Public Consultation Report

Vopak Pacific Canada

February 2019

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1 Introduction

1.1 Project Overview

Vopak Development Canada Inc. (Vopak), a wholly-owned subsidiary of Royal Vopak, is investigating the opportunity to construct, own and operate a new bulk liquids tank storage facility in Prince Rupert, British Columbia (BC). The proposed project is called Vopak Pacific Canada (the Project).

The Project is proposed to be located on Ridley Island within the lands and waters under the jurisdiction of the Prince Rupert Port Authority (PRPA). At full build-out the facility will have a capacity of 90,000 cubic metres (m^3) of liquefied petroleum gas (LPG), 260,000 m^3 of diesel and/or gasoline and 220,000 m^3 of methanol. It will consist of the following major components:

- a bulk liquids tank storage facility;
- a jetty; and
- supporting infrastructure and facilities, including power supply and a wastewater treatment system.

The Project will store LPG, diesel and/or gasoline, and methanol on behalf of Vopak's customers. Products will be transported to the Project via the existing Canadian National Railway line. Products will be received and unloaded into the Project storage facilities. From the storage facilities the products will be loaded via pipeline along the Project's jetty to a berthed ship.

The bulk liquids tanks storage facility will be located on approximately 30 hectares of land leased from PRPA. The marine terminal will be located within a water lot allocated by PRPA for the Project. It is anticipated that vessel loading operations will occur approximately once every three days, which at full capacity results in approximately 150 vessels per year depending on customer demand.

The Project requires environmental effects determinations by federal authorities under Section 67 of the Canadian Environmental Assessment Act, 2012 (CEAA 2012), as well as an Environmental Assessment (EA) under the BC Environmental Assessment Act (BCEAA). The Project will undergo a coordinated environmental review process between the BC Environmental Assessment Office (BC EAO) and federal authorities.

The Project is expected to also require a *Navigation Protection Act* Approval from Transport Canada, a *Fisheries Act Authorization* from the Department of Fisheries and Oceans (DFO) and a Disposal at Sea permit from Environment and Climate Change Canada (ECCC).

1.2 Purpose of the Public Consultation Report

Pursuant to the BC EAO's Section 11 Order, the Public Consultation Report (the Report) provides a summary of consultations undertaken and input received from the public in relation to the Project up to and including the public comment period on the draft Terms of Reference/Application Information Requirements (TOR/AIR). The Report provides the following information:

- An overview of Vopak's approved Public Consultation Plan
- A description of the results of the activities outlined in the Public Consultation Plan
- A summary of Vopak's consultations with the public that have been carried out in relation to the proposed Project, including information, comments, concerns and questions received from the public within the scope of the environmental assessment and how the concerns are addressed
- Proposed next steps for public consultation activities

2 Vopak's Public Consultation Plan

2.1 Public Consultation Plan Overview

The Public Consultation Plan (the Consultation Plan) was submitted in November 2018 to meet the requirements for consultation set out in the Section 11 Order, a procedural order issued by the BC EAO as per the *Public Consultation Policy Regulation*, and to ensure there are meaningful opportunities for the public and local communities to learn about and provide input on the Project. The BC EAO accepted the Public Consultation Plan in December 2018.

The purpose of the Consultation Plan is to describe the approach, methods and activities Vopak is undertaking to share Project-related information and seek input from the public throughout the environmental assessment of the Project. The Consultation Plan provides the framework for the public consultation activities that are summarized in this Report and is publically available on the BC EAO's website.

2.2 Vopak's Principles for Public and Stakeholder Consultation

Vopak believes that open, transparent and respectful dialogue with local communities and stakeholders is key. The public and stakeholder engagement activities for the Project are guided by the following Vopak values:

- **Care for safety, health & environment:** Care for safety, health and environment is the guiding principle in all decisions we make and all activities we carry out. Vopak will aim to understand local community values, including those that pertain to safety, health and the environment.
- **Integrity:** As a company we strive to develop and maintain long-lasting relationships with local communities and stakeholders that are based on mutual respect and understanding. We act with honesty and reliability to build the foundation for these relationships.
- **Team spirit:** Vopak will seek and consider input from local communities and stakeholders with respect to the Project, understanding that feedback we receive will improve the sustainability of our Project.
- **Commitment:** Vopak is committed to undertaking ongoing engagement with local communities and stakeholders and to provide timely and accurate information about the Project. We seek to deliver what we promise and stick to the decisions made.
- **Agility:** Vopak will work to understand and respond to input from local communities and stakeholders, including feedback on how input has been considered in the Project planning, including mitigation plans. We continuously strive to improve the quality of our work and are open to feedback and alternative ideas.

2.3 Public and Stakeholder Identification

Vopak has identified the following groups based on their potential interest in the Project. Vopak expects that further stakeholders will be identified as part of consultation activities with stakeholders, the public and regulatory authorities. Vopak is engaging with Indigenous Groups in a parallel consultation process.

2.3.1 Local Governments/Elected Officials

The Project is proposed to be located on Ridley Island in Prince Rupert, British Columbia. Based on the location of the Project, the following local governments and elected officials have been identified for consultation and engagement activities:

- The City of Prince Rupert
- The District of Port Edward
- The North Coast Regional District
- Member of the Legislative Assembly for the North Coast
- Member of the Legislative Assembly for Skeena
- Member of Parliament for the Skeena-Bulkley Valley

2.3.2 Other Stakeholder Groups

In addition to the above-mentioned local governments and elected officials, Vopak has identified the following stakeholder groups as having an interest in or being potentially affected by the Project:

- The general public
- Community organizations, including community service providers
- Economic development organizations, i.e. Chambers of Commerce
- Educational stakeholders, including colleges, skills training organizations and secondary schools
- Environmental stakeholders, including non-governmental organizations
- First responders, including fire, ambulance and police
- Local businesses
- Marine users and associated stakeholder groups

2.4 Staged Approach to Consultation

Vopak's Public Consultation Plan follows a staged approach to consultation and engagement that is based on Project development stages and the regulatory process. The stages of consultation are shown in the following table.

Table 1: Overview of Vopak's Staged Approach to Consultation and Engagement

Stage	Overview	Timing/Status
Stage 1 - Initial Engagement	• Introductory informal meetings with local governments and community stakeholders in Prince Rupert and Port Edward	Spring 2018 *Complete*
Stage 2 - Project Description and Terms of Reference/Pre-Application Phase Consultation	• Establishment of communications tools: project website, project email address and project fact sheets • Broader engagement with local communities and stakeholders through meetings, open houses in Prince Rupert/Port Edward and presentations • Attendance and participation in regulatory Open Houses on the Project Description and draft Terms of Reference/Application Information Requirements (TOR/AIR) • Tracking and responding to public comments on the Project Description and draft TOR/AIR • Development of the Public Consultation Plan and Public Consultation Reports • Ongoing information sharing	Summer 2018 – Summer 2019 *Current*
Stage 3 - Draft EEE/Application Review Phase Consultation	• Ongoing information sharing through meetings, open houses in Prince Rupert/Port Edward and presentations • Attendance and participation in regulatory Open Houses on the draft Environmental Effects Evaluation (EEE)/Application • Tracking and responding to public comments on the draft EEE/Application • Development of Public Consultation Reports	Fall 2019 – Summer 2020[1] *Future Stage*
Stage 4 - Ongoing Engagement	• Post-environmental review: continued community engagement on the different stages of the Project (construction, operations, decommissioning), including compliance and enforcement activities as needed.	Ongoing/Post-decision *Future Stage*

The following sections focus on the first two stages of the consultation and engagement approach. Vopak will continue to submit Public Consultation Reports at key stages of the environmental review process, as outlined in the BC EAO's Section 11 Order.

[1] Anticipated timing.

3 Public Consultation Activities To Date

3.1 Stage 1 – Initial Engagement

Vopak initiated early discussions with local governments and community stakeholders to introduce Vopak and the proposed Project and to learn about the local communities. The following table provides a summary of Vopak's initial engagement with local community stakeholders, as well as a description of the outcome of the engagement activities.

Table 2: Initial Engagement Activities

Stage 1 Engagement Activities (Spring 2018)	Outcome

• Initial informal introductory meetings took place with local governments and community stakeholders in Prince Rupert and Port Edward. Vopak initiated early discussions with the following stakeholders:
  ○ City of Prince Rupert
  ○ District of Port Edward
  ○ North Coast Regional District
  ○ Prince Rupert Chamber of Commerce
  ○ Community Futures Pacific Northwest
	• Vopak provided general information about the Project, including a Project update
	• Vopak provided contact information for follow-up discussions or inquiries about the Project
	• Local community outreach allowed Vopak to learn about areas of potential interest, concerns and opportunities to consider in Project planning and throughout the environmental assessment, including:
	  ○ Potential impacts of the Project on the quality of life in Port Edward due to noise, lighting, pollution and increased railway
	  ○ Increased vessel traffic and impacts on the marine environment
	  ○ Economic opportunities for the local communities

Please refer to Table 4 for further information of how these concerns/comments are addressed.

3.2 Stage 2 – Project Description and Terms of Reference/Pre-Application Phase Consultation

This section outlines current and planned consultation and engagement activities during the Project Description and Terms of Reference/Pre-Application Phase. The following table provides a summary of Vopak's engagement with the public and local community stakeholder during this phase, as well as a description of the outcome of the engagement activities.

Table 3: Project Description and Terms of Reference/Pre-Application Phase Consultation Activities

Stage 2 Engagement Activities (Summer 2018 – Current)	Outcome
Establishment of communications tools: Project website, Project email address and Project fact sheets	• Vopak launched its Project website in September 2018 to provide publically available information about the Project. The website provides a link to the BC EAO's Electronic Project Information Centre (e-PIC) to support the participation of interested parties in the environmental assessment process. • Vopak established a Project email address (vopakpacificcanada@vopak.com) in August 2018 to provide means for the public and interested parties to contact the Project team, seek information on the Project and provide input. • Open house notification posters (Appendix 1) were posted at the Prince Rupert Library, Port of Prince Rupert Interpretive Centre, Prince Rupert Civic Centre, Prince Rupert City Hall on September 14, 2018 and at the Port Edward convenience store and Port Edward Council Office on September 18, 2018. • Open house notification postcards (Appendix 2) were inserted into the Northern View and mailed to 5,700 local residents on September 20, 2018. • Printed copies of the draft AIR/TOR were made available at the Port of Prince Rupert Interpretive Centre and the Prince Rupert Public Library throughout the 30-day public comment period.

Stage 2 Engagement Activities (Summer 2018 – Current)	Outcome
Review of draft TOR/AIR	• Vopak participated in the EAO-led open houses in Port Edward on September 25, 2018 and in Prince Rupert on September 26, 2018 for the review of the Project Description and draft TOR/AIR. • Consistent with the requirements for notification outlined in the August 30, 2018 letter from the BC EAO to Vopak, a public notice of the open houses was published in the Northern View seven days prior to the start of the public comment period (Appendix 3). The public notice provides the date, time and addresses of the open houses. • Vopak developed storyboards in support of the open houses to describe the Project and provide a visual representation of the proposed environmental assessment scope (Appendix 4). • Vopak received 34 public comments and submitted responses to regulatory authorities, including the BC EAO, in December 2018.
Development of the Public Consultation Plan and Public Consultation Reports	Vopak submitted a Public Consultation Plan to the BC EAO in November 2018, which was accepted by the BC EAO in December 2018. Vopak is preparing this Public Consultation Report to • describe the results of the activities outlined in the Public Consultation Plan conducted to date; • summarize: consultations with the public that Vopak has already carried out in relation to the Project; information, comments, concerns and questions received from the public within the scope of the environmental assessment and how these concerns were addressed; and • describe proposed next steps for public consultation activities.

4 Summary of Public Feedback

The following section provides a summary of public feedback received, based on comments, concerns and questions received from the public within the scope of the environmental assessment and how these concerns were addressed.

Table 4: Summary of Public Feedback and Vopak Response

Topic	Concerns and Interests Identified	Vopak Response/Proposed Action
Spatial Scope of the Assessment	Requests to assess rail activity beyond the PRPA jurisdiction	As described in the Project's Section 11 Order issued by the BC EAO, the scope of the assessment will be based on the description of the Project, including its main facilities and components, and associated off-site shipping and rail activities, including those listed below. <u>Main facilities and components</u> • A bulk liquids tank storage facility, including for petroleum products; • A marine terminal and loading facility; • Rail car unloading racks; • Supporting infrastructure and facilities, which include, but are not limited to power supply, power generation, cooling equipment and de-ethanizer, emergency ground flare, air and water utilities, drainage and wastewater management, roads, and natural gas connection; and • Temporary infrastructure and facilities. <u>Associated off-site shipping and rail activities</u> • The operation of vessels and other supporting marine traffic along the marine access route between the marine terminal and the pilot boarding location at or near Triple Island; and • The operation of rail tracks used by the proposed Project within the Port of Prince Rupert. Due to the fact that Vopak has no ability to direct or influence CN's operations outside of the Port, and has no care or control of their activities, which are governed by existing regulations (i.e. *Transportation of Dangerous Goods Act* and regulations), an assessment of rail activities outside of the Port of Prince Rupert is not included. Vopak prepared a memo as part of the public comment responses to provide greater detail. Memo #2, Spatial Scope of the Assessment is included as Appendix 6.

Air Quality and Greenhouse Gas (GHG) Emissions	Requests to assess upstream GHG emissions	The project GHG assessment will rely on accepted methods and government targets for GHGs. While ECCC has an interest in developing a methodology for estimating upstream GHGs associated with fossil fuel projects, these methods are for large scale projects that have upstream activities exclusively linked to the project. The scale and nature of this Project do not meet these criteria. Upstream as well as life cycle emissions are not within the scope of the effects assessment.
	Requests to assess GHG emissions in relation to provincial and federal climate change targets	GHGs will be assessed as part of the effects assessment. The individual GHG (gases) will be included, as well as the equivalent effect of these gases to climate change (global warming potentials). The methodology for evaluating global warming potential is provided by ECCC and updated annually. It is expected that the published ECCC methods and data will be used. Project GHG emission sources will be determined for Vopak's operations within the Local Study Area (LSA), including transportation-related sources (e.g. on-site vehicles, worker vehicle trips) as well as terminal-operated sources within Vopak's care and control. This will include carbon emissions associated with electricity use, whether the electricity is generated on site or sourced from the grid. For all fossil fuel use, CH4, N2O and CO2 estimates will be made (as well as Co2e) based on expected fuels consumption and the current ECCC fuel-based GHG rates identified in the National Inventory Report. Transportation-related fuel consumption estimates will be made by identifying the expected fleet details and associated fuel consumption rates from best available sources, including rates available in the Transport Canada Port Emissions Inventory Tool. The estimated annual GHG emissions will be compared to provincial and national emissions estimates, identifying the provincial and national emission targets as well.
	Requests to assess air emissions related to transport and storage of refined liquids	The effects assessment includes analysis of fugitive emissions, which in this case are escaping vapours from the storage, transfer and loading of fuels. These emissions include both criteria air contaminants as well as GHGs. The transportation sources (rail, ship) within the study area are included.

Marine Traffic and Navigational Safety	Requests to assess increased vessel traffic and impacts on existing marine users and the cumulative impacts of marine shipping	The assessment of Project-related shipping within the scope of the Marine Resources assessment will look at potential impacts on the marine environment. Cumulative effect of shipping traffic will be assessed for any residual effects identified in the assessment. The incremental increase of traffic from the Project on existing and expected traffic in the area will be quantified by Vopak and included in the Marine Use and Navigation VC assessment and will also be used to inform the assessment of potential accidents and malfunctions.
Accidents and Malfunctions	Requests to assess marine accidents resulting in a spill of diesel to the marine environment	Vopak will assess all potential accidents and malfunctions related to the Project, including a loss of containment of Project bulk liquids. Vopak will assess all Project-related risks and the effectiveness of safety measures. The consequence of these risks will be assessed for all Project Valued Components (VCs) in Section 6, Assessment of Potential Accidents and Malfunctions. Memo #3, Accidents and Malfunctions, has been prepared by Vopak to detail the scope of these assessments to address issues related to potential accidents and malfunctions raised by the public and is included as Appendix 7.
	Request for Vopak to complete a detailed Marine Quantitative Risk Assessment	Vopak will be conducting an assessment of potential accidents and malfunctions. Specific accident and malfunction scenarios will be assessed, including, but not limited to : • Navigation incident frequency for all vessel transits and loss of cargo risk for laden transits. This will be reported as average number of events per year for the entire route and sections of the route. • Risk of loss of cargo. This will be reported as fatality risk, and frequency per quantity of products spilled. The portion of the navigation route within the scope is from the terminal to Triple Island. The study will estimate risk from the following types of marine incidents: • Collision • Drift grounding • Powered grounding • Structural failure

		• Fire & explosion The effects of these risks as described in Section 6 (Potential Accidents and Malfunctions) will be assessed for all Project VCs. Memo #3, Accidents and Malfunctions, has been prepared by Vopak to detail the scope of these assessments to address issues related to potential accidents and malfunctions raised by the public and is included as Appendix 7.
	Concerns related to public safety with respect to the proximity of Project stored goods to communities	Care for safety is a core value at Vopak and is an integral part of how we operate. Ownership of safety lies with each and every Vopak employee at all levels in the organization. The bulk liquids terminal will be designed with integrated safety systems and processes. Emergency detection and shut down systems will be an integral component of the operational design. In addition, the Port maintains up-to-date practices and procedures based on international standards that emphasize maximum safety with minimum disruption for neighbouring communities. The bulk liquids terminal will be designed with integrated safety systems and processes. Emergency detection and shut down systems will be an integral component of the operational design.
	Public safety concerns and potential effects on the environment from derailments of cargo from CN trains headed to Ridley Island	Rail operations outside of PRPA jurisdiction are the responsibility of CN, with regulatory oversight from the federal government and are not part of the Project scope. CN has existing safety protocols and emergency response measures that apply to all arriving rail to the PRPA. CN's Safety Management System is a proactive, comprehensive program designed to minimize risk and continually reduce injuries and accidents. The federal government also has regulatory requirements under the *Transportation of Dangerous Good Act*, and the requirement for Emergency Response Action Plans for tank cars that handle dangerous goods, including informing communities of dangerous goods being transported. CN is required to notify Transport Canada of any dangerous goods incident. CN provides dangerous goods and rail safety training to first responders in communities throughout Northern BC, and has highly-trained dangerous goods responders and contractors on call to address any rail incident. Local first responders also have access to real time information on dangerous goods

		transported through their community with the Ask Rail mobile application. For more detail on the scope of the assessment and assessment of accidents and malfunctions, please see Memo #2 and #3, respectively.
	Concerns regarding the risk of anchor drag incidents	Vopak has had discussions with the PRPA with respect to risks related to anchorage. Based on these discussions the assessment of anchorage risk is considered outside the scope of the Project. Ships calling at the Vopak terminal will not be required to anchor while waiting for cargo loading, as there are two berths, the anticipated throughput rate, and the loading rate of the terminal will limit ships needing to anchor. In the event that ships calling at the Vopak terminal may require anchorage, they must request anchorage through the PRPA. Anchorage procedures are well defined and managed by the PRPA, who monitors anchorages 24/7 through the Port Security Operations Centre. This Centre is the information hub for port safety and security matters and ensures an effective and efficient response to any incident. For more detail on the scope of the assessment and assessment of accidents and malfunctions, please see Memo #2 and #3, respectively.
Human Health	Concerns related to risks from resuspension of contaminated marine sediment	A screening-level Human Health Risk Assessment (HHRA) is planned to be conducted as part of the overall assessment. The wording in the draft Terms of Reference (TOR)/Application Information Requirements (AIR) will be revised to specify. The HHRA will consider potential human exposure to altered environmental media (including soil, sediment, water, air and country foods), and changes in noise and light levels and whether or not this exposure (if identified) would result in risks to human receptors. The potential for disturbance and resuspension of historically contaminated sediment within the marine portion of the Project footprint during dredging and disposal at sea operations, if to occur, has been specifically identified as a scenario that may require a Detailed Quantitative Risk Assessment (DQRA) approach in the evaluation of potential effects to the Human Health VC. This assessment would include an evaluation of potential uptake of resuspended sediment contamination by biota, and consumption of impacted country/traditional foods by human receptors. Vopak will update the TOR/AIR to clarify

		its commitment to conducting a screening-level HHRA and if required a DQRA with respect to resuspension of contaminants.
	Concerns regarding potential impacts of the Project on the quality of life in Port Edward due to noise, lighting, pollution and increased railway traffic	The Human Health VC assessment will consider potential human health effects related to exposure to altered environmental media (including soil, sediment, water, air and country foods), and changes in noise and light levels and whether or not this exposure (if identified) would result in risks to human receptors. Other indicators for 'quality of life' or social determinants of health will be assessed in the Social and Economic VCs. The assessment of the Community and Infrastructure VC includes indicators of community health and wellbeing such as demand for and supply of community infrastructure and services (e.g., education and municipal services, emergency response services capacity, health and social care services), local government expenditures on community infrastructure and services, traffic volume (daily), availability (vacancy rates, inventory levels) and cost of accommodation ($). The assessment will include the effects of railway operations associated with inbound train unloading and outbound train staging within Vopak's proposed lease area. For more detail on the scope of the assessment, please see Memo #2.
	Request that Health Canada and Northern Health should be authorities of the project environmental review	Both Health Canada and Northern Health are members of the regulatory Technical Working Group and are actively involved in providing expert advice and input into the draft TOR/AIR, as well as part of the environmental review process.
Marine Birds	Concerns regarding project-related effects on marine bird habitat and breeding territory	Vopak is assessing all potential Project-related effects on Marine Birds. In response to comments received, the LSA for the Terrestrial Resources VC (including Marine Birds) has been expanded. The LSA for the Terrestrial Resources VC will be changed to include the lands and waters within the Vopak land and water lot areas, 500 m on all sides of the land and water lot areas, and 1 km on both sides of the proposed shipping route between the marine terminal and Triple Island. This expansion in the LSA to include the marine shipping route will ensure potential effects of ship traffic on marine birds are captured in

		the EEE/Application document. The terrestrial component of the Regional Study Area (RSA) will be expanded to the extent of the Kaien Landscape Unit. The landscape unit is a spatially identified area for resource management, can be related back to landscape-level objectives and information on wildlife and ecosystems, and follows ecologically-relevant boundaries such as watersheds.
Marine Resources	Concerns that the scope of the assessment is not large enough to capture potential effects on marine fish and fish habitat, marine mammals	In response comments received on the draft TOR/AIR Vopak has increased the boundaries of the Marine Resources VC assessment. The Marine Resources study boundaries has been updated to reflect: • an expanded marine mammals LSA and RSA, which includes a 6.5 km diameter buffer extending outwards from the berths to the Kinahan Islands and a 6 km buffer on each side of the shipping route from the berths out to Triple Island; • an expanded LSA and RSA for the other marine resources subcomponents, including marine habitats, marine sediment quality and marine fish and benthic invertebrates that includes the Project water lot area and a 500 m buffer around the western portion of the water lot, and; • an expanded LSA/RSA for the marine water quality subcomponent that includes a 5 km radius from the berth to incorporate up to eight PRPA marine water quality stations.
	Concerns regarding marine water quality impacts from dredging	Any dredging or activities that have the potential to disturb marine sediment will be required to undertake sediment dispersion modeling. DFO permitting under the *Fisheries Act*, and ECCC Disposal at Sea permitting criteria require techniques that limit potential effects from sediment disturbance. Sediment Management: A Proponent's Guide for the Prince Rupert Region (2016) is a comprehensive guideline document for proponents who need to manage marine sediment. The document was initiated by the Metlakatla First Nation and PRPA with participation from DFO and ECCC, Lax Kw'aalams, Gitxaała, Kitselas, and Kitsumkalum First Nations. The guidance from DFO, ECCC and the regionally specific guidelines will lead the requirements for sediment dispersion

		modeling for the Project.
	Concerns related to impact on marine life from underwater blasting	No underwater blasting will be required for the Project.
Disposal of Contaminated Sediment	Concerns that disposal of contaminated sediment would have adverse effects on the environment and human health	Disposal of dredged material will be explored through the Disposal At Sea permitting process adjudicated by ECCC under the *Canadian Environmental Protection Act, 1999* (CEPA). This permitting process will be investigated concurrently with the environmental effects assessment.
Local Economy	Economic opportunities for the local communities	The Project will require a workforce of approximately 300 people, with an estimated peak number of 200 people, during the two-year construction phase and up to 40-50 people during the operational lifespan of the Project. Vopak is committed to working with local suppliers. Should the Project receive regulatory approval, Vopak has an interest in sourcing goods and services locally and is interested in learning more about the capabilities of local construction firms.
Public Consultation	Concerns related to lack of advertising of the open houses	A public notice was posted in the Northern View on August 30, 2018, to announce the 30-day public comment period and open houses. Open house notification posters were posted at the Prince Rupert Library, Port of Prince Rupert Interpretive Centre, Prince Rupert Civic Centre, Prince Rupert City Hall on September 14, 2018 and at the Port Edward convenience store and Port Edward Council Office on September 18, 2018. Additionally, open house notification postcards were inserted into the Northern View and mailed to 5,700 local residents on September 20, 2018. Further opportunities to participate in open houses will be posted on Vopak's project website: https://www.vopak.com/vopak-pacific-canada.
Environmental Assessment Process	Requests for the Project to undergo a 'full' environmental assessment under the *Canadian Environmental*	The Project does not exceed any specified thresholds under the CEAA 2012 *Regulations Designating Physical Activities* (SOR/2012-147) and therefore, the Project does not require an environmental assessment under Section 13 of CEAA 2012. However, projects can be determined by the Minister of ECCC to require an environmental assessment under Section 14 of

	Assessment Act, 2012 (CEAA 2012).	CEAA 2012. In a letter dated November 8, 2018, the Minister of Environment and Climate Change McKenna confirmed that she would not designate the project for an environmental assessment under Section 14 of CEAA 2012. In her decision, the Minister acknowledged the ongoing efforts to consult Indigenous communities in the Prince Rupert area being carried out by the PRPA, ECCC, DFO, and Transport Canada to fulfill their obligations under section 67 of CEAA 2012 as well as the provincial environmental assessment being carried out by the BC EAO. Vopak prepared a memo to provide more details related to the environmental review process. Memo #1, Environmental Review Process, which is included as Appendix 5.
	Understanding of current environmental review process has not been communicated clearly	Vopak has prepared a memo to improve clarity regarding the environmental review process of the Project. Please refer to Memo #1, Environmental Review Process, which is included as Appendix 5. Additionally changes will be made to improve clarity on the EA process in Section 1.4 of the draft TOR/AIR. These changes include: • Inclusion of the complete definition of environmental effects as defined in *CEAA* 2012, Section 5(1)(a-c) in Section 1.4.1. • Language has been inserted to clarify that each identified federal authority will make their own independent EEDs on the Project. • Language will be inserted in Section 1.4.2 to clarify the provincial scope of the assessment will include effects on VCs identified for all five provincial pillars: environment, social, economic, heritage, and health.
Effects of the Environment on the Project	Requests to look at risks of tsunami, earthquake or storm surge on project infrastructure.	Effects of the Environment on the Project will be assessed in Section 7. Factors of safety are included in the design of Project infrastructure to avoid effects resulting from these natural events.

5 Next Steps for Public Consultation

This report summarizes the public consultation activities conducted to date, as well as comments received. Vopak will continue implementing the activities outlined in the Consultation Plan. In terms of the immediate next steps related to Stage 2 - Project Description and Terms of Reference/Pre-Application Phase Consultation, Vopak proposes to conduct the following activities:

- Developing and maintaining communications tools and materials to share Project-related information to enable ongoing two-way communication and information sharing, such as the Project website and Project email address; and
- Meeting with interested local communities and stakeholder to continue to engage with community members and stakeholders on the Project.

Vopak will review all input received and consider it in the project planning, the environmental review process and in the development of communication materials.

6 Appendices

The following items noted in the Report are provided separately:

- Appendix 1: Open house notification poster
- Appendix 2: Open house notification postcard
- Appendix 3: Public notification advertisement
- Appendix 4: Open house storyboards
- Appendix 5: Memo #1, Environmental Review Process
- Appendix 6: Memo #2, Spatial Scope of the Assessment
- Appendix 7: Memo #3, Accidents and Malfunctions

Port Edward

September 25, 2018

4:00 PM - 7:00 PM

Port Edward
Community Center

770 Pacific Avenue,
Port Edward, BC

Prince Rupert

September 26, 2018

5:00 PM - 8:00 PM

North Coast
Convention Centre

240 West 1st Avenue,
Prince Rupert, BC

Vopak Development Canada Inc. is proposing to construct and operate the Vopak Pacific Canada Project, a bulk liquids tank storage and marine export facility on Ridley Island within the Port of Prince Rupert.

The Vopak Pacific Canada Project is being reviewed under both the Canadian Environmental Assessment Act, 2012 and B.C.'s Environmental Assessment Act. The Prince Rupert Port Authority and BC Environmental Assessment Office have scheduled open houses in Port Edward and Prince Rupert as part of the regulatory Public Comment Period to provide you with the opportunity to give input and learn about the Project.

Light refreshments will be provided.

We look forward to meeting with you.

Storing vital products with care

Vopak

Vopak invites you to attend the

Vopak Pacific Canada **Open Houses**

Port Edward

September 25, 2018

4:00 PM - 7:00 PM

Port Edward
Community Center

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Light refreshments will be provided.

We look forward to meeting with you.

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Bachelor & 1 Bedroom Suites. Security Entrance, harbour views, balconies, storage, laundry facilities, hot water & heat included. Sorry no pets. Close to hospital, bus stop & downtown. References required.
Contact our on site Manager at 250-624-4744

Rooms for Rent

Prince Rupert Rooms For Rent
Executive Rooms Starting at $399/Weekly, $999/Monthly. Contractors Welcome All-Inclusive.
250-600-1680

Suites, Lower

2 bedroom suite
Located downtown Prince Rupert. Includes 5 appliances. No smoking, no pets and no parties. $1200 per month.
Call Balvinder Nanan: 250.600.3896

Prince Rupert Spacious 2 bedroom Main Floor Suite
1 full and 2 1/2 baths, 1740 sq ft, fully furnished, washer/dryer/dishwasher, quiet neighbourhood, off street parking, close to town. Heat, hot water, cable, Wi-Fi & hydro included. No pets, no smoking (allergies).
$1,800 per month (Negotiable)
To view or for more info call 250-624-5635 (H), 250-627-1724 (cell) or 778-645-0607 (cell)

Transportation

Cars - Domestic

2006 Ford Escape V6
asking $6900.00
250-624-5222

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Transportation

Boats

32' FIBERGLASS FERRELL BOAT
2300hrs on New 370H.P. Fresh Water cooled 8.1L Diesel Engine, Trolling valve, Bow Thruster, 3 Stage Steering, 2 Hydraulic Deep lines and Trap Puller, Sounder, Radar, 2 Radios, Com-Dev Auto Pilot, Spare Prop, 8' Dinghy. Can be seen at MK Bay Marina. Includes slip
$49,900 or best offer
Contact Warren Poff at
250.632.6119/250.242.1789

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Tracking No. 373068

ENVIRONMENTAL PROTECTION NOTICE

Application for a Burn Permit under the Provisions of the Environment Management Act.

Wainwright Marine Services Ltd., P.O. Box 10 Prince Rupert BC V8J 3P4, intend to submit this application to the Director to authorize the discharge of biogenic CO2, NOx approximately 1.51 lbs. per 20 tons of processed material, PM of less than 10 microns or less (PM2.5) particles. From an Air Curtain Incinerator. The source of the discharge is from derelict wooden boats, waste from demolished housings and land clearing debris.

The land upon which this facility will be situated and the discharge will occur at 121 Duncan Road Lot 1, Plan PR10618, District Lot 251, Range 5, Coast Range 5 Land District PID:005-192-790.Prince Rupert BC.

The maximum rate of air Emissions is approx. per 1 ton of waste PM2.5=1.1, PM10=0.10 to 0.13, SO2=0.00313, NOx =0.03 to 0.05, CO=0.611 to 2.6, discharged from this facility. The operating period of this facility will be 8 hours a day, 5 days a week on a as needed basics. The characteristics of the waste discharge is burning wood by products CO2, (Carbon Dioxide), H2O (gaseous water) and Ash. The feed rate could be as high as 5 ton per hour. The type of treatment applied to the discharge (ash) is as follows. The ash will be encased in cement.

Any person who may be adversely affected by the proposed incineration of this wood product waste and wishes to provide relevant information may, within 30 days after the last day of posting, publishing, service or display, send written comments to Wainwright Marine, P.O. Box 10, Prince Rupert ,BC V8J 3P4 Attention George Hillier, with a copy to the Director, Environmental Protection, Ministry of Environment and Climate Change Strategy, at authorizations.north@gov.bc.ca or by mail to 400-640 Borland Street, Williams Lake BC, V2G 4T1. The identity of any respondents and the contents of anything of anything submitted in relation to this application will become part of the public record.

Dated August 7, 2018

George Hillier
george@wainwrightmarine.com
250-624-9858

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Environmental Assessment of the Proposed Vopak Pacific Canada Project

Public Comment Period and Open House

Vopak Development Canada Inc. (Vopak) is proposing to construct and operate the Vopak Pacific Canada Project, a bulk liquids tank storage and marine export facility on Ridley Island within the Port of Prince Rupert. The Vopak Pacific Canada Project is being reviewed under both the *Canadian Environmental Assessment Act, 2012* and B.C.'s *Environmental Assessment Act*. The environmental assessment of the project is being conducted by the Port of Prince Rupert (PRPA) and B.C.'s Environmental Assessment Office (EAO), with both agencies seeking to coordinate their environmental assessments.

Public Comment Period
Vopak has recently submitted its Project Description and draft Application Information Requirements which describe the Vopak Pacific Canada Project, its potential to cause adverse environmental, economic, social, health and heritage effects, the studies to be conducted and the detailed information to be provided by Vopak in its Environmental Effects Evaluation/Application. PRPA and EAO are inviting the public to submit comments on the Vopak Pacific Canada Project.

A copy of the complete Project Description and the draft Application Information Requirements are available online at www.rupertport.com and www.projects.eao.gov.bc.ca/p/vopak-pacific-canada.

Submit comments from **September 6, 2018 to October 9, 2018**

By Online Form: www.projects.eao.gov.bc.ca/ **By Email:** projects@rupertport.com **By Fax:** 250-387-0230

By mail: Jack Smith, Director, Environmental Planning and Compliance, PRPA
200, 215 Cow Bay Road, Prince Rupert, BC
V8J 1A2

OR

Nathan Braun, Executive Director
Environmental Assessment Office
PO Box 9426 Stn Prov Govt
Victoria, British Columbia V8W 9V1

Comments only need to be submitted **once** to either PRPA or the EAO to be considered in both the provincial and federal environmental assessments.

Copies of the Project Description and draft Application Information Requirements are also available for viewing at these locations:

Prince Rupert Port Authority
Port Interpretive Centre
215 Cow Bay Road, Prince Rupert, BC

Prince Rupert Public Library
101 – 6th Avenue West, Prince Rupert, BC

Open Houses
In order to provide information about the Project Description and the draft Application Information Requirements, PRPA and the EAO invites the public to attend one of the following open houses:

at: **Port Edward Community Centre**
770 Pacific Avenue, Port Edward, BC
on: **September 25, 2018**
from: **4:00 p.m. to 7:00 p.m.**

at: **North Coast Convention Center**
240 West 1st Avenue, Prince Rupert, BC
on: **September 26, 2018**
from: **5:00 p.m. to 8:00 p.m.**

Canada BRITISH COLUMBIA

Welcome

Vopak Development Canada Inc. (Vopak) would like to welcome everyone.

We acknowledge and thank the members of the Tsimshian First Nations for hosting us in their traditional territory today.

Vopak is investigating the opportunity to construct and operate a bulk liquids tank storage facility on Ridley Island near Prince Rupert and Port Edward, British Columbia. The Project will be built on federal lands and will be subject to an Environmental Effects Determination under Section 67 of the *Canadian Environmental Assessment Act, 2012*. In addition, the Project energy storage capacity exceeds the threshold for a reviewable project under the BC *Environmental Assessment Act* (BCEAA). As such the Project will also be subject to approval under the BCEAA.

The purpose of the federal determination and provincial assessment is to identify the potential adverse effects related to the Project, as well as the practical means of preventing or reducing any potential adverse effects.

This Open House is an opportunity for you to:

- Meet members of the Vopak Project team;
- Engage with both federal and provincial regulators involved in the review;
- Ask questions about the Project and provide comments about the proposed scope of the assessment that is outlined in the Project's Terms of Reference, including the proposed Valued Components to be assessed in the Environmental Effects Evaluation (EEE) Document submission; and
- Learn how you can continue to be involved in the environmental assessment process.

Your input is encouraged and welcomed. It will help Vopak better understand the concerns and values of your community, with the objective of conducting a robust environmental assessment.

Vopak will be participating in more consultation activities throughout the process. Open Houses are also planned with submission of the EEE document. We look forward to your engagement and participation throughout this process.

Submit comments from September 6, 2018 to October 9, 2018.

By filling out a Comment Card available at the welcome desk.

Through the Online Form available at: www.projects.eao.gov.bc.ca/

By email: projects@rupertport.com

By fax: 250-387-0230

Comments only need to be submitted **once** to either Prince Rupert Port Authority or the BC Environmental Assessment Office to be considered in both the provincial and federal environmental assessments.

Storing vital products with care

Vopak

Who Are We?

About Us

Vopak is the world's leading independent tank storage provider. We operate a global network of terminals located at strategic locations along major trade routes. With a 400-year history and a strong focus on safety and sustainability, we ensure efficient, safe and clean storage and handling of bulk liquid products and gases for our customers.

Vopak Values:

- Care for Safety, Health & Environment
- Integrity
- Team Spirit
- Commitment
- Agility

Our five leadership areas:

Vopak Assets at a Glance

Vopak has a 30% interest in the Ridley Island Propane Export Terminal, which is currently being constructed in Prince Rupert, BC. This facility is the first propane export facility off the coast of Canada.

Operational Excellence

Doing the right things right - Vopak takes a leadership role on operating capabilities and set the standard in the field of safety, service and costs. We are the trustful partners of our customers. They trust us with their valuable goods that are crucial to people's lives, but can endanger their health and the environment if stored or handled inappropriately. We abide by existing rules and regulations as a minimum and adopt best practices whenever possible.

Safety

Safety is our first priority. This concerns both personal and process safety. It is our responsibility to deliver services in a safe manner, to provide a safe and healthy workplace for Vopak employees, contractors and the communities in which we operate.

The bulk liquids terminal will be designed with integrated safety systems and processes. Emergency detection and shut down systems will be an integral component of the operational design. In addition, the Prince Rupert Port Authority maintains up-to-date practices and procedures based on international standards that emphasize maximum safety with minimum disruption for neighbouring communities. Vopak will work with the Port Authority to integrate Port safety zones and policies. Railcars will be designed specifically for transporting facility products and will comply with Transport Canada regulations.

Sustainability

Our mission is to connect the supply and demand for products by providing safe, efficient and clean storage and handling services for our customers. By fulfilling our mission with care, we strive to be the partner of choice for all our stakeholders, from customers, business partners and investors, to governments, local communities and society at large. We believe it is our responsibility to do what we can to maximize our contribution to and minimize negative impacts on society and the environment. To Vopak, sustainability means generating added value for our stakeholders, without causing any human suffering or unacceptable negative social and environmental impacts. We are committed to improving our personal and process safety, minimizing our energy and water consumption and emissions to soil, air, surface and sewage water.

The Vopak WeConnect Foundation aims to empower young people in the communities near Vopak locations and connect them to the world by opening up new (professional) horizons and increasing their future job readiness and/or by inspiring them to work together with others across cultures, languages and social backgrounds. The Foundation was formally established in June 2017 and is registered under number 69006784 with the Dutch Chamber of Commerce.

Project Overview

Project Overview

Vopak Pacific Canada (the Project) is proposed to be located on Ridley Island within the lands and waters under the jurisdiction of the Prince Rupert Port Authority. The Project will store Liquefied Petroleum Gas (LPG) (i.e., propane), Clean Petroleum Products (CPP) (i.e., diesel and/or gasoline), and methanol on behalf of Vopak's customers. Vopak will build the Project and manage the day-to-day operations of the bulk liquids tank storage facility. All products will be transported from various locations across Western Canada to the Project via the existing Canadian National (CN) Railway line. Customers of Vopak will be scheduling the transportation of the products to site and will ship the products from the jetty to international markets. The Project provides much needed tidewater access to global markets around the world.

The preliminary key Project phases are:

- Environmental assessment and engineering design – 2018 to 2019;
- Permitting and environmental management plans – end of 2019;
- Construction activities – 2020 to 2022;
- Commissioning – 2022 (one to two months);
- Operational in-service date – 2022;
- Operations and maintenance – 2022 out to a minimum of 50 years 2072); and
- Decommissioning, abandonment and reclamation – sometime after 2072 when the Project has reached the end of its operational life.

Project Benefits

- Diversify product and economic activity at the Port of Prince Rupert;
- Provide access for Canadian products to markets around the world; and
- Provide local skills training and employment opportunities.

Employment

The Project will require a workforce of approximately 300 people, with an estimated peak number of 200 people, during the two-year construction phase and up to 40-50 people during the operational lifespan of the Project.

Vopak is committed to working with local suppliers. Should the Project receive regulatory approval, Vopak has an interest in sourcing the following goods and services locally and is interested in learning more about the capabilities of local construction firms.

Anticipated contractor requirements for the Project include:

- Site services (including water, sewage and office supplies);
- Construction services (including gravel, earthworks, rental trucks);
- Concrete foundations (including footings, pre-cast capabilities, geotechnical, laboratory testing);
- Pre-fabrication (buildings and modules of terminal infrastructure);
- Mechanical contractors;
- Marine contractors;
- Welders;
- Pipe fabrication; and
- Electrical & instrumentation.

Vopak invites interested suppliers and contractors to fill out a vendor information form, which can be accessed on the Project website:

https://www.vopak.com/vopak-pacific-canada

Vopak will review submitted forms and will keep them on file for consideration for future work based on the capabilities of the respective supplier and contractor.

Project Components and Capacities

The scope of the Project includes the receiving and unloading of customer products from CN rail cars via six rail tracks part of the Ridley Island Road, Rail and Utility Corridor, into the Project's rail unloading area and into Project storage facilities. From the storage facilities the product is loaded via pipeline along the Project's jetty to a berthed ship ready to take the products to their final destination.

At full build-out the facility will have a capacity of 90,000 cubic meter (m^3) of LPG, 260,000 m^3 of CPP and 220,000 m^3 of methanol. Components of the Project include:

Bulk liquids tank storage facility

- Gas generators capable of producing up to 2.7 megawatts of electrical power combined for LPG cooling;
- LPG cooling equipment and de-ethanizer;
- Emergency ground flare;
- Six pressurized LPG bullets of 1,000 m^3 each;
- One full containment LPG storage tank of 90,000 m^3;
- Carbon steel storage tanks;
  - CPP: 2 tanks at 40,000 m^3 and 6 tanks at 30,000 m^3;
  - Methanol: 4 tanks at 40,000 m^3 and 2 tanks at 30,000 m^3; and
- Process control and safety systems.

Jetty

- A 200 meter long causeway;
- A 800 meter long trestle;
- A pipe rack for the insulated pipelines for products and utilities;
- Two berths for vessels up to 85,000 m^3 capacity (80,000 dead weight tonnes);
- Two loading platforms including all required equipment and systems; and
- One auxiliary platform for the firewater pump house, spill boom shed and electrical building.

Supporting infrastructure

- Roads and car parking;
- Drainage and wastewater treatment system;
- Nitrogen for safety and maintenance purposes;
- Office including central control room, maintenance and utilities buildings;
- Electrical substation and connection to the BC Hydro grid; and
- Natural gas connection to Pacific Northern Gas for compressors, gas generators and heating of buildings.

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- Two loading platforms including all required equipment and systems; and
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Supporting infrastructure

- Roads and car parking;
- Drainage and wastewater treatment system;
- Nitrogen for safety and maintenance purposes;
- Office including central control room, maintenance and utilities buildings;
- Electrical substation and connection to the BC Hydro grid; and
- Natural gas connection to Pacific Northern Gas for compressors, gas generators and heating of buildings.

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Project Operations

Power Requirements

Total power consumption during operations will be on average less than 2 megawatt (MW). At peak, it is expected to be 4.5 MW. Power is expected to be supplied by both existing BC Hydro power and supplemented with on-site gas generators.

Liquefied Petroleum Gas (LPG) Cooling Process

The LPG will arrive by rail in a pressurized state. Rail cars will be unloaded into temporary pressurized storage bullets (six bullets of 1,000 m³ each). The product will then be transferred through a refrigeration unit into a refrigerated storage to be stored at approximately -42 degrees celsius. The pressurized storage acts as a buffer, allowing pressurized LPG, which is unloaded at regular intervals, to be refrigerated continuously. By refrigerating the LPG continuously, the size of the refrigeration plant can be minimized, reducing the overall footprint and power consumption and increasing the efficiency of the unit. The refrigeration unit will be powered by gas generators which can produce a maximum of 2.7 MW combined.

Product Storage

The products will be stored at atmospheric pressure in tanks that are specifically designed for the product type. The tanks will meet the applicable Canadian standards and regulations and will incorporate best available technology.

After the LPG has been received and cooled, it will be stored in a full containment refrigerated storage tank of 90,000 m³, which will be composed of an inner steel tank and an outer concrete tank for optimal isolation. Tank dimensions are typically 70 meters in diameter with a height of 25 meters.

The other bulk liquids will be stored in carbon steel tanks. The liquid products will be stored in such a way as to minimize vapours. For example, methanol with a high vapour pressure and low flash point will be stored in tanks with internal floating roofs which float on top of the product and which reduce the accumulation of product vapours and possible formation of a combustible mixture as well as vapour emissions to the environment. Additionally, the Clean Petroleum product (CPP) and methanol tanks will be placed in a secondary containment tankpit with bundwalls or dykes with an impermeable barrier in the floor of the tankpit and in the dykewalls, so product cannot flow into the ground in case of an incident.

Marine Ship and Rail Movements

Rail Movement

The expected number of rail cars is approximately 240 per day; 60 for LPG, 90 for CPP and 90 for methanol.

Vopak customers will utilize unit trains owned and operated by Canadian National (CN) railway to deliver product to the storage facility. CN will deliver the unit trains to the facility, after which Vopak will take over the responsibility for the rail cars. The cars will be split and shunted into place for the unloading of the products. After they have been unloaded, the empty cars will be parked at the west end of the Road, Rail and Utility Corridor (RRUC) for pick up by CN.

Propane, CPP and methanol are regulated for transport under the *Transportation of Dangerous Goods Act* and Regulations. Rail tank cars that carry these products are specifically designed and built for that purpose, and are required to meet well-established engineering codes and the requirements of Transport Canada.

Marine Shipping

The vessel traffic along the shipping lane through Prince Rupert Port Authority waters and between Triple Island and the terminal is expected to increase by up to 150 vessels per year. Vessels to be loaded at the terminal will call at the pilotage station at Triple Island from, which they will be subject to compulsory pilotage before entering Prince Rupert Port Authority (PRPA) waters. Pilotage and escort requirements will be in accordance with PRPA's "Harbour Practices and Procedures" and in consultation with the Pacific Pilotage Authority, Transport Canada, and the Canadian Coast Guard.

Vessels that call at the terminal will be owned and operated by third party companies that are specialists in the safe transport of the products. Vessel vetting by Vopak will furthermore ensure that all vessels comply with the local and international safety and environmental standards.

Project Emissions

Project-related emissions sources include:

- On-shore (trains, vehicles, emergency ground flare and gas generators); and
- Marine (vessels and tugs).

Project sources used during the construction and operations phase will emit criteria air contaminants such as particulate matter (PM10, PM2.5), nitrogen oxides, sulphur oxides, carbon monoxide; and volatile organic compounds. The Environmental Effects Evaluation will review the potential effects of these emissions.

The facility will have an enclosed ground level flare, which will only be used in case of emergency or for periodical (annual) maintenance activities. The flare will not emit a visible flame, nor will it emit radiant energy that will impact adjacent properties.

Emissions Containment

The low pressure refrigerated propane storage tank will be connected to a vapour recovery system to recover boil-off vapours, which are re-condensed to liquid propane and returned to the refrigerated storage tank. A closed venting system will be installed to receive any gas released as a result of a maintenance related shutdown, and the system will feed to the emergency flare. Maintenance related shutdowns are expected to take place once a year.

Dredging during Construction

The estimated dredge volume for construction of the marine jetty is approximately 682,000 m³ of soft material which is expected to be disposed at sea. The disposal location will be identified through consultation with Indigenous groups and various stakeholders. Alternatives to Disposal at Sea (DAS) will be explored through the DAS permitting planning process.

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Valued Components

What is a Valued Component?

Valued Components (VC) form the analytical basis for the environmental assessment. VCs are components of the biophysical and socio-economic environments that are considered by Vopak, the public, Aboriginal groups, government agencies, and other stakeholders involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, Indigenous, or historical importance.

The selection of VCs includes:

- Issues scoping;
- Identification of candidate VCs;
- Evaluation of candidate VCs;
- Selection of VCs; and
- Determining Effects Pathways (i.e. changes in VCs that may be influenced by, or influence, effects on other VCs).

Proposed VCs are outlined in the table below:

Valued Component	Subcomponent	Rationale
Air Quality	-	• Potential interaction of the Project, including emissions of Criteria Air Contaminants and Volatile Organic Compounds.
Greenhouse Gas (GHG) Emissions	-	• Potential interaction of the Project involving emissions of GHGs (e.g., carbon dioxide, methane, nitrous oxide).
Noise	-	• Project-related noise may be a source of disturbance to nearby sensitive receptors (humans and fauna).
Visual Quality - including Ambient Light	-	• Existing viewscape may be altered. • Project lighting may contribute to existing skyglow and be a source of disturbance to nearby sensitive receptors (humans and fauna).
Marine Resources	Marine Habitat Marine Water Quality Marine Sediment Quality Marine Fish and Benthic Invertebrates Marine Mammals, including Species at Risk	• The Marine Resources VC was selected as an umbrella for several marine-related subcomponents. • Several federal acts have provisions for the protection of resources related to the marine environment, including fauna and habitat. (e.g., *Fisheries Act, Canadian Environmental Protection Act*). • Includes the assessment of potential sediment contamination and the effects of underwater noise on marine mammals and fish.
Terrestrial Resources	Wildlife and Wildlife Habitat, including Birds and Species at Risk Vegetation, including Rare Plants Wetland Function	• Terrestrial Resources VC was selected as an umbrella for several terrestrial-related subcomponents. • Mandated protection legislation or policy is in place (e.g., ***Species at Risk Act, Migratory Birds Convention Act***). • Certain species are legally protected under legislation, i.e., species at risk, such as little brown myotis bat (Myotis lucifugus).
Soils and Terrain	Soils and Terrain	• The Soils and Terrain VC is proposed as potential changes to soil and terrain may have effects on other VCs (e.g., loss of permeability, habitat loss).
Freshwater Fish and Fish Habitat	Ground and Surface Water Quality Freshwater Fish	• Freshwater Fish and Fish Habitat was selected to represent several related components of freshwater aquatic habitat. The quality of freshwater surface, and groundwater have the potential to affect habitat for receptors such as fish and other fauna. These subcomponents of freshwater resources support an understanding for the environmental setting of the Project.
Socio-Economic Conditions	Marine Use and Navigation Community Infrastructure and Services including Accommodations Economic Conditions (Labour Force Capacity Commercial Business)	• Potential economic effects of the Project (e.g., job creation during construction and operation).
Archaeology	-	• Archaeological sites have been identified within the Vopak project site, therefore, Archaeology has been identified as a VC to be considered for this Project.
Human Health	-	• Air quality, noise and lighting have been considered in other EAs as important to the health of nearby residents and workers. • Results of the marine sediment assessment will provide the basis for assessing Project-related effects to human health from potentially contaminated marine foods.

The poster boards at this Open House introduce you to each of the proposed VCs, the proposed Study Boundaries, the potential Project-related effects, and the indicators that will be used to measure the potential project-related effects.

Air Quality and Greenhouse Gas Valued Components

Air Quality Valued Component

What are the potential project-related effects?

- Change in ambient air quality related to dust and Criteria Air Contaminants (CACs) releases during construction and operations activities.

How will we measure the potential effect?

- CACs will be used as indicators to predict potential changes in ambient air quality.

Changes in ambient air quality will be used to assess potential project-related effects on:

- Human Health
- Terrestrial Resources
- Freshwater Fish and Fish Habitat
- Visual Quality
- Socio-Economic Condition

Greenhouse Gas (GHG) Emissions Valued Component

What are the potential project-related effects?

- Changes in GHG emissions related to combustion of fuels or release of fugitive GHGs (i.e. methane) from LPG movement and storage during construction and operations.

How will we measure the potential effect?

- CO_2e is a measure of GHGs which influence climate change.

Changes in GHG emissions will be used to assess potential project-related effects on:

- Human Health
- Terrestrial Resources
- Visual Quality
- Socio-Economy

Administrative boundaries for the GHG VC are relevant with respect to provincial and national GHG emissions management targets and objectives. The assessment boundaries for GHG emissions will be the Province of BC, to provide context as to the Project-related GHG emissions contribution to provincial targets as well as nationally, using federal GHG emissions targets.

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Noise, Visual and Ambient Light Valued Components

Noise Valued Component

What are the potential project-related effects?

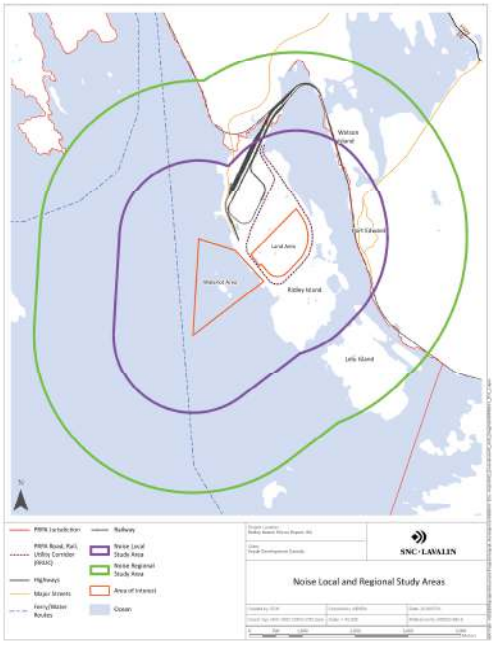
- Change in ambient sound levels related to short-term construction activity and during facility operations.

How will we measure the potential effect?

- Ambient sound levels;
- Incremental change in noise level from construction of the project; and
- Incremental change in noise level from facility operations.

Changes in ambient noise will be used to assess potential Project-related effects on:

- Human Health
- Marine Resources
- Terrestrial Resources
- Socio-Economic Condition (e.g. local economy, marine use)



Visual including Ambient Light Valued Component

Valued Component Sub-components:

- Visual Quality
- Ambient Light

What are the potential project-related effects?

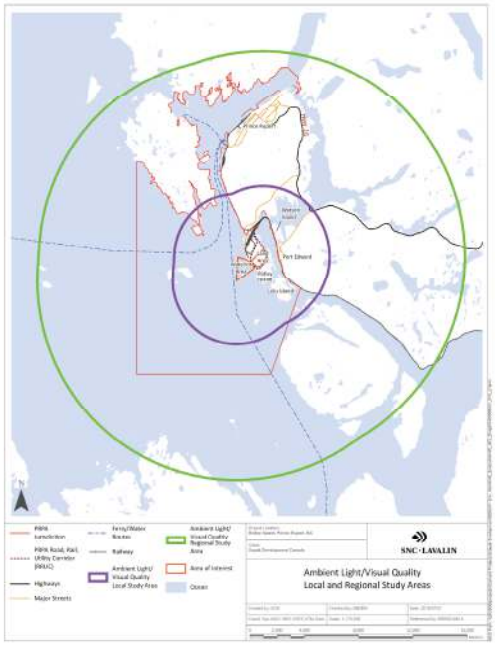
- Site clearing, grading and construction of project infrastructure may change visual quality by alteration of viewscape; and
- Project operational lighting may contribute to ambient light and existing skyglow.

How will we measure the potential effect?

- Change in visual quality (i.e. modified viewscape metrics), resulting from project activities and land development; and
- Change in levels of light trespass, glare and sky glow.

Changes in Visual Quality and Ambient Light will be used to assess potential Project-related effects on:

- Socio-economic Conditions
- Marine Resources
- Air Quality
- Human Health



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Marine and Terrestrial Valued Components

Marine Resources Valued Component

Valued Component Sub-components

- Marine Habitat
- Marine Mammals
- Marine Water Quality
- Marine Sediment Quality
- Marine Fish and Benthic Invertebrates

What are the potential Project-related effects?

- Change in marine water quality, alteration and loss of subtidal and intertidal fish habitat from construction of the marine jetty and causeway;
- Deposit of potentially deleterious materials and alteration of fish habitat during jetty construction activities;
- Interaction with marine water, potential change in marine water quality related to discharge of hydrotest sea water (if sea water is used);
- Direct mortality of fish and marine mammals;
- Increased marine traffic and temporary construction activities of the marine infrastructure may contribute to underwater noise and habitat disturbance; and
- Harm or change in behaviour of marine mammals from underwater noise.

How will we measure the potential effect?

- Change in habitat quality and quantity metrics;
- Marine mammal or species at risk presence/absence;
- Marine water sediment and water quality metrics;
- Fish species presence/absence; and
- Benthic invertebrate diversity/abundance.

Terrestrial Resources Valued Component

Valued Component Sub-components

- Wildlife and Wildlife Habitat, including non-marine birds and species at risk
- Marine Birds
- Vegetation, including rare plants
- Wetland Function

What are the potential Project-related effects?

Site clearing, road construction, construction traffic, and dredging may result in:

- Loss of habitat for wildlife and vegetation;
- Loss of wetland function;
- Disturbance or displacement of wildlife due to noise, light and human presence; and
- Direct mortality of wildlife from traffic collisions.

How will we measure the potential effect?

- Quantity and distribution of suitable wildlife habitat and sensitive habitat features;
- Quantity and distribution of identified critical habitat or residences for federal species at risk;
- Presence and distribution of wildlife (including marine birds) and species at risk;
- Quantity and distribution of terrestrial ecosystems, including at-risk ecosystems;
- Presence and distribution of vegetation, including rare plants; and
- Quantity and distribution of wetland ecosystems (by class).

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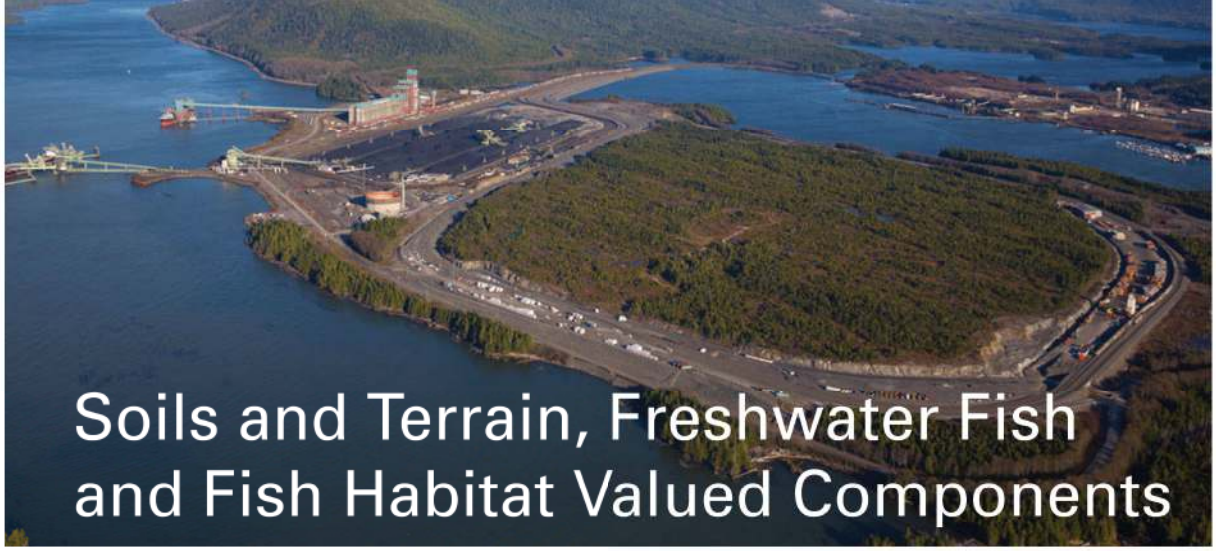


Soils and Terrain, Freshwater Fish and Fish Habitat Valued Components

Soils and Terrain Valued Component

What are the potential Project-related effects?

- Reduced permeability or loss of permeability as a result of soil removal;
- Disturbance of potentially contaminated soil within the site clearing boundaries;
- Soil compression resulting in reduced permeability or complete loss of permeability;
- Accidental introduction of contaminated fill for site grading; and
- Potential for the introduction of untreated contaminated sediment to the onsite disposal area at Ridley Island, unless the dredge material is disposed of at sea.

How will we measure the potential effect?

- Presence of soil contaminants
- Terrain stability metrics

Changes to the Soils and Terrain will also be used to assess Project-related changes on:

- Terrestrial Resources

Freshwater Fish and Fish Habitat Valued Component

Valued Component Sub-components

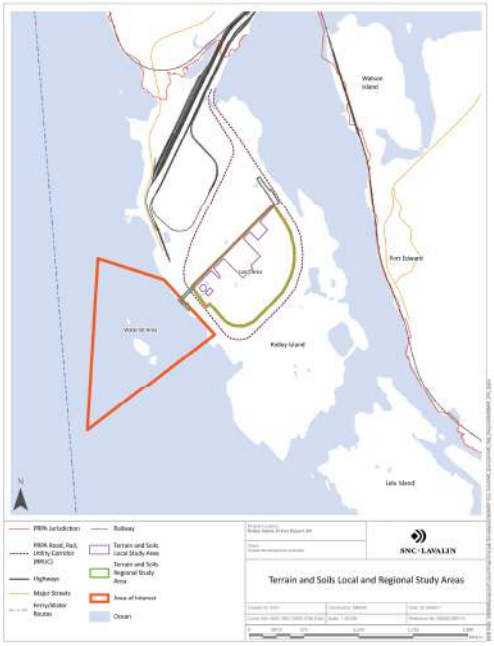
- Ground and Surface Water Quality
- Freshwater Fish

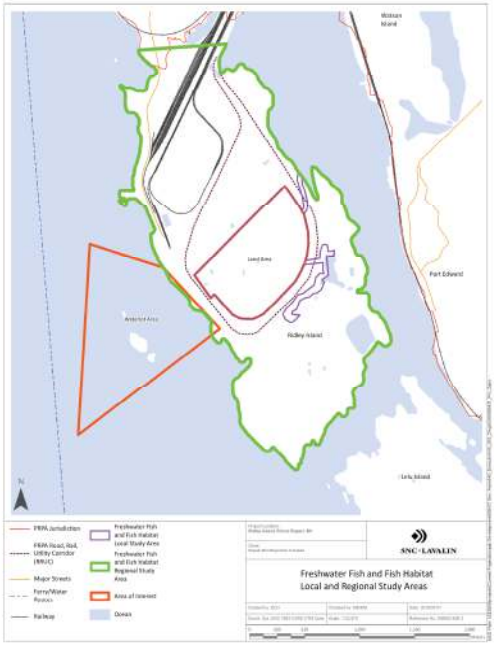
What are the potential Project-related effects?

- Change in water quality, surface water drainage, increased sediment and erosion risk related to construction activities that may affect surface water and runoff; and
- Change in water quality from accidents and malfunctions or inadequate measures for storm water management.

How will we measure the potential effect?

- Ground and surface water quality parameters (such as metals, nutrients, contaminants, and in situ measurements, e.g., pH, temperature, dissolved oxygen, turbidity);
- Fish presence/absence; and
- Habitat quality and quantity.





Socio-Economic Condition Valued Component

Socio-Economic Conditions Valued Component

Valued Component Sub-components

- Marine Use and Navigation;
- Economic Conditions; and
- Infrastructure and Services.

What are the potential Project-related effects?

- Fishing, recreation and marine use may be affected by temporary construction related activities of the Project as well as potential changes to noise, visual quality and increased marine traffic during construction and operations;
- Interference on navigation as a result of Project-related marine traffic and construction of a new jetty;
- Potential social and community effects on local services and infrastructure, including local accommodation and housing affordability and availability as a result of increased workers living in the area during both construction and operations;
- Short-term accommodation for construction workers will require a work camp. Potential effects of work camp related to public safety, services and infrastructure capacity, local spending; and
- Potential economic effects of Project (e.g., labour demand job creation during construction and operation).

How will we measure the potential effect?

Marine Use and Navigation

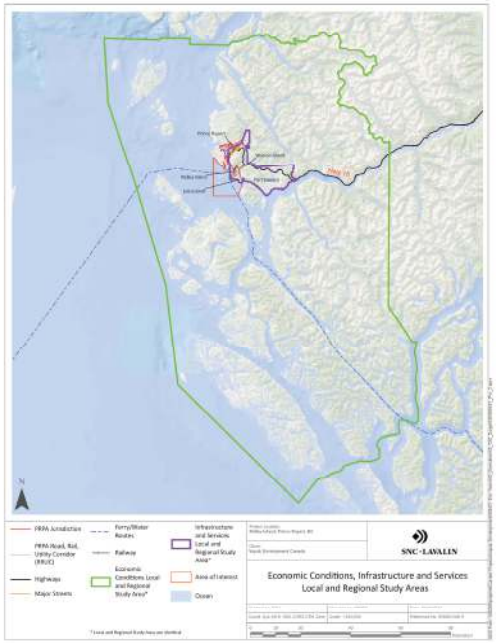
- Shipping traffic in Prince Rupert harbour (ships per year);
- Marine vessel types;
- Data on marine uses along shipping channel (i.e., fishing, aquaculture); and
- Data on other uses (e.g., recreational boating routes, marine park locations, visitor frequency, and access).

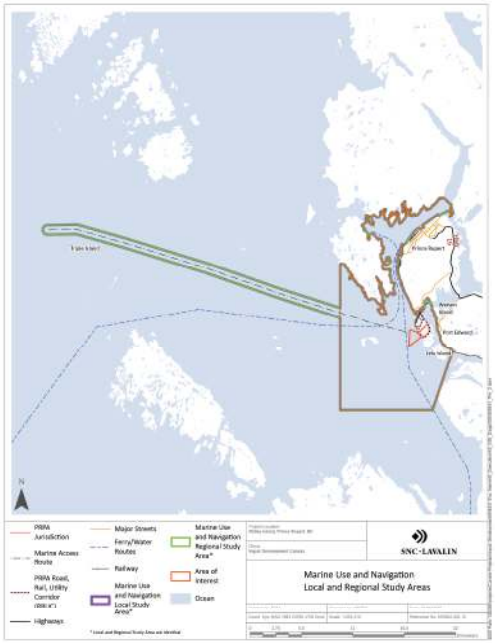
Economic Conditions

- Quantitative indicators of the supply and demand for labour in the region (e.g., qualified labour supply, i.e., number of workers by occupation and region of residence, unemployment rates, wage rates, skill levels); and
- Value of local and regional spending ($) related to population influx and related employment.

Community Infrastructure and Services

- Demand for and supply of community infrastructure and services (e.g., education and municipal services, emergency response services capacity, health and social care services);
- Local government expenditures on community infrastructure and services;
- Traffic volume (daily); and
- Availability (vacancy rates, inventory levels) and cost of accommodation ($).





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Archaeology and Human Health Valued Components

Archaeology Valued Component

What are the potential Project-related effects?

- Construction activities have the potential to alter or destroy potential archaeological sites.

How will we measure the potential effect?

- Number of affected sites; and
- Location of recorded archaeological sites.

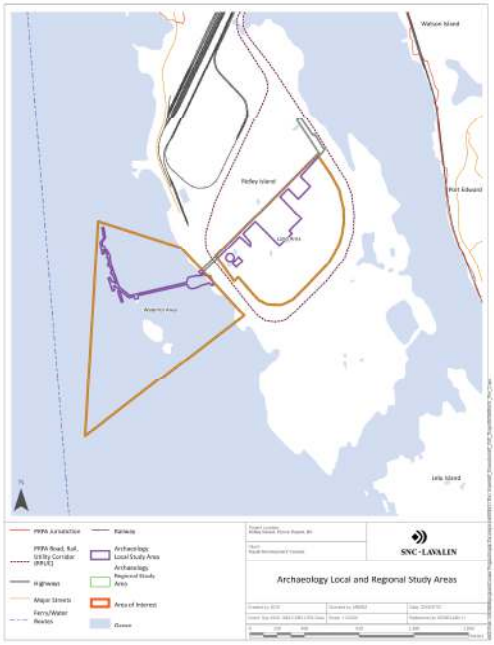
Human Health Valued Component

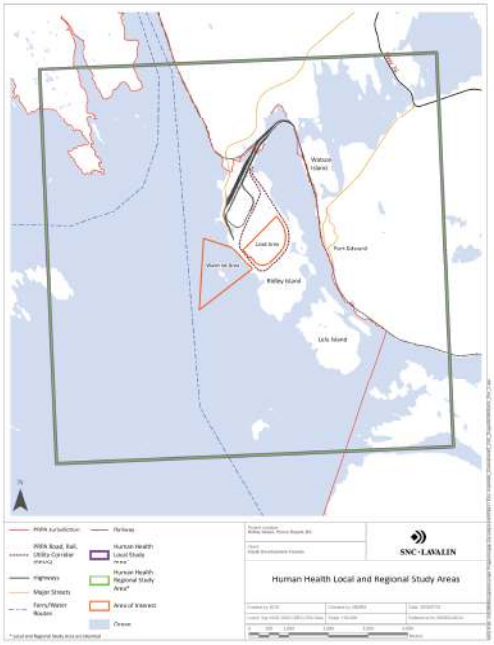
What are the potential Project-related effects?

- Potential changes to human health (e.g. related to Project effects on Air Quality, Greenhouse Gas (GHG), Noise and Marine Sediment).

How will we measure the Project effect?

- Project-related effects will be measured using the same metrics that are used to measure changes in Air Quality, Noise, GHGs, Light and Marine Sediment.





Memo 1: Environmental Review Process

Introduction

Concerns raised during the draft Terms of Reference /Application Information Requirements (TOR/AIR) comment period related to the environmental review process of the Project have focused on:

- Obtaining clarity on which federal authorities will be making independent final Environmental Effects Determinations for the Project;
- Clarity as to why the Project does not require an assessment under Section 13 of the C*anadian Environmental Assessment Act, 2012* (*CEAA* 2012);
- Confirmation of which regulatory authority is leading the process; and
- Clarity on additional permit requirements, including provincial permitting requirements.

The following response has been provided to improve clarity on the Project environmental review process. Vopak will be updating the TOR/AIR to better communicate the process. These changes are summarized at the end of this memo.

Environmental Review Requirements

The proposed Vopak Pacific Canada Project (the Project) is subject to the following legislated requirements:

1. **As the Project will be built on federal lands it will be subject to an Environmental Effects Determination under Section 67 of *CEAA* 2012**.

"67 An authority must not carry out a project on federal lands, or exercise any power or perform any duty or function conferred on it under any Act of Parliament other than this Act that could permit a project to be carried out, in whole or in part, on federal lands, unless:

(a) the authority determines that the carrying out of the project is not likely to cause significant adverse environmental effects; or

(b) the authority determines that the carrying out of the project is likely to cause significant adverse environmental effects and the Governor in Council decides that those effects are justified in the circumstances under subsection 69(3)."

2. **Projects that are considered reviewable pursuant to the *BC Environmental Assessment Act* (BCEAA) are specified in the *Reviewable Projects Regulations* (regulations).**

The Project exceeds the energy storage threshold of 3 PJ of stored energy as specified under Part 4, Table 8 of the regulations. The Project also will require dredging of an area larger than 2 hectares of foreshore or submerged land, which exceeds the shoreline modification threshold specified under Part 5, Table 9 of the regulations.

Under the *CEAA* 2012 *Regulations Designating Physical Activities* (SOR/2012-147) the Project does not exceed any specified thresholds and therefore, the Project does not require an environmental assessment under Section 13 of *CEAA* 2012. However, projects can be determined by the Minister of Environment and Climate Change Canada to require an Environmental Assessment under Section 14 of *CEAA* 2012.

In a letter dated November 8, 2018, the Minister of Environment and Climate Change McKenna confirmed that she would not designate the project for an environmental assessment under Section 14 of *CEAA* 2012. In her decision, the Minister acknowledged the ongoing efforts to consult Indigenous communities

in the Prince Rupert area being carried out by the Prince Rupert Port Authority (PRPA), ECCC, Fisheries and Oceans Canada, and Transport Canada to fulfill their obligations under section 67 of *CEAA* 2012 as well as the provincial environmental assessment being carried out by the British Columbia Environmental Assessment Office.

Description of the Vopak Environmental Review Process

The Project will require independent determinations/approvals from both federal and provincial regulatory authorities under two separate environmental review processes in order to proceed. The two processes will be completed in a coordinated and concurrent fashion. The federal process will be coordinated by the PRPA, working closely with the BC Environmental Assessment Office (EAO). The two processes the Project will be assessed under are as follows:

1. **Section 67, *CEAA* 2012- Projects on Federal Lands.**

   Individual federal authorities are required to make their own independent Environmental Effects Determination based on whether or not the Project is likely to result in significant adverse environmental effects (after implementing mitigation measures) as presented in a final Environmental Effects Evaluation document to be prepared by Vopak. Environmental effects in this process are defined under section 5 of *CEAA* 2012.

   The federal authorities making Environmental Effects Determination for the Vopak project include: the PRPA, Transport Canada, Environment and Climate Change Canada, and Fisheries and Oceans Canada. While the PRPA is coordinating the process on behalf of federal authorities, no one federal authority is the lead authority as each federal authority makes its own determination.

   Within this framework federal authorities must also fulfill and report on the adequacy of Indigenous consultation. Health Canada and other federal departments provide expert advice as required.

2. **British Columbia Environmental Assessment Act (*BCEAA*).**

   The Project will be assessed by the EAO pursuant to the requirements of *BCEAA*. The scope of this assessment will consider potential project-related adverse effects on identified environmental, economic, social, heritage and health valued components, as well as on Indigenous Peoples.

Additional Permitting Requirements

Additional permit approvals may also be required and will be identified through ongoing engagement with relevant federal regulators. Provincial permits are not anticipated for the Project as it is operating on federal lands; however, if provincial permit requirements are identified through the review process, Vopak will comply with direction from relevant regulators.

Federal permits potentially required are summarized below.

Permit or Approval	Regulator	Description
PRPA Lease Agreement under the *Canada Marine Act*	PRPA	Lease to occupy and use PRPA-administered lands.
Approval under *Navigation Protection Act* (NPA)	TC	Approval for the construction of Project components that would impact navigation (marine facility, dredging, etc.).
Authorization under *Fisheries Act*	DFO	Marine-based activities and infrastructure causing disturbance or loss of fish habitat in the marine environment require an Authorization from DFO.
Disposal at Sea (DAS) permit under *Canadian Environmental Protection Act*	ECCC	Permit authorizing disposal of excavated or dredged material at sea.
Section 73 permit under *Species at Risk Act*	ECCC	Permit authorizing activities affecting a threatened or endangered species, any part of its critical habitat or the residences of its individuals.

Summary of Changes to the TOR/AIR

Changes will be made to improve clarity on the environmental review process in Section 1.4 of the TOR/AIR. These changes include:

- Inclusion of the complete definition of environmental effects as defined in *CEAA* 2012, Section 5(1)(a-c) in Section 1.4.1.
- Language will be inserted to clarify that each identified federal authority will make their own independent Environmental Effects Determination on the Project.
- Language will be inserted in Section 1.4.2 to clarify the provincial scope of the assessment will include effects on VCs identified for all five provincial pillars: environment, social, economic, heritage, and health.
- Inclusion of a fifth additional permit requirement (as demonstrated in the above table) to capture potential SARA permit requirements in Table 4, Section 1.4.5.

Memo 2: Spatial Scope of the Assessment (Rail/Marine)

Introduction

The following response provides greater clarity as to the spatial scope of the environmental assessment to be completed for the proposed Vopak Pacific Canada Project (the Project), specifically as they pertain to Canadian National Railway (CN) activities and marine shipping beyond the Prince Rupert Port Authority's (PRPA) navigation jurisdiction.

Vopak acknowledges the following concerns and requests that have been brought forward by the public and Working Group members, including Indigenous groups.

Rail Activities

- Expand the scope of the Project's rail assessment to include all CN rail activities to/from the Project, including areas within Indigenous territories.
- Concerns related to the increased shipping of dangerous goods via rail, including the potential for spills and explosions that may affect nearby communities.
- Concerns associated with rail activities near the Skeena River and potential for derailments and spills that could impact ecosystems and contaminate food sources.

Marine Shipping Activities

- Expand the spatial scope of the marine shipping assessment to include all areas where an accident may take place, including all areas and communities that may be affected by a spill.
- Complete a detailed Marine Risk Assessment (MRA) to evaluate potential risks associated with marine shipping, including issues associated with anchor drag and vessel grounding.

Scope of the Proposed Project and Assessment

As described in the Project's Section 11 Order issued by the BC Environmental Assessment Office, the scope of the assessment will be based on the description of the Project, including its main facilities and components, and associated off-site shipping and rail activities, including those listed below.

Main facilities and components

- A bulk liquids tank storage facility, including for petroleum products;
- A marine terminal and loading facility;
- Rail car unloading racks;
- Supporting infrastructure and facilities, which include, but are not limited to power supply, power generation, cooling equipment and de-ethanizer, emergency ground flare, air and water utilities, drainage and wastewater management, roads, and natural gas connection; and
- Temporary infrastructure and facilities.

Associated off-site shipping and rail activities

- The operation of vessels and other supporting marine traffic along the marine access route between the marine terminal and the pilot boarding location at or near Triple Island; and
- The operation of rail tracks used by the proposed Project within the Port of Prince Rupert.

As described in Section 2.4. of the Canadian Environmental Assessment Agency's (CEA) "Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, 2012" (March 2015), the following criteria are also taken into consideration in determining the activities that are incidental to the project:

- The nature of the proposed activities and whether they are subordinate or complementary to the project;
- Whether the activity is within the care and control of the proponent;
- If the activity is to be undertaken by a third party, the nature of the relationship between the proponent and the third party and whether the proponent has the ability to "direct or influence" the carrying out of the activity;
- Whether the activity is solely for the benefit of the proponent or is available for other proponents as well; and
- The federal and/or provincial regulatory requirements for the activity.

Scope of the Rail Assessment

Vopak is required to assess the potential effects associated with the operation of rail tracks used within the Port of Prince Rupert. The scope of Vopak's assessment of rail activities associated with inbound train unloading and outbound train staging will focus on potential effects associated with air quality and greenhouse gas emissions, noise, terrestrial resources, freshwater fish and fish habitat, soil and terrain, socio-economic issues and human health.

Due to the fact that Vopak has no ability to direct or influence CN's operations outside of the Port, and has no care or control of their activities, which are governed by existing regulations (i.e. *Transportation of Dangerous Goods Act and Regulations*), an assessment of rail activities outside of the Port of Prince Rupert is not included.

Scope of the Marine Assessment

The scope of Vopak's marine assessment will focus on potential impacts to marine resources, marine use and navigation and accidents and malfunctions, including linkages to other values associated with human health, visual quality, noise, and freshwater fish and fish habitat.

Based on feedback received from the public and the Working Group, the LSA/RSA for the marine mammals subcomponent will be expanded to a 6.5 km diameter buffer extending outwards from the berths to the Kinahan Islands and a 6 km buffer on each side of the shipping route from the berths out to Triple Island.

The buffer around the berths will include diverse habitats that encapsulate the behavior and range of inshore pinniped and local cetacean species inhabiting the area. The buffer around the shipping route will also include diverse habitats, including varied water depths, to cover all marine mammal species that could potential be affected.

The LSA/RSA for the other marine resources subcomponents, including marine habitats, marine sediment quality and marine fish and benthic invertebrates will be defined as the Project water lot area and a 500 m buffer around the western portion of the water lot that has potential to be affected by berthing vessels, trestle and loading platform construction, and other activities associated with the construction and operation of the Project.

The LSA/RSA for the marine water quality subcomponent will include a 5km radius from the berth to incorporate up to eight PRPA marine water quality stations. The spatial distribution of the eight locations is appropriate to describe the baseline conditions across different seasonal conditions.

For Marine Use and Navigation, the LSA will be revised to include a 5 km buffer, on either side of the centre-line of the shipping route to account for the two-way passing of carriers travelling along the shipping lane. Under normal operating conditions, ships will turn around during docking at the terminal, under the assistance of tug-boats. The RSA will also be revised to include the Pacific Fishery Management Area 4 and marine traffic in Hecate Strait coming from and going to Kitimat to support the assessment of cumulative effects.

The Accidents and Malfunctions assessment will include all potential marine accidents or malfunctions and associated potential effects on all Project VCs, including values identified by each First Nation. For additional information on the assessment of accidents and malfunctions, please see Vopak's memo #3.

Vopak will have no operational authority over marine vessel operations, including anchoring. However, it is expected that carriers and project activities associated with marine shipping will continue to be subject to regulations and requirements provided by International Maritime Organization, Transport Canada, and PRPA. These regulations include, but are not limited to the *Navigation Protection Act*, *Canada Marine Act*, the *Pilotage Act* and *Canada Shipping Act*.

Changes to the TOR/AIR

Based on the rationale provided above, the scope of the rail assessment will continue to focus on inbound train unloading and outbound train staging as described in the BC EAO's section 11 order. The TOR/AIR will remain unchanged in regards to the spatial scope of rail activities.

Vopak will make the following changes to the TOR/AIR to address comments related to the scope of the assessment in the marine environment;

- The Marine Resources study boundaries in Table 20 and associated figures will be updated to reflect:
    - an expanded marine mammals LSA and RSA, which includes a 6.5km diameter buffer extending outwards from the berths to the Kinahan Islands and a 6km buffer on each side of the shipping route from the berths out to Triple Island;
    - an expanded LSA and RSA for the other marine resources subcomponents, including marine habitats, marine sediment quality and marine fish and benthic invertebrates that includes the Project water lot area and a 500 m buffer around the western portion of the water lot, and;
    - an expanded LSA/RSA for the marine water quality subcomponent that includes a 5km radius from the berth to incorporate up to eight PRPA marine water quality stations.
- The Marine Use and Navigation LSA and RSA in table 32 and associated figure will be updated to reflect an expanded LSA with a 5 km buffer on each side of the marine access route, and an RSA expanded to include the entire Pacific Fishery Management Area 4.

Memo 3: Accidents and Malfunction

Introduction

Care for safety is a core value at Vopak and is an integral part of how we operate. With a 400-year operating history and a strong focus on safety and sustainability, we ensure efficient, safe and clean storage and handling of bulk liquid products and gases. Ownership of safety lies with each and every Vopak employee at all levels in the organization.

The bulk liquids terminal will be designed with integrated safety systems and processes. Emergency detection and shut down systems will be an integral component of the operational design. In addition, the Prince Rupert Port Authority (PRPA) maintains up-to-date practices and procedures (discussed below) that are based on international standards that emphasize maximum safety with minimum disruption for neighbouring communities.

Concerns raised related to potential accidents and malfunctions associated with the proposed Vopak Pacific Canada Project (the Project), the scope of the assessment, and methods by which this assessment will be completed have been thoroughly considered. Vopak is committed to discussing and engaging on accidents and malfunctions with regulators, Indigenous groups and local residents.

The following response provides greater resolution with respect to the scope of the accidents and malfunctions assessment being completed for the proposed Project by Vopak. Vopak will be updating the draft Terms of Reference/Application Information Requirements (AIR/TOR) document to better communicate the scope and methods of the accidents and malfunctions section of the Environmental Effects Evaluation/Environmental Assessment Certificate Application (the EEE/Application). These changes are summarized at the end of this memo.

Assessment of Potential Accidents and Malfunctions

Vopak will assess potential effects of accidents or malfunctions on all Project Valued Components (VCs) within the scope of the assessment as defined by the BC Environmental Assessment Office (EAO) issued Section 11 Order. The Order specifically states the scope of the Project includes the following:

- ***Main facilities and components:***
  - *A bulk liquids tank storage facility, including for petroleum products;*
  - *A marine terminal and loading facility;*
  - *Rail car unloading racks;*
  - *Supporting infrastructure and facilities, which include, but are not limited to power supply, power generation, cooling equipment and de-ethanizer, emergency ground flare, air and water utilities, drainage and wastewater management, roads, and natural gas connection; and*
  - *Temporary infrastructure and facilities.*

- ***Associated off-site shipping and rail activities:***
  - *The operation of vessels and other supporting marine traffic along the marine access route between the marine terminal and the pilot boarding location at or near Triple Island; and*
  - *The operation of rail tracks used by the proposed Project within the Port of Prince Rupert.*

Within these boundaries the accidents and malfunctions assessment will include all potential accidents or malfunctions relevant to Project-related activities and associated potential effects on all Project VCs and Indigenous interests.

The assessment methodology will follow the BC EAO guidance AIR template as defined:

- *The overall methodology for assessing the potential risk of an event (likelihood and consequence);*
- *Definitions of each category of likelihood;*
- *Definitions for each category of consequence;*
- *An assessment of the likelihood of the event occurring, based on historical trends and predictive models;*
- *Identification of proposed measures to reduce the likelihood of the event;*
- *Assessment of consequence of the event, in a manner consistent with the direct effects assessment,*
- *Identification of measures to mitigate the consequences to valued components; and*
- *Conclusions on the potential risk (likelihood multiplied by consequence) of the accident or malfunction.*

The likelihood and consequence (i.e. risk) associated with the accident scenarios will be assessed by Vopak to minimize and/or eliminate all potential risks. This will involve:

1. Identifying operational hazards
2. Assessing loss of containment
3. Assessing risks quantitatively
4. Assessing marine transit safety

1. Identifying operational hazards

To identify the potential hazards and operability issues, ‘what if’ scenarios will be explored to mitigate the following risks:

- Material Problems (MP)
- External Effects or Influences (EE/I)
- Operating Errors and other Human Factors (OE&HF)
- Analytical or Sampling Errors (A/SE)
- Equipment/Instrumentation Malfunction (E/IM)
- Process Upsets of Unspecified Origin (PUUO)
- Utility Failures (UF)
- Integrity Failure or Loss of Containment (IF/LOC)
- Emergency Operations (EO)
- Environmental Release (ER)

This management approach will use past experience and professional judgement to isolate potential hazards and assess the risk of failures of operational procedures. The outcomes will be evaluated based on their severity and probability of occurring, thereby characterizing the causes and all possible consequences of each risk. As a result, safety measures and further actions will be implemented as needed.

The methodology that will be adopted to identify potential operational hazards includes:

1. Identify all causes
2. Identify all possible consequences of the cause
3. Identify “gross risk” (risk (likelihood * impact) without incorporating safeguards)
4. Identify (existing) safeguards
5. Identify “residual risk” using “As Low As Reasonably Possible (ALARP)”
6. Agree any actions if needed.

ALARP Principle

Hazards are inherent in any process used in the terminal. As it is not reasonably practicable to entirely eliminate all hazards present in the processes, Vopak adopts the hierarchy of controls in identifying the controls to manage the hazards and thereby reduce the risks. The hierarchy of controls are listed in order of consideration for risk level reduction:

- Elimination
- Substitution
- Engineering
- Administrative Controls e.g. training, signs, work instructions
- Personal Protective Equipment

2. Assessing loss of containment (LOC)

To control measures that prevent LOC (i.e. an uncontrolled release of material), the following issues will be assessed:

- Accidental release
- Tank overfilling
- Wear
- Corrosion
- Damage
- Over pressurization
- Fire and explosion
- Under pressurization
- High metal temperature
- Low metal temperature

The aim is to assess in detail the working of safety measures and procedures to show a terminal is well equipped to handle serious accidents.

3. Assessing risk quantitatively

Vopak will apply a systematic approach that will involve calculating estimates of the potential risks of the Project to compare against regulatory risk standards. This method will translate the risks associated with running a technical process with hazardous substances into interpretable risk contours. As a result it will provide information to help make decisions regarding acceptability of the risks and insight into the probability of the Project achieving its safety objectives. To assess various scenarios for small, medium and large leaks (including overfilling of the atmospheric tanks) the following equipment will be considered:

- Atmospheric tanks
- Pressure tanks
- Underground piping
- Above ground piping
- Valves
- Pumps
- Transfer equipment

The systematic approach incorporates the following phases:

1. **Hazard Identification:** Identifies all potential hazards to personnel, assets, environment and loss of containment scenarios; especially those credible scenarios with off-site impacts.
2. **Evaluation of Frequencies:** Estimate the event frequency per year for credible incident scenarios based on relevant historical failure frequencies.
3. **Evaluation of Consequences and Impacts:** The Consequence Evaluation determines hazard zones, considering all the different ways releases can develop. The Impact Evaluation determines the impacts of these consequences on population.
4. **Risk Estimation:** Frequency and impact information is combined
5. **Assessment of the Risks:** First compares the risks calculated with criteria fixed in advance so as to determine their acceptability.

4. Assessing marine transit safety

A specific approach will be applied to estimate the possible effects and risks related to marine transit and will review:

- Navigation incident frequency for all vessel transits and loss of cargo risk for laden transits. This will be reported as average number of events per year for the entire route and sections of the route.
- Risk of loss of cargo. This will be reported as fatality risk, and frequency per quantity of products spilled.

The portion of the navigation route within the scope is from the terminal to Triple Island. The study will estimate risk from the following types of marine incidents:

- Collision
- Drift grounding
- Powered grounding
- Structural failure
- Fire & explosion

Existing Safety Measures

Vopak will have their own site safety plans, including emergency response and management plans, which will be outlined in the EEE/Application. Furthermore, as the project will be operating within PRPA's jurisdiction, existing PRPA safety protocols will be enforced. The PRPA maintains the "Prince Rupert Port Authority - Emergency Management Plan (EMP)". The PRPA EMP covers hazards including, earthquake, tsunami, flood, severe weather/storm surge, hazardous material events, oil spills, disease and pandemics, and emergencies. Emergencies include fatalities, casualties, displaced people, interruption of essential public services, property damage or loss, economic impacts, damage to basic infrastructure, and significant harm to the environment. The PRPA EMP includes roles, responsibilities and procedures for how to respond to these types of hazards.

PRPA is also responsible for navigation and navigational safety within PRPA's jurisdiction. Vessels will be subject to mandatory pilotage while in Canadian waters in compliance with the *Pilotage Act* and *Pacific Pilotage Regulations*. Vessels will be operated by experienced master mariners and supported by the BC Coast Pilots for the entire duration of passage within the marine access route. Vessels will comply with the speed limits established by the PRPA. Vessel movement will rely on the judgement of an experienced ship captain, the local advice from the BC Coast Pilots, and existing environmental conditions.

Vopak acknowledges concerns raised by the Public and Working Group members regarding effects on the environment, economy, and human health related to:

- Potential anchor drag incidents;
- Derailments resulting in spills of CN rail cars along CN track before arriving at Ridley Island; and
- Risks to public safety in communities along CN rail tracks related to fire or explosion of CN rail cars carrying flammable goods.

At present, these specific scenarios will not be part of the assessment for the reasons set out below.

Rail operations away from Ridley Island are the responsibility of CN, with regulatory oversight from the federal government. CN has existing safety protocols and emergency response measures that apply to all arriving rail to the PRPA. CN's Safety Management System is a comprehensive program designed to minimize risk and reduce injuries and accidents. The federal government also has regulatory requirements under the *Transportation of Dangerous Good Act*, and the requirement for Emergency Response Action Plans for tank cars that handle dangerous goods, including informing communities of dangerous goods being transported. CN is required to notify Transport Canada of any dangerous goods incident. CN provides dangerous goods and rail safety training to first responders in communities throughout Northern BC, and has highly-trained dangerous goods responders and contractors on call to address any rail incident. Local first responders also have access to real time information on dangerous goods transported through their community with the Ask Rail mobile application.

Vopak has had discussions with PRPA with respect to risks related to anchorage. Based on these discussions the assessment of anchorage risk is considered outside the scope of the

Vopak Project. Ships calling at the Vopak terminal will not be required to anchor while waiting for cargo loading, as there are two berths, the anticipated throughput rate, and the loading rate of the terminal will limit ships needing to anchor. In the event that ships calling at the Vopak terminal may require anchorage, they must request anchorage through the PRPA. Anchorage procedures are well defined and managed by the PRPA, who monitors anchorages 24/7 through the Port Security Operations Centre. This Centre is the information hub for port safety and security matters and ensures an effective and efficient response to any incident.

Changes to the TOR/AIR

Vopak will make the following changes to address concerns related to the assessment of potential accidents and malfunctions section of the TOR/AIR:

The list of accidents and malfunctions will be updated to clearly identify the scenarios that will be assessed:

- Accidents at the Project facility (within the scope of the assessment):
  - Accidents involving workers and their vehicles or equipment;
  - Integrity Failure or Loss of Containment of Project infrastructure (i.e. Atmospheric tanks, Pressure tanks, Underground piping, Above ground piping, Valves, Pumps, Transfer equipment)
  - Rail movement accident resulting in integrity failure of rail tank cars resulting in cargo spill;
  - Project-related fire or explosions.
- Marine based incident within the marine study area:
  - Marine ship incident involving either collision, drift grounding, or powered grounding.
  - Structural failure resulting in loss of cargo.
  - Fire and explosion

To confirm that effects on all VCs will be assessed where an interaction with potential accidents and malfunctions may occur ‘Potential Project-related accidents and malfunctions’ will be added to Project interactions Table 7 as an activity and interactions will be identified for all VCs, where relevant. These interactions will be identified for all VCs and effects on the VCs will be identified and characterized in Section 7, Assessment of Potential Accidents and Malfunctions. Potential effects to Indigenous interests will be assessed in Section 6.

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