

Project Permit PER No.:	18-196
Amendment No.	01
Permit Holder:	Schnitzer Steel Canada Ltd.
Authorized Project:	Schnitzer Pile Installation to Support Cameras and Water Cannons
Amendment:	Fire Suppression System Design Amendment
Project Location:	12301 Musqueam Drive, Surrey, BC V3V 3T2
Applicant:	Schnitzer Steel Canada Ltd.
Recommendation:	That PER No. 18-196-01 Fire Suppression System Design Amendment be approved

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 amendment report (the Amendment Report) documents the port authority's project and environmental review of the proposed scope of Amendment PER No. 18-196-01: Fire Suppression System Design Amendment (the Amendment) proposed by Schnitzer Steel Canada Ltd. (the Applicant).

The project and environmental review of the proposed permit Amendment 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 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, a port authority authorization is required for the proposed Amendment to proceed and in such circumstances, where applicable, Section 82 of *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 scope of this project and environmental review considered the application for the Amendment along with supporting studies, assessments and consultations carried out or commissioned by the Applicant, as well as other information provided by the Applicant. In addition, this project and environmental review considered other information available to the port authority and other consultations carried out by the port authority. A full list of information sources germane to the review is provided in the following pages of this report.

This project and environmental review amendment report is NOT a project authorization. This report summarizes the review outcome, and provides the basis for approval or denial of the proposed amendment.

NOTE: This report is for internal use only and was not provided to the Applicant. The Applicant was provided an amendment letter describing the new project scope and amended conditions.

2 AUTHORIZED PROJECT

The Applicant received approval on April 17, 2019, under PER No. 18-196, to install water cannons and thermal cameras adjacent to the existing west barge ramp at the Surrey BC facility. The water cannons and thermal cameras were intended to detect heat sources during warm or dry weather and enhance fire detection and suppression ability. The equipment would be mounted to three new dolphin pile structures.

The water cannons are triggered if the thermal cameras detect heat from the barge. When triggered each water cannon is expected to use approximately 800-1000 gallons per minute (gpm) at maximum and approximately

200-300 gpm when kept at a spray mist level during barge loading activity. Water is proposed to be withdrawn from the Fraser River by a pump, with an intake located beside the pile closest to shore. Collectively, these physical works and activities are referred to as “the Authorized Project.”

3 SCOPE OF PERMIT AMENDMENT

The Applicant is requesting to amend the design of the fire suppression system as a result of project design optimizations. The revised fire suppression system design proposes two pile pier structures consisting of two fifteen-metre towers with fire monitors, two eight-metre access towers, two four-metre bent pile structures, lighting, and misting stations, and connective access trusses. The two fire monitor towers will be equipped with fire monitors and water cannons which will be activated in the event of a fire to deploy up to 2,000 gallons per minute. The support towers will support connecting access trusses between the fire monitor towers to the upland. Fire water lines, access lighting, power and control cables will be mounted on the access trusses to each water monitor station. The bumper pile cluster is to protect the eastern fire monitor tower from vessel activity. All piles will be installed by vibratory hammer.

The fire suppression system will be connected to the municipal water supply, which will be supported by the installation of a 350,000 gallon (1,300,000 litre) fire water tank, valve tie-in, and pump house building installed on a concrete foundation. Upland excavation and construction activities will follow best management practices including the use of silt fencing and other erosion prevention measures. The fire water tank, valve, and pump house will store water onsite to augment the municipal water supply to meet the demand of the suppression system in the event of a fire. The fire water tank, has capacity to fight a fire at full pump capacity of 410 Litres per second (L/s) for two hours when supplemented with the City of Surrey system supply (250 L/s). After the fire water tank has been exhausted, the fire water system will operate at a reduced capacity (250 L/s). The proposed lighting system will be used seasonally during operational hours (7:00 am to 8:00 pm), where required, and used overnight, only when needed, by security personnel or during emergencies.

In addition, the Applicant is requesting an extension to the expiry date of April 30, 2019 for PER18-196 in order to implement the revised fire suppression system design. The amendment is being requested as a result of project scheduling delays.

The scope includes the following physical works and activities:

- Installation of four piers, consisting of a total of twelve concrete capped 1,200 millimetre diameter piles as foundations for the fire water monitor towers;
- Installation of two fifteen-metre tall steel fire monitor towers equipped with three fire water monitors including: thermal and flame detectors, cameras, misting system, and water cannons;
- Installation of two eight-metre tall truss support towers, four steel access trusses, access stairs and lighting along the trusses connecting the upland with the fire monitor towers;
- Installation of two four-metre tall bents and two steel capped pile foundations to support bents;
- Installation of a three piles in a cluster (bump pile) to protect the eastern fire monitor tower from approaching vessels;
- Installation of power and control lines to the three fire water monitors and connection to existing site utilities.
- Excavation of approximately 25 m³ of existing concrete for the footprint of the pump house and concrete pad for fire water storage tank; and
- Construction of fire pump house and valve house on concrete foundation, and installation of fire water break tank (350,000 gallon), pumps and piping from City of Surrey supply water, through the valve station, fire water tank, and pumps to fire water monitor towers;

4 VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following port authority departments have undertaken and completed a review of the amendment and confirm that the proposal meets their requirements, subject to the listed project and environmental conditions.

Planning

Environmental Programs

Engineering

Marine Operations Public Engagement Transportation Indigenous Consultation

5 NOTIFICATIONS

5.1 Municipal Notification

The proposed Amendment was assessed by the port authority to have potential impacts to municipal interests. A notification letter was sent to the City of Surrey on May 5, 2020, notifying them of the proposed Amendment.

The City responded in a letter on May 22, 2020. Below is a table summarizing the City's comments and how they were considered as part of the project and environmental review. Comments received were associated with the supply of water to the site from the municipal water supply and passed on the applicant to address, the port authority is of the opinion that comments have been appropriately addressed by the applicant.

City of Surrey Comment	Applicant Response
The report indicates that the City will provide 250 l/s at a minimum pressure of 40 psi. The City strives to provide a minimum pressure of 40 psi to domestic water supply; however, the pressure available for firefighting purposes is 20 psi at the supply point to the property and is not guaranteed. Further pressure loss will incur through the service connection, backflow preventer, and private fire lines. The available pressure is critical to whether City water supply can be supplied to the break tank.	A booster pump will be installed in the new enclosure and will be designed to start once pressure drops below the value required, to adequately provide the required flow.
The City water network can supply 250 l/s; however, the existing service connection and internal fire lines may need to be upgraded to supply this flow to the storage tank. This needs to be confirmed from their consultant.	The majority of the system from the new enclosure is new and has been designed for the flow.
The capacity of the break tank is not clear, as the letter indicates 'Fire water break tank to supplement the flow from the municipality three hundred thousand gallon (350,000 gallon) on concrete foundation'.	The capacity of the break tank is 350,000 gallons.
Would there be a situation when all four water cannons are operating at the same time? Sacre-Davey indicates the total fire flow requirement is 410 l/s, which matches with the pumping capacity of 6500 gallon per minute in the report. We are not sure how this information correlates to the individual capacity of each cannon at 2000 gallon per minute, or 125 l/s.	There are only three water cannons; therefore, 3 x 2000 gpm is 6,000 gpm. Additionally, there is a fire hydrant connection near the barge ramp which is designed for 500 gpm. This is where the 6,500 gpm pumping capacity comes from.
How long will the water cannons be at continuous flow before the Fire Water Break Tank is empty?	Two hours, if the City's supply network supplements with a continuous flow of 250 l/s, or 54 minutes from the break tank alone, all based on firefighting requirements of 410 l/s.
If the Fire Water Break Tank is empty, will there be enough water in the municipal system to supply them after that point?	No, the City network can only supply 250 l/s versus the requirement of 410 l/s.

City of Surrey Comment	Applicant Response
Is there enough water available in the municipal system for the City to fight a simultaneous structure fire nearby if the water cannons were flowing?	No. The capacity of the City's network is 250 l/s, which would be used to supplement the break tank and would not be available for other firefighting purposes, either within or outside of Schnitzer's property.

6 PUBLIC ENGAGEMENT

To meet requirements of section 86 of the *Impact Assessment Act*, the port authority posted a description of the Amendment and notice of public participation to the Canadian Impact Assessment Registry to provide the public 30 calendar days to comment on the Amendment and provide community knowledge. No comments were received.

The proposed Amendment 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 INDIGENOUS CONSULTATION

The port authority has reviewed the proposed works and determined that adverse impacts to Indigenous or Treaty rights are not expected.

8 ENVIRONMENTAL EFFECTS REVIEW

To fulfill its responsibilities under the *Canada Marine Act* and the *Impact Assessment Act*, the port authority must make a determination on the potential environmental effects of a proposed project on the port authority managed lands and waters prior to authorizing those works to proceed.

The environmental review includes consideration of the potential environmental effects of the proposed amendment, taking into account mitigation measures to avoid or reduce those effects. This review considered the physical works and activities described in Section 2 and 3. The environmental review also considered the information provided in the previous sections of this report.

The review focused on the potential adverse effects of the Amendment scope. The potential for adverse effects as a result of the proposed amendment to similar to the potential adverse effects assessed under authorized Project Permit PER No. 18-196. The revised design includes additional upland construction and a larger in-river footprint. The installation of the upland pump house and fire water storage tank are not expected to result in additional effects. The larger towers and lighting may be visible to adjacent residents, however the project is not anticipated to affect views overall. The Applicant is proposing to install all pile structures by vibratory hammer during the least risk period from July 15, 2020 to February 28, 2021. The revised design eliminates the in-river water intake and pump infrastructure, and will no longer source fire water from the Fraser River. This eliminates potential effects to fish from the in-river water intake.

Residual adverse effects (i.e., effects that remain with mitigation in place) are predicted to be similar to the original project scope. The residual effects to noise, lighting, and aquatic resources as a result from the physical activities and works proposed as part of the amendment scope are not expected to be significant.

9 INFORMATION SOURCES

The port authority has relied upon the following sources of information in its review of the Amendment.

- Application form and materials submitted by the Applicant on behalf of the tenant on April 1, 2020.
- All Amendment correspondence from April 1, 2020 to June 23, 2020
- All plans and drawings labelled:
 - 7191-E-015-RA
 - 7191-E-17-RA

- 7191-M-001-RF
- 7191-M-002-RE
- 7191-M-030-RD
- 7191-M-110-RB
- 7191-S-410-RE
- 7191-S-415-RE
- “7191-PM-RPT-001-R3 Project Description”, April 1, 2020, Sacre-Davey Engineering

10 ENVIRONMENTAL REVIEW DECISION

In completing this project and environmental review, the port authority has reviewed and taken into account relevant information available on the proposed Amendment and has considered any adverse impact that the Amendment may have on the rights of the 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 the proposed mitigation measures and Permit conditions, the Amendment is not likely to cause significant adverse environmental effects.

ORIGINAL COPY SIGNED

June 29, 2020

ANDREA MACLEOD, MANAGER, ENVIRONMENTAL PROGRAMS

DATE OF DECISION

11 RECOMMENDATION

In completing the project and environmental review, the port authority concludes that with the implementation of proposed mitigation measures and conditions described in the Permit and any subsequent amendment(s), the proposed Amendment has appropriately addressed all identified concerns.

It is the recommendation of staff that this permit amendment, **Amendment PER No. 18-196-01**, be approved subject to the addition, revision or removal of the following project and environmental conditions, as applicable, to **Project Permit PER No. 18-196-01** and any subsequent amendment(s).

No.	AUTHORIZED CONDITIONS PROJECT PERMIT PER No. 18-196-196- (April 17, 2019)	REVISED CONDITIONS AMENDMENT PER No. 18-196-01
	REVISED CONDITIONS	
32.	Without limiting the generality of permit condition #2, the Permit Holder shall screen water intakes placed in the Fraser River in accordance with the Fisheries and Oceans Canada (DFO) "Freshwater Intake End-Of-Pipe Fish Screen Guideline", March 1995.	*removed*
	SUPPLEMENTARY CONDITIONS	

41	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	The Permit Holder shall dispose of any soils excavated from the project site that are not suitable for backfill at appropriate off-site facilities and maintain records of off-site disposal.
42	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	The Permit Holder shall conduct all activities involving the use of concrete, cement, mortars and other Portland cement or lime-containing construction materials in a manner that shall not deposit sediments, debris, concrete (cured or uncured), and concrete fines into the aquatic environment, either directly or indirectly. Water that has contacted uncured or partly cured concrete or Portland cement or lime-containing construction materials (such as the water that may be used for exposed aggregate wash-off, wet curing, equipment and truck washing) shall not be permitted to enter the aquatic environment. The Permit Holder shall provide containment facilities at the site for the wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment, as required.
43	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	<p>At least 10 business days prior to construction, the Permit Holder must submit a marine construction and staging plan, including the following, for VFPA review and approval:</p> <ul style="list-style-type: none"> • Staging and construction areas (in relation to Navigation channel) including means of securing to the seabed or mobile with tug; • Dates and hours of operation; • Description of activities taking place; • Equipment and vessels (dimensions must be included); • Method of preferred communication with marine users; • Special request and/or additional information. <p>The Permit Holder shall carry out the Project in accordance with the marine construction and staging plan, including any subsequent amendments approved by VFPA.</p>
44	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	For structures and proposed interior changes to structures that are reviewable under the National Building Code and National Fire Code, the Permit Holder shall apply for a VFPA Building Permit.
45	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	The Permit Holder shall carry out all activities in a manner that prevents the release of sediment, sediment-laden waters, and turbid waters to the aquatic environment. Sediment and erosion control measures shall be implemented prior to the start of ground disturbance activities and should meet or surpass the standards outlined in the 1992 Fisheries and Oceans Canada (DFO) “Land Development Guidelines for the Protection of Aquatic Habitat”.
46	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	Air emissions from vehicle/equipment exhaust, dust and vapours shall be minimized and managed to avoid effects on and off the Project site. More detailed guidance is available in Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities prepared for Environment Canada (Cheminfo Services Inc. March 2005).

47	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	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.
48	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	Without limiting the generality of permit no. 18-196 condition 3, if suspect contaminated materials are encountered, the Permit Holder shall contain, test and dispose of such materials at appropriate licensed off-site facilities and maintain records of off-site disposal. VFPA shall be notified of such activities and provided relevant documentation upon completion.
49	NOT APPLICABLE – NEW SUPPLEMENTARY CONDITION	The Permit Holder is responsible for locating all existing site services and utilities including any located underground. The Permit Holder is responsible for repair or replacement of any damage to existing site services and utilities, to the satisfaction of VFPA, that result from construction and operation of the Project.
LENGTH OF PERMIT VALIDITY		
	The Project must be completed no later than April 30, 2020 (the Expiry Date).	The Project must be completed no later than April 30, 2021 (the AMENDED Expiry Date).