APPLICATION INFORMATION REQUIREMENTS  
(DRAFT, REV. 01)  

FOR  

VANCOUVER AIRPORT FUEL DELIVERY PROJECT  

With Respect to  
an Application  
for an Environmental Assessment Certificate  
pursuant to the Environmental Assessment Act, S.B.C. 2002, c. 43  

Submitted by  
Vancouver Airport Fuel Facilities Corporation  
to  
British Columbia Environmental Assessment Office  

March 17, 2010
PREFACE TO THE AIR

The Proponent, Vancouver Airport Fuel Facilities Corporation (‘VAFFC’), proposes to develop a new aviation kerosene fuel (‘aviation fuel’ or ‘fuel’) delivery system project located in the City of Richmond, Lower Mainland, British Columbia (‘B.C.’).

The proposed Vancouver Airport Fuel Delivery Project (‘the proposed Project’) consists of:

• upgrades to an existing marine terminal wharf located on the South Arm of the Fraser River (‘Fraser River’ or ‘river’) to accommodate fuel cargo vessels;
• construction and operation/maintenance of new facilities at the marine terminal for off-loading fuel cargo;
• construction and operation/maintenance of a new fuel receiving facility;
• construction and operation/maintenance of a new pipeline to transfer fuel from the marine terminal to the fuel receiving facility;
• construction and operation/maintenance of a new pipeline to deliver fuel from the fuel receiving facility to Vancouver International Airport (‘YVR’); and
• movement of fuel cargo on vessels within the Fraser River.

Based on conceptual designs, the proposed Project does not exceed one of the thresholds that would make it “reviewable” under the B.C. Environmental Assessment Act, S.B.C. 2002, c. 43 (‘the BCEAA’ or ‘the Act’) Reviewable Projects Regulation. Notwithstanding that the proposed Project does not exceed one of the thresholds that would make it a “reviewable” project, in a letter to the B.C. Environmental Assessment Office (‘EAO’) dated November 28, 2008, VAFFC requested an opt in to the BCEAA review process under section 7(1) of the Act for the following reasons:

• at 2.78 petajoules of energy storage capacity, the proposed Project is close to the threshold that would make it “reviewable”;
• given the proposed Project’s location and function, it has the potential for significant adverse effects that must be managed carefully in the design, construction and operation/maintenance stages;
• it is in the public’s best interest to ensure that the risk of adverse effects and the adequacy of proposed risk mitigation are assessed in a thorough review of the proposed Project;
• although several environmental assessment processes apply to specific components of the proposed Project, only the BCEAA process captures the entire geographic extent and function of these components and provides the necessary level of coordination to best serve the public interest; and

• the proposed Project is essential to the ongoing and future operations of YVR, which is a significant economic driver for Canada, B.C., and the Lower Mainland Region.

In response to VAFFC’s opt in request, the proposed Project was designated as “reviewable” pursuant to the BCEAA in an order issued by the EAO on February 10, 2009, under section 7(3)(a) of the Act.

The proposed Project is also subject to a federal Screening review pursuant to the Canadian Environmental Assessment Act, S.C. 1992, c.37 (‘the CEAA’). The federal trigger is the requirement for a section 5(2) Approval from Transport Canada under the Navigable Waters Protection Act for the upgrade and operation of the proposed marine terminal component. The Canada – BC Agreement for Environmental Assessment Cooperation (2004) provides for a harmonized provincial and federal review when a project is subject to assessment under both the BCEAA and the CEAA. The proposed Project is currently in the pre-Application stage of this harmonized environmental assessment process.

The Application Information Requirements (‘AIR’) document is intended to address the information content requirements of an Environmental Assessment Certificate Application pursuant to the BCEAA and a Screening Environmental Assessment Report under the CEAA. As described in the order issued by the EAO on February 23, 2009, under section 10(1)(c) of the Act, VAFFC may not proceed with construction of the proposed Project until completion of the environmental assessment process.

This draft AIR (‘dAIR’) document has been developed based on “A Guide to the British Columbia Environmental Assessment Process” (EAO, March, 2003); “Proponent Guide to the Environmental Assessment Review Process (Working Draft)” (EAO, May, 2005); “A Guide to Preparing Terms of Reference for an Application for an Environmental Assessment Certificate” (EAO, September, 2007); the “Environmental Assessment Office 2009 User Guide”, and other guidance materials prepared by the EAO and the Canadian Environmental Assessment Agency (‘CEA Agency’).

This dAIR document has been revised based on the newly established EAO AIR Guideline Template (EAO, January, 2010), and on comments received following review by the EAO and members of the Technical Working Group (‘TWG’), which consists of representatives from federal, provincial, and local governments, and First Nations (Table 1).
Table 1  Agencies, Authorities and First Nations involved in the Development of the Application Information Requirements

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<td>Transport Canada</td>
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<td>Fisheries and Oceans Canada</td>
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<td>Vancouver Airport Authority</td>
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During the formal 45-day public comment period, scheduled to start on April 12, 2010, this dAIR document will be subject to further review and comment by members of the TWG. Once finalized and approved by the EAO, it will constitute the approved AIR for VAFFC’s Application.

The purpose of the AIR is to identify and describe the issues and information requirements that VAFFC will address in its Application, and not to provide a detailed account of all information that will be included under the various sections in the Application. VAFFC will comply with any other relevant instructions provided in the orders issued by the EAO under sections 11 and 13 of the BCEAA, on November 18 and December 15, 2009, respectively.

Vancouver Airport Fuel Facilities Corporation will track and respond to all public comments, in consultation with the EAO, the CEA Agency, and other members of the TWG, and will revise this dAIR document accordingly.

The next steps in the pre-Application stage of the environmental review process are the finalization of the AIR following comments received by the public, the EAO and members of the TWG on this dAIR document, and the preparation and submission of the Application for the commencement of the Application Review stage.
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ACKNOWLEDGEMENTS

This part of the Application will acknowledge regulatory agencies, First Nations, key stakeholders, VAFFC’s proposed Project Team, and others who contributed to the Application document.
The Preface to the Application will:

- state that the proposed Project is subject to review under the BCEAA and identify the trigger(s) for the review;
- state that the proposed Project is subject to a Screening under the CEAA and identify the trigger(s) for the review;
- state that the proposed Project is subject to a Screening under the Canada Port Authority Environmental Assessment Regulations and identify the trigger(s) for the review;
- state that the proposed Project is subject to a harmonized provincial/federal review pursuant to the Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004);
- state that the Application has been developed pursuant to the AIR as approved by the EAO with input from the CEA Agency, and complies with the relevant instructions provided in the section 11 and 13 orders issued by the EAO;
- state that the Application has been developed pursuant to the federal information requirements as communicated by the CEA Agency and defined by the federal Responsible Authorities;
- identify the agencies, First Nations and other parties involved in the development of the Application; and
- include a table of concordance that cross-references the information presented in the Application with the information requirements identified in the approved AIR document.

The following Preface has been prepared for this dAIR document to provide a concise summary of the aforementioned information requirements, where known. This Preface will be updated and expanded in the Application as appropriate.
The proposed Project is subject to review under the BCEAA following a request by VAFFC to opt in to the provincial environmental assessment process under section 7(1) of the Act on November 28, 2008.

The EAO Executive Director issued an order under section 7(3)(a) of the Act on February 10, 2009 designating the proposed Project as “reviewable”. On February 23, 2009 an order was issued by the EAO Project Assessment Manager under section 10(1)(c) of the Act, stating that VAFFC may not proceed with construction of the proposed Project until completion of the environmental assessment process. On November 18, 2009, the EAO Project Assessment Manager issued an order under section 11 of the Act, determining the scope of the required environmental assessment and the procedures and methods for conducting the assessment. On December 15, 2009, the EAO Project Assessment Manager issued an order under section 13 of the Act, whereby the scope of the proposed Project and the scope of the assessment were amended from that described in the section 11 order.

The proposed Project is also subject to assessment under the CEAA, as specified in a letter issued to VAFFC by the CEA Agency Project Manager dated May 14, 2009. This letter states that Transport Canada has determined that the marine terminal component of the proposed Project will require an approval under Section 5(2) of the Navigable Waters Protection Act, which is a trigger for a federal assessment under the CEAA Law List Regulations. The federal environmental assessment will proceed at the Screening level, as specified in an email issued to the EAO and VAFFC by the CEA Agency Project Manager dated March 08, 2010, and as described on the online CEA Registry, and may not include all proposed Project components that will be reviewed through the BCEAA process.

This federal mandate, together with the provincial BCEAA designation, requires that the proposed Project is subject to a harmonized provincial/federal assessment, pursuant to the Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004). As such, VAFFC will prepare and submit an “Environmental Assessment Certificate Application/Screening Environmental Assessment Report” (‘the Application’) for EAO and CEA Agency review and approval.

Vancouver Airport Fuel Facility Corporation commits to developing the Application pursuant to the AIR, approved by the EAO, with input and direction from the CEA Agency, and in compliance with relevant instructions provided in the procedural and amendment orders issued by the EAO under sections 11 and 13 of the Act. Vancouver Airport Fuel Facility Corporation also commits to developing the Application pursuant to the federal information requirements as communicated by the CEA Agency and/or federal Responsible Authorities (i.e., the Vancouver Fraser Port Authority (doing
business as Port Metro Vancouver and hereafter referred to as ‘the Port’) and Transport Canada).

The agencies, authorities, First Nations and other key parties expected to be involved in the development of the Application are listed below in Table 2, which will be updated in the Preface to the Application as appropriate.

**Table 2 Agencies, Authorities and First Nations Expected to be involved in the Development of the Application**

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Vancouver Airport Fuel Facility Corporation commits to providing a table of concordance (Table 3) in the Application Preface that cross-references the information presented in the Application with the information requirements identified in the approved AIR document. This table of concordance will be based around the following template.
Table 3  Table of Concordance

<table>
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<tr>
<th>APPLICATION INFORMATION REQUIREMENTS CHAPTER AND SECTION #</th>
<th>PROJECT-RELATED ISSUES AND INFORMATION REQUIREMENTS DEFINED IN THE APPLICATION INFORMATION REQUIREMENTS DOCUMENT</th>
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**ACRONYMS AND ABBREVIATIONS**

A list of all necessary acronyms, abbreviations and units of measure used repeatedly in the text of the Application will be defined and provided in this section. Listed below are the acronyms, abbreviations and units of measure referenced in this dAIR document, which will be updated in the Application.

<table>
<thead>
<tr>
<th>Acronym/Abbreviation</th>
<th>Definition</th>
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<tr>
<td>Act</td>
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<td>AIR</td>
<td>Application Information Requirements</td>
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<td>Environmental Assessment Certificate Application/Screening</td>
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<td>Vancouver Airport Fuel Facilities Corporation</td>
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<td>YVR</td>
<td>Vancouver International Airport</td>
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</table>
GLOSSARY OF TERMS

A glossary of terms will be listed and defined in this section of the Application.
EXECUTIVE SUMMARY

The Application will include an Executive Summary as a stand-alone section that presents a concise summary of:

- Vancouver Airport Fuel Facilities Corporation;
- the proposed Project components, including facilities, associate activities, locations and site maps;
- the Application and environmental assessment processes;
- consultation and information distribution activities undertaken with First Nations, members of the public, key stakeholders and regulatory agencies;
- issues raised during these activities and responses provided by VAFFC;
- key potential effects and recommended mitigation measures;
- potential residual and cumulative effects; and
- conclusions from the effects assessment.

The information presented will be sufficient to describe the proposed Project and the outcome of the effects assessment studies and consultation activities so that those who may not wish to read the full Application can rely on the Executive Summary for a synopsis of the proposed Project.

The following Executive Summary has been prepared to provide a concise summary of VAFFC and the proposed Project, regulatory approvals, the environmental assessment process, and consultation activities undertaken to date. This Executive Summary will be updated and expanded in the Application as appropriate.
Introduction and Background

Vancouver International Airport has experienced tremendous growth over the last two decades, driving an increase in the demand for aviation fuel. Over the same period of time, local fuel refining capacity has declined to the point where international sources now supply the majority of fuel for YVR. In the future, any increase in the demand for fuel will, of necessity, be supplied from international sources.

The existing fuel delivery system to YVR is inadequate to meet the forecast fuel demand and is currently supplemented by up to 35 tanker trucks each day. Without a new fuel delivery system, any incremental growth in fuel demand at YVR will need to be met by additional tanker truck deliveries.

Vancouver Airport Fuel Facility Corporation is a not-for-profit company owned by a consortium of international and domestic commercial airlines that operate at YVR. Vancouver Airport Fuel Facilities Corporation owns and operates fuel storage and distribution facilities at YVR, and has over 20 years of experience in fuel handling activities at YVR. Similar fuel facility corporations operate at all of the major international airports across Canada. Each member airline purchases fuel for its own use and arranges its delivery to the VAFFC fuel facilities at YVR, either through the existing delivery pipeline system or via tanker trucks. Vancouver Airport Fuel Facilities Corporation manages the storage and handling of each airline’s fuel and ensures its delivery to the airline’s respective aircraft.

Proposed Project Overview

Vancouver Airport Fuel Facilities Corporation regularly reviews future requirements at YVR as part of its ongoing system planning for fuel delivery, and has looked at various alternatives for a new fuel delivery system capable of meeting YVR’s demand over the long-term. A range of potential delivery options were evaluated that included combinations of marine, rail, tanker truck, and pipeline modes of delivery to bring fuel to YVR. A common and critical component of the top-ranked options was secure access to offshore marine shipments. The proposed Project evolved from this preliminary work.

Vancouver Airport Fuel Facilities Corporation proposes to develop a new aviation fuel delivery system project located in the City of Richmond, Lower Mainland, B.C. (Figure 1) that will:

- reduce the footprint of activity currently required to maintain fuel delivery;
- secure flexible access to a broad range of competitive offshore international fuel supply sources; and
- meet the forecast long-term demand for fuel at YVR.
Figure 1  Vancouver Airport Fuel Delivery Project Location

Source: Adapted from: Natural Resources Canada, National Topographic System, Map 92G, Vancouver, 1995
The proposed Project has three (3) infrastructure components:

1. **Upgrade and Operation of a Marine Terminal**

Vancouver Airport Fuel Facility Corporation owns a waterfront property with an existing marine terminal and Water Lot Lease on the north shore of the Fraser River, approximately 2 kilometres east of Highway 99 and 1 kilometre north of Steveston Highway. The marine terminal is located on industrially zoned land (I-1 Industrial District) and was constructed by a previous owner to accommodate vessels up to 30,000 dead weight tonnes. To optimize flexibility and security of future fuel supply to YVR, VAFFC proposes upgrades to the marine terminal to accommodate fuel cargo shipments on a range of vessel types and sizes, from barges to Handysize tankers, and potentially up to partly-laden Panamax-class tankers in the 60,000 to 80,000 dead weight tonnes category.

Upgrades, which are also required to satisfy current standards, codes and seismic design criteria, will consist of structural strengthening of the existing marine terminal wharf, installation of new breasting and mooring infrastructure, construction of fuel off-loading and transfer facilities and equipment and, depending on the outcome of detailed design, possibly infrequent dredging of the riverbed between the navigation channel and the terminal berth to ensure adequate underkeel clearance for larger Panamax-class vessels during all river conditions. Spill prevention, preparedness and emergency response planning will be incorporated into the terminal upgrades.

A conceptual rendering of how the upgraded marine terminal could look is shown in **Figure 2**.

![Figure 2](image-url)

**Figure 2** Conceptual Rendering of how the upgraded Marine Terminal could look with a Berthed Panamax-Class Tanker
2. Construction and Operation of a Fuel Receiving Facility

Vancouver Airport Fuel Facilities Corporation’s marine terminal property is not well configured or sized for the accommodation of fuel storage. Vancouver Airport Fuel Facilities Corporation is consulting with the Port with the intent to lease an upland portion of Port-owned industrially zoned land (I-1 Industrial District) to construct and operate a fuel receiving facility.

The potential lease area is located adjacent and northeast of VAFFC’s marine terminal property. The facility will include six above ground steel tanks located within a secondary containment compound and will have a total storage capacity of approximately 80 million litres (500,000 barrels). The proposed lease area will be able to accommodate a further two tanks as determined by distant future fuel demand at YVR.

A conceptual rendering showing how the fuel receiving facility could look is provided in Figure 3.

![Conceptual Rendering of how the Proposed Fuel Receiving Facility could look](image)

3. Construction and Operation of Fuel Pipelines

Vancouver Airport Fuel Facilities Corporation proposes to construct an approximate 0.5 kilometre long pipeline to transfer off-loaded fuel from the marine terminal to the fuel receiving facility, and an approximate 15 kilometre long pipeline to deliver fuel
from the fuel receiving facility to YVR. The fuel transfer pipeline will be between approximately 406 and 508 millimetres (16 to 20 inches) in diameter, and the fuel delivery pipeline between approximately 254 and 304.8 millimetres (10 to 12 inches) in diameter. With the exception of the crossing under Williams Road, the transfer pipeline will be located on industrially zoned land (i.e., I-1 Industrial District), either owned by VAFFC or leased by VAFFC from the Port. The transfer pipeline is expected to be constructed on a raised pipe rack on VAFFC’s marine terminal property, cross under Williams Road and continue underground to the fuel receiving facility.

The delivery pipeline will be constructed approximately 2 to 3 meters (6.56 to 9.85 feet) under existing transportation and/or utility corridors in the City of Richmond. Where major road and waterway crossings are required (e.g., Highway 99 and the Moray Channel in the Middle Arm of the Fraser River), the pipeline will be installed by directionally drilling underground to assist with the mitigation of potential environmental and heritage effects, and avoid disruption of road and waterway traffic.

A preliminary pipeline reference alignment has been identified (Figure 4).

![Figure 4](image-url)

**Figure 4** Preliminary Pipeline Reference Alignment and Possible Routing Alternatives

The alignment goes west from the proposed fuel receiving facility along the Williams Road corridor, then north along the No. 5 Road corridor, west along Westminster Highway, north along the Shell Road corridor, and west along the Bridgeport Road
or Bridgeport Trail corridor to the Moray Channel crossing. Similar to the existing Trans Mountain (Jet Fuel) Inc. fuel delivery pipeline corridor, the pipeline will cross under the Moray Channel. It will then follow under or adjacent to existing airport service roads on Sea Island to reach VAFFC’s fuel facilities at YVR. The pipeline alignment will avoid the Sea Island Conservation Area. Possible alternative route alignments within this general corridor may exist (e.g., the Francis Road corridor one block north of the Williams Road corridor, and the Shell Road corridor between Williams Road and Westminster Highway) and VAFFC will continue to investigate and consult with the City of Richmond on options before selecting a final route.

Fuel cargo shipments currently servicing the existing fuel delivery system pass by Roberts and Sturgeon banks, the mouth of the Fraser River, YVR and Stanley Park, and through the First and Second Narrows to off-load and transfer fuel cargo at the Westridge Marine Terminal in Burrard Inlet, located approximately 5.5 kilometres (3.4 miles) east (upriver) of the Iron Workers Memorial Bridge. During the operations/maintenance phase of the proposed Project, these existing fuel cargo shipments will be redirected from their transit route in the Strait of Georgia to the proposed marine terminal via the Fraser River’s deep-sea navigation channel. Over the foreseeable future, these barges are expected to be the types of vessels servicing the proposed Project. Handysize tankers, and potentially partly-laden Panamax-class tankers, are anticipated over the longer-term as determined by future distant demand for fuel at YVR and sources of international fuel supplies.

**Regulatory Approvals**

In response to a request made by VAFFC to opt in to the provincial environmental assessment process for the review of the proposed Project, the EAO Executive Director issued an order under section 7(3)(a) of the BCEAA on February 10, 2009 designating the proposed Project as “reviewable”. On February 23, 2009 an order was issued by the EAO Project Assessment Manager under section 10(1)(c) of the Act, stating that VAFFC may not proceed with construction of the proposed Project until completion of the environmental assessment process. On November 18, 2009, the EAO issued an order under section 11 of the Act, determining the scope of the required environmental assessment and the procedures and methods for conducting the assessment. On December 15, 2009, the EAO issued a further order under section 13 of the Act, whereby the scope of the proposed Project and the scope of the assessment were amended from that described in the section 11 order.

On May 14, 2009 a letter was issued to VAFFC from the CEA Agency Project Manager, stating that Transport Canada’s Navigable Waters Protection Program has determined that the marine terminal component of the proposed Project requires an approval under Section 5(2) of the *Navigable Waters Protection Act*. This approval triggers a federal
environmental review under the CEAA Law List Regulations. Vancouver Airport Fuel Facility Corporation is, therefore, required to submit an application to Transport Canada for their review and approval of the marine terminal component.

This CEAA mandate, together with the proposed leasing of federally-owned Port lands for the fuel receiving facility, which triggers a Screening level review by the Port under the Canada Port Authority Environmental Assessment Regulations, and the BCEAA designation, requires that the proposed Project is subject to a harmonized provincial/federal environmental assessment, pursuant to the Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004).

The federal review will proceed at the Screening level as specified by the CEA Agency Project Manager. Transport Canada and the Port are designated Responsible Authority(s), responsible for determining how the federal assessment of the proposed Project will be undertaken. Environment Canada has been designated an ‘expert authority’ role. Vancouver Airport Fuel Facility Corporation will prepare and submit an “Environmental Assessment Certificate Application/Screening Environmental Assessment Report” (‘the Application’) for EAO and CEA Agency review and approval.

Based on the information contained in the Project Description Report prepared by VAFFC (January 16, 2009) regarding potential upgrades to the marine terminal, and the proposed method of directional drilling underground for the pipeline crossing of the Moray Channel, Fisheries and Oceans Canada has indicated that an Authorization under Section 35(2) of the Fisheries Act is not required for the proposed Project. However, VAFFC will continue to consult with Fisheries and Oceans Canada to determine if a future authorization may be required if the scope of work for the proposed Project was to significantly alter.

The harmonized environmental assessment process will address the disparate federal, provincial and inter-governmental jurisdictional interests in the proposed Project, and enable coordinated review from the various government agencies, authorities and First Nations that form part of the TWG established by the EAO and the CEA Agency. Members of the TWG include those with interests administered by the Port, Vancouver Airport Authority, Transport Canada, Environment Canada, Fisheries and Oceans Canada, Health Canada, Fraser River Estuary Management Program (‘FREMP’), B.C. Oil and Gas Commission, B.C. Ministry of Environment, and the City of Richmond.

At the commencement of the pre-Application stage, the EAO invited twelve First Nations to join the TWG and participate in the proposed Project’s review process. All have identified traditional territory in or within the vicinity of the proposed Project. First Nations include Chemainus First Nation, Cowichan Tribes, Halalt First Nation, Hwilitsum First Nation, Kwantlen First Nation, Lake Cowichan First Nation, Lyackson First Nation,
Musqueam First Nation, Penelakut First Nation, Semiahmoo First Nation, Tsawout First Nation, and Tsawwassen First Nation all of which are expected to participate in the review of the proposed Project as members of the TWG.

The first TWG meeting was held in Richmond on April 08, 2009. During this meeting, VAFFC presented the TWG with an overview of the proposed Project, including a site tour of the proposed Project components. The EAO and the CEA Agency also presented the TWG with a summary of the provincial and federal environmental assessment and review processes, respectively. A second meeting was held on December 14, 2009, where VAFFC presented the TWG with an update on the proposed Project and studies undertaken to date.

The various jurisdictional interests in the proposed Project are summarized below.

**Vancouver Fraser Port Authority:**

The proposed Project triggers a review by the Port under the Canada Port Authority Environmental Assessment Regulations. The Port review is triggered by the potential leasing of Port-administered lands for the proposed fuel receiving facility and the proposed upgrades to the marine terminal. The Port’s review process will defer to the overarching BCEAA/CEAA harmonized process.

The Port will also conduct a review of the marine terminal upgrades and the fuel receiving facility to be constructed and operated/maintained on Port lands as part of its project development approval process, including any application to amend the current Water Lot Lease, if an increase in lot area is required. If dredging of the riverbed outside of the navigation channel is required, VAFFC will submit a Dredging Application to the Port as part of its approval process. The Port will also review navigation considerations within the Fraser River.

**Vancouver Airport Authority:**

The Vancouver Airport Authority will conduct an engineering review and environmental assessment of pipeline and associated infrastructure to be constructed and operated/maintained on airport lands as part of its development permit and facility permit approvals processes. The Vancouver Airport Authority’s review process will defer to the overarching BCEAA/CEAA harmonized process.

**Fraser River Estuary Management Program:**

Marine terminal upgrades will involve works in the deep water reaches of the river and in upland areas of VAFFC’s property that are riverside of the dike. Therefore, the FREMP Track 2 Environmental Review Committee Coordinated Project Review process
will be triggered by these works. The FREMP review process will defer to the overarching BCEAA/CEAA harmonized process.

The fuel delivery pipeline will be installed by directionally drilling underground for the crossing of the Moray Channel to assist with the mitigation of potential environmental and heritage effects, and to avoid disruption of waterway traffic. A FREMP Environmental Review Committee process is not expected to be triggered for this crossing.

If dredging is required, VAFFC’s Dredging Application to the Port will be reviewed concurrently through the FREMP Environmental Review Committee Coordinated Project Review process.

**BC Oil and Gas Commission:**

Vancouver Airport Fuel Facilities Corporation will submit a concurrent application to the B.C. Oil and Gas Commission for approval to construct and operate/maintain the fuel pipelines, including the fuel off-loading and transfer facilities, and fuel receiving facility under the B.C. *Pipeline Act*.

**City of Richmond:**

The City of Richmond, under its development permit process, will review the marine terminal upgrades and participate in the review of pipeline design and alignment through Richmond (i.e., Lulu Island). A Municipal Access Agreement will be required from the City for construction of sections of the pipeline located on City property.

**Environmental Assessment**

For the purposes of environmental assessment under the harmonized BCEAA/CEAA review process the scope of the proposed Project, as defined in the section 11 and 13 orders issued by the EAO, consists of the following on-site and off-site components and activities:

1. upgrade of an existing marine terminal;
2. construction and operation of new facilities at the marine terminal for off-loading aviation fuel;
3. construction and operation of a new aviation fuel receiving facility;
4. construction and operation of a new fuel transfer pipeline from the marine terminal to the aviation fuel receiving facility;
5. construction and operation of a new fuel delivery pipeline from the aviation fuel receiving facility to YVR; and

6. movement of vessels transporting aviation fuel within the South Arm of the Fraser River to and from the marine terminal, including fuel off-loading and transfer at the marine terminal.

The movement of aviation fuel cargo on vessels will be a new operational activity within the river. Although fuel cargo vessels will not be owned or controlled by VAFFC, their presence in the river will be a direct cause of the proposed Project. Therefore, the portion of this activity occurring within the Fraser River is included in the scope of the proposed Project. The spatial limit for the assessment of this component scope is from Sand Heads located at the river mouth (kilometre mark 0 in the river’s navigation channel), approximately 21 kilometres upriver (east) to the marine terminal, including areas of the river required for the activities associated with vessel manoeuvring, and fuel off-loading and transfer at the marine terminal.

The scope of the environmental assessment, as defined in the section 11 and 13 orders, includes consideration of potential adverse environmental, economic, social, heritage, and health effects, and practical means to prevent or reduce to an acceptable level any such potential adverse effects as a result of the construction and operations/maintenance of the proposed Project. It also includes consideration of cumulative impacts and assessment for significance of any residual effects following mitigation, potential adverse effects on First Nations’ Aboriginal interests and, to the extent appropriate, ways to avoid, mitigate or otherwise accommodate potential adverse effects. Spill prevention, preparedness and emergency response planning is also a key consideration in the scope of the assessment.

As described in the section 11 order, one or more components of the proposed Project are located within the “Tsawwassen Territory” as defined by the Tsawwassen First Nation Final Agreement Act, S.B.C. 2007, c. 39. Therefore, the scope of the environmental assessment is intended to satisfy all applicable requirements of Chapter 15 of the Tsawwassen First Nation Final Agreement Act.

Discipline-specific effects assessment studies will be undertaken to describe the general setting of the proposed Project, identify baseline conditions and characteristics, assess potential effects (including consideration of cumulative impacts) and recommend acceptable mitigation measures and management strategies, and identify significant residual effects. These studies will form the effects assessment chapters in Part B: Assessment of Project Effects, Mitigation and Significance of Residual Effects of the Application.
Since the proposed Project will have an indefinite lifespan, decommissioning or abandonment of permanent proposed Project-related infrastructure will not be considered in the Application. It is anticipated that a separate decommissioning plan would be required prior to any decommissioning of proposed Project components to evaluate potential effects, based on environmental, social, economic, heritage and health values, public interests, characteristics and legislative requirements relevant to that time. However, any dismantling and/or removal of temporary structures that may be required during the construction phase will be described and assessed in the Application.

In addition to the effects assessment chapters in Part B: Part B: Assessment of Project Effects, Mitigation and Significance of Residual Effects of the Application, and in accordance with federal requirements, the Application will also include assessment of potential environmental effects from accidents or malfunctions, assessment of potential cumulative environmental effects, and assessment of potential effects of the environment on the proposed Project.

The Application will also include an assessment of in-river navigation feasibility and risk for vessels expected to service the proposed Project, an analysis of the probability and risk of an accidental aviation fuel release occurring in the Fraser River during vessel transit and berthing, and spill prevention, preparedness and emergency response planning for proposed Project components and infrastructure. The predicted behaviour and potential effects of aviation fuel cargo on the biophysical and socio-economic/socio-community resources of the Fraser River and beyond, as a result of an accidental fuel release incident in the river, will be addressed under the separate chapter in the Application (Chapter 19: Fate and Effects Analysis).

The study area boundary for the fate and effects analysis will be directed by the results of detailed spill modelling, undertaken to determine the likely reach of plausible maximum release scenarios from a Panamax-class tanker located near Sand Heads, Steveston Bend and the George Massey Tunnel (10,000 barrels or approximately 1.6 million litres), and for plausible maximum release scenarios at the marine terminal during the process of fuel off-loading and transfer (1,000 barrels or approximately 160,000 litres).

Sand Heads was selected as one of the fuel release locations for the spill modelling because this is the approximate area where a change in vessel pilotage will occur. Steveston Bend and the George Massey Tunnel were selected to represent accidental fuel release locations for the spill modelling due to their proximity to sensitive areas (i.e., the Sturgeon and Roberts banks, Westham Island and the South Arm Marshes). The marine terminal was also selected as one of the fuel release locations for the spill modelling as this is where the fuel cargo off-loading and transfer processes will occur.
The spill modelling scenarios will account for seasonality and the varying environmental and river conditions, and shoreline types, associated with the lower Fraser River environment and the Strait of Georgia in the analysis of fate and effects.

As a consequence of the proposed Project, the existing vessel transit distance of fuel cargo shipments in Canadian waters will be significantly reduced. The proposed Project will also greatly reduce or eliminate the need for the existing fuel delivery pipeline system and tanker truck traffic on local roads. These elements will also be assessed in the Application.

Consultation

In September and October 2008, prior to the EAO’s designation of the proposed Project as “reviewable” and in advance of broader consultation, VAFFC distributed a Project Backgrounder document to various community and business groups likely to have an interest in the proposed Project. The purpose of this document was to provide information and an update on the proposed Project, and to provide the opportunity in follow-up meetings for input from representatives of the business community and environmental and recreational interest groups regarding proposed Project-related issues and concerns.

In February and March 2009, following the EAO’s designation of the proposed Project as “reviewable”, VAFFC held four Public Information Sessions in Richmond to introduce the proposed Project concept and receive general feedback from the public. Brochures were also mailed out to various stakeholders and were made available for the general public at the Information Sessions, along with a feedback form. The comments received during these sessions were recorded and are reflected in this dAIR document. A copy of the Public Information Sessions Summary is included in Appendix A.

Through to the summer of 2009, VAFFC continued to share information about the proposed Project with community, business and other stakeholders. Comments received were recorded and are also reflected in this dAIR document. A copy of the Stakeholder Outreach Summary Report is included in Appendix B.

During the pre-Application phase for the proposed Project, VAFFC will also implement a public consultation program to include group stakeholder meetings, open houses, media information inserts, and focus groups.

In July 2008, VAFFC sent an introductory letter to First Nations identified as having a potential interest in the proposed Project, requesting an opportunity to meet. Meetings with these First Nations occurred in the summer and fall months of 2008. In these meetings, the proposed Project was described together with a discussion on the approaches to consultation.
First Nations to be consulted by VAFFC were later confirmed by the EAO. The section 11 and 13 orders issued by the EAO instruct VAFFC to meaningfully consult with identified First Nations about the proposed Project’s potential effects.

VAFFC has entered into capacity and consultation understandings with the majority of First Nations to facilitate their meaningful involvement in the EAO-coordinated review process for the proposed Project. Capacity and consultation understandings with remaining First Nations are expected to follow. In August 2009, all First Nations were invited to participate in an Archaeological Overview Assessment, which was conducted as part of the proposed Project’s environmental effects assessment study of Archaeological, Historical and Heritage Resources. In September 2009, VAFFC also invited First Nations to participate in a VAFFC-sponsored boat tour of the Fraser River. This Archaeological, Historical and Heritage Resources Assessment will be shared with First Nations once the report is finalized.

Throughout the pre-Application stage, and following discussion with the EAO, VAFFC will continue to meet and consult with representatives of First Nations to provide information about the proposed Project, respond to questions and concerns, and gather information regarding aboriginal practices, traditions and customs that have been practiced in the past, or are currently practiced, within the proposed Project area. Vancouver Airport Fuel Facilities Corporation will seek to identify First Nation concerns and issues to be addressed in the Application. Information requirements and issues raised by First Nations during the initial dAIR comment period are reflected in this revised dAIR document, where appropriate.

A website has been developed for the proposed Project ([http://www.vancouverairportfuel.ca](http://www.vancouverairportfuel.ca)) and an email address ([info@vancouverairportfuel.ca](mailto:info@vancouverairportfuel.ca)) has been created to facilitate the transfer of proposed Project-related information and assist with public attitude surveys and feedback. Telephone, facsimile and written correspondence details are also posted on this website to provide alternative means of communication. Vancouver Airport Fuel Facilities Corporation will track and respond to all public and First Nation comments, gather information regarding heritage, environmental and community values associated with the proposed Project, and, in consultation with the EAO and members of the TWG, identify issues to be addressed in the Application.
PART A – INTRODUCTION AND BACKGROUND

1 Purpose and Organization of the Application

In this chapter of the Application, VAFFC commits to providing a discussion of the purpose and understanding of:

- the environmental assessment and review processes;
- the AIR; and
- the Application

This chapter will also indicate that the Application fulfills the federal requirements for an environmental assessment decision, in addition to the requirements of the provincial review process.

The following sections for this chapter are proposed, which may include additional subsections in the Application.
1.1 Introduction

This section will provide an introduction and background to the purpose and organization of the Application.

1.2 Purpose and Understanding of the Environmental Assessment Process

This section will outline the BCEAA and the CEAA environmental assessment processes designed to identify and assess potential effects associated with the proposed Project to ensure that proposed Project-specific mitigation measures are developed for managing those effects.

1.3 Purpose and Understanding of the Application Information Requirements

This section will state that the EAO issued approved AIR for the proposed Project, and the date this was issued. It will state that the approved AIR document was prepared in accordance with Schedule A of the procedural order for the proposed Project, issued by the EAO under section 11 of the BCEAA on November 18, 2009, and in accordance with the amendment order issued under section 13 of the BCEAA on December 15, 2009. This section will also state that the approved AIR identifies information that must be included in the proposed Project’s Application to meet the requirements of both the BCEAA and the CEAA.

In addition to the information requirements, this section will also state that the Application will be submitted to the EAO pursuant to section 16 of the BCEAA.

1.4 Basis for Project Review

This section will describe the basis for the application of provincial and federal legislation for an environmental assessment and review of the proposed Project under the BCEAA and the CEAA, respectively.

1.5 Application Layout

This section will provide a clear concise description and rationale for the layout and format of the Application consistent with the requirements of the EAO, including a summary of which chapters may be found in separate volumes, should the Application be of such a size that more than one volume is necessary to present all the required information.

1.6 References

This section will include a list of all supporting references used in this chapter of the Application.
2 Proposed Project Overview

This chapter of the Application will:

- provide a detailed description of VAFFC, including history, type of company, affiliations, headquarters location and contact information, including contact names, addresses, telephone numbers, fax numbers and e-mail addresses;

- provide the names(s) and contact information for individuals responsible for managing the proposed Project’s environmental assessment requirements, and indicate where information in the Application has been prepared by a suitably qualified professional;

- provide reference to the BCEAA, the CEAA and the Canada Port Authority Environmental Assessment Regulation trigger(s), including the type of federal environmental assessment required;

- provide a background and rationale for the proposed Project, including a description of the existing fuel delivery system and a comparative risk analysis of the proposed Project and the existing fuel delivery system;

- describe all on-site components and associated on-site and off-site infrastructure and other facilities associated with the proposed Project, and include the longitude and latitude of components and maps showing both regional context and site-specific setting;

- identify the distance to nearby communities and note the communities on the regional map;

- describe temporary and permanent on-site and off-site facilities and access requirements, and the activities associated with their construction and operations/maintenance;

- describe alternative means of undertaking the proposed Project;

- describe land use, and features and benefits of the proposed Project;

- describe the regulatory framework and applicable permits, licenses and approvals required for the proposed Project;

- describe the proposed Project delivery mechanism, design criteria, plan and schedule, capital costs and financing, and estimated direct labour force, for construction and operations/maintenance; and
• describe the environmental management system and management approach for the proposed Project.

Although the proposed Project will remain at the conceptual design stage during the environmental assessment process, the description of the proposed Project will be presented in sufficient detail to enable a meaningful assessment of potential effects. It is understood that, while detailed design information will be required at the permitting stage, it is not normally required for environmental assessment review purposes.

The scope of the provincial review is confirmed in the orders issued by the EAO under sections 11 and 13 of the BCEAA. A separate determination regarding the federal assessment scope of the proposed Project is made by the CEA Agency and federal Responsible Authorities. Any differences between the federal and provincial scope will be described in this section of the Application.

Should VAFFC amend the proposed Project Description, which was provided to the EAO by VAFFC at the beginning of the pre-Application stage, later in the review process, the section 11 and 13 orders and the proposed Project scope may require revision.

The following sections of this chapter, which may include additional subsections, are populated with the relevant information, consistent with the information requirements for the Application, where this information is currently known.
2.1 Introduction

This section will provide an introduction and background to the proposed Project overview.

2.2 Vancouver Airport Fuel Facilities Corporation

2.2.1 Introduction and Background

Vancouver Airport Fuel Facilities Corporation is a not-for-profit company owned by a consortium of international and domestic commercial airlines that operate at YVR. Currently, there are twenty-six consortium members as listed in Table 4.

Table 4 List of Current VAFFC Member Airlines (as of March 2010)

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<td>22.</td>
<td>British Airways PLC</td>
<td>23. Japan Airlines Company Ltd.</td>
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Vancouver Airport Fuel Facilities Corporation owns and operates fuel storage and distribution facilities at YVR, and has over 20 years of experience in fuel handling activities at YVR. Similar fuel facility corporations operate at all of the major international airports across Canada. Vancouver Airport Fuel Facilities Corporation contracts the management, construction and operation of its facilities to qualified
organizations, and draws expertise from a network of experienced engineering and environmental consultants specializing in fuel infrastructure.

The consortium structure provides efficient sharing of costs and risks between member airlines. Although membership may vary with the airlines use at YVR, the VAFFC structure remains stable over time. Vancouver Airport Fuel Facilities Corporation has invested over CAD $40 million in fuelling infrastructure at YVR over the last 15 years, and capital financing of up to CAD $100 million is attainable with VAFFC’s financial structure.

2.2.2 Responsibilities

Vancouver Airport Fuel Facilities Corporation’s fuel facilities at YVR include a four-tank storage facility and tanker truck offloading rack system, an airside tanker truck loading compound, an extensive underground pipeline hydrant system to transfer fuel from VAFFC’s tanks to airside fuelling aprons, and a maintenance and administration facility (Figure 5). The VAFFC fuel storage tanks receive fuel supply from the existing Trans Mountain (Jet Fuel) Inc. fuel pipeline and storage delivery system, and from daily tanker truck deliveries from the Cherry Point refinery in Washington State.

![Figure 5 Overview of the Fuel Facility System at YVR](image)

Vancouver Airport Fuel Facilities Corporation operates the only fuel facility system servicing YVR’s main terminal and therefore provides fuel delivery service to all airlines
using that terminal. Non-member airlines receive fuel delivery service from VAFFC on a fee-for-service basis.

Each member airline purchases fuel for its own use and arranges its delivery to the VAFFC fuel facilities at YVR, either through the existing delivery pipeline system or via tanker trucks. Vancouver Airport Fuel Facilities Corporation manages the storage and handling of each airline’s fuel and ensures its delivery to the airline’s respective aircraft.

On behalf of its member airlines, VAFFC is responsible for:

- operating and maintaining the fuel facility system at YVR;
- working with the Vancouver Airport Authority planning group to develop fuel demand forecasts;
- directing new investment, maintaining insurance, and structuring debt;
- planning, constructing and operating safe, reliable and cost-effective fuel infrastructure to meet near and long-term demand projections; and
- obtaining regulatory approvals, permits and licenses as they relate to fuel system expansion and/or development.

Vancouver Airport Fuel Facilities Corporation is currently in the process of expanding its fuel storage at YVR (Figure 5), which will improve on-airport fuel reserve capacity from 1.5 days to approximately 5 days during peak demand periods. New storage is expected to be operational in 2010. Vancouver Airport Fuel Facilities Corporation has also recently expanded its underground fuel hydrant system in step with the Vancouver Airport Authority’s expansion of the domestic passenger terminal building at YVR.

2.2.3 Project Representatives

The proposed Project is managed by FSM Management Group Inc., who is responsible for administrating the day-to-day operation of VAFFC’s activities and facilities at YVR. FSM Management Group specializes in the planning and management of fuel-related projects and infrastructure across Canada. The Technical Lead, Hatch Ltd., is responsible for managing and coordinating the environmental component of the proposed Project.
The primary contacts for the proposed Project are as follows:

**Project Director**
Mr. Adrian Pollard, P.Eng.
Director of Engineering
FSM Management Group Inc.
Unit 103 - 12300 Horseshoe Way
Richmond, British Columbia  V7A 4Z1
Tel: (604) 271-7113
Fax: (604) 271-8006
Email: apollard@vancouverairportfuel.ca

**Technical Lead**
Mr. R. Scott Hanna, M.R.M., R.P.Bio.
Regional Director W. North America/Associate Environment & Community Interface, Hatch Ltd.
400 – 1066 West Hastings Street
Vancouver, British Columbia   V6E 3X2
Tel: (604) 689-5767
Fax: (604) 689-3918
Email: shanna@hatch.ca

The following expert consultants listed in Table 5, which will be updated as required in the Application, will be assisting in the preparation of discipline-specific environmental and other technical studies in support of the Application:

**Table 5   Preliminary List of Professional Contributions to the Application**

<table>
<thead>
<tr>
<th>Consultant</th>
<th>Discipline Area</th>
<th>Application Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moffat and Nichol</td>
<td>Marine Terminal Conceptual Design</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>Chinook Engineering</td>
<td>Fuel Receiving Facility Conceptual Design</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>Chinook Engineering</td>
<td>Fuel Pipeline Conceptual Design</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>National</td>
<td>Public Consultation</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>Hatfield Consultants</td>
<td>Fisheries, Aquatics and Water Quality Assessment</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>Robertson Environmental</td>
<td>Vegetation, Wildlife and Wildlife Habitat Assessment</td>
<td>Chapter 5</td>
</tr>
</tbody>
</table>
2.3 Project Background and Rationale

2.3.1 Existing Fuel Delivery System

This subsection will describe the current fuel delivery system servicing YVR, including facilities, activities and high level mapping.
2.3.2 Fuel Demand and Supply

This subsection will describe the historical and projected fuel demand at YVR and sources of fuel supplies.

2.3.3 Fuel Delivery System Options

This subsection will provide a brief overview of all potential fuel delivery system options considered leading up to selection of the proposed Project.

2.3.4 Proposed Project Overview

This subsection will provide a brief overview of the proposed Project including facilities and high level mapping.

2.3.5 Comparative Risk Analysis

This subsection will evaluate the relative risks of the proposed Project in the context of the existing fuel delivery system.

2.3.6 Incidental Occurrences

This subsection will describe incidental occurrences that are expected to arise as a direct result of proposed Project operations, including:

- shorter vessel transit distance in Canadian waters;
- shorter pipeline length required to deliver fuel to YVR;
- future decommissioning of the existing fuel delivery pipeline system; and
- future elimination of tanker trucks.

2.4 Proposed Project Description and Scope

2.4.1 Project Details

2.4.1.1 Marine Terminal

Reference Footprint – Location and Mapping

This subsection will:

- provide a description of the marine terminal location including longitude and latitude of the representative area;
• provide mapping at appropriate scales that indicates both the regional setting and layout of the marine terminal and proposed activities; and

• include site plans/sketches/photographs showing marine terminal location, features and activities identified.

**Facilities and Design Parameters**

This subsection will:

• describe in detail the engineering and design criteria selected for upgrading and operating the proposed marine terminal and associated on-site and off-site infrastructure, including fuel off-loading and transfer mechanisms, emergency and spill response and prevention systems, and associated ancillary equipment; and

• summarize the results of studies undertaken to assist with selection of on-site and off-site facilities.

**Construction-Phase Activities**

This subsection will:

• describe construction and pre-operation activities, including an estimate of construction scheduling using best available information, and dismantling, removal and restoration for any temporary structures as required; and

• describe intended approaches for the delivery of services required for the construction-phase, such as water supply, waste disposal, material requirements, energy supply, construction-stage transportation/traffic, construction worker’s facilities, and emergency and maintenance procedures.

**Operations/Maintenance-Phase Activities**

This subsection will:

• provide a description of operations/maintenance activities, including maintenance protocols and an estimate of scheduling using best available information; and

• describe intended approaches for the delivery of services required for operations/maintenance, such as water supply, waste disposal, material requirements, energy supply, transportation/traffic, operating workforce services, and emergency and maintenance procedures.
2.4.1.2 Fuel Receiving Facility

**Reference Footprint – Location and Mapping**

This subsection will:

- provide a description of the fuel receiving facility location including longitude and latitude of the representative area;
- provide mapping at appropriate scales that indicate both the regional setting and layout of the fuel receiving facility and activities; and
- include site plans/sketches/photographs with facility location, features and activities identified.

**Facilities and Design Parameters**

This subsection will:

- describe in detail the engineering and design criteria selected for constructing and operating the proposed fuel receiving facility and associated on-site and off-site infrastructure, including fuel receiving and storing mechanisms, emergency and spill response and prevention systems, and associated ancillary equipment; and
- summarize the results of studies undertaken to assist with site selection for on-site and off-site facilities.

**Construction-Phase Activities**

This subsection will:

- describe construction and pre-operation activities, including an estimate of construction scheduling using best available information, and dismantling, removal and restoration for any temporary structures as required; and
- describe intended approaches for the delivery of services required for the construction-phase, such as water supply, waste disposal, material requirements, energy supply, construction-stage transportation/traffic, construction worker’s facilities, and emergency and maintenance procedures.
Operations/Maintenance-Phase Activities

This subsection will:

• provide a description of operations/maintenance activities, including maintenance protocols and an estimate of scheduling using best available information; and

• describe intended approaches for the delivery of services required for operations/maintenance, such as water supply, waste disposal, material requirements, energy supply, transportation/traffic, operating workforce services, and emergency and maintenance procedures.

2.4.1.3 Fuel Pipelines

Reference Footprint – Location and Mapping

This subsection will:

• provide a description of pipeline location including longitude and latitude of the representative area;

• provide mapping at appropriate scales that indicate both the regional setting and layout of pipeline and activities; and

• include site plans/sketches/photographs with pipeline location, features and activities identified.

Facilities and Design Parameters

This subsection will:

• describe in detail the engineering and design criteria selected for constructing and operating the proposed pipelines and associated on-site and off-site infrastructure, including emergency and spill response and prevention systems, and associated ancillary equipment;

• provide a description of the pipeline and associated on-site and off-site infrastructure and other facilities to be developed; and

• summarize the results of studies undertaken to assist with site selection for on-site and off-site facilities.

Construction-Phase Activities

This subsection will:
• describe construction and pre-operation activities, including an estimate of construction scheduling using best available information, and dismantling, removal and restoration for any temporary structures as required; and

• describe intended approaches for the delivery of services required for the construction-phase, such as water supply, waste disposal, material requirements, energy supply, construction-stage transportation/traffic, construction worker’s facilities, and emergency and maintenance procedures.

**Operations/Maintenance-Phase Activities**

This subsection will:

• provide a description of operations/maintenance activities, including maintenance protocols and an estimate of scheduling using best available information; and

• describe intended approaches for the delivery of services required for operations/maintenance, such as water supply, waste disposal, material requirements, energy supply, transportation/traffic, operating workforce services, and emergency and maintenance procedures.

2.4.1.4 Movement of Fuel on Vessels within the Fraser River

This subsection will describe the operational component for the proposed movement of vessels transporting aviation fuel within the South Arm of the Fraser River to and from the marine terminal, including the process of fuel off-loading and transfer at the marine terminal.

**Reference Footprint – Location and Mapping**

This subsection will:

• provide a description of the footprint of vessel movements in the Fraser River; and

• provide mapping at appropriate scales that indicate both the local and regional setting of vessel movements.

**Vessel Design Parameters**

This subsection will:

• describe in detail the types and sizes of design vessels expected to service the proposed Project during operations/maintenance; and

• summarize the results of studies undertaken to assist with vessel selection.
Operations/Maintenance-Phase Activities

This subsection will:

- provide a description of operations/maintenance activities, including an estimate of vessel scheduling using best available information.

2.4.2 Project Scope

This subsection will describe the scope of the proposed Project as described in the orders issued by the EAO under sections 11 and 13 of the BCEAA, and as outlined by the CEA Agency and defined by the federal Responsible Authorities, which may not include all proposed Project components that will be reviewed through the BCEAA process.

As VAFFC plans to operate the proposed Project for an indefinite life span, decommissioning or abandonment of permanent Project-related infrastructure will not be considered in the Application. It is anticipated that a separate decommissioning plan would be required prior to any decommissioning of proposed Project components to evaluate potential effects, based on resource values, public interests, characteristics and legislative requirements relevant to that time. However, any dismantling and/or removal of temporary structures that may be required during the construction phase will be described and assessed in the Application.

It is anticipated that the proposed Project scope, as described below in Table 6, may be modified during the pre-Application phase based on revisions to the design concept associated with avoidance/mitigation of effects identified during environmental assessment studies and the environmental review process, and the results of ongoing engineering studies. If VAFFC amends the Project Description during the environmental assessment process, it may be necessary to amend the scope of proposed Project information provided in Table 6 to reflect the changes.
<table>
<thead>
<tr>
<th>Definition (as per the section 11 and 13 orders)</th>
<th>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</th>
</tr>
</thead>
</table>
| Upgrade and operation of an existing marine terminal for off-loading aviation fuel | Structural Upgrades  
Much of the upgrade work is expected to be on the inner landside area of the existing steel pipe pile bulkhead wall. The backfill soils behind the existing bulkhead wall will be removed and replaced or densified to improve seismic stability, and a new concrete beam may be constructed along the top of the existing perimeter wall to improve structural strength. Additional tie-backs may be constructed and/or existing tie-backs may be strengthened or replaced, and a new cathodic protection system will be installed to reduce the potential for long-term corrosion. Some in-water works will also be undertaken along the outer face of the perimeter wall, in deep water (approximately 10 metres (33 feet) deep at low tide). This work is described below under “berthing/mooring upgrades”. The construction method in both areas is expected to involve pile-driving for steel pipe piles. Land-based equipment or machinery used during the upgrades will only operate from upland areas. |
### CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES

#### Berthing/mooring upgrades

A new vessel breasting face equipped with modern fender systems will be constructed off of the outside of the existing bulkhead wall. Four new breasting dolphin structures will be placed approximately 10 metres further out into the river on support piles located in the river. Each of the four breasting structures will be equipped with modern fenders and quick-release mooring hooks for the vessel’s mooring lines. Four additional mooring points (also with quick-release hooks) will be constructed on shore. Any water-based equipment or machinery (for example a pile-driving barge) moored or used during the Project will make use of vertical spuds or other anchors to hold the water-based machinery or equipment in place and prevent grounding in intertidal or subtidal areas. Whenever and wherever possible, best efforts will be made to install steel pipe piles using equipment, machinery and methods in accordance with the requirements set out by Fisheries and Oceans Canada.

#### Fuel off-loading and Transfer

Fuel off-loading from vessels will be accomplished using articulated hydraulic cargo transfer arms or hoses which connect to the vessel’s fuel manifold and allow the fuel to be pumped directly to the storage tanks located on adjacent land via pipeline. The transfer arms and/or hose-handling crane will be mounted on a concrete off-loading platform equipped with spill containment and collection equipment. The unloading platform will be supported by piles located in the river. The short transfer pipeline connecting the new berth face to the storage tanks, and associated ancillary infrastructure, will be located on land owned by VAFFC or land leased by VAFFC from the Port. The exception will be the portion of the transfer pipeline crossing under Williams Road. As with fuel pipelines, the hydraulic cargo transfer arms and/or hose-handling crane will be regulated by the Oil and Gas Commission under the Pipeline Act.
### Conanotional Description and Typical Activities

<table>
<thead>
<tr>
<th><strong>Definition (as per the section 11 and 13 orders)</strong></th>
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<tr>
<td><strong>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</strong></td>
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<table>
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<tr>
<th><strong>Dredging (may not be required)</strong></th>
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<tbody>
<tr>
<td>If required, conduct infrequent (e.g., once every 2 years) dredging in deep water between the face of the new berthing configuration and the navigation channel to provide the necessary underkeel clearance for larger vessels. This would likely be timed to coincide with routine river dredging undertaken by the Port. However, VAFFC would be responsible for this activity &amp; for obtaining the necessary permits. Dredged material is currently a valued commodity that VAFFC would plan on disposing of to the appropriate vendors on land. Disposal at sea would not be a consideration.</td>
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<tr>
<th><strong>Utilities</strong></th>
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<tbody>
<tr>
<td>Power, communications, water and drainage utilities will be needed for construction and to service the terminal during operations. Utilities are located nearby and will be extended to the terminal footprint. Drainage from the terminal will be designed to prevent off-site transportation of deleterious substances during construction and operations/maintenance. An approval under the Water Act will be sought in the event that use of surface water for construction activities is required.</td>
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<table>
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<tr>
<th><strong>Operations Control</strong></th>
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<tbody>
<tr>
<td>Operations control and ancillary buildings will be constructed for fuel processing (i.e., testing/sampling and pumping equipment), handling and management. These will be located in upland areas of the marine terminal property.</td>
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<table>
<thead>
<tr>
<th><strong>Security</strong></th>
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<tbody>
<tr>
<td>The terminal will be surrounded by security fencing and monitored through closed-circuit television. Trained personnel will be in attendance throughout the process of vessel berthing and mooring, fuel off-loading/transfer and vessel deberthing.</td>
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<tr>
<td>Definition (as per the section 11 and 13 orders)</td>
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<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td><strong>Emergency Response</strong></td>
</tr>
<tr>
<td><strong>Other</strong></td>
</tr>
<tr>
<td><strong>Construction and operation of an aviation fuel receiving facility</strong></td>
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### Conceptual Description and Typical Activities

<table>
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<th>Definition (as per the section 11 and 13 orders)</th>
<th><strong>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage Tanks</strong></td>
<td>Tanks will be located aboveground and constructed of steel. Each of the six tanks will be approximately 30 meters (98 feet) in diameter and 15 meters (49 feet) high. Tanks will be located above an impermeable liner and surrounded by a raised perimeter retention berm – secondary containment system, with oil/water separators, will be designed and constructed in accordance with federal regulations governing the aboveground storage of petroleum hydrocarbons.</td>
</tr>
<tr>
<td><strong>Operations Buildings</strong></td>
<td>Construct buildings to accommodate facility control systems and personnel.</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Construct perimeter security fencing around the facility and monitor and control access through closed circuit television.</td>
</tr>
<tr>
<td><strong>Emergency Response</strong></td>
<td>Comprehensive spill/fire prevention, preparedness and emergency response measures will be incorporated into the planning of facility construction and operations. All personnel will be trained in safety, prevention, preparedness and response measures.</td>
</tr>
<tr>
<td>Definition (as per the section 11 and 13 orders)</td>
<td>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Construction and operation of pipeline to transfer fuel from the marine terminal to the aviation fuel receiving facility</td>
<td><strong>Construction and Operation</strong></td>
</tr>
</tbody>
</table>

Construct pipeline to transfer off-loaded fuel to the storage tanks at the nearby receiving facility. Pipeline will be approximately 406 to 508 millimetres (16 to 20 inches) in diameter and approximately 0.5 kilometres (0.3 miles) long. Pipeline sections will be welded and located on a raised rack where it connects with the cargo off-loading system. Cathodic protection measures will be implemented for any section of pipeline that is buried, to inhibit corrosion potential. Automated leak detection and shut-off systems will be incorporated for the entire length of the pipeline. The pipeline will be regulated by the B.C. Oil and Gas Commission under the Pipeline Act. An approval under the Water Act will be sought in the event that use of surface water for construction activities is required.

**Emergency Response**

Comprehensive spill/fire prevention, preparedness and emergency response measures will be incorporated into the planning of pipeline construction and operations. All personnel will be trained in safety, prevention, preparedness and response measures.
<table>
<thead>
<tr>
<th><strong>Definition (as per the section 11 and 13 orders)</strong></th>
<th><strong>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</strong></th>
</tr>
</thead>
</table>
| Construction and operation of pipeline to deliver fuel from the aviation fuel receiving facility to VAFFC’s facilities at YVR | **Construction and Operation**

Construct pipeline to deliver the stored fuel from the fuel receiving facility to the existing facilities at YVR. Pipeline will be approximately 15 kilometres (9.3 miles) long and 254 to 304 millimetres (10 to 12 inches) in diameter. Pipeline will be welded and constructed in sections and buried at depth. The systematic process is expected to involve trench excavation and slope shoring, placement of aggregate material and pipeline, section welding and re-covering with native material and repaving, where required. Cathodic protection measures will be implemented for the entire pipeline length to inhibit corrosion potential. Automated leak detection and shut-off systems will be incorporated for the entire length of the pipeline. Crossings of major roads and watercourses will be directionally drilled underground (e.g., Highway 99 and the Moray Channel). A preliminary reference alignment has been identified under existing transportation/utility corridors in Richmond that requires further consultation and refinement. The pipeline will be regulated by the B.C. Oil and Gas Commission under the Pipeline Act. An approval under the Water Act will be sought in the event that use of surface water for construction activities is required.

**Emergency Response**

Comprehensive spill/fire prevention, preparedness and emergency response measures will be incorporated into the planning of pipeline construction and operations. All personnel will be trained in safety, prevention, preparedness and response measures.
<table>
<thead>
<tr>
<th><strong>Definition (as per the section 11 and 13 orders)</strong></th>
<th><strong>CONCEPTUAL DESCRIPTION AND TYPICAL ACTIVITIES</strong></th>
</tr>
</thead>
</table>
| Movement of vessels transporting aviation fuel within the South Arm of the Fraser River to and from the marine terminal, including fuel off-loading and transfer at the marine terminal | **Operations**  
This activity will occur as a result of the proposed Project during the operations/maintenance phase. The proposed Project will be designed to accommodate barges, Handysize tankers and Panamax-class tankers. Vancouver Airport Fuel Facilities Corporation will not own or operate vessels or manage their movement to and from the marine terminal. Vessels will be owned and operated by individual shippers. The movement of commercial vessels transporting aviation fuel in Canadian waters is regulated by Transport Canada under the Canada Shipping Act and Transportation of Dangerous Goods Act and administered/managed by the Canadian Coast Guard under the Marine Communications and Traffic Services Program. Under the Canada Marine Act responsibility for the movement of vessels in the Fraser River lies within the jurisdiction of the Port and under the management of the Fraser River Pilots and Pacific Pilotage Authority.  
Vancouver Airport Fuel Facilities Corporation can exercise control over the types, sizes and technical design characteristics of vessels servicing the marine terminal. Vancouver Airport Fuel Facilities Corporation will require that all shippers comply with relevant federal regulations and international codes governing the shipment of aviation fuel on vessels in Canadian waters, and that all vessels servicing the proposed Project are double-hulled, regardless of federal requirements.  
The feasibility and risks associated with vessels transporting fuel within the Fraser River (i.e., simulation modelling for Panamax-class river transits from Sand Heads to the marine terminal, and passing vessel forces simulation modelling) will be assessed in the Application, together with the probability and risk of a fuel release incident and the potential fate and effects of fuel in the event a release was to occur in the river. A Full Mission Bridge simulation for the Fraser River Pilots is anticipated during the detailed design stage. |
2.4.3 Project Delivery Mechanism

This subsection will provide a description of the proposed Project delivery mechanism (e.g., Design/Build option) or, in the event that the details of the delivery mechanism have not been determined, describe the range of options being considered.

2.4.4 Project Constraints

This subsection will provide a description of any significant development constraints to be faced by the proposed Project (e.g., fisheries habitat issues, physical barriers, land use conflicts, navigational issues, geotechnical issues, distance constraints, soils/water contamination, etc.) for the construction and operations/maintenance of proposed Project components.

2.4.5 Project Security

This subsection will provide a description of security measures to be implemented for the proposed marine terminal, fuel receiving facility and fuel pipelines.

2.4.6 General Project Plan and Schedule

This subsection will provide:

- an outline of the general proposed Project plan and schedule including estimated timeframe for processing environmental approvals, key milestones, a projected target date for the commencement of construction, key activities that must be completed in order to achieve this construction start date, and a forecast target date for the commencement of operations;

- an outline of expected construction activities, methodologies and sequencing for each proposed Project component;

- a description of work anticipated in advance of the targeted commencement of construction date and reasons for this work taking place; and

- a description of anticipated schedules, activities, and milestones related to proposed Project operations/maintenance.

2.4.7 Property Requirements

This subsection will provide a description of:

- federal, provincial or municipal agreements required to construct and/or operate/maintain the proposed Project; and
• federal, provincial, municipal or private land purchases/leases required to construct and/or operate/maintain the proposed Project.

2.4.8 Capital Costs and Financing

This subsection will provide:

• an estimated breakdown budget estimate for completing the proposed Project consistent with the engineering and design mechanisms described in the Application; and

• a description of the financing and business model for the proposed Project.

2.4.9 Labour Force

This subsection will provide:

• an estimation of direct construction workforce requirements for the proposed Project;

• an indication of from which location(s) the workforce would originate; and

• an estimation of direct operation and maintenance workforce requirements for the proposed Project.

2.4.10 Business Opportunities

This subsection will provide:

• an estimate and description of potential business opportunities (direct and indirect) relating to the proposed Project’s construction and operations/maintenance; and

• a description of the importance of fuel delivery to YVR, and the importance of YVR to the Lower Mainland and the Province, referencing YVR’s Economic Impact Study (2005).

2.4.11 Construction Scheduling and Sequencing

This subsection will provide a proposed construction schedule diagram/flow chart identifying major tasks and timelines.

2.5 Alternative Means of Undertaking the Proposed Project

This section will provide a brief description of the alternative means for undertaking the proposed Project and will include the:
• identification of key issues in considering the alternative(s);

• analysis of the alternative means of carrying out the proposed Project that are technically and economically feasible; and

• identification of the rationale for selecting the preferred alternative(s).

2.6 Project Land Use

This section will provide a brief description of:

• the land ownership and land use regime including tenures, licenses, permits or other authorizations that would be potentially affected by the proposed Project and report on the status of consultations with holders of such tenures and permits, and private land owners on resolving issues with tenure and permit holders;

• any Land and Resource Management Plans that the proposed Project overlaps and list the management objectives of the Land and Resource Management Plans;

• existing and proposed management and monitoring programs or regional studies;

• other projects, even if not directly related to the proposed Project, that may result in overlapping effects with the proposed Project; and

• future projects that are reasonably foreseeable and sufficiently certain to proceed.

2.7 Project Benefits

This section will provide a list of proposed Project benefits including, but not limited to:

• a summary of the direct and indirect employment in person-years for the construction and operations/maintenance phases;

• a summary of the capital investment required;

• an estimate of the direct and indirect government revenues that would be expected over the life of the proposed Project, including any taxes and fees payable to the province and to local government;

• an estimate of contributions to the provincial gross domestic product; and
• an estimate of contributions to environmental, social, economic, and public health.

2.8 Regulatory Framework

This section will:

• describe the relevant federal and provincial legislative and policy requirements governing proposed Project development; and

• identify and describe applicable local government official planning and zoning requirements.

2.9 Applicable Permits

This section will:

• identify and list the relevant permits, approvals, licences, authorizations and notifications required to complete the discipline-specific environmental assessment studies in support of the Application, and which will be required for proposed Project construction and operations/maintenance; and

• indicate which of the regulatory applications will be submitted for concurrent review under Section 23 of the BCEAA, consistent with the Concurrent Approval Regulation (B.C. Reg. 371/2002).

2.10 References

This section will include a list of all supporting references used in this chapter of the Application.
3 Assessment Process

This chapter of the Application will describe the information distribution and consultation activities (i.e., open houses, meetings with interested parties, enclosures in community papers, media interviews, participation in community events) and direct communications (i.e., letters, phone calls, faxes and emails) undertaken prior to and during the Pre-Application stage, and those activities planned during and subsequent to the formal Application review process. This chapter will also document consultations with federal, provincial and local government agencies and regulatory authorities, as well as key stakeholders (e.g., land and resource tenure holders in the proposed Project Area), and issues and concerns raised during the preparation of the AIR and the Application.

The following sections of this chapter are proposed:

3.1 Introduction

This section will provide an introduction and background to the harmonized provincial and federal review, and First Nations, public and agency information distribution consultation.

3.2 Provincial Review

This section will include:

- a list of the provincial agencies/departments/organizations likely to be involved in the review;
- a list and discussion of applicable provincial milestones; and
- a tabulated record to documented issues and concerns raised during the preparation of the AIR and the Application.

3.3 Federal Review

This section will include:

- a list of the federal agencies/departments/organizations likely to be involved in the review, and their anticipated or confirmed roles including the responsible authority, federal authority, or federal environmental assessment coordinator;
- a list and discussion of applicable federal milestones; and
- a tabulated record to document issues and concerns raised during the preparation of the AIR and the Application.
3.4 First Nations Information Distribution and Consultation

This section will provide a summary of consultation activities undertaken with the identified First Nations and Treaty Nations potentially affected by the proposed Project.

Substantive details on First Nations Consultation will be included in Chapter 13: Aboriginal Consultation under Part C: First Nations Information Requirements of the Application.

3.5 Public and Agency Information Distribution and Consultation

This section will summarize VAFFC’s past and proposed public and agency consultation initiatives, in accordance with the consultation provisions set out in the section 11 and 13 orders issued by the EAO.

This section will also:

- include a summary of consultations with public and other key stakeholders, federal, provincial and local government agencies;
- describe the means of information distribution and consultation used at public meetings and open houses; one-on-one meetings with interested parties; publication of articles in the media, enclosures and community newspapers; through interviews on local radio and television; and by means of participation in community events; and
- include a summary of issues, concerns and interests identified during these consultations, and how these matters were addressed.

3.5.1 Pre-Application Consultation

This subsection will include an outline of consultations undertaken in the pre-Application stage, covering both the preparation of the AIR and the Application, and will:

- include a summary of consultations with public and other key stakeholders;
- include a summary of consultations with federal, provincial and local government representatives;
- include a summary of responses provided regarding issues raised by the public and government agencies; and
- indicate the degree to which issues are considered resolved or addressed by VAFFC and other parties.
3.5.2 Consultation Planned During Application Review

This subsection will:

- describe the public consultation program proposed for the Application review stage;
- describe the proposed programs for consultation with government agencies; and
- document the proposed methods and process to resolve outstanding issues.

3.6 Access to Information

This section will provide a description as to how proposed Project information has been and will continue to be made available to government agencies, First Nations and the public.

3.7 References

This section will include a list of all supporting references used in this chapter of the Application.
PART B – ASSESSMENT OF PROJECT EFFECTS, MITIGATION, AND SIGNIFICANCE OF RESIDUAL EFFECTS

Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application will provide a thorough assessment of potential environmental, social, economic, heritage and health effects as a result of construction and operation/maintenance of the proposed Project, and will include a description of recommended mitigation measures to reduce or eliminate potential effects. It will also include an assessment of potential cumulative impacts, residual effects and their significance, following the implementation of mitigation measures, which will form the basis for the federal cumulative environmental effects assessment in Part D of the Application. Each of the discipline-specific studies that will form Part B of the Application will also meet federal requirements for the assessment of environmental effects, environmental changes and species at risk.

The proposed Project will have an indefinite lifespan; therefore, the scope of the environmental assessment will not include an assessment of potential effects associated with decommissioning of permanent structures. It is anticipated that a separate decommissioning plan would be required prior to any decommissioning of Project components to evaluate potential effects, based on resource values, public interests, characteristics and legislative requirements relevant to that time. Analysis of the effects resulting from temporary decommissioning of construction-related facilities will occur within the consideration of construction phase effects.

The discipline-specific environmental assessment studies that will form the basis of Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application, have been undertaken based on the draft Environmental Assessment Study Work Plans document submitted to the EAO in July 2009.
4 Assessment Scope and Methodology

4.1 Approach to Effects Assessment and Management

This section of the Application will provide a description of the approaches taken to identify, assess and manage potential environmental, social, economic, heritage, and health effects of the proposed Project consistent with provincial and federal environmental assessment requirements and legislative mandates. Potential cumulative impacts, as defined by the EAO, will be considered and integrated within each of the discipline-specific assessments of the effects analysis. Federal assessment methodology that will be followed in the effects assessment is described in Part D: Federal Assessment Requirements.

4.2 Scope of the Assessment

This section will provide a description of the issues scoping process used to identify potential Project-related environmental, social, economic, heritage, and health effects, including the influence of consultations during this scoping process and the scope presented in the section 11 and 13 orders issued by the EAO.

In addition, this section will also provide an overview of the federal scoping and the CEAA requirements pertaining to environmental effects, analysis of expected environmental changes as a result of the proposed Project, and potential effects on listed wildlife.

This section will provide a summary of the technical discipline-specific assessments that will be included in Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application, consistent with the EAO’s five effects assessment pillars and AIR Template Guideline:

Environmental Effects Assessment:

- Fisheries, Aquatics and Water Quality Assessment
- Vegetation, Wildlife and Wildlife Habitat Assessment
- Local and Regional Air Quality and Climate Change Assessment;
- Noise Assessment
- Screening Level Contaminated Sites Assessment

Social and Economic Effects Assessment:

- Socio-economic and Socio-community Assessment
Heritage Effects Assessment:

- Archaeological, Historical and Heritage Resources Assessment

Human Health Effects Assessment:

- Air Quality Health Effects
- Noise Health Effects
- Socio-economic and Socio-community Health Effects
- Water Quality Health Effects

First Nations interests will be addressed under Part C: First Nations Information Requirements of the Application.

4.3 Assessment Methodology

This section will describe how the environmental assessment was performed, identify components of the effects assessment and the indicators and data sources used to consider all potential proposed Project effects, and explain how the cumulative impacts and significance of residual effects were determined.

Baseline studies and assessment analyses will follow relevant provincial and federal standards, such as the Resource Information Standards Committee standards, and guidance. A description and/or reference for each standard, and a list of applicable provincially and regionally developed best management practices and guidance materials to be followed will be provided in each of the technical discipline studies.

The physical (spatial) boundaries and timeframes (temporal) from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur will be described and/or mapped in each of the technical discipline studies.

4.3.1 Selection of Valued Components

This subsection will provide a description of the rationale and criteria used for determining potentially affected Valued Components\(^1\). The specific Valued Components will be evaluated in each of the appropriate assessment sections in Part

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\(^1\) Valued Components are any part of the environment, including social, economic, heritage and health components, which is considered important by the Proponent, members of the public, scientists, government and First Nations involved in the assessment process. Importance may be determined on the basis of heritage value or scientific concern. The specific Valued Components considered will be defined in the Application.
B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application (e.g., fisheries and aquatics Valued Components will be presented in Section 5.2: Fisheries, Aquatics and Water Quality Assessment, and wildlife Valued Components will be presented in Section 5.3: Vegetation, Wildlife and Wildlife Habitat Assessment), where appropriate.

Proposed Valued Components pertaining to ecosystems and biophysical resources potentially affected by the proposed Project include:

- **Terrestrial and Aquatic Vegetation**
  - Eelgrass Beds
  - Marshes
  - Intertidal Mudflats/Biofilm
  - Rare and at Risk Plants and Plant Communities

- **Terrestrial and Aquatic Fauna**
  - Aquatic Birds
  - Marine Mammals
  - Terrestrial Wildlife
  - Terrestrial Birds
  - Non-Avian Species at Risk
  - Bird Species at Risk
  - Provincially red- and blue-listed fish species, as well as yellow-listed species of concern
  - Fish species identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to be endangered, threatened, or of special concern
  - Fish species of special concern according to the Species at Risk Act (SARA)
  - Species-at-risk requiring protection under the provincial Identified Wildlife Management Strategy
4.3.2 Determination of Cumulative Impacts

Consistent with requirements of the EAO, this subsection will provide a description of the general rationale and criteria used to determine whether the proposed Project will have significant adverse cumulative environmental, social, economic, heritage or health impacts.

This subsection will:

- include methodology and rationale used to identify other projects, including other reasonably foreseeable future further that may, in concert with the potential effects of the proposed Project, lead to cumulative impacts; and

- provide a summary table identifying and describing the projects included in the cumulative impacts assessment for each of the studies in Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application, where relevant.

The provincial cumulative impacts assessment will consider:

- approved land use plans that designate the most appropriate activities on the land base;

- comprehensive baseline studies which set out the current conditions and thereby factor in effects of prior development;

- consideration of potential overlapping impacts that may be occurring due to other projects, even if not directly related to the proposed Project; and

- consideration of future projects that are reasonably foreseeable and sufficiently certain to proceed.

The federal requirements for assessment of cumulative environmental effects will be addressed in Chapter 22: Cumulative Environmental Effects of the Application.

4.3.3 Determination of Mitigation Measures and Management Strategies

This subsection will provide a description of:

- methods used, including the influence of public, First Nations, and government agency consultations, to identify and develop mitigation measures and
management strategies to avoid, reduce, or otherwise mitigate potential effects of the proposed Project;

- potential compensation measures where the proposed Project is expected to result in significant adverse effects that cannot be avoided or mitigated, and for adverse effects that are not significant but where compensation would be appropriate as determined in consultation with the relevant agencies and/or authorities; and

- feasibility for any compensation measures, including the limitations for successful and effective implementation; where direct compensation is not practical or possible, describe potential consequences to valued/sensitive resources and/or the social setting.

4.3.4 Determination of Residual Effects and their Significance

This subsection will provide a description of the general rationale and criteria used to determine residual effects and their significance, including the establishment of clearly defined threshold criteria or standards beyond which residual effects would be considered significant. Specific study component significance criteria will be presented at the end of each effects assessment section.

Residual effects are defined as environmental changes that result from a project after mitigation measures have been incorporated. As much as possible, the “significance” of residual effects is quantified with an assessment of the level of effect according to defined parameters and evaluation criteria.

The “significance” of predicted residual effects after mitigation measures have been applied will be assessed as described in the Reference Guide: Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects (Federal Environmental Assessment Review Office, 1994). It is intended that application of defined criteria will enable a systematic and objective determination of “significance”, which is both defensible and transparent, and which reduces or eliminates biases in deciding the importance of adverse effects following mitigation. It is recognized that the final determination of significance rests with the federal Responsible Authorities and with the EAO.

The following factors will be used, where appropriate, for the analysis of whether any residual adverse effects after mitigation would be significant:

- **Magnitude**: This refers to the magnitude or severity of the effect. Low magnitude effects may have no impact, while high magnitude effects may have an impact.

- **Geographic Extent**: This refers to the extent of change over the geographic
area of a proposed project. The geographic extent of effects can be local or regional. Local effects may have a lower impact than regional effects.

- **Duration and Frequency**: This refers to the length of time the effect lasts and how often the effect occurs. The duration of an effect can be short term or long term. The frequency of an effect can be frequent or infrequent. Short term and/or infrequent effects may have a lower impact than long term and/or frequent effects.

- **Reversibility**: This refers to the degree to which the effect is reversible. Effects can be reversible or permanent. Reversible effects may have lower impact than irreversible or permanent effects.

- **Context**: This refers to the ability of the environment to accept change. For example, the effects of a project may have an impact if they occur in areas that are ecologically sensitive, with little resilience to imposed stresses.

- **Probability**: The likelihood that an adverse effect will occur in circumstances where it is not certain that the effect will materialize.

4.4 **References**

This section will include a list of all supporting references used in this chapter of the Application.
5 Assessment of Environmental Effects

5.1 Environmental Context

This section of the Application will provide a general description of the existing biophysical environment, including surrounding areas within the zone of potential influence of the proposed Project. Description of the biophysical environment will include an overview of the aquatic, terrestrial, air and noise setting associated with the proposed Project, including any existing contaminated sites.

This section will also describe and/or map the proximity of the proposed Project to designated environmentally sensitive areas, ecological reserves, protected and other sensitive areas (e.g., Ramsar sites, Western Hemisphere Shorebird Reserve Network designated sites, Important Bird Areas, Wildlife Management Areas, National Wildlife Areas, Migratory Bird Sanctuaries, Provincial Ecological Reserves, Fraser River Estuary Management Program-coded habitat, other wetland habitats, known bird migration corridors, any known areas containing significant concentrations of staging, wintering or summering migratory or resident birds, and any land containing wildlife designated as ‘at risk’ under SARA).

5.2 Fisheries, Aquatics and Water Quality Assessment

5.2.1 Introduction

This subsection will provide an introduction and background to the Fisheries, Aquatics and Water Quality Assessment.

5.2.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used for the Fisheries, Aquatics and Water Quality Assessment; and

- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

5.2.3 Existing Baseline Conditions

This subsection will:

- describe existing fisheries and aquatic resource values in the Study Area including identification and potential presence of provincially red-listed and blue-
listed species, as well as federally listed species under SARA and COSEWIC, and species of regional or First Nations importance; and City of Richmond Riparian Management Areas.

5.2.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

- assess the potential Project-related effects on fish and aquatic resources, including but not limited to: changes in fish populations or fish passage, degradation of instream and riparian habitat (i.e., potential changes in erosion and deposition rates to sensitive downstream habitats);

- identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area;

- identify and describe mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on fish, aquatic and hydrogeological resources during proposed Project construction and operations/maintenance; and

- recommend mitigation measures that ensure all reasonable precautions necessary are taken to prevent pollution and meet all provincial requirements for waste discharges to the environment, including those outlined under the Environmental Management Act, Petroleum Storage and Distribution Facilities Storm Water Regulation, and Waste Discharge Regulation.

5.2.5 Potential Residual Effects and their Significance

This subsection will:

- identify and describe the potential residual effects following implementation of mitigation measures and management strategies; and

- discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

5.2.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.
5.3 Vegetation, Wildlife and Wildlife Habitat Assessment

5.3.1 Introduction

This subsection will provide an introduction and background to the Vegetation, Wildlife and Wildlife Habitat Assessment.

5.3.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used for the Vegetation, Wildlife and Wildlife Habitat Assessment; and
- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

5.3.3 Existing Baseline Conditions

This subsection will describe the existing vegetation, wildlife (amphibians, reptiles, birds, mammals and insects) and wildlife habitat in the Study Area, including provincially red-listed and blue-listed species, as well as federally listed species under the SARA and the COSEWIC, and species of regional or First Nations importance, and species with a known range that overlaps with the Study Area (i.e., migratory birds), and for which suitable habitat may be present.

5.3.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

- assess the potential Project-related effects on vegetation, wildlife and wildlife habitat, including but not limited to: habitat alteration, loss or fragmentation, displacement and disturbance of vegetation and wildlife, access management, and potential introduction of invasive plant species;
- assess estuarine and riparian vegetation, estuarine and marine wildlife including pinnipeds (seals and sea lions), cetaceans (whales and dolphins) and avifauna (coastal waterbirds), and terrestrial vegetation and wildlife habitat;
- identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area; and
• identify and describe mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on vegetation and wildlife resources during proposed Project construction and operations/maintenance.

5.3.5 Potential Residual Effects and their Significance

The subsection will:

• identify and describe potential residual effects following implementation of mitigation measures and management strategies; and

• discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

5.3.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.

5.4 Local and Regional Air Quality and Climate Assessment

5.4.1 Introduction

This subsection will provide an introduction and background to the Local and Regional Air Quality and Climate Assessment.

5.4.2 Approach and Methodology

This subsection will:

• describe the methodology and rationale used for the Local and Regional Air Quality and Climate Assessment (i.e., review of historical meteorological and ambient air quality monitoring data, inventories of emissions from existing sources, dispersion modelling, etc.); and

• provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

5.4.3 Existing Baseline Conditions

This subsection will:
• describe the baseline air quality characteristics in the Study Area(s) including review of available existing air quality and meteorological information data and local, regional and federal air quality standards and objectives, and a description of air quality contaminant contributors (i.e., vehicle, industry, etc.), including a description of potential contaminants;

• determine baseline air quality conditions from air quality monitoring stations, and local ambient air quality data and emission inventories that have been developed by Environment Canada and Metro Vancouver; and

• identify the relevant agency or agencies responsible for reviewing any permit applications for specific activities relating to air quality and reference all applicable air quality bylaws, objectives and guidelines.

5.4.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

• assess proposed Project-related effects on air quality, including but not limited to: air pollutant emissions from activities associated with proposed Project construction and operations/maintenance, changes in emissions from proposed Project construction and operations/maintenance, and description of emissions offset from proposed Project operations (i.e., replacement of fuel truck deliveries due to proposed Project);

• include consideration of the following contaminants: particulate matter, oxides of nitrogen, oxides of sulphur and volatile organic compounds. The assessment will also consider the following greenhouse gases: carbon dioxide, methane and nitrous oxide;

• assess the potential effect of the proposed Project emissions based on a detailed activity-based emissions inventory and compare estimated future emissions to existing emissions;

• identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area; and

• identify and describe emission reduction and mitigation strategies, consistent with industry standards and best affordable practices, to avoid, minimize or mitigate potential adverse impacts on air quality during proposed Project construction and operations/maintenance.
5.4.5 Potential Residual Effects and their Significance

This subsection will:

- identify and describe potential residual effects following implementation of mitigation measures and management strategies; and

- discuss the significance of potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

5.4.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.

5.5 Noise Assessment

5.5.1 Introduction

This subsection will provide an introduction and background to the Noise Assessment.

5.5.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used to complete the Noise Assessment; and

- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

5.5.3 Existing Baseline Conditions

This subsection will:

- describe the existing acoustic conditions in the Study Area, including: review of municipal noise by-laws and guidelines and standards, measure of the existing ambient noise conditions and identification of noise sensitive land uses (i.e., residences, schools, health care facilities, or areas of First Nations value, etc.) and noise producers (i.e., industry, traffic, etc.); and
• obtain 48-hour continuous baseline noise monitoring carried out at two residential locations that are judged to be the most likely to be affected by operations noise from the proposed Project.

5.5.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

• assess the Project-related effects on noise conditions, including but not limited to: identification of potential effects on the community including interference with essential activities (i.e., speech communications and sleep) and generation of annoyance and negative reactions from community members;

• use Cadna/A outdoor sound propagation software to model upgrades to the marine terminal including dredging (if dredging is required) and pile driving, construction of the fuel receiving facility and installation of fuel pipeline adjacent to residential housing;

• identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area; and

• identify mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on acoustic conditions during Project construction, operation and maintenance, including identification of monitoring and follow-up requirements.

5.5.5 Potential Residual Effects and their Significance

This subsection will:

• identify and describe potential residual effects following implementation of mitigation measures and management strategies; and

• discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

5.5.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.
5.6 Screening Level Contaminated Sites Assessment

5.6.1 Introduction

This subsection will provide an introduction and background to the Screening Level Contaminated Sites Assessment.

5.6.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used for the Screening Level Contaminated Sites Assessment, in accordance with the applicable provincial/federal regulations; and

- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

5.6.3 Existing Baseline Conditions

This subsection will describe the existing contamination issues in the Study Area, through an historical review and selective site reconnaissance, including a review of previous assessments, air photographs, and local/municipal information, identification of applicable legislation and regulations, as well as characterization of soil conditions, summary of historical land use activities to determine potential sources of contamination, and identification of existing contaminated sites and suspected contaminants.

5.6.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

- assess Project-related effects on contaminated sites, including but not limited to: an evaluation of areas of potential soil and/or groundwater contamination due to historical and current land use activities and description of potential contamination due to proposed Project activities;

- assess baseline potential for, and the presence/absence of, contaminated materials including soil, sediment, surface water, groundwater, and soil vapour, where appropriate, based on proposed Project construction activities;

- assign a risk ranking along the preliminary pipeline reference alignment and possible pipeline routing alternatives, and at the marine terminal and proposed
location for the fuel receiving facility, corresponding to high, moderate or low risk of contamination;

- identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area;

- identify mitigation measures and environmental management strategies consistent with the Environmental Management Act and the Hazardous Waste Regulation to avoid, minimize or mitigate potential adverse effects on the environment with respect to contaminated sites during Project construction and operations/maintenance;

- include recommendations for Phase 1 and Phase 2 assessments of specific sites, suggested mitigation/remediation options for consideration or collection of other information consistent with provincial/federal regulations and guidelines (e.g., through interviews or review of third party environmental reports). The Phase 1 or Phase 2 assessments would identify and quantify background contaminant levels in areas warranted by the Screening Level Contaminated Sites Assessment. Alternatively, the Ministry of Environment’s Water Quality Objectives/Guidelines and the Canadian Council of Ministers of the Environment’s Canadian Environmental Quality Guidelines may be used as reference standards for clean-up; and

- include preparation of an outline for a Contaminated Sites Management Plan to manage existing contaminated sites, as well as those discovered during construction.

5.6.5 Potential Residual Effects and their Significance

This subsection will:

- identify and describe potential residual effects following implementation of mitigation measures and management strategies; and

- discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

5.6.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.
5.7 Summary of Potential Environmental Effects

This section will include a table summarizing the environmental effects analysis.
6 Assessment of Social and Economic Effects

6.1 Social and Economic Context

This section of the Application will include a general description of the existing social and economic context, including surrounding areas within the zone of potential influence of the proposed Project. Description of the social and economic context will consider contract and business opportunities, employment opportunities, labour income generated and local unemployment rate and trends.

This section will also describe and/or map the proximity of the proposed Project to any national/provincial/regional/municipal parks, trails and recreational areas.

6.2 Socio-community and Socio-economic Assessment

6.2.1 Introduction

This subsection will provide an introduction and background to the Socio-community and Socio-economic Assessment.

6.2.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used for the Socio-community and Socio-economic Assessment; and

- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

6.2.3 Existing Baseline Conditions

This subsection will describe the existing socio-economic and socio-community characteristics in the Study Area. This subsection will also include a review of background information such as existing and proposed recreational resources (e.g., City parks and trails), Official Community Plans, local government bylaws and designations, regional strategic plans, etc. Other areas of interest include land use planning and designations (i.e., FREMP, First Nations reserves), identification of Development Permit Areas, Environmentally Sensitive Areas, populations and demographics, and information on First Nations communities.
6.2.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

- assess five broad categories including: land use impacts, socio-economic impacts, community impacts, community/institutional arrangements and quality of life;

- assess the potential proposed Project-related effects on socio-economic and socio-community components, including estimated initial construction costs, approximate capital costs over the life of the proposed Project, annual operating costs, employment and training (measured in person years), estimated annual regional and municipal government revenue, estimated annual provincial government revenue and estimated procurement of local goods and services;

- assess the potential proposed Project-related effects on socio-economic and socio-community conditions, including labour force estimates, economic impact and Crown revenues including

- assess potential proposed Project-related effects on land and resource use, including but not limited to: existing and future land use, access to land, designated environmentally sensitive areas, and any additional relevant policies (local, regional, provincial, federal, or of First Nations’ interest);

- identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area;

- identify mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on socio-economic and socio-community conditions, land and resource use, during proposed Project construction and operations/maintenance; and

- state all assumptions and references used to complete the socio-economic and socio-community assessment.

6.2.5 Potential Residual Effects and their Significance

This subsection will:

- identify and describe potential residual effects following implementation of mitigation measures and management strategies; and
• discuss the significance of potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

6.2.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.

6.3 Summary of Potential Social and Economic Effects

This section will include a table that summarizes the social and economic effects analysis.
7 Assessment of Heritage Effects

7.1 Heritage Context

This section of the Application will include a general description of the existing archaeological, historical and heritage resources located within the zone of potential influence of the proposed Project.

The services of a consulting archaeologist have been retained to conduct an archaeological overview assessment and, if required, an archaeological impact assessment consistent with the British Columbia Archaeological Impact Assessment Guidelines (Archaeology Branch 1998, available on the Archaeology Branch website). The archaeologist’s permit reports will be submitted to the Archaeology Branch well in advance of the environmental assessment process review deadlines.

In accordance with the Heritage Conservation Act and the Freedom of Information and Protection of Privacy Act, information posted on the EAO’s electronic Project Information Centre and/or the CEA Agency’s Project Registry will not include specific site locations on maps and will show maps within a scale between 1:50,000 and 1:250,000.

This section will also describe and/or map the proximity of the proposed Project to existing archaeological, historical and heritage sites.

7.2 Archaeological, Historical and Heritage Resources Assessment

7.2.1 Introduction

This subsection will provide an introduction and background to the Archaeological, Historical and Heritage Resources Assessment.

7.2.2 Approach and Methodology

This subsection will:

- describe the methodology and rationale used for the Archaeological, Historical and Heritage Resources Assessment. All archaeology surveys will be conducted in accordance with the Heritage Conservation Act; and

- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.
7.2.3 Existing Baseline Conditions

This subsection will describe the archaeological, historical and heritage resources in the Study Area, including review of available information on existing archaeological, paleontological, historical, architectural, and First Nations sites, determination of site significance, and identification of locations that warrant field investigations at the impact assessment level.

7.2.4 Potential Effects and Recommended Mitigation Measures

This subsection will:

- assess potential proposed Project-related effects on archaeological, historical and heritage resources during the construction phase;
- assign an archaeological potential rating from low to high along the preliminary pipeline reference alignment and possible pipeline routing alternatives, at the marine terminal and the proposed location for the fuel receiving facility;
- identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area;
- identify and describe mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on archaeological, historical and heritage resources during proposed Project construction, operations/maintenance; and
- include a preliminary outline of an Archaeological and Heritage Sites Management Plan to manage existing sites, as well as those discovered during construction.

7.2.5 Potential Residual Effects and their Significance

This subsection will:

- identify and describe potential residual effects following implementation of mitigation measures and management strategies; and
- discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.
7.2.6 References

This subsection will include a list of all supporting references used in this discipline-specific component study.

7.3 Summary of Potential Heritage Effects

This section will include a summary table of the heritage effects analysis.
8 Assessment of Human Health Effects

8.1 Human Health Context

This section of the Application will include a general description of the existing human health conditions with respect to air quality, noise, socio-economic and socio-community, and water quality located within the zone of potential influence of the proposed Project.

8.2 Introduction and Approach

This section will:

- provide an introduction to the Human Health Effects Assessment and describe the approach used to scope human health issues, based on technical review and input from the public and government agencies;
- describe existing air quality, noise, and socio-economic and socio-community conditions in the Study Area;
- describe existing water quality conditions in the Study Area, including characterization of general groundwater conditions based on a review of available information, a review of B.C. Ministry of Environment data to identify registered water wells, a review of municipal water supply network data to identify water use, a water well survey to confirm registered and unregistered wells, baseline well water quality data, baseline surface water quality data, and identification of drinking water treatment facilities along and downstream of the proposed pipeline corridor; and
- provide a rationale for, describe and/or map the physical (spatial) boundaries and timeframes (temporal) of the Study Area from which potential effects of construction and operations/maintenance of the proposed Project are anticipated to occur.

8.3 Potential Effects and Recommended Mitigation Measures

This section of the Application will:

- discuss the findings of the air quality, noise, socio-community and socio-economic and water quality effects assessments as they relate to healthy living and human health effects;
• assess the potential Project-related effects on hydrogeological resources, including but not limited to: general groundwater conditions, water wells, surface water quality, and drinking water quality;

• identify and describe any potential contributions to cumulative impacts in combination with other known past, present and foreseeable future projects or activities in the proposed Project Area;

• provide a general determination with respect to potential positive and negative human health effects; and

• identify and describe mitigation measures and environmental management strategies to avoid, minimize or mitigate potential adverse effects on human health during proposed Project construction, operations/maintenance.

8.4 Potential Residual Effects and their Significance

This section will:

• identify and describe potential residual effects following implementation of mitigation measures and management strategies; and

• discuss the significance of the potential residual effects of the proposed Project (i.e., “not significant” or “significant”) considering magnitude, geographic extent, duration and frequency, reversibility, context and probability, as appropriate.

8.5 References

This section will include a list of all supporting references used in this discipline-specific component study.

8.6 Summary of Potential Human Health Effects

The section will include a summary table of the human health effects analysis.
9 Environmental Management Program

This chapter of the Application will describe the approach to environmental management, monitoring and inspection.

A framework for an Environmental Management Program describing the environmental practices and procedures to be systematically applied during proposed Project construction and decommissioning of temporary construction-related facilities, and operations/maintenance will be included in the Application. The objective of the Environmental Management Program will be to minimize environmental effects and other adverse effects throughout the life of the proposed Project.

If the proposed Project is granted an Environmental Assessment Certificate, a comprehensive Environmental Management Program (including detailed component plans) will be developed and, prior to commencement of construction, submitted to the appropriate regulatory agencies and authorities for review and comment.

The following sections of this chapter are proposed:

9.1 Introduction
This section will provide an introduction and background to the Environmental Management Program.

9.2 Approach to Environmental Management
This section will include an overview of VAFFC’s approach to environmental management during the construction and operation/maintenance phases of the proposed Project.

9.3 Environmental Inspection and Compliance Monitoring
This section will detail the reporting structure of the proposed Project including the type and frequency of reports to be submitted to EAO and/or other regulatory federal or provincial agencies.

9.4 Construction Environmental Management Planning
This section will:

- provide a conceptual outline of a Construction Environmental Management Plan, including a table of contents for component plans;
- address environmental practices and procedures to be implemented during the decommissioning of temporary, construction-related facilities; and
- identify monitoring parameters and activities, impact management measures, and reporting protocols to be used to identify, respond to and mitigate impacts during proposed Project construction.

Component plans may include, but will not necessarily be limited to, the following:

- Accidents and Malfunctions Plan
- Air Quality and Dust Control Plan
- Archaeological and Heritage Mitigation / Monitoring Plan
- Communications Plan
- Contaminated Sites Management Plan
- Environmental Education and Awareness Plan
- Environmental Monitoring Plan
- Erosion and Sediment Control Plan
- Fisheries Mitigation Plan
- Hazardous Waste Management Plan
- Health and Safety Plan
- Landscape Restoration Plan
- Noise Management Plan
- Solid and Liquid Waste Management Plan
- Surface Water Quality and Sediment / Erosion Control Plan
- Spill Prevention, Preparedness and Emergency Response Plan
- Traffic Management Plan
- Vegetation and Wildlife Management Plan

9.5 Operations Environmental Management Planning

The section will:
• provide a conceptual outline of an Operations and Maintenance Environmental Management Plan, including a table of contents of component plans; and

• identify monitoring parameters and activities, adaptive management measures, and reporting protocols to be used to identify, respond to and mitigate impacts during proposed Project operations/maintenance.

Component plans may include, but will not necessarily be limited to, the following:

• Accidents and Malfunctions Plan
• Berth Procedures and Provisions Plan
• Communications Plan
• Hazardous Waste Management Plan
• Port Operations Book
• Post-Construction Compliance Monitoring Plan
• Reporting Procedures Plan
• Spill Containment and Management Plan
• Spill Prevention, Preparedness and Emergency Response Plan
• Terminal Operations Manual
• Waste Management Plan

This section will also describe post-construction monitoring requirements, including any that may be identified by the federal Responsible Authorities as a Follow-up Program under the CEAA. Under the CEAA, a Follow-up Program is defined as a program to:

• verify the accuracy of the proposed Project’s environmental assessment;

• determine the effectiveness of any measures taken to mitigate the adverse environmental effects of the proposed Project; and

• report on these findings.

At minimum, the Application will contain outlines of the following monitoring plans:

• Compliance Monitoring Plan; and

• Response Monitoring Plan.
9.6 References

This section will include a list of all supporting references used in this chapter of the Application.
PART C – FIRST NATIONS INFORMATION REQUIREMENTS

This Part of the Application will be developed based on guidelines prepared by the EAO, including the “Proponent Guide for Providing First Nation Consultation Information” and “the Proponent Guide for Providing Treaty Nation Consultation Information”.

10 Background Information

This chapter of the Application will identify and describe the First Nations and Treaty Nations that could be potentially affected by the proposed Project and their asserted or established traditional territory, in consultation with the EAO. Maps of the asserted or traditional territory of the potentially affected First Nations and Treaty Nations will also be included.

In consultation with the EAO, the following First Nations have been identified as being potentially affected by the proposed Project:

- Chemainus First Nation
- Cowichan Tribes
- Halalt First Nation
- Hw'ilitsum First Nation
- Kwantlen First Nation
- Lake Cowichan First Nation
- Lyackson First Nation
- Musqueam First Nation
- Penelakut First Nation
- Semiahmoo First Nation
- Tsawout First Nation
- Tsawwassen First Nation
11 Aboriginal Rights and Treaty Rights

This chapter of the Application will:

- identify past, present and anticipated future uses of the proposed Project Area by aboriginal groups; and

- identify specific aboriginal and treaty rights (including title), currently being practiced or that could potentially be carried out in the future, which are potentially affected by the proposed Project.

11.1 Aboriginal Rights and Treaty Rights Potentially Affected by the Proposed Project

This section will:

- provide a non-confidential summary of information shared by each involved First Nations regarding traditional and current use and knowledge of lands and resources in the proposed Project Area;

- identify, at an overview level, First Nations activities such as: hunting, trapping and fishing, and/or by collection from natural sources (e.g., berries, medicinal plants) in the proposed Project Area; and

- assess the potential proposed Project-related effects on the traditional and current use activities of each First Nation identified and the relative importance of sites used to carry out these activities within the proposed Project Area.

11.2 Recommended Mitigation for Aboriginal Rights and Treaty Rights Affected by the Proposed Project

This section will:

- identify monitoring protocols and mitigation measures to be implemented during the construction phase to avoid or minimize adverse effects to traditional and current use sites and resources; and

- identify the proposed Project stage and context at and in which the prescribed mitigation measure are to be applied.

11.3 Potential Residual Effects and their Significance

This section will:
• identify potential residual effects and significance following implementation of mitigation measures and management strategies; and

• evaluate the environmental, social, economic, heritage or health significance of potential residual effects to the respective identified First Nations.

11.4 Conclusions

This section will summarize and conclude the Other Aboriginal Interests chapter.

11.5 References

This section will include a list of all supporting references used in this chapter of the Application.
12 Other Aboriginal Interests

This chapter of the Application will:

- identify and describe aboriginal interests, other than the rights and treaty rights that will be described in Chapter 11, potentially affected by the proposed Project with respect to potential environmental, social, economic, heritage and health effects (e.g., economic interests and land use plans, social needs, etc.);

- describe how potential effects on these interests have been addressed; and

- outline any recommended mitigation measures or management strategies required.

12.1 Introduction

This section will provide an introduction and background to the Other Aboriginal Interests chapter.

12.2 Aboriginal Interests Potentially Affected by the Proposed Project

This section will identify any relevant aboriginal interest, other than the rights and treaty rights that will be described in Chapter 11, such as land use plans and/or planning objectives proposed, where this information is made available to VAFFC within the timeframes prescribed by the EAO.

12.3 Recommended Mitigation for Aboriginal Interests Affected by the Proposed Project

This section will:

- identify monitoring protocols and mitigation measures to be implemented during the construction phase to avoid or minimize adverse effects to other aboriginal interests; and

- identify the proposed Project stage and context at and in which the prescribed mitigation measure are to be applied.

12.4 Potential Residual Effects and their Significance

This section will:

- identify potential residual effects and significance following implementation of mitigation measures and management strategies; and
• evaluate the environmental, social, economic, heritage or health significance of potential residual effects to the respective identified First Nations.

12.5 Conclusions

This section will summarize and conclude the Other Aboriginal Interests chapter.

12.6 References

This section will include a list of all supporting references used in this chapter of the Application.
13 Aboriginal Consultation

This chapter of the Application will provide a summary of:

- past and planned aboriginal consultation activities; and
- key aboriginal issues and responses to these issues, which will be summarized in a tracking table and posted on the EAO’s online electronic Project Information Centre.

This chapter of the Application will also describe:

- how proposed Project information has been made available to potentially affected First Nations;
- activities undertaken by VAFFC to notify and consult with potentially affected First Nations, during the pre-Application Stage, including the preparation of the AIR and the Application;
- VAFFC’s proposed First Nations notification, information distribution, and consultation activities for the Application review stage, following screening and acceptance of the Application for formal detailed review, including the proposed location and timing of all consultation activities;
- any non-confidential consultation agreements reached with potentially affected First Nations;
- the degree to which First Nations issues have been taken into account, are resolved, and/or addressed and if not accounted for, describe why;
- any further measures the EAO, in consultation with First Nations, may identify to ensure adequate First Nations consultation during the Application Review stage; and
- the process to document, track and resolve or address, if applicable, outstanding First Nations issues.

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2 VAFFC will respect First Nations’ requests for confidentiality. Information to be treated as confidential will not be included in the Application.
14 Conclusions

This chapter of the Application will:

- provide a summary of potential effects on aboriginal and or treaty rights/other interests; and

- identify in a table, specific commitments to address potential effects on those rights and interests.
PART D – FEDERAL INFORMATION REQUIREMENTS

This Part of the Application will provide information on the scope and direction received from the Responsible Authorities and the CEA Agency for the federal environmental assessment of the proposed Project.

The federal information requirements for assessment of potential environmental effects/changes and species at risk will be integrated within each of the studies to be presented under Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application.

The assessment of potential effects that will be provided in Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application will be undertaken consistent with section 16(1) of the CEAA, which requires an assessment of the “environmental effects” of the proposed Project. “Environmental effects” are defined in section 2(1) of the CEAA as:

I. “Any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of SARA;

II. Any effect of any change referred to in paragraph (I) on:
   a. Health and socio-economic conditions;
   b. Physical and heritage;
   c. The current use of lands and resources for traditional purposes by aboriginal persons; or
   d. Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

III. Any change to the project that be caused by the environment, whether any such change or effect occurs within or outside Canada.”

This Part of the Application will identify and assess the federal assessment requirements pertaining to potential effects of the environment on the proposed Project, as referenced in subsection (III) of the definition of “environmental effect”, and potential cumulative environmental effects.
15 Accidents or Malfunctions

This chapter of the Application will include consideration of:

- potential accidents, malfunctions and unplanned events that could occur during construction and operations/maintenance of the proposed Project;
- the likelihood and circumstances under which these events could occur; and
- the environmental effects that may result from such events, assuming contingency plans are not fully effective.

This chapter will also include a description of how each potential accident, malfunction or unplanned event would be managed or mitigated. To manage effects and minimize the potential for accidents or malfunctions, contingency planning will be a component of this chapter.

Construction and operations/maintenance for each component of the proposed Project will be assessed to identify any area of risk and means of prevention; these will include: vessel movements in the river, marine terminal, fuel receiving facility, and fuel pipelines.

The following areas of assessment relating to the effects of potential accidents or malfunctions from fuel cargo vessels within the South Arm of the Fraser River will have dedicated chapters in the Application:

- Spill Probability and Risk (Chapter 16)
- Spill Prevention, Preparedness and Emergency Response Planning (Chapter 17)
- Fire Prevention, Preparedness and Emergency Response Planning (Chapter 18)
- Fate and Effects Analysis (Chapter 19)
- Navigational Feasibility and Risk (Chapter 20)
16 Spill Probability and Risk

This chapter of the Application will describe accidental cargo release statistics relating to the movement of petroleum hydrocarbons in local and international waters, and provide information on the probability and risk associated with a release of aviation fuel for the proposed Project during:

- vessel transit operations within the South Arm of the Fraser River;
- fuel cargo off-loading and transfer operations at the marine terminal;
- fuel receiving facility operations;
- fuel pipeline operations.

Based on the assessment conducted within this chapter, the outline for a Spill Prevention, Preparedness and Emergency Response Plan will be developed prior to commencement of proposed Project operations/maintenance (see Chapter 17).
17 Spill Prevention, Preparedness and Emergency Response

This chapter of the Application will:

- specify the outline and components of the comprehensive Spill Prevention, Preparedness and Emergency Response Plan to be developed and completed prior to the commencement of proposed Project operations/maintenance;

- describe the planning and delivery processes to be implemented for preventing, preparing for, and responding to a fuel release incident in the Fraser River, at the marine terminal, fuel receiving facility and fuel pipelines, in consultation with the appropriate authorities;

- describe methods for preventing, preparing for, and responding to a fuel release incident associated with the proposed Project in accordance with the Spill Reporting Regulation, the Contaminated Sites Regulation and the Hazardous Waste Regulation under the B.C. Environmental Management Act; and

- describe present spill response capability along the proposed vessel routes to be used within the river, and in proximity to the proposed marine terminal, fuel receiving and pipeline facilities, and evaluations of their adequacy.

In accordance with the Canada Shipping Act, the Spill Prevention, Preparedness and Emergency Response Plan will identify third party spill response agreements with designated Response Organizations such as Western Canada Marine Response Corporation.
18 Fire Prevention, Preparedness and Emergency Response

This chapter of the Application will:

- describe the planning and delivery processes to be implemented for preventing, preparing for, and responding to a fire incident in the Fraser River, at the marine terminal, fuel receiving facility and fuel pipelines;

- include detailed information and definition of the specific fire suppression systems or solutions that will be in place to address the fire hazard potential presented by proposed Project infrastructure; and

- describe present fire response capability along the proposed vessel routes to be used within the river, and at the proposed marine terminal, fuel receiving and pipeline facilities, and evaluations of their adequacy.
19 Fate and Effects Analysis

This chapter of the Application will describe the potential fate and effects of aviation fuel cargo, in the event of an accidental fuel release incident in the South Arm of the Fraser River from a vessel transiting the river or during fuel cargo off-loading and transfer operations at the marine terminal. The Study Area boundary for the Fate and Effects Analysis will be determined by the results of detailed spill modelling undertaken for the proposed Project, and will cover all areas potentially reached by an accidental release of aviation fuel cargo. Details regarding the maximum plausible fuel release scenario, determined based on consultation with Transport Canada and used to conduct the spill modelling, will also be included.

This chapter will:

- describe the physical properties and characteristics of aviation fuel, and its behaviour in the aquatic/atmospheric interface;
- describe potential baseline biophysical and socio-economic/socio-community resources of the Fraser River and the Strait of Georgia that could be affected by a release of aviation fuel;
- provide a description of the detailed spill trajectory and stochastic modelling undertaken to determine the anticipated fate and effects of fuel in the event of an accidental release of aviation fuel;
- provide a rationale for the fuel release locations and volumes (i.e., 10,000 barrels released at Sand Heads, Steveston Bend, and near the George Massey Tunnel during vessel transit; and 1,000 barrels at the proposed marine terminal during fuel off-loading and transfer operations) used in the spill modelling;
- describe and map the results of the fuel spill modelling;
- describe and evaluate the potential effects of an accidental fuel release in the Fraser River on all biophysical and socio-economic/socio-community resources identified as being potentially reached and/or affected by the spill modelling, which will include bird populations, instream/riparian habitats, intertidal and shoreline areas, fisheries and aquatic resources, and the atmospheric environment;
- assess potential effects of dispersed fuel in the water column on aquatic life; and
- assess potential lethal and sublethal effects of aviation fuel to migratory birds both as a consequence of direct and indirect exposure, including ingestion of contaminated food, and persistence of aviation fuel in ecosystem components.
20 Navigational Feasibility and Risk

This chapter of the Application will describe the feasibility and associated risks from navigating barges and tankers through the South Arm of the Fraser River navigable channel from Sand Heads at the river mouth upstream to the marine terminal, including the activities associated with vessel approach, berthing, mooring, deberthing and turnaround. Computer based simulations of navigation manoeuvres and vessel mooring forces will be undertaken and presented in this chapter.

This chapter will:

- provide a description of river conditions and characteristics that could potentially affect navigation in the river, including tides and currents, wind and wave climate, visibility, and navigational aids;
- assess the potential effects on other marine traffic and the risks associated with collisions and grounding;
- provide a description of the types of vessels proposed, including tug boats, the regulations governing their movement in the Fraser River, terminal vessel vetting procedures, and the regulations governing the transportation of dangerous goods in Canadian waters;
- provide a description of proposed traffic density and frequency, including transit speeds and times and an assessment of the potential for delays;
- provide a description of the arrival plan, including pre-arrival, laden transiting, berthing, and mooring procedures to be followed;
- provide a description of fuel cargo handing requirements for barges, tankers and the marine terminal, and the preparation procedures and process for fuel offloading and transfer; and
- provide an outline of the vessel departure plan, including pre-departure, deberthing, turnaround, and unladen transiting procedures that will be followed.
21 Effects of the Environment on the Project

This chapter of the Application will:

- identify the type, location, frequency and magnitude of environmental factors deemed to have possible consequences on the proposed Project, including, but not necessarily limited to consideration of natural hazards such as:
  - inclement weather conditions (e.g., lightning, fog, heavy precipitation, extreme temperatures, and wind);
  - river conditions (e.g., extreme freshet and tidal currents, and flooding);
  - natural seismic events; and
  - climate change.

- identify any changes or effects on the proposed Project that may be caused by the above-mentioned environmental factors, whether the changes or effects occur within or outside of Canada;

- identify the likelihood and severity of the changes or effects; and

- identify mitigation measures, including design strategies, planned to avoid or minimize the likelihood and severity of the changes or effects on the proposed Project.
22 Cumulative Environmental Effects

This chapter of the Application will fulfill the federal requirement for the Cumulative Environmental Effects Assessment and will be completed according to the requirements set out under section 16 of the CEAA and guidance documentation available from the CEA Agency (i.e., “Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act (November, 2007)

Residual effects deemed greater than “negligible”, as identified in each of the discipline-specific component studies forming Part B: Assessment of Project Effects, Mitigation, and Significance of Residual Effects of the Application, will be included in this Cumulative Environmental Effects Assessment chapter in accordance with the CEA Agency’s guidance materials. Cumulative environmental effects consist of both direct environmental effects and indirect social and economic effects caused by an activity in association with other, past, present and future human activities. Cumulative effects assessment is required by the federal assessment process to ensure that the incremental effects resulting from the combined influences of various activities are considered. These combined effects may be significant even though the effects of each action, when individually assessed, are considered insignificant.

Cumulative environmental effects assessment includes effects that are likely to result from the proposed Project in combination with other projects or activities that have been or will likely be present in a reasonable temporal and spatial scale. Section 16.2 of the CEAA also contemplates taking into account any available regional study results in considering any cumulative environmental effects that may be likely to result from the proposed project in combination with other projects or activities that have been or will be carried out. Vancouver Airport Fuel Facilities Corporation will seek direction from the federal Responsible Authority and/or the CEA Agency as to whether and how any such study results should be taken into account.

The Cumulative environmental effects assessment will be conducted in accordance with the following five-step framework (Hegmann at al. 1999):

1. Scoping
2. Effects Analysis
3. Mitigation Identification
4. Significance Evaluation
5. Follow-up Monitoring
Conclusions on the significance of identified cumulative environmental effects, as well as recommended mitigation measures, as warranted, will be derived from the assessment findings.
PART E – CONCLUSIONS

23 Summary of Residual Effects

This chapter of the Application will provide a tabulated summary of the potential environmental, economic, social, heritage or health effects that cannot be completely avoided or mitigated through the re-design or relocation of the proposed Project or through the implementation of control measures associated with ancillary activities.
24 Summary of Commitments and Assurances

This chapter of the Application will provide a tabulated summary of VAFFCs commitments and assurances to minimize the potential for the proposed Project to generate residual environmental, economic, social, heritage or health effects. The summary will identify the specific commitments VAFFC will implement, which will become a schedule of the Environmental Assessment Certificate if a Certificate is issued, and will inform subsequent federal decision(s).
25 Conclusion

This chapter of the Application will provide a summary of VAFFCs understanding of the harmonized provincial/federal environmental assessment process in promoting sustainable development while minimizing the effects to environmental, economic, social, heritage and health values. In summation of the Application, VAFFC will provide statements describing how the proposed Project aligns with the goal of the harmonized provincial/federal environmental assessment.

Vancouver Airport Fuel Facilities Corporation will state their request for an Environmental Assessment Certificate for the proposed Project and the need to successfully complete a federal environmental assessment and subsequent permitting/authorization processes prior to proceeding with proposed Project construction and operations/maintenance.
REFERENCES


APPENDICES

This part of the Application will provide applicable appendices to the Application. The following appendices are attached to this dAIR document.
Vancouver Airport Fuel Delivery Project
Information Sessions Summary Report
April 2009
INTRODUCTION

Vancouver Airport Fuel Facilities Corporation (VAFFC) is proposing a new fuel delivery system to meet the long-term needs for aviation fuel at Vancouver International Airport and support the future economic growth of the region.

In January 2009, VAFFC submitted a Project Description Report (PDR) to the BC Environmental Assessment Office in support of its application made in November 2008 to have the project reviewed under the *BC Environmental Assessment Act*. The PDR is an overview of the proposed project. Elements of the project have not yet been finalized and are still subject to public and First Nations consultation and regulatory approval.

As the first stage of public outreach, VAFFC voluntarily held four information sessions in late February and early March 2009. A range of topics were discussed at these sessions, including the need for the project, safety, the environment, the evaluation of delivery options and pipeline alignment options.

Comment forms were available at the information sessions, and this report is a summary of comments received. In addition, those interested in the project were encouraged to submit comments or questions to the project website (www.vancouverairportfuel.ca), by email (info@vancouverairportfuel.ca), phone (604.638.7463) or fax (604.684.6981). A brief summary of submissions made during February and March is included in this report.
INFORMATION SESSIONS – ATTENDANCE

Our four information sessions attracted nearly 460 people, with the overwhelming majority attending the shopping mall sessions.

<table>
<thead>
<tr>
<th>Information Session</th>
<th>Visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holiday Inn – Cambie Road</td>
<td>5</td>
</tr>
<tr>
<td>Aberdeen Mall</td>
<td>80</td>
</tr>
<tr>
<td>Richmond Centre Mall</td>
<td>344*</td>
</tr>
<tr>
<td>South Arm Community Centre</td>
<td>27</td>
</tr>
</tbody>
</table>

*As it was sporadically crowded, this is an approximate number.

INFORMATION SESSIONS – PUBLIC NOTICE

The information sessions were promoted on the project website and through quarter-page ads in the following publications:

<table>
<thead>
<tr>
<th>Publication</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond Review</td>
<td>Feb. 21</td>
</tr>
<tr>
<td></td>
<td>Feb. 28</td>
</tr>
<tr>
<td></td>
<td>Mar. 5</td>
</tr>
<tr>
<td>Richmond News</td>
<td>Feb. 20</td>
</tr>
<tr>
<td></td>
<td>Feb. 27</td>
</tr>
<tr>
<td></td>
<td>Mar. 6</td>
</tr>
<tr>
<td>Ming Pao</td>
<td>Feb. 25</td>
</tr>
<tr>
<td>World Journal</td>
<td>Feb. 26</td>
</tr>
</tbody>
</table>

MEDIA COVERAGE

The project generated a significant amount of media coverage in the Richmond newspapers, including an editorial in the Richmond Review and a number of letters to the editor. The Richmond Review also ran a letter to the editor from VAFFC in response to the editorial. Sing Tao also published multiple stories, with content mostly taken from the Richmond newspapers. Providing limited coverage were the Sun and Province, World Journal, Global TV and News 1130. Most of the media coverage preceded or coincided with the first information session, while Global TV’s piece coincided with the last information session.
## Media Coverage Summary

### Major Print Media

<table>
<thead>
<tr>
<th>Date</th>
<th>Media Outlet</th>
<th>Headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-Feb-08</td>
<td>Province</td>
<td>Estuary advocates upset over YVR fuel plan; Limited to two, unpublicized open houses without panel or open mike</td>
</tr>
<tr>
<td>13-Feb-08</td>
<td>Province</td>
<td>Airport responds</td>
</tr>
<tr>
<td>29-Feb-08</td>
<td>Richmond News</td>
<td>Fuel storage input deadline extended</td>
</tr>
<tr>
<td>4-Apr-08</td>
<td>Province</td>
<td>Fuel storage to quadruple; Richmond approval not required for airport expansion</td>
</tr>
<tr>
<td>6-May-08</td>
<td>Richmond News</td>
<td>Jet fuel pipeline could cross city to power planes; Risk of spill too great; environmentalists</td>
</tr>
<tr>
<td>7-May-08</td>
<td>Richmond Review</td>
<td>Airport eyes jet fuel pipeline</td>
</tr>
<tr>
<td>20-Feb-09</td>
<td>Richmond Review</td>
<td>Jet fuel could be shipped up the Fraser</td>
</tr>
<tr>
<td>20-Feb-09</td>
<td>Richmond News</td>
<td>Airlines fuel debate with pipeline plan; Jet fuel demand up</td>
</tr>
<tr>
<td>20-Feb-09</td>
<td>Richmond Review</td>
<td>Editorial: Time to come clean</td>
</tr>
<tr>
<td>24-Feb-09</td>
<td>Vancouver Sun</td>
<td>Jet fuel pipeline plan raises concerns about spill in Fraser; Opposition mounts against proposed tanker offloading facility to serve YVR</td>
</tr>
<tr>
<td>25-Feb-09</td>
<td>Richmond News</td>
<td>Pipeline open house attracts few</td>
</tr>
<tr>
<td>25-Feb-09</td>
<td>Richmond News</td>
<td>Won't get fuelled again</td>
</tr>
<tr>
<td>4-Mar-09</td>
<td>Richmond News</td>
<td>Fuel line in 'good shape'</td>
</tr>
<tr>
<td>4-Mar-09</td>
<td>Richmond News</td>
<td>Send pipeline proposal back to drawing board</td>
</tr>
<tr>
<td>6-Mar-09</td>
<td>Richmond Review</td>
<td>Pipeline nightmare</td>
</tr>
<tr>
<td>11-Mar-09</td>
<td>Delta Optimist</td>
<td>Plan would see jet fuel shipped up river; Delta wants to have say on proposal that includes offloading facility and 15-kilometre pipeline in Richmond</td>
</tr>
<tr>
<td>11-Mar-09</td>
<td>Richmond News</td>
<td>Pipeline may require environmental review</td>
</tr>
</tbody>
</table>

### Chinese Media

<table>
<thead>
<tr>
<th>Date</th>
<th>Media Outlet</th>
<th>Headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-Feb-09</td>
<td>World Journal</td>
<td>Environmental Concern: Controversy over Fuel Pipeline Running Through Richmond Urban Area</td>
</tr>
<tr>
<td>23-Feb-09</td>
<td>Sing Tao Daily</td>
<td>Pipeline Fuel Delivery to YVR may run underground across Richmond</td>
</tr>
<tr>
<td>26-Feb-09</td>
<td>Sing Tao Daily</td>
<td>Chinese [Residents] organization signature drive to oppose building fuel pipeline in Richmond</td>
</tr>
<tr>
<td>27-Feb-09</td>
<td>Sing Tao Daily</td>
<td>Public Consultation on Fuel Pipeline</td>
</tr>
</tbody>
</table>

### Broadcast Media - Radio

<table>
<thead>
<tr>
<th>Date</th>
<th>Media Outlet</th>
<th>Headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-May-08</td>
<td>News 1130</td>
<td>A group of airlines has bought land in Richmond destined for an underground jet fuel pipeline</td>
</tr>
<tr>
<td>23-Feb-09</td>
<td>CBC Radio</td>
<td>Adrian Pollard - On the Coast</td>
</tr>
</tbody>
</table>

### Broadcast Media - Television

<table>
<thead>
<tr>
<th>Date</th>
<th>Media Outlet</th>
<th>Headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-Mar-09</td>
<td>Global BC Television 6:00pm News</td>
<td>YVR pipeline project</td>
</tr>
</tbody>
</table>
COMMENT FORMS

Comment forms submitted at the sessions totaled 29. When asked their opinion of the project on the comment form, 15 expressed support, 11 expressed opposition and three did not answer.

Based on the responses to questions, people generally understood the rationale behind the project, and found the information sessions informative and useful. However, based on the written comments, it appears that those who oppose the project were more likely to provide comments than those who support the project. The three issues raised most often were:

1. safety and protection of the environment
2. other options
3. upgrade the existing line

The following bar charts show how people answered each of the questions on the comment forms. Following each chart are the additional comments provided by some of the information session visitors.

A summary of other submissions provided through other means is included on the last page.
1. How did you hear about the information sessions?

Note: Some chose more than one answer

Comments from this question:

- Information booth at Richmond Centre
- Richmond News
- It’s the timing of the notification that is the problem. Where was the information session in May 2008 when you had your silly intention of (buying) property cheap to later disrupt lives, poison our water and risk greater tragedies?
- Richmond News and Richmond Review. To be fair, publish the people’s concerns. Possible future explosion, fire and leakage. From leakage (from) people digging into it, tremors, earthquakes, erosion; you are placing a time bomb where we live and where we have business.
- Local newspaper: Richmond Review
2. How often do you fly through Vancouver International Airport?

![Bar chart showing flight frequency]

Comments from this question:

- Both South and Main (terminals)
- Twice in the past five years
- 1 or 2 in a life. I will fly if it is the only option. I do not travel for great distances, therefore my student loan budget has me staying on the ground. I pick up people, like seniors flying for out for funerals.
- We oppose the pipeline going through/middle of our residential and business areas. Too dangerous. We have whole life savings in our residence.
- I volunteer for YVR as a Green Coat every week and I’ve seldom seen a tanker truck on the road. Why not have them make all deliveries from 9 pm to 5 am to avoid traffic delays, etc.
3. Describe how much you agree or disagree with the following statement: Meeting the growing fuel demands of Vancouver International Airport is important to ensure the airport runs efficiently.

Comments from this question:

- As fossil fuels diminish for automobile use, the need for airlines will increase.
- Growing demands? Are you nuts? YVR should start thinking about lowering demands.
- Look around, other airports are downsizing, airlines are going bankrupt, and passengers are staying home.
- Replace existing pipelines.
- Planes require fuel – obviously. But does this ensure that the airport runs efficiently?
- With reduced airport air traffic, e.g. 17% reduction January 2009. The figures being stated by VAFFC in this bulletin are ridiculously over inflated in order to justify VAFFC’s proposal.
4. Describe how much you agree or disagree with the following statement: A reliable fuel supply will help Vancouver International Airport remain a “gateway of choice” for airlines and that means continued jobs and economic benefits for our community, our region and our province.

Comments from this question:

- Reliable for who? The salmon in the estuary, the migrating birds being polluted and displaced? Let our children's health and liability of Richmond be a higher priority than your reliable fuel source.
- Replace existing pipelines.
- A reliable fuel supply may help YVR remain a "gateway of choice" but again without fuel there is no airport.
- I'm not sure I want YVR to be a "gateway of choice" and all the ensuing problems that creates.
5. *Describe how much you agree or disagree with the following statement: Taking large fuel tanker trucks off our highways and roads will improve safety and reduce traffic.*

![Bar Chart](image)

**Comments from this question:**

- The fastest and easiest way to lower carbon emissions is to get the trucks off the highways.
- Our highways and roads? Oh really, do I have a choice at whatever drives on them? I'll choose electric vehicles and about the skies, are they ours too? If so, my safety will improve without more fuel.
- 1) Replace existing pipelines. 2) Have it shipped in west side of sea island and reconstruct shore line reaching to it.
- As no safety statistics are presented, I can only assume that this is a motherhood statement.
- When was the last time a tanker truck created a problem? Probably more so on the ramp amongst parked aircraft than on the highways.
6. *Were you generally satisfied with the information made available about the Vancouver Airport Fuel Delivery Project?*

![Bar graph showing responses to the question.]

**Comments from this question:**

- Safety and security of the pipeline are important when it is in place.
- Not pleased at all. You present one option, who the beep would be satisfied with that? Maybe greedy people who live away from your proposed pipelines. Where do I say I don’t want any alternative fuel deliveries?
- Question one sided to elicit a yes answer, did not give the whole picture with written alternatives.
- Why not show option routes other then No. 5 Road: such as up Highway 99 corridor or 6 Road where there are fewer houses and less disruptions?
- Lack of information about how optional routes were evaluated.
- No information about alternatives.
- No, the 50 page Project Description field with the EAO should have been made available. It has been recently published as almost [more of] a fait accompli than a method of education to the concerned public.
7. Did a project representative answer your questions to your satisfaction? If you had a concern, was it addressed?

![Bar Chart]

Comments from this question:

- We need more public forums before final route [is] decided [upon].
- I prefer to ask questions or address my concerns after I know more.
- I am not satisfied. What can they do for the salmon, birds, infants, asthma-stricken people, groundwater, future generations? You are a bully in the playground and your PR reps are nothing more than smiles and suits.
- Only board display – no rep present.
- Did not ask questions. Anything to get truckers off the road.
- The Public Safety concerns of people directly affected overrides the theoretical and “what if” concerns of people who may not be affected or concerns based on hypothetical scare tactics.
- They agree that our concerns were valid and informed us of other ideas that VAFFC were considering.
8. What was your overall impression of the Vancouver Airport Fuel Delivery Project information session?

![Bar chart]

Comments from this question:

- No alternative options. No considerations to our environment. No considerations for our health. Waste of my time, but I gave you some reading material.
- Too one-sided.
- Very superficial.
- The potential for environmental damage to the downstream (15km) communities, tourism, wild life parks, etc. is too great. Alternative 14 is superior with less risks. The evaluation matrix has issues.
9. How informative were the display materials?

Comments from this question:

- A clear waste of paper/plastic, probably didn’t use anything on recycled paper. I am quite disgusted by the shiny white display when you plan to dump toxic fuel into our water and mouths.
- Tanker capacities should have been shown, pumping rates could have been included.
10. Based on what you have learned about it so far, what is your opinion of the Vancouver Airport Fuel Delivery Project?

Comments from this question:

- Have resided in Steveston – Richmond area 48 years and think this is a positive move for our town to be a leader in removing semi-truck travel from our roads.
- The project representatives were very helpful, polite and informative. Thank you.
- I was dead against it but realize that if done properly with full, thorough environmental assessments done by everyone it certainly is an option.
- I do not support the proposed Vancouver Airport Duel Delivery project. I feel the environmental risks to the Fraser River and the farmlands the pipeline will travel through are too great should an accident happen.
- In no way do I endorse any part of the proposal to ship jet fuel up the Fraser River or to build a pipeline through Richmond to transport jet fuel.
- I support it but there has to be a different way to get it there. Build a terminal off [the] airport.
- Replace existing pipelines. Ship fuel in on west side directly and restructure shore line as needed.
- The route is disruptive and poses safety hazards.
- Option number 14 is supportable as it minimizes the risks.
- As Richmond residents living close to Williams and No. 5 Road and an ever present concern – re: earthquakes – an under-surface pipeline is a no go.
11. As we continue the consultation process, what topics would you like more information about?

Comments from this question:

- The whole system and engineering intrigues me because it is my employment.
- I asked about the idea of having the barges off-load right at the airport, but this option had been considered and was still a possibility although not the primary or preferred route.
- Hopefully it doesn’t go up – (in reference to YVR’s future fuel demands).
- Fuel barged or by tanker up south arm I definitely would not support.
- None, I do not support any part of the Vancouver Airport Fuel Delivery Project, to ship jet fuel up the Fraser River or to build a pipeline through Richmond to transport jet fuel.
- No one says why YVR can’t get away with demanding more fuel. That’s the root of this (your) problem and that is where the solution can be found. Be happy you have jobs, try and do them better (higher quality, not quantity).
- Potential explosion due to escaping vapors being ignited, fuel contaminating river and our living areas.
- Why not continue the existing pipeline/trucking routes, making trucking deliveries in the late evening early morning to avoid traffic.
- Shorter supply route with delivery right onto Sea Island would be much better option.
- Alternative pipeline delivery route – less disruptive, [as] proposed route may be unsafe.
- The owners of the current pipeline are confident of the pipes’ quality and indicate flow capacity can be increased as need arises.
12. As consultation continues, how would you like to be kept informed and consulted?

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Email updates</td>
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<tr>
<td>Website</td>
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<td>Public consultation</td>
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<tr>
<td>Neighbourhood group</td>
<td>2</td>
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<tr>
<td>Information in the newspaper</td>
<td>16</td>
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</tbody>
</table>

Note: Some chose more than one answer

Comments from this question:

- Instead of No. 5 Road to Westminster, move to freeway 99 or go up No. 6 Road.
- Tell us when you are backing away from any further storage at YVR and any new pipeline routes. That will be a good news story for once. I’d like you to organize a few interactive roundtables on this debate.
- If barging jet fuel up the estuary was a bad idea in 1988, what has changed?
- Would it be possible to take a tanker to Sea Island and unload? This would eliminate trucking, piping, and rupture of any pipeline. Dredging of the Fraser River for future development on Sea Island.
- Well presented.
- Innovative engineering can resolve environmental and construction concerns.
- Accurate information in the newspaper.
13. Any other comments

- I live in Caithcart and would prefer that if the pipeline proceeds along Shell Road, that it also go along Bridgeport and not the alternate (Bird Road).
- Get on with construction.
- I have concerns that the waterway needs constant dredging and would need to be watched as the ground is sandy and shifts. Wildlife/fishery concerns if there is any kind of accident – also to communities nearby wherever the route is. Vessels would have to be newer – double hulled etc.
- Alternatives floating or fixed terminal 4, 12, 13 seem better – shortest route to airport, less impact on people, cost-effective. No pipeline through Richmond.
- Options – route 4-12-13 only.
- Yes, if a terminal is built at [the] airport, lots of dredge work [will be required]; but think this is better way than building a pipe line across the whole island.
- It is critical to have an emergency response contingency fund in place prior to development - this will ensure the city, province and federal governments will not be on the hook for clean-up cost in the event of an accident. Insurance companies will do their best not to pay out.
- It makes sense for security resources to have a pipeline – build.
- When the proposal is firm, more information on the construction and disturbance on a neighbourhood would be proper, [including] addresses.
- I do not support the project!
- You follow best practices in environmental/responsibility; well what are they? I’m sure I can come up with better ones like cancelling this whole project and consulting with YVR to use less (not more) fuel in the future.
- Publicize it in larger display ads and show both sides with community concerns instead of little articles here and there to escape attention.
- Instead of disrupting and threatening local neighbourhoods with the proposed pipeline, continue to improve the existing lines. The proposal is too costly.
- The South Arm route has much more potential for major environmental damage. Refurbish the existing pipeline.
- Before this is an encroachment on the city of Richmond and residents, it should put up to a plebiscite.
- Pipeline would stop a lot of pollution by tanker trucks.
- A less costly solution is to use accreted land north of Garry Point Park. Dredge deep water channel. Build low level temporary storage tanks. Build pipeline adjacent to dyke to south side of airport. Use silt from river to build containment dykes and fill to avoid spillage into Georgia Strait.
- Consideration (should) be given toward a rail line delivery system if the current pipeline is inadequate, at least the system would be above ground and hopefully in the event of an earthquake/terrorist attack the delivery could be handled quicker and safer.
OTHER SUBMISSIONS

Comments on the project were also received through VAFFC’s website (www.vancouverairportfuel.ca), email (info@vancouverairportfuel.ca), phone (604.638.7463) and fax (604.684.6981). In total, 19 such submissions were received by March 31.

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<th>Other Submissions</th>
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<td>Phone</td>
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<td>Fax</td>
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Submissions ranged from questions to comments to solicitations of business. Of the 19 received, eight expressed concerns or opposed the project, two expressed support, seven asked questions and two were about business opportunities.

This summary is for the months of February and March only, leading up to and following the information sessions.

It is expected that additional submissions will be made through these avenues as the project review process proceeds.
Vancouver Airport Fuel Delivery Project
Stakeholder Outreach Summary Report
Fall 2008- Summer 2009

Prepared by NATIONAL Public Relations
Introduction

In fall 2008 and continuing into summer 2009, Vancouver Airport Fuel Facilities Corporation undertook a number of initiatives to share information about the proposed Vancouver Airport Fuel Delivery Project with community, business and other stakeholders. These activities included meetings, presentations, distribution of a project brochure, launch of a project website (May 2009) and responding to enquiries or comments sent into the project office. These activities are summarized below.

In addition, four public Information Sessions were held in February and March 2009. These are summarized in a separate document.

Meetings – 2008

<table>
<thead>
<tr>
<th>NAMES</th>
<th>ORGANIZATION</th>
<th>MONTH</th>
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<tbody>
<tr>
<td>Andrew Nazareth, Terry Crowe, Robert Kates</td>
<td>City of Richmond staff</td>
<td>September</td>
</tr>
<tr>
<td>Jerry Dobrovolny, Brian Crowe, Judy Rogers</td>
<td>City of Vancouver</td>
<td>September</td>
</tr>
<tr>
<td>Jack Baryluk</td>
<td>BCIT – Aerospace Campus</td>
<td>September</td>
</tr>
<tr>
<td>Katie Emery</td>
<td>Tourism Vancouver</td>
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<tr>
<td>Shaun McGill, Paula Kolisnek</td>
<td>Corporation of Delta staff</td>
<td>October</td>
</tr>
<tr>
<td>Tony Guglielmin, Jeff Hewitt</td>
<td>Canada Line</td>
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<tr>
<td>Larry Berg, Anne Murray, Bob Cowan</td>
<td>Vancouver Airport Authority</td>
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<tr>
<td>Tom Prendergast</td>
<td>TransLink</td>
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<tr>
<td>Anne McMullin</td>
<td>Port Metro Vancouver</td>
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<td>Darcy Rezac</td>
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<td>John Winter</td>
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<td>Environmental Advisory Committee</td>
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<td>(Stakeholder Committee)</td>
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Meetings – 2009

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<tr>
<td>Mark Griggs, Carlos Felip, Sharleen Suszezwie, Sarah McPherson, Lindsay Colin</td>
<td>Port Metro Vancouver</td>
<td>January</td>
</tr>
<tr>
<td>Terry Crowe, Brian Jackson and representatives of several city departments</td>
<td>City of Richmond staff</td>
<td>January</td>
</tr>
<tr>
<td>George Duncan</td>
<td>City of Richmond staff</td>
<td>February</td>
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<tr>
<td>Terry Crowe, John Irving, Kim Decker</td>
<td>City of Richmond staff</td>
<td>March</td>
</tr>
<tr>
<td>John Cummins</td>
<td>MP – Delta-Richmond East</td>
<td>March</td>
</tr>
<tr>
<td>John Yap</td>
<td>MLA – Richmond-Steveston</td>
<td>April</td>
</tr>
<tr>
<td>Linda Reid</td>
<td>MLA – Richmond East</td>
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<tr>
<td>Greg Halsey-Brandt, Derek Dang</td>
<td>Councillors – City of Richmond</td>
<td>April</td>
</tr>
<tr>
<td>Alice Wong</td>
<td>MP – Richmond</td>
<td>April</td>
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<td>Evelina Halsey-Brandt</td>
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<td>Sue Halsey-Brandt</td>
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<td>Linda Barnes</td>
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<tr>
<td>Mike Brotherston, Hugh Fraser</td>
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**City of Richmond Presentations – 2009**

<table>
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<th>City of Richmond</th>
<th>MONTH</th>
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<tbody>
<tr>
<td>Public Works and Transportation Committee</td>
<td>February</td>
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<tr>
<td>Council Meeting</td>
<td>June</td>
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**Requests for Information or Comments – 2009 (to August)**

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<th>NAME</th>
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<tbody>
<tr>
<td>Fred Lee</td>
<td>Richmond neighbourhood coalition</td>
<td>February</td>
</tr>
<tr>
<td>Kyle Caplette</td>
<td>N/A</td>
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</tr>
<tr>
<td>Carmen Ciubotariu</td>
<td>N/A</td>
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<tr>
<td>Gordon Edge</td>
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<tr>
<td>Daniel Leung</td>
<td>N/A</td>
<td>March</td>
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<tr>
<td>Peter Ng</td>
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<tr>
<td>Maureen Otway</td>
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<td>Bill Pekonen</td>
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<tr>
<td>Nancy Berger</td>
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<td>Don Flintoff</td>
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<td>Christiane Wilhelmson</td>
<td>Georgia Strait Alliance</td>
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<tr>
<td>Don Pitcairn</td>
<td>Surrey United Naturists</td>
<td>June</td>
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<tr>
<td>John Werring</td>
<td>David Suzuki Foundation</td>
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<tr>
<td>Vickie Van Dyken</td>
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<td>August</td>
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**Project Brochure Mailout – Spring 2009**

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<tr>
<th>NAME</th>
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<tr>
<td>Michael Henderson</td>
<td>Regional Director General, Pacific Region</td>
<td>Transport Canada</td>
</tr>
<tr>
<td>James Lawson</td>
<td>Regional Director, Marine Safety</td>
<td>Transport Canada</td>
</tr>
<tr>
<td>Lori Young</td>
<td>Regional Director, Programs</td>
<td>Transport Canada</td>
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<tr>
<td>Name</td>
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<tr>
<td>Michele McKenzie</td>
<td>President and CEO</td>
<td>Canadian Tourism Commission</td>
</tr>
<tr>
<td>Hon. Barry Penner</td>
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<td>BC Ministry of Environment</td>
</tr>
<tr>
<td>Joan Hesketh</td>
<td>Deputy Minister</td>
<td>BC Ministry of Environment</td>
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<tr>
<td>Hon. Kevin Falcon</td>
<td>Minister</td>
<td>BC Ministry of Transportation and Infrastructure</td>
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<tr>
<td>John Dyble</td>
<td>Deputy Minister</td>
<td>BC Ministry of Transportation and Infrastructure</td>
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<tr>
<td>Robin Junger</td>
<td>Associate Deputy Minister</td>
<td>BC Ministry of Environment, Environmental Assessment Office</td>
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<tr>
<td>Martha Anslow</td>
<td>Project Assessment Officer</td>
<td>BC Ministry of Environment, Environmental Assessment Office</td>
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<td>Yeun Pau Woo</td>
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<td>Jill Price</td>
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<td>Ken McNicol</td>
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<td>Virginia Greene</td>
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<td>Jock Finalyson</td>
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<td>Andy Smith</td>
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<td>CEO</td>
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<td>Katie Emery</td>
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<td>Darcy Rezac</td>
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<td>Bernie Magnan</td>
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<td>Bal Want Sanghera</td>
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<tr>
<td>Kuo Wong</td>
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<tr>
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<tr>
<td>Terri Martin</td>
<td>President</td>
<td>Sea Island Community Association</td>
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<tr>
<td>Karen Adamson</td>
<td>President</td>
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<tr>
<td>Ben Branscombe</td>
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<tr>
<td>Gerald Galasso</td>
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<td>Thompson Community Association</td>
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<td>West Richmond Community Association</td>
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<tr>
<td>Margaret Mahan</td>
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<td>Better Environmentally Sound Transport</td>
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<td>Jack Baryluk</td>
<td>Acting Associate Dean</td>
<td>BCIT Aerospace Technology</td>
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<td>BC Ferries</td>
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<td>Craig Dougans</td>
<td>Manager, Response &amp; Operational Standards</td>
<td>Burrard Clean/Western Canadian Marine Response Corporation</td>
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<tr>
<td>Tony Guglielmin</td>
<td>Senior Vice President, Finance and CFO</td>
<td>Canada Line Rapid Transit Inc.</td>
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<tr>
<td>Jeff Hewitt</td>
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<td>Jane Bird</td>
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<tr>
<td>Scott Roberts</td>
<td>General Manager</td>
<td>Gray Line of Vancouver</td>
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<tr>
<td>John Hansen</td>
<td>President</td>
<td>Northwest Cruiseship Association</td>
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<td>Tom Prendergast</td>
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