



**PORT of
vancouver**

PROJECT AND ENVIRONMENTAL REVIEW REPORT

PER NO. 18-163 CP CASCADE CAPACITY EXPANSION

Prepared for: Director, Planning & Development

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		VANCOUVER FRASER PORT AUTHORITY PROJECT AND ENVIRONMENTAL REVIEW REPORT	
PER No.:	18-163		
Tenant:	Canadian Pacific		
Project:	CP Cascade Capacity Expansion		
Project Location	South Shore of Burrard Inlet – Port Moody Arm		
VFPA SID No.:	BBY094, BBY095 and PTM096		
Land Use Designation:	Port Terminal		
Applicant(s):	Canadian Pacific		
Applicant Address:	7550 Ogden Dale Road SE, Calgary		
Category of Review:	C		
Recommendation:	That PER No. 18-163 for CP Cascade Capacity Expansion be approved.		

1 INTRODUCTION

The Vancouver Fraser Port Authority (VFPA or port authority), a federal port authority, manages lands under the purview of the *Canada Marine Act*, which imparts responsibilities for environmental protection. The port authority accordingly conducts project and environmental reviews of works and activities undertaken on these lands to ensure that the works and activities will not likely cause significant adverse environmental effects. This project and environmental review report documents the port authority's project and environmental review of PER No. 18-163: CP Cascade Capacity Expansion (the Project) proposed by Canadian Pacific (the Applicant).

This project and environmental review was carried out to address the port authority's responsibilities under the *Canada Marine Act*, and to meet the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), as applicable. The proposed Project is not a CEAA 2012 "designated project" and an environmental assessment as described in CEAA 2012 is not required. However, VFPA authorization is required for the proposed Project to proceed and in such circumstances, where applicable, Section 67 of CEAA 2012 requires federal authorities to assure themselves that projects will not likely cause significant adverse environmental effects. The project and environmental review process is designed to provide that assurance. In addition, the port authority considers other interests, impacts and mitigations through the project and environmental review.

The project and environmental review considered the application along with supporting studies, assessments and consultations carried out or commissioned by the Applicant, as well as other information provided by the Applicant. In addition, this project and environmental review considered other information available to the port authority and other consultations carried out by the port authority. A full list of information sources germane to the review is provided in Appendix B.

This project and environmental review report is NOT a project authorization. This project and environmental review report summarizes the review outcome, and provides the basis for approval or denial. Should the project be approved, the report is accompanied by a project permit (the Permit) and the conclusions described in this report require compliance with the conditions in the Permit.

2 PROJECT DESCRIPTION

The Applicant is proposing to expand existing railway infrastructure to increase capacity along a section of their Cascade Subdivision rail route between Port Moody and Burnaby, British Columbia. Growth in freight volumes into and out of port facilities on the south shore of the Burrard Inlet requires an increase in rail capacity on the west end of CP's Cascade Subdivision. Introducing a third track along a section of the Subdivision will increase track capacity and will reduce potential delays to both freight and passenger train traffic through the area on the mainline tracks.

The proposed third track is approximately 1,100 metres in length and situated on the north side of the existing mainline tracks. The majority of proposed rail infrastructure will be located within the CP right-of-way with a portion of the rail embankment, grading works, infilling, and shoreline protection proposed within the port authority's jurisdiction.

Fisheries and Oceans Canada have determined that a Section 35(2) *Fisheries Act* Authorization is required for the project. Habitat-offsetting is proposed at two locations in Burrard Inlet and include the installation of spawning beach habitat, nearshore reef habitat and replanting of riparian vegetation along the shoreline.

2.1 Proposed Works

Proposed works for infill and rail embankment construction include:

- Site mobilization including establishment of access routes and rail crossings
- Removal of terrestrial and riparian vegetation in the works area
- Excavation of the toe of the slope and disposal of material
- Installation of geotextile and riprap toe material
- Installation of approximately 22,000 m² of fill material (e.g., structural fill and rip-rap) below the high water mark for embankment expansion and creation of temporary works areas
- Installation of a sheet pile or H-pile retaining wall to support the embankment expansion at the existing trestle bridge
- Extension of eight (8) existing culverts
- Installation of rail bridge crossing structure to span existing Suncor pipes, including the installation of caissons below the high water mark and some concrete works
- Site clean-up and demobilization

The proposed habitat offsetting includes construction of three beach habitats to support spawning activities for forage fish (i.e., Pacific Sand Lance and Surf Smelt), four subtidal reef structures, and re-planting of riparian vegetation along the impacted shoreline. Habitat offsetting is proposed at two locations in Burrard Inlet. The Burnaby location is located at the western end of the Project area. The Burnaby offsetting is comprised of two spawning beaches (6,070 m²), three reef structures (1,300 m²), rip rap installation (2,670 m²), and riparian planting (4,350 m²). The Vancouver habitat offsetting location is west of New Brighton Park and ties into an existing habitat feature installed in 2018. The Vancouver offsetting is comprised of one spawning beach (590 m²), one reef structure (200 m²), rip rap installation (830 m²) and riparian planting (290 m²).

Proposed works for the habitat offsetting include:

- Installation of riprap slope for spawning beach sites (including wave trip and reef structure)
- Installation of 300 mm coarse sand and pebble for beach area
- Installation of habitat features (e.g., boulder clusters and woody debris)
- Planting of riparian vegetation along impacted shoreline (black cottonwood and red alder)

2.2 Proposed Construction Methods

Access to and egress from the Project site is proposed via both road and marine based options. Eastern road access is proposed to be gained via the construction of a temporary access road along the south side of the CP right-of-way from the public road (Reed Point Way) used to access Reed Point Marina, the access road would then cross to the north side of the mainline tracks at the Project site. Road access is also proposed via Suncor's Burrard Terminal. Western road access is proposed to be gained via the construction of temporary access road within the CP right-of-way from ChemTrade Solution's property and Cariboo Road. The majority of temporary road access routes are outside of port authority jurisdiction. Marine based access is proposed for the inbound and outbound movement of construction materials and equipment. This includes a temporary works area at the western end of the Project area, accessing the work site and delivering/removing materials by marine barge. Access to the Vancouver habitat offsetting location will be via marine barge, should a land based option be required the Applicant will coordinate with the port authority.

Construction is anticipated to take approximately nine months to complete. The Applicant has proposed to conduct some of the construction activities outside of the port authority's regular hours of construction (between Monday and Saturday from 7:00 a.m. and 8:00 p.m.). Work that is proposed to occur on a 24 hour a day and 7 days a week basis includes the following:

- Temporary access route installation
- Aquatic lifeform salvage
- Material delivery and handling
- Embankment construction
- Bridge foundation construction excluding pile driving
- Retaining wall construction
- Bridge span lift/installation

If pile-driving is required as part of the Project it will be conducted during the port authority's regular hours of construction. In-water works are anticipated to commence December 16, 2019 and be completed within the timing window of least risk (August 16 to February 28).

Estimated project cost is \$31,000,000.

3 VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following VFPA departments have reviewed the application and have the following project considerations.

3.1 Planning

Planning has reviewed the application and has the following land use comments.

The proposal meets Planning's requirements, based on the primary considerations of the land use designation and current land use policies.

3.1.1 Land Use Designation

The rail embankment proposed in support of the rail expansion conforms to the designation of "Port Terminal" in Vancouver Fraser Port Authority's Land Use Plan as this supports the primary use of the site as an important marine terminal.

3.1.2 Existing Land Use Policies

The proposed habitat offsetting at the Vancouver location is within the East Vancouver Port Lands (EVPL) Area Plan and is considered to be a "Green" development. As a result, no consultation with the EVPL Liaison Committee was conducted. A notification will be sent to the EVPL Liaison Committee should a permit be issued.

3.2 Engineering

VFPA Engineering provided advice to the Applicant in the pre-application stage including directing them to the VFPA Shore Protection Guidelines – Inspection, Maintenance, Design and Repair to ensure industry best practice is incorporated into the design of the project. Engineering reviewed the PER application, the scope of the review included a general engineering review to ensure the port authority's interests are met, and preparation of associated permit conditions that are suited to the nature of the Project.

The proposed Project intends to extend the existing rail embankment including rip-rap and shoreline protection. Eight (8) underground culverts within the Project Area are proposed to be modified through the construction of culvert extensions or by slip-lining the existing culvert with a new pipe of slightly smaller diameter. The Applicant has confirmed ownership of all these culvert modification. It is noted that the proposed Project has been designed

by professional engineers licensed to practice in the Province of British Columbia and has been designed to applicable engineering standards.

Engineering has reviewed the application and has provided requirements to the Applicant to adhere to under permit Conditions No. 18, 65 and 66.

The proposal meets Engineering's review requirements, subject to adherence to the listed project and environmental conditions in the Permit.

3.3 Transportation Planning and Land Operations

Transportation Planning and Land Operations reviewed the impacts of construction traffic on port operations and public roadways. The majority of rail infrastructure is proposed within CP's right-of-way and outside of the port authority's jurisdiction.

Access to the site is proposed via a number of road based options including Reed Point Way, Suncor Burrard Terminal and Cariboo Road. The Applicant anticipates that up to 70 trucks per day will use these three access points. The Applicant has provided route plans for each road based option as part of their submission and, if a permit is issued, will be required to provide construction parking and management plans for each location where road access will be gained to the construction site prior to commencement. The Commissioner Street Truck Staging Site has been proposed as a potential site for material storage and/or access to the Vancouver habitat offsetting location. Given the importance of Commissioner Street as a road corridor for port lands and terminals, should this site be required for access and construction staging, the Applicant would be required to reach an agreement with VFPA Land Operations that ensures regular operations of the site as well as other construction projects in the surrounding area are not impacted.

Transportation and Land Operations has reviewed the application and has provided requirements to the Applicant to adhere to under permit Condition No. 22.

The proposal meets Transportation and Land Operation's requirements, subject to adherence to the listed project and environmental conditions in the Permit.

3.4 Marine Operations

Marine access to the Project site for construction activities is proposed to be gained via barge. To facilitate barge access, a temporary work area is proposed to be installed at the western end of the Project site prior to slope construction to provide a stable working area for material unloading, temporary stockpiles, equipment set up and storage. Barge operations will be managed following Transport Canada requirements to minimize potential interference with active commercial and recreational navigation. A marine construction and staging plan has been provided as part of the application submission which has been reviewed and approved by Marine Operations.

Marine Operations has reviewed the application and has provided requirements to the Applicant to adhere to under permit Conditions No. 23 and 63.

The proposal meets Marine Operations' requirements, subject to adherence to the listed project and environmental conditions in the Permit.

4 STAKEHOLDER CONSULTATION

The proposed Project was assessed to have potential impacts to stakeholders and the local community and consultation activities were determined to be required. The following sections describe the stakeholder consultation activities undertaken by the Applicant and the port authority as part of the project and environmental review.

4.1 Municipal Consultation

The proposed Project was assessed by the port authority to have potential impacts to municipal interests. A referral letter was sent to the following municipalities on July 31, 2019 notifying them of the proposed Project:

- City of Port Moody
- City of Burnaby
- City of Vancouver

The port authority did not receive any comments from the City of Burnaby or the City of Vancouver.

The City of Port Moody responded with comments on the proposed Project. Below is a table summarizing the comments received and how they were considered as part of the project and environmental review.

City of Port Moody Comments	Applicant Response	PER Response
Proposed works involve loss of intertidal habitat in Port Moody and Burnaby. Why are offsetting measures proposed outside of Port Moody only?	CP engaged potentially affected First Nations to develop habitat offsetting plan. Benefit to fish primary consideration in proposal.	
The City encourages the Applicant to meet with environmental stewardship groups and the City's Environmental Protection Committee.	CP has committed to meeting with City environmental staff to present the project.	The port authority responded to enquiries from groups and member of the public through the review. Comments and/or concerns are incorporated into this decision recommendation.
The City requests temporary work areas be completely restored and enhanced.	CP commits to meet the obligations established under the Fisheries Act Authorization and implement commitments made in plans.	The Applicant has incorporated into the scope of the Project plans to restore and enhance temporary work areas.
City encourages a longer post-construction monitoring program along with a detailed monitoring plan.	CP will meet the offsetting habitat post-construction monitoring requirement established by DFO.	Monitoring periods for habitat offsetting and success will be prescribed by DFO as part of the <i>Fisheries Act</i> Authorization.
No consideration of climate change adaptation measures and measures to increase the resiliency of new track to projected impacts of sea level rise.	CP retained Professional Engineers for the design of this project whom ensured that the standards set by the American Railroad Engineering and Maintenance of Way Association (AREMA) as well as other applicable standards were met.	The port authority have shoreline protection guidelines which were provided to CP during their design phase. The port authority do not consider it practical to request elevated rail beds, as the project only represents a small portion of the total CP track, introducing differences in elevation of railway tracks is problematic for rail operations.

		Generally, shoreline protection has a lifespan of at least 30 years, if properly maintained, within its lifespan it may see a moderate amount of sea level rise, and serve a function of protecting against shoreline erosion caused by storm surges and high water levels.
No indication that the impacts of climate change have been incorporated in the habitat offsetting plan.	CP retained Professional Engineers for the design of this project whom ensured that applicable standards were met.	The proposed project requires a <i>Fisheries Act</i> Authorization from DFO. The projected functionality of the proposed habitat offsetting will be reviewed by DFO. It is outside the remit of the port authority's review scope.
Every effort to salvage fish and all benthic species should be implemented.	CP's contractor will be responsible for implementing an aquatic lifeform salvage so that Serious Harm to Fish (as defined in the <i>Fisheries Act</i>) does not occur as a result of the Project.	The port authority have considered mitigations proposed during in-water works, including salvage methods, during the Project review.
City encourages VFPA to request additional monitoring requirements and an updated CEMP should pile driving be required.	CP will abide by any thresholds set within our <i>Fisheries Act</i> Authorization if pile driving is required.	Condition 50 of the Permit restricts the use of impact pile driving without review and authorization by the port authority.
City requests clarification around invasive species removal and management.	CP has an extensive vegetation management program which will be implemented.	Condition 55 of the Permit requires management of invasive species.
City encourages VFPA to require the Applicant undergo a risk assessment to avoid impacts to migratory waterfowl and other birds.	CP's environmental monitors will ensure compliance with the <i>Migratory Birds Convention Act</i> .	The port authority has considered potential impacts to migratory birds and species at risk during the review of the Project. Condition 38 of the Permit provides mitigation for migratory birds, marine mammals and other wildlife including the use of slow start up procedures, restriction to operate equipment in close proximity to birds or wildlife and carrying out the project in accordance with the provided marine mammal monitoring plan.

		<p>CP has committed to stopping work activities when species at risk or species of concern are in proximity to the work zone.</p> <p>Construction of the 1 km of shoreline are expected to be staged (i.e., completed in sections) with exclusion fencing installed to limit aquatic species from entering work zones.</p>
<p>The City had comments and consideration for additional factors to be incorporated into the geotechnical report.</p>	<p>CP retained Professional Engineers for the design of this project whom ensured that the standards set by the American Railroad Engineering and Maintenance of Way Association (AREMA) as well as other applicable standards were met.</p>	<p>The Project has been designed by professional engineers licensed to practice in the Province of British Columbia and has been designed to applicable standards.</p>
<p>The City had comments and considerations for assessment, design, responsibility, and monitoring of culverts in the Project area.</p>	<p>CP confirmed ownership and responsibility for maintaining culverts. CP commits to meeting all requirements set by Transport Canada with respect to ongoing inspection and maintenance of CP culverts.</p>	<p>Condition 6 of Permit holds the Applicant responsible for the repair and replacement of any damage to site services that result from the construction and operation of the Project.</p>
<p>City requests a Traffic Impact Study including Construction Access and Staging Management Plan identifying upgrades to intersections.</p>	<p>Given the small number of trucks required to construct the east end of the project (less than 15 per day) and the existing turn bays at Reed Point Way, no upgrades are required.</p>	<p>Given the low number of trucks required during construction at this end of the Project, the port authority will not require a traffic impact study.</p> <p>The Applicant has provided route plans for each road based option as part of their application submission which has been reviewed by the port authority.</p>
<p>City requests confirmation of sediment control while temporary access roads are in use.</p>	<p>The contractor will be responsible for ensuring that sediment laden runoff does not enter a waterbody and drainage is maintained.</p>	<p>Condition 58 and 35, requires the Applicant to carry out all physical activities in a manner that prevents sediment, sediment-laden waters, or other deleterious substances to enter the water during the Project. The Applicant is also required to regularly monitor turbidity and provide weekly monitoring reports to the port authority for review (Condition 57).</p>

4.2 Federal Agency Consultation

The proposed Project was assessed to have potential impacts to federal agencies interests. Fisheries and Oceans Canada and Transport Canada were regularly engaged throughout the project and environmental review.

The proposed Project requires a Section 35(2) *Fisheries Act* Authorization due to the potential to result in serious harm to fish. Fisheries and Oceans Canada review leads were consulted throughout the review for review progress updates, consultation process updates, to ensure consistency of information received and to review draft conditions. Condition 21 requires that the Applicant provide the port authority with a copy of their *Fisheries Act* Authorization prior to commencing construction or any physical activities.

The proposed Project requires authorization under the Canadian Navigable Waters Act. The Transport Canada review lead was consulted throughout the review for review progress updates, to ensure consistency of information received and to review draft conditions.

4.3 Adjacent Tenant Consultation

The proposed Project was assessed to have potential impacts to adjacent port authority tenant operations. A referral letter was sent to the following port authority tenants on July 31, 2019 notifying them of the proposed Project:

- Reed Point Marina Ltd.
- Suncor Energy Products Partnership
- British Columbia Hydro and Power Authority

The port authority did not receive any tenant comments through this consultation. During a project site visit conducted on November 4, 2019, the port authority discussed the project with staff at the University of British Columbia's Marine Mammal Research Unit (MMRU) who are sub-tenants at Reed Point Marina and located in close proximity to portions of the proposed Project. The Applicant has committed to working with the MMRU to mitigate any Project related impacts to the sea lions including coordination of any pile driving activities, if required.

5 PUBLIC CONSULTATION

The proposed Project at the main project site was assessed by the port authority to have minimal or no potential impacts to community interests upon completion of the project. Therefore public consultation was not required to be conducted by the Applicant during the permit review.

The proposed habitat offsetting area located west of New Brighton Park in Vancouver was assessed by the port authority to have potential impacts to community interests during construction. These include potential visibility and noise impacts.

As a result, the Applicant is required to send a construction notice to adjacent residents and businesses in Vancouver as shown in the map below. The notification area is within approximately four blocks (500 m) from the project site. The construction notice shall be distributed by the Applicant at least 10 business days prior to the start of the works for the habitat offsetting area west of New Brighton Park. This is Condition 20 in the project permit.

Map of notification area:



5.1 Summary of Public Consultation

A description of the Project and proposed works, and all supporting materials were posted to the port authority's website in July 2019 for public review.

Below is a table summarizing issues raised by the public, and how they were considered by the port authority as part of the permit review.

Issue	Mitigations and Permit Conditions	Rationale
<p>The port authority received community knowledge related to habitat and species in the Project area including:</p> <ul style="list-style-type: none"> The area is a designated Important Bird Area with feeding sites for migratory birds including surf scoter, Barrow's goldeneye and western grebe During dive surveys (2010 and 2019) species presence at the site included bay piperfish, 	<p>Condition 38 of the Permit provides mitigation for migratory birds, marine mammals and other wildlife including the use of slow start up procedures, restriction to operate equipment in close proximity to birds or wildlife and carrying out the project in accordance with the provided marine mammal monitoring plan.</p> <p>The Applicant has committed to stopping work activities when species at risk or species of</p>	<p>The port authority has considered potential impacts to migratory birds and species at risk during the review of the Project and requires mitigation and conditions to reduce potential effects.</p> <p>The Applicant has committed to working with the University of British Columbia Marine Mammal Unit to mitigate any Project</p>

<p>speckled sanddab, Buffalo sculpin juvenile Dungeness crabs, and grunt sculpin</p> <ul style="list-style-type: none"> • Invertebrate species noted during recent dive surveys near the Project are included <i>Tresus nuttallii</i>, <i>Odostomia tenuisculpta</i>, and <i>Odostomia</i> • Stellar sea lions are housed at the University of British Columbia's Marine Mammal Unit located in close proximity to a portion of the Project area 	<p>concern are in proximity to the work zone. Construction of the 1 km of shoreline are expected to be staged (i.e., completed in sections) with exclusion fencing installed to limit aquatic species from entering work zones. Marine life salvages will be conducted prior to in-water works.</p>	<p>related impacts to the sea lions including coordination of any pile driving activities, if required</p>
<p>Environmental concern regarding the use of creosote railway ties proposed for the new segment of track.</p>	<p>Condition 60 requires appropriate storage of creosote ties to mitigate any run-off into nearby waterbodies.</p>	<p>Railway ties are proposed on the CP right-of-way outside of port authority jurisdiction. The port authority engaged CP regarding the use of alternative types of railway ties and it was indicated by the Applicant that the use of alternative materials would have design and engineering project implications. A condition was added to the permit to reduce potential effects on adjacent waterbodies.</p>

VFPA has reviewed the record of public consultation, and provided that the mitigation measures and conditions outlined in the table above are included in the Permit, is of the view that the Project has adequately addressed the concerns raised during public consultation.

6 INDIGENOUS CONSULTATION

Under subsection 5(1)(c) of *CEAA, 2012*, the port authority must consider, with respect to Indigenous peoples, whether the proposed project will result in any change to the environment that may affect the health and socio-economic conditions, physical and cultural heritage, current use of lands and resources for traditional purposes, or any structure, site or thing of historical, archaeological, paleontological or architectural significance. This also included whether the proposed works have the potential to adversely impact Aboriginal or Treaty rights.

The port authority reviewed the proposed works and determined that Indigenous consultation was required.

6.1 Summary of Indigenous Consultation

The proposed project falls within the asserted traditional territory of the following Indigenous groups:

- Kwikwetlem First Nation
- Musqueam Indian Band
- Squamish Nation
- Sto:lo Nation

- Tsleil-Waututh Nation

The port authority delegated procedural aspects of consultation to the Applicant for this project and environmental review. CP verbally accepted delegated consultation on March 7, 2019, and the roles and responsibilities for delegated procedural aspects of consultation were outlined in a letter dated August 8, 2019, from the port authority to Indigenous groups. No comments or concerns were raised by Indigenous groups with respect to the approach to consultation.

Below is a table summarizing key issues raised by Indigenous groups during the consultation process and, where applicable, how they were considered as part of the Project and Environmental Review process.

Concerns, Issues, or Interests	VFPA Consideration/Response	Mitigation and Permit Conditions
Concern regarding project activities and impacts to cultural resources (i.e. geotechnical work, project development, etc.)	Although the Archaeological Impact Assessment (AIA) confirmed no archaeological sites were identified within the assess area, and the potential for the project to impact undocumented archaeological sites was low, the Applicant has committed to developing a Chance Find Procedure, stop works if archaeological resources are identified, and provide opportunities for Indigenous monitors to be present during any ground disturbance activities.	The Applicant has submitted an Archaeological Chance Find Procedure as part of their application within the Construction Environmental Management Plan (CEMP). As per Condition 34, the Permit Holder shall carry out the Project in accordance with the CEMP provided by the Permit Holder, and any subsequent amendments approved by VFPA. Additionally, should archaeological resources be encountered, the port authority has added Condition 31, which sets out measures to be taken in such a situation.
Interest in archaeological and environmental monitoring	The Applicant has committed to hiring Indigenous Monitor(s) during the Construction Phase of the project.	Condition 32 which requires the Applicant to honour this commitment during construction.
Participation/Involvement in Habitat Offset Planning	The Applicant advised that Indigenous groups were invited to participate in the research component of the habitat offsetting, and were asked to submit a habitat offsetting research work plan to be considered as part of the offsetting plan. Both Musqueam and Kwikwetlem declined to submit a work plan, however Tsleil-Waututh Nation submitted a plan. Further it was advised that Indigenous groups were provided the opportunity to review the	The Applicant has submitted a Habitat Offsetting Plan, as part of their application and per Condition 67 of the permit, VFPA shall be copied on the offsetting measures monitoring reports required by the <i>Fisheries Act</i> Authorization. VFPA shall be consulted during the development of any contingency plans and any measures in those plans that fall within VFPA jurisdiction.

	<p>Habitat Offsetting Plan, including participating in a Habitat Offsetting Workshop on December 8, 2018.</p> <p>The Applicant states the approach to fish habitat offsetting for this Project is intended to result in a net environmental gain to fish and fish habitat of Burrard Inlet.</p>	
Request to be notified immediately of any accident or malfunction	The Applicant has committed to notifying interested Indigenous groups of any accident or malfunction that arises during construction immediately.	The port authority will make sure Indigenous groups are notified of such incidents.
Participation/Involvement in review of and input of project regulatory applications	The Applicant confirmed that its permitting application to the port authority had been shared with Indigenous groups, and they were invited to comment on the package prior to submission. Additionally the applicant advised it met with Indigenous groups to review their comments to its application.	None required.
Interest in procurement opportunities	<p>The Applicant has advised the port authority that it included Indigenous inclusion measures in its construction contract bid evaluation.</p> <p>Additionally, the Applicant has committed to including Indigenous monitors during construction phase.</p>	None required.

The port authority, through delegating procedural aspects of consultation to CP Rail, has made a meaningful effort to consult with all potentially impacted Indigenous groups. Based on the record of consultation, the port authority is of the view that the duty to consult has been met.

7 ENVIRONMENTAL REVIEW

To fulfill its responsibilities under the *Canada Marine Act* and CEAA 2012, the port authority must make a determination on the potential environmental effects of a proposed project on the port authority managed lands and waters prior to authorizing those works to proceed. To make that determination, the port authority considers the residual adverse effects of the Project, that is, the effects after mitigation measures have been taken into account.

This section of the project and environmental review report summarizes the environmental review conducted for the Project, and provides the environmental review decision. The environmental review also considered the information provided in the previous sections of this report.

7.1 Scope of Environmental Review

The environmental review includes consideration of the potential environmental effects of the proposed Project, taking into account mitigation measures to avoid or reduce those effects. This review considered the Project components and physical activities described in Section 2.

The temporal scope of the review includes Project construction and operation. The environmental review considered potential adverse environmental and social effects of the Project on 14 environmental components (e.g., species with special status, aquatic species and their habitat, recreational interests, etc.) and from accidents and malfunctions. These environmental components are aspects of the biophysical and socio-economic environment considered to have ecological, economic, social, cultural, archaeological, or historical importance.

The environmental components assessed by the port authority are presented in Section 7.2 and include the environmental effects listed in section 5(1) and 5(2) of CEAA 2012.

Section 7.2 summarizes the results of the environmental review.

7.2 Environmental Effects Summary

The proposed Project area is comprised of foreshore, intertidal, and subtidal habitat. The existing habitat is utilized by a variety of marine fish, invertebrates, and plants and is characterized as an important bird area for a variety of migratory and other bird species. The following table summarizes the potential environmental effects the project could have on the identified environmental components and describes the mitigation measures proposed.

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Air quality</p> <p>Assessed as required under subsection 5(1) and 5(2) of CEAA 2012</p>	■	<input type="checkbox"/>	<p>There is potential for adverse effects on air quality during construction activities from equipment operation. Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the CEMP. This includes an idling reduction, and the turning off of emission sources when not in use. To minimize dust during construction, loads of dusty materials will be covered, track out of vehicles from the site will be managed with a wash station and/or road sweeping,</p> <p>With mitigation in place, residual adverse effects on air quality are expected to be not significant.</p>	<input type="checkbox"/>	■
<p>Lighting</p> <p>Assessed as required under subsection 5(1) and 5(2) of CEAA 2012</p>	■	<input type="checkbox"/>	<p>No new permanent lighting will be installed as part of the Project.</p> <p>There is potential for adverse effects from lighting during night-time construction works. Mitigation measures will be implemented to reduce those effects, including the use of directional lighting focused on the works area, and limiting night-time works when applicable.</p> <p>With mitigation in place, residual adverse effects from Project-related lighting are expected to be not significant.</p>	<input type="checkbox"/>	■

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Noise</p> <p>Assessed as required under subsection 5(1) and 5(2) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse noise effects during construction activities.</p> <p>Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the CEMP. Potentially noisy construction activities such as pile driving will be conducted during regular construction hours, if required.</p> <p>Construction noise is anticipated to have minimal adverse effects due to the location of the project site (greater than 500 m away from residents), and the mitigation measures implemented.</p> <p>With mitigation in place, residual adverse effects on noise are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Soils</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project components within port authority jurisdiction are located entirely within foreshore and intertidal marine environment. No effects on soils are anticipated and impacts to soils are not included in the scope of this review.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Sediments</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for spills or suspension of sediments during excavation, fill, and riprap placement to affect sediment quality.</p> <p>Mitigation measures outlined in the CEMP will be implemented during construction to mitigate off-site transport of sediment including the use of a floating silt curtain, and turbidity monitoring. A spill prevention, containment and clean-up plan will be implemented prior to commencing works.</p> <p>With mitigation in place, residual adverse effects on sediment quality are expected to be not significant</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Groundwater</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project components within VFPA jurisdiction are located entirely within foreshore and intertidal marine environment. No effects on groundwater are anticipated and impacts to groundwater are not included in the scope of this review.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Surface water and water bodies</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on surface water and water bodies during construction activities, including excavation and placement of riprap and fill materials. Potential adverse effects are anticipated to include sedimentation and increases to total suspended solids (TSS) concentrations.</p> <p>To mitigate the potential sedimentation effects from increased TSS, a silt curtain will be installed during periods of in-water work to isolate the site and contain sediment that may be conveyed from the construction footprint. Turbidity monitoring will be conducted during in-water works. Sediment and erosion control measures and a spill prevention plan will be in place. Mitigation measures that will be implemented to reduce sediment transport are outlined in the CEMP.</p> <p>Creosote railway ties are proposed for the track expansion in CP's right-of-way and outside of port authority jurisdiction. During construction activities Condition 60 of the permit requires appropriate storage of creosote ties to mitigate any run-off into nearby waterbodies.</p> <p>Weekly environmental monitoring reports, including turbidity monitoring data, will be provided to the port authority for review under VFPA's Compliance Monitoring and Enforcement program.</p> <p>With mitigation in place, residual adverse effects on surface water and water bodies are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Species/habitat with special status</p> <p>Assessed as required under subsection 5(1) of CEEA 2012</p> <p>Assessed under section 79 of the <i>Species at Risk Act</i>, as applicable</p>	■	<input type="checkbox"/>	<p>There is potential for adverse effects on species with special status during construction activities.</p> <p>Federally-listed species with ranges that potentially overlap with the Project site include: Green Sturgeon, Stellar sea lion, Killer Whale (Southern Resident and Transient), Harbour Porpoise, and Grey Whale. None of these species were identified at the site during the biophysical assessments and are unlikely to be present based on known habitat preferences.</p> <p>A great blue heron was observed during field investigations however, no nesting colonies were observed during the site assessments. Migratory birds (e.g., surf scoter and great blue heron) that may utilize the site for food sources may be temporarily displaced during construction activities. Food sources for migratory birds (e.g., mussel, benthic invertebrates, and fish) are anticipated to recolonize following project completion.</p> <p>Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the CEMP. These include conducting in-water construction works within the fisheries least-risk window (August 15 to February 28); the installation of an silt curtain to limit aquatic life from entering the work zone and to reduce turbidity; pre-construction dive surveys and aquatic life salvages conducted prior to infill activities; and establishing marine mammal safety zones around the Project site including a 200 m safety zone for cetaceans (whales, dolphins, and porpoises) and a 100 m safety zone for pinnipeds (seals and sea lions). If a marine mammal enters its respective safety zone during in-water construction activities, a work stoppage will be implemented.</p> <p>With mitigation in place, residual adverse effects on species/habitat with special status are expected to be not significant.</p>	<input type="checkbox"/>	■
<p>Terrestrial resources (e.g., vegetation, wildlife, etc.)</p> <p>Assessed as required under subsection 5(1) of CEEA 2012</p>	<input type="checkbox"/>	■	<p>The Project components within port authority jurisdiction are located entirely within foreshore and intertidal marine environment. Impacts to terrestrial resources are not included in the scope of this review.</p>	<input type="checkbox"/>	■

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Wetlands</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on wetlands from infilling and extension of the shoreline.</p> <p>An existing patch of intertidal grass (approximately 375 m²) has been identified at Mile 118 just east of the overhead trestle near the Suncor Facility. The intertidal grass will be transplanted to a constructed bench along the extended shoreline to re-establish the wetland area. Monitoring for success of the constructed wetland will take place over a three year period. If the wetland is not deemed successful, a contingency plan will be submitted to VFPA for approval. Offsetting of the wetland meets the criteria of no net loss under the Federal Wetland Policy.</p> <p>With mitigation in place, residual adverse effects on wetlands are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Aquatic resources (e.g., aquatic plants, fish and fish habitat, waterbirds, marine mammals, etc.)</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on aquatic resources from habitat loss due to infilling activities and marine intertidal works. Fish, shorebirds, invertebrates, and marine plants use the aquatic habitats in the project area.</p> <p>To mitigate impacts on nearshore water quality and to aquatic species during construction activities, a silt curtain will be installed to isolate the works area. An aquatic life salvage will be conducted in the Project work area prior to the placement of rock and fill materials. Salvaged organisms will be relocated to similar habitat outside of the works area.</p> <p>Riparian vegetation removal will be limited to what is required for the project. Habitat offsetting will be conducted to mitigate the loss of habitat from the infill and shoreline works. Habitat offsetting includes construction of approximately 6,070 m² of intertidal beaches, 1,300 m² of rocky reefs, and 4,350 m² of riparian planting. Installed habitat will be monitored for success based on criteria established by DFO.</p> <p>Migratory birds (e.g., surf scoter, great blue heron) that may utilize the site for food sources may be temporarily displaced during construction activities. Food sources for migratory birds (e.g., mussel, benthic invertebrates, and fish) are anticipated to recolonize following project completion.</p> <p>Other mitigations, as outlined in the CEMP, will be in place to reduce impacts to aquatic resources. These include: visual monitoring for marine mammals and establishing exclusion zones, implementing slow start-up procedures for in-water works</p> <p>With mitigation in place, residual adverse effects on aquatic resources are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Health and socio-economic conditions</p> <p>Assessed as required under subsection 5(1) and 5(2) of CEAA 2012</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Based on the very low magnitude of residual effects on air and noise, the Project is not expected to cause adverse effects on health or socio-economic conditions of people, including Indigenous people.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
<p>Archaeological, physical, and cultural heritage resources</p> <p>Assessed as required under subsection 5(1) and 5(2) of CEAA 2012</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on archeological, physical, and cultural heritage resources during construction activities.</p> <p>The works will follow the recommendations made in the Archaeological Overview Assessment (AOA), and a chance find procedure will be implemented as described in the CEMP. See Section 6, Indigenous Consultation for further details.</p> <p>With mitigation measures in place, the proposed works are not anticipated to affect archaeological, physical, or cultural heritage resources.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Current use of lands and resources for traditional purposes by Indigenous peoples</p> <p>Assessed as required under subsection 5(1) of CEAA 2012</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>With mitigation measures in place, the proposed works are not anticipated to affect current use of lands and resources for traditional purposes by Indigenous peoples.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Accidents and malfunctions</p> <p>Assessed as required by the <i>Canada Marine Act</i></p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on surface water from accidental equipment leaks or spills.</p> <p>Mitigation measures will be in place to reduce potential for adverse, project-related effects due to accidents, by implementing the measures outlined in the CEMP.</p> <p>With mitigation measures in place, the effect of an accident or malfunction on the environment, if it were to occur, is predicted to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Residual adverse effects (i.e., effects that remain with mitigation in place) were identified for the following environmental components:

- Air quality
- Lighting
- Noise
- Sediments
- Surface water
- Species/habitat with special status
- Terrestrial resources
- Wetlands
- Aquatic resources
- Archaeological, physical, and cultural heritage resources
- Accidents and malfunctions

Overall, the residual adverse effects of the Project on all of the environmental components are characterized as:

- Low in magnitude due to impacts on surface water and aquatic resources anticipated to be not significant with mitigations in place, the temporary nature of the construction activities, and construction of spawning beach and rocky reef habitats.
- Local (i.e., offsite effects on nearby environment or community) in geographic extent because project impacts will be limited to the project site and immediate vicinity;
- Short-term in duration because the Project will be in construction for approximately eight months;
- Continuous (daily to weekly) in frequency during the project construction period (approximately eight months); and
- Reversible/temporary because residual adverse effects of the Project would be cease once the project construction is complete.

In conclusion, based on the characterization above, the mitigation measures proposed by the Applicant and the permit conditions, the residual adverse effects from the Project are predicted to be not significant.

7.3 The Environmental Review Decision

In completing the environmental review, the port authority has reviewed and taken into account relevant information available on the proposed project, has considered the information and proposed mitigations provided by the Applicant and other information as listed elsewhere in this document, and concludes that with the implementation of proposed mitigation measures and Permit conditions, the Project is not likely to cause significant adverse environmental effects.

ORIGINAL COPY SIGNED

ANDREA MACLEOD
MANAGER, ENVIRONMENTAL PROGRAMS

December 4, 2019
DATE OF DECISION

8 CONCLUSION

In completing the project and environmental review, the port authority concludes that with the implementation of proposed mitigation measures and conditions described in the Permit, the Project has appropriately addressed all identified concerns.

It is the recommendation of staff that this application be approved subject to conformance with the project and environmental conditions listed in project permit **PER No. 18-163**.

COPY

**APPENDIX A
Location Plan**

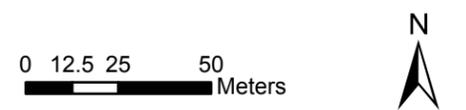
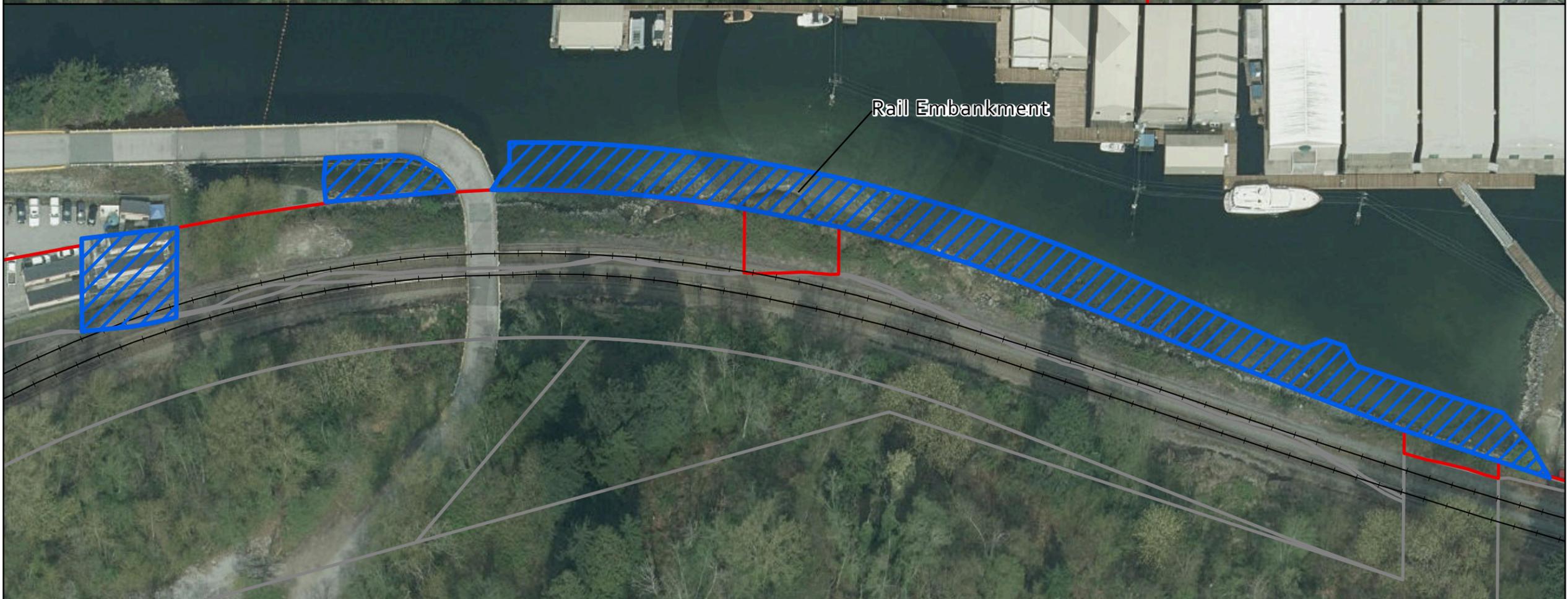
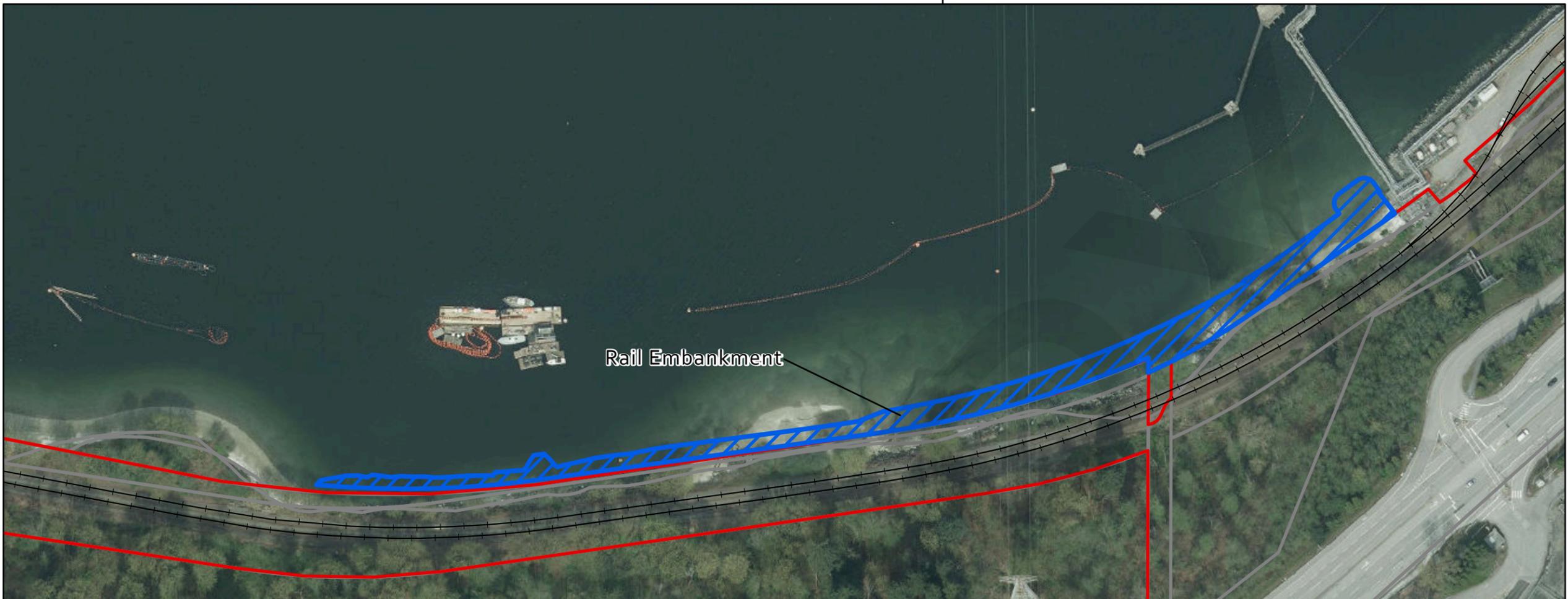
APPENDIX B
List of Information Sources

VFPA has relied on the following sources of information in the project and environmental review of the Project:

- Application form and materials submitted by Applicant on dates as follows:
 - PER application materials: May 17, 2019
 - Additional application materials: May 22, 2019, June 11, 2019
 - Revised application materials: June 27, 2019
- All Project correspondence from May 17, 2019 to November 25, 2019.
- All plans and drawings labelled PER No.18-163-A to G

CP Cascade Capacity Expansion PER # 18-163

-  Project Location
-  VFPA Boundary
-  Railway
-  Property Line



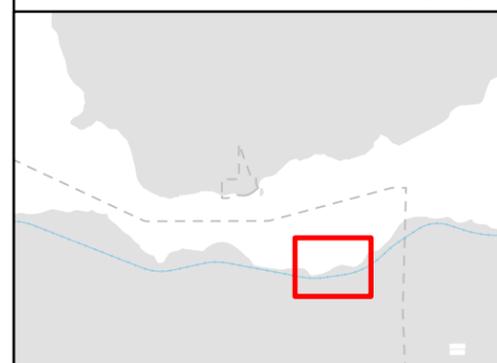
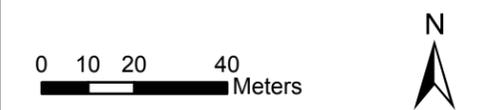
VFPA Spatial Data Group
Prepared by: BL
July 25, 2019
Last updated: July 25, 2019
PLAN #G2019-074-01

Service Layer Credits: Orthos2018:

CP Cascade Capacity Expansion PER # 18-163

-  Project Location
-  Railway
-  VFPA Boundary
-  Property Line

Proposed Habitat
Offsetting Area



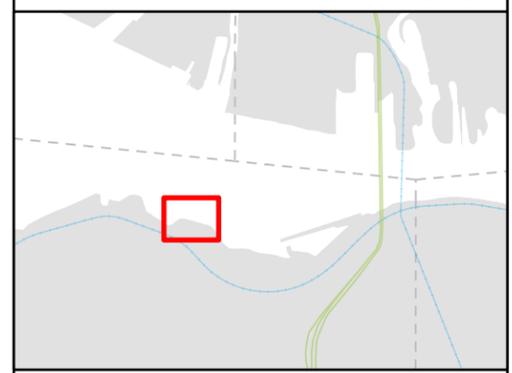
VFPA Spatial Data Group
Prepared by: BL
July 25, 2019
Last updated: July 25, 2019
PLAN #G2019-074-02

Service Layer Credits: Orthos2018:

CP Cascade Capacity Expansion PER # 18-163

- Property Line
- VFPA Boundary
- Railway
- Project Location

Proposed Habitat
Offsetting Area



VFPA Spatial Data Group
Prepared by: BL
July 25, 2019
Last updated: July 25, 2019
PLAN #G2019-074-03

Service Layer Credits: Orthos2018: