10.6 Summary

Table 10.6-1 illustrates the relevance of each plan identified in this section by cross-referencing the environmental mitigations, controls, and protective measures from the assessment presented in **Section 5** Environmental Effects Evaluation. Relevant VCs (where applicable) are also identified. The relevant authorities for all plans are the Environmental Assessment Office and PRPA. Identified mitigations within plans are summarized in **Section 12 Conclusions**.

Table 10.6-1: Summary of Environmental Management Plans

Management Plan	Mitigation Measures
Construction Phase	
Air Quality and Dust Control Management Plan (AQDCMP)	› Use efficient, lower-emission vehicles and equipment where practical. › Ensuring appropriate catalytic converters, mufflers and exhaust systems are in place on equipment and functioning as designed. › Minimize idling where practical. › Limit vehicle speeds. › Spray overburden and soils with water prior to moving them if overly dry. › Use of vapour-tight connections during the unloading of rail cars and loading of the storage tanks. › Use of water sprays to control dust on roads. › Implement a monitoring program for dust. › Cross-reference with the mitigations within the Construction Traffic Management plan and Soil Management Plan.
Archaeological Resources Management Plan (ARMP)	› Develop general procedures to identify, report, and manage archaeological and heritage resources during construction. › Train on-site personnel on the Chance Find Protocol prior to conducting any ground-disturbing activities. The Chance Find Protocol will provide information to identify archaeological materials if encountered in the construction area, resources to report the find, and actions to follow to protect the site from impacts. › Avoid CMT sites, where possible. › Collect stem round samples from all CMTs that are removed. › Create a wind-firm buffer to protect indirectly affected CMTs from potential blowdown. › Avoid AOPs, where possible. › Monitor AOPs during construction to identify archaeological deposits, if present.

Management Plan	Mitigation Measures
Construction Blasting Management Plan (CBMP)	› Use protective measures (e.g., blasting mats) to mitigate adverse noise and vibration effects, impacts to air quality or geotechnical stability, and impacts of blasting activities to the receiving environment. › Consider sensitive time periods when scheduling blasting activities. › Schedule blasting to occur during low tide, when possible, to reduce likelihood of fish or marine mammal injury due to underwater pressure changes. › Include measures to minimize effects to marine habitats such as use of blast mats or alternative rock excavation techniques to avoid effects caused by blasting. › Best practices and guidance recommendations for blasting, such as ISEE (2011) and Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (Wright and Hopky 1998). › Conduct visual check to confirm that no wildlife is visible on the site before commencing blasting. › Size blasting charges to avoid potential percussion injuries to sticklebacks found in pond FSS-10. › Establish minimum 500 m Exclusion Zone for all marine mammals following the guidance of Wright and Hopky (1998), with an additional 250 m marine mammal monitoring zone extending outwards from the 500 m perimeter. › Cross-reference the mitigations within the Noise Management Plan, Air Quality and Dust Control Management Plan, and Wildlife Management Plan. › Follow mitigations for hydroacoustic monitoring in the Marine Underwater Noise and Vibration Management Plan when blasting.
Construction Environmental Management Plan (CEMP)	› The component management plans discussed under the construction section of this table will make up the Construction Environmental Management Plan.
Construction Traffic Management Plan (CTMP)	› Transport workers via bus. › Develop and implement engine idling policy to minimize vehicle emissions. › Limit vehicle speeds consistent with PRPA speed limits. › Educate drivers regarding wildlife presence. › Include safety measures such as driver awareness, wildlife presence, signage, flag persons, and monitoring. › Cross-reference the mitigations within the Air Quality Dust Control Management Plan and Wildlife Management Plan. › Avoid the use of excessive vehicles or machinery at site. Only use vehicles that are required to design, build, operate and maintain the terminal.
Construction Waste Management Plan (CWMP)	› Develop and implement procedures for collection, storage and disposal of upland soil and sediment, water from dewatering activities, food waste, hazardous waste (including contaminated soil and used spill kit materials), waste concrete, construction waste, invasive weeds, and recyclables in a manner consistent with regulation and inaccessible to wildlife. › Cross-reference the mitigations within the Soil Management Plan, Petroleum Storage and Handling Plan, Wildlife Management Plan, and Vegetation Management Plan.
Environmental Awareness and Education Plan (EAEP)	› Provide information for all personnel and contractors regarding environmental sensitivities and appropriate mitigations. › Provide a cultural training program that requires all in-migrant workers to undergo cultural training to learn about Tsimshian culture.

Management Plan	Mitigation Measures
	› Cross-reference the mitigations within the Wildlife Management Plan, Construction Waste Management Plan, Vegetation Management Plan, Construction Traffic Management Plan, Air Quality Dust Control Management Plan, Erosion and Sediment Control Plan and Petroleum Storage and Handling Plan.
Erosion and Sediment Control Plan (ESCP)	› Specify the procedures to be used during clearing and other construction activities with the potential to result in erosion or sedimentation, and specific measures to be taken during heavy rain. › Protect steep slopes, stockpiles, and disturbed areas during storm events. › Limit the extent of temporary roadways, workspace, and laydown areas to reduce erosion potential. › Retain a minimum 10 m-wide buffer along the shoreline LSA as much as practical. › Operate machinery on land or on water in a manner that reduces disturbance to the waterbody and seabed. › Include measures to minimize turbidity and sedimentation, such as installing sediment curtains around the immediate work area, as needed. › Re-contour the site to manage drainage and minimize potential for erosion. › Cross-reference with the mitigations within the Petroleum Storage and Handling Plan, Spill Prevention and Emergency Response Management Plan and Surface Water and Storm Water Management Plan. › Conduct progressive reclamation and re-vegetation of disturbed areas, where possible.
Fish and Fish Habitat Management Plan (FFHMP)	› Identify fish habitat, no-go zones, limits of construction on maps. › Avoid placing vertical spuds or other anchors into valued and sensitive habitat areas, where possible. › Schedule pile and anchor installations during work windows to reduce seasonal risk. These include Marine/Estuarine Timing Windows for the Protection of Fish and Fish Habitat (Area 4 – Lower Skeena). The timing windows are open November 30 to February 15. › Develop construction activity specific Stop Work Protocols that allow for the temporary cessation of Project-related activities and account for site-specific species and observation conditions. Stop Work Protocols include, but are not limited to, SPL exceedances, observations of distressed fish, or observations of aggregations of Pacific Herring, salmon, or Eulachon. › Specify construction activities for which fish monitoring would be necessary and procedures for monitoring construction activities by a QEP, or EM under the supervision of a QEP. › Follow additional mitigations in DFO Request for Review and Letter of Advice (20-HPAC-00996). › Cross-reference with the mitigations within the Marine Underwater Noise and Vibration Management Plan, Petroleum Storage and Handling Plan, Spill Prevention and Emergency Response Management Plan, and Surface Water and Storm Water Management Plan.
Health and Safety Management Plan (HSMP)	› Personal protective equipment, proper protocols for working in and around machinery, and location of existing structures, utilities, and potential hazards within the work site in compliance with BC Occupational Health and Safety Regulation and WorkSafeBC Standards. › Conduct employee and contractor training and adherence to the Vopak Fundamentals of Safety and the Vopak Code of Conduct. › Develop and implement an Emergency Response Assistance Plan. › Work with Northern Health and the work camp provider to ensure appropriate resources, such as mental wellness and suicide prevention resources, are available in the camp.

Management Plan	Mitigation Measures
	› Provide health care on the work site (i.e., hire a nurse practitioner) and encourage the use of home community care. › Include a Health and Medical Services Plan (HMSP) prepared by qualified individuals and incorporating Northern Health Emergency Response Roles. › Develop and implement measures to reduce and contain communicable disease outbreaks and other health issues, thereby minimizing pressure on the regional health care system during Project construction. › Include specific protocols relating to COVID-19 such as but not limited to: (1) screening procedures for workers, including any who have travelled recently outside of Canada, (2) preparation and worker management, including required training on social distancing and hygiene, (3) site controls and standards, including handwashing facilities and documentation requirements, and (4) case response, including individual suspected and/or confirmed cases, alerts to potential outbreaks, and handling issues of confidentiality. Develop plan in accordance with BC Guidelines for Industrial Camps Regulation (BC Reg 70/2012) and Communicable Disease Control Plan - Best Management Guide for Industrial Camps (Northern Health, 2017b) and Northern Health COVID-19 Update to Industry Partners – November 21, 2020.
Indigenous Interests Management Plan (IIMP)	› Provide Project workers, with cross-cultural awareness training, which will be developed in collaboration with engaged Indigenous nations. › Avoid traditional use sites to the extent feasible. › Avoid critical timing windows to the extent feasible. › Work with the Indigenous nations to develop a shared understanding of how the Project may affect Indigenous Interests. › Engage with Indigenous nations to discuss the Project and its effects, understand concerns that may arise, and respond to those concerns. › Engage with Indigenous nations regarding economic opportunities related to the Project. › Promote a hire-local first with all contractors and subcontractors and develop a contracting and procurement strategy that recognizes and acknowledges local Indigenous businesses.
Marine Access and Vessel Communications Plan (MAVCP)	› Identify marine-based construction staging areas, travel corridors for marine vessels and equipment into and through construction areas including exclusion and no-go zones, such as navigational hazards, and sensitive ecosystems, habitat, or infrastructure. › Include measures to manage marine traffic and navigation during construction (e.g., signage, website, a Project telephone line). › Use of marine safety zones under the jurisdiction of the PRPA during construction. › Communicate alternative options for vessel movement. › Delineate construction areas and safety zones through the use of navigational aids, markers, and signs. › Develop detailed requirements to assist vessels (pilot vessels, tugs, barges, etc.). › Develop and implement a procedure for liaison with the Canadian Coast Guard (CCG) to provide Navigational Warning (NAVWARN) and Notices to Mariners. › Specify transit speed in accordance with the PRPA and Collision Regulations. › Comply with the *Navigable Waters Act* approval conditions. › Establish and maintain radio communications between vessels and the Canadian Coast Guard's Marine Communications and Traffic Services, as required by CCG. › Develop radio communication protocol for vessels accessing the site. › Respect public and traditional access to marine resource users. › Develop emergency response plan for vessel accidents and malfunctions.

Management Plan	Mitigation Measures
	› Liaise with communities of scheduled vessels coming into the terminal including date, type of vessel and origin of vessel.

Marine Underwater Noise and Vibration Management Plan (MUNVMP)	› Refer to appropriate BMPs, including the BMPs for Pile Driving and Related Operations (BC Marine and Pile Driving Contractors Association 2003), DFO BMP for Pile Driving and Related Operations (DFO undated) and Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky 1998). › Follow additional mitigations in DFO Request for Review and Letter of Advice (20-HPAC-00996). › Include information on the marine fauna that may be present within and around the marine works area, including any sensitive time periods that are to be considered in construction scheduling. › Prioritize the use of lower sound emission equipment. › Avoid concurrent in-water noise-producing construction activities, as possible. › Undertake acoustic modelling of impact pile installation and mitigations. The model should evaluate what type of bubble curtain array would effectively attenuate noise below injury thresholds to fish or whether a double walled pile or similar containment would be needed. This information would also identify the anticipated radius for marine mammal exclusion zones (at which underwater noise is less than 160 dB re: 1uPa). › Verify the results of acoustic modelling through hydro-acoustic field monitoring. For impact pile installation, at minimum, a two-hydrophone configuration should be used to monitor hydroacoustic sound levels at 10 m from the source. This should be achieved by positioning one hydrophone at the mid-point of the water column and another hydrophone within 2 m of the seabed. If bubble curtains are used, frequent inspections of the bubble curtain system must confirm that it is fully connected and functioning (i.e., continuous bubble distribution around the pile at the water surface) within the zone of influence prior to impact pile installation. › Vibratory pile installation, rather than impact pile installation, is preferred. › If using a vibratory hammer method: conduct hydroacoustic monitoring to verify underwater noise levels comply with acoustic thresholds; to avoid harm to fishes peak sound pressure level should not exceed 206 dB at a reference pressure of 1 uPa and a cumulative sound exposure level of 186 dB (re: 1uPa2s at 10 m from the noise source); if monitoring indicates that the acoustic thresholds are being exceeded, work shall be halted and will only resume after additional mitigation measures are effectively implemented to avoid harm to fish. › Conduct hydroacoustic monitoring to verify underwater noise levels comply with acoustic thresholds, if impact pile installation is to occur. Implement a sound attenuation device (e.g., bubble curtain) to reduce the peak sound pressure level to below 206 dB (re 1 uPa and a cumulative sound exposure level of 186 dB) outside of the sound attenuation device. › Establish a marine mammal exclusion zone, defined as the area around the noise source where the average sound pressure level at the boundary does not exceed 160 dB re:1uPa (a separate pinneped exclusion zone may be established with a minimum radius of 150 m from the noise source). This will be done by a qualified marine mammal observer. › Establish separate fish and marine mammal exclusion zones prior to pile installation and monitor the zones for presence of fish for at least 10 minutes and for marine mammals for at least 30 minutes prior to the start of impact pile installation. › Monitor for mammals in the exclusion zone for 30 minutes prior to the start of and during all impact pile installation and cease pile installation if any cetacean is observed within the marine mammal exclusion zone. This will be done by an experienced and qualified marine mammal observer(s). › If fish and marine mammals are not observed within the respective exclusion zones during the pre-start period a soft start procedure is recommended where the impact energy is gradually increased over a 10 minute period (the soft start period is also recommended any time after there has been a break of 30 minutes or more during impact pile installation).

Management Plan	Mitigation Measures
	› If monitoring indicates that acoustic thresholds are being exceeded, work shall be halted and will only resume after additional measures are effectively implemented to avoid harm to fish. › Conduct impact pile installation during daylight hours and weather conditions that permit visual observations of fish and marine mammals. › Cross-reference the mitigations within the Fish and Fish Habitat Management Plan and Construction Blasting Management Plan.
Marine Water Quality and Sediment Quality Management Plan (MWQSQMP)	› Include all mitigation measures to be used while conducting in-water works. › Follow additional mitigations in DFO Request for Review and Letter of Advice (20-HPAC-00996). › Complete in-water works during the least risk timing window for the protection of fish and fish habitat (Area 4A: November 30–February 15). › Minimize duration of in-water works. › Conduct environmental monitoring by a QEP or EM under the supervision of a QEP of all in-water activities that may result in potential adverse effects to fish and fish habitat. › Install silt curtains where feasible and in consideration of water depths, currents and feasibility of monitoring. › Install silt curtains around the work area if turbidity concentrations within 5 m of the water's surface are anticipated to exceed accepted thresholds as listed below: ○ Change from background of 8 nephelometric turbidity units (NTU) at any one time for a duration of 24 hours in all waters during clear flows or in clear waters. ○ Change from background of 2 NTU at any one time for a duration of 30 days in all waters during clear flows or in clear waters. ○ Change from background of 5 NTU at any time when background is 8–50 NTU during high flows or in turbid waters. ○ Change from background of 10% when background is >50 NTU at any time during high flows or in turbid waters (MOE 2019). › Prevent vessels from operating in shallow water to prevent direct physical disturbance to the seabed/habitat from prop scour and sediment resuspension. › Prevent vessels from grounding upon the seabed except for the use of anchors or spuds needed to keep the vessels in position. › Limit impacts on riparian vegetation to those approved for the work, undertaking or activity. › If there is a risk of harm to a marine mammal from direct contact, temporarily suspend construction until there is no longer a risk or the individual has not been sited for 30 minutes. › Include requirements for adaptive management and stop-work triggers and applicable thresholds/guidelines. › Cross-reference the mitigations within the Fish and Fish Habitat Management Plan, Construction Blasting Management Plan and Marine Underwater Noise and Vibration Management Plan.

Management Plan	Mitigation Measures
Petrochemical Storage and Handling Plan (PSHP)	› Designate areas for storage of petrochemicals, refuelling and maintenance of vehicles, equipment, and machinery. › Provide specifications for the proper storage of petrochemical products, e.g., minimum distances from sensitive locations or work sites, containment, and safety requirements. › Include s procedures for extreme weather such as more frequent pumping/clean out of spill trays. › Prohibit fuel, hydrocarbons or hazardous materials to be stored or refueled within 30 m of a freshwater body. › Use designated fueling areas for construction equipment. › Provide specifications for the proper disposal of petrochemical products. › Provide worker safety training. › Include environmental monitoring and reporting requirements. › Cross-reference with the mitigations within the Spill Prevention and Emergency Response Management Plan, Surface Water and Storm Water Management Plan, Health and Safety Management Plan and Construction Waste Management Plan.
Site Restoration Plan (SRP)	› Identify location(s) of site-specific restoration. › Identify timing requirements. › Identify permit requirements, if any. › Include environmental monitoring requirements for the effectiveness of restoration and ensuring that invasive species are not present. › Salvage and manage soil. › Include details of planting requirements, e.g., plant species list, number, size, and plant spacing, specifications for hydroseeding. › Include procedures for post-construction maintenance and care. › Restore temporarily cleared marine riparian vegetation areas to conditions consistent with the surrounding environment including revegetating with native species. › Cross-reference with the mitigations within the Soil Management Plan and Vegetation Management Plan.
Spill Prevention and Emergency Response Management Plan (SPERMP)	› Include contact list of responsible Project personnel and external contacts. › Develop and implement a communication procedure and notification requirements in the event of a spill or emergency. › Specify containment, recovery, and clean-up procedures (including those applicable to equipment refuelling and servicing, and spill preparedness, such as spill kits and booms). › Develop and implement procedures in case of unexpected failure or malfunction of temporary containment systems (such as sediment bunds or cement traps). › Develop and implement special procedures for extreme weather such as more frequent pumping/clean out of spill trays. › Provide a list and description or purpose of spill abatement materials and equipment to be stored and available on-site. › Identify the location of spill clean-up materials and equipment. › Identify procedures for equipment refuelling and servicing and limitations. › Identify follow-up and reporting requirements. › Identify and conduct training requirements for personnel. › Develop and implement an Emergency Response Assistance Plan. › Cross-reference the mitigations within the Petroleum Storage and Handling Plan and Fish and Fish Habitat Management Plan.

Management Plan	Mitigation Measures
Soil Management Plan (SMP)	› Designate areas for temporary stockpiling and dewatering of overburden, including site maps. › Designate areas for temporary stockpiling and storage of imported fill, including site maps. › Specify procedures for the handling and disposal of overburden, and water disposal. › Develop and implement measures to prevent contamination of soil. › Specify procedures for the handling and storage of imported fill. › Specify procedures for transportation of soil, including spraying overburden and soil with water if it appears to be overly dry prior to moving it. › Identify and follow criteria for overburden acceptance at the PRPA storage area on Ridley Island. › Develop and implement protocols for soil and groundwater sampling for excavated materials suspected of contamination. › Develop and implement protocols for handling, remediation and disposal of contaminated soil or groundwater. › Develop a metal leaching and acid rock drainage (ML/ARD) sampling plan for geotechnical investigations, that includes criteria for which materials would be appropriate for use and testing of fill materials brought in from off-site; engage with relevant authorities, including ECCC, on the requirements for an ML/ARD Management Plan, if required. › Conduct employee and contractor training and adherence to the Vopak Fundamentals of Safety and the Vopak Code of Conduct. › Cross-reference with Construction Waste Management Plan, Site Restoration Plan, Air Quality and Dust Control Management Plan, and Erosion and Sediment Control Plan.
Surface Water and Storm Water Management Plan (SWSWMP)	› Develop and implement protective measures for maintaining current surface water quality. › Include appropriate surface water quality criteria (federal and provincial). › Identify methods for surface water diversion or dewatering if it is necessary for site preparation, including ponds, drainage ditches, and culverts as necessary. › Manage and monitor storm water runoff during construction, including monitoring water quality in the two storm water lagoons prior to discharge into the existing PRPA drainage system. › Control flow into the RRUC to not exceed pre-development flows. › Monitor all Project discharges, including monitoring water quality in the lagoons prior to discharge into the RRUC drainage system. › Include environmental monitoring and reporting requirements. › Cross-reference the mitigations within the Erosion and Sediment Control Plan and Fish and Fish Habitat Management Plan.
Vegetation Management Plan (VMP)	› Minimize disturbance to the existing vegetation, including sensitive habitat such as riparian zones and wetlands from construction. › Reduce and avoid impacts outside of the clearing zone during construction. › Restore temporarily disturbed areas, as appropriate, as soon as practicable. › Retain peripheral vegetation as much as possible to limit sight lines to the Project. › Control the spread or introduction of invasive or noxious plants. › Treat any infestations of invasive plants that are identified per the *Pest Control Product Act*. › Designate areas for temporary stockpiling of vegetation. › Protocols and procedures for handling and storing of cleared vegetation on-site. › Specify procedures for the handling, storage, and disposal of vegetation, including noxious and invasive plants. › Include inspection, monitoring, and reporting requirements.

Management Plan	Mitigation Measures
	› Provide the opportunity to salvage plants by Indigenous nations, where feasible, prior to construction activities. › Cross-reference the mitigations within the Wildlife Management Plan, Construction Waste Management Plan, Erosion and Sediment Control Plan, Soil Management Plan and Surface Water and Storm Water Management Plan.
Wildlife Management Plan (WMP)	› Consider timing windows for vegetation clearing of moderate-rated forested habitat (for little brown myotis) outside of the bat active season (April 1-October 31). (DRAFT – due to ongoing SARA permitting process) › Conduct vegetation clearing and other construction activities with potential to disturb migratory birds outside the bird nesting season (April 4 – August 17) to the extent feasible. Where these activities cannot be avoided during the bird nesting season, the Proponent will conduct non-active nest searches, in accordance with ECCC's Avoidance Guidelines. A migratory bird mitigation and management plan will be developed, in consultation with PRPA and ECCC, to guide the development of mitigations. › Identify active bird nests and establish protective buffers around nests until the nest is no longer active. Surveys will be conducted by a Qualified Professional. › Communicate to personnel not to feed wildlife and utilize signage that such activity is prohibited. › Prohibit wildlife harvesting on the Project site. › Restrict construction activity to the flagged footprint area and previously-disturbed areas. › Conduct amphibian salvage prior to vegetation removal, draining, clearing and grading of wetlands, following methods outlined in Best Management Practices for Amphibian and Reptile Salvage (BC MFLNRO 2016). Salvage will be conducted by a Qualified Professional. › Incorporate detailed information on reducing the risk of harm to migratory birds during all Project phases, based on guidance provided in federal avoidance guidelines (Government of Canada 2020). › Conduct pre-construction wildlife surveys. Surveys will be conducted by a Qualified Professional. › Maintain clean worksites and store all potential wildlife attractants (food, garbage, paint) in a manner that is inaccessible to wildlife. › Install perimeter fencing to deter access by large wildlife. › Communicate to drivers on wildlife awareness. › Report wildlife observations and wildlife roadkills to the site manager. › Install artificial bat roost boxes. (DRAFT – due to ongoing SARA permitting process) › Cross-reference with the mitigations within the Construction Traffic Management Plan, Construction Waste Management Plan, Construction Blasting Management Plan and Vegetation Management Plan.
Operation Phase	
Erosion and Sediment Control Plan (ESCP)	› Develop and implement procedures to be used during clearing and other maintenance activities with the potential to result in erosion or sedimentation, and specific measures to be taken during heavy rain. › Provide specifications for protection for steep slopes, stockpiles, and disturbed areas during storm events. › Include provisions for re-contouring the site to manage drainage and prevent erosion. › Conduct progressive reclamation and re-vegetation of disturbed areas, where possible.

Management Plan	Mitigation Measures
	› Cross-reference with the mitigations within the Petroleum Storage and Handling Plan, Spill Prevention and Emergency Response Management Plan and Surface Water and Storm Water Management Plan.
Energy Management Plan (EMP)	› Include a Leak Detection and Repair program for terminal fuels storage and processing systems to reduce fugitive vapour emissions. › Develop and implement an engine idling policy to reduce fuel consumption.
Health and Safety Management Plan (HSMP)	› Provide employees with safety orientation, incident reporting, drugs and alcohol, security. › Identify safety requirements (e.g., housekeeping, personal protective equipment) and job requirements (safety audits, toolbox/safety meetings). › Work with Emergency Response Assistance Canada to provide LPG Fire Fighting Training to the local community. › Develop and implement an Emergency Response Assistance Plan. › Develop the following procedures: ○ Permit to Work. ○ Lockout and Tagout. ○ Confined Space Entry. ○ Excavation. ○ Working at Heights. ○ Motorized Vehicles. ○ Transfer of Product. ○ Management of Change. › Include a Health and Medical Services Plan (HMSP) prepared by qualified individuals and incorporating Northern Health Emergency Response Roles.
Light Management Plan (LMP)	› Avoid lighting shallow nearshore areas, where practical. › Avoid overwater down-casting lights, where practical. › Use an industrial low-profile light fixture that sidecasts light. › Use smart, low consumption light-emitting diode (LED) lighting, which will be pointed down to avoid sky glow and minimize effects on wildlife. › Illuminate those parts of the marine terminal that need lighting, when they need lighting (i.e., restrict continuous lighting to human and navigational safety). › Schedule illumination through motion and occupancy sensors for both indoor and outdoor applications, thereby reducing the amount of light trespass. › Include specifications for emergency lighting (floodlights) that will only be used during accidents or malfunctions, or in case of unauthorized vessel trespass. › Establish two-way communication channels with the public. Community members are able to engage with the Project to provide their feedback or voice their concerns via the website, email, phone or in person. › Avoid the use of excessive vehicles or machinery at site. Only use vehicles that are required to design, build, operate and maintain the terminal.
Marine Access and Vessel Communications Plan (MAVCP)	› Develop a procedure to provide Navigational Warning (NAVWARN) and Notices to Mariners, in collaboration with CCG. › Local marine communications and Project-related safety procedures, including and designated safety zones under the jurisdiction of the PRPA to specify “no-go” areas. › Adhere to applicable PRPA and PPA procedures (including mandatory piloting of carriers calling on the terminal and safety zones for other vessels). › Comply with transit speed in accordance with the PRPA and Collision Regulations.

Management Plan	Mitigation Measures
	› Communicate information on scheduled vessels coming into the terminal. › Use tugboats for the safe transit and berthing of vessels calling on the terminal. › Adhere to applicable limits set by the PRPA on environmental conditions under which operation can be conducted safely › Comply with the *Navigable Waters Act* approval conditions. › Adhere to the Port Information Guide. › Minimize carrier time in the berths. › Avoid discharge of any deleterious substance into the marine environment. › Require vessels to establish and maintain radio communications with the Canadian Coast Guard's Marine Communications and Traffic Services, as required by CCG. › Adhere to the Be Whale Wise guidance. › Communicate movement of incoming vessels with local communities and user groups. › Cross-reference with mitigations in the Light Management Plan.
Marine Underwater Noise and Vibration Management Plan (MUNVMP)	› Develop procedure (including vessel speeds) for vessels entering and leaving berths. › Cross-reference and implement conditions of relevant authorizations and permits for marine operations. › Specify monitoring and reporting to be conducted by specialist staff, if required.
Noise Management Plan (NMP)	› List equipment, machinery, and vehicles with noise emission specifications including mufflers on Project gas engines and generators. › Limit maintenance and inspection activities to daytime hours, when possible; use of noise abatement measures including screens, if necessary. › Develop and implement a procedure for community notification of noisy activities. › Schedule of expected noisy activities. › Establish two-way communication channels with the public. Community members are able to engage with the Project to provide their feedback or voice their concerns via the website, email, phone or in person. › Investigate and follow up on complaints. › Avoid the use of excessive vehicles or machinery at site. Only use vehicles that are required to design, build, operate and maintain the terminal.
Operations Environmental Management Plan (OEMP)	› Reduce area of benthic scouring from mooring buoy chains to the extent possible by limiting chain length on seabed and setting guardian anchor blocks so as to limit the chain range of motion. › Anchor chain will be supported with a subsurface buoy and a surface mooring buoy, minimizing drag and scour on the seabed floor. › Prevent vessels from operating in shallow water to prevent direct physical disturbance to the seabed/habitat from prop scour and sediment resuspension. › Prevent vessels from grounding upon seabed except for the use of anchors or spuds needed to keep the vessels in position. › Conduct one sediment survey one year after operation. The results of the survey will determine whether additional monitoring is required. The follow-up plan will include adaptive management measures, and may include additional mitigation measures, such as using an alternate subsurface buoy type or placement or changing mooring procedures to further limit scouring. › Conduct visual monitoring of marine water quality during operation in the area of the mooring chains. › Avoid the use of excessive vehicles or machinery at site. Only use vehicles that are required to design, build, operate and maintain the terminal. › Implement an air quality monitoring program at the terminal.

Management Plan	Mitigation Measures
Petrochemical Storage and Handling Plan (PSHP)	› Designate areas for storage of petrochemicals. › Designate areas for refuelling and maintenance of vehicles, equipment, and machinery. › Identify specifications for the proper storage of petrochemical products, e.g., minimum distances from sensitive locations or work sites, containment, and safety requirements. › Identify specifications for the handling of petrochemical products and refuelling of vehicles, equipment, and machinery including special procedures for extreme weather such as more frequent pumping/clean out of spill trays. › Use of vapour-tight connections during the unloading of rail cars and loading of the storage tanks. › Identify specifications for the proper disposal of petrochemical products. › Train workers that handle petrochemicals. › Cross-reference with the mitigations within the Erosion and Sediment Control Plan, Spill Prevention and Emergency Response Plan and Surface Water and Storm Water Management Plan.
Preventative Maintenance Program and Periodic Inspection Plan	› Schedule planned maintenance and periodic inspections to confirm equipment condition and function and avoid preventable accidents and malfunctions caused by fatigue, neglect, or normal wear.
Spill Prevention and Emergency Response Management Plan (SPERMP)	› Develop a communication procedure and notification requirements in the event of a spill and/or emergency. › Develop containment, recovery, and clean-up procedures (including those applicable to equipment refuelling and servicing, and spill preparedness, such as spill kits and booms). › Develop procedures for the unexpected failure or malfunction of temporary containment systems (such as sediment bunds or cement traps). › Develop special procedures for extreme weather such as more frequent pumping/clean out of spill trays. › Store and make spill abatement materials available on-site. › Identify procedures for equipment refuelling and servicing and limitations. › Identify training requirements for personnel. › Work with Emergency Response Assistance Canada to provide LPG Fire Fighting Training to the local community. › Develop and implement an Emergency Response Assistance Plan. › Cross-reference with Port of Prince Rupert emergency preparedness and response plans, Petroleum Storage and Handling Plan.
Surface Water and Storm Water Management Plan (SWSWMP)	› Include appropriate surface water quality criteria (federal and provincial). › Develop and implement protective measures for maintaining current surface water quality. › Manage storm water runoff during operation, including water quality monitoring and discharge flow control such that discharge into the Ridley Island Road and Rail Utility Corridor drainage system does not exceed pre-development flows. › Monitor all project discharges, including monitoring water quality in the lagoons prior to discharge into the RRUC drainage system. › Conduct environmental monitoring and reporting requirements specified by the PRPA.
Training Management Plan (TMP)	› Develop measures to train local, including Indigenous, people for junior operation jobs.

Management Plan	Mitigation Measures
Vegetation (Sensitive Habitat, Invasive and Noxious Plants) Management Plan	› Minimize disturbance to the existing vegetation, including sensitive habitat such as riparian zones and wetlands, during operation. › Reduce and avoid impacts outside of the site footprint during operation. › Include measures to mitigate rare plants if they are discovered within the Project footprint. › Control the spread or introduction of invasive or noxious plants. › Treat any infestations of invasive plants that are identified per the *Pest Control Product Act*. Other applicable legislation will be identified in the Vegetation Management Plan (VMP). › The PRPA has a vegetation management plan for the RRUC which includes the clearing of shrubs.
Wildlife Management Plan	› Communicate to personnel not to feed wildlife and utilize signage that such activity is prohibited. › Conduct vegetation clearing and other construction activities with potential to disturb migratory birds outside the bird nesting season (April 4-August 17) to the extent feasible. Where these activities cannot be avoided during the bird nesting season, the Proponent will conduct non-active nest searches, in accordance with ECCC's Avoidance Guidelines. A migratory bird mitigation and management plan will be developed, in consultation with PRPA and ECCC, to guide the development of mitigations. › Identify active bird nests and establish protective buffers around nests until the nest is no longer active. Surveys will be conducted by a Qualified Professional. › Do not disturb or remove active bird nests within the facility other than those not protected by law. › Maintain perimeter fencing to deter access by large wildlife. › Maintain clean worksites and storage of all potential wildlife attractants (food, garbage, paint) in a manner that is inaccessible to wildlife. › Incorporate detailed information on reducing the risk of harm to migratory birds during all Project phases, based on guidance provided in federal avoidance guidelines (Government of Canada 2020). › Conduct environmental monitoring for wildlife (including birds and marine mammals), if specified by the PRPA. › Develop and implement MBM berth entanglement protocol. › Conduct a visual inspection of flaring infrastructure before testing. › Communicate to drivers on wildlife awareness. › Report notable wildlife roadkills to the site manager. › Prohibit harvesting of wildlife on the Project Site. › Participate in the PRPA Marine Mammal Program (PRPA 2020) or other such programs. › Report any wildlife mortality observed by Project personnel, including birds that may have died as a result of collision with Project infrastructure to the Project's environmental staff. › Evaluate all records of wildlife mortality for spatial, seasonal, causal, and taxonomic trends on an ongoing basis. › If a significant number of avian mortality events attributable to collision with Project infrastructure (e.g., tanks, buildings, pipes, etc.) are recorded in a single season, Vopak will, with the support of a QEP, develop and implement a formal avian collision monitoring program to further investigate the magnitude of the effect.

Management Plan	Mitigation Measures
Decommissioning Phase	
Decommissioning Environmental Management Plan (DEMP)	› Develop and implement a procedure for liaison with the Canadian Coast Guard (CCG) to provide Navigational Warning (NAVWARN) and Notices to Mariners. › Adhere to an updated Health and Safety Management Plan, including an updated Health and Medical Services Plan, developed for construction and operation. › Participate in the PRPA Marine Mammal Program (PRPA 2020) or other such programs. › Adhere to the Be Whale Wise guidance. › Include marine mammal specific details such as safety zones and visual monitoring by qualified MMOs. › Develop and implement a Wildlife Management Plan (WMP) to include: wildlife feeding will be prohibited; scheduling removal of jetty topside outside of breeding bird season or conduct a bird nesting survey before beginning jetty removal and placing a protective buffer around the nest to avoid disturbance until the nest is no longer active; collecting all waste materials (including food scraps) in appropriate containers for disposal off-site; and measures that reduce risk to wildlife mortality, and reduce wildlife disturbance or displacement to the greatest extent practicable within future management plans of PRPA. › Establish setbacks; conduct progressive reclamation and revegetation of shoreline and riparian areas. › Include measures for habitat recovery and restoration. › Avoid removal of tanks and infrastructure under overly dry conditions. › Use of water sprays to control dust. › Use efficient, lower-emission vehicles and equipment where practical. › Develop and implement an engine idling policy. › Navigational aids will remain on jetty structures, where required, to enhance navigation safety. › Allow clearance around trestle spans sufficient for navigation of some vessels (e.g., kayaks) following decommissioning. › Communicate timing of decommissioning. › Engage with chambers of commerce.
Erosion and Sediment Control Plan (ESCP)	› Employ erosion controls (e.g., silt fences, berms, ditches) and erosion protection (e.g., mats, staking, re-sloping) to reduce the potential for transport of sediments to water bodies. › Use of ditches and storm water lagoons, as available, to manage storm water during decommissioning. › Restore surface drainage conditions to a state congruent with the surrounding environment.
Surface Water and Storm Water Management Plan (SWSWMP)	› Design to avoid water bodies; develop and implement management plans, including Air Quality and Dust Control Management Plan, Construction Blasting Management Plan, Erosion and Sediment Control Plan, Soil Management Plan, and Surface Water and Storm Water Management Plan. › Establish setbacks around water bodies; limit the extent of temporary disturbance. › Employ ditches and lagoons to drain and collect stormwater. › Sample stormwater to ensure it meets water quality guidelines before discharge. › Conduct progressive reclamation where possible and re-vegetate disturbed areas to restore surface drainage conditions to a state congruent with the surrounding environment.

Management Plan	Mitigation Measures
Marine Underwater Noise Monitoring Plan	› Implement safety zones with visual monitoring by qualified Marine Mammal Observers with distance from the sound source determined based on underwater acoustic monitoring and comparison of measured sound levels to the currently accepted threshold of 160 dB re 1 µPa rms SPL for marine mammals (unless otherwise directed by DFO). › Conduct in-situ verification that all decommissioning-related noise is below accepted thresholds through underwater acoustic monitoring. › Establish marine mammal safety and monitoring zones, underwater acoustic monitoring, use of noise reduction techniques or devices where possible, ramp ups and soft starts when possible, and development of activity-specific Stop Work Protocols. › Avoid concurrent in-water noise-producing decommissioning activities, where possible. › Develop provisions for informing decommissioning-related vessels of the locations of marine mammals observed in proximity to the Project area or transit routes to and from the Project area.