

Comments on South Fraser Perimeter Road Air Quality Update and Revised Cumulative Effects Assessment

Summary

The Ministry of Transportation documents include the assertion that "SFPR is part of overall Provincial initiatives to [reduce] GHG emissions by 33 percent by 2020". However, the Ministry of Transportation then assumes that the Province's initiatives will be a complete failure and GHG emissions will continue to rise rapidly.

Other inadequacies in the Ministry of Transportation documents include:

- The Ministry of Transportation has corrected some distortions from previous studies, for example projected traffic-related emissions in 2021 with Gateway increase from 5.74 million tonnes/year to 8.44 million tonnes/year, an increase of 47%. However, this very significant change is not adequately reflected in the conclusions of the Ministry of Transportation studies.
- One of the most blatant distortions identified in *Cooking the Books, Cooking the Planet* has been retained in the Ministry of Transportation's revised documents. The Ministry of Transportation still compares predicted on-road emissions from the Greater Vancouver Regional District (GVRD) and Fraser Valley Regional District (FVRD) to the total projected emissions from Whatcom County USA, the GVRD and FVRD. The Ministry of Transportation is diluting Canadian emissions data with the continued inclusions of Whatcom County emissions to attempt to make Gateway emissions seem less significant.
- Highway expansions induce automobile dependant sprawl, which results in increased GHG emissions. However, the Ministry of Transportation's emissions estimates do not take this crucial factor into account and are therefore of little utility in assessing the likely environmental impact of the Gateway Program.
- The extreme threat caused by GHG emissions clearly outweighs any other environmental impact ever assessed under Canadian Environmental Assessment legislation. However, the Ministry of Transportation asserts that the "magnitude of the cumulative effect" of GHG emissions is "Low".¹ The Ministry of Transportation gives no clear explanation for their remarkable conclusion.
- The Ministry of Transportation document asserts that "the Gateway Program is part of a suite of overall Provincial initiatives to reduce vehicle emissions [including] expanding the transit network reducing GHG emissions". However, the Gateway Program is expected to reduce transit ridership and increase GHG emissions. Therefore, the Gateway Program is in direct conflict with the Province's most important environmental commitment.
- Alternatives to the Gateway Program for goods movement exist, but have apparently not been given any serious consideration as part of the environmental assessment process. For example, John Cummins, M.P. - Delta-Richmond East, has produced a report proposing an electrified rail line and/or a system using container barges as an alternative to the proposed South Fraser Perimeter Road.

The Ministry of Transportation's environmental assessment documents are inadequate and misleading. No meaningful environmental assessment can proceed on the basis of these documents.

¹ Ministry of Transportation. Updated Cumulative Effects Assessment - July 6, 2007. Table 10.3-5 (p 30)
http://www.eao.gov.bc.ca/epic/output/html/depoly/epic_document_196_24143.html

Federal Environmental Assessment legislation requires consideration of alternatives. Therefore, a package of alternative measures designed to meet the Province's commitment to reduce GHG emissions 33% by 2020, with a similar budget to the \$3 billion Gateway project, must be part of any meaningful environmental assessment of this project.

1 Province's GHG Reduction Goal

On page 3 of the April 20, 2007 *Air Quality Discussion Paper*² it was noted that "Presently, greenhouse gases are not regulated by any Canadian jurisdiction; government policies for reducing GHG emissions are in early development." This comment is now incomplete given recent developments in BC. In the recent Throne Speech the Government of BC asserted that climate change due to GHG pollution is:

"threatening life on Earth as we know it. . . . In 2007, British Columbia will take concerted provincial action to halt and reverse the growth in greenhouse gas emissions. . . . The rate of atmospheric warming over the last 50 years is faster than at any time in the past 1,000 years. The science is clear. It leaves no room for procrastination. . . . The more timid our response is, the harsher the consequences will be."

"However, our emissions are increasing at a rate far faster than most of our neighbors'. We must act to arrest and reverse that trend. This government will firmly establish British Columbia standards for action on climate change. It will aim to reduce B.C.'s greenhouse gas emissions by at least 33 per cent below current levels by 2020. This will place British Columbia's greenhouse gas emissions at 10 per cent under 1990 levels by 2020."³

The *Air Quality Update* includes the assertion that "SFPR is part of overall Provincial initiatives to [reduce] GHG emissions by 33 percent by 2020" (p 3). Since reducing GHG emissions by 33% by 2020 is the Province's goal, as the *Update* states, then the significance of the Gateway Project's environmental impacts must be assessed in the context of this goal. Instead, in amending *Technical Volume 16*, the *Air Quality Update* assumes that the Province's initiatives will be a complete failure in the Lower Fraser Valley with emissions rising 16% by 2021 even without Gateway.⁴ The Ministry of Transportation's *Revised CEA* gives an even higher projected increase in emissions, stating that "total regional GHG emissions are projected to increase by approximately 20%" by 2020 on the same page as suggesting that the Gateway program should be examined in light of the Province's commitment to reduce GHG emissions 33% by 2020.⁵

If the Gateway Program is part of the province's initiatives to reduce GHG emissions by 33% by 2020, then a serious study of the impact the Gateway Program would have on meeting this goal must be done. It may well be that the Gateway Program as presently formulated would make it virtually impossible for the Province to reach its GHG reduction goal; but the Ministry of Transportation has apparently not even considered this goal in any of their studies to date.

² Air Quality - Discussion Paper dated April 20, 2007

http://www.eao.gov.bc.ca/epic/output/html/deploy/epic_document_196_23810.html

³ Speech from the Throne February 13, 2007 <http://www.leg.bc.ca/38th3rd/4-8-38-3.htm>

⁴ Table 5-2 (June 2007) p 7 of *Air Quality Update* (30594/26352 = 1.161)

⁵ http://www.eao.gov.bc.ca/epic/output/documents/p196/1184015395973_6fcbaa56f08a41b08fb5b5ae4ac36a67.pdf
p 26.

2.1 Corrections to the *Regional Air Quality Impact Assessment*

On page 3 of the *Air Quality Update* it is stated that "Ministry of Transportation has refined the previously approved methodology for predicting GHG emissions so that it is more consistent with that used by the GVRD."

The figures in the June 2007 table are apparently corrected in response to the distortions identified in sections 2.22 and 2.23 of *Cooking the Books, Cooking the Planet*, which pointed out that the GVRD's methodology was likely more accurate and produced very different results from the Ministry of Transportation study. The corrected results vary dramatically from the original. For example, as shown below in Figure 1, the projected traffic-related emissions in 2021 with Gateway increase from 5.74 million tonnes/year to 8.44 million tonnes/year, an increase of 47%.

However, despite an increase in projected on-road emissions of 47%, the *Update* asserts that emissions due to Gateway would only result in "the relative contribution of traffic-related emissions to total regional GHG emissions"⁶ increasing from 0.3% to 0.4%. This is inaccurate and misleading as documented in section 1.0 above, sections 2.2 and 2.3 below, and in *Cooking the Books, Cooking the Planet*.

Figure 1 Corrections to the *Regional Air Quality Impact Assessment*

⁶ *Ibid* p. 7

Table 5-2 (June 2007)

Proportion of GHG emissions from regional traffic with and without the proposed Gateway Program compared to total LFV emissions.

Scenario	Traffic-related Emissions in the Canadian LFV (kt/y)	Total Emissions from All Sources in the LFV ¹	Traffic-related Emissions % of Total LFV Emissions
Existing Situation 2003	6,696	26,352	25.4
Projected 2021 Without Gateway	8,261	30,594	27.0
Projected 2021 With Gateway	8,437	30,769	27.4

Table 5-2 (September 2006)

Proportion of GHG emissions from regional traffic with and without the proposed Gateway Program compared to total LFV emissions (*Page 47 Technical Volume 16*).

Scenario	Traffic-related Emissions in the Canadian LFV (kt/y)	Total Emissions from All Sources in the LFV	Traffic-related Emissions % of Total LFV Emissions
Existing Situation 2003	4,365	23,358	18.7
Projected 2021 Without Gateway	5,618	27,972	20.1
Projected 2021 With Gateway	5,742	28,095	20.4

2.2 Inappropriate Inclusion of US GHG emissions

One of the most blatant distortions identified in *Cooking the Books, Cooking the Planet* has been retained in the *Update and Revised CEA*. Section 2.21 of *Cooking the Books* states:

Table 5-2 in the Ministry's report compares Canadian traffic-related GHG emissions to the total emissions in the Lower Fraser Valley (LFV) including Whatcom County in the USA. While there may be some rationale for this with regional air contaminants, there is no apparent reason to do so for GHGs other than to disguise the true proportion of Gateway emissions. Whatcom County accounted for 22% of LFV GHG emissions in 2000⁷; therefore, this is a very significant distortion. The report did include Whatcom County on-road emissions for some parts of their analysis, but not for GHG emissions.

This is apparently where the Ministry came up with a "net increase in total regional GHG emissions of 0.3%" due to Gateway; by comparing predicted on-road emissions in the Greater Vancouver Regional District (GVRD) and Fraser Valley Regional District (FVRD) to the total projected emissions from Whatcom County USA, the GVRD and FVRD.

Note that the June 2007 Table 2-4 (**Figure 1** above) still compares predicted on-road emissions from the Greater Vancouver Regional District (GVRD) and Fraser Valley Regional District

⁷ 2000 Emission Inventory for the Lower Fraser Valley Airshed. http://www.gvrd.bc.ca/air/inventory_reports.htm p S-6

(FVRD) to the total projected emissions from Whatcom County USA, the GVRD and FVRD. No rationale for diluting Canadian emissions data with the continued inclusions of Whatcom County emissions is given in the *Update*.

The *Update* asserts that emissions due to Gateway would only result in "the relative contribution of traffic-related emissions to total regional GHG emissions⁸" increasing from 0.3% to 0.4%. The *Revised CEA* similarly asserts that "In the projected 2021 with Gateway scenario, traffic-related GHG emissions in the Canadian LFV are expected to . . . account for 27.4% of forecast regional GHG emissions."⁹ These assertions are grossly misleading given the distortion induced by inappropriately including GHG emissions from a foreign country in a Canadian environmental assessment. Any assessment of the impact and significance of Gateway GHG emissions based on these distorted figures would be farcical.

2.3 Induced Traffic and GHG Emissions

Highway expansions induce automobile dependant sprawl, which results in increased GHG emissions. However, the Ministry of Transportation's emissions estimates do not take this crucial factor into account and are therefore of little utility in assessing the likely environmental impact of the Gateway Program. Section 2.2 of *Cooking the Books* notes that:

The traffic modeling in the Ministry's report uses a version of the four-step computer program EMME/2 without the necessary feedback loop to model land use changes induced by transportation infrastructure. Modern traffic modeling programs, including more advanced versions of EMME/2, use land use feedback features which significantly improve their accuracy¹⁰.

Renowned transportation planners Newman and Kenworthy call misleading results from these basic 'black box' models "The biggest force still driving the Auto City to . . . accommodate the automobile rather than providing other options"¹¹ An article in the *Journal of the Institute of Transportation Engineers* documents modeling of an expansion of Highway 1 similar to the expansion proposed under the Gateway Program under different land use scenarios. The author asserts that the "origin-destination patterns indicate that the primary effect of [freeway building] has been to foster low-density sprawl in the outlying parts of the region". Therefore the author concludes that "traditional modeling approaches [that ignore induced land use] are so misleading that, in some cases, we would be better off without them"¹².

In order for the environmental effects of the Gateway Project to be assessed in a reasonable manner, induced sprawl must be accounted for in the studies.

2.4 Self-limitation of Traffic Emissions

⁸ p. 7

⁹ p. 26

¹⁰ e.g. *Urban transportation planning: A decision oriented approach*. M. Meyer & E. Miller 2001.

¹¹ Newman, P. and J. Kenworthy. *Sustainability and Cities: Overcoming Automobile Dependence*. Washington, DC, USA: Island Press, 1999.

¹² Ramsey, Stuart 'Of Mice and Elephants' *ITE Journal* September 2005. pp 38-41.

<http://www.livableregion.ca/pdf/2005-09-ITE-Journal-Ramsey-OfMiceandElephants.pdf>

The *Revised CEA* states that "emissions of GHG from mobile sources including road vehicles, are expected to increase, with or without Gateway Program projects. The increase is a result of expected increases in vehicle kilometres driven in the region which are associated with future population and economic growth." (p 26)

As noted in section 2.4 of *Cooking the Books*, traffic volumes, congestion and therefore GHG emissions tend to be self limiting if roadways are not expanded (even without improvements in public transit). The evidence does not support the Ministry of Transportation's assumption that on-road GHG emissions will rise with population and economic growth regardless of the infrastructure alternative chosen.

2.5 Significance of Impacts

As noted above in Section 1, the Provincial Government has determined that climate change due to GHG pollution is "threatening life on Earth as we know it" and has committed to reduce emissions by 33% by 2020.

Recent scientific studies document the extreme magnitude of the threat to human society and economy, as well as to other species. One recent NASA study warns of "dramatic climate change that could run out of our control, with great dangers for humans and other creatures... Only intense simultaneous efforts to slow CO₂ emissions and reduce non-CO₂ forcings can keep climate within or near the range of the past million years."¹³

The extreme threat caused by GHG emissions clearly outweighs any other environmental impact ever assessed under Canadian Environmental Assessment legislation. However, the Ministry of Transportation asserts that the "magnitude of the cumulative effect" of GHG emissions is "Low".¹⁴ This could refer to only the total net change in emissions due to Gateway and the seven other transportation considered in the *Revised CEA*, which the Ministry of Transportation projects would increase GHG emissions by 384,000 tonnes/year¹⁵; or it could refer to traffic-related emissions in the Canadian Lower Fraser Valley which the Ministry of Transportation now projects will increase from 6.70 to 8.44 million tonnes per year by 2021 if the Gateway Project proceeds; or perhaps it refers to total global GHG emissions, as affected by Canadian participation in international agreements. However, whatever the Ministry of Transportation's intention, this assessment of the magnitude of the cumulative effects of GHG emissions is not adequately explained or documented.

A meaningful cumulative effects assessment must include an assessment of the impact the Gateway Project would have on both the Province's commitment to reduce GHG emissions by 33% by 2020, and on the Federal commitment to the Kyoto Accord and any future international agreements on GHG emissions.

Ministry of Transportation's *Revised CEA* also asserts that the contribution of the SFPR to GHG emissions is "Low"; however, the Ministry of Transportation's documents do not clearly specify what they project the increase in emissions would be due to the SFPR as opposed to other Gateway Program projects. This is clearly inadequate.

¹³ Hansen, J., Mki. Sato, P. Kharecha, G. Russell, D.W. Lea, and M. Siddall, 2007: Climate change and trace gases. *Phil. Trans. Royal. Soc. A*, **365**, 1925-1954,

¹⁴ Ministry of Transportation. Updated Cumulative Effects Assessment - July 6, 2007. Table 10.3-5 (p 30) http://www.eao.gov.bc.ca/epic/output/html/deploy/epic_document_196_24143.html

¹⁵ 218,490 + 166,000 tonnes (Table 10.3-4 in Cumulative Effects Update & Table 5-2 in SFPR Air Quality Update)

The Ministry of Transportation's assessment of the significance of GHG emissions from Gateway relies heavily on the misleading assertion that the Gateway Program would only increase regional emissions by 0.4%. For example, the conclusion to the *Air Quality Update* states that "Increases in regional emissions of GHGs as a result of the Gateway Program projects, remain negligible (0.4%)"¹⁶. This is misleading as documented above in Sections 2.2 & 2.3, and in *Cooking the Books*.

The Ministry of Transportation's overall assessment of the significance level of Gateway GHG emissions is "Low" in the *Revised CEA* (Table 10.3-5), but as discussed above this does not seem to be a reasonable assessment given the evidence.

2.6 Transit & Efficient Goods Movement Alternatives

The *Revised CEA* asserts that "the Gateway Program is part of a suite of overall Provincial initiatives to reduce vehicle emissions [including] expanding the transit network reducing GHG emissions" (p. 26). However, the Gateway Program is expected to reduce transit ridership and increase GHG emissions as discussed in *Cooking the Books*. The Ministry of Transportation has also attempted to portray transit alternatives to the Gateway Program as being ineffective, and has delayed transit improvements, as documented in *Taken for a Ride: Technical and Media Manipulation in the Gateway Program's response to Transportation for a Sustainable Region: Transit or Freeway Expansion*¹⁷. Therefore the Ministry of Transportation's assertion that there is a suite of initiatives to reduce GHG emissions that Gateway is a part of seems problematic at best; instead it might be more accurately stated that the Gateway Program is in direct conflict with the Province's most important environmental commitment, and that this conflict is still to be resolved.

Alternatives to the Gateway Program for goods movement also exist, but have apparently also not been given any serious consideration as part of the environmental assessment process. For example, John Cummins, M.P. - Delta-Richmond East, has produced a report titled *Better Way of Gateway Project* proposing an electrified rail line and/or a system using container barges as an alternative to the proposed South Fraser Perimeter Road. The Gateway Council has also produced a report, *Greater Vancouver Short Sea Container Shipping Report: Pre-Feasibility Study*, which establishes that barge movement of containers within the region would be feasible and cost-effective. The study also notes that emissions per container would be considerably lower with larger volumes moving by barge, suggesting that a barge system would be more efficient as a replacement for the Gateway Program rather than as an addition to it:

It is clear that the comparative emissions (notably CO₂ and VOCs) between intra-regional short-sea transport and intra-regional truck transport of containers favour the former more dramatically as one-way barge volumes increase. Operational volumes in the future will directly impact the extent to which environmental benefits are realized ... with higher volumes resulting in greater benefits.¹⁸

Alternatives designed to reduce GHG emissions are also discussed in section 2.7 of *Cooking the Books, Cooking the Planet*.

¹⁶ http://www.eao.gov.bc.ca/epic/output/documents/p196/1184015417410_6fcbaa56f08a41b08fb5b5ae4ac36a67.pdf
p 21

¹⁷ http://www.livableregion.ca/pdf/Taken_For_A_Ride_April2507%5B1%5D.pdf

¹⁸ http://www.gvgc.org/pdfs/GVGC_SSS_PreFeasibility_Report_Final.pdf p 81

3. Conclusion

The Ministry of Transportation's *South Fraser Perimeter Road Air Quality Update* and *Revised Cumulative Effects Assessment*, both dated July 6, 2007, are inadequate and misleading as documented above. No meaningful environmental assessment can proceed on the basis of these documents.

Federal Environmental Assessment legislation requires that the Ministry of Transportation consider alternative ways of achieving the objectives of the Gateway Program. Therefore, a package of alternative measures designed specifically to contribute to the Province's commitment to reduce GHG emissions 33% by 2020 in a cost-effective manner, with a similar budget to the Gateway project, must be part of any meaningful environmental assessment.

As noted in the Provincial Throne Speech, "The rate of atmospheric warming over the last 50 years is faster than at any time in the past 1,000 years. The science is clear. It leaves no room for procrastination... The more timid our response is, the harsher the consequences will be."