

The Environmental Application for the South Fraser Perimeter Road is being called the worst E.A. in history for good reason. The amount of environmental damage to residential communities and habitat for species at risk would be severe.

A fundamental problem with the Environmental Application for the SFPR is the fact that the public and the working groups have been making comment on erroneous and misleading information. Many of these inaccuracies were pointed out by the Sunbury Neighbourhood Association, and yet much of the Errata have not been acknowledged or reported on the Gateway website, so the Environmental Assessment is therefore incomplete.

Habitat Misrepresentation:

Part of this misinformation is the failure to properly address the loss of vegetation along the North Delta Bluffs in the Riparian Habitat calculations and the reluctance of the MoT in recognizing the importance of these bluffs as a wildlife corridor.

*“The MoT acknowledges the importance of the Delta ravines...but does not accept that there is existing habitat for substantial wildlife movement between the Delta Ravines. The majority of the land between the ravines is currently occupied by residential housing and the railway right-of-way.”*

(Third Public Comments Period Issues Response Table, ID 036).

**As you can see by the following pictures, there is a wide and heavily vegetated corridor along the North Delta Bluffs, a good part of which is Red- and Blue-listed Habitat for threatened and endangered species. The relationship between this critical habitat, the ravines, and the Red- and Yellow-coded Fraser River foreshore is undeniable.**



Along these bluffs the highway would be 4 lanes in a split grade that would replace all of the vegetation from the railroad tracks up to and including most of the first row houses at the top of the escarpment.



This picture shows the **Collings Way Environmental Reserve** to the right of center and the corridor connection to the Blue-listed **Norum Creek Ravine, Norum Place Park Reserve and Gunderson Creek Ravine** to the left and the Blue-listed **McAdam Ravine** and **Unnamed Creek Ravine** on the right. **Clearly visible is the wildlife corridor that traverses the North Delta Bluffs connecting all of the ravines.**

A wildlife corridor that would be entirely removed by the proposed highway, leaving the ravines isolated from one another and separated from the Fraser River. These ravines are home to hundreds of species of birds and animals of which nearly 20 are species at risk.

*"By definition, red-listed habitats are endangered or threatened by extinction, and blue-listed habitats are vulnerable to becoming endangered, threatened or extinct. **Loss of these habitats within the study area through clearing would thus be highly significant given their increasing scarcity in the Lower Mainland.**"* (Technical Volume 12, p. 46, 4.5, para 1)

*"**These designations reflect the habitats' rarity within the Province. Many of the surviving forests in the study area represent red- or blue-listed habitats that are the only remaining habitat in an area...**"* (Technical Volume 12, p. 34 para 2)

*"The impacts on upland forest as a result of the SFPR are 14.7 ha, of which 11.3 ha are threatened plant communities...Some of the affected forest...supports the greatest number of species at risk..."*

**Not only is this habitat home to threatened and endangered species, but it is made up of threatened and endangered plant species.**

*"Impacts to species at risk are high, due to potential impacts to Pacific water shrew habitat **resulting from clearing within 100 m** (Craig and Vennesland 2005) **of the creeks in the Delta Ravines**, and losses to western screech-owl habitat in McAdam Creek." (Technical Volume 12, Pg. 123, 6.4.3.7)*

For some reason this paragraph only mentions two of the nearly 20 species at risk that can be associated with the North Delta Ravines. Although 100 meters is recognized as critical habitat, only 30 m was considered.

The Vegetation and Wildlife section of the application states that potential impacts to wildlife are associated with direct habitat loss and the shading of the Delta Ravines by the bridge spans resulting in impacts to the many raptors and other birds that inhabit these ravines including high impacts to species at risk. (Technical Volume 12, Pg. iii, Paragraph 4)

These impacts would have permanent and irreversible consequences to the North Delta Ravines by direct habitat loss, fragmentation and isolation destroying the connection between the ravines and the link between Burns Bog and habitat farther up the Fraser River, thereby severely reducing the genetic fitness of the entire ecosystem and the biodiversity of the already endangered Fraser River and ultimately the human condition.

*"The disturbances introduced by a linear development can also act as a barrier to movement of wildlife. In the SFPR study area there are a number of routes used by wildlife for travel corridors. **These include deer, amphibians, reptiles and small mammals traveling between Burns Bog and other forest areas (Fraser Heights)** and adjacent wetland and/or agricultural areas for foraging. (MoT (10.3.3.2 Wildlife Pattern Changes)*

**It is widely recognized that a wildlife corridor exists between Burns Bog and the Fraser Heights wetlands, and Gateway officials acknowledge this. The North Delta Bluffs are the largest and most important section of this corridor, but they don't want to admit that because they would destroy more critical habitat here than in any other section of the route, save Burns Bog itself.**

#### Terrain Misrepresentation:

One of the biggest misrepresentations of the Environmental Application is that the public and the working groups have been told in meetings and in text that the SFPR is a flat, low, down by the train tracks route, and the predicted impacts have been based on a flat alignment.

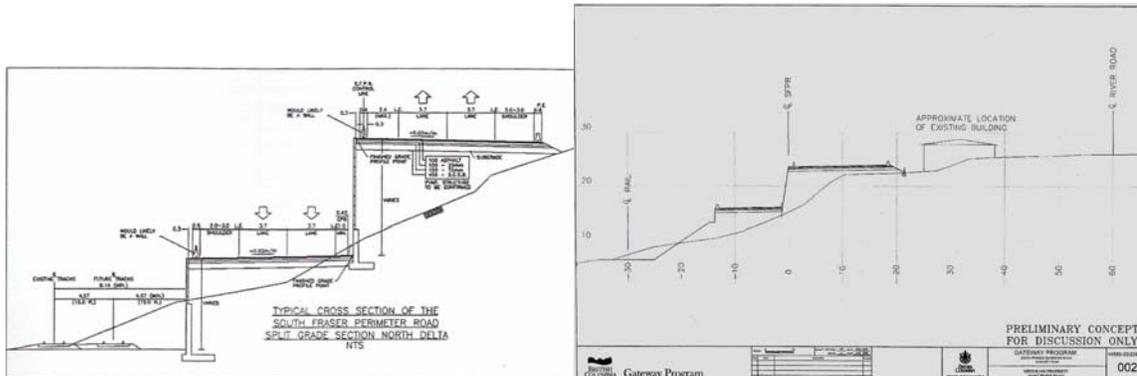
*"...as the terrain for the proposed corridor **is considered flat, for each modeled segment of the corridor.**"* (MoT, page 5, paragraph 5).

*"...the SFPR follows the BNSF right of way **along the bottom of the escarpment.**"* (4.2.1.3, Section C-Nordel/Alex Fraser Bridge to Pattullo Bridgeview, Pg. 93)

*"The proposed alignment for **the SFPR is at the bottom of a steep forested slope, close to the river...**"* (8.3.3.6 Visual Environment, Pg. 451, paragraph 4, Alex Fraser Bridge to Elevator Road)

*“the proposed route follows the bottom of the slope,” ... “steep treed slopes with large residential lots overlook this alignment.”*

**These statements are not true.**



These cross sections show the SFPR would span the entire face of the North Delta escarpment from the train tracks at the bottom, up to, and including, some of the homes on River Road and along the top of the Bluffs.

Main binder, pg. 95, Table 4.2, Highway and structure design criteria, shows a maximum 4% grade. **This is not true.** There are grades of up to 6% in residential areas which would cause excessive acceleration and deceleration noise. This will add to the additional noise and congestion caused by the three traffic lights that are planned for this 80 km highway.

(Reference Figures P9 & P19, Technical Volume 1)

Noise Misrepresentation:

Noise calculations were based on a flat terrain and still showed high impacts to residential areas. Bridges over ravines would send the sounds up the ravines magnifying the reverberation in the homes that currently enjoy a quiet yard. Raised viaducts would project the noise much farther than the ‘first one or two rows’ of houses estimated in the application. The 6% grades in Fraser Heights and Sunbury neighbourhoods would result in greater engine noise and engine brake use, especially considering the curves in the highway at the bottom of each hill. When these discrepancies are pointed out to Gateway and the EAO they say that “follow-up monitoring” would identify these impacts and “then be considered”. Noise levels are already expected to severely impact sleep patterns and normal conversation, so adding the differences in terrain, and the amount of people affected, the impacts from noise would be much greater than stated in the application.

*“For the SFPR, **despite the application of mitigation** as per the MoT noise policy, noise increases are predicted for 7 sites (each representing a residential enclave). **The impact at these sites was assessed as ‘severe’**, as predicted by the percentage of highly annoyed residents.”*

(Cumulative Environmental Affects, 10.3.3.2 Change in Noise levels, pg. 11)

*“Accordingly, if “amphitheatre effects” result in noise levels greater than originally predicted, these changes should be identified by the follow-up monitoring and would then be considered in relation to the MoT Noise Mitigation Policy (1993).”*

(From an E-mail from Paul Finkel, EAO to Rob Langford, Fraser Heights Community Association)

*“...estimated on the first one or two residential rows on either side of the highway...”*

(Technical Volume 13, Pg. 30, % of highly annoyed residents)

Follow-up monitoring would only confirm what any sensible person already knows... replacing a quiet greenspace with a 24/7 highway would harshly impact the residences and severely reduce property values for much further than the first one or two rows of houses. No amount of ‘follow-up’ mitigation will change that.

### Residential Misrepresentation:

Fraser Heights in particular is a neighbourhood where Gateway didn't properly acknowledge the number of residents that would be impacted by stating that the area is a treed slope buffering the highway impacts from residences higher up the hill. Gateway bought some of this hillside property from the developer knowing the trees would be replaced with houses, exposing the entire hillside community to the noise, air and light pollution of the highway.

Some of these new homes would be in the shadow of an SFPR viaduct. Neither Gateway officials, (nor the developer), made an effort to inform people purchasing these homes about the highway project. Instead they placed a small sign on a one block long side street, hiding it from public view. When people started asking questions, they received evasive answers and still have not been told how tall the viaduct in front of their homes would be, despite repeatedly asking. It is shameful to allow people to put their lifesavings into a home with a view of the mountains and the river, only to replace that view with a highway viaduct, slashing those property values.

### Air Quality Misrepresentation:

Air pollution effects were also based on a flat terrain and the monitoring sites used do not reflect the true impacts.

Gateway used measurements from 6 GVRD Air Quality-Monitoring sites for their baseline figures, and state that *"all stations are within approximately 5 to 6 km of the proposed SFPR."* (Technical Volume 7, pg. 26)

#### **This is not true.**

The fact is that only **one** of these sites is within 6 km and it measures only NO<sub>2</sub> and O<sub>3</sub>. Only two of the sites measure for PM 2.5 particulate. Both of these sites are almost 7 km away, and two other sites are more than 8 and 11 km distant. None of the sites measure for all of the more than 21 different types of airborne contaminants. (Technical Volume 7, pg. 30, Table 7)

**MoT-pg 5 para5** *"For the SFPR, terrain surface effects were not considered by CALINE3 as the terrain for the proposed corridor is considered flat, for each modeled segment of the corridor."* **This is not true.**

The terrain is not flat but undulates as it moves along the North Delta Bluffs and goes up through Fraser Heights. There are also many raised viaducts along the route that will spread the noise, air and light pollution much farther than admitted in the application. The modeled segments that contain residential neighbourhoods would receive much higher engine noise and air pollution than is projected in the Application.

Therefore the actual outcomes for each of the impacts would be much greater than projected.

*"Locally (within 1 km of the SFPR) emissions from traffic on the SFPR are predicted to cause an increase in concentrations of the various contaminants."* (Technical Volume 7, Page 63 para 3).

*"PARTICULATE MATTER: Human Studies: Epidemiological studies indicate that long-term exposure to particulate matter is associated with increased mortality, respiratory disease, decrease in lung function and possibly with increases in lung cancer."* (Technical Volume 16, Pg. 77, Table 26).

**These airborne contaminants contain carcinogenic particles that would severely impact the health of our families and cause an added burden to our Health Care system. Gateway states that there is a possible upside to this...**

*"With increased air pollution there can possibly be increased employment (e.g., in the health sector) because of the economic activity associated with correcting the results of its impacts."*  
(Technical Volume 16, pg. 39, 4.3.5 Employment)

Health impacts would reach unacceptable levels in dollars and lives.

"An analysis of the highest concentration response factors indicates that the risk may be **20% higher for most morbidity outcomes.**" (Technical Volume 7, Page 115, 6.5.7.3, para 3)

**"Human Health is the second largest category impacted by the Gateway program and PM<sub>2.5</sub> emissions account for 75% of health-related economic impacts."** (Technical Volume 16, Pg. 51, para 4)

Health Canada reports a 10% reduction of the airborne contaminants results in \$200 million dollars per year in health savings. So conversely, building a new highway through residential neighbourhoods past 20 schools and 46 parks and playgrounds will elevate cancer deaths and respiratory diseases in neighbourhood adults and children, compromising health and learning, and costing hundreds of millions of dollars yearly.

#### Geotechnical Misrepresentation:

Questions about highway design and the instability of building a major highway over and through boggy soil conditions has not been properly addressed. Gateway's "full report" used for Geotechnical decisions is missing a considerable amount of data and did not take into account the "eight elevated bridge structures" planned for the west edge of Burns Bog. The Geotechnical review has the following quotes...

*"There are, however, considerable data gaps in some segments of the alignment. For preliminary design, and to obtain reliable estimates, additional geotechnical investigation and laboratory tests are required."*

*"Please note that AH/CPT04-12, shown on the Schematic Subsurface Stratigraphy Profile in the Gateway program Report, Preliminary Draft: version 2 dated November 18, 2005, **is not in the database**". ...*

*"**Since there are no structures planned up to 72<sup>nd</sup> street...**"*

*"Eight boreholes [S]BH9803 to [S]BH98010 shown on the plans **are not in the data base.**"*

*"Please note that four test hole records, AH/CPT04-26, AH/CPT04-72, BDH-1, BDH-2 and AH99-C, **are not in the database.**"*

*"Test hole records...indicate that inclinometers were installed in these holes. **There are no inclinometer readings in the database. Obtaining and reviewing the readings from these inclinometers will be needed to assess the lateral compression of the peat and instabilities in the subsoil...**"*

*(GEOTECHNICAL REVIEW AND EVALUATION OF THE PROPOSED SOUTH FRASER PERIMETER ROAD CORRIDOR CONDITIONS, Turgut Ersoy, Ph.D., P.Eng. January 23, 2006)*

Missing data and an incomplete assessment of the soil conditions where there is known to be very deep peat conditions would result in an unstable highway and bridge structures. All roads that go through peaty conditions are in constant need of repair due to the wavy undulations and the cracks and potholes caused by the excessive movement. Now eight new bridge structures are planned for the Burns Bog section.

Olav Naas, (a noted reference by the Geotechnical report author), co-producer of the Hoover/Naas proposal, ([www.thereisanotherway.com](http://www.thereisanotherway.com)), a man with as much experience in building road and rail through these parts as anyone, says that the bedrock is exceptionally deep along this section and the stability of structures would be called into question. Even lamp standards would require very deep stabilization. The price of stabilizing a highway and structures through this area would be cost prohibitive with predictably poor results.

Gateway is proposing an experimental highway design that would have many unknown consequences to the delicate ecology of Burns Bog, however we do know that it would alter the hydrology and water quality of the Bog as well as strip away habitat for species at risk, disrupting the Bogs ecology, and there is a protective covenant of the Bog, signed by all levels of Government, that prevents such impacts.

#### BNSF Railway Misrepresentation:

In relation to public comments regarding mitigation and impacts by the BNSF railway; Gateway states; *"The MoT does not claim the efforts of BNSF to manage its environmental impacts will reduce the impacts of the SFPR."* (Third Public Comments Period Issues Response Table, ID 036).

**This is not true...**

In Technical Volume 9 they say;

*“There are opportunities to work with BNSF to limit mowing along the riverside of the track to 2 – 2.5 m from the track, allow planting of areas that are currently barren of shrubs and trees, and allowing existing vegetation within the “no-mow” zone to re-establish. This opportunity could provide an estimated increase of ~1.5 m of vegetated riparian area over a distance of 1,300 m, resulting in a total riparian habitat gain of 1,950 m<sup>2</sup> of additional vegetation along the river bank.” (MoT (Technical Volume 9, 6.3.2, p. 121)*

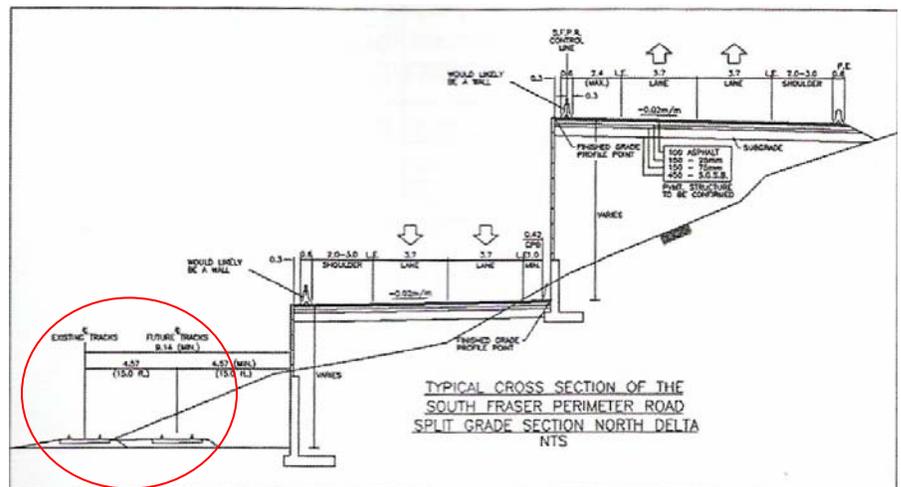
The BNSF is dealing with its own environmental impacts as it upgrades the tracks along this route. The proponent is attempting to piggyback onto these mitigation efforts.

*“Doubling of the BNSF railway line has not been identified as an imminent project”*

(Third Public Comments Period Issues Response Table, ID 011). **This is not true...**

A 2005 Gateway presentation referred it as a “first priority improvement”. Text in the application refers to it, the figures in the application refer to it, and the doubling of the tracks has already begun along the Delta watershed park. The Ministry of Transportation would be well aware of this.

Note the Double tracks in this Cross section from the Main Binder Pg. 96, Fig. 4.2



#### Heritage Misrepresentation:

Impacts to residential neighbourhoods are also being hidden and besides severe noise, visual, and air pollution, Sunbury/Annieville would lose most of its heritage quality and be separated from the River of its origin.

*“East of the (Alex Fraser) bridge the grade-supported road will create a substantial barrier between the land and the river, and will be a notable new elevated structure. Although primarily an industrial area, this separation is adjacent to the river.” **This is not true***

East of the Alex Fraser Bridge is **NOT** primarily industrial, but is the residential neighbourhood of Sunbury/Annieville. One of the oldest areas of Delta, it has an historical fishing connection to the Fraser River. This heritage community would be separated visually and physically from the river.

There are net sheds and boat docks along this section and with the building of the SFPR the owners would no longer be able to watch over, or walk down to their business assets from their homes, instead, in many cases they would have to move their homes and businesses elsewhere, and many others would have to drive around through the municipality of Surrey to get to work,

*“The limited access nature of the corridor will make it difficult for residents to use or cross the SFPR to access different parts of their neighbourhood or other neighbourhoods. This will especially be the case in more urban areas, where neighbourhoods depend on ready access to local schools, and similar community areas, or where there is neighbourhood interest in maintaining a connection to special community features, such as the Fraser River waterfront.” (Technical Volume 15, pg. 65, 6.6, Community Cohesion)*



From the Alex Fraser Bridge looking east. (Double tracks are also visible in this photo)

*"Given the new, elevated road sections and required lighting, it is unlikely that landscape treatment will be effective in having a substantive impact on softening the visual character of this portion of the road."*  
 (Technical Volume 15, Pg. 68, Paragraph 1)

Despite a high visual impact rating, an increase in respiratory diseases, and a severe noise impact for residential neighbourhoods, as well as a separation of a heritage fishing community from its river and farmers from their fields, the proponent blithely states...

*"...the overall impact of the SFPR on existing communities is deemed to be relatively benign."*  
 (Technical Volume 15, pg. iii, para 6).

Interesting choice of words. Dictionary definition of 'benign': "mild, favourable, gentle"  
 (Canadian Oxford Dictionary, 1998)

Burns Bog Misrepresentation:

One of the most disturbing aspects of the application is the downplaying of the known and admitted impacts to Burns Bog. The Bog is protected by a covenant signed by all levels of Government that states...

*"the Province, Delta, and the GVRD shall not do anything, or allow anything to be done, that does or could reasonably be expected to destroy, impair, diminish, negatively affect, or alter the Bog or (its) amenities."*

And yet the Gateway proposal states...

*"...the SFPR is expected to cause footprint impacts to 28.79 ha of land in zones required for, or supporting, the viability of Burns Bog." "...5.6 ha of the affected land with ecological values is in zone 1 or in the water mound **and required for Burns Bog viability...**"*  
 (Cumulative Environmental Effects, 10.3, pg. 19, Burns Bog)

5.6 hectares is 56,000 square meters or a swath equivalent to 9 football fields laid end to end, through habitat that is necessary for Burns Bog to continue to function properly. That would constitute ‘impairing’, ‘diminishing’, ‘negatively affecting’, and ‘altering’ the Bog.  
The other 23.3 hectares is 233,000 square meters or the equivalent of over 35 football fields through the Bog’s ‘amenities’, habitat for threatened and endangered species that is ecologically interrelated to the life of the Bog.  
**Impact to these areas is not allowed by law.**

**The Ministry of the Environment has had people prosecuted, jailed and fined hundreds of thousands of dollars for impacting the Bog, and must abide by the same law.**

Gateway documents also state that the SFPR would not impact the Bog partnership lands.

**This is not true**

Impacts to one part of the Bog ecosystem will have an affect on the whole. We know from the preloading activities for Highway 91 and Tilbury industrial that the effects are felt well into the protected lands. The periphery of the Bog plays an important role in the life of the Bog, and studies of the Bog have made recommendations to protect a greater amount than the 2042 ha partnership lands to a minimum total of 2450 ha. Of the remaining 408 ha that is “*required to preserve Burns Bog as a viable ecosystem*”, the SFPR would destroy almost 288,000 square meters and isolate a large portion of the balance from the protected lands. This includes land that Delta Municipality already owns that could easily be added to the protected areas.

Gateway documents also say... “*In general, the SFPR alignment skirts around areas that have wildlife and vegetation values (i.e. Burns Bog), thus fragmentation impacts are limited, and/or they are confined to the periphery of those areas.*”

**This is not true**

“*The route also passes through ecosystems that are directly part of the bog complex and previously identified as required for the Bog’s ecological integrity (Hebda et al, 2000).*”  
(Scientific Advisory Panel Opinions to Environment Canada Concerning Potential Environmental Impacts of the Proposed South Fraser Perimeter Road on Burns Bog, Pg. 5)

By Gateway’s own admissions the SFPR would destroy;

- 3,037 m2 of undisturbed sphagnum moss habitat.
- 4,780 m2 of red-listed plant communities.
- 61,958 m2 of red-coded Pacific Water Shrew Habitat

And the recent shift in the alignment by Sherwood Forest would still destroy roosting and foraging habitat for large numbers of threatened bird populations including Trumpeter Swans, Great Blue Herons, Bald eagles, Owls, and the Sandhill Crane.

Gateway’s table of impact to species at risk shows no area of impact to the Southern Red-backed Vole, however this too **is not true.**

The SFPR alignment goes right through prime Vole habitat according to the BC Government’s ‘Burns Bog Terrestrial Ecosystem Mapping.’

Gateway’s most recent comment... “The proposed mitigation around Burns Bog...is supported by environmental agencies and the Scientific Advisory Panel...”

(Third Public Comments Period Issues Response Table, ID 051)

**This is not true**

The Scientific Advisory Panel is collectively against a highway being built through bog supporting lands. They state in a recent submission that...

*“If the highway is placed through the western edge of the Bog, the ability to apply the guidelines for Bog protection and restoration recommended by the SAP will be compromised.” “It is clear that wherever the SFPR is put, it will have major consequences to wildlife. A route within or immediately adjacent to the mixed conifer forest on the Bog’s western edge will have the greatest impacts on ecological integrity, through ecosystem conversion and negative edge effects.”*

(Scientific Advisory Panel Opinions to Environment Canada Concerning Potential Environmental Impacts of the Proposed South Fraser Perimeter Road on Burns Bog, Pg. 11)

Gateway documents state; *“Based on modeled ambient concentrations of road dust from SFPR adjacent to Burns Bog, there is little potential for deposition of mineral particulate matter from the SFPR in Burns Bog.”* (Cumulative Environmental Effects, 10.3, pg. 27, Particulate Matter in Burns Bog)

However the Scientific Advisory Panel concludes that there will be an increase in air-borne drift of particulates and aerosols onto the Bog during the construction period and subsequent use of the SFPR. *“The distance of significant levels of particulate drift may be about 200 to 300 m.”*

This is supported by Environment Canada data that shows PM<sub>10</sub> particulate can stay aloft for hours to days and PM<sub>2.5</sub> particulate will remain airborne for days to weeks and that exhaust from major roadways reduces farm crops and vegetation by 15%, and leaves heavy metals in the soil, so the effects on a sensitive environment like Burns Bog would be significant and cumulative.

The S.A.P. also say that the impacts of the proposed SFPR alignment along the Bog can only be **partially mitigated** with a berm/double-ditch (BDD) system as described in the report.

Clearly they are concerned about the potential impacts to the Bog and recognize that mitigation measures would be only partially successful. Since the Bog and it’s rare plant and animal communities are highly susceptible to changes, and no one is allowed to ‘impair’, ‘diminish’, or ‘negatively affect’ the Bog, ‘partial mitigation’ is unacceptable.

*“Bogs are particularly sensitive to physical, hydrological, and chemical disturbance. In order to maintain essential ecological functions such as peat production and accumulation, vegetation and ground surface must remain intact...”*

(Technical Volume 12, p. 46, 4.5.1 Burns Bog)

*“Bogs are complex ecosystems requiring a particular set of biophysical conditions...Due to interactions between vegetation, peat accumulation, chemical conditions, and water movement and storage, impacts to one ecosystem component will affect others.”* (Main Binder, p. 350, Potential Impacts to Burns Bog)

Burns Bog, the lungs and kidneys of the Lower Mainland, and the largest urban carbon-sink in the world would be diminished, and cut off from its co-dependant ecological partner, the threatened and endangered Fraser River, contrary to the protective covenant signed by all levels of Government.

We understand that there is a tremendous amount of pressure to build an economic Gateway to Asia, but there are alternative methods that would achieve the movement of goods and people without an unacceptable burden on our environment and our livability.

It is our duty to protect and enhance our environment and the building of the SFPR would run counter to these ideals.

If this SFPR E.A. is passed, then there is no accountability of the process or the Environmental Assessment Office, and the Provincial and Federal Governments will be knowingly depleting our endangered species, polluting our residential neighbourhoods and breaking a legal covenant that is in place to protect Burns Bog in perpetuity.