

REPORT

ENGINEERING SERVICES DEPARTMENT

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

To: Mayor W. Wright and Members of Council in Committee of the Whole Date: December 04, 2013

From: Jim Lowrie, Director of Engineering File: 09.1740.02

Lisa Spitale
Chief Administrative Officer

Subject: Fraser Surrey Docks Proposed Direct Transfer Coal Facility –
Environmental Impact Assessment Review

RECOMMENDATION

THAT the City inform Port Metro Vancouver and Fraser Surrey Docks that the Environmental Impact Assessment by SNC Lavalin for the proposed Direct Transfer Coal Facility does not address the City's concerns and the City remains opposed to the facility until these concerns have been fully addressed.

PURPOSE

The purpose of this report is to report back to Council on the status of the application by Fraser Surrey Docks to Port Metro Vancouver to operate a Direct Transfer Coal Facility, in particular on the Environmental Impact Assessment study prepared by SNC Lavalin.

BACKGROUND

Fraser Surrey Docks (FSD) is a multi-purpose marine terminal that is located on the Fraser River in North Surrey under the jurisdiction of Port Metro Vancouver (PMV). A proposal has been submitted by FSD to PMV to construct and operate a coal transfer facility in which coal would be unloaded directly from bottom dump railcars to receiving pits and then transferred directly onto barges via a conveyor system for transport to a deep-sea shipping terminal.

Concerns have been raised about the local environmental and health impacts of the coal facility's operation as well as the global impacts of expanding coal use by organizations as diverse as local governments, medical health officers and environmental advocacy groups. These concerns include local engine emissions from trains and tug boats, global Greenhouse Gas emissions from burning the shipped coal, dust from train movements and coal transfer operations, chemicals used in train cars and barges for dust suppression, soil and water contamination and risks related to explosions, fires, collisions and spills.

On February 4th, 2013, Council received a report on potential impacts of the facility on the City and directed staff to work with the facility proponent and PMV to address identified issues.

At a meeting on May 27th, 2013, Council passed the following resolution:

WHEREAS Port Metro Vancouver is planning to ship volatile thermal coal from the United States through the Fraser Surrey Docks, in the vicinity of our densely populated city;

AND WHEREAS Port Metro Vancouver has not been able to clearly disclose all health and safety data related to this product, including the flame retardant solutions required to stabilize the volatility of this coal;

AND WHEREAS the Federal Government has yielded its' jurisdiction on this matter to Port Metro Vancouver;

AND WHEREAS Port Metro Vancouver has denied New Westminster's request for a meeting in New Westminster;

THEREFORE BE IT RESOLVED THAT the City of New Westminster communicates its' opposition to the shipping of thermal coal from the neighbouring Surrey Fraser Docks.

On May 30th, 2013, the City co-hosted, with local MPs and MLA, a "Town Hall" meeting to discuss the proposal and answer questions on the proposal. Approximately 300 persons attended the event and presentations were made by representatives of Port Metro Vancouver, Fraser Surrey Docks, Metro Vancouver, Fraser Health Authority and the New Westminster Environmental Partners. A summary of the notes from the event has been prepared and provided to all stakeholders.

On September 23rd, 2013 Council received an update from Port Metro Vancouver and Fraser Surrey Docks on the results of the initial round of consultation that ended in June and new requirements for additional studies and mitigation measures to address health and environmental concerns. Staff was directed to review this additional information and report back on how well this information addresses City concerns.

EXISTING POLICY/PRACTICE

Port Metro Vancouver operates under a federal charter that provides it with a broad mandate to promote international trade and a range of powers to implement this mandate. As a federal agency, the ability of local and provincial governments to directly influence port land use decisions is limited. PMV does have an internal review process for land use proposals which involves the notification of affected local jurisdictions, sharing of plans and public consultation. PMV also has policies promoting sustainability in its facilities and internal operations but does not assume responsibility for the sustainability of goods movement to or from these facilities or for the production or use of these goods.

In this case, the facility is also located outside of New Westminster's jurisdiction in the City of Surrey, adjacent to the District of Delta on the Fraser River. It is approximately 1500m southeast of the Queensborough community, separated by the northern tip of Annacis Island, and approximately 2000m south of the Quayside and Downtown communities. The docks are located in lands zoned for heavy industrial use and there are regional policies supported by the City for the retention of industrial lands.

The City and region also have policies calling for the intensification of livable regional centres, including Downtown New Westminster, and the safe, efficient and low-impact transportation of goods. The City supports the movement of goods by rail and water where feasible to reduce the impacts of trucks on populated areas. The City also supports reductions in the generation of Greenhouse Gases (GHGs), but corporate and community energy and emission plans focus on controlling local emissions, as opposed to those generated in surrounding communities or abroad.

ANALYSIS

The basic operating concept of the facility is that trains loaded with coal would be brought to the FSD terminal, unloaded into a pit through doors under the train cars and then loaded onto barges by conveyor belt for transport to a deep sea shipping facility at Texada Island for transport to customers in Asia, primarily in China. Initially, four million tonnes of coal would be shipped and the capacity for the facility as proposed is eight million tonnes.

One additional train per day of up to 135 cars is expected using BNSF's track south of the Fraser River every day by 2014 and eventually up to three trains per day, i.e., three trips to and three trips from the facility daily. Although it is possible, it is not currently expected that coal trains will be routed through New Westminster, with the proponent stating that trains will be routed primarily through the BNSF tracks through White Rock,

South Surrey and Delta. If there was a blockage of that route, e.g., for track maintenance or accident, trains could be routed temporarily through New Westminster. Proposed barge routes to transfer the coal from FSD to Texada Island will be along the South Arm of the Fraser River, i.e., not the channels immediately adjacent to the Quayside or Queensborough neighbourhoods.

As part of the consultation component of the Project Review Process, PMV reviewed input received from municipalities, communities, health authorities and First Nations. After considering the comments heard during the public consultation process, PMV is now requiring FSD to provide additional mitigation to address potential fugitive coal dust from trains, the terminal, and from barges. Specifically, PMV is asking FSD to address the following issues:

- Work with its rail provider (BNSF) 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 in the Port;
- Revise its proposal by employing other measures in the supply chain to remove the necessity to have an emergency stockpile on site;
- Revise its proposal to address potential fugitive dust from the barges at the terminal and while transiting the Fraser River;
- Provide an Environmental Impact Assessment (EIA) for the project, which includes a specific section on the effects of the project on human health.

The EIA was released to the City on November 18, 2013 and PMV has allowed 30 days to review and comment on the EIA. In addition, the EIA has also been provided for comment to First Nations, local governments and concerned agencies, including health authorities. The full EIA document and appendices have been posted on PMV's website to allow the public to review and provide their comments:

<http://portmetrovanancouver.com/en/projects/OngoingProjects/Tenant-Led-Projects/FraserSurreyDocks.aspx>

In its response to PMV's requirements, FSD is proposing a number of additional coal dust control measures and has commissioned SNC-Lavalin to conduct an independent EIA of the project. It should be noted that the project is not designated as one requiring a full EIA as defined by the Canadian or BC Environmental Assessment Acts, which would involve a rigorous review process with extensive opportunities for public review and input, but rather includes "elements of a CEAA and BCEAA-style EIA consistent with best practices when conducting an environmental assessment of a project."

In addition to the EIA, FSD has proposed the following new dust control enhancements:

- A coal stockpile will no longer be used at the terminal. Originally it was proposed for use as a contingency in case a train arrived and no coal barges were available. To minimize the risk of this occurring, additional barges will be used and rail delivery schedules will be modified when necessary.
- BNSF Railway has voluntarily agreed to establish a re-spray facility, which will re-apply an approved “topping agent” to coal in loaded railcars. Topping agents are first applied at the mines in the Powder River Basin, located in Montana and Wyoming in the Western United States.
- A suppression and binding agent will also be added to the coal at FSD as it is being loaded onto the barges for transit to Texada Island to contain coal dust on the barges during transit. This is in addition to previously incorporated measures including profiling the coal on barges to reduce turbulence and preventing the coal from catching wind, adding water to wet the coal in the barges to prevent dusting and not operating the barges in wind conditions greater than 40 km/hour.

SNC Lavalin Environmental Impact Assessment

The EIA states that it has assembled and integrated studies and information that have been made available by FSD to date and includes updates where appropriate. It also contains new project analysis undertaken by SNC-Lavalin, Levelton Consultants Ltd., Triton Consultants Ltd., Soleil Environmental Consulting Ltd., and Dr. Leonard Ritter, Professor Emeritus of Toxicology in the School of Environmental Sciences at the University of Guelph. The EIA outlines additional mitigation measures that have been designed in response to input from PMV and local stakeholders.

As in previous studies, the EIA does not address the shipment of coal to the FSD facility by train, only the handling of the commodity within the FSD facility and transfer to barges destined for Texada Island. Although the facility could eventually handle three trains each day, the EIA focuses on the next five years, a period during which approximately one train and two barge movements will be handled each day. The EIA recognizes the significant impact of the greenhouse gases that will be produced by coal when it is burned by overseas customers, but does not assess these impacts.

The EIA notes that the Department of Fisheries and Oceans, provincial or regional health authorities and local governments do not have a regulatory decision making role in the process. Transport Canada’s jurisdiction is stated to be related to the application of the Railway Safety Act and Canada Transportation Act statutes and associated regulations. While FSD is working with Metro Vancouver to obtain an Air Emissions Permit for the

Project, the EIA states that a Metro permit is not legally required for the construction or operation of the facility.

The conclusions of the EIA review related to air quality and health are:

With the application of these mitigation measures, particulate matter emissions from fugitive dust sources are localized around the facility and predicted air quality impacts are low. With the mitigation planned for the facility the fugitive dust sources are predicted to have low impact on air quality in the area. There are predicted exceedences noted for the 24-hour averaged PM_{10} and annual NO_2 when combining the impacts from the proposed Project, current agricultural goods operations and ambient background concentrations. The predicted 24-hour averaged PM_{10} exceedences are located on the facility fence line inland, while the predicted annual NO_2 exceedences are receptors located over the Fraser River. While the modelling results are likely to be conservative by nature, monitoring after facility commissioning is recommended to validate that air quality exceedences will not occur.

Construction and operational activities are likely to result in localised air quality impacts. Construction related impacts are expected to be short-term, temporary, and can include fugitive dust and combustion emission from vehicles, which are typical of construction. Air quality impacts from traveling barges along the Fraser River were considered to be low to negligible. No significant adverse effects on air quality are likely to occur as a result of this project.

PM_{10} is particulate matter, or particles, of 10 microns (10 millionth of a meter) or less in size that generally passes through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects.¹ NO_2 is Nitrous Oxide, which is associated with adverse respiratory effects after short term exposure, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma.²

The EIA later states that, while PM_{10} and other pollutant levels, if achieved, are likely to be less than health-based municipal, provincial, national and international ambient air objectives, NO_2 levels would be “approximately equal to these objectives.” These conclusions appear to be based mainly on previous air quality studies commissioned by FSD, not a new study with a focus on health issues specific to this site. Although the EIA

¹ <http://www.epa.gov/airquality/urbanair/>

² <http://www.epa.gov/airquality/urbanair/>

views the air dispersion modelling and predicted contaminants findings to be conservative, it recommends ongoing air quality monitoring to ensure that the proposed dust and emission measures in fact meet the air quality objectives. An Air Quality Management Plan has been developed to monitor air quality and the effectiveness of proposed mitigation measures.

The Chief Medical Officer for the Fraser Health Authority has reviewed the EIA and has provided Port and the facility proponent with the following feedback:

- 1. The SNC-Lavalin report is primarily a repackaging of work previously done by other consultants, primarily Levelton Consultants Inc., with limited additional analyses to address concerns raised by ourselves, the public and local governments.*
- 2. Most of the conclusions in the report about potential environmental and health impacts rely upon modeling work done by Levelton, i.e., the "Air Quality Assessment." We are concerned about the underlying assumptions that informed that model, which were not assessed critically by SNC-Lavalin.*
- 3. The assessment of potential health impacts is particularly disappointing, and receives minimal attention in the document. Of note, much greater consideration is given to the potential effects of the project on plants, fish and wildlife than to people. The report does not meet even the most basic requirements of a health impact assessment.*
- 4. The report does not deal with the full scope of the project, from the time coal crosses the Canadian border to its transport and loading at Texada Island.*

A copy of the Medical Health Officer's letter is attached as Appendix 1.

As a result of these ongoing issues, particularly the request for a comprehensive Health Impact Assessment that is satisfactory to the Fraser Health Authority and is undertaken according to current best practices, it would appear that the City's conditions for support of the project have not yet been met.

SUSTAINABILITY IMPLICATIONS

Socially, the presence of large coal piles and industrial buildings create visual intrusion and industrial operations of this kind generally result in noise, dust, vibrations and light intrusion for nearby properties, although it should be noted that these have been long standing uses of the FSD. In particular, coal dust contains particulate matter of 2.5 and 10 microns (PM_{2.5} and PM₁₀) which can be a factor in lung disease. The Fraser Health Authority and other regional health authorities have raised concerns of potential health

issues and have requested that a full Health Impact Assessment (HIA) be conducted for the facility, which has not yet been satisfied.

Economically, it is expected that the facility, during operation, will generate 50 full time jobs at FSD, with an additional 25 jobs being created at the Texada Island deep-sea facility. Some of these employees may ultimately reside in New Westminster or utilize local businesses, particularly in Queensborough.

Environmentally, coal is a leading source of Greenhouse Gases (GHGs), with this type of coal emitting roughly 6 tonnes of Carbon Dioxide equivalent (CO₂e) for every tonne of coal (1000 kg) burned. At capacity, the facility will transport coal that will create 48 Megatonnes (Mt) of CO₂e annually. By comparison, British Columbia produces 62 Mt of CO₂e annually from all sources. If the proposal is accepted, PMV will become North America's largest export port for coal. Although a large-scale expansion of coal shipments will likely significantly accelerate the impacts of global climate change, the Port has a policy of not restricting the shipment of goods as long as they are legal commodities and are shipped, stored, and loaded in an environmentally friendly manner.

Other environmental concerns related to the proposal include the potential for the water and soil contamination and accidental spillage of coal into the Fraser River. Although an Environmental Management Plan calls for procedures to reduce risks and to monitor air, water and soil quality regularly, this is a large industrial site and the proposed project will provide no improvements for the local environment or wildlife habitat. The City has no direct jurisdiction with respect to mitigating these potential environmental impacts.

OPTIONS

Council may:

1. Inform Port Metro Vancouver and Fraser Surrey Docks that the Environmental Impact Assessment by SNC Lavalin for the proposed Direct Transfer Coal Facility does not address the City's concerns and the City remains opposed to the facility until these concerns have been fully addressed; or
2. Provide staff with other direction or input.

Staff recommends option 1.

FINANCIAL IMPACT

There is no direct financial impact related to the proposed coal transfer facility other than staff time dedicated to researching issues and meeting with stakeholders to resolve these.

INTERDEPARTMENTAL LIAISON

The Engineering Services department is working with the Chief Administrator's Office to identify and mitigate potential impacts from the proposed coal transfer facility and has consulted with key City staff to review the proposal, including Emergency Management.

CONCLUSION

Port Metro Vancouver is reviewing a project permit application from Fraser Surrey Docks for a Direct Transfer Coal Facility that will load coal, primarily from the central U.S., directly from trains onto barges for transfer to ocean-going ships at Texada Island for overseas markets. Initially, up to four million metric tonnes of coal is to be shipped annually, or roughly three to four million cubic meters, with an ultimate capacity of eight million tonnes per year.

While the proponent has indicated that the environmental and health impacts from the construction and operation of the facility are manageable, this will depend on the degree to which identified controls that are ultimately applied and how emissions are monitored and controlled. PMV has identified a number of additional requirements of the project proponent before the review can proceed, in particular an independent Environmental Impact Assessment that includes health issues.

The EIA appears to be primarily a consolidation and summary of previous studies and does not appear to meet the Fraser Health Authority requirements for a Health Impact Assessment. As the EIA leaves unresolved a number of questions related to health and environment, it is considered that the City cannot support the proposal at this time.

City staff will continue working with PMV and the facility proponent as well as other jurisdictions, including provincial, regional and local governments and agencies, to research and attempt to resolve issues that may impact the City.

Report Author

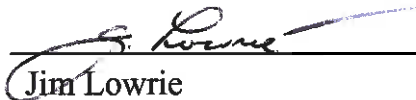


Mark Allison
Senior Planner

Approved for Presentation to Council



Lisa Spitale
Chief Administrative Officer



Jim Lowrie
Director of Engineering

Appendix 1:

Letter from Fraser Health Authority
to Fraser Surrey Docks on EIA for
Direct Transfer Coal Facility



November 13, 2013

DARRELL DESJARDIN

Director, Environmental Programs
Port Metro Vancouver
100 The Pointe
999 Canada Place
Vancouver, BC V6C 3T4

Dear Mr. Desjardin:

RE: October 24 2013 draft of the Fraser Surrey Docks EIA

We thank you for the opportunity to provide comments on the above document prepared by SNC Lavalin for Fraser Surrey Docks (FSD). We apologize for missing the agency comment deadline. To minimize delay in the review process, we will provide a copy of our comments to the proponent (FSD) directly. Due to the short turnaround time for agencies to provide response, we will provide additional comments as **necessary** during the public comment period.

Should it proceed as planned, this project will see the transportation of coal on a segment of the BNSF line that did not transport coal before, through urban neighborhoods that never had experience with coal as a commodity on the railway, and into a port facility (FSD) that has never handled coal. Being this is a "first" in a number of fronts, expectations are appropriately high that the proponents will exercise very careful considerations with respect to the project's impact on the health and safety of the public, as well as its environmental impact.

We were encouraged when Port Metro Vancouver indicated the requirement that Fraser Surrey Docks complete an Environmental Impact Assessment of the project that included an assessment of health impacts of the full project, not limited only to impacts from activity at FSD. After reviewing the report, we provide the following high-level feedback:

1. The SNC-Lavalin report is primarily a repackaging of work previously done by other consultants, primarily Levelton Consultants Inc., with limited additional analyses to address concerns raised by ourselves, the public and local governments.

2. Most of the conclusions in the report about potential environmental and health impacts rely upon modeling work done by Levelton i.e. "Air Quality Assessment". We are concerned about the underlying assumptions that informed that model, which were not assessed critically by SNC-Lavalin.
3. The assessment of potential health impacts is particularly disappointing, and receives minimal attention in the document. Of note, much greater consideration is given to the potential effects of the project on plants, fish and wildlife than to people. The report does not meet even the most basic requirements of a health impact assessment. SNC-Lavalin has included a 4-page summary describing general air toxins and their known health effects, but no link to this project. The appendix includes a short letter written by a toxicologist, Dr. Leonard Ritter, with his opinion about the potential health impacts of coal dust. The letter is based on the assumption that the Levelton model is accurate, and includes only a single reference pertaining to the potential health impacts of coal dust. No discussion is included of any other potential health impacts. This single toxicologist's opinion does not meet the standards of a health impact assessment.
4. The report does not deal with the full scope of the project, from the time coal crosses the Canadian border to its transport and loading at Texada Island.

Based on these shortfalls, this report adds little to the information we require to determine the potential health impacts of the project and does not allow us to address legitimate concerns raised by members of the public and local governments.

We would still be very willing to meet with SNC-Lavalin to identify the parameters required to do an appropriate assessment of the potential health effects of the project, and we urge Port Metro Vancouver to ask Fraser Surrey Docks to revisit this report with that recommendation.

In addition to these general comments, we provide the following specific feedback on this draft of the report. Firstly, we ask that the May 27th 2013 letter to Port Metro Vancouver from Dr. Van Buynder Chief Medical Health Officer for Fraser Health, is included as an appendix, and that those concerns outlined in the letter are addressed in the report.

Since the May letter, we understand that a number of revisions has been made to the project with the intention to at least partially address the concerns. It is with this in mind that we provide the following additional comments.

1. The Spatial , Population, and Temporal Scope of the EIA

• Spatial

The draft EIA primarily covers the FSD site and the immediate surrounding areas on land and water. While we understand the limited jurisdiction Port Metro Vancouver has and that this EIA is primarily to address Port Metro Vancouver's requirements, it is still disappointing that the proponent (FSD) chose not to include the Canadian side of the project supply chain from the border to Texada Island in the EIA. Locations where potential health impacts could be of concern are not limited to the FSD site and its vicinity. For the health and safety of the public, the scope of this EIA should not be limited to the construction and operations that will occur at the FSD site. As Dr. Van Buynder pointed out in his May 27th letter, "the public are particularly intolerant of piecemeal approaches to major projects". This EIA will not be credible to the public unless it covers the entire geographic area in which this project will operate within British Columbia.

- **Population.**

The draft EIA provided only general descriptions of the population and growth trends for Surrey and Delta. While the document correctly identified children and the elderly as two of the vulnerable populations who could be more sensitive to project impacts such as air quality degradation, the document did not provide much detail on the sizes and locations of potentially sensitive population groups along the rail corridor from White Rock to FSD. The air dispersion modeling in appendix VIII did include sensitive receptors (locations of schools, child care and hospitals) in a 20km x 20km domain. However only the FSD emissions were included in the dispersion model. Indeed the distribution of the sensitive receptors in the model suggests that vulnerable populations are located all along the rail corridor and that modeling emissions from FSD only is not adequate.

As the draft EIA showed, the populations of Surrey and Delta are increasing. Yet the document did not include information on how these population increases may affect the size of the vulnerable population over the proposed life time of the project. Nor did the document include information on other important characteristics of the population such as socioeconomic status. The narrow geographic scope also meant the exclusion of populations near the proposed operations at Texada Island in the assessment. Indeed while the draft EIA rightly included extensive documentation and analyses of sensitive plants, and non-human animal species that may potentially be impacted by the project, the same effort was not given to describing the human population that may potentially be impacted.

Information on potentially vulnerable populations impacted by the project should be included and could be accessed through government sources. This information is essential to determine population health risk based on those exposed.

- **Temporal boundary**

The draft EIA states that this project has a life span of six years. At the same time however, the draft EIA also states that the FSD facility improvements will not be decommissioned after completion of the project. In addition, the planned expansion work at the Port Authority Rail Yard (PARY) is for accommodating two unit trains at a time. The draft EIA states: "the current capacity at the PARY is one unit coal train at a time, based on its capability to receive, stage, and depart trains." Even at the proposed maximum capacity for this project, there will be only one unit train a day arriving at FSD. The current project should not require tracks to accommodate two unit trains at a time. It is therefore unclear whether continuation and further expansion of the project beyond six years are being contemplated, or whether the capacity for one additional unit train is intended as temporary coal storage in lieu of the original emergency coal storage stockpile that was deleted from the revised proposal. Clarification of intent is critical. It is not appropriate for example to be limiting the EIA to consider only six years of operation and at the stated volume if the ultimate goal is to expand beyond six years and or current volume.

2. Air Quality

- **Coal dust**

We acknowledge that a number of positive changes have been proposed with respect to coal dust mitigation: elimination of the emergency storage stockpile, additional use of sealants during transit on the incoming coal trains, and the addition of sealant during transfer and

loading onto the barges. The proposed dust mitigation strategies will now rely much on the use of sealants, and load profiling. Neither data nor references are given in the draft EIA to support the efficiency claims for these strategies. They could be as efficient as claimed, but as written, it would appear the authors of the draft EIA simply took the values provided by the project proponent / product manufacturer without any effort to seek independent validation.

With respect to the health effects from coal dust, the WHO International Agency for Research on Cancer (IARC) recently announced the inclusion of outdoor air pollution in general as a Group 1 carcinogen. In making its decision IARC included both anthropogenic and natural sources of air pollution. (<http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045%2813%2970487-X/fulltext>, http://www.iarc.fr/en/media-centre/pr/2013/pdfs/pr221_E.pdf) The Health Effects Institute also recently published its review on particulate (PM) air pollution. While the review found stronger evidence for the health effects from certain types of particulates, “the review panel concluded, however, that the studies do not provide compelling evidence that any specific source, component, or size class of PM may be excluded as a possible contributor to PM toxicity.” (<http://www.healtheffects.org/Pubs/NPACT-ExecutiveSummary.pdf>) In other words, coal dust will contribute to the total toxicity from outdoor air pollution when it is present. Dr Ritter’s comments with respect to the 1997 IARC monograph on coal should be considered in light of these recent scientific developments.

We note in the draft EIA mention of the use of a ten fold (10 X) factor for transforming occupational health limits to sensitive populations such as children and the elderly (pages 121, 124). The document goes on to intimate that this is a common and accepted practice. We request the document author to supply references from published literature to support this assumption specifically for coal dust.

A brief summary on the type and composition of the coal to be shipped is provided in the draft EIA. The description, unfortunately, does not contain information regarding mercury, lead, arsenic, and other possible contaminants as requested by Dr. Van Buynder in his May 27 letter. This could be important information for assessing the potential impacts on food grown by residents and farms along the railway track leading to the FSD site

Much was mentioned in the draft EIA and in the appendices on the 1986 ESL study on coal dust at Agassiz BC. This study is more than 25 years old. Air quality instrumentation and measurement protocols have advanced considerably since. It is unknown whether the older instruments and measurement protocols in 1986 would have under or over estimated the actual levels. More recent data do exist and would have been helpful to include them. In addition, averaging the particulate concentration over 24 hours will mask any shorter term concentration levels that may have short term health effects.

The revised plan has deleted the emergency coal storage stockpile. The revised plan however considers the possibility of loaded barges staying at the dockside in the event of high winds (> 40 km/hr) as a way of reducing the risk of blown dust during passage to Texada Island. In effect, during these weather events these barges would be providing a function similar to the original emergency stockpile. Although the dispersion modeling included loaded barges at dockside as a source of emission, it is unclear whether the modeling considered severe wind events when the barges may stay at dockside much longer than during normal operations. It would be important to determine the possible frequency of such events and to

model the impacts to air quality when the loaded barges stay at dockside for extended periods of time.

- **Diesel emissions**

The assessment of health impacts in the report focuses primarily on coal dust, with little consideration of the increase in diesel emissions from trains, barges, trucks and idling vehicles at railway crossings. Given that diesel emissions are associated with many acute and chronic health impacts, and are a known carcinogen, this is a significant deficiency of the report. We find this surprising because Levelton, in 2007, completed the "Air Toxics Emissions Inventory and Health Risk Assessment – Summary Report" on behalf of Metro Vancouver.

(http://www.metrovancouver.org/about/publications/Publications/Air_Toxics_Emission.pdf)

This report estimated about 350 cancers per one million population over a 70 year lifespan from diesel emissions in the Metro Vancouver region. Levelton could use this model to estimate the cumulative effects from the added diesel emissions from this proposed project for the potentially affected populations.

- **Dispersion modeling**

We defer the detailed review of the dispersion model to Metro Vancouver staff. Much of the EIA conclusions on the health effects from air emissions from this project are dependent on the validity of the dispersion modeling, and the interpretation of the intent of the Ambient Air Quality Objectives (AAQO). The BC Government has this to say regarding the use of the AAQO: "As even low levels of air pollution can affect some individuals, air quality objectives should not be viewed as levels we can "pollute up to," but levels to stay well below."

(<http://www.bcairquality.ca/regulatory/air-objectives-standards.html>) Moreover, in setting the AAQO, the BC Government considers other factors besides health evidence. The final AAQO is an integration of "information from the risk assessment with economic and technical factors as well as ethical, social, legal, ecological and achievability considerations".

(<http://www.bcairquality.ca/reports/pdfs/aqo-framework-information-sheet.pdf>) Furthermore, the AAQO is only meant as a guide for decision making.

(<http://www.bcairquality.ca/regulatory/air-objectives-standards.html>). It is therefore inappropriate for this EIA document to use the AAQO as the definitive criteria to characterize the level of health effects from the air quality predictions.

We have already mentioned above that there is a lack of information in the EIA regarding the efficiency of the dust sealants and other coal dust mitigation strategies, and therefore it is impossible for us to determine whether the emission factors used for the model are correct. We have also noted that the time and spatial domains chosen for the model will influence whether the model will be able to assess any possible short term health effects. While using the 24 hours and annual averages will allow comparison to existing air quality objectives over a wide area, they are not as useful for assessing short term local impacts. In addition, there is no known threshold below which particulate air pollution have no health effects. There are health effects even at the current air quality objectives. Concentration response functions are available to assess health effects at different levels of different air pollutants. It is much more informative to derive estimates of additional health effects directly from a validated model as opposed to simply commenting on whether the existing air quality objectives will be exceeded.

- **South Fraser Health Region 1998 Letter**

The draft EIA included a 1998 letter to the Corporation of Delta from Dr Robert Strang, then Associate Medical Health Officer, South Fraser Health Region. The letter was in response to concerns regarding dust originating from Westshore Terminals affecting the health of Delta residents – in particular Tsawwassen children. The letter presented data on respiratory illness and asthma related hospitalization and deaths, comparing different areas in the former South Fraser Health Region and elsewhere in BC. The spatial unit of analysis used was the Local Health Area (LHA), which is equivalent geographically to the local school district. The letter concluded that the information available did not point to concerns about higher levels of asthma or respiratory disease in Delta compared to other areas in the South Fraser Health Region or the province. LHA 37 is equivalent in size and geographic location as the Delta School District (SD 37). LHA 37 is a large geographic area, and includes three town centers (Tsawwassen, Ladner, and North Delta), with even the closest of them (Tsawwassen) still some distance away from the Westshore Terminals. If there were any health effects associated with dust exposure for the smaller number of people who lived closer to the coal port or along the railway tracks that served the port, the signals would have been drowned out by the health experiences of the large population centers. As well, the analysis did not adjust for socioeconomic status, smoking status or other potential confounders when comparing the different LHAs. The geographic location of Tsawwassen in relation to Westshore Terminals is also different from the geographic relationship between FSD and its neighboring residential areas. Dr. Strang provided no conclusion in his letter about whether or not populations living in close proximity to coal dust transport and handling had suffered undue health effects, nor was the analyses included appropriate to answer that question. It is not appropriate to use the letter as evidence for assessing health effects for the FSD project.

- **Air Quality Monitoring**

Dr Van Buynder in his May 27 letter emphasized the need for adequate air quality monitoring to verify the dispersion modeling results should the project proceed. It is not clear reading the draft EIA whether the entire monitoring proposal in Levelton's May 2013 draft Air Quality Management Plan is to be carried forward. Even if it does, the single air quality monitor station proposed outside of the FSD site is not adequate. Additional air quality monitoring at strategic locations on the rail corridor are needed to resolve issues including coal dust falls, train diesel emissions, and motor vehicle emissions at rail crossings given the increased wait times. Also in the earlier May 2013 draft Air Quality Management Plan barge based monitoring for particulates was proposed. Again, it is unclear in the draft EIA whether this is still the case.

3. Emergency Vehicle Access

The draft EIA suggests that the current arrangements for ensuring timely access across rail crossings for emergency vehicles are adequate. Without additional information, we remain concerned. We recommend that the proponent asks BC Ambulance Service, the Surrey and Delta Fire Departments and other appropriate first responders to review the proposal for adequacy with respect to emergency response access.

4. Recreation, Livability, Amenities

The impact of dust falls from passing coal trains on neighborhood livability is not addressed in the draft EIA. Complaints of coal dust soiling windows, covering outdoor structures have been recorded from residents living close to railway tracks in other locations such as was in Agassiz. (The Canadian Council of Ministers of the Environment. "*A Study of Fugitive Coal*

Dust Emissions In Canada". 2001) The dispersion modeling presented in the EIA is not useful for predicting dust fouling of outdoor living spaces in residential areas and in recreational amenities such as trails that run parallel to segments of the BNSF tracks. There is also no information on the increased potential for injury to the public at rail crossings. Neither baseline injury data nor possible future impacts are presented.

The EIA described some general strategies that the project will be using to mitigate noise impact. In order to ensure that these strategies will work, baseline noise measurements and ongoing noise monitoring during both the construction and operation phases of the project are needed

5. Public Engagement

Information contained in the draft EIA and its appendices do not permit an assessment on the adequacy of the public engagement process. Written public comments were summarized, but no attempt was made to map the public feedback, including feedback at public meetings, to the draft EIA so that reviewers can tell how the concerns were addressed. Importantly, there was no information with respect to actions or decisions by local government following presentations from FSD to the mayors and councils. We remind Port Metro that the Board of Directors of Metro Vancouver has called for a health impact assessment of the project, and that two Lower Mainland municipalities have recently passed motions banning coal from municipal lands. These decisions are important context that was not noted amongst the public feedback. Nor was recent correspondence from the Fraser and Vancouver Coastal Chief Medical Health Officers found in the appendices, even though a letter from an Associate Medical Health Officer written some 15 years ago was included.

A noise complaint response process for the FSD site of the project is described in the draft EIA. An air quality complaint tracking system for the FSD site is included in the May 2013 draft Air Quality Management Plan. There is a need for a coordinated complaint response system for this project that covers concerns arising from both within and without the FSD site. It is unclear whether such is being planned. The absence of coordinated and timely response to complaints will frustrate the public and potentially lead to unnecessary escalation of concerns.

In summary, we were pleased that Port Metro Vancouver requested a more comprehensive impact assessment for this direct transfer coal facility project. Unfortunately, this draft EIA fell well short of adequately addressing the human health impacts of the proposal. We, as the Medical Health Officers responsible for protecting the public health in the regions impacted by the project are being asked by the public and the local governments whether this project will have health impacts. Regrettably we are no closer to answering this question, even having reviewed the draft EIA. In our letter of September 25, 2013 we requested that health authorities be provided with an opportunity to assist in the scoping of the EIA. This offer still stands and we once again urge the project proponents (FSD and its business partners in this project) to conduct a health impact assessment that includes all of the project components from the U.S.-Canada border to Texada Island.

Health Impact Assessments are designed to minimize the negative and maximize the positive impacts of large projects. We believe it is the most appropriate and socially responsible approach for the proponents to address our concerns and those of the public.

Sincerely,



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| Paul Van Buynder, MBBS, MPH, FAFPHM Chief Medical Health Officer and Program Medical Director, Public Health Fraser Health Authority |
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| Patricia Daly MD, FRCPC Chief Medical Health Officer and Vice-President, Public Health Vancouver Coastal Health |
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CC: Dr. Perry Kendall, Provincial Health Officer
Roger Quan, Air Quality Policy & Management Division Manager, Metro Vancouver
Jurgen Franke, Director, Engineering and Maintenance, Fraser Surrey Docks –
contact for proponent (jurgenf@fsd.bc.ca)

Attachments:

1. May 27 2013 letter from Dr. Van Buynder to PMV
2. September 25 2013 letter from Drs. Van Buynder and Daly to PMV