

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component

Project and Environmental Review: Category C Application Submission

Prepared for: Vancouver Fraser Port Authority 100 The Pointe 999 Canada Place Vancouver, B.C. V6C 3T4 PER No. 20-055

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Canada

Table of Contents

List of Acronyms and Abbreviations	1
1. General Submission Requirements	2
1.1. Online Application Form	2
1.2. Application Fee	2
1.3. Documentation Deposit	2
1.4. Project Contact List	2
2. Project Description Requirements	4
2.1. General Scope	4
2.1.1. Project Description	4
2.1.2. Purpose of Project	5
2.1.3. Project Use	5
2.1.4. Project Rationale	5
2.2. Description of Project Setting	5
2.2.1. Proximity to Sensitive Receptors	5
2.3. Description of Potential Impacts	6
2.3.1. Land, Water and Air	6
2.3.2. Adjacent Communities and Businesses	6
2.4. Studies and Plans	6
2.5. Operations	7
2.5.1. Description of Existing and Proposed Capacities	7
2.6. Potential Environmental and Community Impacts and Proposed Mitigations	8
2.7. Construction and Demolition	9
2.7.1. Proposed Construction Period, Hours, and Construction Methods	9
2.8. Description of Construction Staging Activities	9
2.8.1. Utilities	10
2.9. Construction Traffic Management Study	10
2.9.1. Traffic Assessment	10
2.10. Engagement Plan	14
2.11. Site and Surroundings Drawings	14
3. Project Drawing Requirements	15
4. Required Studies and Reports	18
4.1. Geotechnical Report	18
4.2. Stormwater Pollution Prevention Plan	18
4.3. Air Quality Assessment Report	18
4.4. Noise Study Report	18
4.5. Archaeological Overview Assessment	18
4.6. Construction Environmental Management Plan	19

4.7.	Soil Management Plan	.19	
4.8.	Invasive Species Assessment	.19	
4.9.	Spill Prevention and Emergency Response Plan	.19	
4.10.	Biophysical Overview Assessment Report	.19	
4.11.	Archaeological Chance Find Management Plan	.20	
5. C	onsultation Requirements	.21	
5.1.	Indigenous Groups	.21	
5.2.	Indigenous Consultation Objectives	.21	
5.3.	Consultation to Date	.22	
5.3.1.	Overview	.22	
5.3.2.	Summary of Key Concerns and Interests Raised	.22	
5.3.3.	Participation Funding	.23	
5.3.4.	Participation in Project Studies	.23	
5.3.5.	Review of Draft PER Application	.24	
5.4.	Stakeholders	.24	
5.4.1.	Stakeholder Engagement Goals	.24	
5.4.2.	Stakeholder Engagement Objectives	.25	
5.4.3.	Phase One Engagement	.25	
5.4.4.	Results of Phase One Engagement	.26	
5.5.	Public	.26	
5.5.1.	Phase Two Engagement	.26	
6. P	hase Three Engagement	.29	
6.1.	Public Engagement Materials	.29	
6.2.	Draft Construction Communications Plan	.29	
6.3.	Construction Notifications	.29	
6.4.	Envision	.30	
7. C	losure	.31	
Refer	ences	.32	
Attac	hment A Table of Concordance	.34	
Attac	hment B Drawings	.35	
Attac	Attachment C Geotechnical Reports		
Attac	Attachment D Geotechnical Construction Environmental Management Plan		
Attachment E Stormwater Pollution Prevention Plan			
Attachment F Air Assessment Report			
Attac	Attachment G Noise Study Report40		
Attac	Attachment H Archaeological Overview Assessment41		
Attac	Attachment I Construction Environmental Management Plan42		
Attac	Attachment J Biophysical Overview Assessment Report		

Attachment K Archaeological Chance Find Management Plan	.44
Attachment L Phase Two Engagement Summary Report	.45
Attachment M Construction Schedule Narrative Report	.46

Tables

Table 1 Contact List	2
Table 2 Studies. Reports and Plans	6
Table 3 Drawing Concordance Table	

Figures

Figure 1 Project Components	4
Figure 2 Preliminary Design - Project Scope	8
Figure 3 Preliminary Design - Portside Road Detour Plan	11
Figure 4 Access to North Properties	13
Figure 5 Access to South Properties	13

List of Acronyms and Abbreviations

Term	Meaning		
AOA	Archaeological Overview Assessment		
BC	British Columbia		
CEMP	Construction Environmental Management Plan		
CN	Canadian National Railway		
CoR	City of Richmond		
СТМР	Construction Traffic Management Plan		
DB	Design Build		
ESA	Environmental Site Assessment		
FRIL	Fraser Richmond Industrial Lands		
GVG	Greater Vancouver Gateway		
MUP	Multi Use Pathway		
PBRI	Portside Blundell Road Improvements		
PDB	Progressive Design-Build		
PER	Project Environmental Review		
РМТА	Project Management and Technical Advisory		
ROW	Right of Way		
port authority	Vancouver Fraser Port Authority		

1. General Submission Requirements

The Portside Blundell Road Improvements (PBRI) Project (Project or PBRI Project), as part of the Vancouver Fraser Port Authority (port authority) Greater Vancouver Gateway (GVG) 2030 Strategy, is being proposed to upgrade roadways in the Fraser Richmond Industrial Lands (FRIL). This permit application covers site preparation, construction, and operation of the Project, which will take place on federal lands under the jurisdiction of the port authority; the Blundell Road widening, and associated utility works section of the Project is under City of Richmond (CoR) jurisdiction.

The purpose of the Project is to address congestion issues and improve safety associated with the existing railway crossing of Portside Road at Blundell Road. A detailed description of the Project is provided in **Section 2.0** of this Project and Environmental Review (PER) application. The port authority has engaged Ledcor as contractor to provide design and, subject to approval, construction services to support the delivery of the Project through a Progressive Design-Build (PDB) delivery model. As the contractor, Ledcor will deliver the selected project concept to a 50% detailed design level and establish technical performance specifications that will form part of a Design-Build (DB) agreement. A preferred DB Contractor will then be procured to execute the DB agreement, including further developing the detailed design and delivering construction and hand-over in compliance with the agreement.

Ledcor has been commissioned by the port authority to prepare this application to meet the Category C Application Submission Requirements, sent on February 9, 2022, for the port authority PER No. 20-055. The Application includes supporting studies that are provided as attachments, which may include appended documents that are identified as appendices. The port authority's Project team will be submitting this application as permit applicant.

To assist the reader in navigating the document and to demonstrate compliance with the submission requirements, a Table of Concordance has been prepared, and is included as **Attachment 1**. The Table of Concordance presents details of all completed studies in support of the Application.

1.1. Online Application Form

An online Category C application form will be submitted through the port authority's Permit Portal.

1.2. Application Fee

The application fee has been waived for this application.

1.3. Documentation Deposit

The documentation deposit has been waived for this application.

1.4. Project Contact List

Table 1 provides a Project contact list including name, title, address, phone number and email address.

Table 1 Contact List

Name	Title	Address	Phone	Email
Noel Allison	PER Lead	Vancouver Fraser Port Authority, 100 The Pointe, 999 Canada Place, Vancouver, BC V6C 3T4	604.665.9382	noel.allison@portvancouver.com

Name	Title	Address	Phone	Email
Sepehr Davani	Senior Project Delivery Specialist	Vancouver Fraser Port Authority, 100 The Pointe, 999 Canada Place, Vancouver, BC V6C 3T4	236.877.1483	Sepehr Davani@portvancouver.com
Sat Oberoi	Design Build Manager	Ledcor CMI Ltd., 1500, 1055 West Hastings Street, Vancouver, BC V6E 2E9	778.886.9706	sat.oberoi@ledcor.com
Gary Lin	Senior Engineer	McElhanney, #100 8837, 201 Street, Langley, BC V2Y 0C8	778.357.1294	glin@mcelhanney.com

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

2. **Project Description Requirements**

This Project description provides general information about the Project and presents an overview of the activities anticipated to occur during the Project's lifecycle.

2.1. General Scope

The following sub-sections provide a summary of the Project and the rationale guiding Project development.

2.1.1. Project Description

The Project consists of improvements to the existing Blundell Road, Portside Road, and connector corridors to improve travel safety and efficiency at the existing railroad crossing (See **Figure 1**). The Project also includes decommissioning of the existing at-grade crossing at No. 8 Road and maintaining designated infrastructure to specified standards during construction (such as pavement, structures, drainage maintenance, etc.). The Project that is the subject of this PER application is composed of the following two key components:

1. Portside Road Overpass

The proposed overpass design includes a new two-lane bridge spanning Blundell Road, the CN rail line, and Portside Road, with a loop on either end to connect the bridge to Blundell Road and Portside Road. The proposed location is approximately 150 to 200 m west of the current rail crossing. A Multi-Use Pathway (MUP) will be constructed along the south side of Portside Road.

2. Blundell Road Widening

The proposed design includes widening Blundell Road from two lanes to four lanes east of the No. 8 Road intersection and west of York Road. Construction of a MUP along the north side of Blundell Road. A new signalized intersection, with two through lanes plus turning lanes in each direction to connect the overpass loop to Blundell Road. Improvements to the No. 8 Road intersection by creating two through lanes on Blundell Road and a left turn lane eastbound to access No. 8 Road. On No. 8 Road, there will be two southbound lanes at the intersection, with one lane being a dedicated right turn lane to access Blundell Road.

Figure 1 Project Components



2.1.2. Purpose of Project

The purpose of the Project is to address congestion issues and improve safety within the existing railway crossing of Portside Road at Blundell Road, in the heart of the FRIL. This primary intersection within the FRIL currently experiences significant delays due to high traffic volumes and an at grade crossing of a rail yard on the south leg of the intersection. Most vehicles affected are heavy vehicles such as container trucks. The Project aims to resolve these issues by increasing road capacity, and grade-separating the rail yard.

2.1.3. Project Use

The Project's location within the FRIL includes marine frontage and access to rail and road networks. The Portside and Blundell Roads are the only road accesses to industrial facilities in the area which generate more than 2,400 container truck trips per day.

2.1.4. Project Rationale

The Project will help mitigate traffic congestion, alleviate rail crossing delays, improve container movements to and from warehouse facilities, support future development, provide better access for public safety and emergency vehicles, and allow for new CN rail tracks to better serve the surrounding industrial area.

Building an overpass over the rail line will reduce idling and increase the efficiency and capacity of the transportation network to and from the Port of Vancouver. Vehicles, including container trucks trying to reach transload and warehouse businesses along Blundell Road and Portside Road, will experience more reliable travel times, and goods will get to their final destinations faster.

Widening Blundell Road will help accommodate current and forecasted traffic volumes and improve access to businesses along Blundell Road.

The proposed MUP will enhance safety and accessibility as people walking or cycling in the area will not have to share the road with moving traffic.

2.2. Description of Project Setting

The Project is in an industrial zone in the southeastern portion of Richmond, BC, approximately 500 m north of the southern and main arm of the Lower Fraser River. Areas within 100 m of the Project are highly developed or altered landscapes. Within the industrial areas characterizing the Project footprint, vegetation is present in narrow corridors adjacent to road and railway edges, either in landscaped areas associated with adjacent commercial properties, or undisturbed, low-nutrient soils, where non-native herbaceous species primarily dominate. The Project area does not contain any watercourses providing fish habitat or potentially supporting fish populations. The ditches along Blundell Road, Portside Road, the north section of the overpass, and the CN rail tracks are ephemeral.

Please refer to **Attachment J** for the findings from the biological survey on the fish habitat, vegetation, wildlife, endangered species, and invasive species.

2.2.1. Proximity to Sensitive Receptors

The Project and adjacent sites are zoned for industrial use. The closest existing residential receptor is located on No. 7 Road: approximately 1 km from the Project boundary. The closest non-industrial land to the Project area is agricultural zoned land which is at least 250 m from the Project footprint.

2.3. **Description of Potential Impacts**

2.3.1. Land, Water and Air

The Project area is a heavily developed industrial area. Impacts to land beyond the Site and adjacent industrial area are not anticipated. There are no natural plant communities. Except for urban bird species and common small mammals, wildlife is expected to be transient in the Project area.

There are no fish-bearing watercourses in the Project area.

Impacts to air quality from machinery operating during construction and from the generation of fugitive dust during excavation, sediment transportation and infilling activities are anticipated to be minor and temporary in nature and are not expected to occur beyond the immediate Project area.

2.3.2. Adjacent Communities and Businesses

There are no residents living near the Project footprint¹.

Access to some local businesses and Lulu Island and ADESA (port authority tenants) will be temporarily impacted during construction. There will be active traffic control devices placed along Blundell Road and Portside Road during roadway construction. Traffic volumes to the site are also anticipated to increase slightly because of construction activities. Effects will be localized and temporary in nature, occurring during the construction phase of the Project. A preliminary Construction Traffic Management Plan (CTMP) has been developed to mitigate effects to operations. This outline CTMP is summarized in **Section 2.9**.

Temporary increases in baseline noise, suspended dust and vehicular exhaust may occur during construction, Further information is provided in **Section 4.4** and mitigation measures are proposed in **Sections 5.1, 5.3, 5.4** and **5.5** of the CEMP (**Attachment I**).

2.4. Studies and Plans

Studies and plans requested and provided as part of this Application are listed in Table 2.

 Table 2 Studies, Reports and Plans

Attachment	Study, Report and Plans		
В	Design Drawings		
С	Geotechnical Design Report		
D	Geotechnical Construction Environmental Management Plan		
E	Stormwater Pollution Prevention Plan		
F	Air Assessment Report		
G	Noise Study Report		

¹ Nearest residents estimated 1.4 km N from Project footprint and 2.6 km W from western most end of Project Footprint.

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

Attachment	Study, Report and Plans		
н	Archaeological Overview Assessment		
I	Construction Environmental Management Plan		
I (Section 5.7)	Soil Management Plan		
I (Section 5.11)	Invasive Species Plan		
I (Section 6)	Spill Prevention and Emergency Response Plan		
J	Biophysical Overview Assessment Report		
К	Cultural Heritage Chance Find Procedure		
L	Phase two Engagement Summary Report		

2.5. **Operations**

2.5.1. Description of Existing and Proposed Capacities

2.5.1.1. Portside Overpass

The existing Portside Road runs east-west through the Richmond Logistics Hub, before turning approximately 90 degrees south at the No. 7 Canal, parallel with the COR Right of Way (ROW). The only access into and out of Portside Road is by the at-grade crossing on No. 8 Road at the east end of Portside Road. Traffic turns approximately 90 degrees at No. 8 Road, crosses the CN track through the existing at-grade crossing, before entering a signalized intersection at No. 8 Road and Blundell Road. While trains cross No. 8 Road, traffic access into and out of Portside Road is temporarily cut off. During these times, traffic backs up at the intersection along Blundell Road and Portside Road until the crossing is clear. The traffic backup causes congestion beyond designated turning pockets at the intersection resulting in interruption of traffic flow in the area.

The existing lane configuration along Portside Road provides one eastbound lane and one westbound lane, with dedicated left turn lanes in the westbound direction for access into tenant properties (Lulu Island, Coast 2000 and Westran). No significant alteration is planned for Portside Road. Asphalt resurfacing is included for a stretch of Portside Road east of Lulu Island.

The Project includes construction of approach ramps for the overpass, located North of Blundell Road in the ADESA lands and south of Portside Road in Area V. A new T-shaped intersection will be created west of the current Blundell Road and No. 8 Road intersection, providing access to the north approach ramp. Both north and south approach ramps will turn westward from the overpass towards Blundell Road and Portside Road, respectively.

The bridge will include two 3500 mm wide lanes, a 1500 mm wide southbound lane shoulder, a 1300 mm wide northbound lane shoulder, and a 3000 mm wide multi-use path (MUP) on the northbound side of the overpass. There will be a physical barrier between the northbound travel lane and MUP.

2.5.1.2. Blundell Road Widening

Currently the intersection of Blundell Road/No. 8 Road serves as the only access point to all tenants west of No. 8 Road within FRIL. This intersection is currently a four-leg signal-controlled intersection with a railway crossing on the south leg. When a train crosses it causes delays in all directions but particularly the south leg which is blocked by rail movements.

Blundell Road runs east-west from the eastern limit of the FRIL, parallel along the north of the CN rail corridor within the FRIL, intersects No. 8 Road, enters a slight curve bend northward, intersects York Road, before reaching the western limit of the FRIL at the No. 7 Canal Road.

From the eastern limit of the FRIL to No. 8 Road, the existing roadway consists of two westbound lanes and two eastbound lanes divided by a median. West of No. 8 Road, Blundell Road reduces to one lane in each direction, without separation. The intersection with York Road includes a dedicated left turn lane for both directions on Blundell Road.

The Project includes widening Blundell Road west of No. 8 Road, to provide two westbound lanes and two eastbound lanes, including medians and left-turn lanes where required by design. Room for widening was considered when Blundell Road was first constructed west of No. 8 Road as some infrastructure, including streetlights were aligned to accommodate twinning Blundell Road with medians and left turn pockets.

Figure 2 provides an overview of the road design and proposed extent of road works on both Portside Overpass and Blundell Widening scopes.



Figure 2 Preliminary Design - Project Scope

2.6. Potential Environmental and Community Impacts and Proposed Mitigations

Construction activities within the Project area will cause air, dust, noise, and light emissions. Traffic volumes to the site are also anticipated to increase slightly because of construction activities. Effects will be localized and temporary in nature, occurring only through the construction phase of the Project.

Access to some local businesses and port authority tenants will be impacted during construction. An outline of preliminary Construction Traffic Management Plan (CTMP) has been developed to mitigate effects to operations. This outline CTMP is summarized in **Section 2.9**. No additional effects to the community or local businesses are anticipated because of the construction or operation of the Project.

Project operation related effects are expected to be limited to increases in light associated with the installation of new streetlighting along the proposed roadway. The lighting will follow CoR Lighting standards and will mitigate environmental impacts to the greatest extent possible and per the port authority's environmental requirements. Lighting will be designed specifically for intersections, walkways, roads, and bike lanes. Where lighting requirements are not clearly defined in the CoR Standards, IES RP-8-21 standards will be applied.

The proposed project will facilitate future development in the area which may have indirect effects in air emissions related to the use of the overpass and road widening by trucks and other vehicular traffic.

A preliminary Construction Environmental Management Plan (CEMP) has been appended to the Application as **Attachment I**. The CEMP will be updated and modified as needed over the duration of the Project. The mitigation measures and controls outlined in the CEMP are intended to avoid and limit potential Project effects related to work near water, vegetation and trees, and wildlife.

2.7. Construction and Demolition

2.7.1. Proposed Construction Period, Hours, and Construction Methods

Pending regulatory approvals, Project construction is scheduled to commence in mid-2023. Blundell Road and Portside Road will be improved in stages between 2023 and 2026. The overpass will be opened in 2026. Construction is estimated to take 36 months. Ground improvements, earthworks, and foundations will be executed between 2023 and 2025, with superstructure and bridge paving occurring throughout the beginning of 2026.

The construction schedule will be based on 5 working days, 10 hours per day (07:00 - 17:00). Certain critical activities (e.g., girders, beams, structural steel, utilities, earthworks, paving, etc.) will need to be completed outside of the standard construction hours to minimize impacts to traffic and to port authority tenants. All requirements outlined on VFPA's Project and Environmental Review Guideline on Construction Outside Regular Work Hours will be met.

2.8. Description of Construction Staging Activities

Construction activities will be conducted near the intersection of Blundell Road, Portside Road, and No. 8 Road, with much of the work occurring west of the intersection. On the south, in Area V, the Project will take up approximately 50,000 m²; and on the north, in ADESA land, the Project will take up approximately 20,000 m². Site offices, laydown areas, and staging areas will all be located within or adjacent to the Project footprint.

Anticipated Project components and construction approach can be found in Construction Schedule Narrative Report in **Attachment M.** Note the report includes materials related to Portside Extension construction, which is beyond the current permit's scope of work. Construction will include but is not limited to vegetation clearing, grading of access, ground improvements involving rapid impact compaction (RIC) and preload, embankment fill, pilings, concrete works, girder erection, utility works, and landscaping.

2.8.1. Utilities

There are several utilities within the vicinity of the proposed overpass that have the potential to affect construction. A fiber optic cable and electrical line are located near an open ditch running east-west within ADESA parcel, north of Blundell Road. The Project's north approach loop will be built on top of the line. Consideration during design and construction will be given to ensure the cable and electrical line remain operational during, and after, construction. A short section of storm sewer under the North approach will be abandoned. A FortisBC gas line conflicts with the North Pier pile locations and will need to be relocated to the North. Discussions with FortisBC are ongoing. The projected settlement requires significant works on utilities on Blundell Road. These include relocation of approximately 550m of water line and upgrade of a further 80m, and mitigation works on sanitary and storm sewers, with potential for replacement of sections of the storm sewer. Interruptions to gas, water and sanitary services will be required.

Along Blundell Road there are storm sewer mains, sanitary sewer mains, gas lines, electrical lines, fiber optic lines, and water lines. More than 20 fire hydrants along Blundell Road will need to be relocated, requiring further interruptions to water service. Subject to further design and surveys, other utilities within the Project area may require minor upgrades and / or relocations.

Note that, as discussed earlier, the works done along Blundell Road are within the CoR lands and outside of the port authority jurisdiction.

2.9. Construction Traffic Management Study

A Construction Traffic Management Plan (CTMP) will be prepared by Ledcor in early 2023 to establish traffic routes, detours, volumes, and control plans during Project construction.

The main considerations for the traffic management during Project execution are as follows:

- Managing existing truck traffic entering and exiting Portside Road during construction via a temporary detour south of the Project site.
- Managing traffic on Blundell Road during road widening activities.
- Maintain access for property owners along Blundell Road and Portside Road.

2.9.1. Traffic Assessment

2.9.1.1. Management of Existing Traffic on Portside Road

A segment of existing Portside Road immediate west of No. 8 Road falls within the Project construction area. To ensure Portside Road remains open throughout the span of the construction, a temporary staging area and detour will be constructed (see **Figure 3** below). The detour will consist of a two-lane paved road, to be built on the south side of the Project area. The detour will be constructed early in the Project execution schedule to ensure that traffic can be switched onto the detour with minimal interruption. Construction will be completed away from active traffic along Portside Road, and we expect minimal disruption while we deliver materials to the project site.

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

Figure 3 Preliminary Design - Portside Road Detour Plan



The existing segment of Portside Road within the construction area will be closed to the public and utilized for construction work, including pre-load placement and removal, piling activities, fill placement, girder erection, and temporary access and laydowns.

Appropriate signage will be designed and installed for the detour. Ledcor will monitor and maintain the detour during construction to avoid any disruptions to traffic. Ledcor expects that the proposed detour will allow traffic along Portside Road to function better than it currently is functioning due to the softened curvature between Portside Road and No. 8 Road.

Construction traffic will be utilizing the existing Blundell Road and proposed detour of Portside Road to access into and out of the construction staging area. The exact locations of the access points into and out of construction staging area will be developed during Project design.

2.9.1.2. Management of Existing Traffic on Blundell Road

Blundell Road is a two-lane road with heavy truck traffic accessing and egressing the Portside Road. The Project will widen Blundell Road to the south by adding a median and two extra travel lanes, to a fourlane road. The widening of Blundell Road will ease congestion and accommodate expected future traffic volumes and patterns. The Project will be resurfacing the existing two-lane Blundell Road.

Widening activities will be staged to minimize impacts to traffic. Two travel lanes, one per direction, will be maintained open to traffic except occasional work that require more comprehensive road closure or short duration stoppages. Traffic management will include delineation, signage, and traffic control personnel to coordinate traffic flow.

Upon the completion of two new travel lanes south of existing Blundell Road, traffic will be temporarily shifted to the newly constructed lanes to allow work to be performed on milling, and paving the existing two travel lanes. Traffic will also be shifted to accommodate any other improvements to the existing lanes of Blundell Road as required. Ledcor will coordinate with CoR to provide sufficient notice and acquire the appropriate permits prior to performing traffic management activities.

As most of the widening work will be on the south side of Blundell Road, pedestrian access on the north will be maintained during construction.

The north embankment of the new overpass will be placed within the footprint of port authority tenant, ADESA. This embankment approach will be near the current east access into ADESA's land. The Project team coordinated with ADESA during the conceptual and preliminary design stages and have agreed to shift their current main access off of Blundell Road to the west of the proposed new bridge.

Access from Blundell Road will be blocked at this location, allowing Ledcor to start preparation works for the north embankment. Businesses in this area will use the western access from Blundell Road. In shifting the ramp access to the west (refer to **Figure 4** below), Ledcor will ensure that the daily operations by ADESA and their tenants are not impacted by construction of the embankment.

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

Figure 4 Access to North Properties



Embankment works on the north of Blundell Road may periodically impact pedestrian traffic, so Ledcor will build and maintain fenced off pedestrian paths around the work areas to ensure pedestrian safety.

During the widening of Blundell Road, some tenants' driveway access south of Blundell Road will likely be closed off for construction at times. To maintain access to Blundell Road, it is proposed the impacted tenants' traffic will be redirected to York Road (see **Figure 5**).



Figure 5 Access to South Properties

The CoR Lift Station and BC Hydro Station located south of the Blundell Road bend, do not have alternative access other than the existing driveway to Blundell Road. The Project team will coordinate with CoR and BC Hydro to ensure access to the stations can be maintained during construction.

2.10. Engagement Plan

The movement of transport and people will be planned and managed in accordance with WorkSafe BC Operational Health and Safety Regulations. During the development of a CTMP, the Project team will engage and consult with the impacted businesses and stakeholders following the Consultation Plan in **Section 5.4** of this report.

2.11. Site and Surroundings Drawings

See figures above in **Section 2.9** for site and surroundings drawings. Drawings with more level of detail and dimension will be available upon the development of CTMP.

3. **Project Drawing Requirements**

The drawing packages are separated into two main Preliminary Design drawing packages:

- Blundell Road Widening package includes all roadworks and utilities included for upgrading Blundell Road from No. 7 Road Canal (west project extent) to No 8 Rd. This drawing package follows CoR CADD standards to be submitted to the city.
 - CoR drawing package numbering is shown with "XXXX" placeholders for the first drawing submission to City. CoR has indicated they will provide drawing numbers after the first submission to coincide with their GIS.
- Portside Road Overpass packages includes the remaining civil drawings structural drawings, or other drawings for the Portside Road Overpass, abutment loop ramps and improvements along Portside Road.

Drawings and associated information needs, as identified in the Submission Requirements, are listed in the drawing concordance table below (**Table 3**). The engineering drawings listed below have been prepared by qualified professionals and are provided in PDF format in **Attachment B**. A separate digital file will be provided in AutoCAD format.

Drawing Requirements	Plan / Drawing Number
Locations Plan	
Plan showing the relationship of the proposed Project to surrounding area at a 1:5000 scale	 356-135-GA-001 - cover sheet OC-XXXX-cover sheet (note, drawing number to be provided by CoR after first submission)
Site Plan	
Lease and property boundaries, easements, and rights-of-way.	 356-135-GA-101 to 356-135-GA-105 PP-XXXX 1 of 5 to PP-XXXX 5 of 5 OC-XXXX 1 of 17 to OC-XXXX 4 of 17
Legal high-water mark where applicable	Not Applicable
Location and dimensions of all existing and proposed roadways, overpasses, bridges, structures, and equipment.	 356-135-GA-101 to 356-135-GA-105 PP-XXXX 1 of 5 to PP-XXXX 5 of 5 OC-XXXX 1 of 17 to OC-XXXX 4 of 17
Location of all field reference	 356-135-GA-101 to 356-135-GA-105 PP-XXXX 1 of 5 to PP-XXXX 5 of 5 OC-XXXX 1 of 17 to OC-XXXX 4 of 17
Access points including roadways, driveways, parking areas, walkways.	 356-135-GA-101 to 356-135-GA-105 PP-XXXX 1 of 5 to PP-XXXX 5 of 5 OC-XXXX 1 of 17 to OC-XXXX 4 of 17
Area of demolition or construction staging/laydown area.	• 6210074-000-PLN-CM-0001
Roadway Infrastructure	
Relevant roadway plan and profile drawings, showing relevant design clearances to existing	 356-135-RD-201 to 210 OC-XXXX 5 of 17 to OC-XXXX 17 of 17

Table 3 Drawing Concordance Table

Drawing Requirements	Plan / Drawing Number
Typical cross-sections and profiles of all roadway infrastructure, with dimensions, elevations, and grades	 356-135-RD-301 to 302 OC-XXXX 6 of 17 to OC-XXXX 17 of 17
Details of roadway infrastructure, including approaches, abutments, retaining walls, curbs, gutters, sidewalks and other as applicable	 356-135-RD-201 to 210 356-135-RD-301 to 302 OC-XXXX 5 of 17 to OC-XXXX 17 of 17
Clearances between the design high-water level and soffit of bridges, if applicable	Not Applicable.
Anticipated excavation depths (for roadway, abutments, approaches, retaining walls, trenches for utilities, etc.), including depth of excavation required to construct any below-ground infrastructure	• 6210074-100-PLN-EN-0005
Signage (location, dimensions, and post details).	 356-135-RD-601 to 605 Ec-XXXX 1 of 4 to Ec-XXXX 4 of 4
Information on site loading for roadway design criteria and any other anticipated loads	Geotechnical reports are provided in Attachment C , listed as follows:
	 ID020X-TENG-REP-GE-0001-Geotech Framework-A ID020X-EXPG-REP-GE-0003-Pavement Design Report-A ID020X-EXPG-MEM-GE-001-CIP WALL-A
	 c ID020A-EXPG-MEM-GE-0001-Waste Mtrl Reuse & Subgrade-A ID020A-EXPG-MEM-GE-0002-Overpass Pile Design-A
Lot Grading and Utilities	
Separate plans showing existing and proposed utilities	 356-135-DR-701 to 705 356-135-UT-771 to 775 UC-XXXX 1 of 5 to UC-XXXX 5 of 5 LC-XXXX 1 of 5 to LC-XXXX 5 of 5
Site preparation and ground improvement requirements	Refer to Geotechnical reports provided in Attachment C.
Lot grading plan showing existing/proposed paving and drainage. Separate into two plans if required for clarity.	Not Applicable.
Discrete site plan showing existing/proposed fire hydrants relative to the fire and emergency vehicle access routes.	Not Applicable.
Proposed service connections to utilities or systems (water, sewer, storm water, power, gas), both above and below ground.	Not Applicable.

Drawing Requirements	Plan / Drawing Number
Provide written confirmation of which other authorities or jurisdictions will need to provide consent or conduct works to establish connections to utilities, and confirmation that capacity exists within those 3rd party networks.	To be submitted at a later date.
Lighting Plan	
Lighting shown on the site plan for all proposed exterior lighting including the location, type of bulbs, orientation, and level of illuminance.	 TC-XXXX-1 to TC-XXXX-4 356-135-EL-101 to 356-135-EL-105
Detailed lighting plan including photometrics and light rendering, technical specifications of proposed luminaires. LED lights are used on neighboring roads; the proponent should use the same design as the existing.	 TC-XXXX-1 to TC-XXXX-4 356-135-EL-101 to 356-135-EL-105
Parking & Access	
Widths of proposed parking areas and driveways.	There are no parking areas included as part of the Project.
Dimensions of maneuvering areas including turning radii	Vehicle swept path drawings for driveways are included as a separate drawing 356-135- SKT-22. Driveways are shown to accommodate a WB-20 and as such will accommodate fire trucks and other emergency vehicles.
Fire and emergency vehicle access routes to be shown on a site plan.	Vehicle swept path drawings for driveways are included as a sAppeparate drawing 356- 135-SKT-22. Driveways are shown to accommodate a WB-20 and as such will accommodate fire trucks and other emergency vehicles.
Other	
Bridge Structure view and cross-sectional view.	Attachment B Drawing No. 356-135-ST-100 to 104

4. Required Studies and Reports

The following sections summarize the required studies, reports, and plans submitted to satisfy the PER Application Submission Requirements. Reports include stand-alone technical data reports, which document existing conditions within the Project Area as well as effects assessments. Plans for the Project identify management and mitigation measures during construction and operation to address potential adverse effects of the Project. The Project Studies and Reports described below were completed by qualified professionals in their respective fields.

4.1. Geotechnical Report

A site-specific geotechnical investigation for the Project site was carried out in June 2022 by Ledcor. The purpose of the investigation was to determine the subsurface conditions in the Project Area and based on this information, to provide the engineering inputs on geotechnical aspects for the preliminary design of the Project.

Further detail is provided in the geotechnical reports (**Attachment C**) and the geotechnical construction environmental plan (**Attachment D**).

4.2. Stormwater Pollution Prevention Plan

A Stormwater Pollution Plan that includes an inventory of the proposed project site, an identification of potential issues and analysis of risks, recommendations for mitigations and implementation and adaptive management measures can be found in **Attachment E.**

4.3. Air Quality Assessment Report

As no residential areas are near the proposed Project, the air emission assessment methodology consisted of a Level 1 Assessment, as specified in the PER Air Guidelines, to evaluate the potential effects that the proposed Project could have on ambient air quality. The air quality assessment can be found in **Attachment F**.

Air Emissions resulting from construction activities are addressed through the Project CEMP (Attachment I, Section 5.3).

4.4. Noise Study Report

A Noise Study was undertaken in May 2021 to compare predicted noise levels due to traffic for the existing conditions, future conditions with no Project, and future conditions with Project. The noise study can be found in **Attachment G**.

Noise resulting from construction, demolition or non-routine maintenance activities are addressed through the Project CEMP (Attachment I, Section 5.4).

4.5. Archaeological Overview Assessment

An Archaeological Overview Assessment (AOA) was completed by Wood in 2020 with the recommendations that:

• No further archaeological assessment is recommended if construction activities are conducted entirely within the existing fill, or within any new fill added in addition to existing fill; and

• Additional archaeological assessment in the form of construction monitoring be undertaken where construction impacts are expected to extend into the native, undisturbed sediments underlying the existing fill.

Attachment H provides a copy of the Archaeological Overview Assessment report.

4.6. Construction Environmental Management Plan

The Construction Environmental Management Plan (CEMP) (**Attachment I**) was prepared consistent with the port authority Guidelines. Included in the CEMP are measures that will avoid or mitigate potential construction-related effects to environmental resources. Best practices proposed in the CEMP are based on Project scope and design, existing environmental conditions of the site, recommended mitigation based on assessments completed at the Project Area to date, and industry-standard environmental construction techniques.

4.7. Soil Management Plan

The Soil Management Plan has been prepared as part of the CEMP (**Attachment I, Section 5.7**). The soil management plan outlines procedures for testing and appropriately handling soils, limiting the migration/run-off and the disposal of contaminated soils.

4.8. Invasive Species Assessment

An Invasive Species Assessment is included as part of the CEMP (Attachment I, Section 5.11) and the Biophysical Overview Assessment Report (Attachment J, Section 3.2.2, and Section 4.2.2). The Invasive species assessment provides an inventory of existing invasive species, mitigation measures to prevent the spread of invasive species during construction as well as an Invasive Species monitoring and management plan.

4.9. Spill Prevention and Emergency Response Plan

The Emergency Response Plan, and Spill Response Plan, have been prepared as part of the CEMP (**Attachment I, Section 6**). The plan includes an inventory of hazardous materials anticipated to be handled or stored on site during normal operations; a description of spill prevention, containment and clean-up plan for hydrocarbon products and any other deleterious substances using standards, practices, methods and procedures to a good commercial standard, conforming to applicable laws; a description of proposed employee training, emergency response communication plan, emergency procedures, spill tracking and reporting, records of inspections; and reference to appropriate spill containment and clean-up supplies available on site at all times and that all personnel working on the Project are familiar with the spill prevention, containment and clean-up plan.

4.10. Biophysical Overview Assessment Report

A Biophysical Overview Assessment was undertaken to take inventory of the existing conditions of fish habitat, vegetation, wildlife, endangered species, and invasive species.

Attachment J provides a copy of the Biophysical Overview Assessment Report.

4.11. Archaeological Chance Find Management Plan

Should unanticipated archaeological resources be encountered, uncovered or inadvertently impacted during construction, the project's archaeological Chance Find Management Plan will be followed (Attachment K).

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

5. Consultation Requirements

5.1. Indigenous Groups

The Project team has conducted consultation with the following Indigenous groups:

- Quw'utsun Tribes
- Halalt First Nation
- Katzie First Nation
- Kwantlen First Nation
- Kwikwetlem First Nation
- Lyackson First Nation
- Musqueam Indian Band
- Penelakut Tribe
- Semiahmoo First Nation
- Squamish First Nation
- S'ôlh Temexw Stewardship Alliance (represented by People of the River Referrals Office or PRRO)
- Stz'uminus First Nation
- Tsawwassen First Nation
- Ts'uubaa-asatx Nation
- Tsleil-Waututh Nation (TWN)

5.2. Indigenous Consultation Objectives

The proposed Project has legal, regulatory and Transport Canada funding requirements in relation to consultation. To fulfil these requirements, the Project team is committed to meaningful consultation and advancement of reconciliation with Indigenous peoples throughout the project. The specific goals of Indigenous consultation include:

- Consulting with Indigenous groups during Project development to identify potential impacts of the Project on asserted or established Aboriginal rights
- Providing opportunities for Indigenous groups to participate in Project development activities including, but not limited to, environmental and archaeological field studies
- Sharing information and Project updates with Indigenous groups
- Working with Indigenous groups to determine appropriate mitigations of any project impacts, where appropriate
- Exploring employment, training, and other opportunities for Indigenous groups to participate and benefit from the project

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

- Communicating issues and concerns identified by Indigenous groups with the Project team and seek to address Indigenous concerns raised
- Sharing any Indigenous knowledge received and input with the Project team for proper consideration

The objectives and goals above are being achieved by:

- Offering capacity funding to Indigenous groups to participate in consultation activities, such as meetings, communications and review and comment on project materials
- Providing Indigenous groups with project-related information, including responses to comments at consultation meetings, by way of email and letters, and through any other activities identified by Indigenous groups as being effective and/or preferred
- Arranging for participation in project activities, such as archaeological monitoring and ecological study participation
- Considering and addressing issues and concerns raised by Indigenous groups throughout project development and implementation, including those related to potential impacts on Aboriginal interests and ensuring Indigenous input and knowledge is used in development of any mitigation measures

5.3. Consultation to Date

5.3.1. Overview

Engagement with Indigenous groups on the PBRI Project began in 2016, as part of the Fraser River Trade Area Planning Study. Engagement activities continued in 2017 as part of the proposed Gateway projects. Early consultation activities in 2016 and 2017 included distribution of information for review and comment, as well as holding meetings to discuss each Gateway Project.

As part of early engagement, the Project team responded to comments and questions raised by Indigenous groups, based on the information available at the time. Consultation with Indigenous groups on the PBRI Project recommenced in August 2019, following a funding agreement with Transport Canada as part of the Transport Canada's National Trade Corridors Fund.

5.3.2. Summary of Key Concerns and Interests Raised

Throughout the consultation process Indigenous groups have asked questions and provided comments on the Project. The Project team has actively responded to comments raised by Indigenous groups and continues to consult on all project components. Key concerns and interests raised by Indigenous groups during consultation have included the following:

- Protection of archaeology
- Interest in Project participation opportunities (archaeology, environment, contracting, and monitoring during construction)
- Interest in the incorporation of habitat enhancement
- Concern regarding increase in rail traffic in the Project area and associated noise

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

- Importance of the provision of funding to support participation in ongoing consultation
- Invasive species management and avoidance of continuous treatment with herbicides and pesticides
- Reintroduction of native plant species, where possible. Inclusion of culturally significant and harvestable plants in the Project's planning plan
- Concern regarding stormwater management, given proximity to the Fraser River
- Concern regarding noise and light pollution
- Concern regarding how Project design may impact ability to harvest plants, wildlife and fish
- Interest in Indigenous cultural recognition
- Management of any contaminated soils
- Concern regarding potential impacts to terrestrial species
- Interest in the incorporation of green infrastructure
- Consideration of climate change
- Importance of improving safety, as well as encouraging alternative modes of transportation
- Support for the incorporation of bat boxes
- Concern regarding the ecological health of the No. 7 Road Canal

5.3.3. Participation Funding

To support ongoing participation in consultation activities, the Project team has provided Indigenous groups with capacity funding.

5.3.4. Participation in Project Studies

Wood Environment & Infrastructure Solutions (Wood) has been leading archaeological studies for PBRI. An Archaeological Overview Assessment (AOA) was undertaken in December 2019. In January 2020, Wood invited Indigenous groups to participate in preliminary field reconnaissance and/or archaeological monitoring during geotechnical drill work proposed for February 2020. This work was postponed but did not occur as planned in the spring due to COVID-19. Subsequently, geotechnical investigations were also postponed, and notification was provided to Indigenous groups. By letter in July 2020, the Project team contacted Indigenous groups advising geotechnical investigations would recommence early September 2020 and invited them to participate. Indigenous groups participated both remotely and in-person for archaeological monitoring and preliminary field reconnaissance. The draft AOA was shared with Indigenous groups in November 2020 for comment.

Indigenous groups were also invited by the Project team to participate in environmental field reconnaissance studies on August 31 and September 22, 2020. Indigenous group representatives participated both in-person and remotely.

Additional geotechnical work was undertaken in early 2022. Indigenous groups were contacted by Wood in May 2022 regarding the geotechnical work with an invitation to participate in archaeological monitoring.

5.3.5. Review of Draft PER Application

The draft PER application was shared with Indigenous groups for review and feedback on August 10, 2022.

Comments were requested by September 16, 2022. A follow-up email was sent to Indigenous Groups on September 14, 2022 and the comment period was extended to September 23, 2022. The Project team received feedback from a number of Indigenous groups on the draft PER application. The following themes were present in the key concerns and interested raised by Indigenous groups with regards to the draft PER application:

- Archaeology
- Noise and vibration
- Environment and environmental monitoring
- Spill response
- Management of invasive plants

The Project team provided responses to each Indigenous groups who shared their concerns and interests throughout the engagement.

5.4. Stakeholders

The Project team has undertaken engagement with business stakeholders (port authority tenants and subtenants, immediate business community, and trucking companies) and technical stakeholders (City of Richmond, CN, emergency responders, transit providers, BC Trucking Association, and third-party utilities) as part of the overall Project to support this PER application for the Portside overpass. The project team continues to work closely with the technical stakeholders to ensure the project design is aligned with their specifications and design standards, including improved safety for pedestrians and cyclists, enhanced access and connection to the Fraser Richmond industrial lands, and better emergency response. Engagement with business stakeholders has included one-on-one meetings, notifications about the Project, and invitation to the information session held in July 2020.

The Project team's approach to engagement is proactive and timely, follows IAP2 principles, and exceeds regulatory requirements. The project team designed a three-phased engagement program to ensure stakeholder feedback can meaningfully inform the planning, design, and construction of the project. In the first phase of engagement, we focused on listening and learning to understand stakeholders' priorities, concerns, and vision for the project. In the second phase of engagement, we shared and collected feedback on draft designs and our construction management approach. In the final phase of engagement, we will share final designs and our construction staging and traffic management plan. After each phase, we produce an engagement summary report outlining what we heard and how we are considering the feedback.

5.4.1. Stakeholder Engagement Goals

- Achieve broad business stakeholder support for the project design and the construction staging and traffic management plan, including potential detours required during construction
- Engage all stakeholders for input to help inform the final designs

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

- Proactively share information to support business stakeholders towards identifying mitigation strategies to minimize any disruptions to their business operations
- Build awareness and understanding of the project scope and funding limitations, and manage expectations about future growth resulting from port land development and general growth in the Fraser Richmond industrial lands

5.4.2. Stakeholder Engagement Objectives

- Meet regulatory requirements, including those requirements outlined in the Transport Canada funding agreement and PER
- Provide opportunities for stakeholders to learn about the project and provide feedback

5.4.3. Phase One Engagement

The first phase of engagement began in fall 2019 and concluded in July 2020. During this phase, the Project team focused its engagement on business stakeholders, including port tenants and subtenants, and engaged this audience by way of:

- Stakeholder meetings (in-person and online): 15 meetings were held with stakeholders, including:
 - o ADESA Canada
 - o Archway
 - Coast 2000 Terminals
 - Container World Forwarding Services
 - DSV Solutions
 - Ecowaste Industries
 - Euro Asia Transload
 - HBC Logistics
 - o IKEA Canada
 - KTL Transport
 - Pure Industrial Real Estate Trust
 - o Simard Westlink
 - o Tolko Industries
 - o Triovest
 - Westran Intermodal
- **Comment period:** Between July 8 and 22, 2020, the Project team invited stakeholders to review the proposed project information and share feedback
- **Digital engagement platform**: A <u>digital engagement platform</u> was used to host project information, register attendees for the virtual information session and host the recording of the session, as well as gather stakeholder feedback through a questionnaire

- **Project information session**: An <u>online information session was hosted on July 8, 2020</u>. 42 individuals attended the session, and 22 questions were submitted. The session provided an opportunity for stakeholders to meet the project team, ask questions, discuss traffic management during construction, and share their interests and ideas. It also included interactive polls on cycling, transit, multi-use pathways, communication preferences, and a question-and-answer session
- **Questionnaire**: A questionnaire was provided to attendees during the information session and promoted throughout the comment period. Nine responses were submitted
- **Project website**: Project information was shared online where visitors could also sign up for a newsletter at <u>portvancouver.com/portsideblundellupgrades</u> and review other project material including the project fact sheet
- **Notification letters:** The Project team sent letters to industrial land users, port tenants, and businesses in the Fraser Richmond industrial lands providing information about the project. The invitation letter for the online information session was sent to 53 organizations
- **Social media**: The Project team provided project information and promoted the comment period and information session on LinkedIn
- **Project newsletters**: Two project newsletters were distributed to provide project updates
- **Project inquiries:** The Project team led communications via the port authority's feedback line and the project communication's email address. A separate phone line was not created for this project. All public material included the following contact information:

Phone: 604.665.9004

Email: gateway@portvancouver.com

5.4.4. Results of Phase One Engagement

Following the first phase of engagement, the project produced a <u>summary of engagement report</u> that included frequently asked questions, a summary and analysis of stakeholder meetings and feedback provided, and how this feedback will be used.

Since the first phase of engagement, and using feedback from stakeholders, technical analysis, and feasibility and budget considerations, the Project team decided to explore an alternative design concept that minimizes impacts on the City of Richmond's infrastructure and addresses stakeholder interests regarding traffic and business operations during construction. Throughout the re-design, the Project team met with key impacted stakeholders - ADESA Canada, CN, and the City of Richmond - to ensure we were understanding and incorporating the stakeholders' needs into the draft design.

5.5. **Public**

5.5.1. Phase Two Engagement

To align with PER's Public Engagement Guidelines for Category C projects and the PER application checklist, the second phase of engagement was held from June 20 to July 25, 2022, and targeted port tenants, subtenants, the immediate businesses community, and the general public within and around the Fraser Richmond industrial lands. The first phase of engagement did not focus on the general public, as the project mostly affects industrial land users. During phase two engagement, the Project team

expanded its reach to include the general public recognizing there is heightened public interest about improvements to the fluidity and resilience of the supply chain to and from the Port of Vancouver.

To align with PER's Stakeholder Consultation Guidelines for Category C projects, all stakeholders described in the stakeholder section were invited to attend the phase two public engagement opportunities.

The focus of phase two engagement was on sharing and collecting feedback on draft designs and traffic management strategies during construction, by way of:

- **Comment period:** Between June 20 and July 25, 2022, the Project team invited the public and stakeholders to review the proposed project information and share feedback.
- **Project video**: A <u>project video</u> providing a 3D rendering and animation of the proposed project components was posted on the project website and digital engagement platform.
- **Project information session**: An <u>online information session was held on June 28, 2022</u>. The purpose of the session was to share a draft design of the Portside overpass and our proposed traffic management strategies during construction, collect feedback in breakout sessions, and answer any questions about the project. The Project team chose an online engagement approach following the results of a poll in the project newsletter that indicated online engagement opportunities continued to be the preference.
- **Digital engagement platform**: A <u>digital engagement platform</u> hosted project information (video, discussion guide, factsheet), recording of the information session and the online survey.
- **Survey**: <u>An online survey</u> was available for the duration of the engagement period for respondents to provide feedback on all aspects of the project with a focus on draft design and construction staging and traffic management.
- Project website: Project information was shared online where visitors could also sign up for a newsletter at portvancouver.com/portsideblundellupgrades and review other project material including the project fact sheet.
- **Postcard:** Between June 9 and 13, 2022, a postcard arrived at all addresses within 700 meters of the project area providing information about the project and the upcoming engagement opportunities.
- Notification letter: On June 20, 2022, the Project team sent a notification letter providing information about the project and the upcoming engagement opportunities. The letter was sent to 72 organizations, including the following:
 - Port tenants and subtenants
 - Technical stakeholders (e.g., City of Richmond, CN, third party utilities)
 - Trucking community
 - Immediate business community (e.g., Ecowaste, Kingswood Industrial Park)
 - Richmond Chamber of Commerce
- Government email: On June 20, 2022, the Project team sent a notification letter via email to elected officials and government agencies including MPs, MLAs, City of Richmond's intergovernmental department, Transport Canada, and the B.C. Ministry of Transportation and Infrastructure.

- **Social media**: The Project team provided project information and promoted phase two engagement on LinkedIn and geo-targeted Facebook and Instagram ads.
- **Newspaper ad:** On June 9, 2022, a newspaper ad was featured in Richmond News sharing project information and promoting phase two engagement.
- **Project newsletters**: The Project team distributed a project newsletter in January 2022 sharing how we were addressing feedback from phase one engagement by developing a new overpass design concept. On June 20, 2022, the Project team sent a newsletter informing subscribers of the launch of the phase two engagement period and how to participate. After the engagement, a newsletter will be sent with the engagement summary report.
- **Port Community Liaison Committee**: On June 16, 2022, the Project team provided a project update and shared the upcoming engagement opportunities with the Port Community Liaison Committee
- **Project inquiries:** The Project team led communications via the port authority's feedback line and the project communication's email address. A separate phone line was not created for this project. All public material included the following contact information:

Phone: 604.665.9004 Email: gateway@portvancouver.com

The Phase two engagement summary report is included in Attachment L.

6. Phase Three Engagement

Using feedback from phase two engagement, technical analysis, along with feasibility and budget considerations, the Project team will develop final designs and a construction staging and traffic management plan and share them as phase three engagement, anticipated for late 2022 to mid-2023.

6.1. Public Engagement Materials

- Project fact sheet
- Project video
- Discussion guide
- Online information session presentation (real time engagement opportunity)
- Online survey (self-access opportunity)

6.2. Draft Construction Communications Plan

The Project team will prepare a draft construction communications plan to communicate construction impacts to stakeholders and the public. If the project is approved, we understand that submission of a final plan will be required as a permit condition. The construction communications plan will include:

- A brief description of the proposed project
- Project background
- Construction timelines
- Considerations and challenges
- Engagement objectives
- Key audiences and stakeholders
- Key messages
- Contact information
- Public and stakeholder notification activities prior to construction and/or demolition

A map of the notification area and mechanism to receive feedback and respond to/resolve issues during construction.

6.3. Construction Notifications

If the project is approved for construction, the project will provide notification to stakeholders and the public within 500 metres of the project area at least 10 days prior to work commencing. The notification will be shared on the project website and in the project newsletter and will include:

- Overview of the project and area map
- General timelines and work hours
- Potential construction impacts (e.g., noise, light, dust, traffic) and mitigation
- Contact information

The contractor, Ledcor, is responsible for issuing construction notification letters for stakeholders and the Project team will issue construction notification letters for the public (e.g., trucking community and immediate business community).

6.4. Envision

The port authority's vision is to be the world's most sustainable port. To ensure a robust approach to sustainability and resilience on the Project, the Project team (through the PMTA (Project Management and Technical Advisory)) is using the Envision framework for sustainable infrastructure. The PMTA's subconsultant (Luuceo) is leading the Envision strategy implementation and verification process for the Project.

A preliminary assessment estimates that a Gold award can be achieved for the overall Project (with a potential to pursue Platinum, depending on feasibility and cost implications, which will be assessed throughout the Project lifecycle). The Project Board has approved this approach and is committed to using Envision to integrate sustainability (environmental, social, and economic) and resilience (including climate change considerations) into the Project.

PER 20-055 Portside Blundell Road Improvements Project Portside Overpass / Blundell Widening Component | Project and Environmental Review: Category C Application Submission

7. Closure

We trust that this Category C PER Application meets the port authority's information needs for the issuance of a Project Permit for the project. Should you require additional information or wish to discuss in more details, please do not hesitate to contact the undersigned.

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Vancouver Fraser Port Authority, Project and Environmental Review Guideline – Construction Outside of Regular Work Hours, 2022.

Attachment A Table of Concordance

Attachment B Drawings

Attachment C Geotechnical Reports

Attachment D Geotechnical Construction Environmental Management Plan

Attachment E Stormwater Pollution Prevention Plan

Attachment F Air Assessment Report

Attachment G Noise Study Report

Attachment H Archaeological Overview Assessment

Attachment I Construction Environmental Management Plan

Attachment J Biophysical Overview Assessment Report

Attachment K Archaeological Chance Find Management Plan

Attachment L Phase Two Engagement Summary Report

Attachment M Construction Schedule Narrative Report