



Construction Environmental Management Plan

*Vancouver Fraser Port Authority
Commissioner Street Road Realignment Project
RFP Number: P200930-59*

Revision No. 2

Prepared for:
B&B Contracting Group
3077 188 Street,
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Envirochem Project No.: 20275

March 25, 2021

Submission No.:		Submittal Review AECOM
Project No.	60612850	Discipline: Environmental
<input checked="" type="checkbox"/>	Reviewed-No Comment	Reviewed - Revise and Resubmit
<input type="checkbox"/>	Reviewed –As Noted	Review by Consultant Not Required
Review is solely for general conformity with contract. The Consultant does not warrant or represent that information in this submittal is accurate or complete. Review does not relieve Contractor of errors/omissions in design, including this submittal, that are the Contractor's responsibility, and for conforming/correlating with all quantities/dimensions, performing the Work, selecting performance means/methods, coordinating with other parts of the work between trades, and performing the Work safely. Notwithstanding this review, Contractor remains solely responsible for contract compliance.		
By:	Jonathan Ward	Date: March 09, 2021

REVIEWED

By Mike Farynuk at 2:20 pm, Apr 12, 2021

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REVISION INDEX

Revision No.	Date	Description of Change	Initial
0	March 3, 2021	Submission to B&B for subsequent submission to VFPA	FT
1	March 18, 2021	Revisions completed to address VFPA comments	FT
2	March 25, 2021	Additional details included in Noise and Vibration Management sub-plan	FT

Note: This document is intended to be a “living document” and subject to change based on changes which may occur with the execution of the construction and which may be different than current construction plans.

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ABBREVIATIONS

BC CSR	British Columbia Contaminated Sites Regulation
BC WQG	BC Water Quality Guidelines
BMP	Best Management Practice
CEQG	Canadian Environmental Quality Guidelines
CEMP	Construction Environmental Management Plan
CP	Canadian Pacific Railway
EM	Environmental Monitor
EMA	Environmental Management Act
ERP	Emergency Response Procedures
ESC	Erosion and Sediment Control
GVS&DD	Greater Vancouver Sewerage and Drainage District
MSDS	Material Safety Data Sheet
PER	Project Environmental Review
PPE	Personal Protective Equipment
QEP	Qualified Environmental Professional
SARA	Species at Risk Act
TDG	Transport of Dangerous Goods
VFPA	Vancouver Fraser Port Authority
WCMRC	Western Canada Marine Response Corporation
WHMIS	Workplace Hazardous Materials Information System

1.0 INTRODUCTION

Envirochem Services Inc. (Envirochem) was retained by B&B Contracting Group (B&B; the Contractor) to prepare the following Construction Environmental Management Plan (CEMP) for implementation at the Commissioner Street Road Realignment Major Works Project (the Project) led by the Vancouver Fraser Port Authority (VFPA; the Owner) (RFP Number: P200930-59). The CEMP has been prepared in accordance with the VFPA guidance on CEMP requirements, and the environmental obligations as described in the PER Permits No. 2011-125 and 20-172. A copy of the existing permits and environmental obligations is provided in **Appendix A**.

The main objectives of this CEMP are as follows:

- Outline best management practices (BMPs) / procedures for construction and operational management that will work to prevent or reduce the potential environmental impacts including the execution of all construction work as associated with the Project; and
- Outline environmental protection and monitoring measures to be implemented on the project site to detect potential environmental impacts and maintain regulatory compliance with applicable legislation and existing permits.

2.0 PROJECT INFORMATION

2.1 Background

The VFPA is undertaking a roadwork project to widen and realign Commissioner Street to the north between Renfrew Street and Victoria Drive (the Site) in order to make room for Canadian Pacific Railway (CP) to add additional rail tracks. The Project is being completed to help support the capacity needed on the south shore to move goods, and improve port operations. The Project is a discrete project amongst numerous projects that make up the Greater Vancouver Gateway 2030 strategy for smart infrastructure investment to address the impacts of trade and population growth.

2.2 Project Location

The Site is located at the VFPA South Shore Trade Area on Commissioner Street, between Renfrew Street and Victoria Drive in Vancouver, BC. The coordinates of the Project's approximate centre are 49°17'31.35" North and 123 °03'15.67" West. The project location is shown in **Figure 1**.

2.3 Project Description

All construction works will be conducted on land along Commissioner Street. The site plan is shown in **Figure 2**.

A general overview of the planned project work is as follows:

- Adjust the southern curbline of Commissioner Street from Nanaimo Street to Slocan Street, including paving and construction of the final cross section comprising four 3.5 m wide lanes (two inbound, one outbound and one staging lane) to allow for future rail expansion to the south of Commissioner Street.

- Widen Commissioner Street on the north side and establish the final northern curblin from Slocan Street to the existing Commissioner Street Vehicle Access Control System at Renfrew Street, including retaining wall modifications at the existing gates, relocation of a sanitary sewer and other drainage, utilities and roadway improvements to accommodate a wider cross section between Slocan Street and Renfrew Street and provide space to introduce additional rail tracks to the south of Commissioner Street.
- Relocate the Greater Vancouver Sewerage and Drainage District (GVS&DD) sanitary sewer pipe, including approximately 530 m of new, large diameter pipe (1,200 mm diameter precast reinforced concrete) placement with cast-in-place chambers, high density polyethylene (HDPE) by-pass piping around the new cast-in-place grit chamber, and abandoning and filling in the old pipe using controlled density fill.
- Connect the impacted sanitary sewer pipes to the new GVS&DD sewer pipe.
- Improve soil for the retaining wall foot print within Western Canada Marine Response Corporation (WCMRC) land.
- Construct a cast-in-place concrete retaining wall approximately 60 m long and 5 m tall, at the tallest location, including excavation, soil improvement and base construction.
- Complete electrical works, including installation of new street lighting and removing old street lights, power distribution from new BC Hydro transformer, interface coordination for power outages, placing conduits and vaults for BC Hydro and TELUS services.
- Complete telecom works, including relocating the Owner's Fibre.
- Relocate Owner and Canadian Pacific (CP) Rail cameras, camera poles, Owner instruments and power distribution panels along with interface coordination.
- Relocate the Owner's water main pipe including approximately 405 m of 300 mm diameter PVC pipe.
- Install new fences and gates, and add a landscaping strip along the new pedestrian walkway.

2.4 Project Schedule

The Project was scheduled to begin on March 4, 2021, and was expected to be completed by January 31, 2022, but the current schedule has pushed the start date back. The prior anticipated project schedule is presented in **Appendix B**.

2.5 Site Description

The Site is located in an industrial area within VFPA-managed federal land. The proposed construction area on Commissioner street is currently paved with asphalt and is generally flat and level. The closest watercourse is Burrard Inlet, located less than 100 m to the north. A railway is located adjacent to the south of the proposed construction area.

AECOM Canada Ltd. (AECOM) conducted a Limited Phase II Environmental Site Assessment (ESA) in October 2019. The Limited Phased II ESA was completed in conjunction with a geotechnical investigation to assess the soil and groundwater quality in select areas of the proposed sanitary sewer realignment trench located on Commissioner Street between Slocan Street and Renfrew Street. The locations of the boreholes are shown in **Appendix C**.

Based on the Limited Phase II ESA findings, concentrations of certain metals exceeding the British Columbia Contaminated Sites Regulation (BC CSR) industrial land use (IL) standards were observed in BH1 and BH2 (between Slocan Street and Renfrew Street) and in BH6 (west of Renfrew Street). Concentrations of metals and polycyclic aromatic hydrocarbons (PAHs) were greater than the applicable BC CSR standards and the BC WQG in the one groundwater sample collected (monitoring well MW3). Groundwater was encountered at 4.7 m below ground surface (bgs), which is below the proposed sanitary sewer realignment trench excavation depth of 3 mbgs. Groundwater is therefore not anticipated to be encountered during this phase of excavation; however, excavations below 4.7 m bgs may be encountered for utility works during other phases of the Project.

3.0 REGULATORY FRAMEWORK

This CEMP shall be binding on all parties involved in the construction phase of the Project and shall be enforceable at all levels of contact within the Project. The CEMP will be implemented during the construction phase in accordance with regulatory approvals, to enforce BMPs, and outline potential environmental risks and key regulatory requirements. These BMPs and site-specific management practices will be developed for the Project in general conformance with the Port of Vancouver “Project & Environmental Review, Guidelines, Construction Environmental Management Plan (CEMP)” (Port Metro Vancouver, 2015).

This CEMP includes the following documentation:

- A management structure, which includes all staff responsible for environmental work to set out respective roles and responsibilities with regards to the environment.
- An internal environmental audit / monitoring program.
- Procedures for monitoring, recording and disseminating the environmental information and performance.
- Procedures for addressing non-compliance and corrective additions.
- Procedures for dealing with incidents (e.g., spills), unexpected occurrences or findings during construction (e.g., soil contamination) or for prevention of construction related impacts to environmental media (soil, water and air). Procedural topics include:
 - Waste Management
 - Air Quality Management
 - Noise and Vibration Management
 - Machinery and Equipment Management
 - Vegetation and Wildlife Management
 - Environmental Monitoring
 - Lighting Plan
 - Fuel Management Plan
 - Concrete Works and Grouting Management
 - Archaeological Resources Management
 - Soil and Groundwater Protection
 - Erosion and Sediment Control Plan
 - Emergency Response and Spill Prevention

3.1 Federal, Provincial, and Municipal Legislation

A summary of the applicable legislation for the Project are listed in **Table 3-1** below.

Table 3-1: Applicable Provincial and Federal Legislation

Act, Regulation, or Bylaw	Applicability	Project Mitigation Measures and Environmental Specifications Affected
Federal		
<i>Fisheries Act</i>	Prohibiting the deposit of deleterious substance in water frequented by fish	<ul style="list-style-type: none"> • Erosion and Sediment Control • Emergency Response and Spill Prevention • Fuel Management Plan • Concrete Works and Grouting Management • Water, Stormwater, and Sediment Control
<i>Species at Risk Act (SARA)</i>	Provides for the protection of listed wildlife species and their critical habitats	<ul style="list-style-type: none"> • Vegetation and Wildlife management
<i>Migratory Birds Convention Act</i>	Provides for periods during which nests may be damaged, destroyed, removed, or disturbed	<ul style="list-style-type: none"> • Vegetation and Wildlife Management
Provincial		
<i>BC Environmental Management Act – Spill Reporting Regulations</i>	Requires immediate reporting when substances spilled to the environment exceed certain quantities	<ul style="list-style-type: none"> • Emergency Response and Spill Prevention • Fuel Management Plan
<i>BC Environmental Management Act – Contaminated Sites Regulation</i>	Provides identification and management of contaminated sites, applicable to any soil and groundwater to be disposed off-site	<ul style="list-style-type: none"> • Soil and Groundwater Protection • Fuel Management Plan • Waste Management
<i>BC Environmental Management Act – Hazardous Waste Regulation</i>	Addresses the proper handling and disposal of hazardous wastes	<ul style="list-style-type: none"> • Waste Management
<i>BC Wildlife Act</i>	Provides for the protection and management of wildlife and wildlife habitats.	<ul style="list-style-type: none"> • Vegetation and Wildlife Management • Waste Management

If required, a project waste discharge permit will be obtained for water discharge to the municipal sanitary sewer system and shall adhere to the waste discharge permit's conditions. Should the Project discharge to the storm sewers that discharge into the Burrard Inlet, the Canadian Council of the Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) shall apply and can only occur

with VFPA authorization. VFPA will need to authorize discharge of water directly or indirectly to storm sewers, and review excavation dewatering plans prior to dewatering

For off-site soil disposal on fee-simple land, the BC Contaminated Sites Regulation (CSR) applies. In the event of soil reuse on the Site, the BC CSR and/or CEQG for soil shall apply for evaluating soil quality.

Should the scope of the Project change during construction, the CEMP should be reviewed to ensure that relevant legislation, standards, and guidelines are applied.

3.2 Existing Permits

The Project has obtained PER permits (No. 2011-125 and 20-172) and has been authorized to proceed, provided that all the conditions outlined in the permits are adhered to. A project amendment request to conduct select construction activities outside of standard construction hours (between 8:00 pm and 7:00 am, Monday to Sunday from March 1, 2021 to September 4, 2021) has been submitted and is currently under review through the VFPA's Project and Environmental Review process. A Project waste discharge permit will be obtained for water discharge to the municipal sanitary sewer system. Any water discharge shall adhere to the waste discharge permit's conditions. Copies of the existing permits is provided in **Appendix A**.

4.0 PROJECT CONTACTS AND RESPONSIBILITIES

Table 4-1 provides contact information for some of the key project personnel. Specific contacts may be updated during the detailed planning stages or as changes occur over the duration of the Project.

Table 4-1: Key Project Personnel

Name	Company / Organization	Role	Phone Number
Owner			
VFPA Project Manager / VFPA Environmental Manager			
Contractor			
Kevin Parlee	B&B	Project Manager	604-861-2155
Darrel Unger	B&B	General Superintendent	604-861-3137
Dave Lalonde	B&B	Site Superintendent	604-842-6475
Greg Jaques	B&B	Project Coordinator	604-817-0011
Rob Simzer	B&B	Project Coordinator	604-861-9949
Contractor Environmental Consultant			
Nora Badreldin	Envirochem	Contractor Environmental Manager	778-951-6004
Fiona Tsun	Envirochem	Contractor Environmental Monitor	604-349-0523
Gail Slavik	Envirochem	Contractor Environmental Monitor	604-230-5202
Eric Choi	Envirochem	Contractor Senior Environmental Technical Reviewer	604-505-3461

4.1 Contractor Responsibilities

The Contractor will be responsible for ensuring the Project is undertaken in accordance with all project conditions including approvals/authorizations/permits, this CEMP, and applicable legislation. The main environmental responsibilities of the Contractor are identified below:

- Comply with all applicable federal, provincial, and municipal laws, statutes, by-laws, regulations, orders and policies as well as environmental requirements specified by applicable project approvals/authorizations/permits and this CEMP.
- Comply with the VFPA's environmental and health and safety requirements.
- Obtain required permits prior to construction work and ensure that work complies with permits.
- Conduct site-specific orientations for all employees and subcontractors including a review of conditions specified in this CEMP and project approvals/authorizations/permits before commencing work.
- Provide qualified personnel. Workers will be appropriately trained and qualified and familiar with the scope of work and operational area.
- Comply with written or verbal instructions from the Environmental Monitor (EM) with respect to compliance and mitigation measures outlined in this CEMP or in other applicable government legislation and project approvals/authorizations/permits. Correct deficiencies upon direction from the EM and VFPA.
- Ensure copies of documentation, including but not necessarily limited to this CEMP, project approvals/authorizations/permits, as well as the Contractors Emergency Response Procedures (ERP), are on-site and readily available for implementation and inspection if requested.
- Conduct and document environmental inspections, as required by this CEMP or as specified by VFPA or EM.

4.2 Environmental Monitor Responsibilities

4.2.1 Contractor Environmental Manager

The Contractor Environmental Manager's responsibilities include, but are not necessarily limited to, the following:

- Ensure that all environmental issues and requirements are in accordance with this CEMP and applicable legislation, permits and approvals.
- Ensure that corrective actions to be implemented by the Contractor are conducted.
- Be responsible for communicating with the Contractor. Concerns that are easily resolved are to be dealt with directly. In the event of a non-compliance, warning, order, or other such occurrence, the appropriate VFPA project personnel will also be contacted through the Contractor's Project Manager or other designated representative.
- Review biweekly monitoring reports completed by the Contractor Environmental Monitor and submit to the Contractor Project Manager, VFPA, and applicable regulatory agencies.

The Contractor Environmental Monitor will support the Contractor Environmental Manager in executing their duties.

4.2.2 Contractor Environmental Monitor

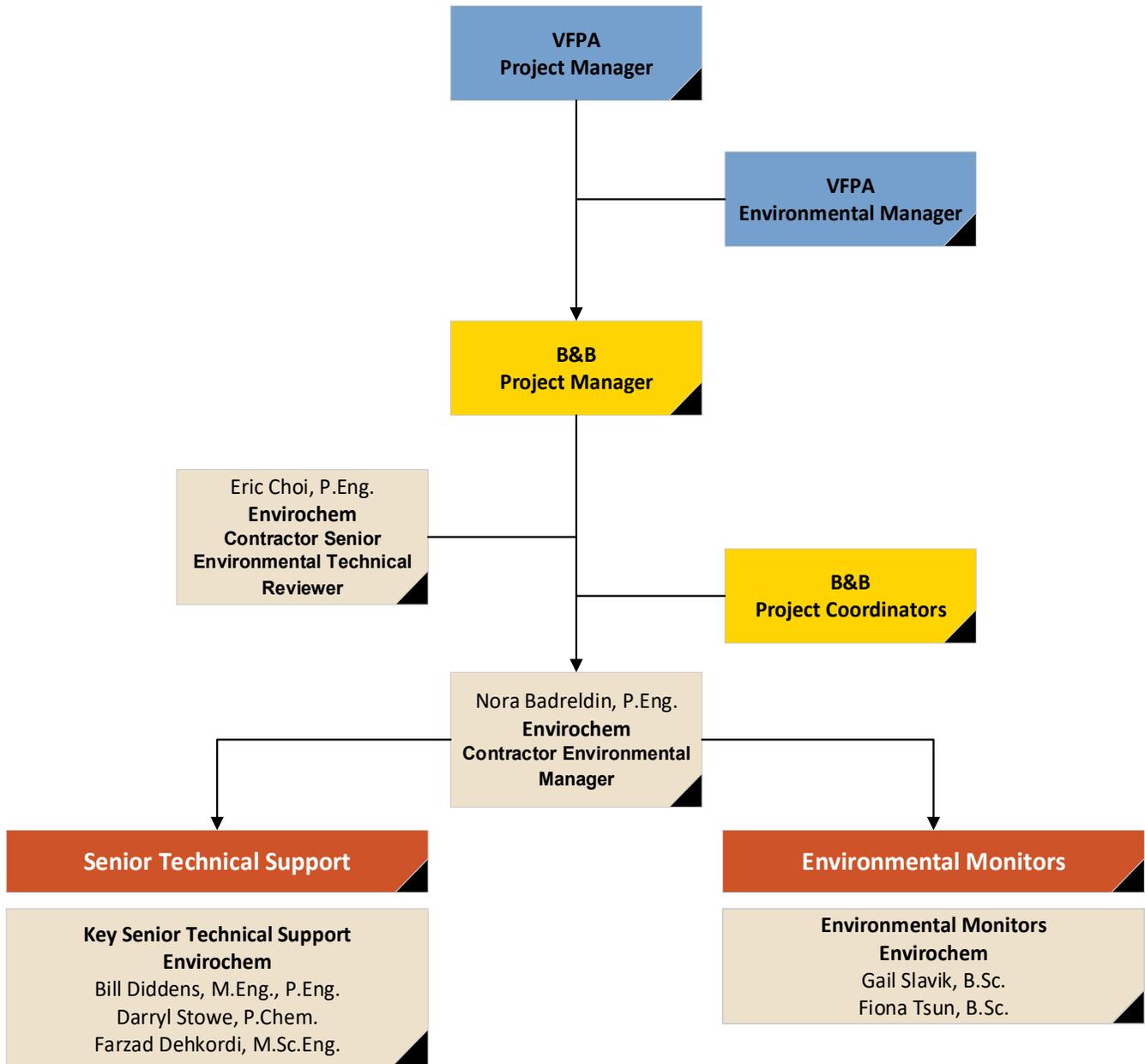
A qualified environmental professional (QEP) is an applied scientist or technologist who is registered and in good standing with an appropriate BC professional organization constituted under an Act. The QEP must be acting under that association's code of ethics, and subject to the organization's disciplinary action. A qualified environmental professional could be a professional Biologist, Agrologist, Forester, Geoscientist, Engineer, or Technologist.

The role of the Environmental Monitor (EM), which is to be a designated QEP, is to ensure that the environmental protection objectives of the applicant and applicable approvals / permits are met by ensuring that the requirements of the CEMP are adhered to (specific items are expected to be refined and / or expanded as per the needs of the Project). Specific roles include:

- Responsible for monitoring and maintaining documentation of the Contractor's implementation of this CEMP.
- Verifies copies of this CEMP and related documentation including but not limited to permits, authorizations and ERPs are on-site and readily available.
- Verifies environmental protection measures are in-place prior to construction start-up.
- Responsible to review the Contractor's work procedures to ensure functionality and compliance with the CEMP and applicable regulations, standards and BMPs.
- Responsible for the inspection and monitoring of construction activities and installations related to this CEMP throughout the duration of construction program as per the schedule established between parties prior to project start.
- Routine inspection of emergency response materials to ensure on-going availability and review of fuel storage and hazardous materials procedures to ensure compliance with this CEMP.
- Responsible for water quality assessments (if applicable) to ensure compliance with this CEMP and government legislation listed in **Section 3.1**.
- Ensure periodic review of this CEMP is undertaken with appropriate project personnel to maintain the relevance of this document.
- Responsible for the completion of biweekly reports detailing construction activities, effectiveness of mitigation measures, non-conformances to the CEMP, if any, and response undertaken to non-conformance. Documentation will include a photographic record of activities and constructed structures, corrective actions (if necessary) along with general observations with respect to compliance.
- Responsible for the immediate reporting of non-compliance incidents, spills or releases of deleterious materials to the aquatic environments to DFO's Observe, Record and Report line (1-800-465-4336). The EM will also ensure the immediate reporting to the Contractor's Project Manager and VFPA representative.
- **The EM has the authority to modify and / or halt any construction activity at any time if deemed necessary for the protection of the environment.**

4.3 Organizational Chart

Project communication will be structured as follows.



5.0 PROJECT MITIGATION MEASURES

Environmental standards, guidelines and BMPs should be referenced where applicable to construction-related impacts associated with the Project. Where any BMPs or guidelines conflict, the EM should be consulted for clarification and management. The CEMP should be updated as needed to incorporate such requirements.

5.1 General Practices

The Contractor will ensure that appropriately trained staff are available on-site during construction activities to implement environmental responsibilities as defined in this CEMP. The following general practices will be followed during construction:

- All contractors and site managers shall review this report and the applicable guidelines prior to each project phase or new activity.
- Contractors shall know how to properly install any protection measures and understand BMPs used on the Project.
- Contractors shall have readily available supplies of erosion and sediment control (ESC) materials as appropriate on-site such as, but not limited to, rock, gravel, silt fencing, staking, polyethylene sheeting, etc.
- Where feasible, project activities should be planned for dry weather. The Contractor shall minimize project works and equipment travel during periods of heavy precipitation.
- Contractors should be prepared to change existing measures and BMPs should they fail or additional measures be required. The EM should be notified of any changes to ensure they are adequate and installed properly.
- The Contractor shall cooperate fully with the Owner in respect of any review by the Owner of the Contractor's compliance with these conditions including providing any information or documentation required by the Owner.
- The Contractor shall make a copy of this CEMP and the project permits available to all employees, agents, contractors, licensees and invitees prior to commencing any physical activities. The Contractor will be responsible for ensuring that all such employees, agents, contractors, licensees and invitees comply with these conditions.
- The Contractor shall make available upon request by any regulatory authority a copy of the project permits.
- Biweekly reports will be submitted to VFPA detailing construction activities, effectiveness of mitigation measures, non-conformances to the CEMP, if any, and response undertaken to non-conformance. Documentation will include a photographic record of activities and constructed structures, corrective actions (if necessary) along with general observations with respect to compliance.

5.2 Health and Safety

The Contractor shall provide a site-specific Health and Safety Plan that is consistent with the requirements in the CEMP and relevant conditions of environmental permits.

5.3 Site Access, Mobilization and Laydown Areas

Site Access for the Project will be via the Commissioner Street entrance or the Clark Drive Overpass. Equipment will be mobilized to and from the Site with the use of trucks. The following BMPs should be followed:

- Trucks should be planned and staged to minimize the number of trips to and from the Site, and to minimize disturbance to the community.
- A laydown area for storage of equipment and materials should be established on a flat, stable area that is at least 30 m from any waterbody.
- A designated area for storage of contaminated soil has been established and is shown in **Figure 2**.

5.4 Waste Management

5.4.1 Non-Hazardous Solid Wastes

Solid non-hazardous materials shall be sorted into separate, clearly identifiable bins and recycled, as appropriate. Recyclable wastes may include cardboard, wood, metal, and approved plastics. Non-hazardous, non-recyclable wastes shall be included as general refuse and are to be disposed of at the local landfill.

Waste material generated or excavated during construction will be handled using industry accepted BMPs that include:

- Bins are to remain within designated contractor areas.
- Identification and segregation of any hazardous waste materials followed by the proper secured storage and subsequent disposal of material in accordance with regulatory requirements.
- Where practicable, the segregation of recyclable materials before transport to appropriate facility.
- Waste materials must be secured to prevent the development of leachate from material contact with surface water.
- Municipal waste, including any food waste, should be stored in containers with a secured lid to avoid attracting wildlife.
- Removal of waste materials should be done at regular intervals to prevent buildup of waste on the Site and prevent potential wildlife nuisance.

5.4.2 Hazardous Material Management

Hazardous materials may include any controlled or hazardous substances used on the Site including, but not limited to, fuels, chemicals, additives, paints and fertilizers. These materials may cause environmental impacts or health problems if released to the environment or exposure occurs. Prevention of such occurrences is best undertaken by conformance with BMPs and spill prevention measures (e.g., secondary containment, spill kits). The storage, handling and use of controlled materials must conform to BC's Occupational Health and Safety Regulation, Part 5 – Chemical and Biological Substances, Workplace Hazardous Materials Information System (WHMIS).

WHMIS labels must be on all controlled materials. Material Safety Data Sheets (MSDS) supplied by the materials manufacturer or supplier that detail the proper transport, storage, handling and disposal must be readily available on-site to site personnel intending to use or handle the material. An inventory of all MSDS must be kept available for review of any personnel or at the request of any party. The project owner must also have a copy of this list prior to project initiation and updates to the list throughout the project, if applicable.

Hazardous waste generated by contractors must be stored and handled according to the BC Hazardous Waste Regulation. For temporary storage on-site, this will include:

- Covered containment using approved containers.
- Isolation from flammable and combustibles (e.g., >10 m).
- Proper labeling and manifesting.
- Storage at least 10 m away from storm drains or waterbodies.

Bringing hazardous waste onto the Site is strictly forbidden (e.g., waste lead-acid batteries, motor oil, etc.) and contractors are not permitted to perform equipment maintenance on-site which can generate hazardous waste (e.g., waste oil, hydraulic fluid, lead-acid battery replacement, etc.). Contractors are expected to use licensed waste carriers and authorized disposal facilities only.

All hazardous wastes shall be transported off-site with appropriate manifesting and record keeping for transport and disposal of Hazardous Wastes in accordance with provincial regulations. All manifests should be kept on-site and provided to the project owner and made available to the EM upon request.

5.5 Air Quality Management

Air emissions such as equipment exhaust and vapours will be minimized and managed with application of the following BMPs for machinery working on the Site:

- All equipment and emission sources will be well-maintained to minimize emissions. Equipment producing excessive exhaust will be repaired or replaced by the Contractor prior to being used on the Project.
- Equipment should be turned off when not in active use to avoid idling when no work is required.
- Stationary emission sources such as portable diesel generators or compressors will be used only as necessary and turned off when not in use.
- Every effort shall be made to use equipment with model year 2007 or newer (that use the best available technology achieving Tier 3 or better emission limits).

Particulate matter is considered to be the primary potential source of adverse air quality at the Site. The primary sources of dust may include excavation and stockpile areas and transportation routes. The following BMPs are to be applied on an as-needed basis:

- Restrict haul routes to paved surfaces if possible, or establish stabilized construction routes (e.g. coarse rock, etc.).

- Conduct street sweeping on haul routes on a regular basis to prevent visible dust beyond the property line. Conduct on a weekly basis, at a minimum, and increase frequency based on site conditions (e.g. dry season, etc.).
- Maintain reduced speed limits on unpaved surfaces to 15 km/hr.
- Apply water, as needed, to haul routes, parking and staging areas that are either unpaved or where dust has otherwise accumulated. Protect against over application of water that could lead to sediment erosion.
- Oil must not be used for dust control. In addition, chemical binding agents, such as calcium chloride, shall not be used unless with permission from by VFPA and in consultation with the EM.
- Cover soil stockpiles to reduce dust and vapour emissions.
- Minimize handling of fine materials.
- Ensure dump trucks are covering their loads prior to transporting materials to off-site locations.
- Establish a wheel-washing facility to reduce material tracked off-site, where appropriate.

5.6 Noise and Vibration Management

Construction activities shall be in compliance with City of Vancouver Noise Control By-Law No. 6555 and will be limited to Monday to Saturday between 7:00 am and 8:00 pm, excluding holidays. The by-law states that continuous sound level resulting from construction should not exceed a rating of 85 dBA when measured at the property line where construction is taking place. In addition to working within the permitted hours, the following general measures are recommended to mitigate and manage noise/vibration concerns:

- Equipment is to be operated at optimal loads as specified by the equipment design (i.e., within load tolerance and ratings).
- Engines are to be turned off when equipment is not in use.
- Noisier tasks (i.e., saw cutting, use of hydrovac trucks) will be completed during the daytime or before 8:00 pm if work is to occur during the evening.
- Noticeable noise, such as white noise back up beepers on equipment, will be within 70 dB as per WorkSafeBC construction guidelines.
- Generators and pumps will be equipped with silent muffler option to reduce noise and will be pointed away from neighbouring residences.

A review of the 2020 noise monitoring data from the VFPA Renfrew sound monitoring station shows that average noise levels are 71 dBA during the day, 68 dBA during the evening, and 65 dBA during the night with daily peak noise levels that range from 60 dBA to 206 dBA. Based on the proposed works, the noise levels during certain activities on the Project are anticipated to reach 85 dBA with peaks upwards of 100 dBA. The Renfrew noise monitoring station data will be checked regularly by the Contractor and/or the EM to verify that noise levels are within the expected range during activities on the Project. Additionally, sound levels will be monitored at the property line during higher noise-generating construction activities. The following activities have been identified as the highest risk for excessive noise:

- Operation of heavy equipment such as but not limited to excavators, hydrovacs, dump trucks, pump trucks, excavators, and backhoes.

- The use of portable equipment such as generators, submersible pumps, skill saws, pneumatic air nailers, hammers

In the event that sound levels are consistently observed to be greater than 85 dBA at the property line, these values will be communicated to the appropriate B&B Project Coordinators and Project Manager and VFPA. Additional mitigation measures will be discussed and implemented if practical, including:

- A review of the project activities and other noise-generating operations in the surrounding environment to confirm source(s) of excessive noise.
- Temporarily suspending noisy activities outside of standard construction hours and resuming during standard construction hours.
- Construction of a mobile sound shield for smaller equipment to deflect construction noise away from neighbouring residences.
- Noise complaints will be reviewed by the Contractor and the daily construction activities will be reviewed to identify the task contributing to excessive noise.

A request to conduct select construction activities outside of standard construction hours (between 8:00 pm and 7:00 am, Monday to Sunday from March 1, 2021 to September 4, 2021) has been submitted and is currently under review through the VFPA's Project and Environmental Review process. Additional mitigation measures may be recommended should this application be approved.

5.7 Machinery and Equipment Management

The Contractor will provide and maintain a list of all non-road diesel equipment and machinery to be used on the Site during the Project, as required under the VFPA's Non-Road Diesel Emissions Program, included in **Appendix D**. Additionally, the following BMPs should be followed:

- Equipment shall be in good mechanical condition and shall be maintained free of fluid leaks, and be decontaminated to be free of invasive species, and noxious weeds prior to entering and leaving the Site. Equipment that is found to not be in good working condition should be removed from the Site immediately.
- A spill kit must be readily accessible on-site and personnel must be trained in use of the spill kit.
- Conduct major maintenance and repairs of equipment off-site. If minor equipment maintenance and repairs are required on-site, it must take place overtop an impermeable layer with use of secondary containment. The Contractor will document daily and/or routine equipment inspections and equipment requiring major repairs will be communicated to the EM.
- Refueling of equipment shall occur on land at least 30 m from any waterbody, with consideration to topographic features. Refueling near catch basin inlets should be avoided.
- Check equipment and vehicles with hydraulic systems on a daily basis to ensure they are free of leaks and in good mechanical condition (including fittings and hoses).
- Install drip trays with sorbent pads under stationary equipment. Inspect, clean out, and replace sorbent pads regularly.

5.8 Vegetation and Wildlife Management

The Project will take place on a paved road surface in an active operations area. As a result, no riparian vegetation will be encountered. Should riparian vegetation be removed during the Project, a vegetation enhancement plan will be developed and implemented. Planned upland vegetation clearing is shown in **Figure 2**. The following general guidelines should be considered:

- Disturbance or clearing of vegetation should be minimized and strictly limited to what is required for implementation of the Work.
- Dispose of invasive plant species material appropriately by storing in a designated green waste bin and remove material off-site to a landfill location. Do not compost on-site. BMPs are available and presented by Metro Vancouver for various invasive plant species.
- Inspecting vehicles for plant material prior to entering the Site. Clean machinery and equipment thoroughly after being used for invasive vegetation removal.
- Ensure any soil or fill brought to the Site is free of noxious weeds.
- If there is potential to affect birds an/or their active nests and eggs (i.e., tree removal), the Contractor shall conduct nest surveys. For any nests identified in surveys, a qualified environmental professional shall confirm that the nest is not occupied by a species protected at that time of year under applicable legislation. To reduce the risk of project-related harm, the Contractor should avoid certain physical activities during the general bird breeding season, which falls between April 1 and July 31, or outside of this time span if occupied nests are present.
- The existing large trees at 2901 Commissioner Street had been previously observed to be used by eagles. Should the trees be used or occupied by eagles during the Project, the trees will be preserved and construction noise in the vicinity will be minimized.
- Should a rare or sensitive species be identified at the Site at any time during the Project, the EM should be notified immediately for further direction, followed by notification to the VFPA.

Determinations and additional mitigation measures may be specified by the EM based on monitoring conducted during the Project following an adaptive management approach.

5.9 Lighting Plan

Project lighting will be implemented with consideration to VFPA Project and Environmental Review guidance. Temporary lighting on-site will be required to carry out safe operations onboard during low light periods. Temporary construction lighting will be installed in a manner to reduce light-spill by pointing lights downward or away from traffic and task lighting will be placed close to the work area to avoid disturbances to the community.

5.10 Fuel Management Plan

Fuels, lubricants, and other petroleum-based products are to be managed in accordance with applicable federal and provincial regulations. The following BMPs should be considered:

- Fuel storage is not allowed on-site by contractors except for portable fuel transfer tanks located in the bed of pick-up trucks and used solely for the transfer of fuel to equipment. Transfer tanks are to be double-walled vessels.

- Smoking is not permitted during fuel transfers and is permitted in designated areas only.
- Fuelling of machinery and routine servicing shall be done in designated areas only or with appropriate approval (and when the appropriate spill prevention and response measures have been agreed upon and approved).
- No refueling or maintenance activities shall be conducted within 30 m of any waterbody, or in an area where there is potential for run-off to reach surface water bodies. Fuel and other hydrocarbon inventories shall not be stored in such areas, temporarily or otherwise.

When it is not practical or safe to move the equipment to the designated fueling area, the following procedure is to be used on cranes and other large equipment:

- Refueling equipment to be inspected and in good repair. If equipment is not in good repair then it is not to be used.
- Avoid refueling near catch basin inlets. All fuel transfers are to be done as far away as practical from drainage and water bodies in approved/designated areas only.
 - If this is not possible, cover the catch basin inlet with a neoprene mat prior to refueling the equipment. Upon completion, remove the neoprene mat.
- Refueling truck is to have a spill kit located on it.
- Prior to commencing refueling of the equipment, the following safe guards are to be in place:
 - Place absorbent pads down around the fueling port on the machine
 - A spill kit to be placed next to the equipment being fueled.
 - A 20 lb ABC dry chemical fire extinguisher to be placed next to the equipment being refueled.
- Check equipment and vehicles with hydraulic systems on a daily basis to ensure they are free of leaks and in good mechanical condition (including fittings and hoses).
- Install drip trays with sorbent pads under stationary equipment. Inspect, clean out, and replace sorbent pads regularly.
- Equipment maintenance and inspection logs shall be provided to the EM for review upon request. At a minimum, the following equipment shall be inspected daily:
 - Fuel and hydraulic lines shall be power washed (if necessary) and then thoroughly examined for fluid leaks prior to arriving on the Site.
 - Fuel transfer tanks.
 - Large equipment, including their hydraulic fittings (must be free of leaks).

As part of the Contractor spill response plan, a fully stocked spill kit (with appropriate containment materials for the chemical or substance of concern) is to be located on-site at near the storage facility or storage location. Mobile equipment with fuel (e.g., excavators) must also carry appropriate spill kits in the event of fuel or fluid release.

To further support efficient response to potential spills, the following actions are also to be followed:

- Regularly inspect spill kits for adequate placement/location and supplies.
- Regularly inspect all machinery for evidence of leaks or worn hoses, fittings, etc., and make all repairs necessary prior to continuing with work.

- Document inspections (date, equipment, person doing the inspection and any observations).
- Ensure that all containers are properly labeled according to WHMIS and Transport of Dangerous Goods (TDG) requirements.

5.11 Concrete Works and Grouting Management

The Contractor shall carry out all activities in a manner that prevents the release of concrete or grout (cured or uncured), cement, mortars, and other Portland-cement or lime-containing construction materials to the aquatic environment, either directly or indirectly. The following BMPs should be considered:

- When water is used to cure concrete, runoff must be monitored to ensure that runoff does not enter a catch basin without treatment.
- Proper housekeeping practices and appropriate work site isolation techniques will be employed to minimize the potential for spills.
- Appropriate spill cleanup materials will be readily available on-site during concrete works. All contractors and sub-contractors will be made aware of appropriate clean up and disposal procedures.
- Water that has contacted uncured or partly cured concrete shall be contained on-site. Washing of concrete equipment will only occur in a contained designated area, as determined in consultation with the EM. The designated area will be a minimum of 30 m from any waterbody.
- If concrete work is required within 20 m of a watercourse (e.g., curbs, catch basin foundations), the work will be supervised by the EM.

5.12 Archaeological Resources Management

The Site is located on reclaimed land in an active operations area. Archaeological resources in the project area were not encountered during the Limited Phase II ESA conducted by AECOM in 2019; however, archeological sites (both recorded and unrecorded) are protected under the *Heritage Conservation Act* and must not be altered or damaged without a permit from the Archeology Branch. In the event that archaeological resources are encountered, the Contractor will implement the Chance Find Procedure included in **Appendix E**. The Contractor is responsible for reviewing and implementing the Chance Find Procedure should it be required.

5.13 Soil and Groundwater Protection

Impacted soil was identified in part of the proposed excavation area during the Limited Phased II ESA, as described in **Section 2.5**. Additional characterization by a qualified professional may be required to confirm the quality of the soil and to support off-site disposal at an authorized disposal facility.

The following BMPs should be followed for soil management:

- Any soils excavated from the Site during the Project shall be handled in a manner that prevents their release into an aquatic environment, either directly or indirectly as silt in storm runoff. Excavations shall not be dewatered unless a dewatering plan has been reviewed and authorized by VFPA.

- The Contractor shall dispose of any soils excavated from the Site at appropriate off-site facilities and maintain records of off-site disposal. There are currently no plans to reuse excavated soil on-site.
- All stockpiled soil should be stored in the designated storage area, as specified in **Section 5.3** and covered and secured with poly at the end of each shift.
- If suspect contaminated materials are encountered, the Contractor shall contain, test and dispose of such materials at appropriate licensed off-site facilities and maintain records of off-site disposal. VFPA shall be notified of such activities and provided relevant documentation upon completion.
- Soil characterization must be conducted by a qualified professional.
- All material leaving the Site will be accompanied by appropriate manifests and will be tracked. Records of off-site material movement will be maintained and provided to the EM.
- All materials proposed to be used as fill shall be approved by VFPA prior to their use.
- Materials brought onto the Site to be used for backfilling, site preparation or other uses shall be from sources demonstrated to be clean and free of environmental contamination, invasive species and noxious weeds. The Contractor shall maintain records to verify this.

Based on a Limited Phase II ESA conducted by AECOM in 2019, groundwater was encountered at 4.7 m below ground surface (bgs), which is below the proposed sanitary sewer realignment trench excavation depth of 3 mbgs. Groundwater is therefore not anticipated to be encountered during this phase of excavation; however, excavations below 4.7 mbgs may be encountered for utility works during other phases of the Project. In the event that groundwater is encountered, the Contractor shall not dewater excavations with discharge to the nearby storm sewers unless a dewatering plan has been prepared by a qualified professional, reviewed and accepted by VFPA.

6.0 EROSION AND SEDIMENT CONTROL PLAN

Erosion and sediment control (ESC) measures will be implemented during activities that have potential to contribute sediments to waterbodies, either directly or indirectly (e.g., catch basins or storm sewer system). The following measures are intended to minimize potential impacts of construction activities on the surrounding area:

- The Contractor shall carry out all activities in a manner that prevents the release of effluents of any type, including sediment, sediment-laden waters, and turbid waters to the aquatic environment, either directly or indirectly as silt in storm runoff. All works shall be in compliance with the following water quality criteria:
 - When background turbidity level is less than or equal to 50 NTU, induced turbidity should not exceed 5 NTU above the background value.
 - When background turbidity level is greater than 50 NTU, induced turbidity should not exceed the background values by more than 10% of the background value.
- ESC devices (such as, but not limited to, silt fencing, straw mulch, gravel, etc.) should be available for use on-site. Workers should be trained in the installation and maintenance of these installments.
- Catch basin inlets located in the area of the excavation and near the haul route must be protected. Install SiltSack® or similar device. All catch basin protection measures shall be inspected after every major rain event or every 2 to 3 weeks minimum, if no major events.
- ESC measures shall be implemented and reviewed by the EM prior to the start of ground disturbance activities.
- Sediment accumulation on haul routes and streets must be managed by appropriate general housekeeping measures. Street sweeping is to be conducted as required.
- Excavation and any vegetation clearing works should be phased to minimize areas of exposed or disturbed soil (e.g., during dry weather; immediately prior to subsurface works to prevent soil exposed for extended durations).
- Soil stockpiles should be stored in the designated area and covered and secured with polyethylene sheeting at the end of each shift, particularly during rainfall or snow, or if rain or snow is imminent. In general, stockpiles (and also steep cut and fill slopes) are to be protected if unworked for more than 12 hours. Sheeting must be inspected on a regular basis and any separation or tears repaired immediately. Excavated soils shall be stored away from storm drains or other potential pathways leading to a waterbody.

Determinations and additional mitigation measures may be specified by the EM based on monitoring conducted during the Project following an adaptive management approach.

7.0 EMERGENCY RESPONSE AND SPILL PREVENTION

The CEMP aims to prevent the occurrence of environmental emergencies through proper management. Should any of these measures fail, there could be an environmental emergency. The following environmental emergencies are considered to present the most likely highest or highest consequence risks:

- Discharge of sediment laden water to the Burrard Inlet (through storm sewer drains).
- Fuel, oils, or lubricant spill or leak on the Site, with increased risk in areas of heavy truck traffic during transport of goods and in traffic staging areas. The significance will be pending location (e.g., near drainage), surface condition (e.g., pervious soil or hard top) and volume lost (and recovered).
- Release of sewage from the GVS&DD sanitary bypass pipe to the Burrard Inlet (through storm sewer drains) during its relocation.
- Release of substances onto or toward the active CP Rail tracks located to the south of Commissioner Street.

In the event of an environmental emergency, safety will take precedence. In the event of discharge of sediment or a spill on-site, the spill response plan (below) should be followed.

7.1 Emergency Communication

In the event of an emergency, the Site will follow the procedures outlined in the Site's safety plan (prepared by the Contractor). This plan will take precedence over the CEMP.

7.2 Spill Response Plan

Prior to commencing construction or any physical activities, the Contractor shall have in place a spill prevention, containment and clean-up plan for hydrocarbon products (including fuel, oil and hydraulic fluid) and any other potentially deleterious substances.

Appropriate spill containment and clean-up supplies shall be available on the Site at all times and all personnel working on the Project shall be trained on the spill prevention, containment and clean-up plan. The Contractor shall carry out the Project in accordance with the spill prevention, containment and clean-up plan.

The following represents the minimum scope for spill/response/management procedures:

- Spill response kits will be readily accessible on all equipment in the event of a release of a deleterious substance to the environment.
- Spill response materials include, but are not necessarily limited to, the following:
 - Emergency Response Spill kits.
 - Personal protective equipment (PPE) (e.g., nitrile gloves, safety glasses, suits).
 - Fire extinguishers.
 - Shovels, buckets, trays.

- The Contractor will be required to maintain Spill Emergency Response Kit(s) at the Site that are appropriately sized for the type, quantity and volume of materials handled. Spill response kits must be replenished after each use.
 - **A minimum of one (1) Large Spill Emergency Response Kit** is required to be kept on-site and are intended to treat larger spills (e.g., exceeding 100L). At a minimum, the contents are to include the following:
 - Minimum 100 sorbent propylene ‘white’ oil and lubricant absorbent pads (oil, gas and diesel).
 - Minimum 100 cellulose ‘general purpose’ absorbent pads for water-based fluids.
 - Minimum 10 containment booms (each 3.0 m long).
 - Minimum 5 black heavy-duty garbage bags (6 mil).
 - PPE.
 - List of spill kit contents and procedures.
 - **Small Spill Emergency Response Kit(s)** are to be kept aboard mobile equipment and are intended to be used to treat smaller spills (generally less than 100L). The contents are to include the following:
 - Minimum 20 propylene ‘white’ oil and lubricant absorbent pads.
 - Minimum 10 cellulose ‘general purpose’ absorbent pads for water-based fluids.
 - Minimum 2 sorbent sock/roll (4’/1.2 m).
 - Minimum 2 black contractors garbage bags (6 mil).
 - PPE.
 - The Contractor is required to maintain MSDS for any hazardous substances used on-site.
 - The Contractor is required to maintain key emergency contacts with telephone numbers.
 - The Contractor is required to maintain written procedures for emergency response and spill reporting.
 - The Contractor will provide immediate response to spills. The Contractor will provide the necessary labour, equipment and materials to contain the spill, clean the area, dispose of waste materials appropriately and restore the area. A summary of the spill response plan is presented in **Table 7-1**.

Table 7-1: Spill Response Plan

Priority and Task		Response Required
1	Evaluate Hazards	Control access to the area, notify safety coordinator and others in the work area, consult safety data sheets and wear appropriate PPE.
2	Stop the Source	If safe to do so, contain the spill by any safe means possible (e.g., plug leak, close/isolate leaking valve). Stop applying water for dust control.
3	Contain the Spill	Begin containment of the spill and stop it from spreading. Prevent spilled material from migrating to waterbodies including ditches and

Priority and Task		Response Required
		drains. If the spill is to water, use measures such as installing sorbent rolls as floating booms to encircle the material and contain the spill.
4	Notify and Report	Report the spill to the EM, who will provide direction and oversee contacting the appropriate regulatory agencies if required. The EM will work with the Contractor Project Manager/Supervisor to ensure spill reporting requirements are met.
5	Spill Clean-up and Restoration	Where it is safe to do so: Clean up spill in accordance with instructions contained in spill kit and recommendations contained in product MSDS. Consult others or external agencies as required. Store used spill supplies in sealed plastic bags or designated containers. Dispose of used spill materials in accordance with applicable regulations. Work with EM and/or applicable regulatory agencies to restore the area.
6	Closure and Follow-up	Complete a spill / incident report. Replenish spill kit contents.

7.3 Environmental Incident Reporting

The Spill Reporting Regulation under the BC Environmental Management Act identifies externally reportable quantities for certain substances. In addition, all spills that enter or are likely to enter a body of water, the spill is considered reportable. Designated personnel under the direction of the EM will report any volume of spill of a regulated substance or deleterious substance. Environmental emergency contacts are listed below

Table 7-2: Environmental Emergency Contacts

Agency	Phone Number
Emergency Coordination Centre (will notify appropriate Environmental Emergency Response Officer)	1-800-663-3456
Canadian Coast Guard (for pollution or threats of pollution in the marine environment)	1-800-889-8852
CP Calgary Operations Center	1-800-795-7851
Metro Vancouver (GVS&DD) Water & Sewerage Emergency Hotline (Monitored 24-hours)	604-451-6610
Transport Canada	1-800-889-8852

An environmental emergency contact list with additional relevant contacts is also included in **Appendix F**.

When reporting a spill, the following minimum information will be collected, recorded and communicated, as it may be required when reporting a spill to a regulatory agency. The information should also be documented in an Environmental Incident Report:

- Name and contact phone number of the person initiating the call.
- Name and telephone number of the owner that spilled.
- Name and telephone number of the person responsible for the spill.
- Date and time of spill.
- Location of the spill site.
- Description of the spill site and surrounding area.
- Type and quantity of the substance spilled.
- Circumstances, cause and adverse effects of the spill.
- Details of corrective actions taken or proposed.
- Names of agencies (provincial, federal, local, and/or first nation government agencies) as well as emergency responders on scene.
- Names of other persons or agencies advised or to be advised concerning the spill.

Notification requirements depend on the quantity and type of substance spilled. A select list of materials and substances likely to be found on a construction site and reportable quantities under the provincial spill reporting regulation are provided in **Table 7-3**. Consult with EM to confirm notification requirements.

Table 7-3: Reportable Quantities for Select Substances

Substance / Material	Reportable Quantity
Flammable liquids	100 L
Flammable solids	25 kg
Toxic substances	5 kg or 5 L
Marine Pollutants (including sediment laden water)	25 kg or 25 L
Waste oil	100 L
Waste containing a pest control product	5 kg or 5 L

8.0 PARTICIPANTS AND QUALIFICATIONS

A summary of qualifications of Envirochem's assessors who prepared and reviewed this report is as follows:

Fiona Tsun, B.Sc. will act as the Project's Environmental Monitor. Ms. Tsun has 3 years of experience related to environmental management, site assessment and remediation on commercial / industrial / residential sites. She has been involved in various aspects of project delivery including project planning, site investigation and remediation, environmental sampling and monitoring, data analysis and interpretation, technical reporting, liaison with clients and regulatory agencies, and project coordination. She has worked on both small- and large-scale commercial, industrial, and residential projects across British Columbia including, but not limited to recycling facilities, service stations, landfills and marine terminals.

Nora Badreldin, P.Eng. will act as Project Manager. Ms. Badreldin has 9 years of experience related to environmental construction management, planning, site assessment and remediation primarily related to commercial / industrial / residential sites. She has conducted all aspects of project delivery including project planning, site investigation, monitoring, remedial design and implementation, data analysis and interpretation, technical reporting, liaison with clients and regulatory agencies, and project management. She has managed environmental aspects including soil management and water treatment of major infrastructure construction.

Eric Choi, P.Eng., will act as Senior Technical Reviewer. Mr. Choi has over 20 years of experience related to environmental management, planning, site assessment and remediation primarily related to commercial / industrial / residential sites and transportation / infrastructure projects. Eric has conducted all aspects of project delivery including project planning, site investigation, monitoring, remedial design and implementation, data analysis and interpretation, technical reporting, liaison with clients and regulatory agencies, and project management. He has worked on major transportation / infrastructure projects and numerous commercial, industrial, and residential sites including, but not limited to, major bridge and infrastructure projects, oil refineries, chemical facilities, landfills, warehouses, highways yards, railway yards, and correctional facilities (federal and provincial).

9.0 CLOSURE

We trust this report meets your requirements at this time. If you have any questions or comments regarding this report, please contact the undersigned.

Yours truly,

Envirochem Services Inc.



Fiona Tsun, B.Sc.
Environmental Scientist
Project Environmental Monitor



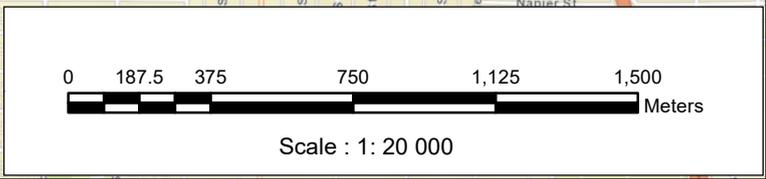
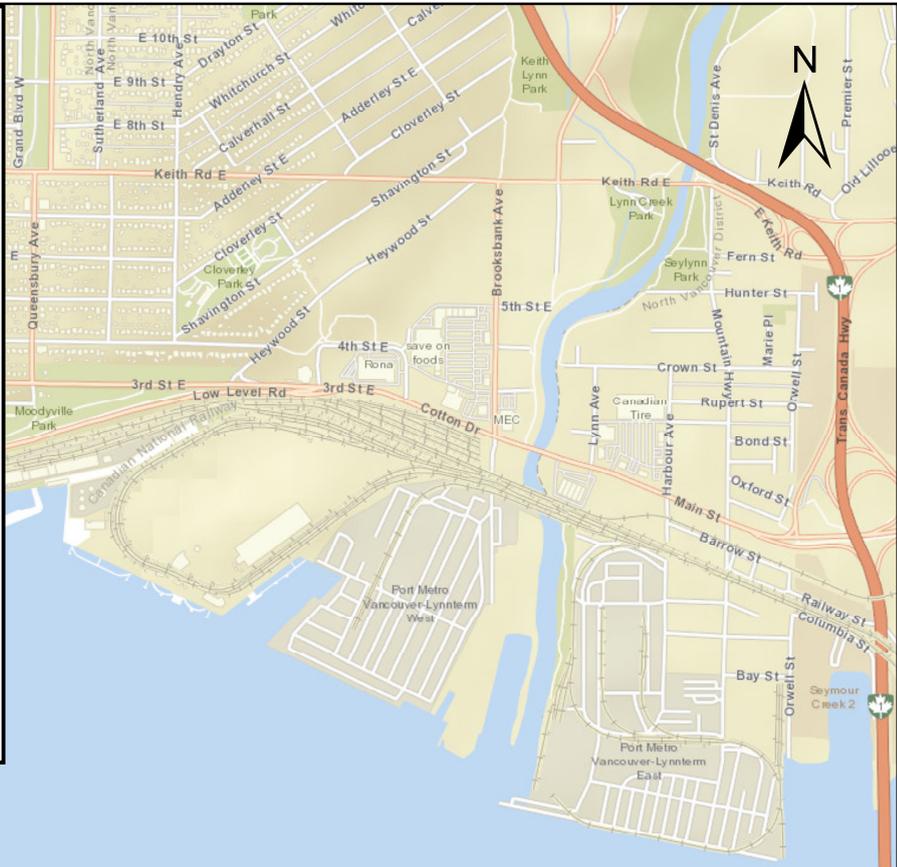
Nora Badreldin, P.Eng.
Environmental Engineer
Project Manager



Eric Choi, P.Eng.
Senior Environmental Engineer
Senior Technical Reviewer

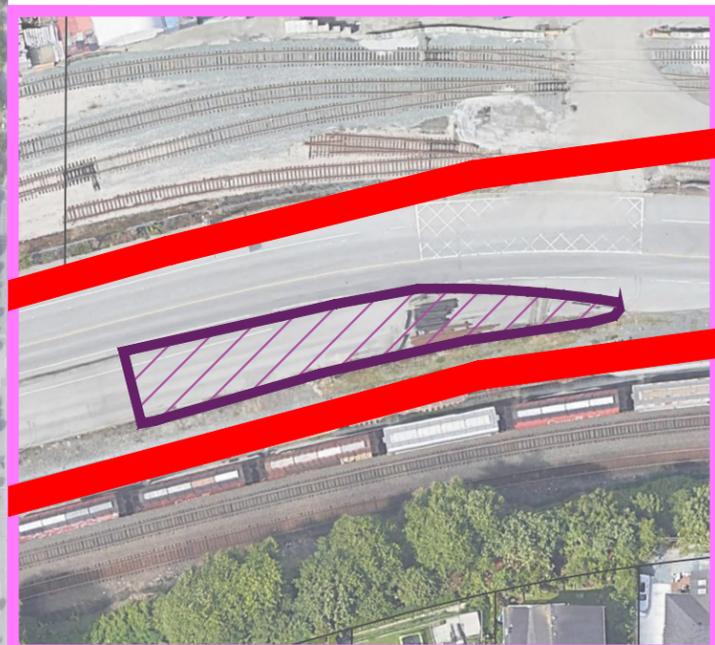
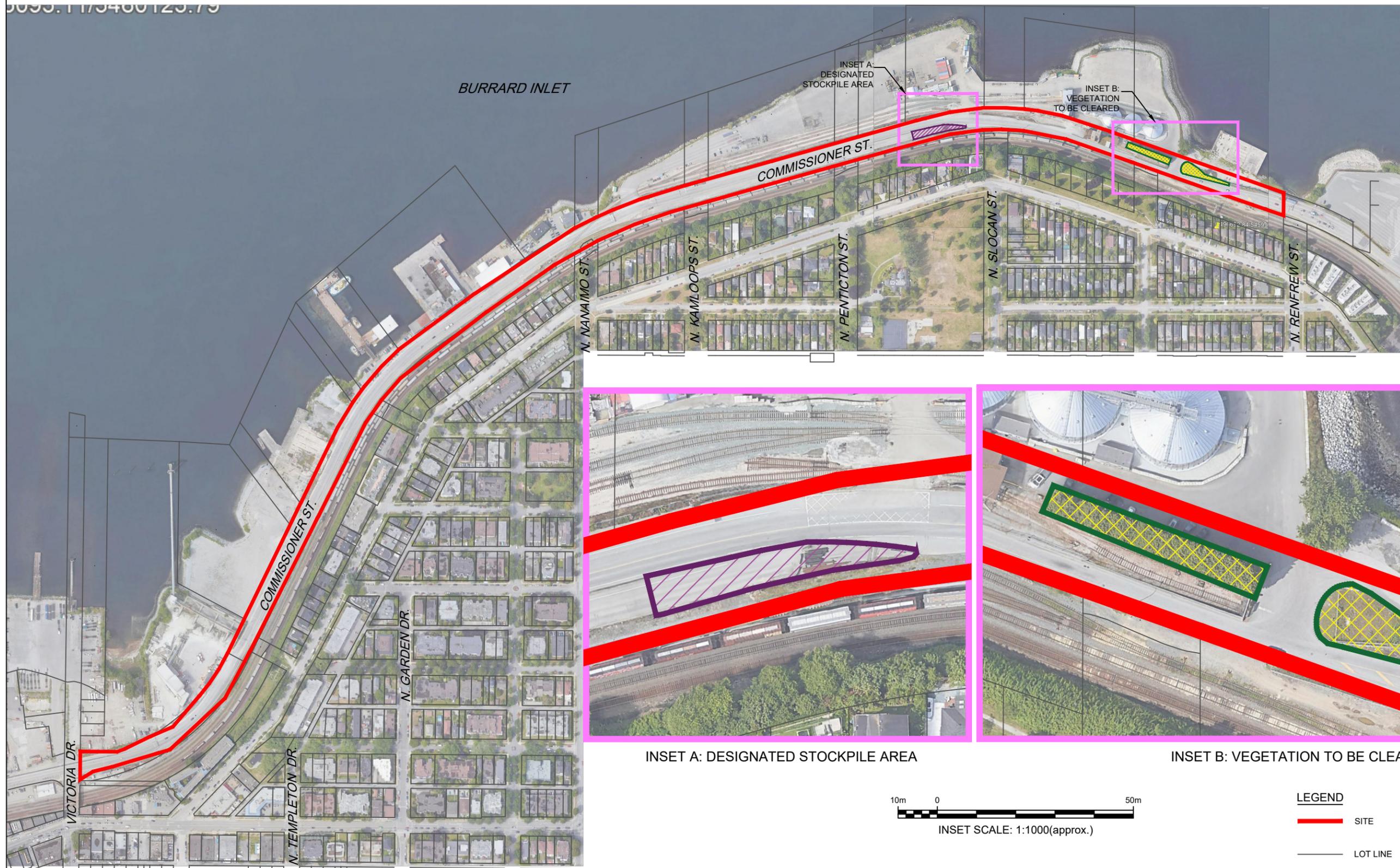
File: 2021-03-25-Re-Cemp-Commissioner St Realignment

FIGURES



 206-267 Esplanade W, North Vancouver, BC V7M1A5 T: 604-986-0233 E: response@envirochem.com	Title: Site Location Plan		Figure No: 1	Rev. No: 00
	Client: B&B Contracting Group		Date: February 2021	
	Project: VFPA Commissioner Street Road Realignment Project		Project No: 20275	
	Site: Commissioner Street, between Renfrew and Victoria Drive, Vancouver, BC		Drawn: HL	Checked: FT

3095.1173460123.75



INSET A: DESIGNATED STOCKPILE AREA



INSET B: VEGETATION TO BE CLEARED



LEGEND

	SITE		DESIGNATED STOCKPILE STORAGE AREA
	LOT LINE		VEGETATION TO BE CLEARED

envirochem
 206-267 Esplanade W,
 North Vancouver, BC V7M1A5
 T: 604-986-0233
 E: response@envirochem.com

NOTE:
 - Aerial Ortho Photo is downloaded from Google Earth Pro. (2019).
 - Original drawing is ANSI full bleed B (11.00 x 17.00 Inches) and in colour.



Title: Site Layout Plan	Figure No: 2	Rev No: 00
	Date: February 2021	
Client: B & B Contracting Group	Project No: 20275	
Project: VFPA Commissioner St. Road Realignment Project	Drawn: HL	Checked: FT
Site Location: Commissioner Street, between Renfrew Street and Victoria Driver, Vancouver, BC		

APPENDIX A

Project Permit Letter and Environmental Obligations

August 26, 2020

Mr. Raul Armendariz-Rodriguez
Vancouver Fraser Port Authority
100 The Pointe, 999 Canada Place
Vancouver, BC V6K 3T4

Dear Mr. Armendariz-Rodriguez:

Re: **Vancouver Fraser Port Authority Infrastructure Delivery – Project Permit No. 2011-125-05
South Shore Corridor Project - Amendment 05
Expiry Date - Extension**

Vancouver Fraser Port Authority (the port authority) has received your request to amend the expiry date of Project Permit No. 2011-125-04 to March 31, 2022. The port authority understands that the request is a result of project scheduling delays. Activities that remain to be complete on the project include construction of a roadway, as well as related road and utility relocations, signage works, and landscaping along Commissioner Street between Nanaimo Street and the McGill Street Overpass.

The port authority has undertaken and completed a review of the requested amendment in accordance with the *Canada Marine Act*, section 5 of the Port Authorities Operations Regulations, and section 82 of the *Impact Assessment Act*.

As part of our review, the port authority considered additional information provided in the following supporting documents:

- Email request for amendment from Raul Armendariz-Rodriguez, July 6, 2020
- All correspondence with Raul Armendariz-Rodriguez from to July 6, 2020 to August 14, 2020

To meet the requirements of the *Impact Assessment Act*, the port authority posted a description of the requested amendment and notice of public participation to the Canadian Impact Assessment Registry and considered the factors set out in section 84. We concluded that the requested amendment is not likely to cause significant adverse environmental effects. We also determined that adverse impacts to Aboriginal or Treaty rights are not expected.

Accordingly, the port authority authorizes an amendment to Project Permit No. 2011-125-05 to extend the expiry date; the expiry date for this permit is now March 31, 2022.

Please also note that due to i) the extended period of time that has passed between original permit issuance and the anticipated start of construction works, and ii) the anticipated duration of this final phase, the Permit Holder shall provide the following information to VFPA Planning:

1. A detailed Construction Schedule 20 business days prior to commencing construction;
2. A detailed Traffic Management Plan for review and approval 20 business days prior to commencing construction. The Permit Holder shall also coordinate construction activities, in particular traffic, with other projects in the area, both VFPA-led and non VFPA-led, that may be impacted by the works described in this permit;

.../2

Mr. Armendariz-Rodreiguez
Amendment PER No. 2011-125-05
August 26, 2020
Page 2 of 2

3. A detailed Construction Communications Plan for review and approval 20 business days prior to commencing construction; and
4. Upon completion of your project, VFPA will require record drawings in AutoCAD format to ensure an accurate record of all site improvements.

Please submit all documents required to satisfy the conditions listed in the Project Permit and above to per@portvancouver.com.

This amendment has been assigned Amendment No. 2011-125-05. Please quote this reference number in all future correspondence. Thank you for your cooperation throughout our review. Should you have any questions regarding this approval, please contact Regan Elley at 604-665-9594 or Regan.Elley@portvancouver.com.

Yours truly,

Vancouver Fraser Port Authority

ORIGINAL COPY SIGNED

Peter Xotta
Vice President, Planning and Operations

cc Payman Pegahi, Manager, Infrastructure Delivery, Vancouver Fraser Port Authority
Chris Bishop, Manager, Planning, Vancouver Fraser Port Authority
Lisa McCuaig, Environmental Specialist, Environmental Programs, Vancouver Fraser Port Authority
Regan Elley, Planner, Planning and Development, Vancouver Fraser Port Authority

encl (2) Amendment PER No. 2011-125-04
Project Permit PER No. 2011-125

June 28, 2019

Mr. Raul Armendariz-Rodriguez
Vancouver Fraser Port Authority
100 The Pointe, 999 Canada Place
Vancouver, BC V6K 3T4

Dear Mr. Armendariz-Rodriguez:

**Re: Vancouver Fraser Port Authority Project Permit No. 2011-125-4 - Extension
VFPA Infrastructure Delivery – South Shore Corridor Project**

On behalf of the Vancouver Fraser Port Authority (VFPA), I am pleased to advise that the Project Permit for the above-noted work has been extended. This permit, which was previously extended, most recently until October 31, 2019, is now valid until March 31, 2021.

The scope of work for Project Permit 2011-125 is understood to include: Construction of an elevated roadway and pedestrian overpass, as well as related road and utility relocations, signage works, and landscaping. The scope of work referred to by VFPA Infrastructure Delivery (the Permit Holder) as Phase 2 and 3 works, which is all that remains to be constructed under the project, is defined as remaining road construction along Commissioner Street between Nanaimo Street and the McGill Street Overpass.

The Permit Holder is responsible for carrying out the works according to the subject conditions contained in the Permit. Please ensure that those involved in undertaking the approved works are aware of these conditions and that a copy of the Permit is maintained on site during the project.

Please also note that due to i) the extended period of time that has passed between original Permit issuance and the anticipated start of construction on Phases 2 and 3 works, and ii) the anticipated duration of this final phase, the Applicant shall provide the following information to VFPA Planning:

1. A detailed Construction Schedule for review and approval 20 business days prior to commencing construction;
2. A detailed Traffic Management Plan for review and approval 20 business days prior to commencing construction. The Permit Holder shall also coordinate construction activities, in particular traffic, with other projects in the area, both VFPA-led and non VFPA-led, that may be impacted by the works described in this permit;
3. A detailed Construction Communications Plan for review and approval 20 business days prior to commencing construction; and
4. Upon completion of your project, VFPA will require record drawings in AutoCAD format to ensure an accurate record of all site improvements.

Mr. Armendariz-Rodriguez
PER No. 2011-125 Extension
June 28, 2019
Page 2 of 2

Please submit all documents required to satisfy the conditions listed in the Project Permit and above to per@portvancouver.com.

Thank you for your cooperation throughout our review. Should you have any questions regarding this approval, please contact Regan Elley at 604-665-9594 or Regan.Elley@portvancouver.com.

Yours truly,

VANCOUVER FRASER PORT AUTHORITY

ORIGINAL COPY SIGNED

Vice President, Planning and Operations

cc Payman Pegahi, Manager, Infrastructure Delivery, VFPA
Greg Yeomans, Director, Planning and Development, VFPA
Chris Bishop, Manager, Planning, VFPA
Regan Elley, Planning, VFPA

encl (1) Project Permit No. 2011-125



PORT METRO
vancouver

June 29, 2012

PP# 2011-125
VIA MAIL & E-MAIL

Mr. Alan Shopland
Collings Johnston Inc.
401 - 409 Granville Street
Vancouver, BC V6C 1T2

Dear Mr. Shopland,

**Re: VFPA Project Permit #2011-125
South Shore Corridor Project**

On behalf of the Vancouver Fraser Port Authority (VFPA) doing business as Port Metro Vancouver, I am pleased to advise that your application for a Project Permit for the above-noted work has been approved. VFPA Project Permit 2011-125 is valid until June 30, 2014. This approval is based on the application submitted on September 1, 2011 and is subject to the conditions listed on the Project Permit.

Collings Johnston Inc. and PMV Infrastructure Delivery are responsible for carrying out the works in the manner described in your application and according to the subject conditions. Please ensure that those involved in undertaking the approved works are aware of these conditions and that a copy of the Permit is maintained on site during the project.

Upon completion of your project, VFPA will require as-built drawings in AutoCAD format to ensure an accurate record of all site improvements. These drawings may be sent by e-mail directly to britta.chang@portmetrovancover.com.

Should you have any questions regarding this approval, please contact me at 604-665-9378.

Sincerely,

ORIGINAL COPY SIGNED

Tim Blair,
Planner

Encls. Project Permit 2011-125

Cc. Jennifer Natland, Planning, VFPA
Carrie Brown, Environmental Programs, VFPA
Raymond Tsow, Real Estate, VFPA
Justin Pedley, Infrastructure Delivery, VFPA

100 The Pointe, 999 Canada Place, Vancouver, B.C. Canada V6C 3T4

100 The Pointe, 999 Canada Place, Vancouver, C.-B. Canada V6C 3T4

portmetrovancover.com

Canada



DATE OF APPROVAL	June 28, 2012
APPLICANT	PMV Infrastructure Delivery, and Collings Johnston Inc.
ADDRESS OF APPLICANT	999 Canada Place, Vancouver BC V6C 3T4
PROJECT LOCATION	South Shore, Burrard Inlet
PROJECT TITLE	South Shore Corridor Project

PROJECT DESCRIPTION

For the purposes of this Permit, the Project is understood to include the following "Works" on Vancouver Fraser Port Authority property:

Construction of an elevated roadway and pedestrian overpass, as well as related road and utility relocations, signage works, and landscaping.

GENERAL CONDITIONS OF APPROVAL:

1. This Permit is granted subject to the fulfillment of all other requirements of the Vancouver Fraser Port Authority (VFPA), doing business as Port Metro Vancouver, relating to the Project, and subject to all applicable laws and other necessary approvals being obtained. Prior to commencing construction the Applicant shall ensure that it has complied with all necessary legal requirements and that all necessary regulatory approvals have been obtained. Furthermore, the issuance of the VFPA Project Review Permit does not preclude compliance with the regulatory processes and requirements of any other applicable agencies;
2. This Permit in no way endorses or warrants the design, engineering, or construction of the construction works contemplated under this Permit and no person may rely upon this Permit for any purpose other than the fact that VFPA has permitted the contemplated construction works to commence, subsequent to the issuance of this Permit, in accordance with the terms and conditions of this Permit;
3. In consideration of the granting of this Permit by VFPA the Applicant agrees to indemnify and save harmless VFPA against any and all actions, claims, loss, damages or other expenses in any way arising or following from or caused by the granting of this Permit or the construction of any works as contemplated by this Permit;
4. Development shall be generally in accordance with the application submitted by Collings Johnston Inc., including the 90% design drawings titled and dated:
 - "Key Plan and Drawing Index"; "Centennial Road Geometrics and Laning"; "TSI/Vanterm Parking Lot Geometrics and Laning"; "Stewart Street Geometrics and Laning"; "Commissioner Street Paving Plan and Profile"; "Commissioner Street Typical Sections"; "Commissioner Street Landscaping Layout" by AECOM, Dated June 4, 2012, Revision 0;

5. Prior to commencement of construction, the Applicant shall submit for review and approval by VFPA detailed Elevated Structure, Pedestrian Overpass, and Lighting plans;
6. The Applicant shall adhere to the conditions listed on the attached VFPA Schedule of Environmental Conditions numbered 11-125, and subject to the Environmental Assessment for the project as a whole;
7. The Applicant is responsible for locating all existing site services and utilities including any located underground and the Applicant shall ensure that these services and utilities are protected during construction and operation of the Project. The Applicant is responsible to employ best practices and meet applicable code requirements with respect to protection of existing site services and clearance between existing and proposed site services. The Applicant is responsible for repair or replacement of any damage to existing site services and utilities, to the satisfaction of VFPA, that result from construction and operation of the Project;
8. Details of any significant proposed changes to the Project or relating to the application must be submitted to VFPA for consideration of an amendment to this Permit;
9. Prior to commencement of construction of the roadworks, elevated structure, and pedestrian overpass, the Applicant shall submit signed and sealed drawing packages approved for construction by a professional engineer licensed to practice in the Province of British Columbia;
10. The Applicant shall provide VFPA with a construction schedule prior to commencement of construction and shall provide VFPA with regular updates of the construction schedule throughout the duration of construction;
11. The Applicant shall confirm acceptability of off-site Dynamic Messaging Signs, roadworks at the intersection of Clark Drive and Hastings Street, and the installation of Closed Circuit Television Cameras with the City of Vancouver prior to installation of these elements;
12. The Applicant shall confirm a detailed Traffic Management Plan to the satisfaction of PMV prior to construction commencing;
13. The Applicant shall post regular information updates to the project website;
14. The Applicant shall ensure that an Archaeological Monitor is on site during column drilling activities and will cease all related activities should any archaeological artifacts be uncovered, and until such time as a recovery and mitigation plan is reviewed and approved by VFPA;
15. All construction activities shall be in compliance with City of Vancouver Noise Control By-Law No. 6555, or to the satisfaction of VFPA;
16. The Applicant shall provide as-built drawings, in both AutoCAD and Adobe (PDF) format, within 60 days of completion of all works; and,
17. The approved works must commence by June 30, 2013 (the "Commencement Date") and be complete no later than June 30, 2014 (the "Completion Date"). For an extension to the Commencement Date, the Applicant must apply to VFPA in writing no later than 30 days following that date. For an extension to the Completion Date, the Applicant must apply in writing to VFPA no later than 30 days prior to that date. Failure to apply for an extension as required may, at the sole discretion of VFPA, result in termination of this approval.

ORIGINAL COPY SIGNED

Peter Xotta
Vice President Planning and Operations

COPY



CENTENNIAL ROAD CONTROL LINE CURVE TABLE

CURVE #	BEARING (N)	LENGTH (M)	DELTA (DEG)	PI POINT (N)	PERCENTAGE	PLACING	E	TANGENT
C1	304.000	133.548	90.000	N 125.128	54.000	54.000	3.141	18.300
C2	618.000	84.633	90.000	N 241.798	54.000	54.000	1.800	0.300

NOTES:
 1. SEE CUBS FOR PARKING LAYOUT.
 2. ALL DIMENSIONS AND CALCULATIONS TO FACE OF CURB.
 3. ALL DIMENSIONS AND CALCULATIONS TO FACE OF CURB.
 4. SEE CUBS FOR CHAIN LINK FENCE CONSTRUCTION DETAILS.

POOLS: - SPOT ELEVATIONS SHOWN AT FACE OF CURB QUARTER POINTS

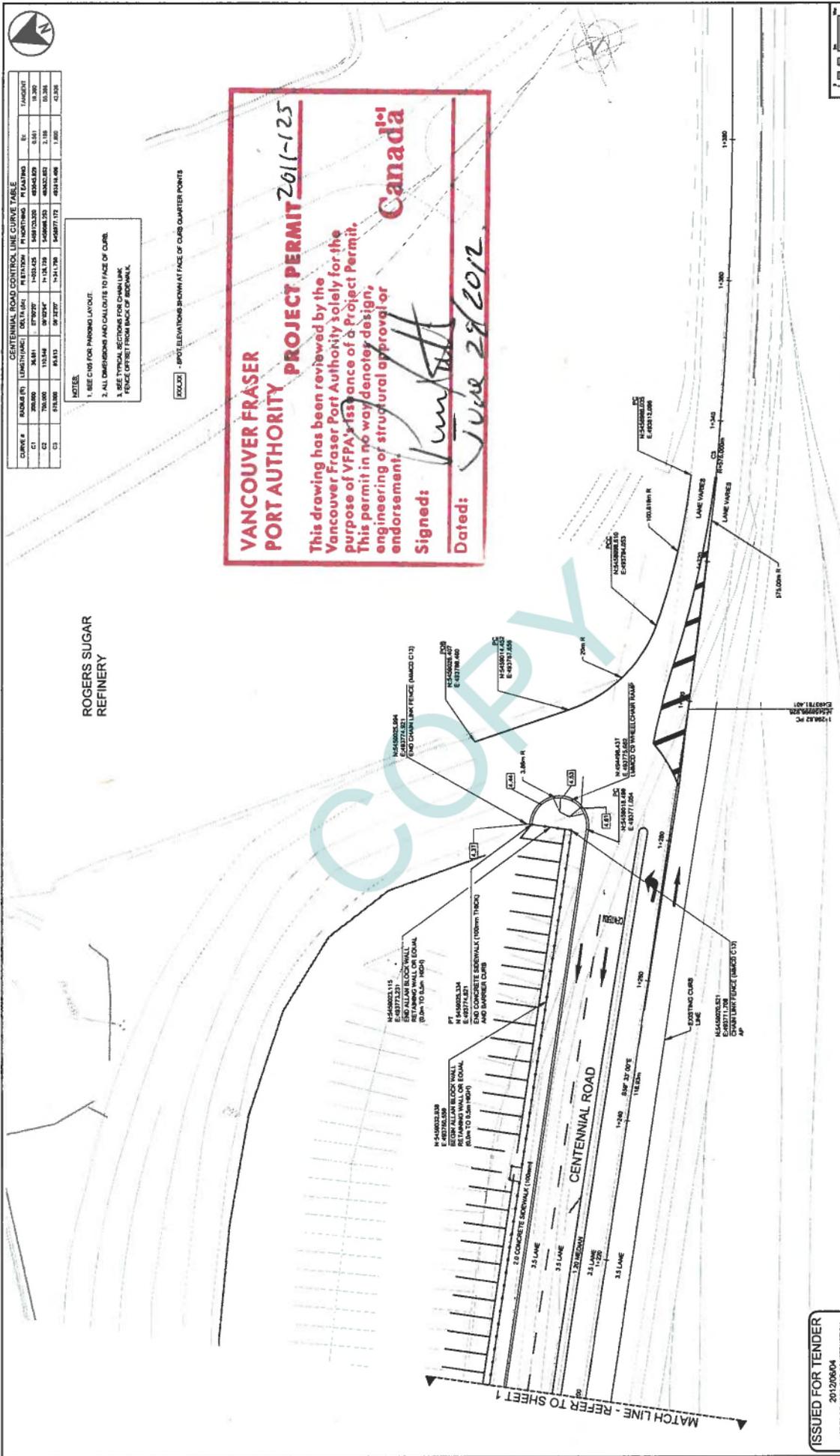
VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2011-125

This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.

Signed: *[Signature]*
 Dated: *June 29 2012*

Canada

ROGERS SUGAR REFINERY



ISSUED FOR TENDER
 20120504
 NOT TO BE USED FOR CONSTRUCTION

AECOM

PORT METRO Vancouver

VANCOUVER FRASER PORT AUTHORITY
 ENGINEERING DEPARTMENT

SOUTH SHORE CORRIDOR PROJECT
 CENTENNIAL ROAD
 GEOMETRICS AND LANING
 STA. 1+200 TO STA. 1+340

NO. 2 of 2
 DATE: 2012/06/05 - 10:30am
 PATH: \\cory\1\001\002\001\000\CAD\040 CAD-BIM\Project\Design\Drawings\C104.dwg



- GENERAL NOTES:**
1. ALL DIMENSIONS AND CALLOUTS TO FACE OF CURB.
 2. SEE TYPICAL SECTIONS FOR CHAIN LINK FENCE OFFSET FROM BACK OF SIDEWALK.
 3. FUTURE ELEVATED STRUCTURE FEATURES SHOWN FOR INFORMATION ONLY.

VANCOUVER FRASER PORT AUTHORITY

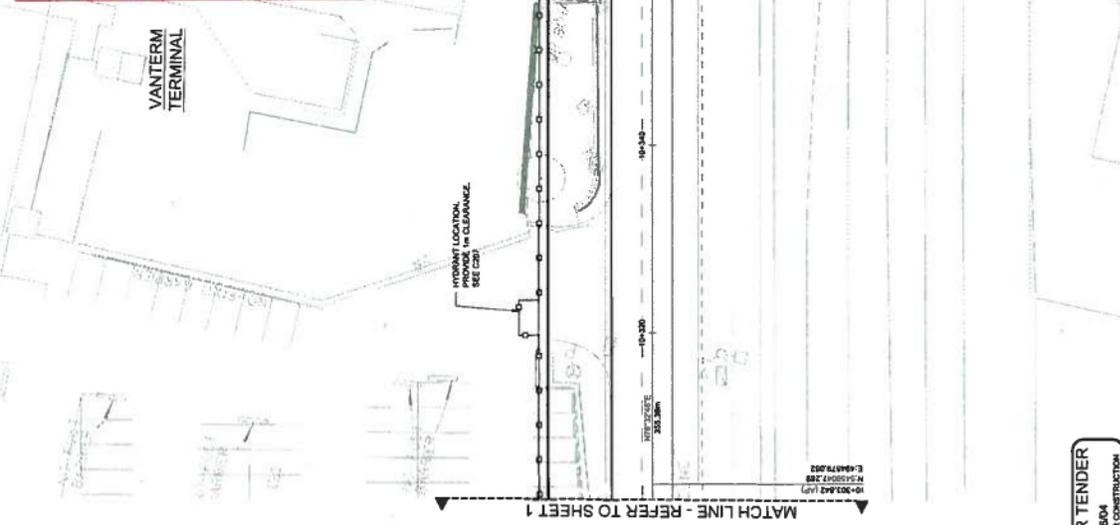
PROJECT PERMIT 2011-125

This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.

Signed: *[Signature]*

Dated: *June 27/2012*

Canada



ISSUED FOR TENDER
2012/06/04
NOT TO BE USED FOR CONSTRUCTION



SOUTH SHORE CORRIDOR PROJECT
STEWART ST
GEOMETRICS AND LANING
STA. 10+300 TO STA. 10+480

NO.	DATE	ISSUED FOR TENDER	REVISION
1	2012/06/04	ISSUED FOR TENDER	REVISION

REV. NO.	REFERENCE

DATE: 2012/06/04 - 10:37am
PATH: \\cory\1001\rescoment.com\project\015409\1000-CAD\04D CAD-BIM\DWG\Drawings\C204.dwg

SCALE: 1:1000
SHEET: 2 of 6
D



STEWART STREET CONTROL LINE CURVE TABLE					
CURVE #	START STA	END STA	DELTA (°)	PI POINT STA	TANGENT
1	10+000.00	10+050.00	90.00	10+025.00	10+000.00
2	10+050.00	10+100.00	90.00	10+075.00	10+050.00
3	10+100.00	10+150.00	90.00	10+125.00	10+100.00
4	10+150.00	10+200.00	90.00	10+175.00	10+150.00
5	10+200.00	10+250.00	90.00	10+225.00	10+200.00
6	10+250.00	10+300.00	90.00	10+275.00	10+250.00
7	10+300.00	10+350.00	90.00	10+325.00	10+300.00
8	10+350.00	10+400.00	90.00	10+375.00	10+350.00
9	10+400.00	10+450.00	90.00	10+425.00	10+400.00
10	10+450.00	10+500.00	90.00	10+475.00	10+450.00

- GENERAL NOTES:**
1. ALL DIMENSIONS AND CALLOUTS TO FACE OF CURVE.
 2. SEE TYPICAL SECTIONS FOR CHAIN LINK FENCE OFFSET FROM BACK OF SBEROUL.
 3. FUTURE ELEVATED STRUCTURE FEATURES SHOWN FOR INFORMATION ONLY.

WEST COAST REDUCTION

VANCOUVER FRASER PORT AUTHORITY

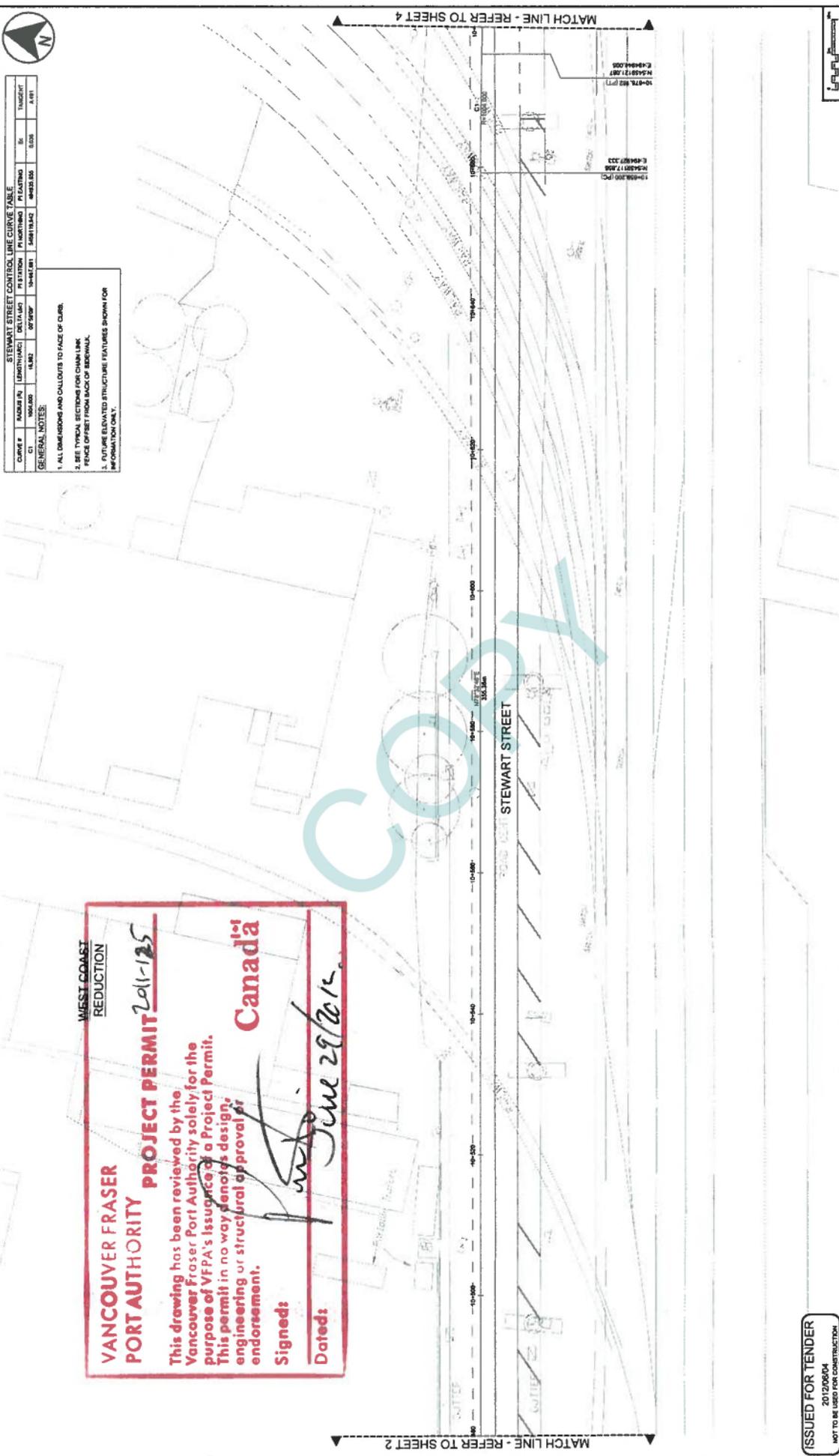
PROJECT PERMIT 2011-125

This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.

Signed: *[Signature]*

Dated: June 29/2015

Canada



ISSUED FOR TENDER 2012/06/04 NOT TO BE USED FOR CONSTRUCTION		AECOM		PORT METRO Vancouver VANCOUVER FRASER PORT AUTHORITY WORKING DEPARTMENT		SOUTH SHORE CORRIDOR PROJECT STEWART ST GEOMETRICS AND LANING STA. 10+300 TO STA. 10+480		SHEET 3 OF 6 NO. C204	
DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	DESIGNER CHECKED APPROVED DATE	
REVISION No. Date		REVISION No. Date		REVISION No. Date		REVISION No. Date		REVISION No. Date	
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STEWART STREET CONTROL LINE CURVE TABLE

CURVE #	NUMBER IN	LENGTH (M)	DELTA (ANG)	PI STATION	PI NORTHING	PI EASTING	EC	STATION
C1	125.000	14.377	14.377	10+73.189	48904.842	49004.081	0.276	8.301

- GENERAL NOTES:
1. ALL DIMENSIONS AND CALLOUTS TO FACE OF CURB.
 2. SEE TYPICAL SECTIONS FOR CHAIN LINK FENCE OFFSET FROM BACK OF SIDEWALK.
 3. FUTURE ELEVATED STRUCTURE FEATURES SHOWN FOR INFORMATION ONLY.

VANCOUVER FRASER PORT AUTHORITY

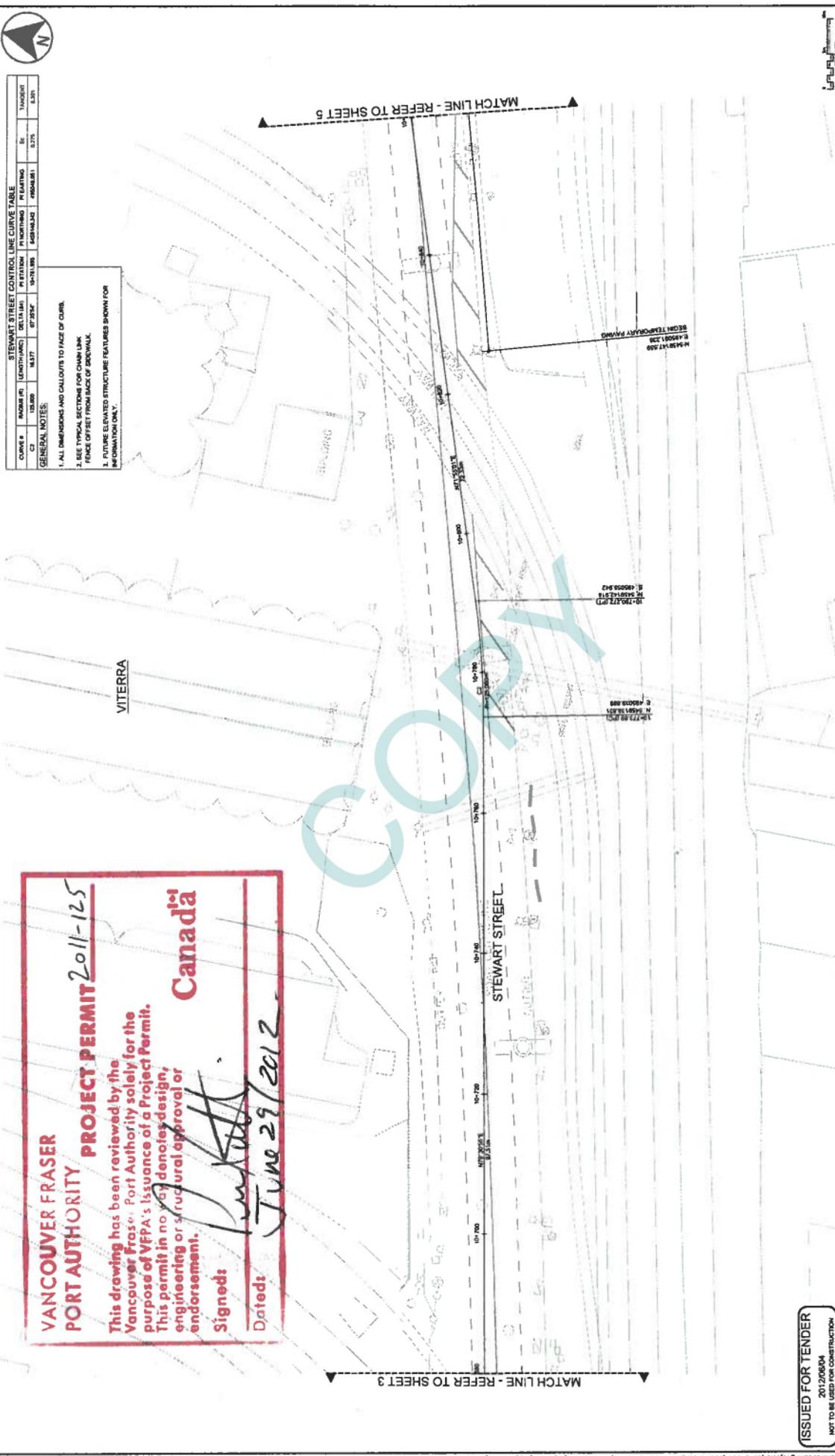
PROJECT PERMIT 2011-125

This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.

Signed: *[Signature]*

Dated: *June 29, 2012*

Canada



ISSUED FOR TENDER
2012 PERM
NOT TO BE USED FOR CONSTRUCTION

AECOM

PORT METRO Vancouver

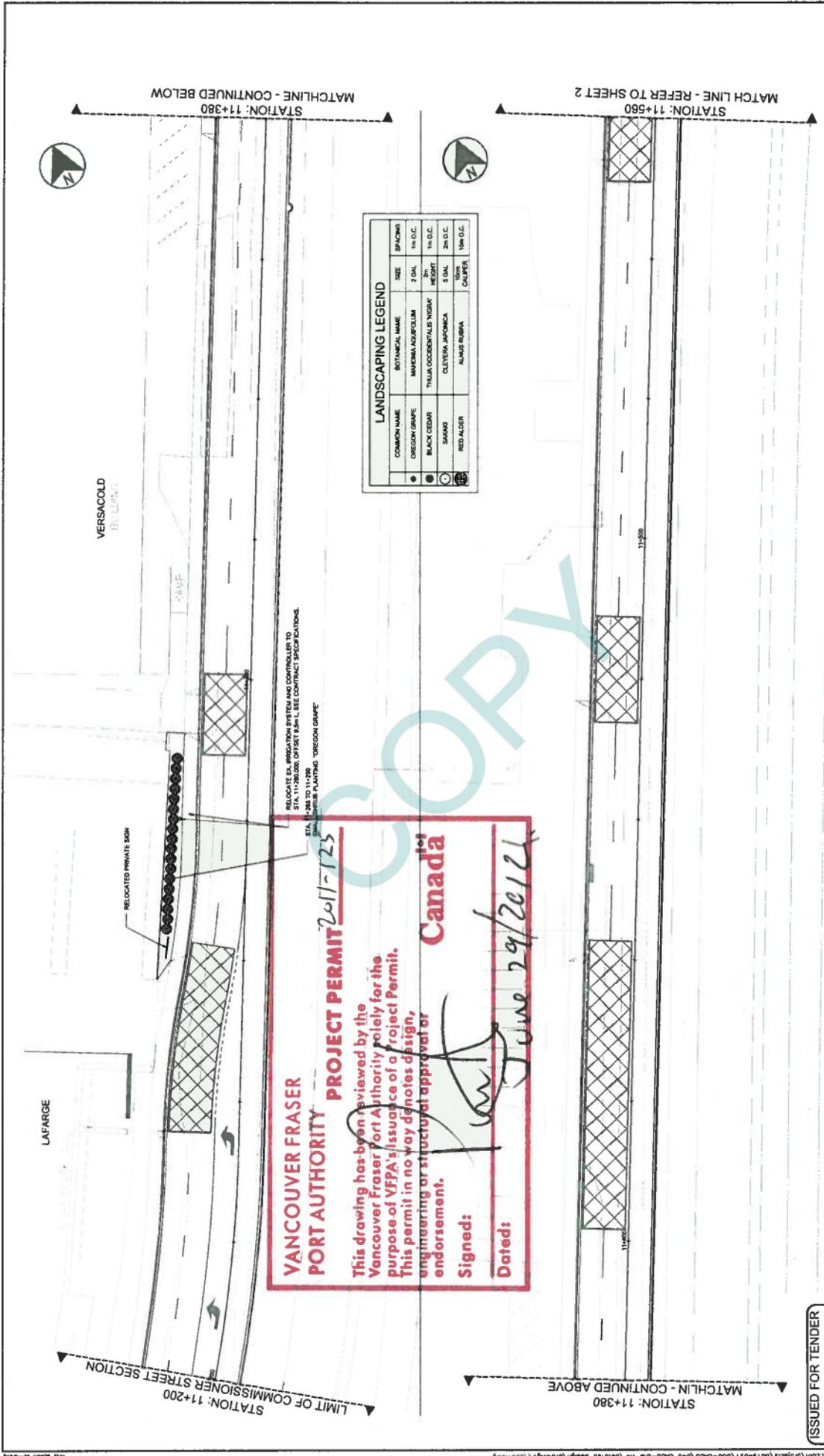
VANCOUVER FRASER PORT AUTHORITY
CIVIL ENGINEERING DEPARTMENT

SOUTH SHORE CORRIDOR PROJECT
STEWART ST
GEOMETRICS AND LANING
STA. 10+300 TO STA. 10+480

Scale: AS SHOWN
Date: 2012/06/04
Permit No: 2011-125

Revision: 1
Date: 2012/06/04

Sheet: 4 of 6



LANDSCAPING LEGEND

COMMON NAME	BOTANICAL NAME	SIZE	SPACING
OREGON GRAPE	MAKINOIA ASPIRIFOLIUM	5 GAL	1m O.C.
BLACK CEDAR	THUJA DOUGLASSII 'NIGRA'	5 GAL	1m O.C.
SAMAO	OLEYERA JAPONICA	5 GAL	2m O.C.
RED ALDER	ALNUS RUBRA	10m CALIPER	10m O.C.

VANCOUVER FRASER PORT AUTHORITY

PROJECT PERMIT 2011-125

This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.

Signed: *[Signature]*

Dated: June 29/2012

Canada

RELOCATE EX. IRRIGATION SYSTEM AND CONTROLLER TO STA. 11+380. OFFSET 5m L. SEE CONTRACT SPECIFICATIONS. SEE PLAN FOR PLANTING 'OREGON GRAPE'

ISSUED FOR TENDER
20120604
NOT TO BE USED FOR CONSTRUCTION

AECOM

POINT METRO Vancouver

YANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

SOUTH SHORE CORRIDOR PROJECT
COMMISSIONER STREET
LANDSCAPING LAYOUT
STA. 11+200 TO STA. 11+560

DESIGN BY: []
DRAWN BY: []
APPROVED BY: []
DATE: 2012/06/04

ISSUE DATE: 2012/06/04
ISSUE BY: []
REVISED BY: []
REVISED DATE: []

REVISION

No.	Date	REVISION
1		ISSUED FOR TENDER

Ref. No. REFERENCE

Sheet No. L301 of 4



Project: **South Shore Corridor Project**

Location: **Stewart Street & Commissioner Street from
Heatley Avenue to McGill Avenue,
Vancouver, BC**

VFPA Site/Area No.: **VAN 032, 037, 141, 145, 068, 142, 140, 038,
132, 069, 070, 071, 134, 072, 046, 047**

Proponent(s): **Vancouver Fraser Port Authority, doing business as Port Metro Vancouver (PMV)**

Environmental Conditions

It is the opinion of PMV Environmental Programs that potential adverse environmental effects associated with the proposed works can be mitigated through the application of the specific mitigations designed into the project and of the following conditions. These conditions should be reflected in the Construction Environmental Management Plan.

1. The Contractor shall ensure that all works are as described. Works other than those described are not authorized with this document.
2. The Contractor acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on its behalf. The Contractor, its agent(s) and/or subcontractor(s), further acknowledge that they are solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
3. All work associated with this project shall comply with the requirements of the *Fisheries Act*, and all other applicable laws, legislation, and best management practices. Note that Section 36(3) of the federal *Fisheries Act* prohibits the discharge of deleterious substances to waters frequented by fish including indirectly as by storm sewer. Due diligence is required at all times to prevent such discharges and adherence to these conditions does not provide relief from ongoing responsibilities in this regard.
4. All works shall be carried out in such a manner so as to avoid any adverse impact on fish or fish habitat. If the harmful alteration, disruption or destruction of fish habitat occurs, the works will be in contravention of Section 35 of the *Fisheries Act*. Fisheries and Oceans Canada has advised that if such impact occurs it reserves the right to immediately suspend or alter operations and the proponent shall undertake, at their own expense, any compensatory and/or remedial works deemed necessary by Fisheries and Oceans Canada to ensure a "no net loss" in the productive capacity of local fish habitat.
5. All work associated with the project involving the use of concrete, cement, mortars and other Portland-cement or lime-containing construction materials must be conducted in a manner that prevents sediments, debris, concrete (cured or uncured), and concrete fines from being deposited into any aquatic environment, either directly or indirectly. Water that has contacted uncured or partly cured concrete or Portland cement or lime-containing construction materials, such as the water that may be used for exposed aggregate wash-off, wet curing, equipment and truck washing, etc. must be prevented from entering any aquatic environment. Containment facilities should be provided at the site for the wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment as required.
6. All equipment working on the project site must be regularly inspected to ensure that it is in good mechanical condition and free from visible evidence of fuel, oil, coolant, solvents or hydraulic leaks. Equipment that is found to be other than in good condition should be removed from the job site immediately.

Draft	March 19, 2012	clb
Final	June 26, 2012	clb



Project: **South Shore Corridor Project**

Location: **Stewart Street & Commissioner Street from
Heatley Avenue to McGill Avenue,
Vancouver, BC**

VFPA Site/Area No.: **VAN 032, 037, 141, 145, 068, 142, 140, 038,
132, 069, 070, 071, 134, 072, 046, 047**

Proponent(s): **Vancouver Fraser Port Authority, doing business as Port Metro Vancouver (PMV)**

7. All equipment working on or near the top of bank must not disturb intertidal areas or the sea bed except within the area where rip rap is to be placed for the proposed storm water outfall. Equipment or machinery shall not operate from the intertidal foreshore of Burrard Inlet.
8. Disturbance to the intertidal foreshore must be kept to the absolute minimum required in order to conduct the works. A riparian vegetation enhancement plan must be developed and implemented.
9. No in-water works will be conducted as part of the project, including the outfall installation. Any work below the higher high water mark shall be conducted in the dry, during low tide.
10. To avoid possible contravention of the *Migratory Birds Convention Act* and the *BC Wildlife Act*, project-related activities with the potential to harm birds and/or their active nests and eggs should be avoided during the general bird breeding season of **March 15th to August 15th**. If potentially harmful activities (such as tree removal) must be undertaken during this period, due diligence shall be exercised to avoid harm to birds, their eggs and nests, and possible contravention of legislation. Note that the nests of some species of birds are protected under the *BC Wildlife Act* regardless of the time of year or whether they are occupied or not. It is recommended that qualified environmental professionals be retained to assist in developing and undertaking appropriate bird nest surveys immediately before, during and after the general bird breeding season.
11. The existing large trees identified to be used as eagle perch trees at 2901 Commissioner Street will be preserved and construction noise in the vicinity of the trees must be minimized while the eagles are using the trees.
12. There shall be no discharge of effluents of any type from this site, either directly or indirectly as by storm sewer, unless explicitly authorized by PMV Environmental Programs.
13. Any soils excavated from the site during the proposed works shall be handled in a manner that prevents their release into an aquatic environment, either directly or indirectly as silt in storm runoff. Excavations shall not be dewatered unless a dewatering plan has been reviewed and authorized by PMV Environmental Programs.
14. A construction soil and groundwater management plan must be in place before construction is started, and must include soil and groundwater management procedures to address any environmental contamination that may be encountered. The plan shall be prepared by the Contractor and shall be available to PMV upon request.
15. Any soils excavated from the site that are not suitable for backfill should be disposed of at appropriate off-site facilities in accordance with applicable legislation, guidelines and best management practices. Suspect materials should be treated as contaminated or they should be stockpiled until their environmental quality has been determined.

Draft	March 19, 2012	clb
Final	June 26, 2012	clb



Project: **South Shore Corridor Project**

Location: **Stewart Street & Commissioner Street from
Heatley Avenue to McGill Avenue,
Vancouver, BC**

VFPA Site/Area No.: **VAN 032, 037, 141, 145, 068, 142, 140, 038,
132, 069, 070, 071, 134, 072, 046, 047**

Proponent(s): **Vancouver Fraser Port Authority, doing business as Port Metro Vancouver (PMV)**

16. Any materials brought onto the property for use as fill, backfill, rip rap armouring or for site preparation shall be from sources known to be clean and free of contamination.
17. Rip rap shall be clean and free of fines and shall be placed rather than dumped.
18. Debris must not be deposited into the aquatic environment. Any debris that is deposited, floating or sinking, shall be contained within the immediate area of the work site and recovered as soon as possible. Sinking debris shall be recovered by diver or other non-intrusive means.
19. Debris and waste materials generated during these works shall be appropriately contained, collected, and disposed of at appropriate upland locations in accordance with all applicable legislation, guidelines, and best management practices. In this regard it should be noted that burning of a wide range of materials, including creosote treated wood, is restricted or prohibited.
20. An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.) and other deleterious substances shall be put in place prior to work commencing. Appropriate spill containment and clean-up supplies should be kept available on site whenever the subject works are underway, and personnel working on the project shall know the spill clean-up plan and how to deploy the spill response materials.
21. Sediment or sediment-laden waters or other deleterious substances shall not be permitted to enter the aquatic environment during the proposed works. All works and activities shall be carried out in a manner that prevents induced sedimentation of foreshore and near shore areas and induced turbidity of local waters, and the release of sediment, sediment-laden waters, and turbid waters to the aquatic environment. All works shall be in compliance with the following water quality criteria:
 - When background is less than or equal to 50 nephelometric turbidity units (NTU) or 100 milligrams per litre (mg/L) non-filterable residue (NFR), induced turbidity should not exceed 5 NTU or 10 mg/L NFR above the background values.
 - When background is greater than 50 NTU or 100 mg/L NFR, induced turbidity should not exceed the background values by more than 10% of the background value.

For the purposes of this letter, background is defined as the level at an appropriate adjacent reference site that is affected neither by works at the site, nor by sediment-laden or turbid waters resulting from works at the site.
22. Dust and air emissions associated with construction should be minimized to the greatest practical extent. Appropriate applicable best practices likely would include:
 - a) No visible dust beyond the property line;
 - b) Tracked out material should not exceed eight (8) metres;

Draft	March 19, 2012	clb
Final	June 26, 2012	clb



Project: **South Shore Corridor Project**

Location: **Stewart Street & Commissioner Street from
Heatley Avenue to McGill Avenue,
Vancouver, BC**

VFPA Site/Area No.: **VAN 032, 037, 141, 145, 068, 142, 140, 038,
132, 069, 070, 071, 134, 072, 046, 047**

Proponent(s): **Vancouver Fraser Port Authority, doing business as Port Metro Vancouver (PMV)**

- c) A wheel washing facility to reduce track out should be established where appropriate;
- d) Vehicles used to transport bulk fine materials should be covered;
- e) Stockpiles of soil or aggregate should be stabilized with water;
- f) Paved sections subject to dust accumulations should be cleaned/wetted on a regular basis; and
- g) Unpaved sections should be wetted on a regular basis.

- 23. A plan shall be developed and implemented by the Contractor that will mitigate problematic noise and nuisance arising from project construction or demolition works. Project construction and demolition activities should align with local municipal noise and nuisance bylaws. Should construction be required at times beyond what is noted in the local bylaws, the Contractor should advise PMV immediately for further review.
- 24. During construction, every effort shall be made to use equipment with model year 2007 or newer (that use the best available technology achieving Tier 3 or better emission limits).
- 25. The PMV reserves the right to rescind or revise these conditions at any time that new information warranting this action is made available to the Port. The PMV also reserves the right to monitor compliance with these conditions.
- 26. It is understood that by proceeding with the subject works the Contractor, its agents and/or subcontractors, shall have indicated that they understand, accept and have agreed to the foregoing conditions. In this regard, a copy of this Schedule of Environmental Conditions is to be provided to any contractor(s) prior to work commencing. In addition, a copy of this Schedule is to be retained on site at all times when the subject works are underway, and shall be available for inspection by authorized personnel upon request.

The above conditions are based solely upon the consideration by Port Metro Vancouver of the potential adverse environmental impacts associated with this project.

Draft	March 19, 2012	clb
Final	June 26, 2012	clb

October 1, 2020

Raul Armendariz-Rodriguez:
Infrastructure Delivery
Vancouver Fraser Port Authority
100 The Pointe, 999 Canada Place
Vancouver, BC V6C 3T4

Dear Raul Armendariz-Rodriguez:

Re: VFPA Commissioner Street Road Realignment, Vancouver
PROJECT PERMIT 20-172

Reference is made to your September 9, 2020 application, and attachments. The Vancouver Fraser Port Authority (the port authority) understands the port authority's Infrastructure Delivery department (the Permit Holder) proposes to realign portions of the south side of Commissioner Street in between Cambridge Street and Nanaimo Street in Vancouver, BC (the Project). The Project will include using a backhoe, excavator, and saw cutter to remove approximately 675 cubic meters of asphalt along 640 linear meters of Commissioner Street. New catch basins will be installed. Afterwards, the exposed areas will be resurfaced to realign the street. Erosion and sediment control measures will be in place.

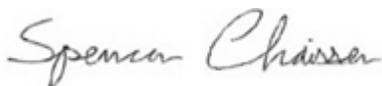
The Permit Holder must complete the following prior to project commencement:

1. Submit a Traffic Management Plan to Marcus Siu (Marcus.Siu@portvancouver.com), Senior Transportation Planner, at least 10 business days prior to the Project.

VFPA has completed a review of these activities and concludes that with the implementation of proposed mitigation measures and conditions described in the attached Schedule of Environmental Conditions, the Project is not likely to cause significant adverse environmental effects.

Pursuant to the Port Authorities Operations Regulations under the *Canada Marine Act*, by way of this letter, the Project is authorized to proceed **provided that all of the Conditions outlined above and on the attached Schedule of Environmental Conditions are adhered to**. In the event of any breach of any of the Conditions, or of any of the background information being determined by VFPA to be incorrect or misleading, then VFPA, acting at its sole discretion, may arbitrarily cancel this Project Permit. This Project Permit may also be cancelled for any other reasons set out in Section 29 of the Port Authorities Operations Regulations. **This Project Permit is valid until September 30, 2021**. Please contact the undersigned, at 604-665-9389 with any questions regarding the Conditions.

Regards,



Spencer Chaisson
Environmental Coordinator, Project Review and Monitoring

cc: Janet McCartney, Senior Real Estate Specialist, Vancouver Fraser Port Authority
Marcus Siu, Senior Transportation Planner, Vancouver Fraser Port Authority

Reference is made to the upland physical activities (the **Project**) described in the permitting letter that these conditions are attached to. VFPA has undertaken and completed a review of the Project in accordance with Section 5 of the Port Authorities Operations Regulations and, as applicable, Section 82 of the *Impact Assessment Act*.

The Project Permit is based on the understanding that the Project will not adversely impact water quality or quantity, and species at risk and archaeological resources are not known to be present in the Project area.

The Permit Holder must have a valid lease, licence, or access agreement for the Project site prior to accessing the Project site or commencing construction or any other physical activities on the Project site. This Permit shall in no way limit any of the Permit Holder's obligations, or VFPA's rights, under such lease, licence, or access agreement.

The Project Permit in no way endorses or warrants the design, engineering, or construction of the Project and no person may rely upon the Permit for any purpose other than the fact that VFPA has permitted the Project, in accordance with the terms and conditions of the Project Permit.

If at any time the Permit Holder fails to comply with any of the conditions set out below, or if VFPA determines that the Permit Holder has provided any incomplete, incorrect or misleading information in relation to the Project, VFPA may, in its sole and absolute discretion, cancel its authorization for the Project or change the conditions to which such authorization is subject.

Pursuant to Section 29 of the Port Authorities Operations Regulations, VFPA may also cancel its authorization for the Project, or change the conditions to which such authorization is subject, if new information is made available to VFPA at any time in relation to the potential adverse environmental effects of the Project.

The following are the minimum conditions that must be followed by the Permit Holder to mitigate potential adverse environmental and other effects:

1. All physical activities must be land-based, with no activities occurring in-water, i.e., below the water surface.
2. The Permit Holder shall undertake and deliver the Project to total completion in a professional, timely and diligent manner in accordance with applicable standards and specifications described in the application document(s) referenced in the permitting letter. The Permit Holder shall not carry out any other physical activities unless expressly authorized by VFPA.
3. The Permit Holder shall at all times and in all respects, comply with and abide by all applicable statutes, laws, regulations and orders from time to time in force and effect, including all applicable environmental, labour and safety laws and regulations.
4. Without limiting the generality of permit condition 3, the Permit Holder shall not, directly or indirectly: (a) deposit or permit the deposit of a deleterious substance of any type in water frequented by fish in a manner contrary to Section 36(3) of the *Fisheries Act*; or (b) adversely affect fish or fish habitat in a manner contrary to Section 35(1) of the *Fisheries Act*.
5. Without limiting the generality of permit condition 3, storage tank removal, installation and operation shall meet the requirements of the *Petroleum Products and Allied Petroleum Products Storage Tank Systems Regulations* and the *CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products*.
6. Should the Project involve lane-closure measures or civil work directly over a roadway or rail track/crossing, the Permit Holder shall contact the VFPA Operations Centre at 604-665-9086 at least 24 hours in advance of such activities.

7. If there is potential to affect birds and/or their active nests and eggs, the Permit Holder shall conduct nest surveys. For any nests identified in surveys, a qualified environmental professional shall confirm that the nest is not occupied by a species protected at that time of year under applicable legislation. To reduce the risk of Project-related harm, the Permit Holder should avoid certain physical activities during the general bird breeding season, which falls between April 1 and July 31, or outside of this time span if occupied nests are present.
8. Disturbance or clearing of vegetation shall be staged and strictly limited to that required for the Project.
9. The Permit Holder shall conduct all activities involving the use of concrete, cement, mortars and other Portland cement or lime-containing construction materials in a manner that shall not deposit sediments, debris, concrete (cured or uncured), and concrete fines into the aquatic environment, either directly or indirectly. Water that has contacted uncured or partly cured concrete or Portland cement or lime-containing construction materials (such as the water that may be used for exposed aggregate wash-off, wet curing, equipment and truck washing) shall not be permitted to enter the aquatic environment. The Permit Holder shall provide containment facilities at the site for the wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment, as required.
10. The Permit Holder shall contain and collect debris and waste material in the immediate working area within the Project site. The Permit Holder shall dispose of waste material at suitable upland locations and maintain records of off-site disposal.
11. The Permit Holder shall carry out all activities in a manner that prevents the release of sediment, sediment-laden waters, and turbid waters to the aquatic environment. Sediment and erosion control measures shall be implemented prior to the start of ground disturbance activities and should meet or surpass the standards outlined in the 1992 Fisheries and Oceans Canada (DFO) "Land Development Guidelines for the Protection of Aquatic Habitat".
12. The Permit Holder shall not dewater excavations unless a dewatering plan has been reviewed and accepted by VFPA.
13. The Permit Holder shall dispose of any soils excavated from the Project site that are not suitable for backfill at appropriate off-site facilities and maintain records of off-site disposal.
14. Without limiting the generality of permit condition 3, if suspect contaminated materials are encountered, the Permit Holder shall contain, test and dispose of such materials at appropriate licensed off-site facilities and maintain records of off-site disposal. VFPA shall be notified of such activities and provided relevant documentation upon completion.
15. If the Permit Holder encounters, expects to encounter, or should expect to encounter an actual or potential archaeological resource, the Permit Holder shall:
 - a) Immediately stop any activities that may disturb the archaeological resource or the site in which it is contained (Site);
 - b) Not move or otherwise disturb the archaeological resource or other remains present at the Site;
 - c) Stake or flag the Site to prevent additional disturbances; and,
 - d) Immediately notify VFPA by email and phone.
16. Without limiting the generality of permit condition 3, materials brought onto the Project site to be used for backfilling, site preparation, or other uses shall be from sources demonstrated to be clean and free of environmental contamination, invasive species and noxious weeds. The Permit Holder shall maintain records to verify this.
17. Prior to commencing construction or any physical activities, the Permit Holder shall have in place a spill prevention, containment and clean-up plan for hydrocarbon products (including fuel, oil and hydraulic fluid) and any other deleterious substances. Appropriate spill containment and clean-up supplies shall be available on the Project site at

all times and all personnel working on the Project shall be trained on the spill prevention, containment and clean-up plan. The Permit Holder shall carry out the Project in accordance with the spill prevention, containment and clean-up plan.

18. The Permit Holder shall maintain equipment in good mechanical condition and free of fluid leaks, invasive species, and noxious weeds.
19. During upland construction activities, the Permit Holder shall not conduct refuelling or maintenance activities on nonroad equipment within 30 metres of any waterbody, or in an area where run-off may potentially reach surface waterbodies. Fuel and other hydrocarbon inventories shall not be stored in such areas, temporarily or otherwise.
20. The Permit Holder shall cooperate fully with VFPA in respect of any review by VFPA of the Permit Holder's compliance with this Permit, including providing information and documentation in a timely manner, as required by VFPA. The Permit Holder is solely responsible for demonstrating the Permit Holder's compliance with this Permit. Accordingly, the Permit Holder shall be familiar with VFPA's compliance and enforcement program: <https://www.portvancouver.com/development-and-permits/compliance/>
21. The Permit Holder shall review the Permit with all employees, agents, contractors, licensees and invitees working on the Project site, prior to such parties participating in any construction or other physical activities on the Project site. The Permit Holder shall be solely responsible for ensuring that all such employees, agents, contractors, licensees and invitees comply with this Permit.
22. The Permit Holder shall make available upon request by any regulatory authority (such as a Fishery Officer) a copy of this Permit.

The above conditions are based solely upon VFPA's review of the Project and in no way limit the authority of, or constitute any form of permit, authorization or approval by, any other governmental authority having jurisdiction. The Permit Holder is solely responsible for obtaining any and all required permits, authorizations and approvals from any other governmental authority having jurisdiction.

APPENDIX G – ENVIRONMENTAL OBLIGATIONS

1. All materials proposed to be used as fill shall be approved by the Owner prior to their use.
2. The Contractor shall carry out all activities in a manner that prevents the release of sediment, sediment-laden waters, and turbid waters to the aquatic environment. Sediment and erosion control measures shall be implemented prior to the start of ground disturbance activities and should meet or surpass the standards outlined in the 1992 Fisheries and Oceans Canada (DFO) "Land Development Guidelines for the Protection of Aquatic Habitat".
3. Air emissions from vehicle/equipment exhaust, dust and vapors shall be minimized and managed to avoid effects on and off the Site, including implementing anti-idling policies for construction vehicles and equipment. More detailed guidance is available in Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities prepared for Environment Canada (Cheminfo Service Inc. March 2005).
4. All non-road diesel equipment shall be reported as required under the Owner's Non-Road Diesel Emissions Program, attached as Schedule 1 hereto. Questions regarding the Program may be addressed to Megan McCann, Environmental Coordinator at Megan.McCann@portvancouver.com.
5. The Contractor shall dispose of any soils excavated from the Site that are not suitable for backfill at appropriate off-site facilities and maintain records of off-site disposal.
6. If suspect contaminated materials are encountered, the Contractor shall contain, test and dispose of such materials at appropriate licensed off-site facilities and maintain records of off-site disposal. The Owner shall be notified of such activities and provided relevant documentation upon completion.
7. Materials brought onto the Site to be used for backfilling, site preparation or other uses shall be from sources demonstrated to be clean and free of environmental contamination, invasive species and noxious weeds. The Contractor shall maintain records to verify this.
8. The Contractor shall not dewater excavations unless a dewatering plan has been prepared by a qualified professional, reviewed and accepted by the Owner.
9. Disturbance or clearing of vegetation shall be strictly limited to what is required for implementation of the Work.
10. Noise, dust, and air emissions associated with the Work shall be kept to a minimum.
11. The Contractor shall ensure that debris and waste material resulting from the Work, including excess drill cuttings, purge water, and any other waste waters resulting from the Work, are contained, collected, and disposed of at suitable upland locations. The Contractor shall have due regard for the applicable prohibitions and restrictions for burning a wide range of materials in British Columbia, such as creosote-treated wood. The Contractor shall dispose of any soils excavated from the Site that are not suitable for backfill at appropriate off-site facilities in accordance with Laws.
12. Equipment shall be in good mechanical condition and shall be maintained free of fluid leaks, and be decontaminated to be free of invasive species, and noxious weeds prior to entering and leaving site.
13. The Contractor shall not conduct refueling or maintenance activities within 30 metres of any watercourse, or in an area where there is potential for run-off to reach surface water bodies. Fuel and other hydrocarbon inventories shall not be stored in such areas, temporarily or otherwise.

14. The Contractor shall cooperate fully with the Owner in respect of any review by the Owner of the Contractor's compliance with these conditions including providing any information or documentation required by the Owner.

15. The Contractor shall make a copy of this Appendix, the CEMP and the PER permit available to all employees, agents, contractors, licensees and invitees prior to commencing any physical activities. The Contractor shall be solely responsible for ensuring that all such employees, agents, contractors, licensees and invitees comply with these conditions.

Construction Environmental Management Plan

The CEMP will include a number of discipline specific sub-plans. The CEMP will describe how construction of the Work will be staged and managed from an environmental perspective. Consistent with regulatory requirements and recognized best management practices, the CEMP will at a minimum define staging and work areas and outline the activities to be undertaken for each stage of the construction.

The Contractor shall prepare the CEMP in accordance with the Project & Environmental Review Guidelines – Construction Environmental Management Plan (CEMP) as set out in the document at the following link:

<https://www.portvancouver.com/wp-content/uploads/2018/04/PER-Construction-Environmental-Management-Plan-CEMP-Guideline-UPDATE.pdf>

The sub-plans will combine to summarize the essential environmental management requirements of the Project and to describe mitigation to facilitate compliance.

The CEMP will identify measures to reduce the risk of occurrence of incidents that could affect the biophysical and social environment and to minimize any unavoidable effects. The CEMP will summarize the roles and responsibilities of the Contractor's team; the environmental mitigation and monitoring required for compliance with the sub-plans; and note environmentally and socially sensitive receptors located nearby. In general, each sub-plan will include the following:

- Objectives of the sub-plan;
- Potential environmental impacts during construction;
- Applicable regulatory requirements;
- Best Management Practices (BMPs) and mitigation measures proposed;
- Environmental Performance Indicators that will be monitored to determine compliance; and
- Contractor's commitment to monitoring and reporting.

The CEMP will embody a series of sub-plans that will address issue-based mitigation measures. The sub-plans will include:

- Waste Management Sub-Plan
- Air Quality Management Sub-Plan
- Noise and Vibration Management Sub-Plan
- Water, Stormwater and Sediment Control Sub-Plan
- Environmental Monitoring Sub-Plan
- Lighting Sub-Plan
- Emergency Response and Spill Prevention Sub-Plan
- Soil and Groundwater Protection Sub-Plan

Mitigation and environmental management strategies and measures for construction will follow and be guided by BMPs for land and infrastructure development projects, including:

- Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia (BC MOE 2014);
- Land Development Guidelines for the Protection of Aquatic Habitat (Chilibeck et al. 1993); and
- Measures to Avoid Causing Harm to Fish and Fish Habitat (DFO 2013a).

Guidance with respect to each of the sub-plans follows.

1. Waste Management Sub-Plan

The Waste Management Sub-Plan is to document the volume or weight of anticipated waste generation in order to calculate the percentage of material diverted from the landfill and is to include waste type, destination of waste materials, and methods to reduce waste generation. The percentage of diverted waste should be calculated as the ratio of material diverted from landfills against the total waste generated during construction operations. Waste deemed as hazardous should not be included in the total waste calculations and should be disposed of according to Laws.

- (a) The Contractor is to develop and implement a Waste Management Sub-Plan that includes procedures for measuring, reusing, recycling, and/or properly disposing of waste generated during the Work. Upon completion of the Work, a Waste Management Report is to be submitted to the Owner.
- (b) The Waste Management Sub-Plan requires identifying potential sources and destinations for recycling. Identification and evaluation of options for recycling and reuse are the first steps in development of an effective plan for handling, segregation, and storage of materials. It is important to determine which materials must be separated versus which can be commingled.
 - (i) Acceptable means of diversion include:
 - (A) Waste reduction;
 - (B) Reuse or recycle materials on site;
 - (C) Materials sent to recycling or reclamation facilities;
 - (D) Materials sent to manufacturers to be used as post-consumer recycled content;
 - (E) Materials composted on site or sent to a composting facility;
 - (F) The use of material, if appropriate, as infill; and
 - (G) Incineration of biomass for energy generation.
 - (ii) Unacceptable means of diversion include:
 - (A) Incineration of materials not classified as biomass; and
 - (B) Burying waste material unsuited for infill.

The Sub-Plan will address the management and disposal of wastes that are designated as non-hazardous site clearance material (such as but not limited to clean fill material, gravels, rocks, cured concrete, asphalt, and green waste). Site clearance material suitable for recycling will be identified, stockpiled, and removed from the Site to an approved recycling facility. Recycling of materials where feasible is encouraged.

The Waste Management Sub-Plan will outline regulatory and contractual requirements for managing hazardous substances and waste and be developed and implemented to address handling, removal, transportation and disposal of hazardous wastes as defined by Law. The Sub-Plan will include a commitment for the Contractor to provide an independent qualified hazardous waste specialist to monitor, verify and document hazardous waste practices.

2. Air Quality Management Sub-Plan

An Air Quality Management Sub-Plan will be developed that will describe standard industry BMPs to control and minimize fugitive dust and other airborne emissions, such as those caused by the operation of equipment, during construction activities, and the handling and loading of hazardous and non-hazardous wastes and soils.

3. Noise and Vibration Management Sub-Plan

A Noise and Vibration Management Sub-Plan will be developed and implemented to minimize the temporary impacts of construction noise and vibration. The sub-plan will describe the noise-sensitive receptors potentially subject to increased noise and/or vibration levels as a result of construction activities and the BMPs that will be implemented to mitigate the adverse effects of unavoidable noise and vibration created by construction.

4. Water, Stormwater and Sediment Control Sub-Plan

A sub-plan will be developed and implemented to prevent adverse effects to Burrard Inlet water quality. The primary objective of the sub-plan will be to ensure that, during construction, water released from the Site into the receiving environment meets provincial water quality guidelines. The plan will include a description of the sediment control strategies or BMPs for site-specific implementation and describe measures to intercept, divert and treat runoff from active work areas.

5. Environmental Monitoring Sub-Plan

An Environmental Monitoring Sub-Plan will be prepared and implemented that will describe the approach to environmental monitoring during construction. The Sub-Plan will conform to industry standards for construction monitoring. The Contractor will retain the services of an Appropriately Qualified Professional as set out in MOTI's SS 165.02, and defined in MOTI's SS 165.01.02 to act as an Independent Environmental Monitor (IEM) who will be present on Site at all times when Work has the potential to cause environmental degradation, adverse environmental effects and/or as required by Permits. At a minimum, the IEM will be on Site once per week. The key objective is to ensure that construction activities are undertaken in accordance with the mitigation described within the CEMP. The IEM shall be suitably experienced in, and responsible for, the preparation and implementation of environmental protection plans including the CEMP. The Owner may carry out independent audits of the Contractor's compliance with the CEMP, the PER Permit and Laws.

During periods of active construction, the Independent Environmental Monitor shall submit bi-weekly environmental monitoring reports in an approved electronic format to the Owner's Representative that will include, at a minimum, the following information:

- (a) Reporting Period
- (b) Project Name/Geographic Location
- (c) Prime Contractor Firm Name/Contact
- (d) Environmental Monitor Name/Contact

- (e) Summary of Construction Activities during the Reporting Period
- (f) Summary of Environmental Issues Encountered during the Reporting Period
- (g) Summary of Mitigation Measures Implemented during the Reporting Period
- (h) Summary of Planned Corrective Measures to Address Site Deficiencies that arose during the Reporting Period
- (i) Summary of any Incident Reports during the Reporting Period
- (j) Representative Site Photographs taken during the Reporting Period

6. Lighting Sub-Plan

A lighting sub-plan typically addresses how outdoor lighting will be designed in order to promote safety, security, and productivity, reduce unwanted light spill on adjacent properties, communities and habitat, and conserve electrical energy and reduce unnecessary use of electrical power. If night-time work is planned, a lighting sub-plan will be required.

7. Emergency Response and Spill Prevention Sub-Plan

An Emergency Response and Spill Prevention Sub-Plan will be developed and implemented that will describe how site construction personnel will prevent, prepare for, and respond to incidents. The Sub-Plan will list the equipment available on Site to respond to an incident and communication protocols will be documented.

8. Soil and Groundwater Protection Sub-Plan

A Soil and Groundwater Protection Sub-Plan will be developed and implemented to prevent the contamination of soils and groundwater within the Site during construction. The sub-plan will describe how existing soils will be protected. The sub-plan will also address mitigation for construction-related activities with the potential to affect groundwater quality.

SCHEDULE 1

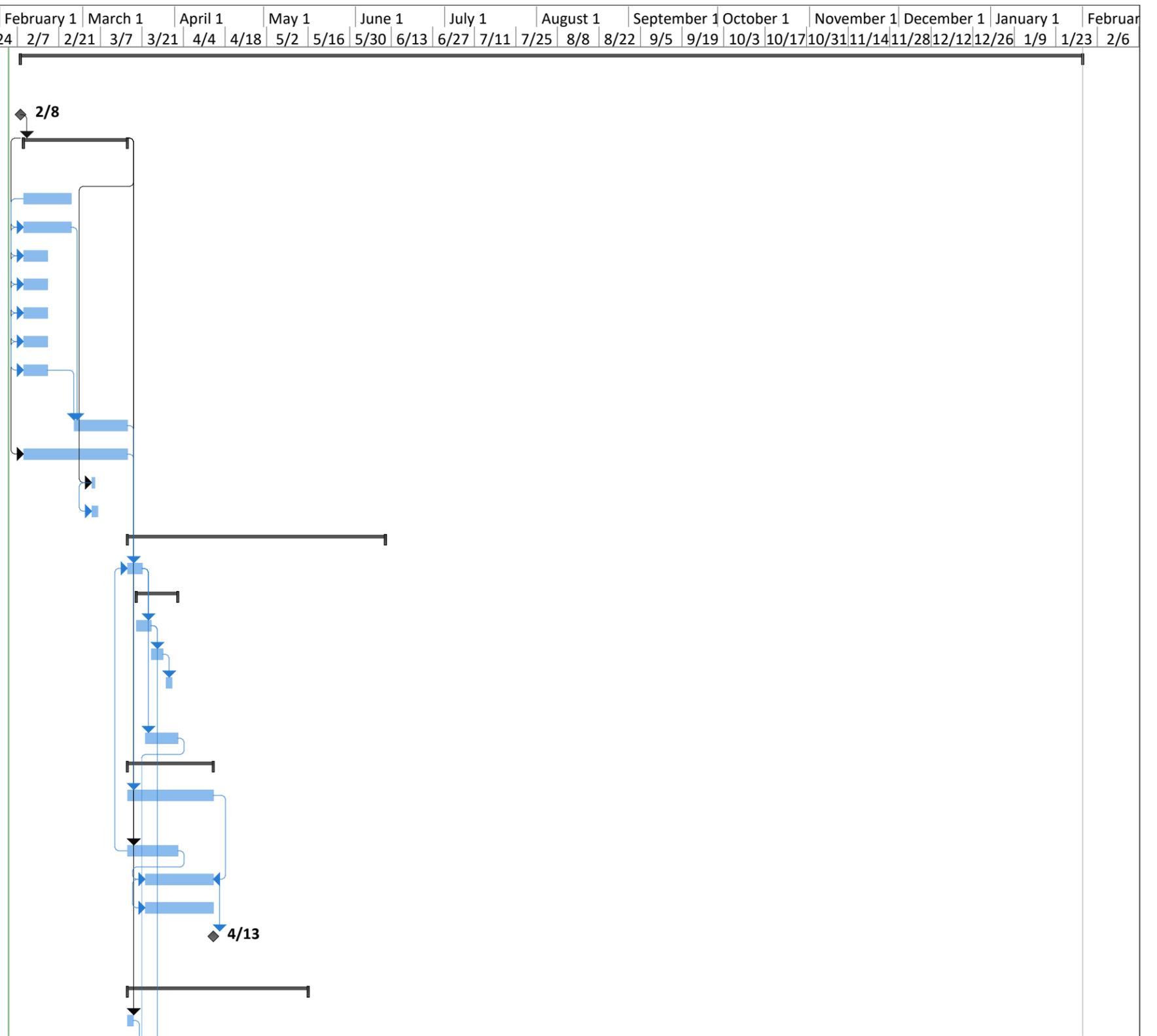
Non-Road Diesel Emissions Program

(See Attached)

APPENDIX B

Anticipated Project Schedule

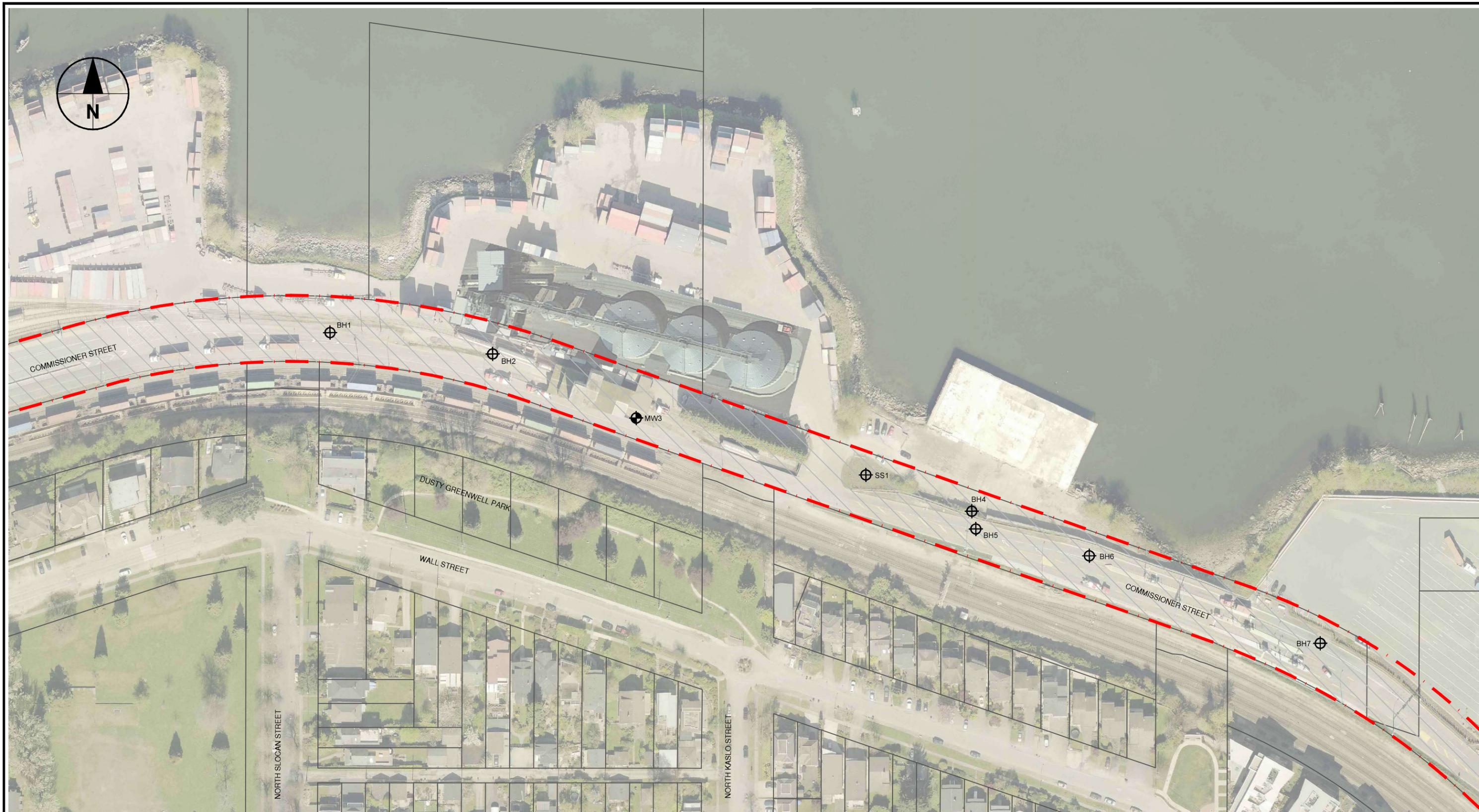
ID	Task Mod	Task Name	Duration	Start	Finish	February 1	March 1	April 1	May 1	June 1	July 1	August 1	September 1	October 1	November 1	December 1	January 1	February									
						1/24	2/7	2/21	3/7	3/21	4/4	4/18	5/2	5/16	5/30	6/13	6/27	7/11	7/25	8/8	8/22	9/5	9/19	10/3	10/17	10/31	11/14
1		VFPA - Commissioner Street Road Re-Alignment Project	308 days	Mon 2/8/21	Mon 1/31/22																						
2		Contract Award - February 8th, 2020	0 days	Mon 2/8/21	Mon 2/8/21																						
3		Submittals - Traffic/Safety/Quality/Environment	30 days	Tue 2/9/21	Mon 3/15/21																						
4		Traffic Management Plan	14 days	Tue 2/9/21	Wed 2/24/21																						
5		Communication Plan	14 days	Tue 2/9/21	Wed 2/24/21																						
6		Work Schedule	7 days	Tue 2/9/21	Tue 2/16/21																						
7		Quality Management Plan (QMP)	7 days	Tue 2/9/21	Tue 2/16/21																						
8		Health & Safety Management Plan	7 days	Tue 2/9/21	Tue 2/16/21																						
9		Utility Management Plan	7 days	Tue 2/9/21	Tue 2/16/21																						
10		Constructvion Environmental Management Plan (CEMP)	7 days	Tue 2/9/21	Tue 2/16/21																						
11		Owner Submittal Review	15 days	Fri 2/26/21	Mon 3/15/21																						
12		Coordination Meetings w/ BC Hydro	30 days	Tue 2/9/21	Mon 3/15/21																						
13		Mobilization	1 day	Thu 3/4/21	Thu 3/4/21																						
14		Site Trailers	2 days	Thu 3/4/21	Fri 3/5/21																						
15		Stage 1 - Traffic Management	75 days	Tue 3/16/21	Thu 6/10/21																						
16		Clear & Gurb	5 days	Tue 3/16/21	Sat 3/20/21																						
17		Demolition	12 days	Fri 3/19/21	Thu 4/1/21																						
18		Rail Tracks	4 days	Fri 3/19/21	Tue 3/23/21																						
19		Grain Foundation - Stage 1	4 days	Wed 3/24/21	Sat 3/27/21																						
20		Demolition Retaining Wall WCMRC Entrance	2 days	Mon 3/29/21	Tue 3/30/21																						
21		Utility Investigation & Removal	10 days	Mon 3/22/21	Thu 4/1/21																						
22		Electrical	25 days	Tue 3/16/21	Tue 4/13/21																						
23		BC Hydro On-Site Coordination - Pole Installation	25 days	Tue 3/16/21	Tue 4/13/21																						
24		Temporary Fibre Installation	15 days	Tue 3/16/21	Thu 4/1/21																						
25		BC Hydro - Sta 12+400 to 12+760	20 days	Mon 3/22/21	Tue 4/13/21																						
26		Telus - Sta 12+400 to 12+710	20 days	Mon 3/22/21	Tue 4/13/21																						
27		BC Hydro / Telecom Duct Bank Civil Milestone - April 13th, 2021	0 days	Tue 4/13/21	Tue 4/13/21																						
28		Stage 1 Traffic Detour	53 days	Tue 3/16/21	Sat 5/15/21																						
29		Temp Line Painting/Barriers	2 days	Tue 3/16/21	Wed 3/17/21																						



Project: N20015 - VFPA Commisio Date: Thu 2/4/21	Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
	Split		External Tasks		Inactive Summary		Manual Summary		Progress	
	Milestone		External Milestone		Manual Task		Start-only		Manual Progress	
	Summary		Inactive Task		Duration-only		Finish-only			

APPENDIX C

Limited Phase II ESA Borehole Locations



PREPARED BY:



4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

LEGEND



AREA OF COMMISSIONER STREET CONSIDERED AS THE SITE



BOREHOLE LOCATIONS



MONITORING WELL LOCATION



Issue	Date	Des'n	Dr'n	Chkd	Appd	Description
A	SEP. 19	AC	NT	AC	RM	ISSUED FOR INTERNAL REVIEW

Design: AC
 Drawn: NT
 Checked: AC
 RM
 Approved
 RM
 Manager

SITE PLAN SHOWING LOCATION OF BOREHOLES/MONITORING WELLS

CLIENT NAME:
PORT OF VANCOUVER

PROJECT LOCATION:
COMMISSION STREET,
VANCOUVER, BC

SCALE:
1:3000
PROJECT:
60612850
DATE:
2019/09/18

FIGURE: 2

SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO **A**

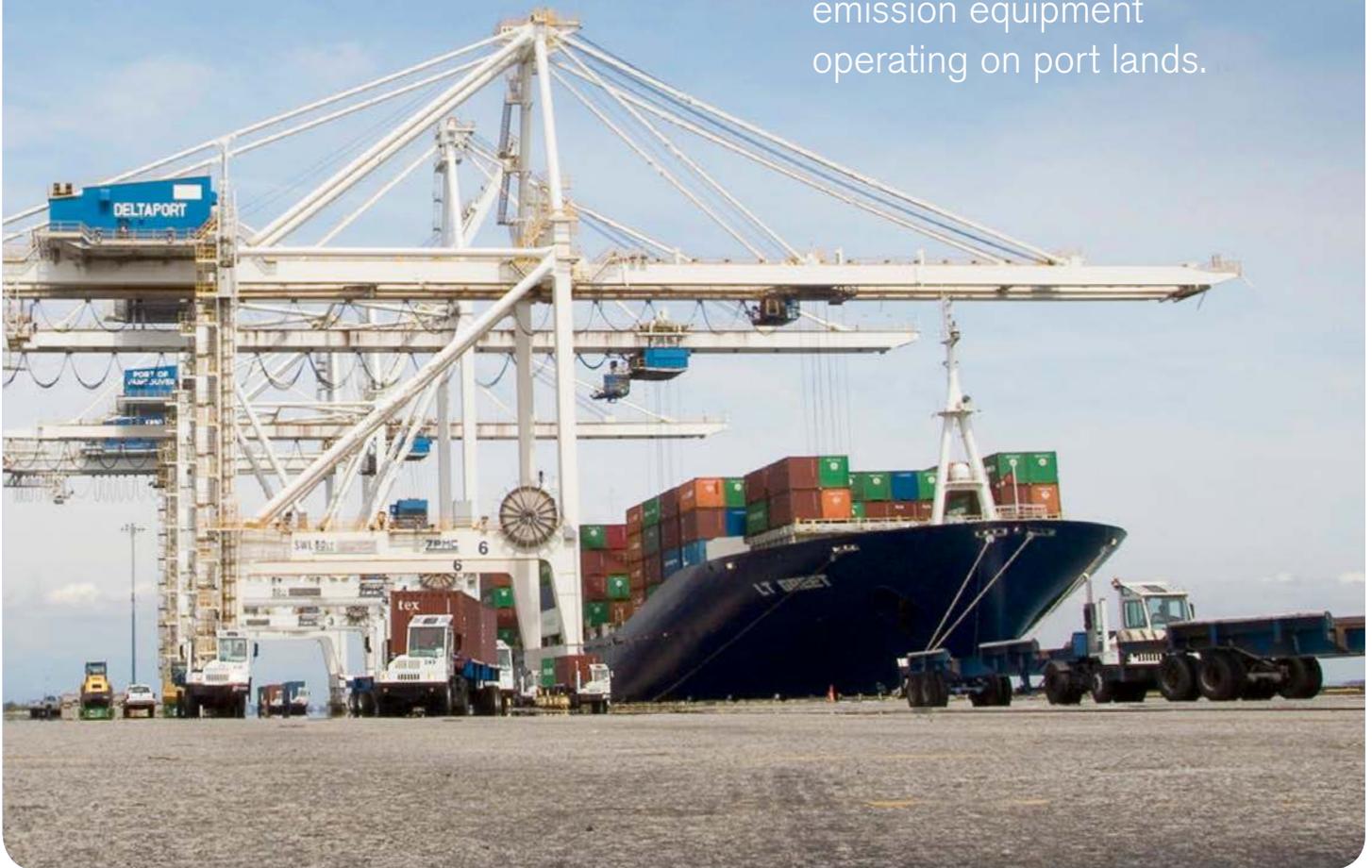
APPENDIX D

VFPA's Non-Road Diesel Emissions Program

Non-Road Diesel Emissions Program

Port Metro Vancouver is committed to environmental stewardship of our land, air and marine resources.

Our Non-Road Diesel Emissions “NRDE” Program supports cleaner, lower emission equipment operating on port lands.



Examples of Equipment included in the NRDE program



Non-Road Diesel Emissions Program

The Non-Road Diesel Emissions Program requires tenants on port lands to label and report non-road diesel equipment. Fees are applicable to equipment with Tier 1 and older engines.

The Program also prohibits the addition of Tier 1 and older diesel engines without Port Authority approval and includes requirements for:

- Fuel efficiency and idle reduction
- Opacity limits
- Auditing

For equipment already registered in the Metro Vancouver Non-Road Diesel Bylaw, or for equipment that operates both on and off port lands, please contact NRDE@portmetrovancover.com for more information.



Reporting and Declarations

Tenants who operate, or permit operation of non-road diesel equipment on port lands must complete and submit the NRDE Annual Reporting Tool for applicable* equipment, including equipment owned, leased or rented by tenants, sub-tenants, contractors and subcontractors.

Required information:

- Equipment and engine details
- End of year hour-meter readings (or appropriate fuel/activity logs)
- New equipment and engine purchases
- Emissions reduction measures applied, and/or
- Equipment retirements

Tenants who do not have applicable* non-road diesel equipment operating on port land must submit an Annual Declaration confirming the status of non-road diesel equipment.

* **The NRDE Fee does not apply to:**

- Equipment engines with a maximum horsepower below 25 hp (19 kW)
- Refrigerated containers, or
- Emergency backup power devices

Fees and Rebates

The NRDE Fee applies to non-certified (Tier 0) or Tier 1 non-road diesel engines operated on Port Metro Vancouver lands.

Fee Rates

Year	Tier 0 (per-hp)	Tier 1 (per-hp)
2015	\$10.00	\$6.00
2016	\$14.00	\$8.00
2017	\$20.00	\$10.00
2018	\$20.00	\$10.00
2019	\$20.00	\$10.00
2020	\$20.00	\$10.00

Fee Calculation

Engines operating less than 2,000 hours in calendar year:

$$\text{Engine max. horsepower} \times \text{Fee Rate} \times \frac{\text{Hours operated in calendar year}}{2000 \text{ hours}}$$

Engines operating 2,000 hours or more in calendar year:

$$\text{Engine max. horsepower} \times \text{Fee Rate}$$

Rebates

Fee rebates of up to 80% are available where equipment is upgraded to Tier 2 or better for particulate matter emissions using an approved emission reduction measure (ERM), or removed from operation.



Additional Requirements

- The Port Authority will provide NRDE Program **labels** for all applicable equipment, which will clearly identify the piece of equipment and engine tier or equivalent.
- Implementation of a **Fuel Efficiency Plan** including an **Idle Reduction Policy**, in accordance with guidance provided by Port Metro Vancouver.
- Maintenance of **opacity** levels of <20% after the first three minutes of non-road engine start up.
- Participation in NRDE Program **audits**.



Blue Circle Award

The Blue Circle Award recognizes port tenants that have the best performing non-road fleets. Please contact the Port Metro Vancouver, Environmental Programs team for additional details.

Important Annual Dates

January 31

Annual Reports and Declarations due for previous calendar year

February

PMV issues invoices for NRDE fees

March

NRDE fees due

Additional information on Port Metro Vancouver's NRDE program can be found in the Fee Document available at portmetrovancover.com, or at www.PortTalk.ca/NRDE.

Port Metro Vancouver

100 The Pointe, 999 Canada Place
Vancouver, BC Canada V6C3T4
Phone: 604.665.9000
Fax: 1.866.284.4271
Email: NRDE@portmetrovancover.com

Declaration for Project-Related Contractor Construction Equipment

As a duly authorized representative of _____ (tenant name) which is undertaking _____ (name of construction project), as authorized under VFPA Project Permit # _____, I certify that all project-related contractor construction non-road diesel equipment in operation on VFPA's lands to which the NRDE Fee applies:

1. Is Tier 2 or newer; or,
2. Was registered in VFPA's Non-Road Diesel Emissions Fee as of January 1, 2015; or,
3. Is otherwise authorized in writing by VFPA Environmental Programs.

This declaration is valid for the duration of the above named construction project.

Signature: _____

Printed name: _____

Title: _____

Phone: _____

Email: _____

Date: _____

Complete and submit this form to VFPA Environmental Programs at the start of the construction project, or immediately if the construction project is already underway. VFPA Environmental Programs can be contacted by phone (604-665-9000) or email NRDE@portvancouver.com.

Background

Effective January 1, 2015, all tenants who operate, cause to be operated, or otherwise permit the operation of non-road diesel equipment on Vancouver Fraser Port Authority ("VFPA") lands must report, label, pay fees, etc. for certain equipment, in accordance with the Non-Road Diesel Emissions (NRDE) Fee as outlined in VFPA's Fee Document. Additionally, the NRDE Fee notes that effective January 1, 2015, non-certified (Tier 0) or certified Tier 1 non-road diesel equipment may not be introduced to the port, without prior written approval from VFPA. During construction projects a tenant may engage a contractor that operates non-road diesel equipment.

This Declaration for Project-Related Contractor Construction Equipment fulfils the NRDE Fee reporting requirement for project-related contractor construction equipment only. Project-related contractor construction equipment is exempt from labelling requirements of the NRDE Fee. The intent of all other aspects of the NRDE Fee must be met.

FACTS - Tier Classification and Emissions Standards

Emissions Standards are used to classify non-road diesel engines into Tiers based on emission rates of several pollutants, including particulate matter (PM) emissions. The EPA implemented the first non-road diesel engine emissions standards (Tier 1 engines) in 1996. This established emission rates for new non-road engines built for use in the United States. The EPA standards were adopted by Canada, under the *Off-Road Compression-Ignition Engine Emission Regulations*³, for engines from 2006 and later model year. Port Metro Vancouver recognizes the emission standards defined by the US Environmental Protection Agency (EPA) and European Commission (EC) emission standards^{1,2} for non-road diesel engines (Tier 1 to Tier 4).

Engines manufactured for use in Canada, the United States, or European Union before 1996 are referred to as Tier 0 engines. Please note that engines manufactured for sale in other markets are considered Tier 0 engines, unless the emissions can be demonstrated to meet a higher Tier.

Table 1⁴ on the following page lists the emission standards for each engine Tier classification by horsepower, and by the year the standard was introduced. Note that the legislation allowed these standards to be phased in over several years; therefore, not all engines purchased in a particular year meet the emissions standards set out for that year. The tier level of an engine is more accurately determined by contacting the manufacturer with the Engine Family Name, which is located on the engine plate. Any engine that is pre-Tier (i.e. Tier 0) does not have an Engine Family Name.

Web Resources:

1. "EPA Non-road Compression - Ignition Engines - Exhaust Emission Standards"
<http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm>
2. European Commission, Directives for Emissions from Mobile Non-road Machinery.
https://ec.europa.eu/growth/sectors/automotive/environment-protection/non-road-mobile-machinery_en
3. Canadian Off-Road Compression-Ignition Engine Emission Regulations
<http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=88>
4. Table is adapted from the US EPA information at
<https://www.epa.gov/emission-standards-reference-guide>

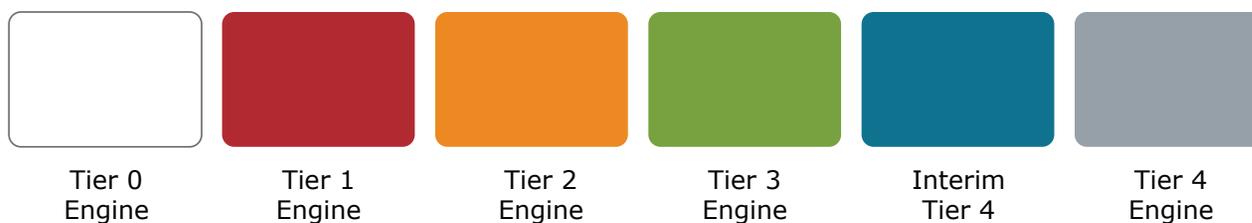
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FACTS - Diesel Particulate Matter Emissions Standards

**PM Emission Standards
by Horsepower and Year (g/bhp-hr)
Horsepower Groups**

Year	25≤49	50≤74	75≤99	100≤174	175≤299	300≤599	600≤749	750≤1199	1200+	Locomotive
1900	0.95	1.2	1.2	1.1	1.1	0.95	0.95	0.95		
1969	0.95	1.2	1.2	1.1	1.1	0.95	0.95	0.95		
1970	0.95	1.2	1.2	0.94	0.94	0.81	0.81	0.81		
1972	0.95	1.2	1.2	0.78	0.78	0.68	0.68	0.68		
1973	0.95	1.2	1.2	0.78	0.78	0.68	0.68	0.68		0.19
1988	0.95	1.2	1.2	0.78	0.54	0.49	0.49	0.5		0.19
1989	0.95	1.2	1.2	0.78	0.54	0.49	0.49	0.5		0.19
1996	0.95	1.2	1.2	0.78	0.4	0.4	0.4	0.5		0.19
1997	0.95	1.2	1.2	0.6	0.4	0.4	0.4	0.5		0.19
1998	0.95	1.09	1.09	0.6	0.4	0.4	0.4	0.5		0.19
1999	0.6	1.09	1.09	0.6	0.4	0.4	0.4	0.5		0.19
2000	0.6	1.09	1.09	0.6	0.4	0.4	0.4	0.4	0.4	0.19
2001	0.6	1.09	1.09	0.6	0.4	0.15	0.4	0.4	0.4	0.19
2002	0.6	1.09	1.09	0.6	0.4	0.15	0.15	0.4	0.4	0.19
2003	0.6	1.09	1.09	0.22	0.15	0.15	0.15	0.4	0.4	0.19
2004	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.4	0.4	0.19
2005	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.4	0.4	0.1
2006	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.15	0.15	0.1
2007	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.15	0.15	0.1
2008	0.22	0.22	0.3	0.22	0.15	0.15	0.15	0.15	0.15	0.1
2009	0.22	0.22	0.3	0.22	0.15	0.15	0.15	0.15	0.15	0.1
2010	0.22	0.22	0.3	0.22	0.15	0.15	0.15	0.15	0.15	0.1
2011	0.22	0.22	0.3	0.22	0.015	0.015	0.015	0.07	0.07	0.07
2012	0.22	0.22	0.015	0.015	0.015	0.015	0.015	0.07	0.07	0.07
2013	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.07	0.07	0.07
2014	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.07	0.07	0.07
2015	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02
2016	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02
2017	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02
2018	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02
2019	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02
2020	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03	0.02	0.02



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APPENDIX E

Archaeological Chance Find Procedure

Initial Action by Contractors if ANY potential cultural materials are encountered:

1) STOP WORK IMMEDIATELY

Cease work if known or suspected archaeological or historic materials are encountered. Do not move or disturb the materials unless they are in imminent threat of being damaged or have already been removed from original location.

2) CONTACT VFPA AND ARCHAEOLOGICAL CONSULTANT

Notify the VFPA Designated contact(s) below. They will either contact or direct you to contact the Archaeological Consultant (Wood).

VFPA Contact(s):	Archaeological Consultant
Raul Armendariz-Rodriguez, B.Eng. Project Coordinator, Infrastructure Delivery P: 604.665.9659 C: 604.910.5567 raul.armendariz@portvancouver.com	Christopher Verral, BA Wood, Archaeologist & Project Manager P: 604.295.4093 C: 778.928.0728 christopher.verral@woodplc.com
Payman Pegahi, M.A.Sc., P.Eng Manager, Infrastructure Delivery P: 604.665.9231 C: 604.356.9070 payman.pegahi@portvancouver.com	Erin Hannon, BA, RPCA Wood, Senior Archaeologist P: 604.295.1639 C: 604.355.2333 erin.hannon@woodplc.com

Basic information to include in notifications:

- o **Date** (when the find was encountered)
- o **Observer** (name of the person recording the information about the find)
- o **Location** (enough detail so the find can be located again, GPS coordinates if possible)
- o **Type of find** (if known, e.g., archaeological, historical, burial)
- o **Description of the obvious disturbance to the find** (by equipment, individual person, erosion etc.)
- o **Photographs** (several angles with a scale for reference from close up and far away if possible)

DO NOT PHOTOGRAPH BONES OR POTENTIAL HUMAN REMAINS.

The VFPA and the Archaeological Consultant will provide direction based on a review of the find location and related information.

3) DO NOT RESTART WORK UNTIL DIRECTED

Do not recommence any ground disturbance within **20 m** of the find location until directed by the archaeologist. Work may continue outside of the immediate area of the find.

IF POTENTIAL HUMAN REMAINS ARE ENCOUNTERED:

Follow the steps above. **Do not move or photograph the remains.**

Secure the site – Cover any exposed bones with plastic sheeting, blankets, or other clean covering (**not back fill**).

If the affected location is busy or has high public visibility, designate a person to stand watch until further direction from the Archaeological Consultant is received.



APPENDIX F

Environmental Emergency Contact List and Other Relevant Numbers

Environmental Emergency Contacts and Other Relevant Contacts (in the event of a spill)

Agency	Phone Number
Emergency Coordination Centre (will notify appropriate Environmental Emergency Response Officer)	1-800-663-3456
Canadian Coast Guard (for pollution or threats of pollution in the marine environment)	1-800-889-8852

Name	Company / Organization	Role	Phone Number
Owner			
VFPA Project Manager / VFPA Environmental Manager			
Contractor			
Kevin Parlee	B&B	Project Manager	604-861-2155
Darrel Unger	B&B	General Superintendent	604-861-3137
Dave Lalonde	B&B	Site Superintendent	604-842-6475
Greg Jaques	B&B	Project Coordinator	604-817-0011
Rob Simzer	B&B	Project Coordinator	604-861-9949
Contractor Environmental Consultant			
Nora Badreldin	Envirochem	Contractor Environmental Manager	778-951-6004
Fiona Tsun	Envirochem	Contractor Environmental Monitor	604-349-0523
Gail Slavik	Envirochem	Contractor Environmental Monitor	604-230-5202
Eric Choi	Envirochem	Contractor Senior Environmental Technical Reviewer	604-505-3461

Other Stake Holders	Phone Number
CP Calgary Operations Center	1-800-795-7851
Metro Vancouver (GVS&DD) Water & Sewerage Emergency Hotline (Monitored 24-hours)	604-451-6610
Transport Canada	1-800-889-8852