KIEWIT WCD MARINE YARD BUILD-OUT PROJECT

VFPA PER 23-130 – PROJECT INFORMATION REPORT

Document Number: 105716-S00-WCD-GEN-RPT-1000

Revision: D

Date: January 21, 2025

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* Indigenous Engagement Information Removed from Report. Please request directly from VFPA if required.

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1 GENERAL SUBMISSION REQUIREMENTS

Peter Kiewit Sons ULC (Kiewit) is submitting this application to Vancouver Fraser Port Authority (VFPA) for a Category C Project and Environmental Review (PER) of the Kiewit Western Canada District (WCD) Marine Yard Build-Out Project (the Project).

This PER application includes the information requested in the VFPA PER - Application Submission Requirements/Checklist for PER No. 23-130, dated November 7, 2023, found in Appendix A. The information consolidated in this document includes:

- General Submission Requirements
  - Application Form
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  - Project Energy Information
  - Archaeological Potential – Preliminary Assessment
  - Archaeological Overview Assessment
  - DFO Request for Review
  - Construction Environmental Management Plan (CEMP)
  - Vegetation Plan
  - Soil Management Plan
  - Dewatering Plan
  - Habitat Assessment
  - Nesting Bird Survey
  - Species-at-Risk Assessment
  - Spill Prevention and Emergency Response Plan
  - Public Engagement Plan
- Notification, Consultation and Engagement Results from:
  - Indigenous Groups

- Stakeholders
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- Other Requirements and Considerations
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  - ECCC Species at Risk Act Permit and Disposal at Sea
  - Transport Canada Navigation Protection Program Review

1.1 APPLICATION FORM

A signed and completed Category C application form is included with the Application submission and is attached to this document in Appendix B.

1.2 APPLICATION FEE

Kiewit has provided the application fee of $13,125 (including GST) to VFPA.

1.3 DOCUMENTATION DEPOSIT

Kiewit has provided the Documentation Deposit of $10,000 to VFPA.

1.4 BUILDING PERMIT

Based on the Project scope, the checklist identifies that building permit is not required.

1.5 CONTACT LIST

The primary contacts for the PER 23-130 project documentation are listed in the table 1-1 below.

Table 1-1: Key Project Personnel

POSITION	NAME	ADDRESS	PHONE
VFPA PER Lead	Katherine Huggins	999 Canada Pl, Vancouver, BC V6C 3T4	604.366.6170
Project Sponsor	Oliver Kolouch	Suite 310, 4350 Still Creek Dr. Burnaby, BC V5C 0G5	778.689.5720
Project Manager	Rod Van Werkhoven	Suite 310, 4350 Still Creek Dr. Burnaby, BC V5C 0G5	604.290.7362
Environmental Manager	Andrew Allan	Suite 310, 4350 Still Creek Dr. Burnaby, BC V5C 0G5	604.317.6886
Design Manager	Kelly Brignall	Suite 210, 4350 Still Creek Dr. Burnaby, BC V5C 0G5	778.877.5789
Communications Manager	Andrea Wilson	Suite 310, 4350 Still Creek Dr. Burnaby, BC V5C 0G5	778.686.1439

2 PROJECT DESCRIPTION REQUIREMENTS

About Kiewit

Kiewit is one of North America's largest and most respected construction and engineering organizations. Our construction and design engineering professionals work on some of the industry's most complex, challenging and rewarding projects. This has included projects such as the Sea-to-Sky Highway and the Port Mann Bridge Highway 1 Improvement Project. To support regional projects like these, Kiewit owns and operates an industrial waterfront property located in the Fraser Mills area along the Fraser River, at 1950 Brigantine Drive in Coquitlam, BC (the Marine Yard), see Figure 1.

2.1 GENERAL SCOPE

Facility Background

The property and area have had an industrial use since the late 1800's, the general area was originally developed with the Fraser Mills sawmill to the west. Further development in the area north of the property included the (now decommissioned) landfills to the north, around the 1960s and 1970s, and warehousing and light industrial buildings constructed in the early 1990s. Kiewit purchased the property in 2021. The Marine Yard is split between a fee simple land owned by Kiewit, and a VFPA lease lot.

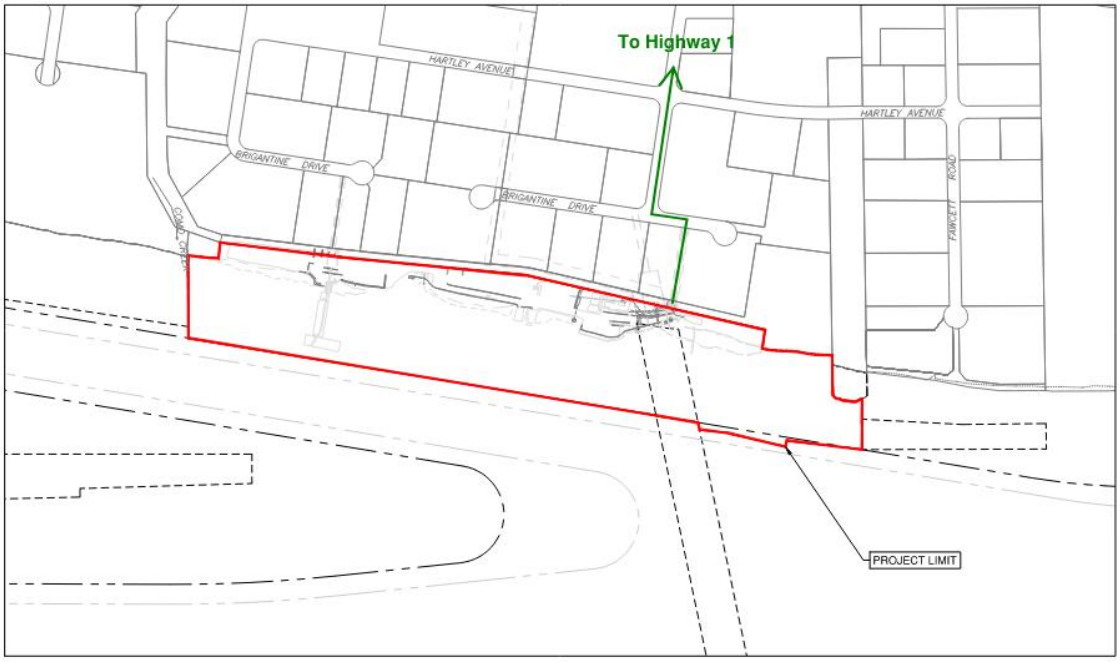
Current Facility Use

The property is actively used to service Kiewit's Canadian marine fleet and other construction equipment. Yard operations generally consist of staging equipment and materials on land, transferring materials to/from barges and fabrication of materials required for our projects, as seen in Figure 1. Currently a Disposal-At-Sea operation is also conducted from the facility. The Marine Yard has several structures and fixed facilities that were installed by the previous owner, including an office building, truck weigh scale, boat ramp, and two marine bulkhead wall structures. A portion of Kiewit's property at the eastern end of the site is currently leased to Quadrant Towing, which contains a fuel building, floating dock and marine access ramp.

Figure 1: Aerial view of the Marine Yard (Left); Barge loading from East Dock (Right)

2.1.1 PROJECT DESCRIPTION

Kiewit is planning to build-out the Marine Yard to ensure it meets today's environmental and engineering standards. Our vision is a modern marine facility that we are proud to showcase to the community. Our build-out improvements will clean up the water lot and include additional environmental offsets.



LOCATION PLAN
1:5000

Figure 2: Project Site Plan

The following is a summary of the proposed project upgrades, also shown in Figure 3.

- Cleanup of the water lot to remove the thick layers of bark mulch, chains and other debris that has accumulated at the site since its development. This includes dredging to increase the water depth for vessels.
- Removing old creosote-soaked timber piles and replacing them with new, steel mooring structures to tie up marine vessels.
- Cleanup and expansion of the foreshore. The yard widening will be completed in an area that is generally composed of wood waste and thick bark mulch, situated above intertidal mud flats. The widening will be composed of structural fills and will be capped with riprap shoreline improvements. The riprap will extend down into the intertidal zone, will help protect the site from erosion, and improve the marine habitat compared with the debris that is currently deposited on site.
- Re-grading, replacement and improvement of the stormwater treatment system, greatly reducing risks of erosion and ensuring better sediment control.
- Construction of new marine access structures including a trestle, conveyor support structure and roll-on/roll-off (RoRo) ramp. All marine structures will be built to current seismic standards, reducing the risk of collapse into the river, and improving the safety of the site for local employees.
- Construction of a shop used for parts storage and maintenance of equipment, so that work can be done in a clean, controlled environment. The permit application for construction of the proposed maintenance shop is outside VFPA's jurisdictional area. A building permit has been applied for and obtained by Kiewit from the City of Coquitlam.
- Construction of a new truck weigh scale located in the upland area of the yard, allowing trucks to be weighed when entering the site and again when exiting, all while travelling in one unique direction. This improves worker safety and reduces congestion in the neighborhood caused by external site circulation.
- Construction of a new truck wheel wash located in the upland area of the yard, used to remove dirt from trucks before they leave the yard.
- Construction of buried electrical services used to power equipment and yard lighting at various locations within the yard.

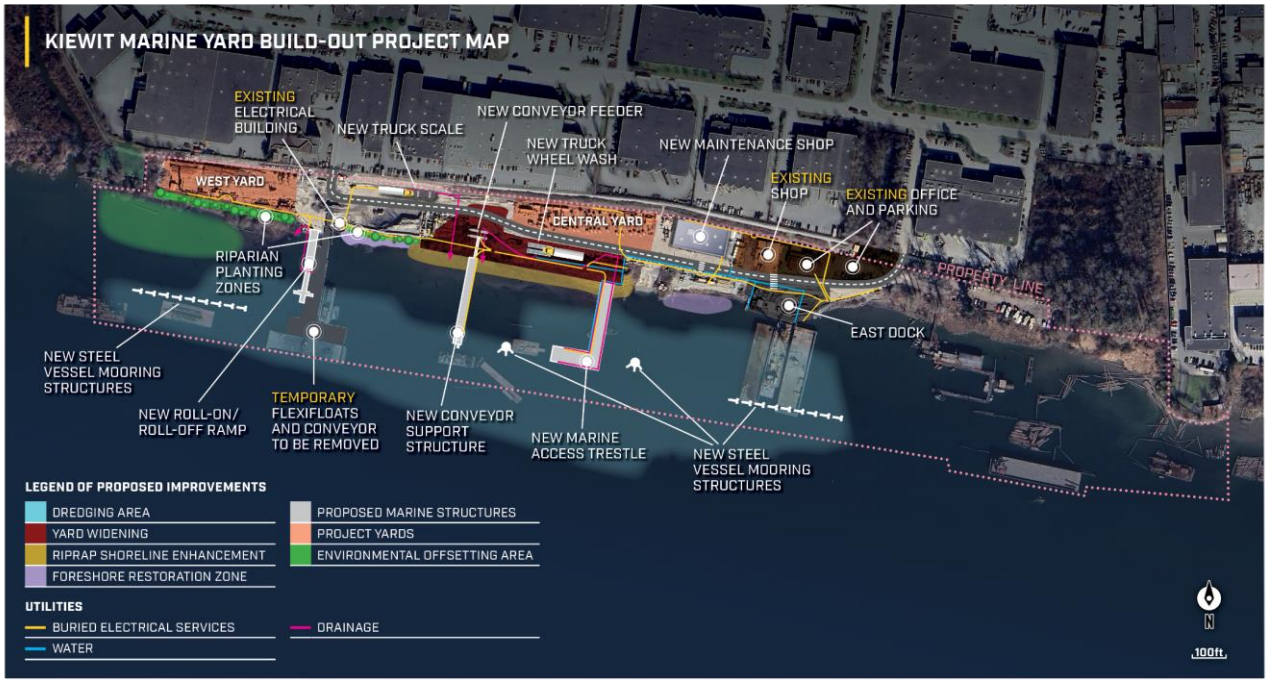


Figure 3: Project Scope

2.1.2 PROJECT SETTING

The Kiewit Marine Yard, situated at 1950 Brigantine Drive in Coquitlam, BC, operates within a predominantly industrial and commercial zone, with limited public or recreational use. The project is divided across Kiewit-owned land and a Vancouver Fraser Port Authority (VFPA) leased lot. The project is located near several other waterbodies such as Como Creek, Barker Creek, and Coquitlam River.

While there are no residential areas within 500 meters of the project site currently, the future residential development of Fraser Mills is planned west of Como Creek. Directly west of the Marine Yard lies Don Roberts Park with a nature trail along Como Creek, and to the east lies the Fraser River Greenway park, with trail access from the alleyway at 1950 Brigantine Drive.

2.1.3 POTENTIAL IMPACTS

Given the nature of the project and its location within an industrial and commercial area, the primary stakeholders potentially impacted include the businesses in close proximity, future residents within a 500-meter radius, and users of nearby parks and nature trails.

The current and future land-based equipment stored and operated at the Kiewit Marine Yard generally includes excavators, delivery trucks, dump trucks, crawler cranes, pile installation equipment, dozers, and rollers. Marine-based equipment stored and maintained generally includes material barges, derrick barges, spud barges, dump scow barges and marine pile installation equipment.

The construction activities and use of construction equipment during both the construction and operational phases of the project may lead to temporary increase in air emissions, dust, noise, and lighting within the project area. It should be noted that the Kiewit Marine Yard is currently an active facility. The project is expected to improve efficiencies within the yard, however operational activities following the completion are the project are not expected to be much different than current operations.

For the proposed build-out project, some of the construction activities that could affect the nearby communities involve those listed below:

- Dredging – Dredging will involve removal of sediments from the river bottom to deepen the water lot using clamshell dredging method. Impacts to nearby communities are expected to be minimal, given that the activity will mostly be situated on the water lot and is not expected to negatively impact navigation. Dredging activity will follow Best Management Practices (BMP) to reduce the impact on the environment.
- Infill expansion – The construction of the infill expansion area will predominantly involve excavation and earthworks, as well as utility installation. Potential impacts may include dust and noise generation.
- Permanent structures – The permanent structures, including the Trestle, Conveyor Structure, RoRo Ramp, and mooring dolphins, require piles to support them. Impacts to nearby communities would generally be limited to noise generation.

Mitigation measures to limit construction-related environmental impacts are outlined in CEMP and attached in Appendix D.

2.1.4 COMPLETED STUDIES

Studies and Plans have been completed as required by the PER 23-130 Application Submission Requirements checklist. The following table indicates where each study can be found:

Table 2-1: List of Completed Studies, Plans and Drawing Packages

STUDY OR PLAN TITLE	DOCUMENT SECTION LOCATION	APPENDIX
Location Plan – Included with Civil Design Drawings		C
Site Plan – Included on Cover of Civil Design Drawings		C
Complete Design Drawings Packages	**See Section 3 for Complete Drawing List**	C
Waste Management Plan – Included in CEMP		D
Fire Safety Plan		E
Stormwater Pollution Prevention Plan		M
Geotechnical Report		F
Hydrotechnical Report		G
Marine Traffic Study	**Section 4.5 of this Report**	
Project Energy Information	**Section 4.9 of this Report**	
Archaeological Potential Preliminary Assessment		H
Archaeological Overview Assessment		I
DFO Fisheries Act Authorization (FAA) Application including Offsetting Plan		J
Construction Environmental Management Plan (CEMP)		D
Vegetation Plan – Included in CEMP		D
Soil Management Plan – Included in CEMP		D
Dewatering Plan – Included in CEMP		D
Habitat Assessment		R
Nesting Bird Survey – Requirements Covered in CEMP, Survey to be conducted prior to construction		D
Species-at-Risk Assessment for Western Painted Turtle		K
Spill Prevention and Emergency Response Plan – Included in CEMP		D
Public Engagement Plan		L
Noise Assessment Report		O

Air Assessment Report		P
Indigenous Engagement		Q

2.2 OPERATIONS

The property is actively used to service Kiewit's Canadian marine fleet and other construction equipment. Yard operations generally consist of staging equipment and materials on land, staging marine vessels for storage or servicing on water, transferring materials to/from barges, and fabrication of materials required for construction projects. Kiewit currently operates the yard from Monday to Saturday, with day shift running from 6:00 AM to 5:00 PM and the night shift running from 6:00 PM to 4:00 AM.

2.2.1 LAND ACTIVITIES

Kiewit's operational setup includes a variety of project support vehicles and equipment located within the yard. During the day shift, equipment such as telehandler, excavator, forklift, skidsteer, loader, manlift, mechanics trucks, and various highway-rated delivery trucks are operational to support the yards activities. Similarly, highway-rated trucks and some other equipment remain in operation throughout the night shift. Depending on the scope of work, at least one crane often remains operational per shift for approximately 3 to 6 hours per day. Additionally, other miscellaneous tools, grinders, and welding machines are used intermittently throughout the day shift for up to 10 hours per day.

Additionally, the marine yard serves as a central hub for our maintenance department, specializing in servicing mobile heavy equipment, trucks, and Kiewit's Western Canadian marine fleet. This includes the operation of a mechanic shop as well as fueling and oil containers for servicing the equipment. With the capacity to support projects across the lower mainland, it also functions as a laydown area for various construction projects as needed.

2.2.2 MARINE ACTIVITIES

Kiewit's operational setup includes a variety of marine support vehicles and equipment distributed across the water lot. During the day shift, derrick barges are operational to support servicing of the marine equipment, as well as offloading and loading of barges. Tugboats facilitate movement of barges within different areas of the water lot or in/out of the water lot. Each barge move typically takes 30 to 60 minutes and often requires the assistance of two tugboats.

The Disposal at Sea area is in the west section of the yard, where the existing Disposal at Sea Conveyors are situated. Light plants, material feeder, conveyors, stacker, as well as equipment like excavators and loaders remains operational for most activities on day shift and on night-shift if required based on material volumes received. With the help of tugboats, the barges are moved to the disposal grounds off of Point Grey in the Strait of Georgia to be offloaded and return back to the marine yard.

2.2.3 DESCRIPTION OF FACILTY EQUIPMENT

On an average, 20 to 25 dump trucks are utilized daily to transport materials from external sites to the yard, with each truck completing approximately 6 trips per shift-day. Additionally, one sweeper truck remains operational per dayshift for approximately 5 hours during each of the day shift. Other equipment that involves intermittent use include derrick barge cranes and generators, telehandler, forklift, skidsteer, manlift land based mobile cranes, loaders, excavators and tug boats. The use of the facility's equipment is described in activities description sections above. For additional information related to equipment types, operational use (operational hours, locations, supply chain impact, etc), refer to the Noise Assessment Report included in Appendix O of this document.

2.2.4 POTENTIAL IMPACTS

The following section describes potential environmental and community impacts that are generated as part of the yard operations, and the proposed mitigation strategies for each impact.

Noise and Vibration Impact Mitigations:

- Dump trucks are to not use engine brakes while in the yard and while travelling adjacent to direct neighboring properties.
- Refer to Section 4.7 for more information of the Noise Assessment completed for the project.

Air Quality Impact Mitigations:

- Utilizing a sweeper truck and wheel wash daily to keep dust to a minimum.
- Water trucks may be used in dryer months if necessary to control dust.
- Using a fleet of modern equipment, equipped with emissions controls it assists with keeping emissions from our heavy equipment to a minimum.
- Restrict the duration that vehicles and equipment are allowed to sit and idle when not in use to less than 5 minutes.
- Apply only water or non-toxic and non-persistent chemical products to access roads for dust control at the laydown yard.

Erosion and Sediment Control Impact Mitigations:

- Best management practices will be utilized mainly in the following contexts:
  - To manage drainage and storm flows in and around work sites;
  - To prevent discharge to the environment of water that may be produced as a result of various construction activities (e.g., from dewatering work sites, excess water from drilling, etc.);
  - To prevent erosion at discharge points e.g., by maintaining or reducing existing flow velocities and/or by providing dissipation measures; and
  - To maintain water quality and flow volume at discharge points
- Refer to the CEMP for mitigation measures.

Light Impact Mitigations:

- When practical, light spill from light plants or temporary light poles will be minimized by directing lights downward and placing task lights as close to the operation as possible.
- Refer to Section 3.2.5 for the proposed lighting plan to limit light impacts.

Traffic Impact Mitigations:

- Maintain speed limits in the yard and easements through neighboring properties.
- Maintain constant flow of traffic, to avoid public disruption.

2.3 CONSTRUCTION

This project focuses on improving the marine yard for loading, unloading, and storage of marine equipment. The project involves construction of marine structures, dredging, and expansion of yard's width by infilling a section of upper intertidal shoreline extending into the Fraser River below the Higher High Water Large Tide (HHWLT) line.

To ensure that the construction activities are completed within the Fishery (periods of least risk) Window, each project component is divided into multiple phases. The anticipated construction schedule is as follows:

Table 2-2: Construction Phasing

PROJECT COMPONENT	COMPONENT PHASE	PROPOSED PROJECT TIMELINE
Dredging	• Phase 1 • Phase 2	Jan 2025 – Feb 2025 Jun 2025 – Sep 2025

PROJECT COMPONENT	COMPONENT PHASE	PROPOSED PROJECT TIMELINE
	• Phase 3 • Phase 4	Dec 2025 – Feb 2026 Jun 2026 – Jul 2026
Offsetting Construction	• Excavation - 1 • Backfill - 1 • Plantation – 1	Jun 2025 – Jul 2025 Jul 2025 Aug 2025
Yard Widening	• Excavation • Backfill • Utility & Drainage • Grading & Paving	Jun 2025 Jul 2025 – Aug 2025 Sep 2025 – Oct 2025 Oct 2025 – Nov 2025
Conveyor Structure	• Foundation • Substructure • Superstructure • Utilities (Electrical, Water, & Air) • Finishing Work	Jan 2026 Jan 2026 – Mar 2026 Mar 2026 – Apr2026 Mar 2026 – Apr 2026 Apr 2026 – Jun 2026
Ro-Ro Ramp	• Foundation • Substructure • Superstructure • Utilities (Electrical, Water, & Air) • Finishing Work	Jun 2026 – Jul 2026 Jul 2026 – Aug 2026 Aug 2026 – Oct 2026 Oct 2026 – Nov 2026 Dec 2026
Trestle	• Foundation • Substructure • Superstructure • Utilities (Electrical, Water, & Air) • Finishing Work	Dec 2026 – Feb 2027 Feb 2027 – Apr 2027 Mar 2027 – May 2027 May 2027 – Jul 2027 Jun 2027 – Aug 2027
Weigh Scale	• Foundation • Substructure • Superstructure • Utilities (Electrical, Water, & Air) • Finishing Work	Jun 2025 Jul 2025 Aug 2025 Aug 2025 Aug 2025
Mill & Pave	• Yard	Aug 2027 – Sep 2027

2.3.1 LAND CONSTRUCTION

The existing infrastructure, such as the main office building, maintenance shop, truck scale, truck wash, and other utilities, will remain fully operational and integrated into the project. Land construction activities pertaining to yard expansion involve the replacement of the existing drainage infrastructure, where impacted by project plans, installation of new drainage infrastructure, yard widening and placement of riprap on the foreshore slope. Additionally, installation of a new maintenance shop, truck weigh scale, and yard electrical and lighting upgrades are being performed.

- The land construction sequence is as follows: Install new maintenance shop, truck weigh scale, and upgrade yard electrical & lighting systems in the uplands area of the yard.
- Relocate and extend existing stormwater drainage components impacted by foreshore widening.
- Excavate to remove unsuitable material under the proposed expansion area.

- Isolate land works from the Fraser River where required, subject to excavation depths below the high water level.
- Place fill layers in specified vertical lifts and compact them to the specified levels. Repeat this process until the final grading elevation is achieved.
- Install riprap on the foreshore slope with a keyed-in-toe.
- Install new drainage infrastructure.
- Regrade and pave the surfaces of the marine yard.

2.3.2 MARINE CONSTRUCTION

Marine construction activities include the removal of existing creosote-covered timber piles, dredging to a depth of -6.5 m Chart Datum (CD) by removing existing sediments to ensure the safe operation of marine equipment, installation of mooring dolphin piles, trestle, and Conveyor Structure and RoRo platform piles from both land and water side using derrick barge/spud barges, and installation of the marine access trestle, conveyor structure and RoRo structures.

The marine construction sequence is as follows:

- Remove existing timber piles.
- Complete dredging in area associated with the permanent structures.
- Locate derrick barge/spud barge for installation of marine piles.
- Drive piles from both land side and derrick barge.
- Install temporary trestle on permanent piles for the advancement of pile installation from land side.
- Once all piles are installed, remove the temporary trestle, and install reinforcement steel cage inside piles. Tremie pour concrete inside of the piles.
- Place precast concrete cap beams and other pre-fabricated superstructure components (ie: girders and deck components).
- Continue from exposed face of permanent structure, retreating to the shoreline.
- Once all cap beams and deck panels are placed, place reinforcement steel for cast-in-place concrete deck overlay and install perimeter edge formwork.
- Place cast-in-place concreted deck surface and screed to finish profile.
- Install all final accessories and secondary components.
- Install all final accessories and secondary components.

2.3.3 REQUEST TO CONDUCT CONSTRUCTION OUTSIDE OF REGULAR WORK HOURS

All construction activities excluding dredging and some shoreline works are expected to be within the Vancouver Fraser Port Authority's standard work hours (i.e., Monday to Saturday, 7:00 am to 8:00 pm). The land construction that takes place along the shoreline will generally need to be completed above the water level, such as placing structural fills and riprap. Due to tide level fluctuations that impact the shoreline of the yard, some of this work may need to be completed during low tide periods when they fall outside of the Port Authority's standard work hours. Dredging operations will occur 24 hours a day, 7 days a week during the fisheries least-risk windows. The activity will be conducted in relation to the least risk fisheries window (LRFW) as mentioned in the Table 2-2.

While there are no residential areas within 500 meters of the project site currently, the future residential development of Fraser Mills is planned west of Como Creek as shown in Figure 4. Impacts to nearby communities are expected to be minimal, given that the activity will mostly be situated on the water lot and is not expected to negatively impact navigation. Dredging activity will follow Best Management Practices (BMP) to reduce the impact on the environment.

Dredging will involve removal of sediments from the river bottom to deepen the water lot using clamshell dredging methods.

- Clamshell dredging will be conducted by crane positioned on a flat deck spud barge.
- Dredge extents are controlled to the pre-approved boundaries using survey-grade GPS equipment.

- Dredge spoil is deposited on either a flat deck or dump scow barge located adjacent to the spud barge.
- Dredging and loading operators will ensure that the bucket is raised slowly through the water column and completely emptied into the scow before swinging the bucket back over the water.
- Dredging and loading operators will only use single grabs (per grab and deposit cycle) into the sediments to reduce the number of impact waves of suspended sediment from the clamshell bucket hitting the riverbed and to minimize the loss from the clamshell reopening for subsequent grabs.
- Scheduling of dredging and loading activities will account for tides and currents and only be undertaken in suitable weather conditions.

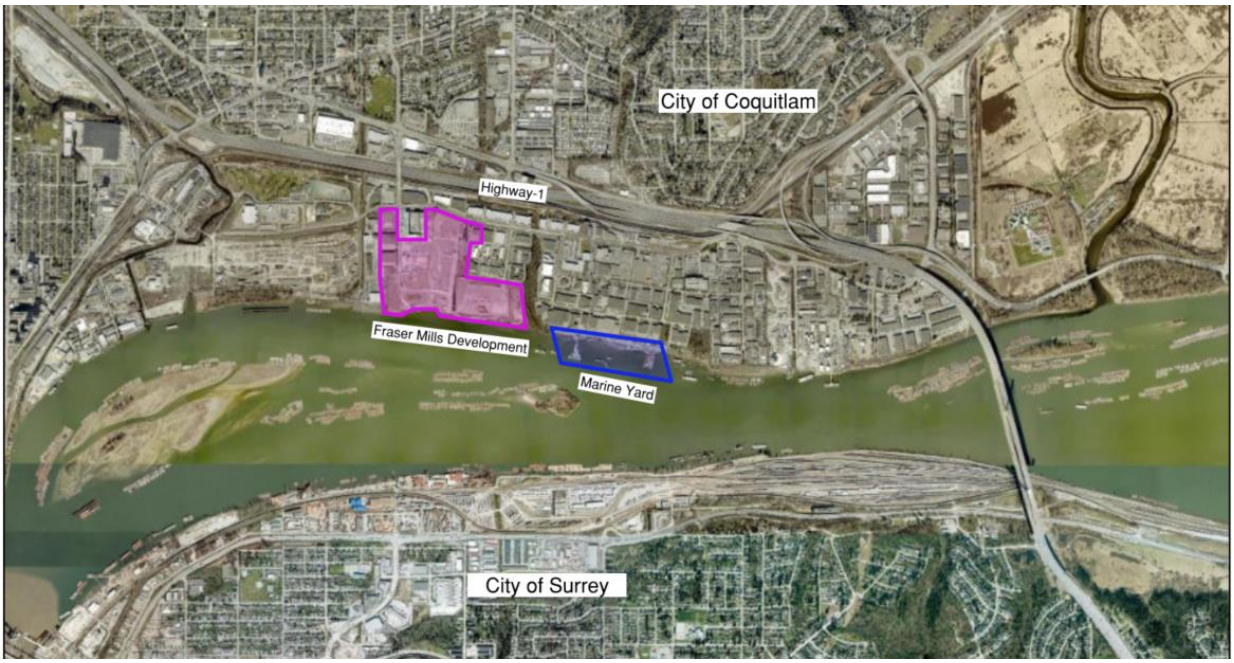


Figure 4: Location

Dredging is indicated in the figure below by the cyan, orange, green, ad red hatched zones (located within the water body).

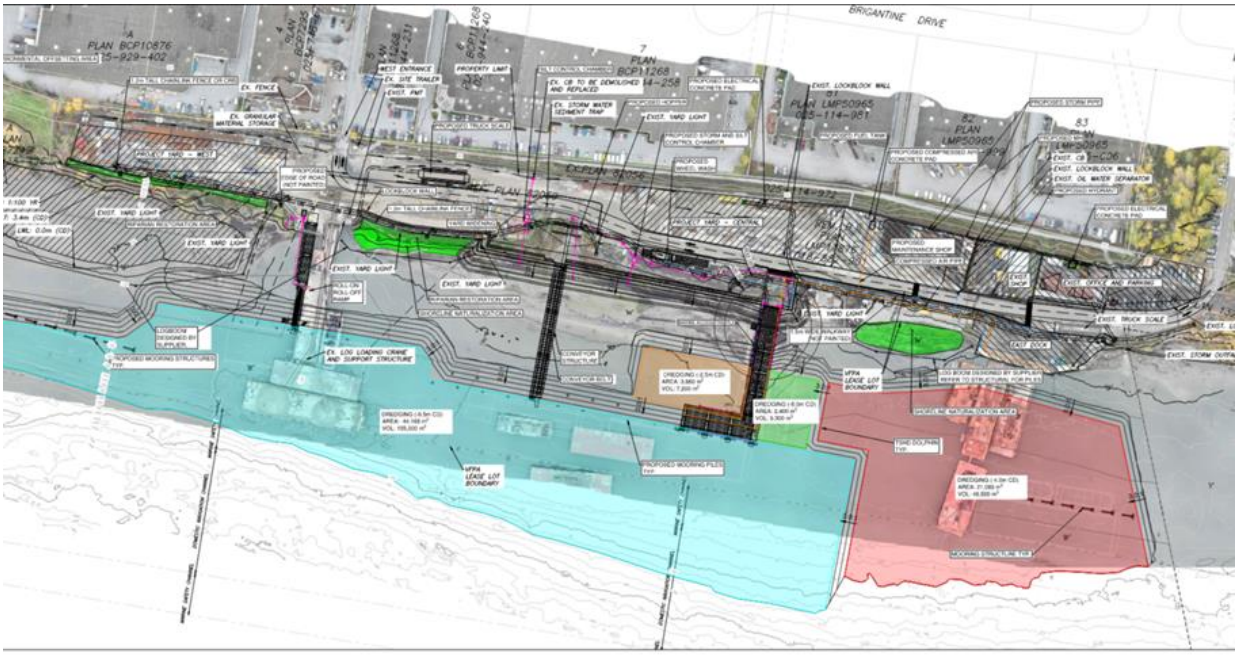


Figure 5: Site Plan

The primary contacts of the Permit Holder and contractor is listed in the Table 1-1. A draft construction notification has been developed for the project and attached in Appendix L. Screening level worksheet has been completed and attached in Appendix S.

3 DRAWING REQUIREMENTS

The design drawing packages are prepared to the level of detail required for the Project and Environmental Review (PER) application and attached to this document in Appendix C.

3.1 DRAWING LIST

3.1.1 CIVIL, DRAINAGE AND UTILITIES PACKAGE

- 105716-S00-KIE-CIV-DWG-0001 – 0004 INDEX AND GENERAL NOTES
- 105716-S00-KIE-CIV-DWG-1001 – 1002 GENERAL ARRANGEMENT
- 105716-S00-KIE-CIV-DWG-3001 – 3013 TYPICAL SECTIONS
- 105716-S00-KIE-CIV-DWG-5002 – 5003 DREDGING SPOT ELEVATIONS
- 105716-S00-KIE-CIV-DWG-5101 – 5103 TRUCK TURNING MOVEMENT
- 105716-S00-KIE-CIV-DWG-5201 PARKING AND ACCESS PLAN
- 105716-S00-KIE-CIV-DWG-8001 ENVIRONMENATAL PLAN
- 105716-S00-KIE-CIV-DWG-8101 – 8102 ENVIRONMENTAL SECTIONS
- 105716-S00-KIE-CIV-DWG-DEM-0001 – 0002 DEMOLITION PLANS
- 105716-S00-KIE-DAU-DWG-4101 STORM OVERALL PLAN AND NOTES
- 105716-S00-KIE-DAU-DWG-4102 STORM DETAILS
- 105716-S00-KIE-DAU-DWG-4103 WATERLINE PLAN, DETAILS AND NOTES
- 105716-S00-KIE-DAU-DWG-4104 STORMWATER MANAGEMENT PLAN
- 105716-S00-KIE-DAU-DWG-4105 – 4107 STORM PLAN AND PROFILE
- 105716-S00-KIE-DAU-DWG-4108 – 4110 STRUCTURAL DRAINAGE PLAN AND PROFILE
- 105716-S00-KIE-DAU-DWG-4201 – 4203 WATERLINE PLAN AND PROFILE

3.1.2 MARINE STRUCTURES – GENERAL PACKAGE

- 105716-S00-KIE-STR-DWG-0000 COVER SHEET
- 105716-S00-KIE-STR-DWG-0001 – 0002 GENERAL NOTES, ABBREVIATIONS, AND SHEET INDEX
- 105716-S00-KIE-STR-DWG-0003 – 0004 GENERAL ARRANGEMENT
- 105716-S00-KIE-STR-DWG-DEM-0001 – 0002 EXISTING PILE REMOVAL PLAN

3.1.3 MARINE ACCESS TRESTLE – STRUCTURAL PACKAGE

- 105716-S02-KIE-STR-DWG-0001 NOTES, LOCATION PLAN, AND SHEET INDEX
- 105716-S02-KIE-STR-DWG-0002 – 0003 GENERAL ARRANGEMENT
- 105716-S02-KIE-STR-DWG-1000 PILE LAYOUT PLAN AND PILE SCHEDULE
- 105716-S02-KIE-STR-DWG-2000 CAST-IN-PLACE ABUTMENT DETAILS
- 105716-S02-KIE-STR-DWG-2100 CONCRETE BENT DETAILS
- 105716-S02-KIE-STR-DWG-3000 – 3001 GIRDER LAYOUT AND ELEVATIONS
- 105716-S02-KIE-STR-DWG-3002 BOX GIRDER TYPICAL DETAILS
- 105716-S02-KIE-STR-DWG-3300 GANGWAY LANDING DETAILS
- 105716-S02-KIE-STR-DWG-3400 FENDER BOARD FRAME
- 105716-S02-KIE-STR-DWG-4000 EXPANSION JOINTS DETAILS

3.1.4 CONVEYOR STRUCTURE – STRUCTURAL PACKAGE

- 105716-S03-KIE-STR-DWG-0001 NOTES, LOCATION PLAN, AND SHEET INDEX
- 105716-S03-KIE-STR-DWG-0002 GENERAL ARRANGEMENT
- 105716-S03-KIE-STR-DWG-1000 PILE LAYOUT PLAN AND PILE SCHEDULE
- 105716-S03-KIE-STR-DWG-2000 CAST-IN-PLACE ABUTMENT DETAILS
- 105716-S03-KIE-STR-DWG-2001 CONCRETE BENT DETAILS

3.1.5 ROLL-ON ROLL-OFF RAMP – STRUCTURAL PACKAGE

- 105716-S04-KIE-STR-DWG-0001 NOTES, LOCATION PLAN, AND SHEET INDEX
- 105716-S04-KIE-STR-DWG-0002 - GENERAL ARRANGEMENT
- 105716-S04-KIE-STR-DWG-1000 APPROACH STRUCTURE – PILE LAYOUT PLAN AND PILE SCHEDULE
- 105716-S04-KIE-STR-DWG-2000 APPROACH STRUCTURE – ABUTMENT DETAILS
- 105716-S04-KIE-STR-DWG-2100 APPROACH STRUCTURE – CONCRETE BENT TYPE-1 & TYPE-2 DETAILS
- 105716-S04-KIE-STR-DWG-3000 – 3001 APPROACH STRUCTURE – BOX GIRDERS
- 105716-S04-KIE-STR-DWG-5000 RAMP STRUCTURE – GIRDERS LAYOUT AND DETAILS
- 105716-S04-KIE-STR-DWG-6000 TOWER AND PLATFORM LAYOUT AND DETAILS

3.1.6 MOORING STRUCTURES – STRUCTURAL PACKAGE

- 105716-S05-KIE-STR-DWG-0001 NOTES, KEY PLAN, AND SHEET INDEX
- 105716-S05-KIE-STR-DWG-1000 – 1001 PILE LAYOUT
- 105716-S05-KIE-STR-DWG-1002 PILE SCHEDULE AND TYPICAL MOORING PILE DETAIL
- 105716-S05-KIE-STR-DWG-2000 MOORING DOLPHIN DETAILS
- 105716-S05-KIE-STR-DWG-3000 TRESTLE SHIP BOW / STREN MOORING DOLPHIN DETAILS

3.1.7 ON-SHORE STRUCTURES – STRUCTURAL PACKAGE

- 105716-S06-KIE-STR-DWG-0001 NOTES, LOCATION PLAN AND SHEET INDEX
- 105716-S06-KIE-STR-DWG-1000 TRUCK SCALE FOUNDATION
- 105716-S06-KIE-STR-DWG-2000 EQUIPMENT FOUNDATIONS
- 105716-S06-KIE-STR-DWG-3000 ELECTRICAL BUILDING FOUNDATION
- 105716-S06-KIE-STR-DWG-3001 ELECTRICAL BUILDING ACCESS STAIRS

3.1.8 ELECTRICAL AND LIGHTING PACKAGE

- 105716-S00-DMD-ELE-DWG-0001 ELECTRICAL DEMOLITION PLAN
- 105716-S00-DMD-ELE-DWG-0002 YARD LIGHTING & ELECTRICAL PLAN
- 105716-S00-DMD-ELE-DWG-0003 SITE ENLARGEMENTS & DETAILS
- 105716-S00-DMD-ELE-DWG-0004 LIGHTING CRITERIA AND POLE ELEVATION DETAILS
- 105716-S00-DMD-ELE-DWG-0005 – 0006 ELECTRICAL SINGLE LINE DIAGRAM – ELECTRICAL ROOM

3.2 PER SPECIFIC DRAWINGS

3.2.1 LOCATION PLAN

A location plan has been developed for the project to show the relationship between the proposed project and the surrounding area. The location plan is shown in Figure 2 and attached in Appendix C.

3.2.2 SITE PLAN

A site plan has been developed for the project to show the property boundaries, location of existing and proposed structures, right-of-way, access points, and legal high-water mark. The site plan is included with the Civil drawings attached in Appendix C. Refer to Figure 3 of this report for an image of the site with the proposed project features.

3.2.3 STRUCTURES & EQUIPMENT

Plans specific to the proposed structures have been developed for the project to show the foundation design, anticipated loads, and excavation depths. The structural drawing package is attached in Appendix C.

3.2.4 MARINE STRUCTURES

Plans specific to marine works have been developed for the project to show dimensions and cross-sections of the existing and proposed marine structures. The plans are attached in appendix C.

3.2.5 LOT GRADING AND UTILITIES

Lot grading and utilities drawings have been developed for the project to show the existing and proposed paving and drainage, as well as the existing and proposed utilities. The lot grading and utilities plan is included with the civil drawings package attached in Appendix C.

3.2.6 LIGHTING PLAN

A lighting plan has been developed for this project to show the location of exterior lighting, type of bulbs, and level of illuminance. The plan also includes photometrics outlining lighting levels and uniformity on site and evidence of lighting cut off at property boundaries. The lighting plan is attached in Appendix C.

The following Sections outline the lighting criteria followed for the project and provides descriptions of the overall lighting solutions proposed for the site.

3.2.6.1LIGHTING DESIGN CRITERIA

Port of Vancouver Project and Environmental Review (PER) Guidelines – Lighting (June 2022) provide information and guidance relating to the design, installation and operation of lighting. The PER Guidelines suggest that the following general considerations should be incorporated into the design of new lighting:

1. Lighting on port authority lands must conform to all applicable legislation and regulations, including to International Safety Guide for Oil Tankers and Terminals and other international standards where applicable.
2. Sufficient light should be provided on any site during construction and operation to help ensure facilities are operated in a safe, secure, and efficient manner
3. Outdoor lighting should be designed in a way that provides a distribution of light that is appropriate to context without compromising safety and security – lighting installations should be designed to minimize harsh contrasts in colour or lighting levels
4. All exterior lighting should be properly maintained and remain in good working order – this may require regular inspections
5. Light fixtures should be energy-efficient while providing minimum illumination levels sufficient for personal safety and security, considering nationally recognized standards. Consider best available technology (BAT) for most energy efficient lighting. The preference is for light-emitting diode (LED) technology. Consider installation of controls (photocells and/or timers) to automatically shut off or dim exterior lights when not required for safety or operation, especially if not required during daylight hours or when the facility is not in use.

6. Lighting must not interfere with the visibility of existing or planned navigational aids. Navigational aids are lights used by vessel pilots and captains to navigate in darkness or during periods of reduced visibility. Waterfront sites must take the location of any navigational aids into account when considering the addition of new site lighting.
7. Ensure that appropriate and reasonable measures are taken in order to reduce the impact of lighting on adjacent tenants and residents, minimize light trespass from the site, and reduce development impact on nocturnal environments:
    a) Lighting should not cause unnecessary glare to motorists or pedestrians, and all reasonable means should be taken to prevent the projection of light from the site, including onto neighboring properties, roadways, or water areas.
    b) Where possible, shield exterior fixtures such that the installed device does not directly emit any light at an angle more than 90 degrees from straight down. LED lights, with a variety of directional optics available, may not require additional shielding.

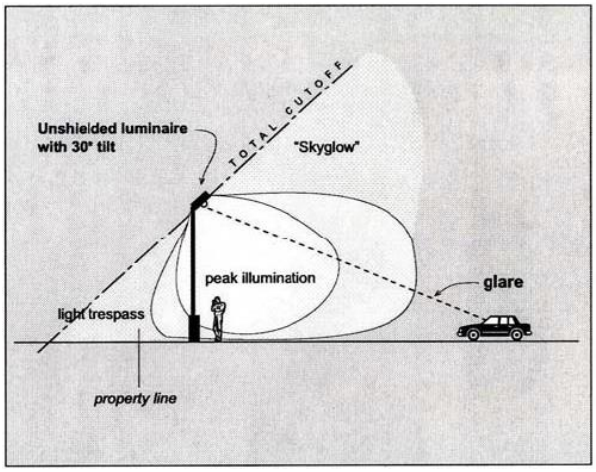


Figure 6: Unshielded Fixture causing pollution and light trespass

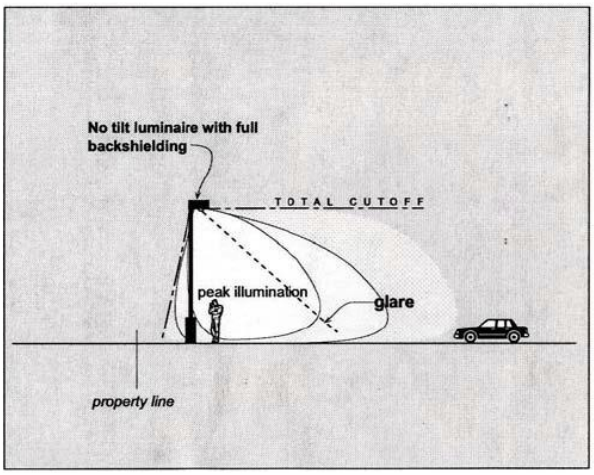


Figure 7: Full Cut-off Fixture which limits these effects

In addition to the PER Guidelines, lighting design at the Project site should follow lighting standards and codes, including:

- Illuminating Engineering Society of North America (IESNA) Lighting Handbook and RP-7 Lighting Industrial Facilities
- National Building Code of Canada
- Canada Occupational Health and Safety Regulations
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- IES Lighting Handbook 10th Edition (Illumination Engineering Society)
- SOR/86-804 Canada Occupational Health and Safety Regulations
- National Building Code of Canada (Section 3.2.7 Lighting and Emergency Power Systems)
- BC Fire Code (Section 6.5 Emergency Power Systems and Unit Equipment for Emergency Lighting)
- WorkSafe BC (Part 4.64 to 4.69 Illumination)
- Osha Standard 1926.56 (Occupational Safety and Health Administration – Worksite Lighting)

Any new lighting should have optical systems to limit up-light and where floodlights are proposed, shields and visors should be added as per the recommendations in IESNA RP 33 Lighting Exterior Environments. The lighting design should aim to reduce sky-glow to the greatest extent practical. Lighting levels should meet standards defined above and over-lighting should be avoided. It is recommended any new lighting be LED with a colour temperature not exceeding 5700 kelvin.

3.2.6.2 YARD LIGHTING

The current condition on-site involves portable lighting towers powered by diesel generators to provide light to the site in specific areas where required to perform work tasks.

As part of the proposed Build-Out Project, the existing, inoperable, yard lighting poles will be removed, and new LED yard lighting will be installed. The proposed Yard lighting will be based on the Musco TLC for LED 900W system, or a Kiewit approved equivalent. Proposed High mast poles will be located on at the top of the bank along the southern shoreline and fixtures will be aimed north, away from the river. This will minimize the amount of light trespass on to the water.

The proposed yard lighting will be controlled by the Musco Control Link system, or a Kiewit approved equivalent. Control link is a programmable controller that can be configured to turn on the yard lights at Dusk and off at dawn, Monday to Friday. Off Saturday and Sunday, if there is no regular work scheduled for weekends. Control link is also capable of providing dimming on schedule if desired by the owner.

Please refer to the enclosed Musco Lighting design scans (229513G) for more information regarding the Yard Lighting performance.

3.2.6.3 STRUCTURE LIGHTING

Three proposed permanent structures will extend over the water: a Roll-on / Roll-off ramp, a conveyor structure, and a Marine Access Trestle.

Structure lighting will be interlocked by photocell (or astronomical time clock) and user input for normal operation. In normal operating mode the structure lighting will require a user to press a button to turn on the lights. Structure lighting will not turn on unless it is between the hours of dusk and dawn. Every day at dawn the lighting will be disabled by the photocell and structure lighting will not automatically turn on at dusk until a user presses the button to turn on the lights.

Each structure will be continuously lighted using full cut off LED Roadway luminaires. Structure lighting will be mounted as low as possible, without limiting operational requirements on the structure, in an effort to limit the amount of light trespass into the water.

Please refer to the enclosed electrical drawing set 105716-S00-DMD-ELE-DWG (DMD project No. 7925-23), specifically sheet 4 of 6 for more information regarding the structure lighting performance and product specification.

3.2.6.4 LIGHTING IMPACT STATEMENT

The lighting plan is designed to achieve minimum recommended illumination level following the specified codes and standards for the facility. Yard lighting is designed with full cutoff fixtures, and the marine structures lighting is designed with a specific luminaire mounting height to minimize spill light into the river. There are no adjacent residential areas that would be impacted by the proposed lighting design.

3.2.7 PARKING AND ACCESS

A Parking Plan has been developed for this project to show the proposed driveway width, parking area, typical cross sections, and grades of all paving. The parking plan is attached in Appendix C.

4 REQUIRED STUDIES, REPORTS AND PLANS

The following studies, reports and plans were prepared for this Project Environmental Review.

4.1 WASTE MANAGEMENT PLAN

The Waste management plan is included in the CEMP and attached in Appendix D.

4.2 FIRE SAFETY

Kiewit has prepared a fire safety plan drawing showing the site entrance, muster points, access routes, fire hydrant locations, and on-site buildings for this project site and attached in Appendix E.

4.3 GEOTECHNICAL REPORT

Kiewit has prepared a geotechnical report outlining the ground conditions, geotechnical issues and recommendations for the project site and attached in Appendix F.

4.4 STORMWATER POLLUTION PREVENTION PLAN

The Stormwater Pollution Prevention Plan (SWPPP) is attached to this document in Appendix M.

4.5 MARINE TRAFFIC

There is no public marine use or navigation within the WCD Marine Yard other than Kiewit operations and therefore, there proposed project components have no potential interference with navigation under the Canadian Navigable Waters Act due to the WCD Marine Yard Build-Out Project discussed herein. Some considerations and activities associated to the WCD Marine Yard during construction and operation are indicated below.

4.5.1 DESIGN VESSELS

The vessels planned to be stored and used at the yard are predominantly barges and dumps scows. The barges range from flat deck barges, spud barges, and derrick barges. The table below summarizes the largest vessel of each type intended to be stored or utilized at the WCD Marine Yard.

Table 4-1 Vessel Names

Vessel Name	Kiewit 251 (Flat Deck Barge)	DB General (Spud / Derrick Barge)	WEEKS 256 (Dump Scow)
Length Overall, m	73.02	91.17	77.94
Beam, m	21.96	30.50	16.16
Depth, m	4.57	5.5	7.01
Loaded Draft, m		4.43	
Gross Tonnage	1817	4252	2666
Net Tonnage	545	1275	1275

4.5.2 ANTICIPATED TRAFFIC

Operational Marine Traffic generally consists of tug boats which are used to move barges (both flat deck and Derrick Barges) around within the water lot, and in/out of the water lot. Prior to the Build-Out project, vessel traffic generally consists of two to five tug movements in and out of the water lot per week. These tug movements are related to both regional construction project operations and Disposal at Sea and typically involve a pair of tug boats with a single barge. Vessel movement of barges within the water lot also occurs multiple times weekly, in which tugs without barges move in and out of

the water lot. Small skiffs are also used daily but are generally limited to use within the water lot only. Following the completion of the Build-Out Project, vessel traffic is not anticipated to increase from the current configuration. The intent of the project is to improve the functionality of the marine yard for loading, unloading and storage of equipment.

The marine traffic during construction is expected to be mostly limited to the WCD Marine Yard property boundary. The main activities anticipated during construction consist of cleanup of the water lot, the removal of old steel and timber piles, dredging, installation of new steel piles, and construction of new marine access structures to include an access trestle, conveyor structure and Ro/Ro ramp.

The installation of new steel pipe piles for the various proposed structures will start after the water lot cleanup, dredging and removal of the timber piles is completed. The marine access structures will likely be constructed using spud barges and derrick barges, which will temporarily increase the marine traffic locally. There will be some increased vessel traffic outside of the property boundary for short periods as barges are brought to/from site for construction or to dispose of dredged materials.

Dredging will start when the dredging window commences. Clamshell dredges are expected to conduct the work, to minimize environmental impacts, using barges or dump scows to collect the sediments. The sediment will be further disposed of at sea or off-site at an approved facility.

Kiewit works with the VFPA for any permissions required to work within the navigation or safety channels outside of the marine yard water lots.

4.5.3 NAVIGATION

The build-out project is planned for construction within the protected waters of the Fraser River in Coquitlam, BC. Based on a hydraulic modeling study performed by Kiewit Engineering Group Inc, the currents within the WCD Marine Yard property boundary are minimal. The low current velocities and experience of the local tug operators minimize the need for any special tug requirements.

No additional navigation aids are required for the project within the property boundary. All traffic into and within the WCD Marine Yard is managed through WCD Marine Yard internal operations. No training requirements are needed from the Pacific Pilotage Authority.

4.5.4 ADDITIONAL INFORMATION

There is no intention of vessel bunkering within the WCD Marine Yard or as a result of the WCD Marine Yard Build-Out Project construction.

4.5.5 TUG OPERATORS

As part of its Yard operations, Kiewit contracts with various tug operators. Table 4-2 below indicates the various tug boats that are generally used at the Marine Yard.

Table 4-2: Tug Operators

TUGS	AIS_ID
Ken Mackenzie	316012342
Rose Mackenzie	316020878
Granny Hutch	316007654
Seaspan Protector	316003677
Quadrant Partner	316011603

TUGS	AIS_ID
Cadal	316003137
Quadrant Warrior	316022036
Ocean Defiant	316038834
Tim MacKenzie	316005611
North Arm Victor	316003008
Ocean Greg	316048198
Harken No.7	316023605
Ocean Betty	316028702
Ocean Warlock	316004661

4.5.6 BUNKERING

There are no bunkering plans for Kiewit's build-out yard expansion.

4.6 DREDGING PLAN

Dredging for the Kiewit Marine yard expansion will be conducted in accordance with the following guidelines and practices.

- The proposed dredging areas are provided in the Civil design drawings package as referenced in Appendix C.
- Sediment analysis will be provided closer to construction date and as required by the ECCC Permit.
- Timing of proposed dredging will be conducted in relation to the least risk fisheries window (LRFW).
- Anticipated timeframe for the duration of works, hours of operation expected for the equipment.
    - Dredging day shift 6:30 to 4 pm.
    - Dredging Night shift 5 pm to 4 am.

To minimize turbidity induced by dredging, the following mitigation methods will be followed during dredging activity. Dredging activity will be conducted in conformance with the Disposal at Sea Material Management Plan approved by ECCC.

- Dredging and loading operators will ensure that the dredge bucket is raised slowly through the water column and complete emptied into the scow before swinging the bucket back over the water.
- Dredging and loading operators will only use single-grabs (i.e.: per cycle) into the sediments to reduce the number of impact waves of suspended sediment from the clamshell bucket hitting the river-bed and to minimize the loss from the clamshell reopening for subsequent grabs.
- Scheduling of dredging and loading activities will take into account tides and currents and only undertaken in suitable weather conditions.

For proposed plan to minimize harmful alteration, disruption, and destruction to fish and fish habitat Refer to Appendix D.

4.7 NOISE STUDY

SLR Consulting (Canada) Ltd. has been retained by Kiewit to prepare an Environmental Noise Assessment (ENA) for the Project. The ENA is completed in accordance with the VFPA Project & Environmental Review: Guidelines – Environmental Noise Assessment (Port Guidelines).

To complete the analysis, SLR has developed a sound prediction model using Cadna/A software to predict the base case and future case sound levels at two noise-sensitive receivers identified by VFPA: Don Roberts Park and future Fraser Mills Development site. A baseline sound survey was completed in February 2024 to calibrate the sound prediction model.

Overall, the Total (Project + Non-Project) Noise increase was less than 1 dB when the Project will operate at full capacity in 2027. The future Total Noise level was predicted to be L_{den} (Day-Evening-Night noise level) 62 dBA at both Don Roberts

Park and the most impacted Fraser Mills building. This result is expected considering that most of the changes from the base case scenario relate to an increase in operation capacity, and there are only minor changes to the equipment itself.

The study involved an assessment of the increase in community noise exposure that could result in an increase in the number of residents likely to be Highly Annoyed (%HA). For the Project, the highest increase in %HA was calculated to be approximately 0.4% at the most impacted receiver. This increase in %HA is significantly lower than the 6.5% criterion from Health Canada.

To assess the potential annoyance from low-frequency noise, a conservative sound prediction model was built to predict the worst-case operation condition where all equipment runs simultaneously in the Marine Yard. It should be noted that this scenario is unlikely to happen but would provide a good indication of whether or not further analysis and/or mitigation are required. The predicted worst-case Low Frequency Noise level (L_{LF}) was 69 dB, below the 70 dB threshold level in the Port Guidelines.

The results from the ENA can be found in the full report provided in Appendix O.

4.8 AIR ASSESSMENT

SLR Consulting (Canada) Ltd. (SLR) has completed an Environmental Air Assessment in accordance with the Project and Environmental Review Guidelines (PER Guidelines) required by the Vancouver Fraser Port Authority (VFPA), to evaluate potential environmental impacts from air emissions resulting from the proposed operations and the build-out Project. Through discussions between VFPA and Kiewit, the VFPA has determined a Level 1 Air Quality Assessment will be required for this permit application. Due to projected growth of operations, project Case emissions are expected to increase both at the Marine Yard and supply chain. Increased material handling activity at the Marine Yard is the primary source of total Project Case PM emission increases compared to the Baseline Case, which is expected to increase over 31% for TPM, PM_{10}, and $PM_{2.5}$ each. Supply chain transportation is the primary source of total Project Case NO_2, CO, SO_2, black carbon, DPM and GHG emissions. Emission increases ranging from 17% to 94% for NO_2, CO, SO_2, black carbon, and DPM. GHG emission increases range from 50% to 229%. However with current ambient concentrations for NO2, CO, and SO2 well within the region's air quality objective values (AQO), proposed Project Case activity is not expected to contribute to ambient AQO exceedances. Other increases in Total Particulate Matter (TPM), inhalable particulate matter (PM10), and fine particulate matter (PM2.5) can be mitigated by best management practices to keep dust down when handling materials. The complete results can be found in the full report provided in Appendix P.

4.9 PROJECT ENERGY INFORMATION

The Vancouver Fraser Port Authority is planning for the future and has encouraged the use of reliable, clean energy in business practices under the Port authority. In the plan to be compliant with the port authority, Kiewit will continue to maintain certain practices previously implemented, as well as implementing new carbon conscious business practices in the work done at the Marine Yard.

4.9.1 IMPLEMENTATION STRATEGY OF EXISTING EQUIPMENT

A current business practice that Kiewit has employed on job sites that will also be implemented at the Marine Yard expansion project is the use of Tier 4 Construction equipment. Kiewit currently uses Tier 4 construction equipment and will continue to employ an equipment fleet of Tier 4 emissions compliant equipment on all our work sites including the Marine Yard where feasible and applicable. Tier 4 standards are currently the strictest EPA emissions regulations for off-highway diesel engines.

In addition to reducing the carbon emissions of our construction equipment fleet, Kiewit also plans to install battery electric vehicle chargers on site in the future and purchase more electric vehicles for on-site and off-site use. In addition to using

electric vehicles for their intended purpose as a mode of transportation, they can also be used around the marine yard as auxiliary power sources reducing the number of generators and light plants that are required on site. With the installation of new battery electric vehicle chargers and by replacing some of our on-site trucks with electric vehicles we can greatly reduce our overall carbon emissions on site.

Another one of Kiewit's practices that will be upkept on site for the Marine Yard build-out project is the continued use of Biofuel and Bio Oil in all our equipment on site. The use of Biodiesel in construction equipment can help reduce net carbon emissions by roughly 70% in the life cycle of a single piece of equipment.

Kiewit has over the past few years across all our projects and districts implemented no idling on site policies as a method of carbon emissions reduction. A truck idling consumes roughly 1.0 liters of fuel per hour of idling. Through enforcement of the Kiewit no idling policy in all gasoline powered trucks, we can reduce up to 15 liters of fuel consumption daily for all site vehicles. This reduction amounts to roughly 35 Kg of carbon emissions daily and over the course of a 2-year project this would add to an overall carbon savings of 21 Tons of Carbon.

In addition to Kiewit's direct carbon emissions savings, the Marine Yard facility in carbon savings for our clients due to a reduction in travel distance for disposal of their excess soil and aggregate at the Marine Yard, versus alternative sites in the Fraser Valley. For projects requiring soil disposals in Langley, Richmond, Delta and Surrey, fuel consumption from distance traveled could be reduced by as much as three times the amount due to the reduced travel distance to the Kiewit Marine Yard as opposed to dumping in Chilliwack (65-75Km travelled vs 15-25Km). For projects located in Vancouver, North Vancouver, Coquitlam and Maple Ridge Fuel consumption form distance travelled can be reduced by nearly four times the amount as opposed to dumping in Chilliwack (80-100Km travelled vs 20-30Km). On average a truck and trailer will have a fuel economy of 23.5 L/100 km, meaning in a round trip from a project in Burnaby fuel savings could be as high as 25 liters for each load dumped at the Marine Yard. Assuming a truck can dump four times daily, fuel savings from a single truck is 100 liters (about 26 gal) in a day. Using the Canadian government standard of 2.7 Kg of CO2 per liter of diesel burned from a single truck dumping at the Marine Yard in a day, the direct savings is 270 Kg of CO2 and over the course of a 2-year project on 6-1 schedule, carbon emissions are reduced by 81 Tons per truck overall.

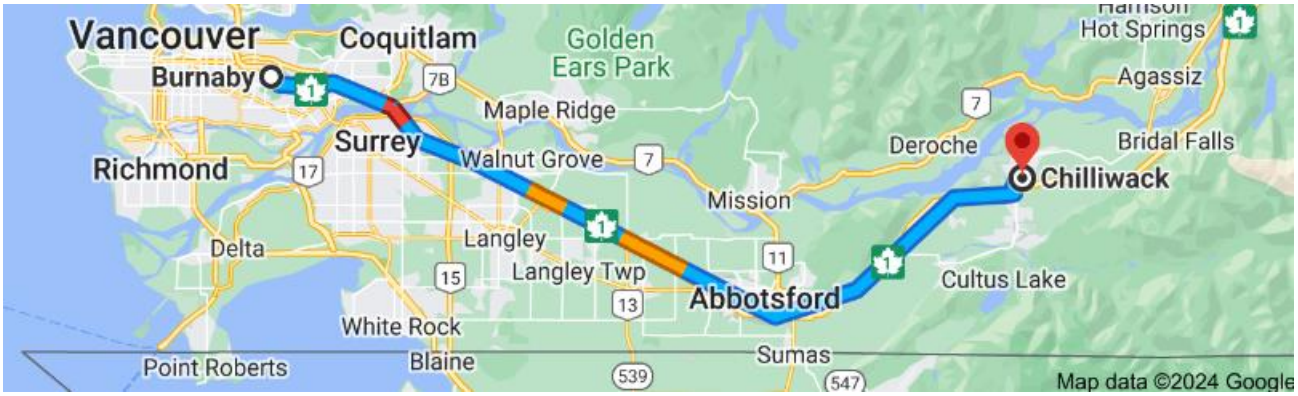


Figure 8: Burnaby to Chilliwack (180 Km Round Trip)

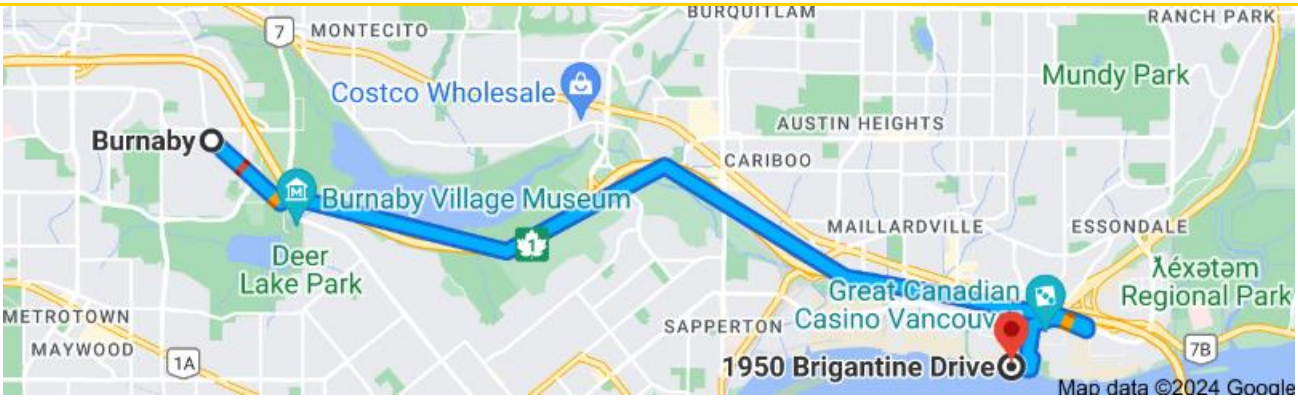


Figure 9: Burnaby to Kiewit Marine Yard (30 Km Round Trip)

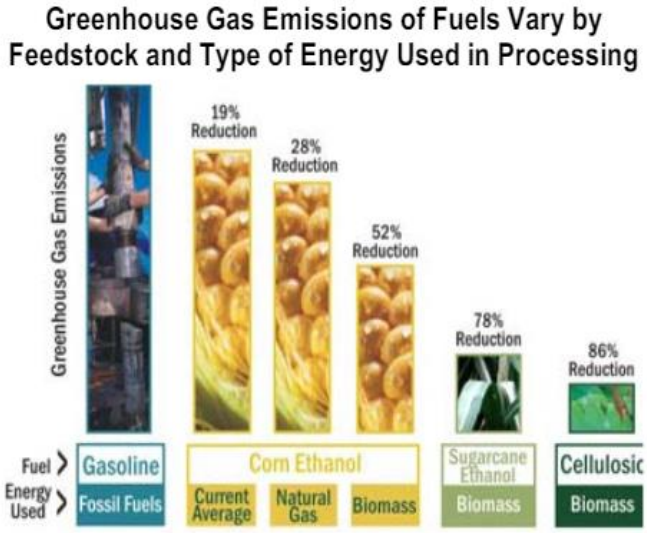


Figure 10: Carbon Emission Reduction from Biofuel compared to Fossil Fuels

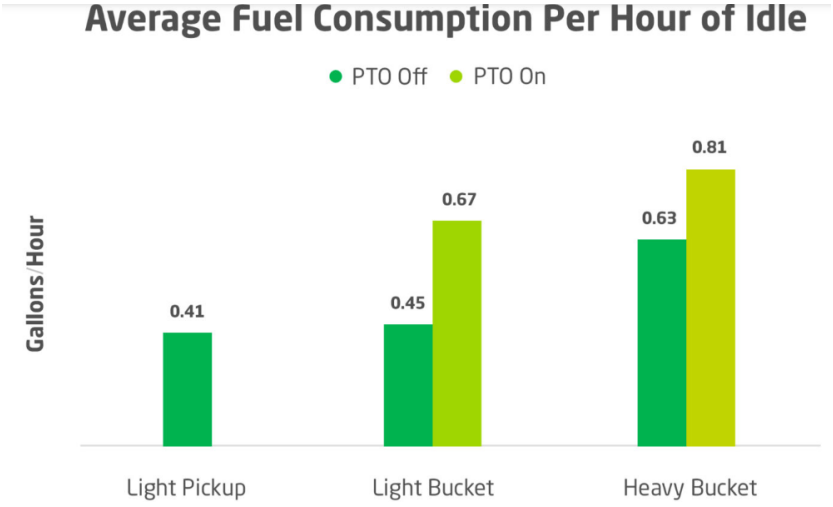


Figure 11: Fuel consumption from idling in Gallons/hour

4.9.2 NEW EQUIPMENT

Implementation of the Kiewit Marine Yard build-out project would result in the replacement of the existing material feeder, conveyors and stacker used for the disposal at sea operations. The replacement system will be powered completely by electricity and would result in an equivalent or lower power consumption. Other new equipment/yard components requiring energy use will include an air compressor, yard lights and the hydraulic lifting system for the RoRo Ramp, all of which is electric. Energy conservation efforts will be achieved by turning off equipment when not in use. Refer to Section 3.2.6 for description of the yard lighting plan, and the strategy for controls that encourage the lights to be turned on only when required, and shut off after dawn when daylight hits the photocell sensor.

4.10 ARCHAEOLOGY

WSP conducted an Archaeological Potential Preliminary Assessment in 2023. This assessment evaluates the risk of the proposed Project to adversely affect recorded or unrecorded heritage resources. WSP consulted multiple sources, including the Provincial Heritage Register (PHR), to complete their assessment. A review of the PHR indicated that there are no previously recorded heritage or archeological sites located in the Project area. WSP recommended an Archeological Overview Assessment (AOA) be completed at the Project site. The Preliminary Assessment is attached in Appendix H.

WSP applied for and received five First Nation Heritage Permits prior to conducting the AOA. The First Nations with Heritage Permit programs that also overlap with the Project area include Kwantlen First Nation, Kwikwetlem First Nation, Musqueam Indian Band, Stó:lō and Tsleil-Waututh First Nation.

As part of the AOA, WSP conducted a preliminary field reconnaissance (PFR) on April 11, 2024. WSP notified and invited First Nations to participate in the field reconnaissance. During the PFR on April 11, Kwikwetlem First Nation encouraged the AOA reconnaissance to consider two additional days of PFR in the intertidal area to allow for changes in visibility and the impacts of tide and silt draping, which took place on April 24 and April 30.

No archeological material was observed during the three field reconnaissance visits. A draft-Final AOA report was prepared by WSP and issued to First Nations for Review. The Report is included in Appendix I.

A summary of the visits and attendees is found in Table 4-3.

Table 4-3 First nations attendees

PFR	DATE	FIRST NATION ATTENDEES
1	April 11, 2024	Kwikwetlem First Nation, Tsleil-Waututh First Nation, Kwantlen First Nation
2	April 24, 2024	Kwikwetlem First Nation, Katzie First Nation
3	April 30, 2024	Kwikwetlem First Nation, Kwantlen First Nation, Tsleil-Waututh First Nation

4.11 DFO REQUEST FOR REVIEW

Prior to developing the design and permit documents for the project, Kiewit submitted a Request for Review (RFR) to DFO, which confirmed the requirement to submit an application under the Fisheries Act Authorization (FAA). Kiewit submitted an initial application under the FAA to DFO in October 2023. In November 2023 DFO responded with comments, in which Kiewit updated the application in response to those comments, and resubmitted in May 2024. The latest FAA Supplemental Report and offsetting plan developed for the project for the FAA are attached in Appendix J.

4.12 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

A detailed Construction Environmental Management Plan (CEMP) outlining the environmental management measures and the best management practices specific to the project is attached in Appendix D.

4.13 VEGETATION PLAN

A vegetation management plan has been developed the project, and included as a section in the CEMP. The CEMP is attached in Appendix D.

4.14 SOIL MANAGEMENT PLAN

A soil management plan has been developed the project, and included as a section in the CEMP. The CEMP is attached in Appendix D.

4.15 DEWATERING PLAN

A dewatering plan has been developed the project, and included as a section in the CEMP. The CEMP is attached in Appendix D.

4.16 HABITAT ASSESSMENT

Kiewit retained Hatfield Consultants LLP (Hatfield) to conduct a field habitat assessment of the property and leased water lot along the south side of the Fraser River at 1950 Brigantine Drive, Coquitlam, BC (the Site). The field assessment was prepared to support permit applications including, but not limited to, a Fisheries Act Authorization administered by the Fisheries and Oceans Canada (DFO) and this Project and Environment Review administered by the Vancouver Fraser Port Authority.

The Habitat Assessment report outlines the results of the desktop review and field assessment completed on the terrestrial, intertidal, and subtidal habitats and species present on the Site. The information is avaialble to inform regulatory requirements, including the assessment of potential Project impacts, mitigation measures, and offsetting planning. The findings may also be used as input to planning and design; specifically, to support the identification of environmental constraints and mitigation. The Overview Habitat Assessment is provided in Appendix R.

4.17 NESTING BIRD SURVEY

A Nesting bird survey protocol has been prepared for this project and is included in the CEMP attached in Appendix D.

4.18 SPECIES-AT-RISK ASSESSMENT

Hatfield has conducted a species-at-risk assessment for the Western Painted Turtle which has critical habitat within 1 km of the Project site. The species-at-risk assessment is attached to this document in Appendix K.

4.19 SPILL PREVENTION AND EMERGENCY RESPONSE PLAN

A spill prevention and emergency response plan has been prepared for this project and is included in the CEMP attached in Appendix D.

4.20 PUBLIC ENGAGEMENT PLAN

A Public Engagement Plan for the Kiewit Marine Yard is provided in Appendix L. The plan outlines the engagement goals, activities and proposed public engagement opportunities.

5 NOTIFICATION, CONSULTATION AND ENGAGEMENT

5.1 INDIGENOUS GROUPS

Kiewit is engaging with Indigenous Groups for the Project. An initial information package was sent to Indigenous Groups (by email and/or website upload) in January 2024 (Table 5-1). The package included facility background and current use information, site development plans, offset information and details on the Archeology Overview Assessment. Kiewit provided contact information for Indigenous Groups to request further information and/or set up a site visit or meeting.

Musqueam and Tsawwassen First Nation requested further information on offsetting plans and environmental impacts.

The Kiewit Marine Yard is in the core territory of Kwikwetlem First Nation. Upon request, Kiewit completed the Kwikwetlem First Nation Referral Intake Form and provided a site tour for the Kwikwetlem First Nation referrals team. Kiewit continues to engage with Kwikwetlem First Nation and provide additional information on the Project.

A full summary of engagement with Indigenous Groups was shared with the Port Authority and can be requested from Port Authority if needed. Kiewit will continue to engage with Indigenous Groups throughout the lifecycle of the Project.

Table 5-1 : Indigenous Groups Contact Methods

Indigenous Group	Contact Method	Initial Outreach Date
Cowichan Tribes	Email	January 19, 2024
Halalt First Nation	Email	January 19, 2024
Katzie First Nation	Email	January 19, 2024
Kwantlen First Nation	Email	January 19, 2024
Kwikwetlem First Nation	Email	January 19, 2024
Lyackson First Nation	Email	January 19, 2024
Musqueam Indian Band	Email	January 19, 2024
Penelakut Tribe	Email	January 30, 2024
People of the River Referrals Office	Upload to Sto:lo Connect	January 19, 2024
Semiahmoo First Nation	Email	January 23, 2024
Stz'uminus First Nation	Email	January 19, 2024
Tsawwassen First Nation	Email	January 19, 2024
Tsleil-Waututh Nation	Email	January 19, 2024

Indigenous Group	Contact Method	Initial Outreach Date
Ts'uubaa-asatx Nation (Lake Cowichan First Nation)	Upload to Nations Connect	January 30, 2024

5.2 STAKEHOLDERS

Consultations with stakeholders for the development and operation of the Marine Yard will be led by the Vancouver Fraser Port Authority (VFPA) and supported by Kiewit. Kiewit will participate in any meetings an provide additional background information as requested by VFPA. The list of stakeholders include:

- Council of Marine Carriers
- Transmountain Pipeline ULC
- City of Coquitlam
- Fraser Mills Properties Ltd.
- Forrest Marine Ltd.

5.3 PUBLIC ENGAGEMENT

Kiewit acknowledges that the Project may have an impact on adjacent community interests. Kiewit prepared a Public Engagement Plan (Appendix L) that outlines how Kiewit will engage with the public and receive feedback on the Project. Kiewit developed a project website, a draft notification letter to advise the public of engagement opportunities, and a feedback form. Kiewit will conduct additional public engagement activities if requested by the VFPA.

5.4 PUBLIC ENGAGEMENT MATERIALS

Draft public engagement materials for the Kiewit Marine Yard are found in Appendix L. Kiewit prepared a draft notification letter, project website and online feedback form for the Project.

5.5 COMPLETION OF PUBLIC ENGAGEMENT

Upon completion of public engagement, Kiewit will provide VFPA with a public engagement summary and consideration report.

6 OTHER REQUIREMENTS AND CONSIDERATION

The following section describes the applications submitted to other agencies including DFO, ECCC and Transport Canada.

6.1 DFO REQUEST FOR REVIEW

Kiewit has submitted two Requests for Review (RFR) to DFO, each supporting different aspects of the project. The first RFR (File No. 22-HPAC-00713) was submitted for the replacement of 68 creosote-treated wooden piles with 58 steel piles. The DFO concluded that these activities would not result in death of fish or Harmful Alteration, Disruption, or Destruction (HADD). The second RFR (File No. 22-HPAC-1071) was submitted for capital dredging at the project site. The DFO determined that certain elements of dredging will result in HADD, requiring an application for Authorization pursuant to the Fisheries Act (FA).

6.2 ECCC

6.2.1 SPECIES AT RISK

The Species at Risk Assessment referred to in Section 4.18 of this report indicated that construction has the potential to impact critical habitat of Western Painted Turtle. As such, Hatfield Consultants, on behalf to Kiewit, made an application to ECCC for a permit under the *Species at Risk Act* on April 26, 2024. On May 15, 2024, ECCC confirmed receipt of the application and the start the application review process by ECCC.

6.2.2 DISPOSAL AT SEA

Disposal at sea for marine yard dredging materials are applied for through ECCC. Initial permit for up to 40,000 m3 has been issued, and a further permit application is in progress for additional marine yard dredging materials to be generated and disposed of at sea.

6.3 TRANSPORT CANADA

Kiewit has submitted an Application for Approval and an Application for Exemption to Transport Canada for the proposed works. The Application for Exemption under the Canadian Navigable Waters Act is related to the deposition of materials for the proposed yard widening and construction of the Habitat Offsetting Marsh Bench. The Applications are attached in Appendix N.

List of Appendices

Appendix A – PER Application Submission Checklist

Appendix B – PER Application Form

Appendix C – Design Drawing Packages

Appendix D – Construction Environmental Management Plan

Appendix E – Fire Safety Plan

Appendix F – Geotechnical Report

Appendix G – Hydrotechnical Report

Appendix H – Archeological Potential Preliminary Assessment

Appendix I – Archeological Overview Assessment

Appendix J – DFO Fisheries Act Authorization (FAA) Application including Offsetting Plan

Appendix K – Species at Risk Assessment for Western Painted Turtle

Appendix L – Public Engagement Plan

Appendix M – Stormwater Pollution Prevention Plan

Appendix N – Transport Canada Applications

Appendix O – Noise Assessment Report

Appendix P – Air Assessment Report

Appendix Q – Indigenous Engagement Removed*

* - Please request from Port Authority if required

Appendix R – Habitat Assessment

Appendix S – Noise Screening Worksheet