



**PORT of  
vancouver**

Vancouver Fraser  
Port Authority

**VANCOUVER FRASER PORT AUTHORITY  
PROJECT AND ENVIRONMENTAL REVIEW  
REPORT AND PERMIT**

<b>PER No.:</b>	<b>21-110</b>
<b>Tenant:</b>	<b>Raincoast Conservation Foundation</b>
<b>Project:</b>	<b>Iona North Arm Jetty Breach, Richmond</b>
<b>Project Location:</b>	<b>Western tip of Iona Island, Richmond, BC</b>
<b>Vancouver Fraser Port Authority SID No.:</b>	<b>RIC601</b>
<b>Land Use Designation:</b>	<b>Log Storage and Barge Moorage</b>
<b>Applicant/Permit Holder:</b>	<b>Raincoast Conservation Foundation</b>
<b>Category of Review:</b>	<b>B</b>
<b>Date of Approval:</b>	<b>January 17, 2022</b>
<b>Date of Expiry:</b>	<b>January 31, 2027</b>

## 1 INTRODUCTION

The Vancouver Fraser Port Authority (the “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 and project permit (the “Permit”) documents the Port Authority’s project and environmental review of PER No. 21-110: Iona North Arm Jetty Breach, Richmond (the “Project”) proposed by Raincoast Conservation Foundation (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 *Impact Assessment Act*, as applicable. The proposed Project is not considered a “designated project” under the *Impact Assessment Act* and an impact assessment as described in the *Impact Assessment Act* is not required. However, Port Authority authorization is required for the proposed Project to proceed and in such circumstances, where applicable, Section 82 of the *Impact Assessment Act* requires federal authorities to assure themselves that projects will not likely cause significant adverse environmental effects. This review provides 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 consultation carried out by the Port Authority. A full list of information sources germane to the review is provided in the following pages of this report.

This Permit is the authorizing document allowing the Applicant to proceed with the Project subject to the listed project and environmental conditions.

## 2 PROJECT DESCRIPTION

Raincoast Conservation Foundation will construct a linear breach (i.e., channel) across the Iona North Arm Jetty in the Fraser River estuary, Richmond, BC (Figure 1). The North Arm Jetty is a human-made structure that was constructed in 1916 to aid in navigation. The goal of the Project is to restore natural migration pathways for

juvenile salmon and other fish species, and to restore the natural movement of freshwater and fine sediments in the estuary. Fisheries and Oceans Canada (DFO) has reviewed the Project and supports the works as described. Transport Canada is also reviewing the Project under the *Canadian Navigable Waters Act*.

In this project permit, the Project means the physical activities authorized by the Port Authority to be carried out pursuant to **PER No. 21-110**, as described below.

## 2.1 Proposed Works and Activities

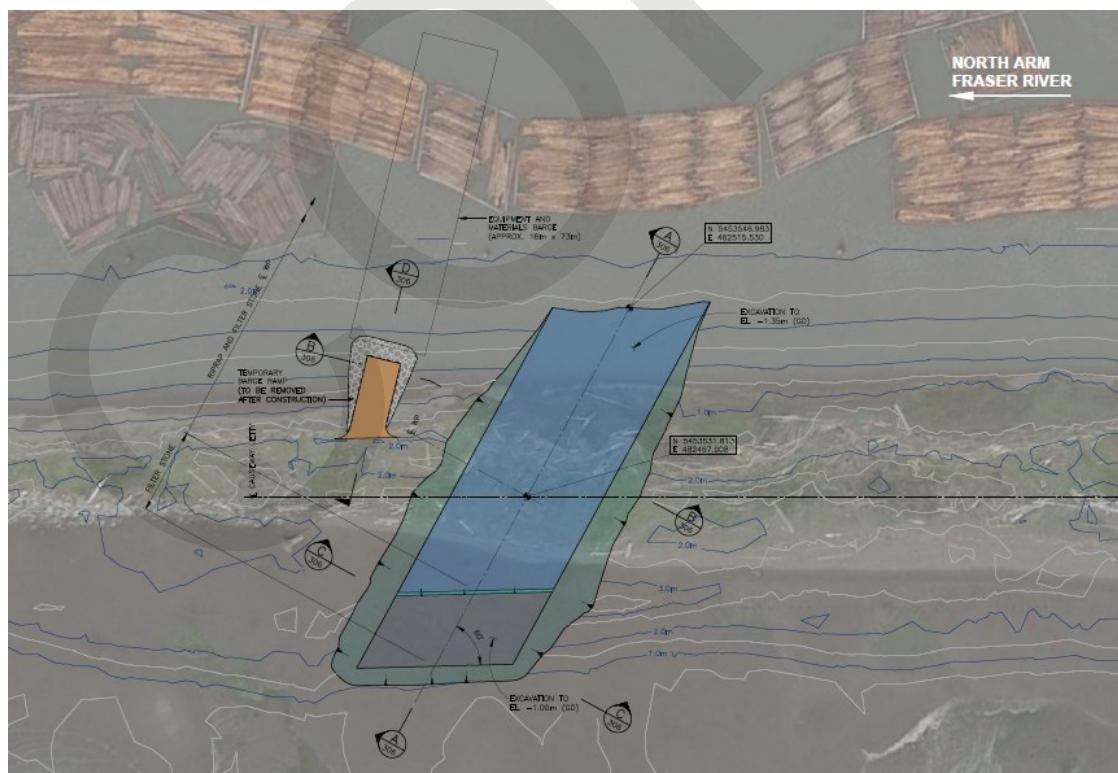
The proposed Project works and activities include the following:

- The jetty breach will be approximately 95 meters (m) long and 30 m wide (i.e., 2850 m<sup>2</sup>), excavated to an approximate elevation of -1.0 m Geodetic Datum (GD)
- The base of the breach will be lined with filter rock and riprap to achieve an approximate final breach elevation of -0.5 m GD. This breach elevation is designed and modeled to allow for flow connectivity between the North Arm and Sturgeon Bank during high-tides
- The side slopes of the breach will be protected with filter rock and riprap
- The construction of the breach will occur from the upland of the jetty using mobile equipment (e.g., backhoe excavators and dump trucks)
- A barge will be used to transport mobile equipment (e.g., backhoe excavators and dump trucks) and materials (e.g., filter rock and riprap) to the Project site. A tug with shore anchors may be used to support the barge
- A temporary barge ramp constructed of filter rock and riprap will be installed next to the breach site. Once the works are complete, the temporary barge ramp and materials will be removed
- Temporary piles may be installed to support a working barge moored at the barge ramp. Once the works are complete, the temporary piles will be removed
- Contractors may utilize the public access road along the jetty for mobilization of workers during construction
- The excavated material (approximately 11,000 m<sup>3</sup>) will be placed on the upland of the jetty, immediately east of the breach, and spread over an area of approximately 375 m by 50 m
- Signage will be installed and maintained to provide the public with information regarding the breach

Construction is anticipated to require four to six weeks under regular working hours, and is planned to occur within the DFO window of least risk to fish.



**Figure 1:** Approximate Project location along the Iona North Arm Jetty, Richmond, BC



**Figure 2:** Design drawing of the breach (center of image) and temporary barge ramp (center left of image)

### 3 VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following Port Authority departments have undertaken and completed a review of these works and confirm that the proposal meets their requirements, subject to the listed project and environmental conditions.

Planning

Environmental Programs

Engineering

Marine Operations

Project Consultation

### 4 INDIGENOUS CONSULTATION

The Port Authority has reviewed the proposed works and determined that the Project may have the potential to adversely impact Aboriginal or Treaty rights.

Every reasonable effort was made to consult with the following Indigenous groups on the proposed Project:

- a) Cowichan Tribes
- b) Halalt First Nation
- c) Lyackson First Nation
- d) Musqueam Indian Band
- e) Penelakut Tribe
- f) Tsleil-Waututh Nation
- g) Squamish Nation

The following consultation activities were conducted:

- Referral package provided for review including consultation letter, application package with appendices and participation funding information and/or participation funding summaries for Indigenous groups with yearly funding agreements
- Project questions from Indigenous groups provided through email answered via email prior to response tables being provided
- Comment deadline reminder sent via email
- Response table provided to Indigenous groups who provided comments on the referral package
- Draft permit conditions provided to one Indigenous group which requested them

Below is a table summarizing comments received by the Port Authority and how they were considered as part of the project and environmental review.

Issue	Mitigations and Permit Conditions	Rationale
Impact of construction activities on unidentified archaeological resources	Condition No. 23 requires the Applicant to submit an Archaeological Chance Find Procedure or adopt the Vancouver Fraser Port Authority Archaeological Chance Find Procedure prior to construction.	The Iona Jetty is a human-made structure which has been in place since the early 1900s. Given that the Project seeks to alter imported fill, the likelihood of impacting unidentified intact archaeological resources has been deemed low and a chance find procedure will be in place throughout the course of Project works.

<b>Issue</b>	<b>Mitigations and Permit Conditions</b>	<b>Rationale</b>
The length of the proposed post-project environmental monitoring is not long enough	None required.	<p>The Applicant indicated that the Project is funding based. The proposed two year monitoring plan is what is feasible with the funding that has been secured for the Project.</p> <p>The Port Authority is working with the Applicant, Fisheries and Oceans Canada (DFO) and Transport Canada to identify opportunities to extend the proposed two year, post-project monitoring at the site to five years, if possible.</p>

Based on the record of consultation, the Port Authority is of the view that the duty to consult has been met.

## 5 EXISTING POLICIES OR GUIDELINES

The Project area is designated as “Log Storage and Barge Moorage” in the Port Authority Land Use Plan (2020). The proposed construction of a linear breach to conserve salmon and fish species would be considered a conditional use in the Land Use Designation. Further, the work would not hinder the area to continue to be used for primary uses such as log storage or barge moorage.

## 6 NOTIFICATIONS

### 6.1 Municipal Notification

The proposed Project was assessed by the Port Authority to have potential impacts to municipal interests. A notification letter was sent to the City of Richmond on November 15, 2021, notifying them of the proposed Project.

The City of Richmond responded on December 14, 2021. Below is a table summarizing the City's comments and how they were considered as part of the project and environmental review.

<b>Issue</b>	<b>Mitigations and Permit Conditions</b>	<b>Rationale</b>
Confirm that all stages of the Project will have no impact on City of Richmond's flood protection infrastructure.	None required.	The proposed Project is located on the North Arm Jetty, which is not part of the City of Richmond's flood protection infrastructure. No impact is anticipated.

Issue	Mitigations and Permit Conditions	Rationale
<p>City staff received the following regulatory considerations from the South Coast Conservation Land Management Program (SCCLMP) coordinator:</p> <ul style="list-style-type: none"> <li>• Wildlife Act Permission under Section 4.4 required</li> <li>• WSA Section 11 Change Approval required, however, likely to be downgraded to a simple Notification of the works as the Province is a partner to this project.</li> <li>• Fisheries Act Authorization likely not required, though some federal conditions may still apply.</li> <li>• Canadian Navigable Waters Act Approvals required.</li> <li>• Vancouver Fraser Port Authority permitting</li> </ul> <p>Please confirm the accuracy of these regulatory requirements. The City can consider this project “fish and wildlife habitat restoration works”; as long as approvals from senior government are required, no ESA DP will be required.</p>	None required.	<p>The proposed Project requires federal approvals prior to commencement.</p> <ul style="list-style-type: none"> <li>• <i>Wildlife Act</i> Permissions are not required as the works are on federal lands</li> <li>• <i>Water Sustainability Act</i> (WSA) Section 11 change approval is not required as the works are on federal lands</li> <li>• <i>Fisheries Act</i> Authorization is not required as this proposed Project is a restoration initiative funded and supported by Fisheries and Oceans Canada</li> <li>• <i>Canada Navigable Waters Act</i> approval is required and this proposed Project is being jointly reviewed by Transport Canada</li> <li>• Vancouver Fraser Port Authority Project and Environmental Review permitting is required for works on federal lands.</li> </ul>
Describe the Project's timeline and consultation requirements.	None required.	The proposed Project, should it be approved, is anticipated to commence in January and be completed by February 28, 2022 to accommodate the least-risk work window. As part of the project review, the Port Authority has undergone consultation with Indigenous groups, municipal and community stakeholders and other marine groups that have an interest in the area of the proposed Project.

<b>Issue</b>	<b>Mitigations and Permit Conditions</b>	<b>Rationale</b>
Will the Project have any impacts of public or boater access? If so how will this information be communicated to the community?	None required.	The proposed Project will not impact navigation. Foot traffic access to the far end of the North Arm Jetty will be impacted by the works, however the area is lightly used. The Applicant held a joint public information session with Metro Vancouver and has worked with Metro Vancouver to install information signs within the park.

## 6.2 Adjacent Tenant Notification

The proposed Project was assessed by the Port Authority to have potential impacts to adjacent tenant interests. A notification letter was sent to Metro Vancouver and CMH Consulting Inc. on November 15, 2021, notifying them of the proposed Project. A letter of support and two comments in support of the Project were received from Metro Vancouver on December 13, 2021.

CMH Consulting Inc. responded to the referral letter on December 13, 2021. Below is a table summarizing CMH Consulting Inc. comments and how they were considered as part of the project and environmental review.

<b>Issue</b>	<b>Mitigations and Permit Conditions</b>	<b>Rationale</b>
Protection: The Jetty that was created helps protect the log booms from most southerly and westerly winds. These log booms are already up against several influential factors that can cause damage (tides, tugs, teredos and even theft). With this breach within the Jetty, it will produce a gap of about 1.5 sections which is equal to approximately 100 feet. It will be wide enough for weather to impact the logs within that vicinity. While the size of waves shows that it will not be a huge factor, there is concern about the strain on dolphins and wires the wing will have pushing the booms away from them.	Condition 41 requires the Applicant to install additional steel piles for effective log storage purposes in the area affected by the breach if adverse impacts to log-storage operations occur as a result of the Project.	The Applicant will work collaboratively with the marine community throughout construction to determine if new dolphins are required to support ongoing operations. The Applicant will also implement a monitoring plan to study and consider impacts to navigation or access to the log booms.

<b>Issue</b>	<b>Mitigations and Permit Conditions</b>	<b>Rationale</b>
Salt Water Flow: There is concern about the extra volume of salt water that would enter the North Arm. One of the reasons the log booms come into the Jetty is to store them up river in fresh water which prevents of dormants' the teredos. The further up river the booms need to go, will become an added cost to the users.	None required.	The Applicant modeled salinity for the proposed Project and determined that during a low river flow and a high tide range, a saltwater plug in the proposed Project location will be the dominant situation and due to high flow of the river compared to the flow through the breach, negative impacts on salinity will be negligible. During a high river flow and a high tide range, flow onto the bank and dilution will be the dominant factor in the proposed Project location. Additional information can be found in the Applicant's "North Arm Jetty Breach Navigation Review" document.
Tidal Influence: While it shows that most tidal factor will be ebbing out of the breach as shown on the reports, there is concern that we won't actually know the influence of the tide until it actually happens.	None required.	The proposed Project has undergone Mike 21 hydraulic modeling on an ebb and flood tide. The model demonstrated that post implementation of the proposed breach, the velocity in the domestic navigation channel will remain parallel to the existing flow. The results of the model confirm that navigation will not be affected.
Sedimentation: With the river levels getting shallower each year, there will always be a concern of other ways to cause the North Arm filling in without a dredging program.	Condition 48 requires the Applicant to develop a monitoring program approved by the Port Authority that comprises annual hydrographic surveys from both DFO and the Applicant to monitor water depths in the river adjacent to the breach for a period of five years after construction. The monitoring program will assess whether sedimentation that could affect navigation or log storage is occurring as a result of the Project. If sedimentation that impacts navigation or log storage occurs as a result of the Project, the Applicant must implement a dredging plan in a timely fashion, at cost to the Applicant, to return the area to pre-construction conditions.	The proposed Project has undergone modeling to inform potential sedimentation resulting from the breach. The technical studies and models confirm that sedimentation will not occur. The Applicant will undertake a monitoring plan that will study and consider sedimentation. If no sedimentation occurs within that period, no additional actions will be necessary. If sedimentation is detected during the monitoring period, is directly attributed to the breach, and impacts the navigation channel or ability to access the log booms, measures will be taken by the Applicant to address the issue.

Issue	Mitigations and Permit Conditions	Rationale
Loss of use: While we can say that we will be able to still use that portion of the Jetty to tie up logs for years to come, my fear is that eventually we will be unable to use it in the full capacity that it is needed. If we were to lose any portion of the Jetty, it could be detrimental to our industry.	Condition 48 requires the Applicant to develop a monitoring program approved by the Port Authority that comprises annual hydrographic surveys from both DFO and the Applicant to monitor water depths in the river adjacent to the breach for a period of five years after construction. The monitoring program will assess whether sedimentation that could affect navigation or log storage is occurring as a result of the Project.	Use of log storage in the proposed Project location is not expected to be impacted. The Applicant will undertake a monitoring plan to study and consider impacts to navigation or access to the log booms.
Questions surrounding the Iona North Arm Jetty Breach: What will we do to maintain the condition of the dolphins and wires in that newly exposed area? What will happen if the sedimentation becomes an issue? How can we be sure to avoid any loss of use of the Jetty in the future?	Condition 41 requires the Applicant to install additional steel piles for effective log storage purposes in the area affected by the breach if adverse impacts to log-storage operations occur as a result of the Project.  Condition 48 requires the Applicant to implement a monitoring plan for five years to assess if sedimentation that could affect navigation or log storage is occurring as a result of the Project.	The Applicant will work collaboratively with the marine community throughout construction to determine if new dolphins are required to support ongoing operations. The Applicant will also undertake a monitoring plan to study and consider impacts to navigation or access to the log booms.

### 6.3 Marine User Notification

The proposed Project was assessed by the Port Authority to have potential impacts to marine user interests. On December 6, 2021, a marine users group meeting was held to inform and collect feedback from marine users on the proposed Project. In addition, on December 13, 2021, Typlan distributed a document to attendees addressing the concerns of marine users raised during the meeting for comment.

Below is a table summarizing marine user comments and how they were considered as part of the project and environmental review.

Issue	Mitigation and Permit Condition	Rational
Seaspan and Catherwood had concerns about the depths and bringing larger barges through the area.	None required.	The Applicant confirmed that the ability to maneuver large deep draft barges through this area will not be impacted.
Council of Marine Carriers brought up concerns surrounding freshet season and what additional impacts that might have and if it had been studied	None required.	The Applicant provided hydraulic models to show that during freshet, the direction of flow and sedimentation would not change in the navigation channel or log storage area.

Catherwood wanted to clarify the mention of having to use 20% more force in the area directly east of the breach in the log boom area, and what horsepower would be needed.	None required.	The Applicant clarified that the increased use in horsepower by 21% was only for the area closest to the breach and other areas would not be affected.
Harken Towing brought up if there was a plan to install more dolphins in this area to help with the additional forces.	Condition 41 requires the Applicant to install additional steel piles for effective log storage purposes in the area affected by the breach if adverse impacts to log-storage operations occur as a result of the Project.	The Applicant will work collaboratively with the marine community throughout construction to ascertain if new dolphins are required to support ongoing operations.
Council of Marine Carriers would like to review the permit conditions prior to the permitting completion.	None required.	The Port Authority discussed proposed permit conditions with the Council of Marine Carriers prior to making a decision on the Project.
Forrest Marine had concerns with log debris being caught in the area, and wanted to know if there was a plan in place for removal if needed.	Condition 48 requires the Applicant to implement a monitoring plan for five years to assess if sedimentation that could affect navigation or log storage is occurring as a result of the Project.	The Applicant confirmed that due to the surrounding topography, log debris is not expected to be an issue. This will be addressed as part of the monitoring program.
Council of Marine Carriers brought up concerns with currents, sedimentation, scouring, and the potential long term effects they could bring. Two years was not considered enough time to be monitoring. They also asked about long term remediation if there were significant sedimentation buildup in the river and how it would be remedied in the future.	Condition 48 requires the Applicant to implement a monitoring plan for five years to assess if sedimentation that could affect navigation or log storage is occurring as a result of the Project.	The Applicant will implement a five year monitoring plan. If the results confirm that sedimentation affecting navigation or log storage does not occur within that period, no additional actions will be necessary. However, if within the five year timeline sedimentation has been detected that is directly attributed to the breach, and that sedimentation affects either the domestic navigation channel or the ability to access and work around the log booms, measures will be taken by the Applicant to address the issue.

## 6.4 Public Engagement

To meet requirements of section 86 of the *Impact Assessment Act*, the Port Authority posted a description of the Project and notice of public participation to the Canadian Impact Assessment Registry in coordination with Transport Canada to provide the public 30 calendar days to comment on the Project and provide community knowledge.

The comment period ran from November 10 to December 9, 2021. At the close of the 30-calendar day public comment period, no comments were received.

The proposed Project was assessed by the Port Authority to have minimal or no potential impacts to community interests in the surrounding area either during construction or once the Project is completed. Therefore, no construction notification was required.

## 7 INFORMATION SOURCES

The Port Authority has relied upon the following sources of information in its review of the Project.

- Application form and materials submitted by the Applicant on July 6, 2021
- Project correspondence from July 6, 2021 to January 13, 2022

## 8 ENVIRONMENTAL REVIEW DECISION

In completing the project and environmental review, the Port Authority has reviewed and taken into account relevant information available on the proposed project and has considered any adverse impact that the Project may have on the rights of Indigenous peoples, Indigenous knowledge, community knowledge, comments received from the public, and measures that would mitigate any significant adverse environmental effects of the Project. We conclude that with the implementation of proposed mitigation measures and conditions described in the project and environmental conditions section below, the Project is not likely to cause significant adverse environmental effects.

ORIGINAL COPY SIGNED

January 17, 2022

LISA McCUAIG  
MANAGER, ECOSYSTEM MANAGEMENT AND  
ENVIRONMENTAL PROGRAMS

DATE OF DECISION

## 9 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 project and environmental conditions section below, the Project has appropriately addressed all identified concerns.

## PROJECT AND ENVIRONMENTAL REVIEW DECISION

Project Permit PER No. 21-110 is approved by:

ORIGINAL COPY SIGNED

January 17, 2022

CHRIS BISHOP  
MANAGER, PROJECT AND ENVIRONMENTAL  
REVIEW

DATE OF APPROVAL

## 10 PROJECT AND ENVIRONMENTAL CONDITIONS

The Port Authority has undertaken and completed a review of the Project in accordance with the *Canada Marine Act* and Section 5 of the Port Authorities Operations Regulations and, as applicable, Section 82 of the *Impact Assessment Act*.

If at any time Raincoast Conservation Foundation (the “Permit Holder”) fails to comply with any of the project and environmental conditions set out in the project permit (the “Permit”) below, or if the Port Authority determines that the Permit Holder has provided any incomplete, incorrect or misleading information in relation to the Project, the Port Authority may, in its sole and absolute discretion, cancel its authorization for the Project or change the project and environmental conditions to which such authorization is subject.

Pursuant to Section 29 of the *Port Authorities Operations Regulations*, the Port Authority may also cancel its authorization for the Project, or change the project and environmental conditions to which such authorization is

subject, if new information is made available to the Port Authority at any time in relation to the potential adverse environmental and other effects of the Project.

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

Port Authority Guidelines and Record Drawing Standards referenced in this document can be located at:

<https://www.portvancouver.com/permitting-and-reviews/per/project-and-environment-review-applicant/guidelines/>.

No.	GENERAL CONDITIONS
1.	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 the Port Authority's rights, under such lease, licence, or access agreement.
2.	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.
3.	This Permit in no way endorses or warrants the design, engineering, or construction of the Project and no person may rely upon this Permit for any purpose other than the fact that the Port Authority has permitted the construction of the Project, in accordance with the terms and conditions of this Permit.
4.	The Permit Holder shall indemnify and save harmless the Port Authority in respect of all claims, losses, costs, fines, penalties or other liabilities, including legal fees, arising out of: (a) any bodily injury or death, property damage or any loss or damage arising out of or in any way connected with the Project; and (b) any breach by the Permit Holder of its obligations under this Permit.
5.	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 set out in the sections above entitled Project Description and Information Sources. The Permit Holder shall not carry out any other physical activities unless expressly authorized by the Port Authority.
6.	The Permit Holder shall cooperate fully with the Port Authority in respect of any review by the Port Authority of the Permit Holder's compliance with this Permit, including providing information and documentation in a timely manner, as required by the Port Authority. The Permit Holder is solely responsible for demonstrating the Permit Holder's compliance with this Permit.
7.	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.
8.	The Permit Holder shall make available upon request by any regulatory authority (such as a Fishery Officer) a copy of this Permit.
9.	Unless otherwise specified, the Permit Holder shall provide plans, documents, and notices required under this Permit to the following email address: <b>per@portvancouver.com</b> and referencing <b>PER No. 21-110</b> .
10.	Unless otherwise specified, all plans, schedules, and other Project-related documentation that the Permit Holder is required to provide under this Permit, and any subsequent updates, must be to the Port Authority's satisfaction.
11.	The Port Authority shall have unfettered access to environmental compliance documentation and the Project site at all times during construction without notice.

12.	The Permit Holder must maintain and retain any records associated with, or produced by, actions or activities undertaken to achieve compliance or that indicate non-compliance with project permit conditions. These records must be made available at the request of the Port Authority.	
	<b>CONDITIONS – PRIOR TO COMMENCING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES</b>	<b>SUBMISSION TIMING (business days)</b>
13.	The Permit Holder shall submit Issued For Construction Drawings for proposed works in accordance with the Port Authority's Record Drawing Standards. These drawings shall be signed and sealed and approved for construction by a professional engineer licensed to practice in the Province of British Columbia. In addition, these drawings shall be submitted in both AutoCAD and PDF format and shall be named according to the record drawing index numbering system set out at Section 2.10 of the Port Authority's Record Drawing Standards.	5 business days before commencing construction or any physical activities
14.	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.	Before commencing construction or any physical activities
15.	Prior to the commencement of any vessel-related activities, the Permit Holder shall contact Canadian Coast Guard (CCG) Marine Communications and Traffic Services (MCTS), (email: <a href="mailto:NAWWARN.MCTSPrinceRupert@innav.gc.ca">NAWWARN.MCTSPrinceRupert@innav.gc.ca</a> ; Phone: 250-627-3070) regarding the issuance of a Navigational Warning (NAWWARN) to advise the marine community of potential hazards associated with the Project.	As per Coast Guard requirements
16.	<p>The Permit Holder shall submit a marine construction and staging plan to the Port Authority's satisfaction, which includes:</p> <ul style="list-style-type: none"> <li>a) identification of navigation related hazards and risk mitigation measures</li> <li>b) staging and construction areas</li> <li>c) dates and hours of operations</li> <li>d) description of activities taking place</li> <li>e) participating equipment and vessels (dimensions must be included)</li> <li>f) method of preferred communication with marine users</li> <li>g) method of communicating updates to relevant marine users</li> <li>h) special requests and/or additional information</li> </ul> <p>The Permit Holder shall carry out the Project in accordance with the marine construction and staging plan, including any subsequent updates made to the Port Authority's satisfaction.</p>	15 business days prior to commencing construction activities
17.	The Permit Holder shall notify the Harbour Master and Project and Environmental Review, email: <a href="mailto:Harbour_Master@portvancouver.com">Harbour_Master@portvancouver.com</a> and <a href="mailto:PER@portvancouver.com">PER@portvancouver.com</a> .	At least 2 days prior to commencing any physical activity

18.	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. Immediately prior to activities with the potential to affect birds and/or their active nests and eggs.	Immediately prior to activities with the potential to affect birds and/or their active nests and eggs.
19.	Sediment and erosion control measures shall be implemented prior to the start of ground disturbance activities. The Permit Holder shall submit an erosion and sediment control plan to the Port Authority's satisfaction. The Permit Holder shall carry out the Project in accordance with the erosion and sediment control plan, and any subsequent updates made to the Port Authority's satisfaction.	Before commencing construction or any physical activities
<b>CONDITIONS – DURING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES</b>		
20.	All general construction and physical activities related to the Project shall be conducted from <b>Monday to Saturday</b> between the hours of <b>7:00 a.m. and 8:00 p.m.</b> No construction and physical activities shall take place on Sundays or holidays. These hours shall not be modified without prior approval of the Port Authority. To request permission to conduct activities outside these hours, the Permit Holder must submit a written request no less than 30 business days prior to the desired start date.	
21.	The Permit Holder shall notify the Port Authority within two business days of any complaints received from the community and stakeholders during construction and indicate how the Permit Holder has responded to such complaints.	
22.	Without limiting the generality of permit condition #2, 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 of the <i>Fisheries Act</i> ; or (b) adversely affect fish or fish habitat in a manner contrary to Section 35 of the <i>Fisheries Act</i> .	
23.	The Permit Holder shall submit an Archaeological Chance Find Procedure for the Project site to the Port Authority's satisfaction and/or confirm the adoption of the Vancouver Fraser Port Authority's Archaeological Chance Find Procedure. The Permit Holder shall carry out the Project in accordance with this Procedure, and any subsequent updates made to the Port Authority's satisfaction.	
24.	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.	
25.	The Permit Holder shall maintain equipment in good mechanical condition and free of fluid leaks, invasive species, and noxious weeds.	

26.	<p>During any vessel-related activities, the Permit Holder shall:</p> <ul style="list-style-type: none"> <li>a) Position vessels and equipment associated with the Project in such a manner so as not to obstruct line of sight to navigational aids or markers</li> <li>b) Exhibit the appropriate lights and day shapes at all times</li> <li>c) Monitor the VHF channel used for MCTS communications in the respective area at all times and participate as necessary</li> <li>d) Be familiar with vessel movements in areas affected by the Project</li> <li>e) Plan and execute the Project in a manner that will not impede navigation or interfere with vessel operations</li> <li>f) During night hours, unless working 24 hours per day, ensure that the rig and associated equipment is moored outside the navigation channel and lit in accordance with all applicable regulations</li> </ul>
27.	<p>The Permit Holder shall not permit sediment, sediment-laden waters, or other deleterious substances to enter the water during the Project. The Permit Holder shall carry out all physical activities 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. The Permit Holder shall manage turbidity in compliance with the following water quality criteria:</p> <ul style="list-style-type: none"> <li>a) when background is less than or equal to 50 nephelometric turbidity units (NTU), induced turbidity shall not exceed 5 NTU above the background values; and</li> <li>b) when background is greater than 50 NTU, induced turbidity shall not exceed the background values by more than 10% of the background value.</li> </ul> <p>For the purposes of this condition, "background" means the level at an appropriate adjacent reference site (as determined to the satisfaction of the Port Authority) that is affected neither by physical activities at the Project site, nor sediment-laden or turbid waters resulting from physical activities at the Project site.</p>
28.	<p>The Permit Holder shall not permit barges or other vessels used during the Project to ground on the foreshore or river/seabed or otherwise disturb the foreshore or river/seabed (including disturbance as a result of vessel propeller wash), excepting only such disturbance as is reasonably required resulting from the use of barge spuds.</p>
29.	<p>Rip rap shall be clean and free of fines and shall be lowered through the water column and deposited near the river/seabed and not dumped or deposited from above or near the water surface.</p>
30.	<p>The Permit Holder shall ensure that excavated material that is intended for upland placement complies with all applicable legislation and regulations. The Permit Holder shall appropriately manage any contamination associated with the excavated material and maintain records of off-site disposal, if off-site disposal is required.</p>
31.	<p>There shall be no in-water works during the fisheries sensitive period from March 1 to June 15, inclusive, unless otherwise approved in writing by DFO or the Port Authority. The Port Authority shall be notified of any DFO exemptions allowing works within the fisheries sensitive period.</p>
32.	<p>The Permit Holder shall immediately cease work and notify the Port Authority if the Permit Holder has reasonable grounds to believe that the Project has harmed fish or fish habitat, including observation of distressed, injured, or dead fish. The Permit Holder shall not resume work until authorized by the Port Authority.</p>
33.	<p>The Permit Holder shall not disturb the river/seabed outside the Project site.</p>

34.	The Permit Holder shall use an environmentally clean clamshell bucket. The bucket and any portion of the cables that will be in contact with or near the water shall be cleaned of any residual hydrocarbons or other contaminants prior to the start of works.	
35.	The Permit Holder shall use reasonable efforts to retain existing native riparian vegetation and native soil. Disturbance or clearing of vegetation shall be staged and strictly limited to that required for the Project.	
36.	If invasive plant species are within the Project area, the Permit Holder shall manage invasive plants in a manner that prevents their spread. Invasive plants and potentially affected materials, such as soil, shall be appropriately contained, collected and disposed of.	
37.	The Permit Holder shall repair and/or remediate any unintended damage or erosion resulting from disturbance to the intertidal zone during the Project.	
38.	The Permit Holder shall carry out all works in the intertidal zone in the dry, i.e., above the water surface.	
39.	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.	
40.	Without limiting the generality of permit condition #2, 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.	
41.	The Permit Holder shall work collaboratively with the Port Authority and the marine community to determine if adverse impacts to log-storage operations occur as a result of the Project. If required, the Permit Holder shall install additional steel piles for effective log storage purposes in the area affected by the breach.	
42.	Piles shall be driven with a vibratory or drop hammer. Piles shall not be installed using a diesel or hydraulic hammer or other technology such as drilling without review and authorization by the Port Authority.	
43.	The Permit Holder shall cap any exposed hollow pipe piles to prevent wildlife entrapment.	
44.	Sediments contained within piles after driving shall be left in place. If it is determined that they must be removed for engineering reasons, the Permit Holder shall consult the Port Authority for review and authorization prior to initiating the proposed physical activities.	
<b>CONDITIONS – UPON COMPLETION</b>		
45.	The Permit Holder shall notify the Port Authority upon completion of the Project.	Upon substantial completion
46.	The Permit Holder shall provide record drawings, including a Project site plan that clearly identifies the location of works, in both AutoCAD and PDF format (with an Engineers stamp where applicable) in accordance with the Port Authority's Record Drawing Standards. All drawings shall be named according to the record drawing index numbering system set out at Section 2.10 of the Port Authority's Record Drawing Standards.	Within 40 business days of completion
47.	The Permit Holder shall confirm that the Project was constructed within the approved area by providing digital photographs of the Project site both before and after construction of the Project.	Within 40 business days of completion

48.	The Permit Holder shall submit, to the Port Authority's satisfaction, a monitoring plan that includes annual hydrographic surveys from both DFO and the Permit Holder to monitor the water depths in the river adjacent to the breach for a period of five years after construction. The monitoring program shall assess whether sedimentation that could affect navigation or log storage is occurring as a result of the Project. If negative impacts to navigation or log storage are identified, the Permit Holder shall submit, to the Port Authority's satisfaction, a dredging plan to return the area to pre-construction conditions.	Within 45 business days of completion and conducted annually for a period of 5 years
49.	The Permit Holder must contact the Database Information Office of the Canadian Hydrographic Service (CHS) at (250) 363-6360 or chsdatacentre@dfo-mpo.gc.ca to arrange for the relevant CHS charts to be updated.	Within 30 business days of completion
<b>The Port Authority reserves the right to rescind or revise these conditions at any time that new information warranting this action is made available to the Port Authority.</b>		
<b>LENGTH OF PERMIT VALIDITY</b>		
The Project must be completed no later than <b>January 31, 2027</b> (the "Expiry Date").		
<b>AMENDMENTS</b>		
<ul style="list-style-type: none"> <li>• Details of any material proposed changes to the Project, including days and hours when construction and any physical activities will be conducted, must be submitted to the Port Authority for consideration of an amendment to this Permit.</li> <li>• For an extension to the Expiry Date, the Permit Holder must apply in writing to the Port Authority no later than 40 business prior to that date.</li> </ul>		
<b>Failure to apply for an extension as required may, at the sole discretion of the Port Authority, result in termination of this Permit.</b>		

## CONTACT INFORMATION

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Project & Environmental Review  
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### After normal business hours:

In the event of any land or marine construction incidents or concerns related to works carried out on-site under this permit, please contact the 24/7 Port Operations Centre 604-665-9086. In the event of an emergency requiring 'First Responders', please call 911 first.