



PORT METRO
vancouver

**Project and Environmental
Review Report**

PER No. 15-104

Vancouver Airport Fuel Delivery


*Prepared for: **Project and Environmental Review Committee***

*Date: **February 16, 2016***

*Prepared by: **Senior Planner, VFPA***

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 PORT METRO vancouver	VANCOUVER FRASER PORT AUTHORITY (VFPA) PROJECT AND ENVIRONMENTAL REVIEW PROJECT REPORT
PER No.:	15-104
Tenant:	Vancouver Airport Fuel Facility Corporation
Project:	Vancouver Airport Fuel Delivery
Project Location	Intersection of Williams Road and Dyke Road, Richmond BC
VFPA SID No.:	RIC 356
Land Use Designation:	Port Terminal
Applicant(s):	FSM Management Group Inc. on behalf of Vancouver Airport Fuel Facility Corporation
Applicant Address:	108 – 12300 Horseshoe Way Richmond BC V7A 4Z1
Category of Review:	Legacy
Recommendation:	That PER No. 15-104 for construction of an aviation fuel receiving facility be approved.

1. INTRODUCTION

The Vancouver Fraser Port Authority (VFPA), a federal port authority doing business as Port Metro Vancouver, manages lands under the purview of the *Canada Marine Act*, which imparts responsibilities for environmental protection. VFPA accordingly conducts project and environmental reviews of works and activities undertaken on these lands to ensure that the works and activities do not result in significant adverse environmental effects. This project and environmental review report documents VFPA's project and environmental review of **PER No. 15-104: Vancouver Airport Fuel Delivery (the Project)** proposed by **FSM Management Group Inc. on behalf of Vancouver Airport Fuel Facilities Corporation (the Applicant)**.

This project and environmental review was carried out to address VFPA's responsibilities under the *Canada Marine Act*. In the case of this Project a harmonized federal and provincial environmental assessment review was conducted under the *Canadian Environmental Assessment Act, 1992* (CEAA 1992) and the British Columbia *Environmental Assessment Act*. On December 16, 2013 VFPA issued an environmental assessment decision statement, pursuant to the CEAA, 1992, that with the implementation of proposed mitigation measures and conditions, the Project is not likely to cause significant adverse environmental effects. The determination was consistent with the provincial decision made on December 12, 2013. For this reason, the project and environmental review for this Project does not include a determination of the significance of adverse effects. However, VFPA considers other interests, impacts and mitigations through the project and environmental review, which are documented here.

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 VFPA and other consultations carried out by VFPA. A full list of information sources germane to the review is provided in Appendix B.

This project and environmental review report is NOT a project authorization. It is a prerequisite to the issuance of a project permit (the Permit) and the conclusions described in this report require compliance with the conditions in the Permit.

2. PROJECT DESCRIPTION

FSM Management Group Inc. on behalf of the Vancouver Airport Fuel Facilities Corporation, (the Applicant) is proposing to construct elements of the Vancouver Airport Fuel Delivery Project on VFPA-administered land, at the intersection of Williams Road and Dyke Road in Richmond, British Columbia.

The elements proposed on VFPA-administered land comprise a fuel receiving facility including tanks, piping, and associated buildings and equipment. The facility is proposed to have a storage capacity of 80 million litres of aviation fuel as part of a new fuel delivery system for the Vancouver International Airport. Fuel would be stored at the site after being unloaded from marine vessels, and before being pumped to the airport by pipeline. All fuel handled would be in-bound to the airport and no export of product is proposed to occur at the facility. Elements of the Project not on VFPA land include the marine terminal site across Williams Road to the south, and the pipeline connection from the tanks to the airport.

FSM is a professional services firm that provides airport fuel administration, project and construction management, engineering and environmental management services for aviation and ground fuel facilities at airports in North America. Vancouver Airport Fuel Facilities Corporation (VAFFC) is a company owned by a 25-member consortium of airlines that operates at the Vancouver International Airport. The consortium provides sharing of costs and risks associated with the delivery of fuels to the airport, and is the tenant for this Project.

VAFFC operates the only aviation fuel facility serving Vancouver International Airport, and provides fuel delivery service to all airlines using the terminals. The airport has experienced significant growth over the last two decades, driving an increase in the demand for fuel, which is currently delivered to the site by either a pipeline from Burnaby, or by truck from Cherry Point, Washington.

Development of a new fuel delivery system is considered by the consortium as essential to secure access to competitive fuel supply sources over the long term. The selection of a marine supply channel using the Fraser River and a pipeline to connect a new marine berth to the airport to transfer fuel from international sources was based on a comprehensive review of the alternative means of carrying out the proposed Project, as required by the harmonized federal and provincial environmental assessment review that was completed in December 2013.

The provincial environmental assessment process started on November 28, 2008, when the VAFFC requested that the Executive Director of the British Columbia Environmental Assessment Office designate the proposed Project as a reviewable Project under section 7(3) (a) of the Act. On February 10, 2009, the proposed Project was designated as reviewable by the BC EAO's Executive Director. The federal environmental assessment process started on March 8, 2010 when the VFPA posted a "Notice of Commencement" of a screening assessment on the web-based Canadian Environmental Assessment Agency Registry.

VAFFC submitted an Application for a provincial Environmental Assessment Certificate, which also served as the Environmental Impact Statement for a federal environmental assessment, on February 18, 2011. On December 16, 2013 VFPA issued an environmental assessment decision statement, pursuant to the CEEA, 1992, that with the implementation of proposed mitigation measures and conditions, the Project is not likely to cause significant adverse environmental effects. The determination was consistent with the provincial decision made on December 12, 2013.

2.1 Proposed Works

General Description

Project components proposed under this application include the following:

- Construction and operation of a new aviation fuel storage facility (jet fuel tanks)
- The construction of associated office, utilities, and landscaping
- Sections of new transfer and delivery pipelines and related equipment

Detailed works in phases are described as follows:

Early earthworks (phase 1)

- Removal of surface soils and vegetation clearing

Site preparation (phase 2)

- Over-excavation and removal of spoil material (up to approximately 150,000 m³)
- Soil replacement by filling the site with dredged river sand as quality backfill
- Ground densification using stone columns or a combination of other methods to achieve a seismic performance target of 1:2475 year event

Storage Tanks & Operations Facilities (phase 3)

- A fuel receiving facility consisting of 6 above ground vertical carbon steel single wall tanks. Each has a diameter of approximately 35 m (115 ft.), a height of 14.6 m (48 ft.) and a useable storage capacity of 13.3 million litres, with a combined capacity of 80 million litres
- A one-storey operations building approximately 64 m² (689 ft²) to house offices, a control room for the facilities, first aid facilities and washrooms
- A one-storey water treatment building of approximately 64 m² (689 ft²)
- An electrical motor control centre building of approximately 64 m² (689 ft²)
- A containment basin and lift station as part of oil/water separator system
- A filtration system and three transfer pumps
- A fire protection system and perimeter fire hydrants around the facility
- A foam storage and incident command centre(s) of approximately 60 m² (646 ft²)
- A backup generator capable of running core functions and firefighting systems
- Spill containment infrastructure
- A storm water detention basin
- A section of the 600 mm jet fuel pipeline used to transfer fuel from the marine terminal to the proposed fuel receiving facility
- A section of the 350 mm jet fuel pipeline used to transfer fuel from the proposed fuel receiving facility to Vancouver International Airport
- Utilities including storm water, sewer, water, communications, and electricity
- Two driveway access points (main access from Williams Road, and emergency access from Dyke Road)
- Eight employee parking spaces
- Removal of rear downstream range light currently located on the site
- Perimeter security fencing, site lighting, and landscaping

The site is currently untenanted and has most recently been used a VFPA contractor for soil mixing and processing. Site clearing activities will be followed by excavation of the site to address underlying soil conditions which must be improved to support the significant loading associated with liquid storage tanks. Replacement materials will consist of dredged river sand,

in combination with stone columns or a combination of stone columns and in-situ soil mixed with river sand to achieve the required density to support the facility and to provide a seismically suitable base. The tanks are proposed to be supported by a concrete ring beam, installed on a concrete raft foundation located on top of the densified soil. The tank bottoms are cathodically protected, and are sloped to a sump located near the centre of the tanks.

Utilities and site services are all required to be installed by the applicant, with all services proposed to be connected at the Williams Road frontage. The applicant is expected to complete negotiations with the City of Richmond with respect to servicing connections and driveway access, and for any potential reconstruction of Williams Road for the purposes of installing these, in addition to a jet fuel pipe, and a fire suppression related water pipe and associated utilities from this site across to the marine terminal site to the south.

Generally, construction activities are anticipated to be conducted between the hours of 7:00 AM and 8:00 PM, Monday to Saturday, in accordance with standard VFPA construction hours. However, construction may need to be accelerated to meet Project timelines. It is anticipated that some soil densification, and some tank construction activities could be required on a 24/7 basis. Condition 23 of the permit requires the Applicant to obtain prior authorization from VFPA for any work outside of standard construction hours.

All workers will access the site from Williams Road. All sand delivered to the site will be sourced from a sand stockpile immediately adjacent to the north. Soils will be removed from the site by truck and delivered to nearby development sites or to appropriate soil disposal sites within the region.

3. VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

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

3.1 Planning

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

3.1.1 Land Use Designation

The proposed fuel receiving facility use conforms to the designation of "Port Terminal" in Vancouver Fraser Port Authority's Land Use Plan.

3.1.2 Building Permit Requirements

The proposed development of the receiving facility and support buildings require review under the 2010 National Building Code and 2010 National Fire Code of Canada. The Applicant is required to obtain a VFPA building permit before proceeding with construction of those works subject to the code, and must obtain VFPA occupancy approval before occupying or commencing regular operations of those structures.

3.2 Engineering

Engineering has reviewed the application and provided the following condition for approval of the Project:

- The Applicant shall provide to VFPA a copy of the final Servicing Agreement with the City of Richmond prior to the commencement of operations.

This requirement is reflected in condition No. 40 in the Permit.

Engineering supports the recommendation to approve the Project subject to adherence to the project and environmental conditions in the Permit.

3.3 Transportation

The operations phase of the Project does not anticipate the addition of significant traffic to the local road network. All product is to arrive and depart the facility by pipeline, and staffing requirements are minimal, with the occasional service vehicle or delivery.

The Project includes installation of a driveway connection to Williams Road at the south corner of the property as the main access point. The Applicant also proposes to provide emergency road access to the site from Dyke Road along the east site boundary, to be used only in the event that the main access road is blocked. Due to site constraints, the width of the driveway at the Williams Road interface does not meet typical road standards for two-lane access. However, the width is ample for one-way traffic. One option to widen the driveway interface is to encroach into Lot K, a City-owned adjacent parcel. City approval is required for both the dyke access point and encroachment of the driveway into Lot K.

In addition, the flare of the current driveway design encroaches onto CN Rail right of way immediately to the west. This does not pose any current functional challenge, but may impact CN Rail should they choose to install the Ewen Branch rail track extension at a future date. As noted later in this report, CN Rail was provided a copy of the application package, but did not respond with any concerns.

Transportation has reviewed the application and requires the Applicant to complete the following:

- The Applicant shall provide VFPA with a copy of an agreement with the City of Richmond to construct an emergency access from Dyke Road and to encroach the Williams Road driveway into Lot K. Should the Applicant not obtain such agreement with the City, the Applicant shall provide a written summary of their efforts to do so along with a description of their alternate proposal to the satisfaction of VFPA.
- The Applicant shall provide VFPA with a copy of the CN Rail Track Specifications and Design Proposal for the adjacent Ewen extension alignment, and provide written confirmation to VFPA that CN Rail is satisfied with the Williams Road driveway arrangement.

These requirements are reflected in conditions No. 38 and No. 39 in the Permit.

Transportation supports the recommendation to approve the Project subject to adherence to the listed project and environmental conditions in the Permit.

3.4 Marine Operations

Offloading of the jet fuel will occur at a new marine terminal at the east foot of Williams Road on privately held land. Vessels berthed at the terminal are also located outside of VFPA-administered property. As VFPA maintains navigational jurisdiction along this stretch of the Fraser River, VFPA provided comments about marine navigation to the BC Environmental Assessment Office during the coordinated federal-provincial environmental assessment.

The footprint of the proposed fuel receiving facility proposed for VFPA-administered property overlaps an existing Canadian Coast Guard (CCG) Aids to Navigation right-of-way where the Tilbury Range #1 Tower LL352 (tower) navigation aid is located. Due to the proposed location of fuel storage tanks in relation to the existing tower, the tower must be relocated to allow for construction of the fuel storage tanks. The Applicant has proposed to temporarily install a new sector light navigation aid in an alternate location to replace the function of the tower. Through consultation with marine users, in collaboration with CCG, the Applicant has sought the concurrence of stakeholders for their proposal and will continue to work with CCG to finalize sector light specifications. The Applicant will be responsible for both purchasing and installation of the sector light. Both the existing tower and sector light will be in operation for a period of time as specified by the CCG. Should the new sector light function as required, the Applicant is then able to remove the existing tower and navigation aid, and retain the sector light.

After construction of the fuel storage tanks is complete, the tower will be restored in an alternate location, determined in conjunction with CCG, unless marine users agree to the installation of the sector light on a permanent basis. If the CCG determines that the sector light is in fact a suitable replacement, the Applicant will not be required to reinstall the tower. If the CCG determines that the sector light is not a suitable long-term replacement, the Applicant will then be required to reinstall the tower to specifications established by the CCG. Should a new tower be proposed for VFPA-administered property, the Applicant will be required to obtain a VFPA Project Permit.

Marine Operations has reviewed the application and requires the Applicant to complete the following:

- Finalize sector light specifications with CCG Aids to Navigation.
- Purchase and install a sector light in cooperation with CCG.
- Operate the sector light for a defined period together with existing lights, as directed by CCG. During the period, the existing lights will not be obscured in any manner. The Applicant will take any necessary steps to ensure the structural integrity of the rear range light during all work activities.
- Obscure existing light and operate only sector light for a defined trial period, as directed by CCG.
- If operation is to the satisfaction of CCG, remove rear light once the defined trial period has expired.
- Reinstall rear light or equivalent, post-construction, as directed by CCG.

Marine operations has also provided direction around non-interference with use of the Range Light (or Sector Light), which affects vessels transiting downstream on the Fraser River. These are reflected in conditions No. 32 and No. 33 in the Permit.

Marine Operations supports the recommendation to approve the Project subject to adherence to the listed project and environmental conditions in the Permit.

3.5 Environmental Programs

A harmonized federal and provincial environmental assessment review of the proposed Project was conducted under the CEAA, 1992 and the British Columbia *Environmental Assessment Act*. On December 16, 2013 VFPA issued an environmental assessment decision statement, pursuant to the CEAA 1992, that with the implementation of proposed mitigation measures and conditions, the Project is not likely to cause significant adverse environmental effects.

Environmental Programs reviewed the application and determined that there are no substantive changes to the Project proposed on VFPA land that would lead to a review of the environmental decision, and therefore, the 2013 federal environmental decision statement remains valid.

The VFPA decision statement includes the 64 conditions that were included within the Environmental Assessment Certificate Table of Conditions (Schedule B), as well as 18 additional conditions that must be incorporated into the Construction Environmental Management Plan (CEMP). VAFFC is required to meet all of these conditions in addition to the conditions of this permit.

In addition, through the project and environmental review of this proposal, Environmental Programs has identified aspects of the Project that would benefit from additional measures to further reduce the identified effects. These aspects are identified below along with the recommended Permit condition.

- **Storm Water Pollution Prevention** – Effective storm water management is needed to reduce potential effects of runoff on the quality of adjacent water bodies. The goals of storm water pollution prevention are to reduce the amount of storm water discharged to the environment, prevent or reduce the pollutant loading of storm water, and treat or manage storm water if pollutant loading cannot be prevented. This is accomplished through design of appropriate storm water infrastructure at the site.

VAFFC will be required to prepare a Storm Water Pollution and Prevention Plan to reduce potential effects of storm water runoff on the environment.

- **Construction Impacts** – Key mitigation measures to reduce effects on the environment during construction are described in the draft Construction Environmental Management Plan (CEMP) that was included in the Project Permit Application. During the project and environmental review VAFFC has received feedback on the plan from VFPA as well as other stakeholders.

VAFFC will be required to submit an updated CEMP, prior to early earthworks, to incorporate that feedback. They will also need to update and re-submit the CEMP prior to facilities construction, to incorporate any necessary changes.

During construction, VAFFC will also be required to submit weekly environmental monitoring reports to VFPA.

- **Vegetation** – Site preparation works include removing existing vegetation and exposing soils. The site is currently disturbed and invasive species may be present.

To reduce the potential spread of invasive species VAFFC will be required to appropriately handle and dispose of any invasive plants encountered during site preparation. To reduce erosion of exposed soils, and early establishment of invasive species, VAFFC will also be required to replant disturbed areas with appropriate native species as soon as practical after disturbance.

These are reflected in conditions No. 18, 19, 20, 29, and 30 in the Permit.

Environmental Programs supports the recommendation to approve the Project subject to adherence to the listed project and environmental conditions in the Permit, which includes both the conditions previously outlined in the VFPA decision statement, the conditions attached to the BC Environmental Assessment Certificate, and new conditions that are the result of this project and environmental review.

4. EXTERNAL REFERRALS

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

4.1 Stakeholder Consultation

4.1.1 Municipal Referrals

The proposed Project was assessed by the VFPA staff to have potential impacts on municipal interests. A referral letter was sent to the City of Richmond, on August 14, 2015 notifying them of the proposed Project and requesting feedback:

The City of Richmond responded with comments on the proposed Project on September 21, 2015. Many of the questions and concerns raised by the City were addressed through a written response to the City providing additional Project information. Comments from the City that resulted in additional mitigations or permit conditions are indicated in the table below.

Municipal Comments	VFPA Considerations
The submission requires detail on the interaction of the fuel receiving facility, the marine terminal, and the pipeline, particularly during emergency or post disaster scenarios.	Conditions No. 34 to 37 of the Permit require the Applicant to develop: <ul style="list-style-type: none"> • a comprehensive Operations Environmental Management Plan, covering accidents and malfunctions at all facilities • a Fire Safety Plan, providing operators and third party responders with response procedures • an Oil Pollution Emergency Plan, covering spill scenarios, response techniques for on-water emergencies involving spills • an Emergency response plan for on-land emergencies including spills.
The scope of the risk and hazard analysis is limited to the fuel receiving facility. It should address how the pipeline and marine terminal components are designed to interact with each other and the facility in an emergency situation.	This comment will be considered during review of a building permit application that requires detailed design drawings and information to address specific life-safety concerns.
The public process should be extended and enhanced.	The public consultation period was in keeping with VFPA requirements. Due to severe weather which impacted the first public information session, the Applicant hosted a second information session to provide a supplementary opportunity for the public to provide feedback. The public consultation period was also extended by 7 days to accommodate the second information session.

Municipal Comments	VFPA Considerations
A Traffic Impact Study is required and transportation improvements identified in the study need to be addressed.	The low traffic volumes expected to be generated by the facility does not meet VFPA thresholds that necessitate a traffic impact study. However, VFPA understands that the Applicant will be required to provide the City with a traffic impact study in order to obtain related authorizations and agreements with the City.
The fuel receiving facility must conform to the American Petroleum Institute (API) 2021 Management of Atmospheric Storage Tank Fires standard.	Condition No. 35 of the Permit requires the Applicant to prepare a Fire Safety Plan, to the satisfaction of VFPA and in consultation with Richmond Fire Rescue, which applies the recommendations of API 2021. This input will be provided to the contracted building code consultants who have been engaged to review conformance of the Project with the National Building Code, National Fire Code, and other applicable codes or regulations.
The risk and hazard analysis omits the API 2021 standard. The facility will be required to adhere to this standard and as such this omission should be remedied. In addition the locations of the existing City fire assets are outside of the industry standard, and neither the Project Permit application nor the risk and hazard analysis address this issue.	During the building permit phase, VFPA will retain appropriately qualified consultant(s) to advise on the relevant standards for the facility and to conduct related reviews for compliance of the detailed Project designs to those standards.
The City recommends that automated fire suppression equipment be included in the fuel receiving facility (not simply automated fire detection).	<p>An automated detection system with a manually operated fire suppression system is included in the facility design, as this combination is proposed to minimize the chance of a false alarm triggering fire suppression.</p> <p>During the building permit phase, VFPA will retain appropriately qualified consultant(s) to advise on the relevant standards for the facility and to conduct related reviews for compliance of the detailed Project designs to those standards.</p>
Fire flow for fire hydrants on the fuel receiving facility site must be identified and addressed. This includes a water system fire flow demand that will be required outside of the fire suppression system.	<p>The Applicant confirms that water pressure and volume (fire flow) are sufficient at the site to conform to the requirements of NFPA 11 Section 5.9.2.3.</p> <p>During the building permit phase, VFPA will retain appropriately qualified consultant(s) to advise on the relevant standards for the facility and to conduct related reviews for compliance of the detailed project designs to those standards.</p>

Municipal Comments	VFPA Considerations
Regular inspection of the fire detection and suppression equipment is not addressed in the risk and hazard analysis.	Condition No. 35 of the Permit requires the Applicant to prepare a Fire Safety Plan, to the satisfaction of VFPA and in consultation with Richmond Fire Rescue, that that includes an inspection schedule of the fire detection and suppression equipment.
Post seismic event operation of fire suppression equipment must be addressed ... including providing water and power to the system.	Condition No. 35 of the Permit requires the Applicant to develop a Fire Safety Plan that addresses post seismic event operations of fire suppression equipment.
Impacts of the fuel receiving facility on the adjacent dike must be identified and addressed. This includes obtaining approval of the Provincial Inspector of Dikes.	Condition No. 27 of the Permit requires the Applicant to provide VFPA with a copy of approval from the Provincial Inspector of Dikes.
The proposed facility is immediately adjacent to the City's dikes. A screen including trees is proposed on the dike outside VFPA property, the proposed landscaping screen should be installed on VFPA land.	Condition No. 17 of the Permit requires the Applicant to provide VFPA with an updated landscaping plan indicating that all landscaping will be installed within site boundaries.
Site servicing for utilities must be addressed.	Condition No. 40 of the Permit requires the Applicant to provide a copy of the Servicing Agreement with the City of Richmond, prior to the commencement of operations.
The development and operation of the fuel receiving facility must be in accordance with the conditions set out in the EA conditional certificate and the City's comments that were submitted through the BC EAO.	Condition No. 7 of the Permit requires the Applicant to adhere to relevant conditions of the Environmental Assessment Certificate.

4.1.2 Agency Referrals

The proposed Project was assessed by VFPA to be of potential interest to regional agencies. A referral letter was sent to the following regional agencies August 14, 2015 notifying them of the proposed Project:

- Metro Vancouver
- Fraser Health Authority
- Vancouver Coastal Health Authority

Metro Vancouver responded on September 28, 2015 with comments on the proposed Project. Fraser Health Authority and Vancouver Coastal Health Authority did not provide comments. Below is a chart summarizing the comments received and how they were considered as part of the project and environmental review.

Metro Vancouver Comments	VFPA Considerations
The Air Quality and Dust Control Management Plan must be based on the "Best Practices for the reduction of Air Emissions from Construction and Demolition Activities" (Cheminfo Services Inc. 2005).	This is addressed under Environmental Assessment Certificate No. E13-02 Condition 24.

The Holder must include as part of the contractual terms that contractors and subcontractors use non-road diesel engines for construction equipment that meet Tier 2 emissions standards, as defined by the U.S. Environmental Protection Agency (EPA).	This is addressed under the Environmental Assessment Certificate Condition 25.
The Holder must incorporate a pressure/vacuum venting system to control emissions from the fuel receiving tanks unless internal floating pans are used in the tanks.	This is addressed under the Environmental Assessment Certificate, Condition 28.
Maintenance of vapour-tight conditions in fuel receiving tanks and pipelines.	This has been adopted in the design of the facility.
Implementation of bottom loading into fuel receiving tanks to reduce turbulence and reduce VOC vapour venting.	This has been adopted in the design of the facility.
Implementation of a leak detection and repair program.	This has been adopted in the design of the facility.

4.1.3 Adjacent Tenant Referrals

The proposed Project is not expected to have potential impacts to adjacent VFPA tenant operations, given the distance between this facility and any other active uses by tenants who would be operating during the construction or operation of this facility. A referral letter on the Project was therefore not sent to any other VFPA tenants.

4.1.4 Marine Users Referrals

The proposed Project was assessed by Marine Operations to have potential impacts to marine users. A referral letter was sent to the Canadian Coast Guard Aids to Navigation on August 14th, 2015 notifying them of the proposed Project.

The Applicant was also required to consult directly with the Marine Users Group. A meeting was held on December 16, 2015 where Marine Users Group provided comments on the proposed Project. Port Metro Vancouver was provided, in copy, support of the proposed aid to navigation relocation plan from both the Fraser River Pilots and a Council of Marine Carriers representative.

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

Marine Users Group Comments	VFPA Considerations
Canadian Coast Guard Aids to Navigation (CCG) were concerned with the Project impacts on the existing range light, and with future access to the range light, should the proposed facility be built around it.	Conditions No. 32 and 33 of the Permit address these comments, as also described above in Section 3.4 Marine Operations.
Fraser River Pilots were concerned with the Project impacts on the existing range light.	
Council of Marine Carriers were concerned with the Project impacts on the existing range light.	

4.2 Public Consultation

The proposed Project was assessed by VFPA to have potential impacts to the surrounding community, therefore public consultation activities were required to be conducted by the Applicant. A description of the Project and proposed works, and all supporting materials, were posted to VFPA's website prior to the open houses held in August and September 2015, for public review and comment.

Consultation and engagement activities conducted by the Applicant included the following:

- Hosting two information sessions;
- Developing a discussion guide with key information about the Project;
- Hand-delivering and mailing notification letters to nearby residents and businesses;
- Placing an advertisement in the Richmond News and Chinese ads in the World Journal and Sing Tao;
- Creating a feedback form to collect community input; and
- Posting all Project-related materials on-line on the VAFFC website and providing a telephone number and email address for enquiries and submissions.

In preparation for the information sessions, the notification letter was mailed to all households and businesses in the area bounded Francis Road (South) to No. 6 Road (West) which included the Waterstone Pier condominiums and adjacent rental complex and Riverport Sports and Entertainment area businesses. The consultation period ran from August 22 to September 28, 2015, and the public was able to provide feedback via telephone, mail, online and at the two information sessions where hard copies of the feedback form were also available. A dedicated VAFFC webpage for the proposal was also created to inform the public about the Project and accept online feedback (<http://vancouverairportfuel.ca>).

The first information session was held at the Holiday Inn Express & Suites Riverport, at 10688 No. 6 Road in Richmond, on August 29, 2015 between 2:00 p.m. and 5:00 p.m. The second information session was held at the East Richmond Community Hall at 12360 Cambie Road in Richmond, on September 17, 2015 between 4:00 p.m. and 7:00 p.m. The information sessions provided information about the Project scope, design, impact assessment study findings including the Hazard and Risk Assessment, landscaping plans, and construction activities. Staff from VFPA, City of Richmond and Vancouver Airport Authority also attended.

During the consultation period, public participation was as follows:

- 41 people attend the first information session and 42 attended the second information session;
- 43 people completed the feedback form;
- VFPA received 4 comments from the public; and
- Comments were mainly related to public consultation, environmental and health effects, construction, operations, emergency response and the hazard and risk assessment.

Below is a chart summarizing the general public comments received by the Applicant and VFPA and how they were considered as part of the project and environmental review.

Public Comments	VFPA Considerations
Concerns about the adequacy of the public information session and concerns regarding the length of the public comment period.	Due to the power outage and the wind warning issued to residents to stay in their homes, the Applicant hosted an additional information session to ensure the public had an opportunity to participate. The public comment period was extended to provide a further 10 business days after the information session to submit comments.
Potential impacts on the Fraser River and salmon in the event of a spill, and spill clean-up process and cost.	<p>The scope of VFPA review is specific to the proposed fuel receiving facility and associated structures located on VFPA land.</p> <p>Marine aspects including marine spill response were reviewed as part of the harmonized federal-provincial environmental assessment process completed in December 2013.</p> <p>The above is addressed through Condition No. 36 of the Permit, which requires the Applicant to provide an Oil Pollution Emergency Plan to address spill response.</p>
Potential vapours from the fuel receiving facility causing health concerns and air quality concerns.	VAFD must incorporate a pressure/vacuum venting system to control emissions from the fuel receiving tanks unless internal floating pans are used in the tanks, in accordance with the Environmental Assessment Certificate Condition 28.
Impact of construction activities including traffic and potential ground vibrations from the construction.	<p>The Applicant indicates that their proposed ground improvement measures consisting of either stone columns and soil replacement or soil mixing will not generate significant ground vibrations, even within the ground improvement zone.</p> <p>Conditions No. 18 & 19 of the Permit requires the Applicant to submit a Construction Environmental Management Plan to consider the impacts from construction activities and ways to mitigate those impacts.</p>
Questions about the fuel transfer process, safety and management plans and control systems.	<p>As part of the project and environmental review, VFPA required the Applicant to conduct a Risk and Hazard Analysis. The report was reviewed by VFPA's Building Code consultants and referred to the City of Richmond for comment.</p> <p>Condition No. 35 of the Permit requires the Applicant to develop a Fire Safety Plan, in consultation with Richmond Fire Rescue.</p>

Public Comments	VFPA Considerations
Impact on the area in the event of an incident at the facility, and on-site response capabilities	<p>As part of the project and environmental review, VFPA required the Applicant to conduct a Risk and Hazard Analysis. The report was reviewed by VFPA's Building Code consultants and referred to the City of Richmond for comment.</p> <p>This concern was also raised by the City of Richmond, who identified the need for providing operators and third party responders with response procedures for the facility.</p> <p>Condition No. 35 of the Permit requires the Applicant to develop a Fire Safety Plan, in consultation with Richmond Fire Rescue.</p>

The Applicant provided a detailed summary of all comments in an Engagement Summary Report prepared in October 2015. The Applicant also provided a Consideration Memo in December 2015, including formal responses to public comments received, by theme. VFPA has reviewed the documents and found them both to be acceptable. These have been posted for information on VFPA and the Applicant's websites as of October and December 2015, respectively.

VFPA has reviewed the record of consultation and is of the view that the Project has adequately addressed the concerns raised during public consultation.

5. ABORIGINAL CONSULTATION

The Pre-Consultation Report (PCR) was completed and it was determined that the duty to consult was triggered, irrespective of the fact that Aboriginal consultation was conducted by the BC EAO during the harmonized federal-provincial environmental review of the broader VAFD Project.

The following Aboriginal groups were consulted:

- Sto:lo Nation and Sto:lo Tribal Council via the People of the River Referrals Office
- Tsawwassen First Nation
- Musqueam Indian Band
- Tsleil-Waututh First Nation
- Katzie First Nation
- Semiahmoo First Nation
- Hwlitsum First Nation
- Hul'qumi'num Treaty Group
 - Cowichan Tribes
 - Halalt First Nation
 - Stz'uminus First Nation
 - Penelakut First Nation
 - Lyackson First Nation
 - Lake Cowichan First Nation

5.1 Summary of Consultation

On August 25, 2015, VFPA sent a referral package to the above-listed Aboriginal groups. The package included:

- a letter initiating consultation
- the permit application
- a Project description
- a summary of previous consultation conducted by the Applicant and the BC EAO;
- the Environmental Assessment Certificate Table of Conditions (Schedule B)
- the site plan, and
- an overview map.

The initial letter provided an overview of works proposed on VFPA-managed lands, VFPA's approach to Aboriginal consultation, and website addresses where further information regarding the proposal and the harmonized federal-provincial environmental review process could be located.

Also in the letter, VFPA explained that Aboriginal consultation was led by the BC EAO during the harmonized federal-provincial environmental review for the broader VAFD project and that VFPA was aware of a number of concerns expressed by First Nations during this consultation process. VFPA further explained that as a result of the BC EAO-led consultation process a series of conditions had been developed to address these concerns and were listed in the Environmental Assessment Certificate Table of Conditions (Schedule B).

Aboriginal groups were asked to advise VFPA of further questions or concerns specifically related to works proposed on VFPA-managed lands that were not known or considered by the BC EAO during the harmonized federal-provincial environmental review. Comments were requested by October 6, 2015.

Consultation activities included the referral package described above, phone calls, letters and emails. Extended timeframes for review and participation funding were requested by some Aboriginal groups. All requests were considered and, where reasonable, agreed to by VFPA to facilitate meaningful consultation.

Below is a table summarizing issues raised by Aboriginal groups, and how they were considered by VFPA as part of the project and environmental review.

Issue	Mitigations and Permit Conditions	Rationale
Aboriginal group not consulted during harmonized federal-provincial environmental review.	None required.	While an Aboriginal group was originally omitted in the BC EAO Section 11 Order for the VAFD Project, in April 8, 2011, a Section 13 Order was issued amending the Section 11 Order. The Section 13 Order amended the definition of the term "First Nation" in the Section 11 Order to include this group.

Issue	Mitigations and Permit Conditions	Rationale
<p>Materials required for an Aboriginal group's review were not provided as part of the referral package.</p>	<p>None required.</p> <p>Should the Aboriginal group continue their review and identify impacts to their Aboriginal rights, the following statement in the Permit preamble may apply:</p> <p><i>Pursuant to Section 29 of the Port Authorities Operations Regulations, VFPA 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 VFPA at any time in relation to the potential adverse environmental and other effects of the Project.</i></p>	<p>On February 5, 2016, VFPA received a request for the CEMP and other related documents that had been made available via a webpage link in the initial referral package sent August 25, 2015; however it appears the Aboriginal group did not recognize that this information was available to them.</p> <p>The Aboriginal group also requested more time to review this information and provide comments.</p> <p>VFPA will provide the Aboriginal group directly with the information requested, however VFPA is of the view that reasonable efforts have been made to facilitate the Aboriginal group's review over the course of consultation from August 25, 2015 to February 5, 2016.</p> <p>VFPA is also of the view that the CEMP and associated documents satisfy VFPA's requirements and that significant adverse environmental effects are appropriately mitigated.</p> <p>In consideration of the timeframe and the efforts made by VFPA to facilitate the Aboriginal group's review, and VFPA's view that significant adverse environmental effects are not expected, further delay of a decision to allow more time for the Aboriginal group's review is not considered procedurally fair to the Applicant.</p>
<p>Insufficient consultation during harmonized federal-provincial environmental review.</p>	<p>None required.</p>	<p>VFPA is relying upon the consultation carried out by the BC EAO during the Environmental Assessment process.</p> <p>VFPA has conducted consultation with Aboriginal groups on the additional details provided for this Project and where the groups have new information not formerly known or considered by the BC EAO.</p> <p>At this time, VFPA is not aware of any new information not considered by the BC EAO, and no adverse impacts to Aboriginal rights are expected.</p>

Issue	Mitigations and Permit Conditions	Rationale
Insufficient funding and time for Aboriginal groups to review the Project.	Participation funding was provided; timeframes were extended upon request.	<p><i>Funding</i> Participation funding was made available to all Aboriginal groups, either by the applicant during the harmonized review, or by VFPA during VFPA's PER.</p> <p><i>Timeframes</i> Aboriginal group consultation was conducted by the BC EAO and the Applicant over the course of 4 years during the harmonized review (2008-2012).</p> <p>VFPA initially provided 30 business days for Aboriginal groups to provide any further comments with respect to the works proposed within VFPA jurisdiction.</p> <p>Upon request, this timeframe was extended from October 6, 2015 until February 4, 2016.</p>
Infringement of Aboriginal rights without justification.	None required.	VFPA is of the view the portions of the Project within VFPA's jurisdiction do not involve impacts that require justification.
Consultation should be at the deep end of the spectrum; Aboriginal groups should share decision-making.	None required.	VFPA is of the view that the proposed Project will not include impacts of a significance that trigger deep consultation.

Issue	Mitigations and Permit Conditions	Rationale
Impacts to archaeological resources.	<p>Standard Chance Find Condition:</p> <p><i>In the event that evidence of what is suspected to be an archaeological resource is encountered, the Applicant shall:</i></p> <ul style="list-style-type: none"> a) <i>Immediately stop any activities that might disturb the archaeological resource or the site in which it is contained ("Site").</i> b) <i>Not move or otherwise disturb the artifacts or other remains present at the Site.</i> c) <i>Stake or flag off the Site to prevent additional disturbances.</i> d) <i>Immediately notify VFPA.</i> <p>Conditions 38-40 of the Environmental Assessment Certificate No. E13-02 further address management of archaeological resources.</p>	<p>The standard condition ensures VFPA is informed and involved in the event that archaeological resources are discovered within VFPA property.</p> <p>Conditions 38-40 of the Environmental Assessment Certificate No. E13-02 describe management strategies for archaeological resources (i.e., conducting an AIA during excavations; involving Aboriginal groups in the assessment work; following provincial heritage management guidelines).</p>
Cumulative environmental effects.	None required.	Cumulative environmental impacts were considered as part of the harmonized review.
Impacts to fish habitat and the ability to exercise the Aboriginal right to fish.	None required.	Both of these matters are outside of the scope of the Project within VFPA jurisdiction.
Accidents, spills, malfunctions.	None required.	VFPA is satisfied the Accident and Malfunction Management Plan, and the Spill Prevention, Preparedness and Emergency Response Plans sufficiently mitigate significant adverse environmental effects as a result of accidents, spills or malfunctions.

Aboriginal Affairs has reviewed the record of Aboriginal consultation and, provided that the mitigation measures and conditions outlined in the chart above are included in the Permit, is of the view that the duty to consult has been fulfilled.

6. RECOMMENDATION

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

It is the recommendation of staff that this application be approved subject to conformance with the project and environmental conditions listed in Project Permit **PER No. 15-104**.

APPENDIX A
Figures and Drawings

COPY

APPENDIX B
List of Information Sources

Vancouver Fraser Port Authority (VFPA) doing business as Port Metro Vancouver has relied on the following sources of information in the project and environmental review of the Project:

- Application form and materials submitted by Applicant on behalf of VAFFC on August 10, 2015.
- All Project correspondence from August 12, 2015 to February 16, 2016
- All plans and drawings labelled PER No.15-104 A to K.
- "Risk and Hazard Analysis for Fuel Receiving Facility", August 5, 2015, Sereca Consulting.
- Vancouver Airport Fuel Delivery Project Assessment Report with respect to the Application by Vancouver Airport Fuel Facilities Corporation for an Environmental Assessment Certificate pursuant to the *Environmental Assessment Act*, S.B.C. 2002, c.43 and Screening Report with respect to the requirements of a Screening pursuant to the *Canadian Environmental Assessment Act*, S.C. 1992, c. 37 as amended, December 14, 2012, Environmental Assessment Office and Vancouver Fraser Port Authority.
- Vancouver Airport Fuel Delivery Project Environmental Assessment Decision Statement, dated December 16, 2013, Vancouver Fraser Port Authority.