SOUTH FRASER PERIMETER ROAD PROJECT (SFPR)

TRACKING OF BIOPHYSICAL/TECHNICAL ISSUES IDENTIFIED IN WORKING GROUP COMMENTS

FINAL – June 16, 2008

Purpose: This table compiles the issues identified by the Biophysical/Technical Working Group (BWTG) representatives in their respective comments on the SFPR Application during the Environmental Assessment Review. The table includes a categorization of issues by the Environmental Assessment Office using three *general* categories following discussions with members of the working groups:

C – Certificate Issue – Strategic level issue, within the scope of the environmental assessment, pertaining to the potential effects of the project and/or proposed measures to avoid or mitigate potential adverse effects.

S - Screening Issue –To be addressed to the satisfaction of the responsible authorities to complete the federal review of the project. (May also be a certificate issue).

P – Permit Issue – Issue normally addressed/managed through existing processes under other enactments for the issuance of authorizations, licences, permits or other approvals.

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ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
1.	**ACCIDENTS AND MALFUNCTIONS**				
2.	No mention of possible extent of adverse effects on environment. Discussion needs to include the extent of environmental damage should emergency plans fail to contain a spill, or accident (i.e. what might be the magnitude of damage) as there could be a response delay. *(CEAA)*	Accidents and malfunctions that require the use of the contingency measures identified in this section of the EA Application (section 10.1) have the potential for the following environmental impacts: • discharge of deleterious materials (e.g. gasoline, diesel) to watercourses from construction activities or vehicle accidents (during construction or operation) – these can be acutely or chronically toxic to salmonids, forage fish species and food resources; • unplanned damage to habitat (watercourses and forests) from construction activities – these can result in loss of habitat, impacts to aquatic or terrestrial species; • structural failure in a culvert, ditch or detention pond – these can result in localized flooding, erosion, sedimentation, and/or discharge of deleterious materials; and • fire as a result of construction activities or vehicle accidents (during construction or operation). Contractor is responsible for fire, not City of Surrey Fire Department. The extent of such impacts is impossible to ascertain, as accidents and malfunctions are by their very nature unplanned. However, they could range from small incidents that can be adequately addressed by on-site management deploying spill abatement or other procedures (with appropriate notification of relevant agencies), to larger incidents that require active assistance from the Provincial Emergency Program (PEP) and other municipal, provincial and federal agencies. Examples of the range of the extent of likely impacts due to activities that might cause accidents or malfunctions include:	S	1.7 3.1 19.2	Satisfactorily addressed for the purpose of the EA

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		• Damage to utilities can constitute a safety hazard, can cause disruption to residential, commercial and industrial services, and can release toxic material into nearby ecosystems. Damage to utilities on a small scale (e.g., ruptured sewer or water pipes) that are isolated from watercourses has low to negligible impacts (low magnitude and reversible). These would be contained and repaired immediately by on—site and utility management crews using materials and resources available. The emergency response plan (part of the EMP for the project) will detail the contingency measures required on-site, including crew training needs and equipment (spill abatement/sediment isolation). On a larger scale, damage to utilities (e.g. buried oil and gas pipes, sewers, and water pipes) that release larger quantities of deleterious materials into watercourses or other sensitive environmental areas have the potential to impact large areas permanently (long-term population level effects) unless they are rehabilitated. These would likely require immediate on-site action such as agency notification and containment. These measures for likely incidents (depending on utilities present in the area) would be detailed in the emergency response plan (part of the EMP for the project). After notification and containment the clean-up and rehabilitation of the impacts would be conducted by a combination of on-site crews, utility management, environmental agencies, and the PEP, using specialist skills and equipment; • Failure of sediment mitigation measures leading to sediment discharge can degrade water quality, affect fish health, growth rates and resistance to disease, and can damage irrigation and drainage equipment. Failure of sediment mitigation measures on a small scale (e.g., breach of a silt fence) may cause turbidity issues or other site specific issues that are temporary (localized, low magnitude and reversible). These would be contained and addressed immediately by on-site crews			

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		using materials and resources available. The emergency response plan (part of the EMP for the project) will detail the standard contingency measures required on-site, including crew training needs and equipment (sediment isolation). On a larger scale, accidents or failure of sediment mitigation measures (e.g., sediment settling pond failure, spills from a truck into a watercourses) could result in large scale discharge and impact watercourses or other sensitive environmental areas outside of the accident location (moderate to high magnitude or non-reversible such that there are population-level impacts). These would likely require immediate on-site action such as agency notification and containment. The measures required for such incidents would be detailed in the emergency response plan (part of the EMP for the project). After agency notification and containment, the clean-up and rehabilitation of impacts would be conducted by a combination of on-site crews and environmental agencies, using specialist skills and equipment. Contingency measures, over and above the standard mitigations that will be implemented, to avoid or minimize the effects of such infrequent and unplanned events are presented in section 10.1 of the EA Application. The decision as to whether an incident is addressed by on-site management, or requires other assistance is typically made by the site or environmental manager taking into consideration the ability of the contractor to address the incident and the value offered by the immediate on-site response compared to that offered by a slower-responding but specialized response team. Guidance for such decisions will be given in the Emergency Response Plan, which is part of the SFPR Environmental Management Plan (EMP). An EMP is a requirement for all MoT projects (s.165 of MoT Standard Specifications for Highway Construction 2006), and a contingency plan (or Emergency Response Plan) is a necessary component of all EMP.			

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3.	**ACCIDENTS AND MALFUNCTIONS**				
4.	This section describes a number of potential activities that might result in an accident or malfunctions but there is no mention of the possible extent of adverse effects on the environment. *(CEAA)*	Accidents and malfunctions that require the use of the contingency measures identified in this section of the EA Application (section 10.1) have the potential for the following environmental impacts: • discharge of deleterious materials (e.g. gasoline, diesel) to watercourses from construction activities or vehicle accidents (during construction or operation) – these can be acutely or chronically toxic to salmonids, forage fish species and food resources; • unplanned damage to habitat (watercourses and forests) from construction activities – these can result in loss of habitat, impacts to aquatic or terrestrial species; • structural failure in a culvert, ditch or detention pond – these can result in localized flooding, erosion, sedimentation, and/or discharge of deleterious materials; and • fire as a result of construction activities or vehicle accidents (during construction or operation). Contractor is responsible for fire, not City of Surrey Fire Department. The extent of such impacts is impossible to ascertain, as accidents and malfunctions are by their very nature unplanned. However, they could range from small incidents that can be adequately addressed by on-site management deploying spill abatement or other procedures (with appropriate notification of relevant agencies), to larger incidents that require active assistance from the Provincial Emergency Program (PEP) and other municipal, provincial and federal agencies. Examples of the range of the extent of likely impacts due to activities that might cause accidents or malfunctions include:	S	1.7 3.1 3.3 3.5	Satisfactorily addressed for the purpose of the EA

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5.	**ACCIDENTS AND MALFUNCTIONS**				
6.	Contaminated sites – SFPR has the potential to improve the current environmental status of several landfill sites located along Road. This improvement is contingent upon the proper closure and long term maintenance of the landfill sites and the segments of the road which are adjacent to the landfills. *(EP, MOE)*	The MoT is committed to adhering to the appropriate regulations to ensure that contaminated sites along the SFPR corridor are appropriately managed. Technical Volume 8 of the EA Application details the MoT approach to identification and management of these sites.	C	1.7 10.1 10.2 10.3 10.4	Satisfactorily addressed for the purpose of the EA
7.	**AIR QUALITY**				
8.	"The impacts of construction are unable to be quantified…" is an unsatisfactory statement. MOT could estimate the number of trucks required for this work and provide a rough estimate of temporary impacts. These could be locally/temporally significant. *(CEAA)* *(Transport Canada clarification:* Where impacts are difficult to quantify, the proponent can provide information based on past experiences – e.g. types of equipment expected to be used on site, proximity to receptors, how assumptions will be verified, etc.)	The MoT will ensure there is mitigation in place to address any potential for impacts. The mitigation will be the measures outlined in the local AQ chapter (pg. 211), which is the same as that used for the GEB project, and the environmental management plan (section 11, pg. 530 - 531 of the EA); which includes air quality and dust control and environmental education and awareness (for contractors). In addition, an environmental management plan will be developed that will include ambient monitoring, mitigation as describe in the Local Air Quality Technical report, and other mitigation that is disclosed through consultation with regulatory agencies such as the GVRD.	S	1.7 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA
9.	Construction emissions require mitigation commitments to ensure that impacts from fugitive dust and diesel particulate matter emissions are minimized. Additional measures should be explored to minimize emissions from non-road engines and equipment. *(GVRD)*	MoT is committed to the application of mitigation measures outlined in the local AQ chapter (pg. 211) of the Application. In addition, the MoT has agreed to a further commitment on management of AQ provided by EC, and a TMP will be prepared. A more detailed, and project specific, air quality management plan will be developed once final design and construction plans are complete. The traffic management plan will include a commitment to use the best available mitigation measures.	C	7.1 7.2	Satisfactorily addressed for the purpose of the EA

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10.	**AIR QUALITY**				
11.	In the background information given on the health effects of the air pollutants assessed in the report, it is recognized that PM2.5 and ozone are formed secondarily from vehicle emissions. As scientific evidence indicates that there is no apparent lower threshold for the effects of these two pollutants on human health, it is recommended that the impact of secondary formation be addressed at least at a qualitative level in the health impact assessment. *(Health Canada)*	Both secondary $PM_{2.5}$ and ozone are secondary pollutants generated from vehicle exhaust, which potentially impact air quality on a regional basis. The focus of this assessment was on air quality within 1 km of the proposed route (the study area). Secondary pollutants are not likely to form within the first kilometre from the road, as these pollutants take time to form; therefore the discussion of these toxicants is better addressed at the regional level. Follow-up discussions with Health Canada and other regulatory agencies with an involvement in air quality will be conducted during the EA Application review period to clarify whether the regional assessment needs to be broadened to include this analysis, and if so what the scope of that work is.	S	1.7 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA
12.	The conclusion that emissions should not change significantly is based on the statement that relatively little new traffic will be generated, which seems to contradict an earlier statement that 60% of the traffic on the SFPR will be new. Further justification of this conclusion would be helpful. *(Health Canada)*	The conclusion of the impact assessment for air quality is that emissions will not change significantly, based on traffic modelling data that indicates that 60% of the vehicle kilometres travelled (VkmT) in the SFPR corridor will be new. Some of the new vehicle kilometres travelled will be existing vehicles on roads in the SFPR corridor travelling further, and some will be new vehicles. While the SFPR will have new (more) vehicle kilometres travelled, much of these will not be subject to the congestion in the corridor in the absence of the SFPR. The increase in vehicle kilometres travelled (more emissions) is balanced by decreased congestion (lower emissions) and the two nearly cancel each other out. As a result the SFPR does generate slightly more emissions, but not significantly so.	C	7.1	Satisfactorily addressed for the purpose of the EA
13.	Proponent should commit to develop and implement an air quality management plan during project construction and to minimize potential air quality and effects. (*Health Canada*)	MoT is committed to producing an Air Quality and Dust Control Plan (EA Application, section 11.3.5, pg. 530). The plan itself will be completed after an EA Certificate is received to ensure it includes all the commitments made in the EA review.	C	7.2	Satisfactorily addressed for the purpose of the EA

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14.	**AIR QUALITY**				
15.	Recommend MoT provide more information and analysis to support the statement "The assessment of the significance for predicted impacts on air quality found that locally (within 1 km of the SFPR) emissions from traffic on the SFPR by 2021 are predicted to cause an increase in concentrations of the various contaminants compared to 2021 without the SFPR. But these impacts are generally occasional and of nil to low magnitude." (HC)	See Section 1 of Levelton Memo "Responses to working group questions on air quality aspects of the SFPR Application" dated March 12, 2007 which was developed in response to working group questions on air quality aspects of the SFPR Application.	C	1.5 7.1	Satisfactorily addressed for the purpose of the EA
16.	The summary of the Public Health Issues section in the technical document included the following statement: "There is no discernable difference between the 2021 Gateway and the 2021 existing roads scenarios." However, it would be desirable to have more quantitative data and analysis in the application to support this statement. The information used to arrive to this conclusion should be subject to review in the EA document. (Health Canada)	The data that is required to make the comparisons between any two scenarios is presented in the document as figures. The intent of this method of presentation was to give the working group and members of the public easy access to all of the data but, also to provide a spatial context for the distribution of risks. We recognize the utility in providing direct numerical comparisons and or better resolution images (similar to that provided for the area around Ladner in Figure 33, Technical Volume 7) and will update the existing tables to also include a 5^{th} through 95^{th} percentile range of risk estimates. See Section 4 of Levelton Memo "Responses to working group questions on air quality aspects of the SFPR Application" dated March 12, 2007 which was developed in response to working group questions on air quality aspects of the SFPR Application.	C	1.5 1.7 7.1	Satisfactorily addressed for the purpose of the EA
17.	Previous comments submitted by GVRD on the draft SFPR air quality impact assessment had suggested that an estimation of air quality impacts at a time near to the commencement of the SFPR (i.e. 2011) could provide an important interim evaluation. It remains unclear as to whether or not 2011 would provide a worse case scenario for the local air quality impact modelling. *(GVRD)*	The worst case scenario is 2003. Each year following 2003 the vehicle profile has more new vehicles with lower emissions. Therefore, 2003 is worse than 2011, which is worse than 2015, which is worse than 2021. However, there may come a time in the future when the increase in the number of vehicles on the road overtakes the reduction in emissions due to technology, but this point is beyond. 2021 (10 years after the road opens and traffic loads have settled down).	C	1.7 7.1	Satisfactorily addressed for the purpose of the EA

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18.	**AIR QUALITY**				
19.	Regional air quality assessment analyzes all three Gateway projects. Explain why this approach is appropriate so that a determination could be made whether the environmental effects of the SFPR are significant. Page: 10 Not all the three Gateway Projects are within the scope of the federal EA. Considering the three projects in combination may provide useful information for the cumulative effects assessment, but there is also the need to provide information on the effects of the SFPR alone. *(Transport Canada)*	The local air quality impact assessment (Technical Volume 7 and EA Application) analyses the potential impact of the SFPR on local air quality (defined as 1 kilometer either side of the alignment). The local air quality assessment considers only the impact of SFPR on local air quality and does not take into account emissions from other Gateway Program projects. The regional air quality impact assessment (Technical Volume 16) considers the effects all three Gateway Program projects on regional air quality (defined as the Lower Fraser Valley airshed). The regional air quality impact assessment also considers potential cumulative effects on air quality. As the Gateway Program projects were planned to be delivered as an integrated program, traffic modeling done during project planning assumed the regional road network in 2021 would include full operation of all of the Gateway Program projects. As such, the regional air quality assessment, which is supported by the traffic modeling data, considers the effects of all Gateway Program projects on regional air quality. The local air quality impact assessment provides project specific effects on local air quality. The regional/cumulative effects assessment for air quality, summarized in the Section 10.3 of the Application, considers the effects of all three Gateway Program projects, in conjunction with effects from other projects, on air quality. The scope of projects considered in considering cumulative effects on air quality include, but are not limited to, a number of regional transportation projects.	S	1.7 7.1	Satisfactorily addressed for the purpose of the EA

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20.	**AIR QUALITY**				
21.	Need more context about how the study area boundaries for local air quality assessment were defined. Study area should take into account the extent to which impacts will occur (not just the maximum impact) to explain what effects will occur beyond the 100m boundary. *(Transport Canada)* Page: 11	The study boundaries for the local air quality assessment were determined using best professional judgement given what is known about the dispersion of air contaminants from roadways and the limitations of air quality modeling tools typically used for such assessments. Specifically, emissions from traffic tends to have the greatest impact within the first few hundred metres, therefore this study area was considered to be appropriate for the local air quality assessment. In addition, air quality modeling using the CALINE model is most accurate within 500 m to 1,000 m of the alignment. Therefore a distance of 1,000m was used to define the study area for the local air quality impact assessment.	S	7.1 7.2	Satisfactorily addressed for the purpose of the EA
22.	Table 16 – need more context to explain "geographic extent", "site", "immediate area" and "beyond" the local airshed. *(Transportation Canada)*	Table 16 (page 64 of Technical Volume 7) summarizes the criteria used to assess significance of potential project related effects on air quality. "Geographic extent" is one of a number of criteria that is typically considered in assessing significance of effects. The "geographic extent" of the effect is the area(s) over which the effect could potentially extend. Using best professional judgement and knowledge from similar projects, it was determined that in the case of the proposed project, the assessment of potential air quality effects should include a consideration of the following three geographic extents: "site"(within 100 m of the SFPR); " immediate area" (100 -1000 m); "beyond the local airshed" (in excess of 1000 m).	S	7.1	Satisfactorily addressed for the purpose of the EA
23.	Canada-wide Standards principle of Continuous Improvement is mentioned, but there is no assessment of how the project supports Continuous Improvement. Even in the absence of predicted Canada-wide standards exceedances. EC expects the project to minimize emissions and human exposure to particulate matter and ozone precursors to the extent practicable. *(EC - ESB)*	The SFPR project – in concert with other Gateway Program projects – is intended to complete the regional road network and assist in reducing congestion related emissions. In doing so, the project supports the principle of continuous improvements. The development and implementation of an air quality management plan for the construction phase is intended to ensure that emissions associated with construction are minimized.	C/S	1.7 7.1	Satisfactorily addressed for the purpose of the EA

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24.	**AIR QUALITY**				
25.	Elaborate on assumptions referred to in, "Traffic Forecasts are available from the Gateway Strategic Transport (GST) model. Is Deltaport (proposed Third Berth and Terminal 2 projects) and increase in container truck traffic along Hwy 17 considered in traffic volumes projection? Is proposed toll on twinned Port Mann Bridge incorporated? *(Environment Canada - ESB)*	The air quality assessment for SFPR assumes the truck traffic that is predicted to be generated by the Deltaport Third Berth project. The Terminal 2 (T2) project is not considered in the air quality assessment as likelihood of the project proceeding, scope of project and estimated traffic volumes is unknown. The impact of the proposed toll was not included in the regional estimates prepared for the SFPR EA since tolling was still under discussion at the time model runs were performed. The impact of tolling is included in the PMH1 EA since by that time a commitment had been made to go forward with tolling.	S	7.1	Satisfactorily addressed for the purpose of the EA
26.	"Based on traffic model results it is anticipated that 60% of the vkmt on SFPR can be classified as new traffic." How was this factor obtained, as it directly relates to the increase the SFPR has on total emissions in the GVRD in 2021? *(Environment Canada - ESB)*	The traffic modelling undertaken for SFPR develops estimates of the movement of people and vehicles in the future based on future land use, employment and residential development, and the configuration of the regional road network in the future. Based on the model results, it was estimated that 60% of the traffic in the SFPR corridor, in the future, would be new to the corridor. This traffic would, however, be a redistribution of traffic (vehicle trips) that is predicted to occur in the future with or without SFPR. While there is increase in vehicle kilometres travelled (vkmt) in the corridor in the future, most of this is because of diversion of trips from other corridors in the region.	C/S	7.1	Satisfactorily addressed for the purpose of the EA

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27.	**AIR QUALITY**				
28.	No references to support, "Because the SFPR will mainly redistribute traffic and generate relatively little new traffic, the total airshed emissions should not change significantly". Such statements be supported with technical references. Also, this statement does not agree with the 60% factor of new traffic due to the SFPR. *(Environment Canada - ESB)*	The traffic modelling undertaken for SFPR develops estimates of the movement of people and vehicles in the future based on future land use, employment and residential development, and the configuration of the regional road network in the future. Based on the model results, it was estimated that 60% of the traffic in the SFPR corridor, in the future, would be new to the corridor. This traffic would, however, be a redistribution of traffic (vehicle trips) that is predicted to occur in the future with or without SFPR. While there is an increase in vehicle kilometres travelled (vkmt) in the corridor in the future, most of this is because of diversion of trips from other corridors in the region. EAO Note: MoT provided a workshop on March 9, 2007 to interested Working Group members on methodology used in the local and regional air quality assessments. MoT also provided a written memo to further respond to questions from the Working Group on methodology for the assessment on local air quality assessment and human health risks. MoT also met with EC and GVRD on March 22, 2007 and provided clarification on local air quality assessment methodology.	C/S	1.5 7.1	Satisfactorily addressed for the purpose of the EA
29.	Statement, "In general, the predicted ambient concentrations for all contaminants do not exceed Canada or BC ambient air quality objectives beyond 50m from the SFPR and beyond this distance the combined ambient concentrations (model predicted plus background) are below the ambient air quality objectives" is not supported by the data presented in Tables 13, 14 and 15, that show exceedances for NOx, CO, NO2, and road dust PM10 when compared to ambient guidelines. *(Environment Canada - ESB)*	The maximum values occur within 50m of the roadway. Beyond 50m there are no cases of values exceeding guidelines. MoT (Levelton) to document issues in a written submission to Working Group. Given the length of the corridor and the resolution of the figures in the Application, which illustrate the distribution of exceedances in the corridor, it is difficult to identify the limited areas of exceedances within 50 metres of the roadway. MoT has met with Environment Canada to review digital images of the distribution of exceedances and their proximity to sensitive receptors.	C/S	7.1	Satisfactorily addressed for the purpose of the EA

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30.	**AIR QUALITY**				
31.	Table 17 – In general, EC suggests that ratings of the impacts be more varied for the different contaminants (especially for the parameters Geographic Extent, Duration, Overall Consequences, Likelihood of Adverse Effect, Level of Confidence), in agreement with what is presented in the study. For example, a) Magnitude of Impact and the Overall Consequences "low" ratings for CO (1-hour and 8-hour averages), NOx (1-hour and annual averages) and Road dust PM10 (24-hour average) should be changed to reflect the definitions listed in Table 16 (i.e. medium, or high), since levels of these contaminants exceed guidelines. This implies "additional management of the contaminant's effects is likely necessary." (per table 16) *b)* EC suggests changes to "Likelihood of Adverse Effect" significance criterion ratings: NO2 (1-hour and annual averages) rating should be changed to "probable", as levels of this contaminant in ambient air may influence the formation of ground-level ozone. EC recommends that the likelihood of adverse effects from PM2.5 (both 24-hour and annual average categories) be changed, at the least, to "possible" since there is no "threshold value" for the concentration-response function for PM2.5. For the parameter "Duration of Impact (Temporal Extent)" with reference to the definitions provided in Table 16, please explain indication that the "duration of impact" on air quality is "medium term: Effect extends through the length of the project", rather than "long-term: Effect extends beyond the length of the project". *(Environment Canada - ESB)*	See Section 1 of Levelton Memo "Responses to working group questions on air quality aspects of the SFPR Application" dated March 12, 2007 which was developed in response to working group questions on air quality aspects of the SFPR Application. In brief, the duration of impact will extend for the time that the SFPR remains the same as originally built. If the SFPR is closed or modified then the impacts would change; that is the predicted impacts are only valid for the time the SFPR remains as originally built and hence the duration is medium term.	S	1.7 7.1	Satisfactorily addressed for the purpose of the EA

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32.	**AIR QUALITY**				
33.	It seems that the construction phase could potentially be a worst-case situation for PM. EC prefers more quantitative characterization of potential PM emissions during construction. Are there emission factors or ambient test results from similar construction projects? *(Environment Canada - ESB)*	Such mitigation measures will be included in the air quality management plan for the project that will also include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures. The air quality management plan will be made available to GVRD, Environment Canada, Ministry of Environment, Health Canada and other agencies for review prior to construction. MoT agrees to provide detailed scope and content of the AQMP in MoT's Table of Commitments.	C/S	1.5 1.7 7.1 7.3	Satisfactorily addressed for the purpose of the EA
34.	In reference to a previous comment recommending that emissions from construction activities be included in the Local Air Quality Impact Assessment, EC recommends that the Regional Study should quantify the contributions of these emissions to regional air quality issues such as visibility and ambient concentrations of ozone and particulate matter (smog precursors). *(Environment Canada - ESB)*	Construction activities are expected to have a temporary, localized effect on air quality. Mitigation measures will be adopted to address any potential for air quality effects from construction. Gateway Program construction is not anticipated to contribute significantly to regional visibility and ambient concentrations of ozone and particulate matter when compared to the projected contribution from all other emission sources in the region.	C/S	7.2	Satisfactorily addressed for the purpose of the EA
35.	In statement, "although the potential air quality impacts from these activities can be significant, it is important to note that they will be temporary and localized"; proponent should mention an estimate of the time length of the construction phase. EC recommends looking at the sensitivity of the area likely to be affected by the construction activities (ie residential neighbourhoods). (*Environment Canada-ESB)*	The MoT is committed to implementing the best available, known and effective, measures for mitigating construction related air emissions, that have been used on similar projects, as outlined in the local AQ chapter (pg. 211) of the Application. Such mitigation measures will be included in the air quality management plan for the project that will also include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures. The plan will take into account site specific considerations, where applicable, such as proximity to sensitive receptors. The air quality management plan will be made available to GVRD, EC, Ministry of Environment, Health Canada and other agencies for review prior to construction. EC has provided a revised commitment to managing air quality during construction. The MoT has accepted this commitment.	C	1.7 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
36.	**AIR QUALITY**				
37.	Pages 157 to 213 – Address Canada-wide standard goals of keeping clean areas clean and continuous improvement. Address whether an increase in vehicles and possible gridlock in the future offset reductions in vehicle emissions achieved through fuels and emission technologies. *(EP, MOE)*	During the time horizon of the air quality assessment conducted for the project, increases in vehicle numbers (or vehicle kilometres driven) as well as traffic conditions do not offset predicted emission reductions associated with improvements in fuels and emissions control technologies. At this time, information is not available to develop a defensible estimate of when predicted emission reductions might be offset by increasing vehicles numbers and congestion.	C	1.7 7.1	Satisfactorily addressed for the purpose of the EA
38.	Pages 157 to 213 – Air quality management plan should include best management practices and mitigation measures and be reviewed, ready for implementation before commencing activities and include details of optimum traffic flow, transportation demand management strategies (including transit and bicycle routes). *(EP, MOE)*	Noted. The EA Application (section 11) currently contains general outlines for various environmental management plans (EMP) that will be developed to support construction of the SFPR. The MOT will discuss the scope of such EMP, including an air quality management plan during the Application review phase. It is MOT's intention that the EMP for the project would be finalized after project certification, as part of obtaining federal and provincial permits and approvals. In this context, federal reviewing agencies would receive more detailed EMP, for review and approval, after final project design is complete, prior to start of construction. The EMP will include a commitment to include the best available mitigation measures.	C	1.5 1.7 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA
39.	Pages 157 to 213 – Determine a quantitative estimate of construction equipment emissions. *(EP, MOE)*	See above response. The MoT will ensure there is mitigation in place to address any potential for impacts. The mitigation will be the measures outlined in the local AQ chapter (pg. 211), which is the same as that used for the GEB project, and the environmental management plan (section 11, pg. 530 - 531 of the EA); which includes air quality and dust control and environmental education and awareness (for contractors). In addition, an environmental management plan will be developed that will include ambient monitoring, mitigation (Technical Volume 7), and other mitigation that is disclosed through consultation with regulatory agencies (eg GVRD).	C	1.5 1.7 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
40.	**AIR QUALITY**				
41.	Pages 157 to 213 – Provide specific details related to the implementation of the proposed mitigation measures. *(EP, MOE)*	EAO Note: This level of detail is not usually provided in an environmental assessment because project designs are still conceptual.	C	1.7 7.1	Satisfactorily addressed for the purpose of the EA
42.	Consider including information on the magnitude of emission reductions related to each mitigation measure. *(EP, MOE)*	This is difficult to estimate for mitigation of construction related emissions because the final construction plan is not complete. However, MOT is committed to working with MoE to identify means for assessing the effectiveness of proposed air quality mitigation measures.	C	7.1 7.2	Satisfactorily addressed for the purpose of the EA
43.	Address and quantify construction emissions. Impacts from construction may not be temporary or low in magnitude. Consider localized impacts and impacts to contaminant load of regional airshed *(EP, MOE)*	MoT is committed to the application of mitigation measures outlined in the local AQ chapter (pg. 211) of the Application. A more detailed, and project specific, air quality management plan, will be developed prior to construction. Given the temporary nature of construction related effects, the effective implementation of mitigation measures, and magnitude of existing emissions inventories in the region, construction related emissions would not be expected to noticeably affect contaminant loads in the regional airshed.	C	1.7 7.2	Satisfactorily addressed for the purpose of the EA
44.	Remove the word “first” as it indicates only the 1 km section of road at the beginning. Define dimension of the sections surrounding major crossroads. *(EP, MOE)*	Noted. All major cross roads within 1 km of the SFPR roadway are included in the air dispersion modelling.	C	7.1	Satisfactorily addressed for the purpose of the EA
45.	Provide rationale for selecting the chosen stations. Clarify how the stations “show consistency” and how the stations describe a “background or baseline” for air quality. *(EP, MOE)*	The stations were those closest to the SFPR. The GVRD air quality monitoring system is designed to provide a measure of the air quality in local regions within the GVRD. The stations are located so as not to be unduly influenced by local sources.	C	7.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
46.	**AIR QUALITY**				
47.	Ensure the modeling approach is as recommended in the BC Dispersion Modeling Guidelines. Define the input data required for CALINE. *(EP, MOE)*	Noted. Please see 7.2.3.7 in the Application and Appendix B of Volume 7 for details about CALINE input. The CALINE model requires input parameters of wind speed, wind direction, stability, and mixing height to predict hourly contaminant concentrations. Time sequential meteorological data was extracted from the CALMET model output, to determine expected frequencies and predictions of ambient concentrations. CALMET is a diagnostic meteorological computer model that generates three-dimensional fields of meteorological parameters based on surface and upper air meteorological data, digital land use data and terrain data. CALMET was used to characterize the meteorology near each modelled segment of the road for the period June 2000 – July 2001. Additional information on the CALMET is provided in Technical Volume 7 (sections 3.6.1 and 3.6.2). Using meteorology and emissions data, and traffic volumes, the model predicted ambient concentrations of the contaminants for each segment for various scenarios. Maximum 1-hour, 8-hour, 24-hour and annual average concentrations were determined.	C	7.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
48.	**BURNS BOG**				
49.	Roadway design will attempt to recover loss in permeability of compressed peat through use of permeable granular fill material but it is not clear to what extent this fill material will result in preferential drainage up-gradient of the SFPR alignment in areas where it intersects Burns Bog. *(Environment Canada - ESB)*	The potential for permeable fill to provide a preferred hydraulic conduit for groundwater flow and cause a deflection of the characteristic radial flow pattern associated with Burns Bog was raised in the Hydrogeological Impact Assessment report. This issue, together with the need to protect the sensitive chemistry of the Bog, will be addressed at the design stage of the project, through consideration of fill materials, encapsulation of the fill material and drainage controls. EAO Note: SFPR alignment will no longer intersect Burns Bog as a result of MoT proposed alignment refinement 4.1d.	C/S	15.1 15.2 15.5 15.7	Satisfactorily addressed for the purpose of the EA
50.	CWS recommends consideration be given to constructing an elevated causeway from Hwy 99 interchange to north end of Polygon 162, and from approximately 76th Street (Polygon 93) to Nordel Way. *(Environment Canada – CWS)*	The MOT has considered the option of elevating portions of SFPR around Burns Bog and has provided a comparative analysis report (March 2007) that summarizes costs and benefits, to a number of values, associated with both a raised structure and an at-grade design.	C	15.1 15.2	Satisfactorily addressed for the purpose of the EA
51.	CWS recommends consideration be given to providing two, 100m wide vegetated corridors between the north end of Burns Bog and Fraser River foreshore. *(Environment Canada – CWS)*	MOT is currently in the process of trying to secure a wildlife corridor between the north end of Burns Bog and the Fraser River foreshore. This compensation proposal, and others, are summarized in the draft habitat compensation plan submitted to CWS (February 2007).	C/S	13.4	Satisfactorily addressed for the purpose of the EA
52.	Design the SFPR to keep road runoff separate from the Bog flow and that the hydraulic conductivity along the south edge of the SFPR be consistent with the current Bog conductivity. *(Corporation of Delta)*	MoT has undertaken a preliminary design of SFPR adjacent to Burns Bog which includes features for both managing road run off and hydrological conditions adjacent to the Bog. The CoD, through its participation on the BBMPC, will have the opportunity to review the preliminary design of the SFPR adjacent to the Bog. EAO Note: Road runoff from SFPR will not enter Burns Bog waters as a result of MoT proposed alignment refinement 4.1d.	S/C	15.1 15.2 15.5 15.6	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
53.	**BURNS BOG**				
54.	Work with Delta staff and the Scientific Advisory Panel to develop an appropriate mitigation approach that should involve a consistent conductivity along the south edge of the road right way, and a separate collection system for the roadway runoff. Systems to provide radial flow should be considered but they should not be located in the road base. *(Corporation of Delta)*	The MoT is committed to working with CoD, GVRD, SAP and others through the BBMPC to advance the preliminary design of SFPR adjacent to the Bog in a way that is protects the existing values and, where possible, contributes to restoration activities being undertaken by the BBMPC EAO Note: Road runoff from SFPR will not enter Burns Bog waters as a result of MoT proposed alignment refinement 4.1d. MoT has committed to developing and implementing a Stormwater Management Plan to address potential impacts of runoff during the construction and operation phases of the SFPR.	C/S	15.1 15.2 15.6	Satisfactorily addressed for the purpose of the EA
55.	Outline a more detailed plan that will prevent ground water contamination, and ensure that water and ground water south of the proposed SFPR is not impacted by the new road corridor. *(Corporation of Delta)*	The MoT is committed to working with CoD, GVRD, SAP and others through the BBMPC to advance the preliminary design of SFPR adjacent to the Bog in a way that is protects the existing values and, where possible, contributes to restoration activities being undertaken by the BBMPC.	C/S	15.1 15.2	Satisfactorily addressed for the purpose of the EA
56.	Burns Bog is a critical and sensitive element of the region's ecology and must be carefully considered in the planning and implementation of the SFPR project. Implement proven strategies in the design and operation of SFPR for preventing the cumulative impacts of fugitive dust from vehicles on bog water chemistry, followed by ongoing monitoring and assessment of SFPR operation. *(GVRD)*	Advanced design for alignment around the Bog will include measures for avoiding potential indirect effects on the BBECA and include design features to address road dust as well as stormwater and drainage infrastructure to keep road drainage from entering Bog and potentially impacting water quality. EAO Note: Additional work completed in early 2008 indicates that fugitive dust from vehicles will not significantly impact bog water chemistry.	C/S	15.1 15.2 15.5 15.7 15.8	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
57.	**BURNS BOG**				
58.	Not clear what the potential impact on nearby sensitive ecosystems would be from dust. Identify impacts of road dust from SFPR on Burns Bog and other sensitive ecosystems along the proposed route. *(Corporation of Delta)*	In general, particulate matter associated with SFPR is predicted to be insignificant beyond approximately 50-100 m. As part of preliminary design planning with respect to Burns Bog, Gateway Program will consider, in more detail, the potential effects of road dust on Burns Bog, and if necessary, how to mitigate this effect. Note - Regional emissions of all sources of dust (particulate matter) are known to be significantly larger than dust that is predicted to be associated with the SFPR. EAO Note: Additional work completed in early 2008 indicates that fugitive dust from vehicles will not significantly impact bog water chemistry.	C/S	15.8	Satisfactorily addressed for the purpose of the EA
59.	Protect existing lagg by shifting the proposed road alignment westward to protect existing lagg on the Nottingham Property (southwest area, west of Parcel 2). Lagg is an essential part of a bog in providing transition with its surroundings, and is required between the Burns Bog ECA and the proposed SFPR. Very little lagg exists within the Burns Bog Local Government and Provincial Lands; however, some existing portions of Burns Bog lagg exist outside of these Lands. For example, the Nottingham Property ("Sherwood Forest") in the southwest area, west of Parcel 2.[1] *(GVRD) (Corporation of Delta)*	Design work on the alignment adjacent to Burns Bog is being advanced, based on early feedback from reviewing agencies. MOT has refined the alignment in the vicinity of Highway 99 to address concerns regarding potential impacts to functioning lagg between the Bog and Crescent Slough. This retains a much larger area of functioning and contiguous lagg between the bog and Crescent Slough. EAO Note: SFPR alignment has been shifted away from the southwest corner of Burns Bog as a result of MoT proposed alignment refinement 4.1d. MoT has proposed construction of Lagg Pond Ecosystem Complexes in locations near Burns Bog, as required.	C/S	15.1 15.2 15.5 15.6 15.7	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
60.	**BURNS BOG**				
61.	Build functioning lagg between the Burns Bog ECA and the proposed SFPR. Scientific understanding of lagg is rudimentary in order to design lagg. A range of bogs need to be studied by Gateway to identify their physical, hydrological, hydro-chemical, and biological characteristics (flow; gradients; vegetation). Lagg characteristics then need to be defined, modeled, built, and field tested, prior to roadway construction, including any pre-load construction.[2] Incorporate climate change modeling in SFPR design e.g. with stormwater runoff calculations and culvert sizing, current 100-year events become 30-year events. *(GVRD)*	Further work on advanced design for SFPR adjacent to Burns Bog has been undertaken and incorporates information from literature reviews and experience gained on other road projects near peat bogs. This work does not include ecological modelling. Given the dynamic nature of Burns Bog and the lack of scientifically accepted long-term spatial models for bog / peat land management, there are no assurances that such modelling would result in identifying clear and consistent trends against which road design could be undertaken. MoT supports the proposed approach that would enable more active management of Burns Bog, and be an investment in building the capacity to realize objectives identified in the long-term management plan being prepared for Burns Bog. Road design and associated infrastructure for mitigation will also be designed and built with ongoing monitoring in place, and the flexibility to be adapted to changing conditions and management objectives. Mitigation measures will focus on maintaining the existing groundwater regime, though will take into account other considerations such as: • Recreating lagg features and characteristics where possible; • Providing adjustable drainage devices in road design to protect water quality; and • Accommodating alterations due to climate change. Careful attention has been and will continue to be taken regarding existing lagg conditions at the margin of Burns Bog, so that the ecological effects of SFPR construction and operation upon lagg features are minimized; the general principles of Best Management Practices for mitigating and addressing effects to the Bog within and near lagg areas are outlined in the EA Application document, and these are	C/S	15.1 15.2 15.3 15.4 15.5 15.6 15.7	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
		being further addressed as part of design work that is currently underway. With respect to lagg modeling, there are no acceptable existing and parameterized scientific models that have been developed and rigorously tested for lagg ecology, and MOT does not believe that an appropriately rigorous and scientifically-acceptable model could be assembled and fully tested in the short term for Burns Bog. However, MOT does agree that constructing and field testing such a model would be of value to the management of Burns Bog over the longer term. As part of the BBMPC/SAP commitment to manage the Partnership Lands, MOT commits to providing baseline and monitoring data collected in association with the SFPR from areas within and around Burns Bog, so that it can be available for modeling and management decision-making over the longer term. EAO Note: MoT has consulted with EC and SAP experts on the design and construction of proposed Lagg Pond Ecosystem Complexes and details on the design and construction were presented to interested Working Group members on March 28, 2008.			
62.	Implement proven strategies in the design and operation of SFPR for preventing the spread of exotic species (inc. plants, animals, insects), followed by ongoing monitoring and assessment of SFPR operation. *(GVRD)*	The design of SFPR adjacent to the Bog will include measures for avoiding the introduction of exotic plant species and encouraging native, bog associated vegetation. Post-construction monitoring and adaptive management will include a focus on red and blue listed plant communities. EAO Note: MoT has committed to developing and implementing an Invasive Species Management Plan as part of the overall Construction Environmental Management Plan.	C	1.7 13.1 13.7 13.11 15.1 15.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
63.	**BURNS BOG**				
64.	That an invasive vegetation management plan be developed as part of the operation of SFPR to prevent colonization of the disturbed areas by species that may spread or impact adjoining natural areas. This is of particular importance to the area adjacent to Burns Bog. *(Corporation of Delta)*	This is being considered as part of the planning work for Burns Bog. We will discuss its application and relevance to other parts of the alignment during the Application review. EAO Note: MoT has committed to developing and implementing an Invasive Species Management Plan as part of the overall Construction Environmental Management Plan.	C	1.7 13.11	Satisfactorily addressed for the purpose of the EA
65.	In SFPR design and operation, prevent stormwater runoff to the Bog i.e. unacceptable bog water chemistry impacts. *(GVRD)*	The design of SFPR adjacent to the bog will include measures to keep bog water and road runoff separate in order to avoid impacts to the bog. EAO Note: Road runoff from SFPR will not enter Burns Bog waters as a result of MoT proposed alignment refinement 4.1d. MoT has committed to developing and implementing a Stormwater Management Plan to address potential impacts of runoff during the construction and operation phases of the SFPR.	C	1.7 5.1 5.5 15.1 15.2 15.5 15.6	Satisfactorily addressed for the purpose of the EA
66.	**CONTAMINATED SITES**				
67.	Will BC Contaminated Site Regulations soil matrix standards for "groundwater flow to surface water used by aquatic life" apply to all of the route? If not, why not? *(EC - ESB)*	It will be assumed that aquatic life standards will apply unless in accordance with CSR guidance it can be shown that the groundwater travel time to the nearest surface water body is greater than 50 years.	S	10.1 10.3 10.4 10.5	Satisfactorily addressed for the purpose of the EA
68.	Assertion that "movement of contaminants will be restricted by denser material at depth, which may trap contaminants within the shallower soil horizons" is unfounded given the very limited groundwater assessment provided. Further assessment of contaminant migration within the shallow hydrogeological regime is warranted to support this statement. *(EC - ESB)*	As part of site investigations, deeper groundwater will be investigated where necessary in accordance with the requirements for site investigations in the EMA and CSR, as well as requirements of Technical Guidance documents #10 and #11.	C/S	10.3 10.4 11.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
69.	**CONTAMINATED SITES**				
70.	Alignment will intersect the waste piles of several landfill sites and engineering infrastructure related to environmental management of contaminated media (i.e. groundwater collection systems) could be encountered. Should conduct detailed assessment of this possibility to ensure that the SFPR does not compromise the operation of these engineered systems. More monitoring should be undertaken post road construction to ensure that the road has not altered the effectiveness of these engineered systems. *(Environment Canada - ESB)*	The MoT is working closely with the MOE in conducting additional investigation at these sites in order to ensure that highway design and construction through the landfills will not result in impacts to existing infrastructure used to manage contaminated media.	P	10.1	Satisfactorily addressed for the purpose of the EA
71.	No discussion relating to the handling of contaminated groundwater is provided. Further information is warranted. *(Environment Canada - ESB)*	Contaminated groundwater if encountered will be handled in accordance with the requirements of the EMA and associated regulations and any relevant local government requirements.	C/S	10.5	Satisfactorily addressed for the purpose of the EA
72.	More details of proposed groundwater monitoring plan during construction should be provided. *(Environment Canada - ESB)*	A groundwater monitoring plan will be prepared that focuses on those areas of the route where contaminated groundwater is identified during pre-construction site investigations.	S	10.1 10.3 10.5 10.6	Satisfactorily addressed for the purpose of the EA
73.	Operating procedures for use and handling of potential contaminants (i.e. fuels) during construction should be developed and included in the construction plan *(Environment Canada -ESB)*	An outline of a Hazardous Water Management and Spill Control Plan is provided in the EA Application (section 11.3.3, ppg. 528 – 529). Development of this plan will be a commitment that is attached to the EA Certificate.	P/S	1.7 3.1 10.4 10.6 10.7	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
74.	**CONTAMINATED SITES**				
75.	Pile driving on contaminated lands could provide a conduit for vertical contaminant migration. Further assessment of this possibility should be completed. *(Environment Canada - ESB)*	The issue of the potential impact from pile driving will be investigated on a site specific basis. Contaminated site investigations will be performed on sites where pile driving is proposed prior to any pile driving occurring. The potential impact of pile driving on vertical contaminant migration will be assessed by reviewing such site characteristics as vertical hydraulic gradients, the level and nature of contamination (if present), and the type of soils that the piles will be driven through. These investigations and information must be performed and reviewed before the need for potential mitigation measures can be determined. Mitigation measures may include; avoidance, contaminated soil removal and treatment and/or groundwater collection and monitoring.	P/S	10.1 10.4 10.6 10.7	Satisfactorily addressed for the purpose of the EA
76.	We are aware of an agricultural property, 3240 64th Street that was a Ministry of Environment permitted site for the land disposal of residual paper products and is currently in the independent remediation process. It has the Provincial site number 9258. This site should be given further consideration. *(Corporation of Delta)*	All properties required for right of way will be closely considered for potential contamination prior to purchase and steps taken, as required, to address site contamination where it may exist.	P	10.1 10.2	Satisfactorily addressed for the purpose of the EA
77.	Some of properties near BB are portions of landfills or other previously disturbed land that may have contaminants present. There will be no access to these properties after SFPR is constructed which will preclude development or clean-up of the parcels. Ensure all isolated parcels between SFPR and Burns Bog are fully remediated to a level that is appropriate for land adjacent to Burns Bog and returned to Bog where practicable. *(Corporation of Delta)*	The MoT will purchase only that land that is required for the ROW and ancillary project activities. Most isolated parcels that will remain (between the bog and SFPR) will be privately owned and under the jurisdiction of CoD. Risk assessment and remediation activities will be undertaken in compliance with the provincial Environmental Management Act and Contaminated Sites Regulation and consistent with the proposed future land use (highway). There may be some residual land adjacent to Burns Bog that can be part of a compensation program for addressing impacts to Burns Bog. The MoT will be working with the partners to the BBMPC to discuss compensation for impacts to Burns Bog.	P	10.1 10.2 10.7	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
78.	**CONTAMINATED SITES**				
79.	Numerous areas of potential concern along alignment. Impact to existing and proposed utilities if contaminants are found to be in the granular backfill areas. Need to ensure utility corridors do not become pathways for contaminant migration. *(City of Surrey)*	Prior to construction, during the property acquisition process, potential contamination will be investigated in more detail as discussed in the Application (section 7.3.5.1). During construction, based on site investigation work undertaken during property acquisition process, site contamination that exists, including potential migration off-site will be managed in accordance with federal and provincial legislation and regulations.	P	10.1 10.6 10.7	Satisfactorily addressed for the purpose of the EA
80.	Report does not mention procedures to be followed if off-site migration of contaminants is found – only mentions containing contaminants on-site. *(City of Surrey)*	If offsite migration of contaminants is found it will be managed in accordance with the requirements in the EMA and Contaminated Site Regulations (CSR).	P	10.4	Satisfactorily addressed for the purpose of the EA
81.	Contaminated sites assessment work is being carried out using a phased approach which is acceptable to MOE. *(Land Remediation, EMB, MOE)*	Noted.	P	10.1	Satisfactorily addressed for the purpose of the EA
82.	Subject to the project commitments described in the Application and satisfactory follow-up regarding the comments provided by the EMB, MOE, we would expect that the ongoing contaminated site assessment and management activities are unlikely to cause significant adverse environmental impacts. *(Land Remediation, EMB, MOE)*	Noted.	C	10.1	Satisfactorily addressed for the purpose of the EA
83.	Per EMB, MOE comments, documentation of the contaminated sites assessment work to-date is not considered complete and requires clarification in some areas. *(Land Remediation, EMB, MOE)*	The Application (Technical Volume 8) provides a preliminary, corridor level, assessment of potential site contamination. The assessment of site specific potential contamination, supported by appropriate documentation where required, will be undertaken as part of the property acquisition process prior to final design and construction.	C	10.1 10.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
84.	**CONTAMINATED SITES**				
85.	Pages 4 and 5 - As project progresses, confirm whether site profiles required by municipalities in connection with land use/zoning approvals. *(Land Remediation, EMB, MOE)*	Site profiles will be provided to BC MOE the relevant municipality in accordance with the requirements in the EMA and CSR.	P	10.1	Satisfactorily addressed for the purpose of the EA
86.	If any listed industrial/commercial sites (CSR, Schedule 2) will be decommissioned, site profiles BCMOE may require site profiles. Requirements for contaminated soil relocation permits, approvals in principle, certificates of compliance will be a function of the outcomes of the confirmation of regulatory requirements and the ongoing contaminated site assessment work (i.e. during subsequent permitting stages of project). *(Land Remediation, EMB, MOE)*	Site profiles will be provided to the relevant municipality in accordance with the requirements in the EMA and CSR.	P	10.1	Satisfactorily addressed for the purpose of the EA
87.	Paragraph 2 indicates that "road and utility rights-of-way" are excluded from the study. Potential for contamination of these corridors should be assessed as the project progresses to ensure adequate knowledge of soil and groundwater conditions for safe and effective project construction. *(Land Remediation, EMB, MOE)*	Investigations will be performed on areas that are to be acquired and built upon. This will include right of ways within these areas to be purchased by the MoT.	P	10.1	Satisfactorily addressed for the purpose of the EA
88.	Acknowledge need to specify applicable land and water uses (and therefore applicable soil and groundwater remediation standards) for purpose of contaminated sites assessment in accordance with CSR s. 12, specifically, land use for the proposed highway would be "industrial" and applicable water uses along the project corridor should be determined as the studies progress to stage 2. *(Land Remediation, EMB, MOE)*	Noted. Site investigations will include the specification of applicable land and water uses in accordance with the CSR.	P	10.1 10.2	Satisfactorily addressed for the purpose of the EA
89.	Site Registry search appears to have been conducted on a property-specific basis. An area search should also be done to identify any other records available for the corridor. *(Land Remediation, EMB, MOE)*	Agreed. The scope of future site assessment work will include an area search to identify site registry records for the corridor.	P	10.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
90.	**CONTAMINATED SITES**				
91.	"80th Street to Alex Fraser Bridge" – Potential contaminants of concerns at landfill sites in this area should also include metals. It is expected that significant additional investigative and planning work (eg., environmental, geotechnical etc.) will be necessary at landfill sites such as these to ensure project success. *(Land Remediation, EMB, MOE)*	Agreed. Metals are potential contaminants of concern at these sites. MOT is committed to continuing to work with the MOE, Corporation of Delta, and land owners to explore potential initiatives to address contamination at landfills, crossed by the SFPR alignment, in a way that meets the objectives of all stakeholders.	P	10.1	Satisfactorily addressed for the purpose of the EA
92.	Figures in Technical Volume 8 should show the 27 well sites and the single operational well site down gradient of the project alignment and discussed in the text as information relevant to future determination of applicable water uses along corridor. *(Land Remediation, EMB, MOE)*	Information on Water Wells is provided in a separate Technical Volume of the EA application. EAO Note: The Application documents previously submitted will remain as submitted but additional information and clarifications from MoT will be considered part of the Application and will be publicly available.	P	12.3	Satisfactorily addressed for the purpose of the EA
93.	Clarify nature of mitigation measures proposed. Explain why "… noticeable heavy metals and hydrocarbon contamination…" centering around auto salvage industrial operations is not considered a problem for highway construction. *(Land Remediation, EMB, MOE)*	Potential metals and hydrocarbon contamination in auto salvage areas will be investigated and managed in accordance with the EMA, CSR and its associated protocols, procedures and guidelines.	C	10.1 10.4	Satisfactorily addressed for the purpose of the EA
94.	Potential contaminants of concern identified in this section (especially in connection with auto demo/repair sties, ship construction sites, painting sites, etc.) should include solvents (e.g. chlorinated hydrocarbons). *(Land Remediation, EMB, MOE)*	Agreed. The scope of future site assessment work at such sites will include a consideration of solvents as a potential contaminant of concern.	P	10.1	Satisfactorily addressed for the purpose of the EA
95.	Concur with plan to pre-assess groundwater and surface water quality in areas of suspected contamination and in areas where water conditions may be altered by the project (to establish baseline). Physical groundwater conditions (e.g. water elevations) should also be assessed in view of findings described in sections 7.3.3.2 and 7.3.4.2 regarding contaminant movement. *(Land Remediation, EMB, MOE)*	Agreed. This approach to site investigation will be undertaken where necessary throughout the corridor.	P	10.1 10.3 10.5 12.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
96.	**CONTAMINATED SITES**				
97.	Hydrocarbons as a PCOC should be inclusive of solvents at locations that may have handled/used these types of chemicals (e.g. automotive repair, paint operations etc.) *(Land Remediation, EMB, MOE)*	Agreed. The scope of future site assessment work will include a consideration of solvents as a potential contaminant of concern.	P	10.1	Satisfactorily addressed for the purpose of the EA
98.	Concur with plan to complete first stage PSIs for all Tier 1 and Tier 2 sites and then follow up with second stage PSIs at those sites where soil or groundwater contamination is suspected. Concur with proposed follow-up at Tier 3 sites where potential for contamination is low. *(Land Remediation, EMB, MOE)*	Noted.	P	10.2	Satisfactorily addressed for the purpose of the EA
99.	"Tier 2 Sites" on page 7 – proposed soil sampling should not be restricted to "surface" samples if possibility of contamination at depth, and/or in groundwater, exists. *(Land Remediation, EMB, MOE)*	Agreed. Soil sampling will not be restricted to surface sampling.	P	10.1	Satisfactorily addressed for the purpose of the EA
100.	Should refer to CSR, s.12, to determine applicable standards for future stage 2 PSIs. Standards need to be protective of both human and ecological health. *(Land Remediation, EMB, MOE)*	MOT acknowledges that s.12 of the CSR is the appropriate regulatory reference with respect to identifying applicable standards for the protection of human and ecological health.	P	10.1	Satisfactorily addressed for the purpose of the EA
101.	Individual property addresses, potential contaminants of concern, and the specific studies and other information used for assessments, should be clearly identified and documented perhaps on Appendix 2 figures. Follow-up site investigation at sites with at least a moderate potential for contamination should be stand-alone property investigation reports incorporating the foundation stage PSI work. *(Land Remediation, EMB, MOE)*	MoT is committed to undertaking stand alone site investigations, in accordance with the EMA and CSR, where necessary.	P	10.1	Satisfactorily addressed for the purpose of the EA

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102.	**CONTAMINATED SITES**				
103.	Page 491 – Subject to the project commitments described in the Application and appropriate follow-up regarding the comments presented here, we concur that no compensation measures would likely be required and no significant residual impacts would likely be expected. See also Section 10, page 509. *(Land Remediation, EMB, MOE)*	Noted.	C	10.1	Satisfactorily addressed for the purpose of the EA
104.	MoT expected to undertake discussions with the relevant agencies to finalize the Construction EMP including Contaminated Sites Management Plan before start of construction . *(Land Remediation, EMB, MOE)*	MOT will work with all relevant regulatory agencies to finalize all construction related EMPs, prior to construction.	C	10.1	Satisfactorily addressed for the purpose of the EA
105.	**CUMULATIVE ENVIRONMENTAL EFFECTS**				
106.	DFO would like to see an assessment of expected residual effects due to stormwater runoff included in the cumulative effects assessment as it would allow DFO to make a determination as to whether there is likely to be any significant adverse cumulative effects on fish habitat due to stormwater runoff. *(DFO)*	A stormwater management plan will be developed and presented to the working group during the EA Application review period. MOT will discuss residual and cumulative effects to fish habitat, as a result of stormwater runoff, as part of revising the cumulative effects assessment for the Project.	S	5.1	Satisfactorily addressed for the purpose of the EA
107.	Scope of the assessment is too limited. CEAA recommends the cumulative effects assessment be redone to correct a number of omissions. *(CEAA)*	A refinement of the cumulative effects assessment, based on discussions with the Canadian Environmental Assessment Agency and federal reviewing agencies, has been completed and forwarded to CEAA (6 July 2007).	S	N/A	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
108.	**CUMULATIVE ENVIRONMENTAL EFFECTS**				
109.	Discussion of how projects were selected that might interact with SFPR is incomplete. Rationale is needed for each existing project in vicinity that is not included in the discussion that clearly identifies why the project was excluded. Existing cumulative environmental effects seems to be focused on only other transportation projects and not all in the vicinity of SFPR. If cumulative environmental effects assessments is to discuss all projects covered by the Gateway Program, then the list should be further expanded. *(CEAA)*	A refinement of the cumulative effects assessment, based on discussions with the Canadian Environmental Assessment Agency and federal reviewing agencies, has been completed and forwarded to CEAA (6 July 2007).	S	N/A	Satisfactorily addressed for the purpose of the EA
110.	Cumulative effects assessment for regional air quality focuses only on transportation related projects. Further explanation on approach should be provided. Under CEAA, cumulative effects of the project, in combination with effects of "other projects and activities that have been or will be carried out". Rationale is needed to support the scope and depending on scope, other developments in vicinity of lower mainland will need to be taken into account. *(Transport Canada)*	A revised draft cumulative effects assessment (June, 2007) has been submitted to the Canadian Environmental Assessment Agency and federal reviewing agencies for review and comment. The revised CEA includes a broader scope of projects and extends beyond a consideration of regional transportation projects. However, given the nature of planned development in the Lower Fraser Valley and the important role of the region as a transportation corridor, the CEA remains strongly dominated by transportation projects.	S	7.1	Satisfactorily addressed for the purpose of the EA
111.	In reviewing Cumulative Effects Assessment, a number of issues have been identified. On this basis, Environment Canada recommends that the Cumulative Effects Assessment be re-examined. *(Environment Canada – ESB)*	The CEA conducted for the SFPR was completed in accordance with CEAA guidelines. The MoT has received comments from other federal reviewing agencies, including CEAA, with respect to the CEA for the SFPR, and a revision of the CEA has been completed and forwarded to CEAA (6 July 2007).	S	N/A	Satisfactorily addressed for the purpose of the EA
112.	Tables 10.3-1 and 10.3-2 – Why has Hwy 91 not been included in these tables? *(Environment Canada - ESB)*	Highway 91 will be included as a project scoped into the cumulative effects assessment (CEA) when it is revised. The revised CEA has been completed and forwarded to CEAA (6 July 2007).	S	N/A	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
113.	**CUMULATIVE ENVIRONMENTAL EFFECTS**				
114.	Hydrogeology was considered in scoping for the cumulative effects assessment but was not included in the analysis. The rationale for this decision was that the proposed highway design and construction methods will "maintain water levels and water chemistry associated with Burns Bog… to ensure that impacts to hydrogeological values do not occur." Environment Canada acknowledges that the proposed design will attempt to recover loss in permeability of compressed peat through use of permeable granular fill material but, it is not clear to what extent this fill material will result in preferential drainage up-gradient of the SFPR alignment in areas where it intersects Burns Bog. *(Environment Canada - ESB)*	While permeable granular fill may be used in some portions of the alignment near Burns Bog, where necessary such material will be encapsulated in order to avoid impacts to water chemistry. Such encapsulation would limit the preferential drainage pathway associated with granular fill. The need for additional design features to avoid such impacts will be further considered during final design. EAO Note: SFPR will not intersect Burns Bog as a result of MoT's proposed alignment refinement 4.1d.	S	1.5	Satisfactorily addressed for the purpose of the EA
115.	The potential for clogging of the granular fill material over time does not appear to have been assessed in the proposed design. Environment Canada noted that water quality type that will be intersected by the highway in the vicinity of investigation areas P and Q is Type I, not Type II, as Figures 12 in Technical Volume 10 suggests. *(Environment Canada - ESB)*	To prevent the clogging of granular fill material over time, the BC MOT will consider the performance of road bed and fill materials during the development of the design of the road sediments near Burns Bog.	S	1.5	Satisfactorily addressed for the purpose of the EA
116.	Under Historical and Development Activities there is no mention of existing highways. In particular the effects of Highway 99 and 91, especially with respect to Burns Bog, should be considered. Historical highway development in the project area should be considered in the cumulative effects assessment. *(Corporation of Delta)*	A refinement of the cumulative effects assessment, based on discussions with the Canadian Environmental Assessment Agency and federal reviewing agencies, has been completed and forwarded to CEAA (6 July 2007) The refinement includes a discussion of Highway 91 development.	S	N/A	Satisfactorily addressed for the purpose of the EA

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117.	**CUMULATIVE ENVIRONMENTAL EFFECTS**				
118.	MoT did not include water quality in the analysis of cumulative effects because "mitigation measures, including stormwater management performance objectives… and best management practices to avoid and minimize impacts on water quality are anticipated to result in no residual effects on water quality." Environment Canada suggests there is not enough detail on the proposed stormwater management to assess whether the design will prevent potential adverse effects from stormwater runoff on the receiving aquatic environment. *(EC- ESB)*	A draft stormwater and drainage plan will be developed and presented to the working group during the EA Application review period. The plan will achieve performance objectives that would avoid significant adverse impacts. A s a result no assessment in the cumulative effects assessment is considered necessary.	S	5.1 5.2	Satisfactorily addressed for the purpose of the EA
119.	Consider air emissions from BP Cherry Point power plant in the cumulative effects and regional air quality assessments. *(Corporation of Delta)*	The MoT understands that the Cherry Point emissions are accounted for in the cumulative effects and regional air quality assessments. The existing air emissions from the BP Cherry Point refinery are included in the GVRD emission inventory forecast. While the expansions at Cherry Point (see below) are not specifically identified in the GVRD emission inventory forecast, they are accounted for because the forecasts use industry-specific growth factors (e.g., refinery emissions in Whatcom County were predicted to increase steadily from 2000 to 2025 based on predicted demands for refined oil). These growth factor projections may capture	S	N/A	Satisfactorily addressed for the purpose of the EA

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Sources Emissions (tonnes/yr)	BP New isomerization unit	Cherry Co-gen project	Point Utility Boiler Removal	Total new sources	Lower Existing sources in the LFV	Fraser Predicted sources in the LFV except Gateway
CO	26	174	**-59**	**141**	402,342	375,597
NOx	20	242	**-549**	**-287**	81,975	70,364
PM10	4	288	**-11**	**281**	15,018	16,359
SO2	32	32	**-8**	**80**	17,948	23,033
VOC	3	64	**-3**	**64**	104,461	93,258
CO2E	Na	2,420,000	**-352,000**	**2,068,000**	22,976,589	27,416,921

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
		some (if not all) of the additional emissions associated with the two BP Cherry Point refinery projects. In addition, the rationale for the some of the expansion proposals is to reduce emissions, and these reductions (improvements) are also not likely to be included in the forecast. There are two recent or proposed expansion projects at the Cherry Point refinery: (1) installation of a new isomerization unit to meet clean fuel regulations; and (2) proposed construction of a new 720 MW natural gas-fired cogeneration plant that will feed steam into the existing refinery, thereby eliminating the currently used "old and dirty" boilers at the refinery. Project (1) appears to have been completed. Project (2) received its PSD permit in Washington State in June 2005; however, they have recently applied for a revision to this permit, reducing the cogeneration plant to 520 MW. The following spreadsheet[2] shows the net emissions associated with the two Cherry Point projects, along with total existing and forecasted emissions for the region as a whole. Note that there is an expected net reduction in NOx emissions from the BP Cherry Point refinery resulting from the removal of old utility boilers. While the additional contribution of the BP Cherry Point refinery to regional greenhouse gas emissions may appear substantial, BP has committed to offsetting the proposed project emissions by greenhouse gas emission reductions within BP worldwide operations. Thus, on a global basis, there will be no net increase in greenhouse gas emissions associated with the proposed cogeneration plant at the Cherry Point refinery.			

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
120.	**EFFECTS OF ENVIRONMENT ON PROJECT**				
121.	Include development of Terminal 2 in assessing cumulative effects. *(Corporation of Delta)*	The T2 Project has been scoped into the cumulative effects assessment. A refinement of the cumulative effects assessment, based on discussions with the Canadian Environmental Assessment Agency and federal reviewing agencies, has been completed and forwarded to CEAA (6 July 2007)	S	N/A	Satisfactorily addressed for the purpose of the EA
122.	Discussion is not complete. Missing discussion on impact of high winds, heavy rain events, fog and snow, particularly during operation. Discussion should include how these natural phenomena would affect the project and how this will be managed. *(CEAA)*	The MOT has provided a revised version of this section of the document to the CEA Agency.	S	N/A	Satisfactorily addressed for the purpose of the EA
123.	What are the climate change studies referred to on page 501? *(CEAA)*	These studies are Clague *et al.* 1982, Thomson and Crawford 1997, Church 2002, Mathews *et al.* 1970, and Kellerhals and Murray 1969.	S	N/A	Satisfactorily addressed for the purpose of the EA
124.	SFPR needs to address the dyke closure requirements at Bolivar Creek where existing dyke crosses the 116 Street. *(City of Surrey)*	The MoT is committed to consultation with the City of Surrey and community groups through the municipality during pre-load planning, preliminary design, final design and during construction, to ensure that project related activities are coordinated with initiatives planned or underway in the City of Surrey. The range of issues that will be addressed during such consultations include but are not necessarily limited to the following: • Traffic and recreational access to and across the corridor; • Stormwater and drainage management; • Fisheries compensation; • Mitigation of construction related impacts, including noise and vibration impacts, on adjacent residential communities; • Flood protection requirements; • Traffic management during construction; and • Consultation processes with adjacent residential communities.	P	4.1 4.4 5.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
125.	**EFFECTS OF ENVIRONMENT ON PROJECT**				
126.	Emergency closure and route planning will also be required for the length of the project especially in light of the limited access points along the route. *(City of Surrey)*	See above response	P	4.1 4.4 8.1	Satisfactorily addressed for the purpose of the EA
127.	**ENVIRONMENTAL MANAGEMENT**				
128.	DFO recommends that details of the fish habitat compensation plan (access, technically feasible, biological feasibility, and design details for construction) be prepared as soon as possible and preferably before the end of the EA process that the waiting until application for a Fishers Act Authorization. This will reduced unexpected delayed at the permitting state and allow for a habitat banking arrangement (see 7.4.6) *(DFO)*	Additional details, with respect to proposed fisheries compensation, is being developed and will be provide to DFO during the Application review period.	P	11.1	Satisfactorily addressed for the purpose of the EA
129.	EC recommends EMP show stronger commitments to mitigation during construction, such as encouraging contractors, through the tendering process, to use newer vehicles, oxidation catalysts or particulate traps, ultra-low sulphur fuel, and to minimize idling time on site. EC encourages proponent to reference the report, Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities, that was prepared for EC under contract but it is not EC policy. *(Environment Canada - ESB)*	The Air Quality And Dust Control Plan will detail the air quality control measures that the MoT will require of its contractors. These include mitigation measures listed in the EA Application (section 7.2.8.2, ppg. 211 – 212) such as: minimizing equipment emissions through operating procedures like using appropriate equipment, routine maintenance, avoiding double-handling and turning off unused vehicles. Further, all heavy-duty diesel on-road vehicles should meet a maximum exhaust opacity requirement of 10%, as measured by the SAE J1667 test procedure and must use ultra-low sulphur diesel fuel (maximum 15-ppm sulphur content), or use catalyzed particulate traps or a diesel oxidation catalyst. To minimize the generation of road dust there are also operating procedures to be followed.	S	1.5 7.1 7.2 7.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
130.	**ENVIRONMENTAL MANAGEMENT**				
131.	Air Quality and Dust Control Plan should address issues identified in the Regional Air Quality Impact Assessment (Technical Volume 16) that are not mentioned in Local Air Quality Impact Assessment (Technical Volume 7) (e.g. sources of VOCs from hot asphalt and drying paint). *(Environment Canada - ESB)*	The Air Quality and Dust Control Management Plan will be supported by best management practices for highway construction and operation that relate to practices such as road surfacing and painting (MoT, 2004, *Best management practices for highway maintenance activities*).	S	1.7 7.2	Satisfactorily addressed for the purpose of the EA
132.	EMP should provide a detailed description of the handling and disposal of contaminated soil and groundwater during construction of the road. *(Environment Canada – ESB)*	The EMP for management of contaminated sites will include this information. An outline of this EMP can be found in the EA Application (section 11.3.2). The EMP for the project would be finalized after project certification, as part of obtaining federal and provincial permits and approvals. Federal reviewing agencies such as EC would receive more detailed EMP, for review and acceptance, after final project design is complete, and prior to the start of construction.	S	1.7 10.7	Satisfactorily addressed for the purpose of the EA
133.	EMP should include a protocol for handling unexpected contamination encountered on sites which may not have been identified as Tier 1 / Tier 2. *(Environment Canada - ESB)*	All contamination encountered during project development, regardless of the current assessment of potential contamination, will be managed in accordance with applicable regulatory requirements.	S	1.7 10.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
134.	**FISHERIES**				
135.	Road and bridge maintenance contractor responsible for addressing the management of potential contamination should ensure that all actions are in compliance with the EMA. *(EP, MOE)*	This is a requirement of the MoT *Best Management Practices for Highway Maintenance* (MoT 2004).	P	10.1 11.5	Satisfactorily addressed for the purpose of the EA
136.	Roads – Fraser Heights Wetland Bridge – DFO prefers that MoT use incremental top-down construction methods to avoid construction equipment or temporary access roads in the wetland and that design-build/construction contractors understand this requirement. Access roads in the wetland would require additional authorized HADDs of highly valued fish habitat which could be substantial (1000's of square metres) and these have not been accounted for in the Application. *(DFO)*	MOT has prepared further technical information on the proposed Wetlands Bridge adjacent to Fraser Heights. This information will assist environmental agencies in gaining a more detailed understanding of the area of impact of the structure. A technical memorandum has provided that outlines the rationale for the dimensions of the proposed structure; specifically at its eastern extent (draft Fraser Height Wetlands Bridge Preliminary Design Report). MoT is committed to using the recommended construction methods outlined in the Fraser Height Wetlands Bridge Preliminary Design Report.	S	11.7	Satisfactorily addressed for the purpose of the EA
137.	Ensure that contaminated sites do not compromise any of the fish habitat compensation sites. Proposed compensation sites should be evaluated for potential contamination issues and these should be appropriately addressed. *(DFO)*	Where MoT is proposing fisheries compensation on previously developed properties, documentation has provided, during the Application review, to confirm that soil and water quality is consistent with the use of the area for fisheries habitat.	C	11.1	Satisfactorily addressed for the purpose of the EA
138.	For relocation of drainage ditches DFO will require, at the permitting stage, details of fish habitat areas that will be lost and detailed designs of proposed replacement habitats and in order to prepare S. 35(2) Fisheries Act authorizations. Recommend that these details are developed in advance of application for authorizations. *(DFO)*	This information will be available at the permitting stage. MOT will provide protocols that will be included in contract tender packages; these will give guidance on how such stream locations should be undertaken in order to achieve fisheries objectives.	P	11.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
139.	**FISHERIES**				
140.	This section proposes habitat replacement ratios based on the value of the habitat that would be impacted (summarized in Table 7.4-1). While DFO does not object to this method for planning purposes at the EA stage, we will not be bound by these ratios at the authorization stage. *(DFO)*	The assessment of impacts to fisheries values is the opinion of the MoT, and it is understood that the final determination of the adequacy of compensation proposals and application of habitat replacement ratios, and will be made by DFO during Authorization.	P	11.1 11.2 11.4	Satisfactorily addressed for the purpose of the EA
141.	Table 7.4-13 – Summary of SFPR impacts and compensation (habitat balance) – this table shows "adjusted" habitat impact values. DFO will not be bound by these values at the authorization stage but does not object to this method for planning purposes. (DFO)	Noted.	P	11.1	Satisfactorily addressed for the purpose of the EA
142.	In determining whether proposed compensation habitat is adequate to achieve no net loss, DFO will consider value of impacted habitat and the uncertainty of success of proposed compensation habitats, variance in quality between impacted and replaced habitats, and any lag times required for compensation habitats to be created and become functional. *(DFO)*	Noted.	P	11.1 11.4	Satisfactorily addressed for the purpose of the EA
143.	DFO understands MOT has made efforts to avoid and minimize negative impacts on fish habitat during the preliminary design process. MOT should be prepared to provide technical details on why any proposed impacts to fish habitat cannot be avoided or minimized further. *(DFO)*	Professional biologists are working closely with MoT design engineers to avoid and minimize negative impacts on fish and fish habitat throughout the design process. A technical rationale will be provided during future design stages, and the associated authorization process, where impacts are unavoidable.	C/S	11.1 11.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
144.	**FISHERIES**				
145.	Details (access, technical feasibility, biological feasibility, and design details for construction) for all proposed compensation sites should be worked out as soon as possible and preferably before completion of the EA. Additional compensation options should also be developed as it is relatively common that conceptual compensation proposals turn out to not be feasible for a number of reasons. Uncertainties about the quality of proposed compensation, habitat or unexpected delays in the creation of compensation habitat may result in DFO requiring higher replacement ratios in order to ensure no net loss or productive capacity is achieved. DFO prefers to see proposed habitat compensation created (where possible) before Fisheries Act authorizations are issued for the project (as a habitat bank for the project). *(DFO)*	As discussed with DFO in Autumn of 2006, MOT has undertaken additional design work to demonstrate that proposed compensation concepts are reasonable and feasible, and will provide sufficient benefit to achieve a habitat balance. The MoT has provided DFO with confirmation that sites for proposed fisheries compensation proposals are not impacted by past land use (i.e., potential site contamination) and are viable for the proposed compensation. As well, MoT is committed to working with DFO to, where possible, develop habitat compensation in advance of other project works and develop a habitat bank to offset future project works.	C/S/P	11.1 11.4	Satisfactorily addressed for the purpose of the EA
146.	Enhancement of Bon Accord Creek appears promising. There are some issues to work out (access, land, technical, biological) to confirm this proposal is technically, biologically and practically feasible and determine amount of habitat that can be created. (This section on Pattullo Bridge to Golden Ears Connector – Bon Accord Creek Drainage System is not numbered in the Application.) *(DFO)*	MOT has undertaken additional design work to demonstrate that proposed compensation concepts are reasonable and feasible, and will provide sufficient benefit to achieve a habitat balance. The revised fisheries habitat balance sheet will be made available to review agencies, and as with the habitat balance sheet in the EA Application the compensation measures will be divided by the 4 project sections.	C/P	11.1 11.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
147.	**FISHERIES**				
148.	DFO would like to see more habitat compensation proposed that would directly benefit fish species in the Fraser River as the project will have impacts on the Fraser River through the loss of riparian vegetation along the Fraser River escarpment in northeast Delta. *(DFO)*	A compensation project is being developed for the area under and immediately adjacent to the north end of the Alex Fraser Bridge. This habitat enhancement concept is proposed as an opportunity to directly improve riparian and aquatic habitat values for the benefit of fish in the Fraser River. Another Fraser River compensation project or support for an existing project or activity that offers value to fisheries habitats could be substituted for one of the proposed compensation projects, if it has the support of DFO. However, at this time the MoT is not proposing the substitution of proposed fisheries compensation projects in the SFPR corridor. The MoT is currently (early April) evaluating the technical feasibility of proposals for fisheries compensation put forward by the Musqueam First Nation.	S	11.4 11.9	Satisfactorily addressed for the purpose of the EA
149.	Re Compensation: Large ponds on small watercourses may result in elevated water temperatures during summer that may be undesirable for salmonids. DFO prefers to see aquatic habitats with more edge habitat and a higher degree of riparian shading. If large pond concepts are proposed, we would need evidence that this will not result in undesirable temperatures in the pond and downstream reaches of the watercourse. *(DFO)*	In response to these comments, compensation plans have been amended to replace a number of larger ponds with smaller ponds and increased marsh areas. These changes are incorporated in the updated fisheries compensation designs.	C/S	11.4	Satisfactorily addressed for the purpose of the EA
150.	DFO is concerned that creating planted riparian areas adjacent to roads may conflict with visibility goals for road safety and may not be practical or effective. DFO does not anticipate that vegetation planted immediately adjacent to roads will be very successful as riparian habitat and is at risk of being mowed. *(DFO)*	During operations and maintenance, plans will be implemented that will protect features such as riparian habitat from any potentially damaging maintenance activities, such as mowing.	P	11.4 11.11	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
151.	**FISHERIES**				
152.	DFO would like MOT to look into fish access to this site (80th Street to Alex Fraser Bridge – 96th Street ditch) from Fraser River to determine if there are any access problems that could be improved. *(DFO)*	MoT is exploring the feasibility of other fisheries compensation concepts as suggested by DFO, including those such as Cougar Creek and the 96th Street Watercourse. A recent site visit of the 96th Street ditch has identified beaver dams, flap gates and a pump station as potential obstacles to fish access. Beaver dams are regularly removed by the Corporation of Delta, so fish access may not be impeded. The flap gates could be replaced by horizontally mounted flap gates, improving fish access. The pump station could be replaced to improve fish access, but this may not be efficient use of resources.	S/P	11.4	Satisfactorily addressed for the purpose of the EA
153.	Opportunities to improve vegetation management and function of riparian vegetation along the railway are limited and unlikely to be successful. Suggest other suitable habitat compensation proposals be developed instead. *(DFO)*	Comment noted. A variety of other compensation opportunities has been identified and are being developed for review.	P	11.4	Satisfactorily addressed for the purpose of the EA
154.	Waterways used for the transportation and rearing and spawning of fish are under the management of the local government as they form part of the Surrey drainage network. Stormwater impacts and coordination with local needs are not being addressed until later in the design process. All impacts to fisheries cannot be identified if these are not addressed at this planning stage. *(City of Surrey)*	A draft stormwater and drainage plan has been provided to reviewing agencies during the EA review. It should also be noted that it is the MoT's intention to continue to work with local governments throughout the corridor to ensure that the approach to the management of stormwater and drainage is complementary to the approach taken by the local governments.	C	4.1 4.4 5.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
155.	**HYDROGEOLOGY**				
156.	Specify detection limits for all water quality parameters and provide information on Quality Assurance/Quality Control results for groundwater sample collection. How was the quality of baseline water quality data assessed? *(Environment Canada - ESB)*	Detection limits will be added to groundwater chemistry tables (Appendix X of Hydrogeology Impact Assessment report). The results of the QA/QC program for sample collection, including an assessment of field duplicates, travel blanks and equipment blanks, are presented in Appendix XI of Hydrogeology Impact Assessment report (technical Volume 10). Tables XI-1 to XI-4 (missing from Technical Volume 10) have been forwarded to EC. The quality of baseline water quality was assessed relative to CSR standards for drinking water, freshwater aquatic life, irrigation and livestock. Major cation chemistry was characterized using cation ternary diagrams.	S	12.1	Satisfactorily addressed for the purpose of the EA
157.	Page iv –What mitigation measures could be implemented to prevent "high risk" spills from vehicle accidents from occurring in the first place? The issue of spill prevention is an important aspect of the construction phase of the SFPR but also has relevance to operational phase of SFPR. *(Environment Canada - ESB)*	During the construction phase, the MOT will have a Hazardous Waste Management and Spill Plan in place to avoid spills of hazardous wastes and materials (EA Application, section 11.3.3, and ppg. 528 – 529). In the event of such an eventuality during construction, the MoT requires its contractors to have a contingency plan in place, Emergency Response Plan (EA Application, section 11 .3.11, ppg. 533 – 534). The Emergency Response Plan will minimize the impacts on the environment of unplanned accidents or spills that are not addressed by mitigation for more likely events. During operation the standard MoT environmental management plan for highways and the Provincial Emergency Plan are the measures by which impacts to the environment from spills will be prevented. Transportation of dangerous goods regulations are designed to limit spills of high risk cargoes in the event of a vehicle accident.	C/S	1.7 3.1 3.2	Satisfactorily addressed for the purpose of the EA
158.	There is little information about the level of risk to specific receptors from "high risk spills. E.g. aquatic habitat or water supply wells within 150m of alignment. There is little information on specific mitigation for these specific receptors, where necessary. *(Environment Canada - ESB)*	With respect to water wells, six active wells have been identified within 150 m of the alignment. In the event of a spill, the potential for remediation of the groundwater supply would depend on the nature and scale of the release.	C/S	3.1 12.3	Satisfactorily addressed for the purpose of the EA

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159.	**HYDROGEOLOGY**				
160.	Page 62 – The assessment planned roadway construction on the Fraser Heights wetland (area 4 – raised roadway supported by driven piles) does not appear to evaluate potential localized densification of saturated zone sediments from pile driving. Supporting analysis of the number of piles for the given area and potential for lowered hydraulic conductivity of saturated sediment would be useful as to support the assumptions being made here. Pile-driving could result in a local change to the local hydraulic conductivity depending on the number of piles over a given area. *(Environment Canada - ESB)*	It is anticipated that pile driving will cause a reduction in hydraulic conductivity of saturated sediments in some areas and enhance the hydraulic conductivity in other areas (for example, opening up pathways in the cartel/fibrous peat layer), resulting in little net change in hydraulic conductivity adjacent to the piles. The effect of the piles on the overall hydraulic conductivity can be assessed during the design phase of the project once the number and the configuration of the piles over a given area are defined.	C/S	1.5 10.1	Satisfactorily addressed for the purpose of the EA
161.	Page 50 – Indicates a Water Level Monitoring Program will be conducted to determine seasonal effects on water table elevations and potential consequences to water balance assessments for the project area. No indication this work is underway or how the results will be reported. EA appears incomplete in this regard. *(Environment Canada - ESB)*	Continuous water-level monitoring has been carried out using dedicated pressure transducers at 18 monitoring well locations in Burns Bog since February, 2006. Interim results were presented to the Burns Bog Scientific Advisory Panel and a report on the results of the first year of monitoring will be prepared at the end of the fiscal year (2006/2007). The requirement for a monitoring program focussed on confirming EA predictions and ensuring mitigation (related to bog hydrology) is effective has been integrated into the EA documentation.	C/S	15.3	Satisfactorily addressed for the purpose of the EA
162.	King Road / 116 Street - area of significant groundwater seepage and slides have occurred in this reach over the years. Local stability issues in the design of new local roads and the SFPR in existing sloped areas should be highlighted and addressed. *(City of Surrey)*	The MoT has conducted geotechnical investigations which confirm that the SFPR can be built to appropriate seismic and road design standards. MoT will conduct more detailed examination of geotechnical issues as designs in these areas are advanced. In conjunction with this, the SFPR alignment has been repositioned slightly north to minimize the intrusion into this escarpment area, reduce disturbance to the local community, and greatly reduce disruption / changes to the existing local road pattern.	C	1.5 4.1 4.4	Satisfactorily addressed for the purpose of the EA
163.	Disposal of land clearing debris should be handled primarily by recycling or chipping or non-burning methods. *(EP, MOE)*	This issue was discussed at the Feb 28 meeting with the MOE.	P	7.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
164.	**HYDROGEOLOGY**				
165.	During all phases of project, recommend that all waste disposal options are applied, and that tender process consider environmental appropriate vs. economically driven alternatives to waste disposal. MoT must prohibit open burning by contractors. *(EP, MOE)*	Noted. Contractors for the MoT will be required to adhere to the MoT's standard specifications for highway construction, which include guidelines for the disposal of waste.	C	1.4 7.4	Satisfactorily addressed for the purpose of the EA
166.	**STORMWATER MANAGEMENT**				
167.	Section references guidelines and BMP's but does not state any quantitative performance objectives for reducing volume, maintaining quality or limiting rate of runoff. Without performance objectives and general plan delivery of mitigation measures, it is challenging to determine if there is a significant adverse residual effect (or cumulative effect) on habitat and water quality of receiving watercourses. *(DFO)*	MoT has submitted a draft stormwater and drainage plan for the project (5 March 2007) that will guide the development of stormwater and drainage infrastructure during future design stages. MoT is committed to working with DFO to determine what additional steps can be taken in order to ensure that the mitigation measures outlined in the stormwater and drainage plan are effectively integrated into the design and operation of the SFPR project. Further information on the performance measures associated with stormwater and drainage mitigation has been sent to review agencies in early April to address further DFO comments on sensitivity of waterbodies to flow and temperature changes.	C/S	5.1	Satisfactorily addressed for the purpose of the EA
168.	Aquatic Habitat Impacts (page 506) –does not consider the potential effect of stormwater runoff which can degrade habitat quality or water quality in receiving watercourses. Consideration of residual effects on habitat quality from stormwater runoff is necessary for determination of significance of cumulative effects on aquatic habitat. Section 4.2.2.1 does not propose any quantitative performance objectives or describe a strategy or plan to mitigation to adequately prevent degradation of aquatic habitat, so determination (of no residual effects) cannot be made with confidence or certainty. *(DFO)*	A stormwater and drainage plan has been developed and submitted to the working group for review. The intent of the plan, which includes a design concept for stormwater and drainage infrastructure associated with SFPR, is to achieve performance objectives that would avoid adverse impacts. As a result no assessment in the cumulative effects assessment is considered necessary. Further information on the performance measures associated with stormwater and drainage mitigation has been sent to review agencies in early April to address further DFO comments on sensitivity of waterbodies to flow and temperature changes.	C/S	5.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
169.	**STORMWATER MANAGEMENT**				
170.	To make a determination regarding the significance of effects on aquatic habitat from stormwater runoff, DFO requests MoT: • Estimate magnitude and extent of anticipated effects on aquatic habitat from creation/use of new impervious surfaces and consider changes in runoff volume, changes in magnitude and frequency of high flows, changes in base flows, and changes in water quality. • Determine BMPs that will most effectively address the anticipated impacts and performance objectives that must be achieved in order to adequately mitigate impacts on aquatic habitats in the receiving watercourses. • Assess the residual effects of stormwater runoff from the project on aquatic habitat in the receiving watercourses after technically feasible mitigation measures. If residual effects are anticipated then assess potential for cumulative effects. *(DFO)*	Additional work, including more detail with respect to stormwater and drainage infrastructure has been provided to reviewing agencies during the Application review (5 March 2007). MoT is committed to working with local governments throughout the corridor to ensure that the approach to the management of stormwater and drainage is complementary to the approach taken by relevant local governments. The development of stormwater and drainage infrastructure in southwest Delta will build upon information from a sub-area Master Drainage Plan that is being developed in collaboration with the Corporation of Delta and the Delta Farmers' Institute. This study is being undertaken to guide the design and construction of alterations to the existing drainage infrastructure due to the SFPR, so that the future drainage system meets the needs of the various user groups (i.e., agriculture, residential/commercial development, fisheries, etc). MoT commits to consulting with DFO in the development of the final Stormwater Management Plan(s), performance targets and project designs.	C/S	5.2	Satisfactorily addressed for the purpose of the EA
171.	MoT states that an assessment of stormwater management will be undertaken during the preliminary/detailed design stage because details on stormwater management have not been developed. Without more detailed information and assessment of potential stormwater effects, DFO will find it difficult to determine whether there are likely to be significant adverse effects (or cumulate effects) on fish habitat. *(DFO)*	Additional work, including more design detail with respect to stormwater and drainage infrastructure is underway, and will be provided to reviewing agencies during the Application review. This information builds upon the general direction provided in the Application with respect to the management of stormwater to achieve both water quality and flow objectives in watercourses adjacent to the SFPR. MOT is committed to working with local governments throughout the corridor to ensure that the approach to the management of stormwater and drainage is complementary to the approach taken by relevant local governments. MoT commits to consulting with DFO in the development of the final Stormwater Management Plan(s), performance targets and project designs.	C/S	5.1 5.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
172.	**STORMWATER MANAGEMENT**				
173.	MoT states that an assessment of stormwater management will be undertaken during the preliminary/detailed design stage because details on stormwater management have not been developed. Without more detailed information and assessment of potential stormwater effects, DFO will find it difficult to determine whether there are likely to be significant adverse effects (or cumulate effects) on fish habitat. *(DFO)*	Additional work, including more design detail with respect to stormwater and drainage infrastructure is underway, and will be provided to reviewing agencies during the Application review. This information builds upon the general direction provided in the Application with respect to the management of stormwater to achieve both water quality and flow objectives in watercourses adjacent to the SFPR. MOT is committed to working with local governments throughout the corridor to ensure that the approach to the management of stormwater and drainage is complementary to the approach taken by relevant local governments. MoT commits to consulting with DFO in the development of the final Stormwater Management Plan(s), performance targets and project designs.	C/S	5.1	Satisfactorily addressed for the purpose of the EA
174.	Insufficient detail on the proposed stormwater management of the site to assess whether the design will prevent the potential adverse effects of the stormwater runoff on the receiving aquatic environment. Develop detailed stormwater management plan that evaluates how the proposed design will perform with regards to water quality improvement and includes • outline of the selected Best Management Practices (BMPs) that will address the increased volume of surface runoff and rationale for choice of BMPs • the expected removal efficiencies of the proposed BMPs with reference to technical literature, such as research programs and cases studies, and why the proposed BMPs, their design and placement, will be appropriate to address water quality concerns from SFPR • outline maintenance plan for the proposed BMPs, including the activities and timing that will	Additional work, including a draft stormwater and drainage plan for SFPR has been submitted (5 March 2007) to reviewing agencies during the Application review period. This information builds upon the general direction provided in the Application with respect to the management of stormwater in order to achieve both water quality and flow objectives in watercourses adjacent to the SFPR. Further information on the performance measures associated with stormwater and drainage mitigation is due to be sent to review agencies in early April. This will complete the design considerations available to reviewers, further design information will not be available until detailed design, but this detail will be available for inclusion in the environmental management plans. The EA Application currently contains general outlines for various environmental management plans (EMP) that the MoT is committed to developing to support construction of the SFPR. As per your request, we have provided the MOT environmental best practices and guidelines referenced in the Application that will be used in the development of EMPs. The MOT will discuss the scope of such EMPs,	C/S	1.7 5.1 5.2	Satisfactorily addressed for the purpose of the EA

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	maintain the removal efficiencies, with reference to technical literature and case studies that document effective maintenance practices, and assign maintenance activities to a responsible party. *(EC- ESB)*	including monitoring requirements, during the Application review phase. It is MOT's intention that EMPs, including monitoring programs, for the project would be finalized after project certification, as part of obtaining federal and provincial permits and approvals. In this context, federal reviewing agencies such as EC would receive more detailed EMPs, for review and acceptance, after final project design is complete, prior to start of construction.			
175.	Stormwater management plan should address pollution associated with vehicle traffic. *(Environment Canada - ESB)*	The stormwater and drainage design, submitted to the working group for review, has been designed to treat contaminants associated with road runoff.. EC in discussion with MoT on the status of the EMPs for stormwater management. Further information on the performance measures associated with stormwater and drainage mitigation is due to be sent to review agencies in early April. This will complete the design considerations available to reviewers, further design information will not be available until detailed design, but this detail will be available for inclusion in the environmental management plans. EAO Note: MoT 's Stormwater Management Plan (sections 4.2 and 4.3) indicate that stormwater issues have been identified and strategies to address impacts have been documented.	C	5.1	Satisfactorily addressed for the purpose of the EA
176.	Stormwater management plan should be developed in conjunction with any municipal Integrated Stormwater Management Plan (ISMPs) that exist in the project area. *(Environment Canada - ESB)*	Additional work, including ongoing design with respect to stormwater and drainage infrastructure, is underway and will be provided to reviewing agencies during the Application review period. This information builds upon the general direction provided in the Application with respect to the management of stormwater in order to achieve both water quality and flow objectives in watercourses adjacent to the SFPR. MOT is committed to working with local governments throughout the corridor to ensure that the approach to the management of stormwater and drainage is complementary to, and consistent with, the approach taken by relevant local governments.	C/S	5.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
177.	**WATER QUALITY**				
178.	Characterization of existing surface water quality conditions is considered to be inadequate. EC supports the pre-construction water sampling proposal. *(Environment Canada - ESB)*	As mentioned in the Application, additional pre-construction water sampling is proposed closer to the start of construction, and this work has begun (Spring 2007). A detailed water quality monitoring program, based on the methodology outlined in Technical Volume 11, is a MoT commitment, and is to be developed and implemented during construction. MOT will be collecting additional baseline water quality data during the winter of 2007, low flow (summer) and first flush (fall) to augment existing data and establish baseline water quality.	S	12.2	Satisfactorily addressed for the purpose of the EA
179.	Clarify the linkages between the existing water quality conditions, potential project impacts on water resources, and measures to minimize potential impacts. *(Environment Canada - ESB)*	A water quality management plan, including a program for monitoring water quality conditions during construction, will be developed prior to the start of construction and will be available for review and comment by environmental agencies including, but not limited to, EC, DFO, and MoE. The monitoring program will include thresholds, which if exceeded, will trigger additional mitigation and corrective measures for addressing potential impacts to water quality. The plan will identify roles and responsibilities of MoT, and contractors, with respect to implementation of the water quality management plan. The mitigation measures identified in the plan will be those used effectively on other similar projects, to avoid or mitigate potential impacts to water quality. Prior to construction, MoT will be completing the collection of baseline water quality throughout the project corridor to facilitate the development and implementation of the water quality management plan.	S	1.5 1.6 1.7 12.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
180.	**WATER QUALITY**				
181.	There were several options available to address water quality data gaps associated with this project and it is unclear why these were not investigated. Existence of constraints does not preclude a reasonable effort to address information gaps. It is reasonable to conclude that water quality in the SFPR study area is event driven, highly variable, and poorly predictable. However, some level of supporting data/information/reasoning is expected. Options to address water quality information gaps could have been explored as there was sufficient time (2+ years) between the initial water quality sampling and the final SFPR Application submission. *(Environment Canada - ESB)*	Reasonable efforts to fill in data gaps were made by gathering and reviewing existing data; however, those data were determined not to be reliable or site-specific. The report does recommend additional sampling be conducted prior to construction and MOT is committed to undertake such sampling and has indicated as such to environmental reviewing agencies. MoT has committed to conducting additional sampling in 2007, and to the development and implementation of a water quality monitoring program during construction. EC supports MoT's intention to undertake pre-construction water quality monitoring in 2007.	S/P	1.7 12.1 12.2	Satisfactorily addressed for the purpose of the EA
182.	EC supports the development of a detailed water quality monitoring plan to be implemented during SFPR construction activities. *(Environment Canada - ESB)*	Noted.	P/S	1.7 2.2 12.1 12.2	Satisfactorily addressed for the purpose of the EA
183.	Recommend MoT develop site-specific strategies to meet objectives of the Environmental Monitoring Plan and relevant sub-plans and ensure deleterious substances are prevented from entering surface waters. *(Environment Canada - ESB)*	As part of environmental permitting, MOT will develop and implement site specific measures for avoiding potential effects on water quality as well as emergency and spill response plans to address accidents and malfunctions that could result in impacts to water quality.	S	1.7 12.1 12.2 12.4 11.6	Satisfactorily addressed for the purpose of the EA
184.	"Background water quality in much of the study area is event-driven and therefore highly variable". Statement is unsupported by data or report reference. *(Environment Canada – ESB)*	This statement is made based upon the professional judgement of the study team which has extensive operational experience in the watercourses of this area. However, the ultimate characterization of baseline water quality conditions will be supported by the collection of data in the field.	S	1.7 12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
185.	**WATER QUALITY**				
186.	Statement, "disruptive yet highly transient events have a substantial probability of being missed in a sampling program. Highly transient events would include spills, illegal discharges, etc and these are unpredictable. In highly urbanized watershed like the SFPR study area, the most frequent disruptive events typically occur in response to precipitation events and the resultant stormwater runoff. Precipitation events are moderately predictable and a well-designed water quality sampling program could capture these precipitation-related water quality events. *(Environment Canada - ESB)*	From a biological point of view and in an urbanized area, the study team is of the opinion that sample collection timed to rainfall would capture the bulk of ecologically disruptive events. Please see for example the temperature chart for Riverview Creek (below). There was no rainfall during that monitoring period and despite suitable habitat, the creek was devoid of fish. A well-designed water quality sampling program based on precipitation events would have missed this issue and other such spill-events entirely. Clarification from EC is required as to how such data would be used in the EA for this project.	S	12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA
187.	Water sampling associated with this assessment took place in March 2004 and this report was finalized in September 2006. Had seasonal water sampling occurred within this 18-month period, water quality data could have been collected for summer/fall 2004, winter/spring/summer/fall 2005 and winter/spring 2006 to give an additional eight data sets for characterizing water quality conditions in the SFPR study area. *(Environment Canada - ESB)*	The MoT is committed to conducting additional pre-construction water quality sampling.	S	12.1 12.2	Satisfactorily addressed for the purpose of the EA
188.	Limitations of taking only one sample per site at only one time of year. Gateway acknowledges this and proposes additional baseline monitoring. This additional monitoring should be quantified *(Corporation of Delta)*	Original scope of work for water quality was not intended to be an impact assessment, but rather a summary of existing data supplemented by a one-time sampling event in the vicinity of the SFPR alignment (i.e., a data report). Establishing an impact on water quality along the alignment and associated with the proposed upgrades would be difficult given the degree of urbanization and anthropogenic inputs already in the area. The strategy for water quality is to minimize impacts during construction by implementing an intensive water quality monitoring program that would guide the implementation of specific mitigation measures for avoiding impacts to water quality.	S	12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
189.	**WATER QUALITY**				
190.	EC supports recommendation of water quality sampling during SFPR construction activities. A detailed water quality monitoring plan should be developed as part of the Surface Water Quality and Sediment Control Plan and reviewed with construction contractors, sub-contractors, etc. *(EC - ESB)*	MOT is committed to developing such a plan after final design is complete and site specific construction plans have been developed. A quality monitoring program is currently being developed to support pre-loading work scheduled in late 2007.	C/S	12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA
191.	Site runoff quality, most notably turbidity, should be monitored and management actions for site runoff quality established to reduce the potential for water quality criterion exceedances in the receiving environment and ensure deleterious substances not released to fish bearing waters during construction. *(EC - ESB)*	MOT is committed to the development and implementation of a water quality management plan which achieves the objectives noted. The water quality monitoring program will monitor a number of parameters, including turbidity, and will include thresholds for taking corrective measures where thresholds are exceeded.	S	1.7 12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA
192.	Overall approach for managing potential water quality impacts should also be to influence the design (i.e. to avoid impacts rather than to treat poor water quality). Adaptive management implies ongoing monitoring activities are directly linked to decision making so that should trends become identifiable, action is taken to change the trend. *(EP, MOE)*	Agreed. This approach is consistent with statutory expectations and recommendations contained in Technical Volumes 11 (Page 20, 2nd paragraph) which recommends avoidance at the outset through adherence to BMPs, proper housekeeping. Monitoring during construction is also recommended to verify the performance and adequacy of these measures.	C	12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
193.	**WATER QUALITY**				
194.	Sampling sites were selected due to the site's importance to fisheries. What are the water quality values specific to "these" sites vs. other sites? What are the sensitivities re fisheries resources vs. other sites? How can impacts be avoided at the fisheries sensitive locations or, if necessary, mitigated? *(EP, MOE)*	As identified in Technical Volume 11, there are requirements to control water quality impacts at the outset. The relaxation of BMPs etc. where fisheries values might be low(er) is not advocated. Therefore, the requirement to control project-related water quality impacts is independent of fisheries values. However, in the area of Burns Bog where water chemistry is the result (and part of) the "unique" bog environment, extra stringency, potentially beyond generally available BMPs, as appropriate has been recommended. Generic BMPs would allow a discharge pH of 6.5 to 9.0. While this would be acceptable for most of the project area, pH control should be narrower in the Burns Bog area. Such control is readily attainable if planned for, through the use of gaseous CO2 for treatment if needed and through the application of proper containment, truck/equipment washout, sealing of forms etc. when working with concrete.	C	11.1 11.6 12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA
195.	The environmental monitor assigned to monitor water quality impacts during construction does not appear to have any authority to take actions to cease or immediately mitigate any negative impacts to water quality or to other environmental values. There is a lack of comfort with this. Point 3 in this section refers to the findings from the monitoring but, there is limited assurance that the feedback will be acted upon. *(EP, MOE)*	A water quality management plan (Sediment and Erosion Control Plan), including a program for monitoring water quality conditions during construction, will be developed prior to the start of construction and will be available for review and comment by environmental agencies including, but not limited to, EC, DFO, and MoE. The monitoring program will include thresholds, which if exceeded, will trigger additional mitigation and corrective measures for addressing potential impacts to water quality. The plan will identify roles and responsibilities of MoT, and contractors, with respect to implementation of the water quality management plan.	C	1.5 1.7 2.1 2.2 2.3 2.5 12.1 12.2 12.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
196.	**WILDLIFE AND VEGETATION**				
197.	Discussion of SARA species is limited to noting their possible presence. Is anything being proposed to minimize impacts on these species? *(CEAA)*	The likely presence of species protected by SARA was noted, and the potential for impacts on them was discussed in the "bird and mammal species at risk" subsections in the impact assessment sections for each of the four segments of the SFPR (EA Application, section 7.7.5.7, ppg. 352 – 357). Where there are likely impacts on these species (barn owl, pacific water shrew, red-legged frog, peregrine falcon, great blue heron and western screech owl), mitigation is presented (EA Application, section 7.7.6, ppg. 357 – 366). This includes measures to avoid impacts (Great blue heron nesting on the Fraser River near Tilbury Slough, and measures to minimize effects (barriers to prevent collisions with barn owl, surveys to avoid peregrine falcon and screech owl nest impacts, tree clearing windows to reduce effects on breeding birds, survey and relocation for red-legged frog, minimizing clearance in locations critical for certain species, and wildlife passage for Pacific water shrew at the Delta Ravines and Fraser Heights wetland).	S/C	13.1 13.5 13.6 13.7 13.8 13.9 14.1 14.2 14.5 14.6 14.8	Satisfactorily addressed for the purpose of the EA
198.	Page 343 - Geographic scope only delineates segments of the alignment; does not specify widths. *(CEAA)*	The study area for the vegetation and wildlife assessment is 500 m either side of the alignment west of Nordel Interchange and 250 m either side of the alignment east of the Nordel Interchange. This is described in the methods (EA Application, section 7.7.2, pg. 321) for the vegetation and wildlife assessment. The area used for the assessment of footprint impacts on vegetation and wildlife habitats is the toe-of-slope shown in the Technical Volume 1 plans, plus a 5 m buffer (on both sides) to account for a construction zone.	S/C	1.5 13.1	Satisfactorily addressed for the purpose of the EA
199.	Discussion is very general and does not give numeric values that can be used to assess impacts. For example, "Actions which result in the destruction or permanent alternation of habitats would cause high impacts…" *(CEAA)*	This section, entitled "General Impacts on Wildlife", explains how construction and or operation of the SFPR might impact wildlife; and it is a precursor to more detailed discussions on what the potential impacts are on each wildlife VEC, in each of the 4 sections of the SFPR alignment (section 7.7.5.7, pg.352). Reference to this latter section will provide the detail sought in the comment.	S/C	1.5 13.1	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
200.	**WILDLIFE AND VEGETATION**				
201.	Specific details on magnitude of impacts on Pacific Water Shrew habitat are lacking. Provide a detailed analysis of habitat suitability mapping following a revision of the habitat mapping, and potential road-related impacts. Preliminary habitat suitability maps indicate much of the High suitability habitats for the shrew are within the footprint of the road. *(EC – CWS)*	Habitat mapping for this species has been revised and submitted to the EAO ("Distribution of the Pacific water shrew (Mar 2007") mapping supplied via the MoT ftp site). This includes further details on the magnitude of spatial impacts to Pacific water shrew. The magnitude of road-related mortalities to this species is speculative, and will be mitigated by crossing structures whose specifications has been described in the mitigation crossing plan (April 2007).	C/S	1.7 13.2 13.5 14.1 14.2	Satisfactorily addressed for the purpose of the EA
202.	Mapping of modelled Pacific water shrew habitat appears to have been conducted at a scale too coarse to capture all potential habitats. Comparison of the wildlife resource mapping in Volume 12 against the shrew suitability mapping suggests that some habitats may have been incorrectly classified, resulting in an underestimate of potential impact. Buffer areas around suitable habitats need to be considered in the assessment of impacts. *(Environmental Stewardship Division, MOE)*	Habitat mapping for this species has been revised and submitted for submission to the EAO ("Distribution of the Pacific water shrew (Mar 2007"). Buffers have been identified as a mitigation measure for this species in Table 7-1 of Volume 12.	S/C	13.2 13.5 14.1 14.2	Satisfactorily addressed for the purpose of the EA
203.	Avoidance/mitigation measures for areas identified as suitable Pacific water shrew habitat must be outlined once the habitat model has been conducted at a suitable scale. Further, a comprehensive review of all crossing structures being used to mitigate habitat fragmentation, conserve habitat, and facilitate wildlife passage, especially in areas with low, medium or high capacity PSW habitats, is required to ensure that the needs of the shrew are addressed. *(ESD, MOE)*	Avoidance/mitigation measures for impacts to this species have been identified in Table 7-1 (Volume 12). They involve salvage during construction in footprint areas where they might occur, and various measures including the establishment of buffers. The Mitigation Crossing Plan (April 2007), revised Pacific water shrew mapping provided to MoE (April 2007) and the Zone of Influence memo (August 2007) provides information to address this comment.	C	1.7 13.1 13.2 13.5 14.1 14.2	Satisfactorily addressed for the purpose of the EA
204.	Similar assessment to that requested for Pacific Water shrew needs to be provided for the Southern Red-backed Vole. *(Environment Canada – CWS)*	Habitat mapping for this species has been revised and submitted to the EAO ("Distribution of the red-backed vole" (Mar 2007) mapping supplied via the MoT ftp site) (May 2007). In addition to impacts summarized in Table 7-1 (Volume 12) the discussion of mitigation has been expanded in the Mitigation Crossing Plan (April 2007).	C	1.7 13.1 13.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
205.	**WILDLIFE AND VEGETATION**				
206.	Need to provide more specific details on the magnitude of potential impacts on Southern Red-backed Vole and Pacific Water shrew. *(Environment Canada – CWS)*	An expanded discussion of impacts to these species has been provided in supplemental submissions primarily directed to mitigation (Mitigation Crossing Plan (April 2007)) and indirect impacts (Zone of Influence (August 2007)).	C	1.7 2.3 13.2	Satisfactorily addressed for the purpose of the EA
207.	Page 515 - What structures are proposed to prevent bisecting habitat in the vicinity of Delta Ravines and Fraser Heights Wetlands? Is this a commitment? *(CEAA)*	The MOT is committed to bridges in these areas to prevent these habitats being bisected and to allow continued wildlife movement (EA Application, section 7.7.6.1). MoT has included this commitment in the revised Table of Commitments.	C/S	11.7	Satisfactorily addressed for the purpose of the EA
208.	Recommend development of draft Wildlife Habitat Compensation Plan for review by environmental agencies and interested participants to compensate for impacts to species and/or their associated habitats. *(Environment Canada – CWS)*	A draft habitat compensation plan, to address residual impacts to wildlife and vegetation values from SFPR has been submitted to facilitate discussion on identifying effective compensation mechanisms (February 2007). The habitat compensation plan includes proposals to address residual effects to a range of habitat values including: agricultural fields, bog habitat adjacent to Burns Bog, riparian and upland forests and wetlands. EAO Note: Issue resolved as one of action items from Working Group meeting; see meeting minutes for June 19/07 Working Group meeting.	C/S	13.4 13.5	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
209.	**WILDLIFE AND VEGETATION**				
210.	Monitoring could be incorporated as part of a potential Wildlife Habitat Compensation Plan and might include science-based surveys to assess potential long-term project effects and adaptive management-based mitigation based on monitoring results. Monitoring programs expected to consider Barn Owl – mortality; Other listed species – habitat fragmentation, reduced connectivity; Sandhill Crane – sensory disturbance; Waterbirds – sensory disturbance; Breeding birds including raptors – sensory disturbance, habitat fragmentation; Wildlife movement – connectivity; and Effectiveness of Habitat Compensation Programs under the Plan. All species other than migratory birds and fish are provincial responsibility. *(EC – CWS)*	The MoT is committed to working with review agencies to develop an appropriate and effective wildlife and vegetation monitoring program to monitor potential Project-related effects during construction, as well as for some period of time, once the SFPR is operating. A draft of the wildlife and vegetation monitoring program will be submitted, for review by the CWS, during the Application review. The MoT is supportive of monitoring linked to follow-up actions which would use information from monitoring to guide or refine the application of mitigation to address impacts to wildlife and vegetation values. The MoT and CWS have discussed the scope of this program and it has been developed to a draft during the Application review (Vegetation and Wildlife Mitigation Monitoring Strategy (April 30, 2007). EAO Note: MoT has provided a revised Wildlife Habitat Compensation Plan and monitoring plans for Working Group review. Within the draft monitoring plan, MoT has defined objectives for monitoring. If monitoring programs indicate that additional mitigation is warranted, MoT has committed to undertaking additional mitigation measures to address impacts to animal and plant species and habitats / communities. MOE has indicated satisfaction with MOT proposed monitoring programs in a March 28/08 letter to EC in response to EC's March 3/08 letter on concerns for Pacific water shrew.	C/S	1.5 13.5 14.5 14.6 14.8	Satisfactorily addressed for the purpose of the EA
211.	Significant detail on proposed monitoring programs and mitigation-adaptive management approach needs to be provided. *(Environment Canada – CWS)*	MoT has submitted a draft wildlife and vegetation monitoring program, for review by CWS and other reviewing agencies. The draft document will include details on proposed monitoring activities and thresholds for action where proposed is determined to not be effective in mitigating project related effects.	C/S	1.5 13.5	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
212.	**WILDLIFE AND VEGETATION**				
213.	Residual impacts related to direct habitat loss have been described and quantified but further evaluation needed to determine any additional mitigation or compensation efforts. *(Environment Canada – CWS)*	The MoT has submitted updated mapping and analysis to further evaluate the likelihood of residual impacts. Further to this, the MoT has submitted a wildlife mitigation plan, and has submitted a draft habitat compensation plan(February 2007).	C/S	1.5 13.2 13.3 13.4 13.5	Satisfactorily addressed for the purpose of the EA
214.	A number of the issues raised during the pre-application phase have not been resolved or are inadequately addressed in the Final Report. *(Environment Canada – CWS)*	MOT has submitted additional information to support the review of the Project including: ▪ Refined habitat mapping; ▪ Zone of influence assessment; and ▪ Habitat compensation plan. Additional information to be provided includes monitoring and mitigation plans based on the principle of adaptive management.	C/S	1.5 13.1 13.2 13.3 13.4 13.5	Satisfactorily addressed for the purpose of the EA
215.	Mapping is too coarse a resolution to assess to a level of accuracy CWS believe is necessary to clearly elucidate direct and indirect project impacts on various ecological communities and likely underestimates direct impacts to wildlife habitats within study area. CWS requires a higher resolution habitat mapping that takes into account smaller vegetated polygons; map scale used in Technical Volume 1 would be suitable. Recommends Proponent discuss minimum polygon size with MOE and CWS prior to undertaking any map revisions. *(Environment Canada – CWS)*	The mapping has been revised and presented to the CWS during the EA Application review period.	C/S	13.1 13.2 13.3 13.5	Satisfactorily addressed for the purpose of the EA
216.	Project impacts on migratory birds that make use of habitats adjacent to the proposed alignment have not been addressed. These indirect impacts, usually associated with sensory disturbance, should be evaluated for the purpose of the assessment. Vegetated areas may be intact but their value as wildlife habitat may be lost. *(CWS / Agency)*	The need for an assessment of disturbance or "zone of influence" effects on migratory birds and other VECs is recognized, and MoT has submitted (1 March 2007) the assessment to the CWS and other reviewing agencies on the Working Group.	C/S	1.5 13.1 13.2 13.3	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
217.	**WILDLIFE AND VEGETATION**				
218.	Insufficient review of relevant scientific literature, particularly literature related to road-related impacts on migratory birds to conduct sufficient analysis of likely indirect impacts on migratory birds and associated habitats, and to develop appropriate mitigation and compensation options, and monitoring programs. Also there is an increasing body of literature on the barrier effects of roads on many wildlife species, particularly small mammals and amphibians. *(Environment Canada – CWS)*	An expanded literature review is part of the "zone of influence" submission described above. EAO Note: MoT provided a revised Zones of Influence Report in August 2007. The revised report includes additional literature review to determine key findings related to the impact of roads on VECs.	C/S	13.1 13.2 13.3 13.5	Satisfactorily addressed for the purpose of the EA
219.	Lack detailed information on species and habitat mitigation, compensation, and follow-up monitoring for: • Amphibians and reptiles (large ditches and canals at north end of Burns Bog); • Bird habitats (between 80th Street and Alex Fraser Bridge impacts to water-associated birds expected to be High (not Low). Crescent Slough used by high numbers of waterfowl at different times of the year); • Water-associated birds – no indication of potential operational impacts to habitats close of Fraser River; • Habitat disturbance and fragmentation to mammals (Alex Fraser Bridge to Pattullo Bridge); • Western Screech Owl (Alex Fraser Bridge to Pattullo Bridge) • Butterflies; • Raptors; • Sandhill Crane; • Pacific Water Shrew; • /Southern Red-backed Vole *(Environment Canada – CWS*	A wildlife mitigation plan, identifying measures for wildlife crossing, will be submitted as part of the Application review. A revised zone of influence assessment will be submitted to CWS (1 March 2007) also identifies mitigation measures for specific species. In addition, a habitat compensation plan has been submitted (February 2007) to address residual effects not addressed by proposed mitigation. EAO Note: MoT provided a Habitat Compensation Plan (Feb/07), Vegetation and Wildlife Mitigation Strategy (April 20/07), and Wildlife Crossing Mitigation Plan (April 26/07) to the Working Group. MoT also provided a MoT provided a revised Zones of Influence Report in August 2007. The revised report includes additional literature review to determine key findings related to the impact of roads on VECs.	C/S	1.5 1.7 13.2 13.3 13.10 13.12	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
220.	**WILDLIFE AND VEGETATION**				
221.	Overall impacts to sensitive ecological communities, particularly those associated with BB, have not been adequately assessed. Habitats along western end of BB are of very high value to numerous wildlife species including Sandhill Crane, Barn Owl, Pacific Water Shrew, Southern Red-backed Vole, Red-legged Frog and other native amphibians, Bald Eagle, and breeding and wintering birds. *(Environment Canada – CWS)*	The zone of influence assessment submitted to reviewing agencies (1 March 2007) provides additional information in this regard. EAO Note: MoE has the mandate for providing direction on the management of all wildlife including species-at-risk mammals and vegetation, except Sandhill crane. MoE has indicated satisfaction with MOT proposed mitigation measures with regard to the management of wildlife and plant and communities.	C/S	13.2 15.1 15.2 15.3	Satisfactorily addressed for the purpose of the EA
222.	Rural or urban designated areas contain habitats of moderate value to wildlife (e.g. blackberry-dominated areas). Overall impacts to ecologically viable habitats have been underestimated (especially north end of Burns Bog). *(Environment Canada – CWS)*	This habitat category (along with disturbed) has been reassessed. Revised mapping and a recalculation of valuable habitats has been prepared for regulators.	C/S	13.1	Satisfactorily addressed for the purpose of the EA
223.	Table 7.7-12 – Rural, urban and disturbed habitats in the table account for 137.66 ha of the 245.68 ha (or 56%) habitat expected to be directly affected by project. Ecologically viable habitats within these designations have not been accounted for. *(Environment Canada – CWS)*	This habitat category (along with disturbed) has been reassessed. Revised mapping and a recalculation of valuable habitats has been prepared for reviewing agencies.	C/S	13.1	Satisfactorily addressed for the purpose of the EA
224.	Mitigation options presented need to be in sufficient detail to allow determination of full extent of residual impacts. *(Environment Canada – CWS)*	Some of the detail requested is more appropriately described at the detail design stage and accompanied by a Project Mitigation Plan for the entire project or for a specific project segment. A mitigation plan that identifies measures for providing for wildlife to cross the corridor, where required, is currently being prepared and will be made available to the working group during the EA Application review period.	C/S	1.5 13.1 13.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
225.	**WILDLIFE AND VEGETATION**				
226.	Recommend nest survey program if and where project activities overlap with the migratory bird breeding season. Survey program should consider protocol, mitigation, and reporting procedures. Transects, nests, and sightings should be geo-referenced on a topographic map and submitted for review. (Environment Canada is not requiring that nest survey reports be vetted by the department as a condition of project approval.) *(Environment Canada – CWS)*	The MoT has committed to pre-construction nest surveys, and to restrict clearing during the breeding season as part of mitigation. MoT has included this commitment in the revised Table of Commitments.	C/S	13.10	Satisfactorily addressed for the purpose of the EA
227.	Improved mapping and associated habitat loss calculations, and losses contributed to sensory disturbance need to be taken into account before being able to determine overall what is needed in terms of mitigation and compensation. Review of habitat compensation related to fisheries should be also investigated to assess possible overlap and synergies. *(Environment Canada – CWS)*	Revised mapping and associated habitat loss calculations have been completed. The habitat enhancement/compensation benefits to wildlife from fisheries habitat compensation is being assessed and was reported on in the draft habitat compensation plan.	C/S	13.4 13.5	Satisfactorily addressed for the purpose of the EA
228.	Residual habitat losses should be compensated. An overriding principle is no-net loss of soil-based agricultural lands, upland forest, riparian habitats, and wetlands. Specific options for land acquisition within the Gateway project should be discussed with MOE and CWS. *(Environment Canada – CWS)*	A habitat compensation plan, to address residual impacts to wildlife and vegetation values as a result of the project has been developed. The plan builds on information supplied by working group members such as the CWS and the MoE, and others (Burns Bog Management Planning Committee and Scientific Advisory Panel), more detailed design for the SFPR, and more certainty over property available for mitigation. The plan will facilitate discussions with the MoE and other environmental regulatory agencies on the working group to identify effective compensation mechanisms. As currently proposed, the habitat compensation plan includes proposals to address residual effects to a range of habitat values including: agricultural fields, bog areas adjacent to Burn Bog, riparian and upland forests and wetlands.	C/S	13.4 13.5	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
229.	**WILDLIFE AND VEGETATION**				
230.	Specific details on habitat enhancement and restoration options associated with Gateway project need to be provided. *(Environment Canada – CWS)*	A habitat compensation plan, to address residual impacts to wildlife and vegetation values as a result of the project has been submitted to CWS. The plan builds on information supplied by working group members such as the CWS and the MoE, and others (Burns Bog Management Planning Committee and Scientific Advisory Panel), more detailed design for the SFPR, and more certainty over property available for mitigation. EAO Note: Issue addressed in MoT's Zones of Influence Report.	C/S	13.1 13.2 13.3 13.4 13.5	Satisfactorily addressed for the purpose of the EA
231.	Specific details on habitat enhancement and restoration options associated with Gateway project need to be provided. *(Environment Canada – CWS)*	A habitat compensation plan, to address residual impacts to wildlife and vegetation values as a result of the project has been submitted to CWS. The plan builds on information supplied by working group members such as the CWS and the MoE, and others (Burns Bog Management Planning Committee and Scientific Advisory Panel), more detailed design for the SFPR, and more certainty over property available for mitigation.	C/S	13.1 13.2 13.3 13.4 13.5	Satisfactorily addressed for the purpose of the EA
232.	Where loss of habitat function cannot be directly compensated through project acquisition, consideration should be given to funding an established program such as the Greenfields program or the Pacific Estuary Conservation Program. More thorough investigation of funding options could be undertaken. *(Environment Canada – CWS)*	This approach was noted as a potential compensation measure (EA Application, section 7.7.8, pg. 371), and the MoT is committed to discussing this approach to compensation during the Application review period. EAO Note: Issue addressed in MoT's Habitat Compensation Plan.	C/S	13.4	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
233.	**WILDLIFE AND VEGETATION**				
234.	Several blue-listed plant species potentially found on the riparian and marshy tidal shore of the Fraser River may be present despite not having been located in the plant surveys. This includes but is not limited to: soft-leaved willow; flowering quillwort; large Canadian St. John's wort; small spike-rush; three-flowered waterwort; purple-leaved willowherb; and false-pimpernel. Assuming a meeting will be arranged between ESD, proponent, and EAO, ESD will work towards developing a complete list of all species for which further consideration is felt to be warranted. *(Environmental Stewardship Division, MOE)*	The MoT has provided a comprehensive list of plant species that were considered in determining the scope of the assessment of rare and endangered plants in the study area, to clarify the methodology used for the assessment. MOT is committed to undertaking site specific vegetation surveys in accordance with the regionally supported *Protocols for Rare Plant Surveys*, to identify the presence and distribution of red and blue listed plants species (including streambank lupine) prior to final design and construction. Information on the presence and distribution of such plants species will be provided to MOE for review and will be used to guide final design and construction so that impacts to these species can be avoided or mitigated for. The MOT is also committed to developing a plan for salvaging plant and seeds, for review by MOE, where impacts to red and blue listed plant species cannot be avoided (except for Streambank Lupine).	C	1.5 13.1 13.6 13.7	Satisfactorily addressed for the purpose of the EA
235.	Full extent of environmentally sensitive area (ESA) for the streambank lupine (SARA Schedule 1; provincial Red list) on north side of Gunderson Slough has not been determined. Not possible to adequately assess the potential impacts of proposed access improvements to the western portion of Fraser Surrey Docks and to Alaska Way. Streambank Lupine Recovery Team has not provided information requested by the proponent's consultant to allow delineation of the ESA, primarily due to uncertainties in the extent of the seed bank which is highly important to future recruitment in this population. ESD suggests proponent meet with Streambank Lupine Recovery Team. *(Environmental Stewardship Division, MOE)*	MoT to meet with SBL Recovery Team and consult for advice on development of final design and construction and a plan for salvaging plant sand seeds and note in MoT's Table of Commitments. EAO Note: Issue addressed as indicated by MoE following meeting with SBL Recovery Team.	C	13.1 13.8 13.9	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
236.	**WILDLIFE AND VEGETATION**				
237.	Further discussion is recommended to confirm additional information requirements to address concerns regarding the conclusions in the report that certain vegetation and wildlife species at risk are "unlikely" to be found within the project area. In several cases, the conclusions seem either inappropriate based on staff knowledge or inadequately justified (e.g. snowshoe hare). *(Environmental Stewardship Division, MOE)*	MOE provided information to MoT on six new records of snowshoe hare (*Washington*) sightings from north of the Fraser River. Assuming these records are valid, they will be used to update the project description of this species and be submitted prior to the end of this month.	C	13.1	Satisfactorily addressed for the purpose of the EA
238.	Concern about the report's suggestion that the diel approach direction of greater sandhill cranes to the fields west of the bog may not be from the bog as concluded in previous studies. Without further clarification of this movement, there is a risk that the effects of the project on the diel movement of the greater sandhill cranes will not be adequately assessed. ESD requests meeting to discuss further. *(Environmental Stewardship Division, MOE)*	The zone of influence assessment has been submitted and provides revised text on what is currently known about the movement of sandhill crane between the bog and adjacent farm fields to ensure that the assessment of potential effects to sandhill crane is based on the best available information and is as accurate as possible.	C	13.1 14.8	Satisfactorily addressed for the purpose of the EA
239.	There is very little estimation of specific responses of affected biota to the effects such as changes in relative abundance or alterations in species composition. *(Environmental Stewardship Division, MOE)*	An estimation of project related effects, such as changes in relative abundance of species or alterations in species composition, was addressed in the zone of influence or disturbance effects assessment that was undertaken in response to related comments from the Canadian Wildlife Service.	C	13.1 13.2 13.3	Satisfactorily addressed for the purpose of the EA
240.	There is little evaluation of specific changes to ecological functions within affected habitats. Further assessment should focus on habitats with ecological values known to be sensitive to roadway impacts such as edge effects and fragmentation. *(Environmental Stewardship Division, MOE)*	The MoT has developed a habitat compensation plan, to address residual impacts to wildlife and vegetation values as a result of the project. It will facilitate discussions with the MoE and other environmental regulatory agencies to identify and effective compensation mechanisms. As currently proposed, the habitat compensation plan includes proposals to address residual effects to a range of habitat values including: agricultural fields, bog areas adjacent to Burn Bog, riparian and upland forests and wetlands	C	13.1 13.2 13.3 13.5	Satisfactorily addressed for the purpose of the EA

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241.	**WILDLIFE AND VEGETATION**				
242.	Compensation strategy is outlined in the report but no details are provided to allow a determination of adequacy. Recommends a detailed wildlife compensation plan be developed with input from agencies. *(Environmental Stewardship Division, MOE)*	The MoT has developed a wildlife habitat compensation plan, to address residual impacts to wildlife and vegetation values as a result of the project. The draft will facilitate discussions with the MoE and other environmental regulatory agencies to identify effective compensation mechanisms. The plan proposes to address residual effects to range of habitat values including: agricultural fields adjacent to Burns Bog riparian and upland forests and wetlands. EAO Note: The Zone of Influence study has been revised (August 2007) and sent to the MoE, CWS, EAO and CEAA.	C	13.4	Satisfactorily addressed for the purpose of the EA
243.	ESD recommends that development of a detailed monitoring program commence without delay. *(Environmental Stewardship Division, MOE)*	MoT is developing monitoring and mitigation programs to monitor potential Project-related effects during construction and for some period of time after the SFPR is operating. This plan will be submitted to environmental agencies for review during the Application review. EAO Note: The Zone of Influence study has been revised (August 2007) and sent to the MoE, CWS, EAO and CEAA.	C	1.5 1.7 13.5	Satisfactorily addressed for the purpose of the EA
244.	Gateway to clarify impacts on wildlife movements between ravines in North Delta as a result of the development of SFPR. *(Corporation of Delta)*	Existing habitat for wildlife to move between the Delta Ravines was not identified by the MoT during field studies for the SFPR. The majority of the land between the ravines is currently occupied by residential housing and the railway right-of-way. There is no managed, dedicated corridor for wildlife in this area, and some of the slope is covered by blackberry. Since rail traffic is not heavy along that line and animals tend to use the easiest routes, it is expected that medium and larger-sized mammals use the railway line rather than the more densely vegetated slope - and this is the likely location of any wildlife corridor. Being on private and railway land it is difficult to manage this area for wildlife corridors, or make commitments about it. Much of the impact has already taken place via	C	1.5 11.7 13.1 13.2 13.3 13.5	Satisfactorily addressed for the purpose of the EA

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		settlement, the railway line, and River Road. The new road probably represents an incremental challenge to wildlife, but the extent is difficult to measure and not likely to be significant. The EA Application acknowledges the value of the watercourses/migration corridors through the Delta ravines. These were protected – through the use of bridges – during conceptual design. MoT is working to acquire a north-south corridor (bog to Fraser River) near 80th St and an additional opportunity may exist with Cougar Creek. The CoD has a role to play in protecting the 96th St. ditch which is a red coded water course and is the other remaining opportunity for a wildlife corridor between 80th St. and the Alex Fraser Bridge. Delta is of the opinion that SFPR will almost completely remove the vegetated links between McAdam, Collings and Norum ravines. MoT seems to feel that this is of low habitat value and thinks medium to large animals would use the rail corridor for moving between the ravines. Delta requests that MoT provide more data to back up its assumption. Also, Delta is concerned about small animals that rely on the vegetated links to move between ravines. Delta has not seen anything with respect to compensation proposed for the North Delta area for wildlife or fisheries impacts. MOT will ensure that measures are taken to mitigate effects on listed wildlife species in this area, and their critical habitat and that potential effects that could occur are monitored. All measures to mitigate against effects to these species will be taken in a manner that is consistent with applicable recovery strategy and actions plans.			

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245.	**EXECUTIVE SUMMARY**				
246.	No estimate is presented for emissions resulting from construction activities associated with the project. EC recommends that emissions from such activities be included considering that the construction phase might represent the worst-case scenario in terms of air emissions. *(EC - ESB)*	MoT is committed to the application of mitigation measures outlined in the local AQ chapter (pg. 211) of the Application. A more detailed, and project specific, air quality management plan will be developed prior to construction. EAO Note: Environment Canada has provided a revised commitment to managing air quality during construction, MoT has accepted this recommendation. The Owner will develop an Air Quality and Dust Control Plan for the construction phase of the project. The plan will: • Include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures, • Commit to the best available, known and effective, measures for mitigating construction related air emissions, including diesel particulate matter (PM),as identified by relevant regulatory agencies. This would include, where practical, the use of diesel oxidation catalysts (DOCs) or diesel particulate filters (DPFs) on all on-road and off-road project equipment in combination with use of a B20 biodiesel blend; and • Identify site specific considerations, where applicable, such as proximity to sensitive receptors.	C	7.1 7.2	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
247.	**GENERAL COMMENTS**				
248.	No section describing Geology and Geohazards; as this project will be built on the Fraser River delta, there may be discussion of this topic required. Page 282 – Local Geology is too limited in scope *(CEAA)*	The MoT has studied the geotechnical conditions related to SFPR construction (Gateway (2006) Geotechnical engineering input to development of reference alignment Tsawwassen, Delta to Port Kells, Surrey). This was referenced in the EA Application and is available at http://www.th.gov.bc.ca/gateway/reports/SFPR/Geotech_SFPR_July_2006.pdf. This study shows that the proposed SFPR alignment is geotechnically feasible. This geotechnical study and other relevant information (e.g., preliminary geotechnical engineering evaluation of the alignment near Burns Bog and records of bore holes) was reviewed in order to identify potential challenges to the construction of the SFPR and plan for ways to address such challenges (i.e., construction techniques in soft and highly compressible soils, settlement during construction and operation, potential impacts on existing properties and facilities, schedule, availability of expertise and resources, project delivery, and risks). The review is available at: http://www.th.gov.bc.ca/gateway/reports/SFPR-Constructability.pdf. A review of all the geotechnical work completed and material available for the SFPR found that the geotechnical investigation program combined with the previously obtained subsurface data represent a state-of-the-practice for pre-design concept route study. The additional geotechnical work that was recommended to address data gaps in some segments of the alignment is currently underway so that more advanced design for the SFPR can be completed. In general the analyses and construction assumptions were found to be appropriate for the road."	S/C	1.5	Satisfactorily addressed for the purpose of the EA
249.	MOT Guidelines and BMPs not readily available to reviewing agencies. MOT needs to be more specific where such references are cited. *(CEAA)*	The MoT has provided the Agency and other members of the working groups access to MoT environmental best practices and guidelines that were used in the development of the impact assessments, and that will be used in the development of the EMP.	C	1.2 1.4 1.51.7	Satisfactorily addressed for the purpose of the EA

ROW	AGENCY COMMENTS/ISSUES ON SFPR APPLICATION *(Agency that provided comments)*	MINISTRY OF TRANSPORTATION RESPONSE	(C) (S) (P)	MoT Commitment	EA STATUS
250.	**GENERAL COMMENTS**				
251.	Mitigation measures are generally set out throughout the Application. There seems to be insufficient information as terms "appropriate" or "best management practices" are frequently used. *(CEAA)*	The MoT has provided the Agency and other members of the working groups access to MoT environmental best practices and guidelines that were used in the development of the impact assessments, and that will be used in the development of the EMP. Additional and more specific mitigation measures will be developed in consultation with regulatory agencies during subsequent environmental permitting processes.	S	1.2 1.4 1.5 1.7	Satisfactorily addressed for the purpose of the EA