be added to the list of FAs	Text in section 1.5 changed to reflect their status as an expert department.
TC-04	Carl Ripley	pg 29 Section 2.12.2 - "Terminal Security Plan" bullet - "outlines the guidelines for security with the International Ship and Port Facilities Security (ISPS) Code with Canadian Modifications and Transport Canada Security." Since this is a terminal in Canada, pls alter the text to read..." Terminal Security Plan - outlines the security procedures required by Transport Canada under the Marine Transportation Security Regulations (MTSR)." The ISPS Code is an international piece of legislation. In Canada, the requirements of the ISPS code have been written into the regulations and actually go beyond the requirements of the ISPS code. As such, the terminal will have to follow the requirements of the regulations	Text modified in Section 2.12.2.
TC-05	Carl Ripley	pg 183 - Section 6.7 Vessel Navigation ( Effects Assessment) Transport Canada is requesting that Navigation NOT be included as a VEC in the EIS as per the following rationale: Transport Canada is now addressing Watercourse Navigation and the Potential Effects on the Public Right of Navigation in environmental assessments in the following manner...Transport Canada regards effects that may be caused by a project on people's right to navigate and/or people's safety while navigating as	Comment noted; EA updated throughout to remove vessel navigation as a VEC

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		similar to effects that relate to people's health and socio-economic conditions. Therefore, these effects are now only considered in an EA if they are indirect environmental effects.	
PWGSC-01	Troy Young	Section 1.5 outlines the CEAA triggers for the proposed project and identifies the federal Responsible Authorities. This section references the Law List Regulations for Transport Canada and DFO, as well as a transfer of a federal waterlot for Transport Canada, identifying both DFO and TC as the two federal RAs. It is my understanding however, that the existing rail lines to be used in this proposed project are owned by Enterprise Cape Breton Corporation (ECBC). As well, if ECBC is providing financial assistance to the proponent to enable the project to be carried out, then funding would be another CEAA trigger making ECBC an RA.	Text in section 1.5 updated.
PWGSC-02	Troy Young	In section 2.0, there is reference to infilling of a portion of Barachois Creek, the installation of a rail bridge, and the extension of the existing Sydney-Truro rail line. What work is required for this?	A significant portion of the containers "cargo" from the site is likely to be shipped from the facility by rail. The current rail line currently terminates at the southern side of Barachois Creek in the currently developed portion of the Sydport Industrial Park. In order to provide rail service to the new container terminal, the existing rail line must be extended across Barachois Creek. EA Figure 2.1 outlines the necessary rail infrastructure required including the bridge structure. The work involved in constructing the crossing will include things such the placement of fill on the approaches, constructing concrete abutments and piling for the bridge structure.
PWGSC-03	Troy Young	Also, section 2.1.4 (Site Preparation), provides limited information on what is currently situated on the upland project site, are there any buildings or other infrastructure that require removal prior to construction?	The upland portion of the terminal will be situated on a "greenfield" site that is currently forested or open field. The site does not contain and buildings of other infrastructure that needs to be demolished for the terminal site.
ECBC-01	Kevin Elworthy	From our point at ECBC there is a lot of info contained in the document. Most of which deals with the scientific and marine based side of things. These are areas that we do not have the in house expertise to comment on..(DFO and Transport area of expertise) However I noticed that we were not listed as a RA on the project. If this file moves forward we do own the rail line from Sydney Junction to the entrance of the Sydport Park which would be a land trigger. Additionally there may be the possibility of	See response to comment PWGSC-01

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		<p>some type of federal assistance to the project which will also trigger us. As previously discussed Troy will be also reviewing the document on our behalf and providing comments</p>	
EC-01		<p>The Proponent recognizes that the Fisheries Act (sub-section 36(3)) prohibits the deposit of a deleterious substance in waters frequented by fish, and that EC is responsible for administering and enforcing Section 36 of the Fisheries Act. As such, it is the responsibility of the proponent to ensure that activities are managed so as to prevent the release of substances deleterious to fish. Mitigation measures necessary to minimize or avoid impacts on water quality should be identified accordingly. It is indicated in the draft report that contaminated sediments are present in the project area. Within, or adjacent to the areas to be dredged and the areas to be infilled, there is concern for resuspension or increased exposure of the marine environment to contaminants in the dredged material. The draft report indicates that engineered silt curtain(s) (page 15) will be installed; however, no additional details are provided. A conceptual silt curtain design should be included in the report, indicating depth, contact with the sea floor etc.</p>	<p>Several mitigative steps have been planned to reduce the resuspension of sediments during dredging, as outlined in response to DFO-13. The most significant step taken to reduce TSS levels is a commitment to use a trailing suction hopper dredge. In addition to using this specialized dredging equipment to control TSS levels, the proponent is also reviewing the feasibility of using silt curtains during berth dredging and during dewatering of the CDF.</p> <p>The feasibility of using silt curtains is largely dependent on final design details and dredging plans. At this time, a conceptual plan for the use of silt curtains has been proposed. At the CDF, silt curtains would be installed around the water discharge point (See comment DFO-19). Given the relatively low current environment at this location, silt curtains, would be anchored with a chain running the full length and would extend to the sea floor. Further investigation is currently underway to determine the feasibility and effectiveness of using silt curtains during dredging of the terminal berth. Factors influencing the feasibility and/or final design of silt curtains during terminal dredging will consider factors such as winds, currents, waves, and operational requirements of the dredging contractor. The final design and/or feasibility of silt curtains during terminal dredging will be developed in consideration of the expertise and experience of the selected dredge contractor and specific dredging equipment.</p>
EC-02		<p>The report also includes Plume study (Appendix A) and sediment data (Appendix E); however, limited quantitative assessment is included in the report in terms of re-suspended contaminated sediments (i.e., water quality, loadings, effects, and duration). Further information regarding the effects of the re-suspended contaminated sediments on the environment should be included in the final EA Report.</p>	<p>As noted in the response to comments DFO-02, DFO-03, a more detailed inventory of contaminant levels at depth on the South Arm is currently being developed by consulting the appropriate literature and contacts at the Bedford Institute of Oceanography. This information, coupled with further sediment samples that will be taken in advance of the HADD compensation program, will provide baseline data from which to guide further monitoring and sampling programs in the South Arm.</p> <p>As noted in the response to DFO-13, several mitigation steps will be put in place to reduce the resuspension of sediments and contaminants during dredging.</p> <p>As shown in the sediment sampling reports in Appendix E of the EA report, concentrations of metals and PAH's in samples taken in the South Arm were well below the probable effects levels (PELs) for these substances as defined in the CCME Sediment Quality Guidelines for the Protection of Aquatic Life. Given the mitigative measures proposed in the EA to control sediment re-suspension, the</p>

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
			contaminant levels in the small quantities of sediments that are re-suspended during dredging in the South Arm are not predicted to have any significant environmental effects on the marine environment.
EC-03		In addition, limited information is provided in terms of commitments for monitoring (Le. fish mortality, metals, TSS, etc.). For example, on page 132, it is indicated the approved compensation program (HADD permit) may have monitoring requirements. More information on the proposed monitoring program should be included in the final EA report. Information relating to parameters, frequency of monitoring, reporting schedule and action levels for immediate reporting to RAs, etc should be a part of the monitoring plan. EC would be willing to review any proposed monitoring plan.	The approved compensation sites will be monitored for the success of the habitat work in supporting the species of interest to the fishery and the development of the biological community in and on that physical habitat. Reports would be made each year on the development of the biological community, the condition of the physical habitat that was built, and the use and density of fisheries species. Monitoring of TSS, metals, and fish mortality relate more to the construction and operations of the terminal and shipping lanes and would not normally be part of a habitat compensation monitoring program.
EC-04		Additional Questions -Coal is not planned to be shipped via this location. Other than petroleum products, what products would be shipped at/from this Terminal? Materials that will be used in the construction of the berth are not included in the draft EA report. The proponent should indicate if any marine preservatives are proposed to be used.	The terminal will not be shipping coal or petroleum. The terminal could potentially handle all types of cargo that are generally shipped in containers and acceptable to import into the country. The use of marine preservatives is not anticipated during construction of the Terminal.
EC-05		Air Quality It is indicated on page 168 that the use of a "cold dock" is "currently planned" to provide electricity to ships rather than having them use their auxiliary engines. How certain is it that this will take place, and if it is not certain, then there should be some recognition of the alternative (ships operating their auxiliary engines). Use of a "cold dock" involves some harmonization of the shore and ship side operations. How realistic is it that all or most of the ships will be able to match up and use the cold dock facilities?	Cold Docking is quickly gaining acceptance in the shipping industry as the preferred method of powering ships at dock side mainly due to the environmental benefits realized. Generally the limiting factor with cold docking is the availability of power at the terminal site versus the capability of container vessels to plug in. Based upon discussions with experts in port development, it is realistic to presume cold docking, or rather "cold ironing" as they refer to it, as the probable option for the Sydney Container Terminal. There are a number of factors that support this position. The target market for the terminal is new large modern vessels. Virtually all of these vessels are equipment for cold ironing. In addition, even many of the older vessels can accommodate cold ironing by using on-dock, barge mounted or ship mounted transformers. At least one company (CleanAir Marine Power) has developed an alternative system called Dual Frequency Multi Voltage Cold Ironing. DFMV could overcome the problem of many ships not being equipped for cold ironing.
EC-06		The estimated GHG emissions from the proposal are noted on page 169; however, there is no reference to the estimated air emissions. This is a simple calculation and should be included in the final EA report.	The majority of the air emissions resulting from a container ship hotelling event would include Sulphur Dioxide (SO <sub>2</sub> ) and Nitrogen Oxides (NO <sub>x</sub> ). The amount of SO <sub>2</sub> and NO <sub>x</sub> emitted during a container ship hotelling event at the proposed marine terminal was calculated. The calculation assumed two large (8,000 TEU) and two small (4,000 TEU) container ships at dock each week using the equivalent energy of

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
			three auxiliary engines (small ship 938 KW; large ship 2500 KW) running off electric power from the provincial grid. It was assumed that one large container ship would be running off electrical power 68 hours a week and for one small container ship 36 hours a week. The estimated emissions for SO <sub>2</sub> equaled 116 t per year and for NO <sub>x</sub> 48 t per year.
EC-07		It is indicated in section 2.10 that "in the case of accidental release... reporting and clean-up procedures will follow provincial emergency spill regulations as required". For notification purposes EC recommends that the Proponent call CCG 1-800-565-1633 to report any spills, as they may also be federal spill notification requirements. If the CCG number is used then both the appropriate provincial and federal government agencies will be advised of any accidental releases.	Text updated in section 2.10.
EC-08		It is indicated in section 7 that a site specific spill management plan will be prepared. Will the Proponent be providing this plan for review when it is completed? In terms of emergency planning, the following documents may be useful: Canada Standards Association (CSA) Emergency Planning for Industry (third edition of CAN/CSA-Z731-03) 2008 Emergency Response Guidebook (ERG2008) accessible at <a href="http://www.tc.gc.ca/canutec/en/guide/guide.htm">http://www.tc.gc.ca/canutec/en/guide/guide.htm</a> Council for Reducing Major Industrial Accidents/Conseil pour la reduction des accidents industriels majeurs (CRAIM) Risk Management Guide for Major Industrial Accidents (2002 edition) accessible at <a href="http://www.uneptie.org/pc/apell/publications/pdCfiles/CRAIM_PDF_EN.pdf">http://www.uneptie.org/pc/apell/publications/pdCfiles/CRAIM_PDF_EN.pdf</a>	Comments noted; Spill management Plan will be provided for review and comment upon completion.
EC-09		It is indicated in section 7.1.3 that some hazardous materials will be stored on-site. As such, the Proponent should be made aware of the potential applicability of the Environmental Emergency Regulations. The Environmental Emergency Regulations under Section 200 of the CEPA apply to	Comment noted. An environmental emergency plan will be prepared if required.

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		<p>any person in Canada who owns, or has charge, management or control of, a substance listed on Schedule 1 of the regulations where either the total amount of the substance or the single largest container on site is equal to or greater than that specified in the Schedule. Where either or both of the criteria are satisfied, that person must undertake a number of actions. The regulations identify the information that must be submitted to EC within 90 days after acquiring a scheduled substance at or above the specified threshold quantities. An environmental emergency plan will also be required for all facilities that store or use any of the scheduled substances at or above the specified threshold quantities. When preparing an emergency plan, the Proponent would be required to consider the following: the properties and characteristics of the substances; The commercial, manufacturing, processing or other activity in relation to which the plan is prepared; the characteristics of the place where the substance is located and of the surrounding area that may increase the risk of harm to the environment or of danger to human life or health; and the maximum expected quantity of the substance at the place at any time during the calendar year; The potential consequences from an environmental emergency on the environment or human health. Consequences are identified through the use of worst-probable-case and alternative scenarios (more information can be found in CRAIM 2002) (see below); A description of roles and responsibilities of individuals during an environmental emergency. The EC publication, Implementation Guidelines for Part 8 of the Canadian Environmental Protection Act, 1999 - Environmental Emergency Plans, provide direction on meeting these requirements. Reporting releases of substances scheduled under the Environmental Emergencies Regulations is a specific requirement under section 201 of the CEPA.</p>	
EC-10		Also in section 7.1.3 as diesel and other oils will be stored on-site for construction machinery, provisions	Comment noted; text changed in section 7.1.3

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		for the management of hazardous materials (e.g. fuels, lubricants, hydraulic oil) and wastes (e.g. waste oil) should be identified and implemented so as to ensure the risk of an accidental release is minimized. For example, refueling and maintenance activities should be undertaken on level terrain, at a suitable distance from environmentally sensitive areas including watercourses, and on a prepared impermeable surface with a collection system.	
EC-11		Wildlife and Habitat-Marine-related birds and "Marine mammals" are grouped together in Section 4.14. They should be considered under separate subsections as they do not have all the same sensitivities. Similarly, all species and habitats in the "terrestrial ecosystem" should not be grouped together, as doing so becomes too confusing in the environmental effects assessment.	Consideration was given to the above comment. All information is complete, organized and presented in the most efficient manner for this particular document and is consistent with the scoping document reviewed by federal agencies involved with this assessment..
EC-12		Migratory Birds- The EA should not only focus on assessing potential impacts on avian species at risk and species of conservation concern, but should also consider: areas of concentration of migratory birds, such as breeding areas, colonies, spring and fall staging areas, and wintering areas; breeding and nesting areas of species low in number and high in the food chain (e.g., eagles, osprey); species that are identified by priority ranking systems (Partners-In-Flight) (see Milko 1998 at <a href="http://www.cws-scf.ec.gc.ca/publications/eval/mig/index_e.cfm">http://www.cws-scf.ec.gc.ca/publications/eval/mig/index_e.cfm</a> ).	Research conducted for the EA indicated that the only area within Sydney Harbour that is known to host concentrations of migrating species or breeding colonies is at South Bar. As is described in the EA, South Bar is located on the opposite side of the harbour from the proposed marine terminal and there will be no substantive interactions between the project and this important bird habitat. Similarly, there will be no interactions between marine vessel traffic associated with the project and South Bar. See sections 4.14.2 and 6.3.4
EC-13		It appears that surveys for breeding birds have been conducted in the project area. Detailed methodology of those surveys with appropriate maps to show survey routes and point count sites, as well as survey results should be provided in the EA documentation. Information should also be provided regarding use of the area by birds during other life stages (e.g. migration, winter). Bird data should be provided for land birds, waterfowl, water birds, and shorebirds; and should describe bird use of coastal areas and other habitats where birds may be adversely affected, in addition to the project footprint.	A breeding bird survey was conducted on June 12, 2007. During the breeding bird surveys all habitats found within the proposed site were visited by a birder with 25 years experience and all birds heard or observed were recorded. Examples of all habitat types present in the Assessment Area were surveyed. The breeding status of each species recorded was determined using the methodology employed by the Atlas of Breeding Birds of the Maritimes program (Erskine 1992). Species identified but not exhibiting signs of breeding (such as flyovers) were classified as non-breeders. Species observed or heard singing in suitable nesting habitat were classified as possible breeders. Species exhibiting the following behaviours were classed as probable breeders: <input type="checkbox"/> courtship behaviour between a male and female; <input type="checkbox"/> birds visiting a probable nesting site; <input type="checkbox"/> birds displaying agitated behaviour; and



**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
			<p><input type="checkbox"/> male and female observed together in suitable nesting habitat.                      Species were confirmed as breeding if any of the following items or activities were observed:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> nest building or adults carrying nesting material;</li> <li><input type="checkbox"/> distraction display or injury feigning;</li> <li><input type="checkbox"/> recently fledged young;</li> <li><input type="checkbox"/> occupied nest located; and</li> <li><input type="checkbox"/> adult observed carrying food or faecal sac for young.</li> </ul> <p>The population status of each species was determined from existing literature. Lists of provincially rare or sensitive birds were derived from the General Status of Wildlife in Nova Scotia (NSDNR 2007) and Species at Risk in Nova Scotia (NSDNR 2007) while nationally rare species were derived from COSEWIC (2007) and SARA. Further information on the use of Sydney Harbour by waterfowl, water birds, and shorebirds is provided in the EA document in sections 4.14.2 and 6.3.4.</p>
EC-14		<p>On page 135, it is stated that the lack of detailed information available on the presence and movements of marine-related birds in Sydney Harbour is a key technical limitation of the assessment. Why then were coastal bird surveys not conducted for this project? On page 93, it is indicated that the presence of Common Tern was revealed during a breeding bird survey "on the property" in June 2007. Colonial nesting species are particularly sensitive to human disturbance; as such, further details should be provided. Details should include for example, the specific location of the species (please show on map in relation to proposed project), the number of birds found and their breeding status. Several types of migratory bird habitat are in decline in Nova Scotia, including mature coniferous forest, mature deciduous forest and mature mixed forest. This is of concern because certain bird species prefer mature forest habitat. Furthermore, some bird species, generally known as interior species, only prosper when the tracts of mature forest are relatively large and unfragmented (i.e., interior forest). It is desirable for projects to avoid causing further loss and fragmentation of these habitat types, and to avoid further fragmentation of the landscape...</p>	<p>Common terns were not observed "on the property", but were observed flying and foraging in the water off the coastline. The wording has been changed in the text to clarify this point. There was no evidence of Common terns nesting on the site. Research conducted during the EA indicated that Common terns do breed at South Bar, so it is not surprising to have observed Common terns feeding in the harbour. As described in Comment EC-12 and in sections 4.14.2 and 6.3.4 of the EA report, no substantive interactions or effects are predicted between the project and bird colonies on South Bar.</p>
EC-15		The Proponent should confirm whether there is	Field studies conducted during the EA classified the habitat types present on the

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		<p>mature and/or interior forest habitat that could be impacted by Project activities. If so, the following information and clarifications should be included in the final report: : mapping that identifies mature and interior forest habitat for migratory birds in both the study area and footprint area, along with a rationale as to why this habitat cannot be avoided through routing and siting of facilities; the total area (hectares) of mature coniferous, mature hardwood, mature mixed, and interior forest habitat for migratory birds that would be lost as a result of the project; a description of the specific steps taken to minimize losses of mature and interior habitat for migratory birds; an analysis of project impacts on mature and interior forest habitat for migratory birds on a local scale taking into account cumulative losses (and taking into account the species of migratory birds that use these habitats, as demonstrated by bird surveys); and proposed mitigation for the predicted loss of mature and interior forest habitat for migratory birds.</p>	<p>project site and indicate that the majority of the project site consists of regenerating, relatively open field habitat, and that there are no areas of mature and/or interior forest habitat that will be affected by Project activities. The Project will therefore not contribute to the decline in this type of habitat noted in comments EC-14 and EC-15.</p>
EC-16		<p>The fact that habitat fragmentation already occurs in the project area should not be used to "dismiss" potential effects of further loss or fragmentation of habitat, as this ignores potential for cumulative effects.</p>	<p>Comment noted. Potential cumulative effects of the Project have been assessed in section 8.0 of the EA report.</p>
EC-17		<p>Bird collisions at lit and floodlit structures are a known problem. In Atlantic Canada, nocturnal migrants and night-flying seabirds are the birds most at risk of attraction to lights. Attraction to lights may result in collision with lit structures or their support structures, or with other birds. Disoriented birds are prone to circling a light source and may deplete their energy reserves and either die of exhaustion or drop to the ground where they are at risk of depredation. Incineration in flares and stranding on vessels are also of concern. In assessing the impacts of lights, a focus should be placed on the most vulnerable species and the occurrence of infrequent, but potential large-scale, stochastic events (e.g. events associated with weather conditions, migratory</p>	<p>Comment noted. Mitigative measures to reduce the effects of project lighting on birds have also been described in section 6.4.4.2 of the EA.</p>

**TABLE K1 Government Comment Disposition Table**

Comment No.	Originator	Question/Statement	Response
		seasons). In implementing steps to reduce potential adverse interactions with migratory birds, and to comply with the MBCA and regulations, the Proponent should take the following best management practices into consideration.	
EC-18		Only the minimum amount of pilot warning and obstruction avoidance lighting should be used;	Comment noted
EC-19		Only strobe lights should be used on tall structures at night, at the minimum intensity and minimum number of flashes per minute (longest duration between flashes) allowable by Transport Canada;	Comment noted
EC-20		Only the minimum number of lights should be used as possible and the use of solid-burning or slow-pulsing red warning lights at night should be avoided;	Comment noted
EC-21		The time of operation of exterior decorative lights, such as spotlights and floodlights, should be minimized or avoided in cases where such lights are only intended to highlight features of structures, or to illuminate an entire structure. Especially on humid, foggy or rainy nights, the glow of such lights can draw birds from considerable distances. In the interest of protecting birds, it would be best if these lights were turned off, at least during the migratory season, when the risk to birds is greatest;	Comment noted
EC-22		Task lighting, as well as lighting for the safety of the employees, should be shielded to shine down and only to where it is needed, without compromising safety. Road and parking lot lighting should also be shielded so that little light escapes skyward and rather falls where it is required; and,	Comment noted
EC-23		The Proponent should describe a plan for minimizing potential adverse interactions between birds and lights.	Comment noted, see section 6.4.4.2 of the EA report.
EC-24		The Proponent should confirm its intent to adopt the attached handling protocol for stranded Leach's Storm-petrels prepared by the Canadian Wildlife Service (CWS) and industry representatives for both the project site and vessels.	Comment noted and text modified in Section 6.3.4.1.

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Comment No.	Originator	Question/Statement	Response
EC-25		Section 6.3.4.3: More information on the proposed monitoring program should be included in the final EA report. For example, the report should elaborate on what would be considered "a problem for marine-related birds".	As noted in section 6.4.4.3, crews on-board the dredger will note incidents of bird collisions. If there appears to be an abnormally large number of bird collisions occurring, the proponent will adopt any further mitigative measures that are technically feasible in order to reduce collisions due to lighting, and will continue to monitor the frequency of bird collisions to ensure that these further mitigative measures are effective.
EC-26		The Proponent should be made aware that in some coastal areas, man-made structures have been used as nesting structures by terns. Since these birds "swoop down" at potential predators of their eggs and/or chicks, and since they view humans as potential predators, the terns nesting on these structures have in some cases been viewed as a menace by the boaters at the adjacent marinas. The Proponent should be made aware that if they build a structure that could be used as a nesting platform by migratory birds, CWS will not issue them permits to destroy nests of these birds should these birds take aggressive measures to protect their eggs/chicks.	Comment noted, proponent is aware of this phenomenon and CWS policies in this regard.
EC-27		The Migratory Birds Convention Act also applies on private lands (in addition to federal and provincial lands).	Comment noted
EC-28		It appears that the Proponent intends to prepare a draft spill plan for the project-specific contingency plan for unplanned discharges and spills. Please refer to CWS draft guidance document Potential components of a spill response plan for marine birds, which was provided in our last correspondence (dated May 28, 2008) to assist the Proponent in preparing such a plan.	Comment noted
EC-29		Species at Risk and Species of Conservation Concern-The term "critical habitat" has a specific meaning under the SARA. It is therefore important not to use the term in a generic manner in Canada. It should be noted that critical habitat designation is an ongoing process, and that critical habitat has not yet been designated for most species at risk in the Maritimes. However, this should not be used as an excuse to not consider potential effects of projects on the habitat of species at risk during the EA process. It should be noted that critical habitat	Comment noted

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Comment No.	Originator	Question/Statement	Response
		<p>designation is an ongoing process, and that critical habitat has not yet been designated for most species at risk in the Maritimes. However, this should not be used as an excuse to not consider potential effects of projects on the habitat of species at risk during the EA process. It should be noted that critical habitat designation is an ongoing process, and that critical habitat has not yet been designated for most species at risk in the Maritimes. However, this should not be used as an excuse to not consider potential effects of projects on the habitat of species at risk during the EA process.</p>	
EC-30		<p>Those species listed under the SARA or protected under provincial endangered species legislation should be referred to as "Species at Risk" and will be referred to as such in our comments. Species listed as Endangered, Threatened or Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) but not yet listed on SARA, species ranked Red or Yellow by the Nova Scotia Department of Natural Resources (NBDNR), and species ranked S1 to S3 by the AC CDC may be referred to as Species of Conservation Concern.</p>	Comment noted
EC-31		Page 134, 1st line: Add "special concern" species.	Text updated in section 6.3
EC-32		Page 134, last line: Add "special concern" species.	Text updated text updated in section 6.3.1
EC-33		Section 6.3.2: Why are species of Special Concern not considered (as is the case in section 6.4.2).Also, why is there no consideration of the significance of direct mortality of individuals?	Text updated in section 6.3.2
EC-34		Page 141: Piping Plover is listed as Endangered on Section 1 of SARA, and under provincial endangered species legislation. Red Knot is listed as Endangered by COSEWIC and under provincial endangered species legislation.	Text updated in Section 6.3.4.1
EC-35		The Federal Policy on Wetland Conservation (FPWC) was introduced "to promote the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and in the future". The policy recognizes the importance of wetlands to the environment, the economy and	Comment noted. The Federal Policy on Wetland Conservation (FPWC) will be used as a best practice

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Comment No.	Originator	Question/Statement	Response
		<p>human health, and promotes a goal of no-net-loss of wetland functions. In support of this goal, the FPWC and related implementation guidance identify the importance of planning, siting and designing a project in a manner that accommodates a consideration of mitigation options in a hierarchical sequence - avoidance, minimization, and as a last resort, compensation. If federal funding is provided for this Project or if federal lands are involved, then the FPWC would apply to this project. Otherwise, EC advocates application of the FPWC to the Project as a best practice.</p>	
EC-36		<p>It is recommended that a detailed wetland functional analysis be conducted for wetlands potentially affected by project-related activities. Examples of functional assessment methodologies include the United States federal-and state protocols (e.g. Brinson 1993) and others (e.g.,' Smith et al. 1995). For synoptic functional assessments, many states have developed rapid assessment techniques (e.g. California at www.cramwetlands.org). Brinson, .M.M. 1993. A Hydrogeomorphic Classification for Wetlands. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, USA. Technical Report WRP-DE-4 Smith, R.D., A. Ammann, C. Bartoldus and M. Brinson 1995. An Approach for Assessing Wetland Functions Using Hydrogeomorphic Classification, Reference Wetlands, and Functional Indices. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, USA. Technical Report WRP-DE-9 This analysis will provide a better understanding of the important wetland functions of the wetlands potentially affected by the project, and allow for a more useful evaluation of impacts of the project.</p>	See response to comment NSDNR-05
EC-37		<p>For those wetlands where avoidance is not possible, a detailed description of the reasons why avoidance and minimization of impacts were determined to not be possible should be provided. This information should be provided during the EIA project review process. The mitigation measures and monitoring</p>	Comment noted See response to comment NSDNR-12

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Comment No.	Originator	Question/Statement	Response
		<p>plan, as well as a proposed compensation plan, should be consistent with those proposed for other projects in Atlantic Canada.</p>	
EC-38		<p>Invasive species Should the project be approved, it is recommended that a variety of species of plants native to the general project area be used in revegetation efforts. Should seed mixes for herbaceous native species for the area not be available, it should be ensured that plants used in revegetation efforts are not known to be invasive. EC also recommends that measures to diminish the risk of introducing invasive species be developed and implemented. These measures could include cleaning and inspecting construction equipment prior to transport from elsewhere (not limited to out of province equipment) to ensure that no plant matter is attached to the machinery; regularly inspecting equipment prior to, during and immediately following construction in wetland areas and in areas found to support Purple Loosestrife to ensure that plant matter is not transported from one construction area to another.</p>	<p>Comments noted; text updated in Section 6.4.4.1</p>
EC-39		<p>In reference to intense extra-tropical cyclones, usually occurring in the late autumn to spring, Section 4.3 could highlight not only the high winds and heavy precipitation but also the high waves and storm surge associated with these events. Correction or modification is needed for the statements that hurricanes (which typically move up the eastern seaboard) "...are significantly downgraded as they encounter the colder waters off the northeast US and Canada", and that " Usually by the time a hurricane reaches the Project area, it will have weakened into a tropical storm or an intense low pressure system with strong winds and heavy rains." The transition from tropical to extratropical cyclone can result in a rapid expansion of the area with damaging winds and waves. These events may occur a few times a year over Canadian Maritime waters (Hart and Evans, 2001; Bowyer and MacAfee, 2005) A recent and extreme example is</p>	<p>Text modified in Section 4.3</p>

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<b>Comment No.</b>	<b>Originator</b>	<b>Question/Statement</b>	<b>Response</b>
		Post-Tropical Storm Noel that made landfall in Nova Scotia in November 2007.	