

This *Public Comments Response Memorandum* provides Port Metro Vancouver's responses to questions and concerns received during the Project Review Process, specifically during the Environmental Impact Assessment 30-day public comment period of the Fraser Surrey Docks Direct Transfer Coal Facility Project.

About Port Metro Vancouver www.portmetrovancouver.com

Port Metro Vancouver (PMV) is a non-shareholder, financially self-sufficient corporation established by the Government of Canada under the *Canada Marine Act* (*CMA*) and accountable to the federal Minister of Transport. Pursuant to the Act, PMV's mandate is to implement marine policies that provide Canada with the marine infrastructure that it needs and that offer effective support for the achievement of national, regional and local social and economic objectives and will promote and safeguard Canada's competitiveness and trade objectives. It must also manage its marine infrastructure in a commercial manner, providing for a high level of environmental protection, being responsive to local needs and priorities, and managing in a manner that takes into account input from users and the community in which a port is located. Port Metro Vancouver accomplishes this mandate by making timely commercial-oriented decisions on business plans and capital spending, which are focused on the operational needs of port users and guided by a vision for long-term, efficient growth and competitiveness.

As Canada's largest and North America's most diversified port, Port Metro Vancouver operates across five business sectors: automobiles, breakbulk (forest products, wood pulp, logs and steel), bulk (grain, sulphur, potash and coal), container (household goods, food and construction materials) and the cruise sector. Port Metro Vancouver facilitates trade with more than 160 world economies and handles \$184 billion of cargo each year, approximately \$505 million in goods each day. This figure represents about 19 percent of Canada's total trade in goods by value.

About Fraser Surrey Docks www.fsd.bc.ca

Fraser Surrey Docks (FSD) is a multi-purpose marine terminal located in Surrey, British Columbia along the banks of the Fraser River. Fraser Surrey Docks handles container, breakbulk, steel, forest products and bulk agricultural products.

Project Overview

In June 2012, Fraser Surrey Docks submitted a project permit application (PP 2012-072) to PMV for the development of a Direct Transfer Coal Facility at the southwest end of the existing terminal to handle up to four million metric tonnes of coal per year. The coal is proposed to be transferred by Burlington Northern Santa Fe rail to the terminal, to be loaded directly onto 8,000 dead weight tonnes (DWT) barges at existing Berth 2 and 3. No coal would be stored at FSD. When loaded, tugs will tow barges down the Fraser River and north to Texada Island. From there the coal will be stored before transfer to deep-sea vessels for overseas export. For more information, please click [here](#).

The current project permit is for the handling of volumes of up to four million metric tonnes per year. Any increase of capacity beyond four million metric tonnes of coal per year will be subject to a new Port Metro Vancouver project and environmental review and issuance of another project permit.

Consultation Program

Port Metro Vancouver received the project permit application in June 2012 and since then a thorough consultation process has been undertaken. Consultation was undertaken in three phases, and FSD led specific public consultation activities throughout Phase 1 and 2. PMV led the public consultation for Phase 3 for the review of the Environmental Impact Assessment.

A separate, but parallel consultation process with First Nations and municipalities was also undertaken for this project. For more information on these processes, see the [Project Review Report](#) available on our website.

Phase 1

FSD conducted their first round of public consultation in October 2012. FSD sent notification letters, met with community groups and associations, and met with local MP's and MLA's. In response to expressed municipal and community interest for more public consultation during Phase 1, and revisions made by FSD to the project in early 2013, FSD was asked to conduct a second round of consultation in March 2013.

Phase 2

The second phase of consultation included two public open houses held by FSD in May 2013. The consultation was focused on FSD revised project scope and proposed mitigation strategies to address coal dust, noise, traffic impacts, coal barge impacts, potential coal impact on marine life, and emergency preparedness.

Feedback during Phase 2 consultation activities raised concerns about the potential for fugitive dust emissions from the terminal and along the supply chain. As the result of these comments, and to satisfy PMV's technical requirements, in August, 2013 PMV requested FSD to incorporate additional mitigation measures into their proposed Direct Transfer Coal Facility project.

These included the following:

- o Work with its rail provider to address the issue of potential dust migration from rail cars in a manner that is consistent with the best practices employed by other rail carriers into the Port;
- o Revise its proposal by employing other measures in the supply chain to remove the necessity to have a temporary stockpile on site; and
- o Revise its proposal to ensure that coal dust does not migrate from the barges at the terminal and along its route to its destination.

Port Metro Vancouver also required FSD to prepare an updated project scope and description including revised drawings and supporting information, as well as undertake an Environmental Impact Assessment, specifically including the potential effects of the project on human and ecological health.

Phase 3

In October 2013, FSD submitted a draft Environmental Impact Assessment for review. Port Metro Vancouver invited interested regional, provincial and federal agencies to review the draft Environmental Impact Assessment during a 15-day agency review period held from mid-October to mid-November, 2013. FSD further revised their Environmental Impact Assessment in mid-November 2013, and this assessment was subsequently posted to PMV's website for public review and comment during a 30-day public comment period (November 18 to December 17, 2013). All documentation related to the Environmental Impact Assessment consultation was posted on PMV's website.

Through the feedback received during the Environmental Impact Assessment consultation and PMV's technical review, it was identified that additional information was required around the assessment of the potential effects of the proposed project on human health. As a result, in

January 2014, FSD was asked to conduct a Human Health Risk Assessment to address these issues. PMV indicated that there would be no further consultation on the proposed project.

Concerns expressed during the Environmental Impact Assessment consultation period were similar to the concerns received during Phase 1 and Phase 2 of consultation. Due to the volume of comments received, individual responses to public input were not provided; however PMV committed to responding to concerns raised through the Environmental Impact Assessment consultation period in a *Public Comments Response Memorandum*.

Comments received during the Environment Impact Assessment consultation period have been categorized into the following themes for response:

- Project Review Process
- Scope of the Environmental Impact Assessment
- Advice of Health Experts
- Footprint at Terminal
- Additional Capacity at Terminal
- Fugitive Dust
- Risk to Human Health
- Rail Traffic
- Marine/Vessel Traffic
- Risk to Marine Habitat, Waterways and Wildlife
- First Nations Consultation
- Contingency Planning

During the Environment Impact Assessment consultation period, PMV also received comments that reflected additional interests and concerns beyond the jurisdiction of Port Metro Vancouver, which have been categorized into the following themes:

- Health versus Profits
- Coal as a Commodity
- Exporting and Burning Coal

Project Review Process

- Respondents stated that PMV should study the full scope of the impacts and conduct a proper consultation with full public hearings. It was stated that PMV continues to act without proper consultation.
- Respondents stated they felt the proposed project was being pushed through a hasty and flawed Environmental Impact Assessment, with no public hearing and very little public input.
- Respondents felt that PMV held all the cards and would approve the application no matter what respondents, public health officers, impacted communities and other concerned stakeholders said.
- Respondents asked that PMV start the process over, take the political and financial pressure out of the process, and provide a proper assessment.
- Respondents questioned why none of the neighborhoods around the port had been consulted.
- Respondents expressed concern that there was a conflict of interest for PMV to review this project and a lack of transparency in the Project Review Process.
- Respondents stated that local First Nations must also be included in the decision-making process and be full members in the joint review panel.
- Respondents stated that a full joint review was needed under the BC Environmental Assessment Act and the Canadian Environment Assessment Act due to the potential scope and jurisdictional impacts of the FSD proposal.

PMV:

As a port authority, it is PMV's role to facilitate Canadian trade and to ensure safe and efficient movement of domestic and international trade. PMV understands and respects that port communities want meaningful and ongoing input into the operation and expansion of port facilities, as well as the related transportation services. PMV's Project Review Process provides a comprehensive planning and environmental review, which considers the technical aspects and potential impacts, as well as input from adjacent municipalities, First Nations and the community on proposed projects. For more detail on who PMV has engaged with on the project, see the [Project Review Report](#).

The proposal by FSD to develop a Direct Transfer Coal Facility is not a designated project as defined by the *Canadian Environmental Assessment Act, 2012 (CEAA 2012)* and therefore is not subject to federal environmental assessment conducted by the Canadian Environmental Assessment agency, including the conduct of public hearings. However, since the project site is on federal lands managed by PMV, the project is subject to environmental review through PMV's Project Review Process. In accordance with section 67 of *CEAA 2012*, for proposed projects located on federal lands that are not designated projects and not subject to an environmental assessment under *CEAA 2012*, the relevant federal authority must be satisfied that there will be no significant adverse environmental effects prior to making any decision. PMV is the relevant federal authority for the FSD project, and has determined that with the application of the project mitigations and the required conditions, the project is not likely to cause significant adverse environmental effects.

The project is not a reviewable project under the BC Environmental Assessment Act (BC EAA), and therefore the *BC Environmental Assessment Office (BC EAO)* does not undertake and *Environmental Assessment (EA)* review.

Since June 2012, FSD has undertaken a thorough public consultation process for the proposed project. FSD completed two phases of consultation, and both the Phase 1 and Phase 2 Engagement Summary Reports and Phase 2 Input Consideration Memo are available on FSD's

[website](#), as well as PMV's [website](#). PMV has also received many letters and emails, engaged with multiple municipalities, authorities, agencies and First Nations. All comments have been documented and were considered in the project review.

As part of the Project Review Process, and based on feedback received through this process, in September 2013, PMV requested that FSD mitigate potential impacts, addressing concerns over fugitive coal dust from trains, the terminal and barges. In November 2013, PMV also required FSD to assess environmental impacts in an Environmental Impact Assessment (EIA). PMV held a 30-day public comment period on the EIA from November 18 to December 17, 2013. In addition to this, in February 2014, PMV requested that FSD provide further information around the assessment of the potential effects of the project on human health. A [Human Health Risk Assessment](#) was undertaken using a risk assessment approach that follows guidelines set out by Health Canada.

PMV referred the project to all First Nations that have asserted traditional territories that intersect the project area. PMV, along with FSD, has had numerous meetings with consulted First Nations to discuss the project and its potential impacts to Aboriginal rights. Comments and concerns raised through First Nation consultation were also considered in the project review.

Scope of the Environmental Impact Assessment

- Respondents questioned the integrity of the data that was used in the Environmental Impact Assessment.
- Respondents stated that the Environmental Impact Assessment and process did not even meet the most basic requirements of a health impact assessment.
- Respondents stated that there was a conflict of interest that SNC-Lavalin was responsible for the Environmental Impact Assessment. They also questioned the integrity of the SNC-Lavalin report due to the recent allegations relating to the company.
- Respondents stated that the Environmental Impact Assessment was inadequate because it did not assess the impacts on the communities affected along the transportation route (includes Sunshine Coast, recreational boaters, and Texada Island).
- Respondents stated that without an independent review there should be no permit granted.
- Respondents stated that the Environmental Impact Assessment needed to be confirmed by an independent body composed of people with relevant expertise before it was accepted by PMV.
- Respondents stated that a proper health assessment includes key stakeholders and health authorities (including city councils, nurses union, physicians, environmental scientists and citizens) from the start to help in determining the scope and terms of reference.
- Respondents stated that PMV was disconnected from the community and is not fulfilling its duty to perform proper health and environment impact assessments.
- Respondents stated that the Environmental Impact Assessment did not assess coal transportation, and the impacts on the communities of White Rock, Delta, Surrey, Texada Island and the Georgia Strait.
- Respondents stated that the Environmental Impact Assessment should have accounted for the end-use greenhouse gas emissions and climate change impacts of coal being shipped to Asia.
- Respondents stated that the Environmental Impact Assessment must consider all impacts of the proposed project, from the shipment of coal by rail (including impacts from coal dust from uncovered rail cars, diesel particulate emission from locomotives and noises, the storage and handling of coal at the dock, including impacts from coal dust on marine and terrestrial environments, public health, and private property, and the transportation of coal by ships, including impacts from fuel and cargo spills and air pollution from ships and the climate change impacts, from the rail and marine transportation of coal and also from the end use of the exported coal.)
- Respondents stated that the Environmental Impact Assessment needed to evaluate the impact of coal traffic on the surrounding land, roads and bridges, and consider the cumulative impact of trains. They further stated this was especially true if there was a derailment.

- Respondents expressed concern that the Environmental Impact Assessment did not include a management plan for the refueling of the barges or large ships, and that the Environmental Impact Assessment must assess the entire transportation process from rail to ocean going vessels.
- Respondents stated that the Environmental Impact Assessment needed to be expanded to include the transportation to and storage on Texada Island.
- Respondents expressed concerns about who is responsible for the barge transport system between FSD and Texada Island.
- Respondents asked that an independent health impact assessment be carried out to international standards.

PMV:

PMV's Project Review Process includes a comprehensive environmental review. The proposal by FSD to develop a Direct Transfer Coal Facility is not a designated project as defined by the *CEAA 2012*. In accordance with section 67 of *CEAA 2012*, for proposed projects located on federal lands that are not designated projects and not subject to an environmental assessment under *CEAA 2012*, the relevant federal authority must be satisfied that there will be no significant adverse environmental effects prior to making any decision.

CEAA 2012 requires PMV to include in its environmental review the federal lands it manages. The geographical scope is limited to FSD's physical site and the Fraser River from the FSD terminal to the downstream limits of PMV jurisdiction along the Fraser River. The temporal scope comprises project construction from the initiation of physical works and project operation for an indefinite period of time. Decommissioning is not within the scope, and it would entail a full new review and permitting by PMV.

The review does not include the mining and/or processing of the coal at the mine site, the transportation of the coal by rail to the terminal, the transportation of the coal by vessel outside of PMV's navigational jurisdiction, or the end use of the coal.

Although the rail corridor is outside the scope of the PMV's environmental review, it should be noted that Transport Canada is responsible for regulating the safe movement of trains along federally regulated rail corridors in accordance with the *Railway Safety Act*. This includes the rail corridor operated by BNSF Railway from the Canada/US border to the terminal site. Transport Canada advises that pursuant to the *Railway Safety Act* it does not regulate the transportation of coal products shipped through the rail transportation system. Product owners are responsible for determining the specific measures required to mitigate environmental risks associated with the rail transport of coal.

Rail service providers, such as BNSF Railway, take significant steps to minimize fugitive coal dust, such as spraying each rail car at the mine site with a dust suppressant designed to create a crust on top of the coal. In May 2014, BNSF Railway confirmed that it is committed to building a coal re-spray facility along their rail line at the mid point between the mine site, and the FSD terminal. The re-spray facility is proposed to be located at its Pasco, Washington Rail Yard and construction will begin in the summer of 2014. BNSF Railway has indicated the facility will be operational by early 2015.

In addition, although the receiving terminal is also outside the scope of PMV's environmental review, PMV was advised that in March 2014, Texada Quarrying Ltd. received a permit form the Provincial Ministry of Energy, Mines & Natural Gas for an amendment to the current permit for the size of their stockpile area for transferring coal to deep-sea vessels. For additional information on this permit, please contact the Provincial Ministry of Energy, Mines & Natural Gas at the following email: SouthwestMinesDivision@gov.bc.ca.

PMV's environmental review considered factors including:

- Environmental effects of the proposed project, including the environmental effects of malfunctions or accidents that may occur in connection with the proposed project;
- The significance of the environmental effects referred to above;
- Comments from authorities with relevant mandates and expertise;
- Comments from First Nations;
- Comments from the public; and
- Technically and economically feasible measures that would mitigate any significant adverse environmental effects of the proposed project.

For full scope of environmental review, including biophysical and socio-economic components, see the [Environmental Review Decision Statement](#).

During the course of the review, in September 2013, PMV requested that FSD prepare an EIA, which among other matters included the effects of the project on human health.

PMV provided the public with a 30-day comment period (November 18 to December 17, 2013) on the EIA. PMV invited and received comments on the EIA from local governments, health authorities, First Nations, businesses, governmental agencies, environmental organizations, community organizations, business organizations, trade unions, elected government officials, members of the public, and others. Through the feedback received during the EIA consultation, including comments from the regional health authorities, and PMV's technical review, in February 2014 PMV requested that FSD provide further information around the assessment of the potential effects of the project on human health.

The [Human Health Risk Assessment](#) was undertaken using a risk assessment approach that follows guidelines set out by Health Canada. In addition to its internal review, PMV retained Golder Associates Ltd. (Golder) as a third-party reviewer and advisor on human health, air quality modeling and aquatic toxicology. Golder assisted PMV with the review of elements of the EIA submitted by FSD in November 2013, and with the review of the HHRA submitted by FSD in July 2014. Upon completion of this review, PMV was able to complete its environmental review.

As detailed in the [Environmental Review Decision Statement](#) PMV has reviewed and taken into account relevant information available on the proposed project, considered the information and proposed mitigations provided by FSD and other information, and concludes that with the implementation of proposed mitigation measures and conditions (as described in the Conditions of the [Project Permit](#)) the project is not likely to cause significant adverse environmental effects.

Advice of Health Experts

- *Respondents were concerned that the concerns of the chief medical health officers of both Vancouver Coastal Health and Fraser Health Authority were being ignored.*

PMV:

The Vancouver Coastal Health Authority and Fraser Health Authority first advised PMV of their interest in the proposal in early 2013. On two

separate occasions during the review process, PMV provided the chief medical health officers from both organizations with project information for review and comment. While some of the comments have been beyond the scope of process, those comments concerning potential health effects within our jurisdictional responsibility have been carefully considered and were addressed in the Human Health Risk Assessment undertaken by FSD in July 2014.

PMV also invited Health Canada to comment on the EIA; however they declined because it was not a designated project under CEAA 2012.

Footprint at Terminal

- *Respondents stated that bigger was not necessarily better and that the enormous size of the project was getting out of control. Furthermore, respondents expressed dissatisfaction with the information about the size of the project, and the fact PMV had described 2.47 acres as "small".*

PMV:

The FSD proposal is for an existing marine terminal to handle a different commodity to what is handled there today, within its existing footprint. The commodity FSD propose to handle is one that is already handled in the port and has been handled for over 40 years. The proposal is to handle up to four million metric tonnes of coal annually. This would result in one additional train per day, and two barges to move the coal to Texada Island. Any increase of capacity beyond four million metric tonnes of coal per year will be subject to a new Port Metro Vancouver project and environmental review, and issuance of another project permit.

The FSD site is designated for "Deep-Sea Terminal use" in PMV's current Land Use Plan and as "Port Terminal" in the draft new Land Use Plan. The proposal for the Direct Transfer Coal Facility is consistent with this land use designation, and as such the purpose of PMV's Project Review Process was ultimately to determine whether or not the specific proposal could proceed.

Additional Capacity at Terminal

- *Respondents expressed concern with PMV becoming one the largest exporters of coal in the world.*

PMV:

Coal has long been PMV's principal export, and accounts for more than one-quarter of the port's total export tonnage annually. In [2013](#), PMV handled more than 135 million metric tonnes of cargo, including more than 38.1 million metric tonnes of coal. Approximately 68% of the coal exported through PMV was metallurgical (25.9 million metric tonnes) and 31% was thermal (11.9 million metric tonnes).

The coal industry is a key economic driver in B.C., generating \$5 billion in economic activity annually. The coal supply chain is responsible for more than 26,000 jobs in B.C. (from mining to terminal jobs).

The proposal is to handle up to four million metric tonnes of coal annually. Any increase of capacity beyond four million metric tonnes of coal per year will be subject to a new Port Metro Vancouver project and environmental review, and issuance of another project permit.

Fugitive Dust

- Respondents were skeptical that the coal dust could be reduced through the use of suppressants.
- Certain respondents said that they have to power wash their house annually due to the coal dust that accumulates.
- Respondents expressed concern over the fact that the rail cars are not contained or covered, leading to more coal dust and particulates in the air and surrounding environment.
- Respondents stated that they cannot stand to see more trains and they are baffled as to why there are not dust mitigation measures in place.
- Respondents stated they were concerned that coal trains are comprised of approximately 120 rail cars, resulting in an average of 60,000-420,000 lbs of coal lost per train trip.
- Respondents wanted to know who was responsible for the particulate emissions increases that result from the diesel exhaust. They stated that currently there are issues with diesel particulates from trucks and ships at FSD.

PMV:

The issue of air emissions and fugitive dust has been a key consideration in the Project Review Process and was included in the scope of the environmental review for the terminal site and the barge route along the Fraser River. As part of its review, PMV has required FSD to include dust mitigation measures into the design of the proposal, and in September 2013 requested FSD to make modifications to its proposal by eliminating the temporary coal storage stockpile, and to address potential dust migration from barges. In its EIA, FSD identified a revision to the proposal to include the addition of a binding agent to the coal as it is being conveyed from the train to the barge.

In support of its proposal, FSD was required to submit detailed air quality assessments, which were identified in the EIA. Upon PMV's review of the EIA, including the review of agency and public comments received, PMV asked FSD to conduct additional air quality analysis, and that analysis to also be included in the [Human Health Risk Assessment](#).

The conclusion of PMV's review indicates that there should not be residual air quality impacts. As a condition of the project permit FSD is required to prepare and implement a comprehensive Air Quality Management Plan, with a key component of the plan to include on-going monitoring and reporting. In addition, the [project permit](#) includes conditions related to mitigating dust during construction, and encourages the use of modern, cleaner terminal equipment.

Respondents' comments related to potential fugitive coal dust along the rail corridor are outside the scope of review as the movement of coal by rail along Canada's rail corridors is regulated by Transport Canada in accordance with the [Railway Safety Act](#). This includes the rail corridor operated by BNSF Railway from the Canada/US border to the terminal site. Transport Canada advises that pursuant to the *Railway Safety Act* it does not regulate the transportation of coal products shipped through the rail transportation system, and that product owners are responsible for determining the specific measures required to mitigate environmental risks associated with the rail transport of coal. Transport Canada further advises that it is currently developing new emissions regulations, under the *Railway Safety Act*, to reduce air pollutant emissions in the Canadian rail sector. See Transport Canada's website for more information about [Transport Canada's Locomotive Emissions Regulations](#).

Furthermore, PMV has been advised that rail service providers also take significant steps to minimize fugitive coal dust such as spraying each rail car at the mine site with a dust suppressant designed to create a crust on top of the coal. In May 2014, BNSF Railway confirmed that it is committed to building a coal re-spray facility along its rail line. The re-spray facility will be located at its Pasco, Washington Rail Yard, and

construction is scheduled to begin in the summer of 2014 and operational by early 2015.

Risk to Human Health

- Respondents expressed concern that the expansion of FSD would lead to coal dust on their homes, farmlands, agriculture, smog alerts and fill the Fraser Valley with a dark sooty residue.
- Respondents expressed that they already breathe dust and fumes from the train yards and did not want to see an increase in coal dust.
- Respondents stated that the coal dust, combusted coal fumes, coal ash and other coal particles are dangerous as they cause cancer, other health problems and are harmful to the environment.
- Respondents stated that they felt that the project would endanger the lives of their children.
- Respondents urged PMV to protect their families from breathing in harmful coal dust.
- Respondents felt that PMV needed to come clean on how the project could affect people's health.
- Respondents stated the constant rail noise is causing sleep deprivation, resulting in stress, constant fatigue and other issues that affect health.
- Respondents expressed concern about the pollutants, such as diesel particulates, associated with ships approaching and leaving the terminals.
- Respondents stated that areas where coal has been burned, such as the U.K., clearly illustrate the health effects that it causes.
- Respondents expressed concern that Wyoming's coal is of the bituminous variety, which is much softer, dustier and dirtier, and far more likely to result in health problems.
- Respondents stated that issues with shunting cars and whistles at all hours of the night, in addition to the proposed construction and eventual operating hours for trains will negatively affect mental health.
- Respondents stated that this expansion would lead to stress related to sleep deprivation, causing fatigue, the inability to focus and other mental and physical health issues.
- Respondents expressed concern with BNSF, CP and CN rail ignoring requests, complaints, court injunctions made by local and provincial bodies, based on the fact that they only have to follow federal rules.

PMV:

Under the *Canada Marine Act*, PMV is responsible to ensure a high level of environmental protection for project reviews, including potential impacts on human health. In February 2014, PMV asked FSD to further assess the potential effects of the project on human health, and FSD undertook a Human Health Risk Assessment (HHRA). The scope of the assessment covers PMV's jurisdiction and includes the terminal footprint and the barge route from FSD to the mouth of the Fraser River. Although the rail corridor is outside of PMV's jurisdiction, FSD expanded the air quality assessment to include representative sections along the railway from White Rock to the terminal, including three additional track sections – two in agricultural areas to evaluate potential impacts to agricultural land and one in an additional area in White Rock to further assess impacts to this area.

The [HHRA](#) was conducted using methods and guidance recommended by Health Canada and using a series of conservative assumptions. The conclusion of the assessment was that there are no unacceptable health risks predicted for exposures to the project emissions.

PMV has reviewed the Human Health Risk Assessment, and as part of its review retained Golder Associates Ltd. as a third-party reviewer and

advisor on human health, air quality modeling and aquatic toxicology. Golder's specialists have experience in the disciplines of human health toxicology assessment, human health exposure and risk modeling, development and modification of toxicity reference values, quantitative fate and transport modeling, development of site specific bioaccumulation factors, derivation of air quality standards and environmental health and safety guidelines, and provision of expert advice peer review, and expert witness testimony. Golder has significant Human Health Risk Assessment experience across the globe and across numerous types of projects, including but not limited to port development. Golder specialists also developed risk assessment guidance documents for Health Canada, International Finance Corporation, Canadian Council of Ministers of the Environment and BC Ministry of Environment. Golder assisted PMV with the review of elements of the EIA submitted by FSD in November 2013, and with the review of the Human Health Risk Assessment submitted by FSD in July 2014.

As detailed in the [Environmental Review Decision Statement](#), PMV has reviewed and taken into account relevant information available on the proposed Project, has considered the information and proposed mitigations provided by FSD and other information, and concludes that with the implementation of proposed mitigation measures and conditions (as described in the Conditions of the project permit), the project is not likely to cause significant adverse environmental effects. For a list of all permit conditions, see the [project permit](#).

Noise concerns have been considered in PMV's environmental review and are addressed in conditions of the project permit. FSD has prepared an Environmental Management Plan to demonstrate how they will handle noise during construction.

The potential generation of noise associated with the project was considered in this review. Project construction and operation are not expected to generate significant levels of noise, taking into consideration the implementation of the mitigation measures described in FSD's reports, and provided that all conditions of the permit are applied.

Rail Traffic

- Respondents expressed concern about the additional traffic that would occur and this would increase the likelihood of a derailment.
- Respondents were concerned about the adverse effects of doubling the capacity of rail cars through a route that goes through neighborhoods and schools.
- Respondents stated the increase traffic would ruin White Rock with the noise, traffic, gridlock, air pollution from the coal dust and diesel locomotives, in addition to the many other health and safety issues.
- Respondents were concerned how emergency services (fire, ambulance, hospital access) would be affected by the increased rail traffic, and how the congestion caused by the closed crossing would interfere with these services.
- Respondents stated the blocked crossing would reduce traffic to businesses and affect deliveries and shipments of goods to local businesses.
- Respondents expressed concerned about having to pay for the upgrades to the rail tracks, in order to accommodate the heavier train cars, and the vibrations associated with the increased train traffic.
- Respondents expressed concern for the communities along the entire rail line starting in Wyoming, that will see increased traffic associated with both coal and oil transportation.
- Respondents would like FSD to coordinate with U.S. officials to have a better idea of rail line capacity, infrastructure upgrades needed, and logistics around rail safety and emergency response before any permits are approved.

PMV:

Transport Canada is responsible for regulating the safe movement of trains along federally regulated rail corridors, in accordance with the *Railway Safety Act*. This includes the rail corridor operated by BNSF Railway from the Canada/US border to the terminal site. This project will result in one extra train every day, along an existing rail corridor. Transport Canada advises that it does not have authority to limit rail traffic on federally regulated rail lines, provided that railway companies adhere to all safety requirements.

The use of 120 rail car trains to transport coal is typical and the responsibility of the rail service provider.

PMV does not foresee any significant local negative impacts as a result of the one extra train per day. Current traffic on the BNSF rail line is nine to 10 trains a day. This is not considered significant in the context of historical levels of rail traffic from the terminal, or in the context of the rail traffic that currently transits the BNSF rail line. In Canada, rail carriers are not permitted to block level public crossings for more than five consecutive minutes. More information can be found on the [Transport Canada](#) website.

The responsibility for upgrades to rail infrastructure lies with the owner of those facilities; in this case, BNSF Railway. Within Canada, proximity issues of rail activity can be directed to the [Proximity Issues](#) website, which includes representatives from the Federation of Canadian Municipalities, Railway Association of Canada, and includes members from the Canadian Association of Municipal Administrators and observers from Transport Canada and the Canadian Transportation Agency.

Marine/Vessel Traffic

- Respondents expressed concerned over the increase in marine traffic associated with the project.
- Respondents stated the proposed project would increase pollution and dust from barges. Barges would be idle in areas with winds over 40 km/h resulting in swirling dust.
- Respondents were concerned that the project would require ships to operate in a narrow waterway and this would increase the risk of a spill.
- Respondents stated that they wanted to know the liability of foreign owned tankers that transport coal from Texada Island to foreign ports.
- Respondents stated that FSD is subject to high winds and expressed concerned over the ability of the barges to maneuver in high winds.
- Respondents viewed the reason for the replacement of the Massey Tunnel was to allow increase tanker traffic and industrial traffic on the Fraser River.
- Respondents were concerned about the ramifications a spill would have on the invaluable wildlife, including the Gulf Island Marine Park Reserve.
- Respondents stated that they did not think the impacts of coastal shipping have been properly addressed, and that our shipping laws were inferior to those in other countries.

PMV:

No deep-sea vessel movements on the Fraser River are proposed for this project. The coal is to be moved by barge down the Fraser River to Texada Island.

For an annual coal volume of four million metric tonnes, FSD's proposed barge movements consists of 640 single-formations, fully-loaded

barge tows (approximately two tows each day from FSD to the mouth of the Fraser River). If any, empty barge movements would transit in a similar fashion as loaded barges. PMV required FSD to conduct a [Risk Assessment Study for Coal Barge Operation](#) to study potential traffic and safety impacts due to their proposal and outline mitigation measures.

As a permit condition, PMV has required FSD to submit an Operations Management Plan that will address ongoing operations, including noise control, barge loading procedures and profile, shutdown procedures and loading and towing of barges during period of high winds (over 40 km/h). Additional details can be found in the Project Review Report.

Although the barge route outside of the Fraser River and the receiving terminal site are outside of PMV's scope of review, PMV was advised that in March 2014, Texada Quarrying Ltd. received a permit from the Provincial Ministry of Energy, Mines & Natural Gas for an amendment to the current permit for the size of their stockpile area for transferring coal to deep-sea vessels. PMV understands that the changes to Texada Quarrying Ltd's facility on Texada Island are precipitated by growth in their business. FSD is one client who would benefit from the permit amendments for the storage of more coal at the quarry. For additional information on this permit, please contact the Provincial Ministry of Energy, Mines & Natural Gas at the following email: SouthwestMinesDivision@gov.bc.ca.

Concerns regarding liability of foreign owned ships in Canadian waters should be directed to Transport Canada.

The George Massey Tunnel project is not related to the Fraser Surrey Docks Direct Transfer Coal Facility project. The barges proposed to be used to transport coal draw significantly less water than is currently available on the main channel of the Fraser River.

PMV has required FSD to submit confirmation that the mitigation measures outlined in the study will be implemented during ongoing operations and over the life of the proposed project. PMV has required FSD to submit and maintain a current [Spill Response Plan](#).

PMV does not have any concerns with the scale of anticipated marine traffic as a result of the project, and there are well established protocols governing [marine operations on the Fraser River](#).

Risk to Marine Habitat, Waterways and Wildlife

- Respondents were concerned about the risk that the proposed project would have on the salmon runs and stock, and the associated damage to sport and recreational fishing industries.
- Respondents were concerned with the increased pollution to waterways through soil contamination, spills and leakage, and the corresponding affect it would have on the commercial fishing industry. They wanted to know who would be responsible for paying for damages or loss income.
- Respondents stated that they wanted to see PMV undertake a full hydrological study to determine the effects on estuaries and oceans.
- Respondents stated that the impacts to migratory birds, the estuary that is part of the Great Pacific Flyway and the habitat near the port are not addressed as part of the EIA.
- Respondents stated the EIA fails to define mitigation measures that are specific to each of the potential effects on vegetation and wildlife.
- Respondents expressed concern about the impact that the coal dust and a coal spill would have on the Fraser River and its estuaries.
- Respondents stated that they have sacrificed time and money to help salmon, orcas and other marine wildlife and one disaster could wipe out all those efforts.

- Respondents expressed concern about toxins leaching into pristine water sources from which they draw drinking water.
- Respondents were concerned about the impact of coal particulates and a spill in the Salish Sea since it is an inner sea and does not experience the same flows of fresh as the open ocean.
- Respondents cited Joseph Gaydos, VMD, Chief Scientist and Wildlife Veterinarian, UC Davis Wildlife, as listing the reasons that the Salish Sea is in a "non-resilient state of decay". He states that the Salish Sea cannot survive increased vessel noise or a major oil spill. He further asks for an analysis of the effects of new potential stressors on every species that is threatened, endangered or of concern.
- Respondents stated that the transportation of coal by barge and the resulting likelihood of a spill or windblown particulates entering the ocean will be harmful to aquatic life in the Georgia Strait.
- Respondents expressed concern that the increase barge traffic could have a negative impact on the whale population that is starting to return to the Georgia Strait. Tankers and container ships are the leading cause of whale mortality worldwide.
- Respondents expressed concern that the Environmental Impact Assessment ignores the potentially grave socio-economic, cultural, ecological and health impacts to the marine environment from barge travel to Texada Island and vessel traffic to international ports.
- Respondents stated that oysters around Texada Island have visible coal dust in them when opened.

PMV:

The potential impact to fish and fish habitat, including species with special status, and the impact to surface water quality were both considered in PMV's environmental review. The potential effects generators considered for the impact to fish and fish habitat included spills (coal, coal handling area storm water and hazardous materials associated with the project), the effects of fugitive emissions of coal dust and their potentially associated binding agent residues, pile driving activity, the alienation of habitat through new road and rail footprints, and others. It was concluded that the project construction and operation are not expected to cause significant residual adverse effects on these, taking into consideration the implementation of the mitigations identified by the proponent and compliance with the conditions identified in the permit. Impacts on local fish habitat will be mitigated through the creation of replacement habitat, reviewed and accepted by Fisheries and Oceans Canada.

The potential effects generators considered for the impact to surface water quality included spills (coal, coal handling area storm water and hazardous materials associated with the project), site preparation (turbidity and sedimentation, excavation dewatering) and fugitive dust emissions associated with operation (turbidity and sedimentation as well as contamination through binding agent residues). All potential adverse effects were assessed as insignificant or avoidable with mitigation. Permanent residual adverse effects are not expected.

Bituminous coal is a light mineral and any that is not recovered after a spill is unlikely to accumulate or persist to any significant degree. It is not toxic and any physical effects related to turbidity and sea or riverbed smothering (if it occurs) would be of limited duration and intensity.

The project review considers barge traffic to the mouth of the Fraser River, nevertheless, spilled coal or coal dust is not likely to have an adverse effect on aquatic life in Georgia Strait. The increase in barge marine traffic would not be significant so its associated effects would not be significant.

The effects of vessel traffic to international ports are out of scope for the project review. As part of the issued project permit, PMV has required FSD to submit confirmation that the mitigation measures outlined in the [Risk Assessment Study for Coal Barge Operation](#) will be implemented during ongoing operations and over the life of the project. PMV has also required FSD to submit and maintain a current [Spill](#)

Response Plan.

PMV's project review focused on the coal itself and concluded that contaminants associated with it are not biologically available (will not bioaccumulate). Mining the coal was not in the scope of the review, and possible effects associated with mining and its waste products were not considered.

Contingency Planning

- *Respondents asked who would be responsible for paying for the cleanup associated with a spill.*
- *Respondents were concerned that the increased marine traffic would lead to more collisions and increase the risk of a spill.*
- *Respondents were concerned about fire hazards at the terminal and in rail cars.*

PMV:

PMV's environmental review considered the potential environmental and health effects associated with accidents and malfunctions as a result of the project during construction and operations. All potential effects were assessed as insignificant or avoidable with mitigation. Permanent residual effects are not expected.

PMV required FSD to conduct a marine risk assessment to study potential traffic and safety impacts due to the proposal. See the [Risk Assessment Study for Coal Barge Operation](#) for additional details. PMV has assessed this risk and is not concerned with the scale of anticipated marine traffic as a result of this project, and there are well established protocols governing [marine operations on the Fraser River](#).

There are a number of conditions included in the project permit that relate to the marine risk assessment study, and spill response both during construction and during operation of the coal portion of the terminal. One of these conditions outlines that prior to commencing of activities; FSD has to establish a Spill Prevention, Containment and Clean-up Plan for hydrocarbon products.

The marine carrier for the terminal carries insurance covering them for the risks associated with ocean transport. Should a spill occur, responsibility for cleanup would be assumed by either the terminal or marine carrier. As a permit condition, PMV has required FSD to submit an Operations Management Plan that will address ongoing operations, including noise control, barge loading procedures and profile, shutdown procedures, and loading and towing of barges during period of high winds.

Concerns about fire hazards at the terminal have been addressed in a Coal Transfer Facility [Fire Safety Plan](#) which will be updated by FSD as necessary. There are also conditions in the [project permit](#) around building code compliance with respect to fire. With respect to respondents' concerns around fire safety around the rail corridor, this is outside PMV jurisdiction and these concerns have been forwarded to BNSF.

Health versus Profits

- *Respondents stated that this proposed project would lead to short term gain for large corporations and result in longer term pain for people and the environment.*
- *Respondents stated that the proposed project represented little benefit to the Lower Mainland but would result in a lot of adverse effects (including effects on people's health.)*
- *Respondents stated that the taxes generated by increased economic activity would not cover the longer costs associated with the*

medical issues that will arise from the proposed project.

- Respondents stated that they had a right to clean water and air, and that no amount of economic benefit was worth giving up those rights.
- Respondents expressed concern that Washington State had turned down similar projects because they did not want to take the health risks associated with the proposed projects.
- Respondents stated that they understood that PMV had a responsibility to increase business but also believed that they had a much greater responsibility to keep people healthy and the environment unblemished.
- Respondents stated that this decision was really about money versus health. Money generated by delivering American coal mined by American workers, shipped on American railroads, to customers of American coal brokers. Compared with the health of thousands of people that happen to live along the transportation route from the Powder River Basin, the Lower Mainland, all the way to Asia.
- Respondents stated their opposition to exporting U.S. coal through Canada. They felt that Canada was taking all the health and environmental risks, with very little benefit.
- Respondents questioned why PMV would consider being the site for coal shipments when ports in the U.S. had already rejected the idea.
- Respondents wanted to know when U.S. coal exports to Asia trumped the health and welfare of Lower Mainland families.

PMV:

PMV recognizes that many people have concerns about the types of commodities traded through the port. As a port authority, it is PMV's role to facilitate Canadian trade and to ensure safe and efficient movement of domestic and international trade. Coal has been safely handled by PMV marine terminals for decades. Exports are federally regulated and more information can be found on specific goods and technology exports from Canada in [Canada's Export Controls Guide](#) on the Government of Canada website. The decision on what goods Canada trades is beyond the scope of a port's jurisdiction. The debate about which commodities Canada trades should take place between citizens, communities and their respective governments.

Canada and the U.S. have long been trading partners. U.S. ports handle Canadian commodities and Canadian ports handle U.S. commodities.

The proposals in the U.S. are very different from the proposal at FSD. The U.S. proposals involve building three entirely new terminals in Oregon and Washington. The largest would be the Pacific Gateway Terminal in Cherry Point, which would handle up to 48 million tonnes of coal a year, and would include significant on-site storage of coal. Proposed new coal exports in the U.S. total 130 million tonnes. Because these are entirely new terminals, the approval process is extensive, involving multiple levels of review and far-reaching consultation over many years. These reviews are ongoing, and have not been rejected. Furthermore, significant volumes of coal are already exported by the U.S. through other existing terminals.

The FSD proposal is for an existing marine terminal to handle a different commodity to what is handled there today, within its existing footprint. The commodity FSD proposes to handle is one that is already handled in the port and has been handled for over 40 years. The proposal is to handle up to 4 million metric tonnes of coal annually. FSD operate a facility in an area of the port designated for industrial, terminal use under our Land Use Plan.

Under the *Canada Marine Act*, PMV is responsible to ensure a high level of environmental protection for project reviews, including potential

impacts on human health. For this reason, in addition to its internal review, PMV retained Golder Associates Ltd. as a third-party reviewer and advisor on human health, air quality modeling and aquatic toxicology. Golder assisted PMV with the review of elements of the EIA submitted by FSD in November 2013, and with the review of the Human Health Risk Assessment submitted by FSD in July 2014. Technical advice from Golder has been taken into consideration, along with all of the available project information, and PMV has determined that with the application of the project mitigations and the required conditions, the Project is not likely to cause any significant adverse environmental effects.

Coal as a Commodity

- Respondents stated that coal was not a sustainable commodity and that they want to see B.C. invest in green and renewable energy.
- Respondents stated that coal was not a clean source of energy and that this was not an industry that taxpayer's money should be supporting.
- Respondents stated that it was insane for PMV to ship any coal as it was an antiquated fuel source with many associated health and environment risks.
- Respondents stated that the tops of mountains are blown off to get access to coal, which is shipped by rail spreading coal dust through the ecosystems it passes, and is finally burn releasing CO₂, particulate and mercury into the atmosphere.

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As part of the review for the FSD project, PMV has reviewed and taken into account relevant information available on the Project, has considered the information and proposed mitigations provided by FSD and other information, including the third party review by Golder Associates Ltd. of the human health and air quality components of the submissions, and concludes that with the implementation of proposed mitigation measures and conditions, the Project is not likely to cause any significant adverse environmental effects.

For more information on the federal approach to monitoring and regulating greenhouse gas emissions, please refer to [Environment Canada's Greenhouse Gas Emissions](#) web page. For more information regarding the provincial approach to greenhouse gas accounting, please see the [Greenhouse Gas Reduction Targets Act](#) and the [Provincial Greenhouse Gas Inventory Report](#).

Exporting and Burning Coal

- Respondents expressed concerns about the impacts of enabling the distribution and delivery of coal globally to be burned as a fossil fuel.
- Respondents stated that coal burned in Asia would result in mercury particulates falling on the west coast of North America
- Respondents stated that coal leads to smog, acid rain, global warming and air toxins. Respondents questioned the choice to ship coal to China, where it would be extremely polluting.

- Respondents questioned the decision to assist in shipping fossil fuels to China that will contribute to global warming.
- Respondents stated Canada refuses to burn thermal coal, yet is willing to export enormous quantities to China.
- Respondents stated that climate change is a global problem and the actual cost of a proposed project is too high, as it does not factor in the environmental when determining in the economic benefit.
- Respondents were concerned about health effects that burning coal would have on the countries receiving coal.
- Respondents stated that by looking at other locations in the world, such as Shanghai, it was easy to see the impacts of coal on the environment.

PMV:

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The statement about Canada not burning thermal coal is incorrect as Canada does use thermal coal, mostly to generate electricity. Approximately 40% of the thermally-generated electricity in Canada comes from coal. This represents approximately 13% of the electricity consumed in the country. For additional information on Canada's consumption of coal, see the [Natural Resources Canada](#) website or the [PwC Economic Report on Coal – Canada](#).