Technical Working Group Comment Tracking Table on the Draft Application Information Requirements

For the Proposed George Massey Tunnel Replacement Project

May, 2016

The following acronyms and abbreviations may be found throughout the tracking table.

Term	Acronym/Abbreviation
Application Information Requirements	AIR
Application for an Environmental Assessment Certificate	Application
B.C. Ministry of Transportation and Infrastructure	Proponent
British Columbia	B.C.
British Columbia *Environmental Assessment Act*	BC*EAA*
Draft Application Information Requirements	dAIR
Environmental Assessment	EA
Environmental Assessment Certificate	EAC
Environmental Assessment Office	EAO
George Massey Tunnel	Tunnel
George Massey Tunnel Replacement Project	Project
Health Impact Assessment	HIA
High-Occupancy Vehicle	HOV
Human Health Risk Assessment	HHRA
Intermediate Component	IC
Local Assessment Area	LAA
Regional Assessment Area	RAA
Species At Rick Act	*SARA*
Terrestrial Ecosystem Mapping	TEM
Valued Component	VC
Water Sustainability Act	WSA

George Massey Tunnel Replacement Project
Technical Working Group comments and responses on the draft Application Information Requirements
January-April 2016

No.	Stakeholder Group	DAIR Section	Subject	Comment/Inquiry	Response	Comment/ Inquiry Round 2	Response Round 2
1	Lyackson First Nation	Section 5.0 (Socio-economic Effects Assessment)	Economic	This pillar should be fully reviewed and should include the assessment of the impact related to tolls resulting in a reduction in `window shopping' trips.	Effects on economic conditions are anticipated to be positive as a result of the Project, and therefore are not assessed as a valued component (VC). The economic pillar of the EAO framework will be considered in the context of project benefits and addressed in the Application. The Application will describe the economic benefits of the Project with respect to users, including travel time savings, reliability and safety benefits as well as employment (jobs created) during construction and operation, and related direct and indirect inputs to the economy. In addition, the Application will discuss tolling in terms of its role in contributing to Project funding as well as its influence as a transportation demand management tool. **Section 1.1 of the dAIR has been updated to provide more detail on how tolling will be discussed in the Application.**	Lyackson First Nation provided no further comment.	----------
2	Lyackson First Nation	Section 5.0 (Socio-economic Effects Assessment)	Crime	This pillar should include: - increase ease of transportation of `gang 'activity, how will police service? - increase potential for 'at-risk' populations using the base areas of the bridge	Changes in crime rate as an effect of the Project were considered as a candidate valued component (VC) for assessment in the Application under the social pillar. In general, the Project will result in a number of social and economic benefits including increased employment opportunities and improved community mobility as well as improved access and response times for emergency responders, and therefore was not carried forward as a VC. In that context, the Project is not anticipated to contribute to increases in crime or negatively impact "at-risk" populations. The Application will describe the social and economic benefits of the Project with respect to employment (jobs created) during construction and operation as well as the direct and indirect inputs to the economy. **The dAIR has been revised to indicate that Section 7.0 (Health) of Part B of the Application will include a summary of the results of a health impact assessment (HIA) that considers potential impacts of the Project on broader determinants of human health and**	Lyackson First Nation provided no further comment.	**Further clarification as requested by EAO:** While not assessed as a VC in the Application, the potential for "at-risk populations" to use/congregate in areas near the bridge will be considered in the HIA. A summary of the results of the HIA will be presented in the Application including any mitigation recommended.

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					includes recognition of health considerations that are specific to Aboriginal populations.		
3	Lyackson First Nation	Section 5.0 (Socio-economic Effects Assessment)	Suicide Risk	This pillar should include: -the potential for increased suicide attempts due to the presence of the bridge	The Proponent is committed to including security fencing as part of the design of the new bridge.	Lyackson First Nation provided no further comment.	**Further clarification as requested by EAO:** The Ministry of Transportation and Infrastructure is in the process of developing a policy in which new bridges in the Lower Mainland will require the installation of safety barriers. This policy would apply to the George Massey Tunnel replacement bridge.
4	Lyackson First Nation	Section 5.0 (Socio-economic Effects Assessment)	Growth	This pillar should include: - growth as a VC o pressures on agricultural lands and issues related to FN ability to acquire lands back that have been taken up related to expensive land bases o real -estate values and affordable housing should be assessed under growth	Changes in land value have occurred over time, as a result of regional growth, and are anticipated to continue with or without the Project. The Application will assess potential effects on land use including the extent to which the Project is consistent with, and supportive of, land use plans developed by regional and local governments. The Project will generally be contained within existing Highway ROW with little or no impact on agricultural lands. Changes in land values are not considered to be substantially influenced by the proposed Project and accordingly are not assessed. **Section 5.3 of the dAIR has been updated to confirm that the land use assessment presented in the Application considers municipal and regional growth strategies.**	Lyackson First Nation provided no further comment.	**Further clarification as requested by EAO:** The results of the land use and agricultural use assessments, and any potential effects identified, will be considered in Part C in relation to Aboriginal Interests (Section 10.1.3) or other matters of concern (Section 10.2), as appropriate.
5	Lyackson First Nation	Section 7.1 (Health Effects Assessment)	Human Health	In agreement with comments made by Goran Krstic from Fraser Health on 2016-01-21 (that water and food consumption effects should be considered from a health perspective)	The Human Health Risk Assessment (HHRA) conducted in support of the environmental assessment will include a consideration of air contaminants near Highway 99. This assessment will be supported by predictions of air contaminant deposition to soils and uptake by plants that are subsequently consumed by humans.	Lyackson First Nation provided no further comment.	----------

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6	Lyackson First Nation	Section 4.4 (Environmental Effects Assessment)	Fish and Fish Habitat	It is not clear if the Southern Resident Killer Whale reliance on Chinook Salmon (is considered) and any potential effect on this Project on Chinook in the River will occur.	The Proponent has considered potential project related effects to Chinook salmon and other salmon species. Fish and Fish Habitat will be assessed as a valued component (VC) in the Application. Construction of the Project is not expected to affect the population integrity of any fish sub-components including Chinook Salmon. In addition, preliminary results of underwater noise modelling indicate underwater noise generated by Project-related activities is not predicted to extend outside of the Fraser River, and therefore will not affect South Resident Killer Whale. **Section 4.6 of the dAIR has been updated to indicate that rationale for exclusion of South Resident Killer Whale from the scope of the assessment will be provided in the Application.**	Lyackson First Nation provided no further comment.	----------
7	Lyackson First Nation	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	Concerned that the funding for the traditional use study was provided very late which shortened the timeframe and excluded some key knowledge holders. -A site visit is still to be undertaken.	The Lyackson Traditional Use and Occupancy Mapping Study, submitted to the Proponent in September 2015, identified a need for an elders' site visit to provide for the sharing of information from key Lyackson knowledge holders. Since receiving the Study, the Proponent has been working with Lyackson First Nation in an effort to coordinate the elders' site visit which is scheduled for March 2016. Lyackson's guidance is being sought on the itinerary and specifics of this activity. The Proponent values the knowledge and input, shared by Aboriginal Groups - their elders, members and staff, during the site visits conducted to date and remains committed to working with Lyackson and other Aboriginal Groups to identify opportunities for knowledge holders to share traditional use information in relation to the Project.	Lyackson First Nation provided no further comment.	----------
8	Lyackson First Nation	Section 12.0 (Management Plans and Follow-up)	Management Plans	Adaptive management techniques should be employed in management plans and monitoring. Request for a socio-economic-health monitoring plan- post construction.	Adaptive management plans are employed to ensure the effectiveness of mitigation. The Proponent will consider the need for monitoring or adaptive management plans where it is determined that an effect is likely to occur and mitigation is required. This could include potential effects related to social or health related valued components (VC).	Lyackson First Nation provided no further comment.	----------

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9	Lyackson First Nation	Section 3.10 (Assessment Methodology)	Cumulative Effects	This list should include: - Kinder Morgan TMEP - PMV-RBT2 - Coal projects	PMV-RBT2 and the Fraser Surrey Docks Direct Coal Transfer Facility are included in the preliminary list presented in Section 3.10 of the dAIR. The proposed Kinder Morgan Trans Mountain Expansion Project (TMEP) will be added to the list of projects to be included in the cumulative effects assessment. **Section 3.10 of the dAIR has been updated to include the proposed Kinder Morgan Trans Mountain Expansion Project in the list of projects and activities considered for inclusion in the cumulative effects assessment.**	Lyackson First Nation provided no further comment.	----------
10	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Sediment and Water Quality	Application should outline improvements or benefits to water quality.	An assessment of changes to water quality related to the Project will be included in the Application. The Proponent will include information that describes potential benefits (i.e., improvements such as storm water collection and treatment measures) to components where such benefits are determined to occur. **Section 4.2.4 of the dAIR has been updated to include confirmation that anticipated benefits the environment will be discussed in the Application.**	Corporation of Delta provided no further comment.	----------
11	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Wetlands	Application should outline impacts to wetlands and intertidal areas by area(m2) and location	The Proponent will update the dAIR to assure that the description of potential effects to wetland and intertidal areas includes a description of location and spatial area (m2). **Section 4.7 of the dAIR has been updated to clarify that potential effects on ecosystems will be described in terms of spatial extent of such effects, where appropriate.**	Corporation of Delta provided no further comment.	----------

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12	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Vegetation	Study to be completed should include how vegetation impacts will be evaluated, mitigated and compensated. -specific language about impacts to, and compensation for, lost hedgerows and trees should be included in the report to be completed - compensation wetland set aside on the north side of the Deas approach should be assessed in the application materials	The Application will provide a detailed description of the methodology used to assess potential effects on vegetation. The majority of Project components and activities will be located within the Highway 99 right of way, where vegetation consists mainly of grassy, mowed verges. The Application will include a description of mitigation measures including replanting. The Proponent has confirmed with the Corporation of Delta that the compensation wetland noted is located within the Project area and captured in the assessment of potential effects on vegetation.	Corporation of Delta provided no further comment.	----------
13	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Terrestrial Wildlife	Application should include "species at risk" section (for wildlife) and should include how works will address species- at-risk and critical habitat.	The Application will consider species at risk; including amphibian and small mammal effects on individuals as well as habitat and describe proposed mitigation measures considered in the assessment.	Corporation of Delta provided no further comment.	**Further clarification as requested by EAO:** The development of the work plan to support the assessment of terrestrial wildlife included a consideration of all listed species that based on their life requirements and habitat conditions in the study area could potentially occur in the LAA. In addition, a review of “critical habitat” (as defined under SARA) was undertaken to determine if critical habitat existed for any species within the LAA. The rationale for selection of species and habitats to be included in the assessment will be provided in the Application.
14	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Agriculture	Project needs to ensure access to irrigation water across highway during and post construction. Application should include a description of how drainage capacity under highway is retained. It should explicitly state that existing culvert sizes will be maintained, the elevation and flow area of culverts.	The Application will describe measures taken and planned to ensure agricultural operations are protected and enhanced adjacent to the Project including maintenance of flows of irrigation water.	Corporation of Delta provided no further comment.	----------
15	Corporation of Delta	Comments submitted on Project Description and	Monitoring Report (Air Quality)	Should consider looking at post-construction air quality monitoring to validate predictions.	The Application will consider the requirement for a post-construction air quality monitoring program upon completion of the effects assessment.	Corporation of Delta provided no further comment.	----------

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		Key Areas of Study, reviewed in context of dAIR as well as the Project Description					
16	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Recreation	Recommended that a separate "recreation" section be included in application. Cycling linkages need to be maintained, if possible enhanced.	As recreation activities are both land-based and water-based, potential effects to recreation as a result of the Project are considered under the land-use and marine use valued-components (VCs). Existing cycling linkages in the vicinity of the Project will be maintained and substantial enhancements will be made to the cycling network as a result of the addition of multi-use pathways on the bridge providing efficient connections to regional networks. **Section 5.2 and 5.3 of the dAIR have been refined to confirm that potential Project-related effects on recreation will be addressed in the Application.**	(Comment from VCH) Recreation and active transportation (e.g. using cycling linkages, and addition of multi-use pathways) should be considered under the human health VC as there are clear health benefits should these improvements to active transportation networks be utilized to their maximum potential. This should also be covered in the HIA.	Health benefits associated with Project-related improvements to active transportation networks will be discussed in the Application, and are considered in the HIA. While the HIA is not a requirement of the EAO, the Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BC*EAA*. The HIA is being undertaken concurrently with the Projects environmental assessment under BC*EAA*. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.
17	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land Use	Assessment of the impacts on Marina Gardens community needs to be included.	The assessment of potential effects of the Project will include noise, air quality and visual assessments that are applicable to Marina Gardens.	Corporation of Delta provided no further comment	----------

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18	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land Use	Suggested that historical significance of the tunnel be mentioned under the section on Heritage Resources (not just Section 2.0[Project Description]), and that consideration of how the history could be commemorated or interpreted.	The Proponent recognizes the historical contribution of the Highway 99 corridor and the George Massey Tunnel. The Proponent is developing a strategy to acknowledge the Tunnel as an engineering success and its role in the area. **Section 1.1 of the dAIR has been updated to indicate a study of the history of the Tunnel will be undertaken and an overview included in the Application.**	Corporation of Delta provided no further comment	**Note:** The study on the history of the Highway 99 corridor will be available to the technical Working Group during the Application Review period.
19	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction (Staging)	Include (in the application) information on locations for temporary construction facilities and their relevant impacts. Describe their impact as part of EA.	Information on temporary construction facilities, and how potential effects associated with such facilities will be addressed, will be provided in the Application. **Section 1.1 of the dAIR has been refined to provide confirmation that information on temporary construction facilities will be included in the Application.**	Corporation of Delta provided no further comment	----------
20	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction (Traffic)	Include (in the application) assessment of the anticipated traffic delays that may occur during construction. - Will the Project include other traffic improvements during the construction window?	The Application will include information describing how traffic management during construction will be undertaken including requirements for specific technical plans, performance objectives, and communication requirements that will be put in place to ensure the efficient movement of traffic during construction. **Section 1.1 of the dAIR has been updated to include confirmation that construction traffic management will be discussed in the Application.**	Corporation of Delta provided no further comment	**Note:** The dAIR is being revised to recognize and to assess traffic as an Intermediate Component (IC). The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and a reference to the Traffic Management Plan will be made here. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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21	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction (Tunnel)	Include (in the application) measures that will be taken to ensure the continued integrity of the tunnel during the Project ex: best management practices.	The Constructor of the new bridge will be responsible for the continued operation and maintenance of the tunnel during construction and will be required to demonstrate thorough planning and best management practices in the following areas: - develop a Traffic Management Plan for the Highway 99 corridor (including the tunnel and counter-flow system) that ensures safe travel for users - develop a Construction Staging Plan that considers potential impacts to the tunnel -develop a Tunnel Management Plan that includes real time monitoring of the tunnel during pile-driving activities and related bridge works. The Proponent is currently undertaking a detailed investigation- in advance of construction-to assess pile driving effects near the Tunnel.	Corporation of Delta provided no further comment	----------
22	Corporation of Delta	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Storm water Management	It should be a requirement that bridge runoff is not permitted to freely run into the receiving environment, aquatic or terrestrial, and that storm water management is designed and installed with the public recreation needs in mind.	A requirement to capture/treat bridge runoff prior to discharge to the Fraser River will be included in the Application.	Corporation of Delta provided no further comment	----------
23	Fraser Health	Section 3.3 (Existing Conditions)	Existing Conditions	Include a description of methods used to determine validity/ applicability of baseline information in the context of cumulative change in the region.	The assessment of all components is conducted by environmental professionals with specific expertise and training. Best professional judgement is applied to the collection of desktop and field data used to support the description of existing conditions. As outlined in Section 3.3 of the dAIR, the description of existing conditions of each component will include a discussion on the quality and reliability of the baseline data, and its applicability for the assessment of Project-related effects. It will also include a discussion to whether past projects and activities in the study area may have affected the component.	Fraser Health provided no further comment.	----------

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24	Fraser Health	Section 3.4 (Potential Effects)	Potential Effects	Include the range of potential effects of the Project, particularly where there is uncertainty of level of effect.	The assessment considers all potential interactions between Project components and activities, and the effects of such interactions. Where there is uncertainty regarding the level of effect of a Project interaction, a conservative approach is used to assess Project-related effects.	Fraser Health provided no further comment.	----------
25	Fraser Health	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects	Include: -implementation of Hwy 17 as certain developments and activities -changes to public transportation services in the region since Canada Line -proposed scenarios of tolled/ untolled bridge in the area and subsequent traffic changes	As Hwy 17 is currently constructed and has been operating for 2 years, it is not included in the list of projects and/ or activities to be considered to support cumulative effects assessments of specific VCs. The influence of Hwy 17 will however be considered in the assessment in the context of its influence over existing conditions in the local assessment areas (LAA) and regional assessment areas(RAA) of specific VCs. General changes to public transportation services in the region since the Canada Line went into operation, are not appropriate to include in this list as they do not represent a discrete project. As such, it is not possible to identify specific effects that could be used to support a cumulative effects assessment. The influence of such projects is considered in the assessment to the extent that changes in existing conditions, as a result of such Projects, are represented in the description of existing conditions for specific VCs. The Application will include discussion regarding anticipated effects on traffic volumes between a tolled and untolled facility.	Fraser Health provided no further comment.	**Note:** The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The Application will include traffic forecasts, with and without the Project. The future forecasted traffic presented in the Application includes both a tolled and untolled scenario. **Traffic as an IC has been added as Section 5.1 of the dAIR**
26	Fraser Health	Section 4.9 (Air Quality)	Air Quality	Include: - range of potential effects based on range of changes in traffic flow patterns during construction and operation and diversion of traffic under various scenarios of tolled/ untolled bridges in the area -spatial boundaries to assess air quality in distant areas with subsequent traffic pattern changes due to construction/ operation -vulnerable populations and sites as sensitive receptors	For the air quality assessment, the Proponent has taken a conservative approach to traffic forecasting, using volumes based on an untolled scenario, which reflects the higher range of traffic that could be anticipated over the planning horizon. As will be outlined in the Application, the regional assessment area (RAA) encompasses the entire lower mainland airshed for the construction and operation phases of the Project. Human Health has been identified as a valued component (VC) for the assessment of potential project related effects, including sensitive receptors. **Section 4.9 of the dAIR has been refined to include**	**(Comment from VCH)** The project has the potential to change traffic patterns during construction and operation, particularly in the current tunnel vicinity, but also on the north end of the project, at the south end of the Oak Street Bridge. The LAA of the project should reflect these changes.	The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and operational phases of the Project. The Application will include traffic forecasts, with and without the Project. The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Liang Bridge. In

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					confirmation that conservative traffic scenario assumptions are used in predicting Project-related changes in air quality. **Section 1.1 of the dAIR has been updated to include further detail indicating a discussion on tolling and related traffic implications will be included in the Application.**		addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM). **Traffic as an IC has been added as Section 5.1 of the dAIR.** **Further clarification as requested by EAO:** Sensitive receptors in this context refer to vulnerable populations.
27	Fraser Health	Section 4.10 (Atmospheric Noise)	Atmospheric Noise	Include: - range of potential effects based on range of changes in traffic flow patterns during construction and operation and diversion of traffic under various scenarios of tolled/ untolled bridges in the area - spatial boundaries to assess noise in distant areas with subsequent traffic pattern changes due to construction/ operation -vulnerable populations and sites as sensitive receptors	For the noise assessment, the Proponent has taken a conservative approach by using traffic volumes associated with an untolled scenario. This approach assumes higher range of traffic volume that would be anticipated. Potential effects on vulnerable populations (i.e. those more sensitive to effects from increases in noise) are considered in the human health VC. **Section 4.10 of the dAIR has been refined to include confirmation that conservative traffic scenario assumptions are used in predicting Project-related changes in noise.** **Section 1.1 of the dAIR has been updated to include further detail indicating a discussion on tolling and**	Fraser Health provided no further comment.	**Further clarification as requested by EAO**: The HIA will also consider vulnerable populations. Vulnerable populations include those people who are more likely than others to suffer adverse health effects. Biological factors (e.g. age), social constructs (e.g. gender, ethnicity), material conditions (e.g. employment, income), or exposure to harmful environments (e.g. populations in certain areas) can all contribute to the vulnerability of a particular group. In a wider sense, a vulnerable population is any population that is "at elevated risk of suffering harm as the result of one or more" factors.

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					related traffic implications will be included in the Application.		**Note:** The dAIR has been revised to include and assess traffic as an Intermediate Component which will support the assessment of atmospheric noise, air quality, human health, land use, and terrestrial wildlife. The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and operational phases of the Project. The future forecasted traffic presented in the Application includes both a tolled and untolled scenario. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
28	Fraser Health	Section 7.0 (Health Effects Assessment)	Human Health	Include broader determinants of health: built environment- changes to local business, community resources; risk of transportation-related accidents; changes in travel times/ vehicle miles traveled; changes in travel modes; accessibility to public transportation	The Proponent, with guidance from regional health authorities, is undertaking a Health Impact Assessment (HIA) for the Project which will consider broader determinants of health. The findings of the HIA will support the assessment of the health VC. **The dAIR has been revised to indicate that Section 7.0 (Health) of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations.**	Fraser Health provided no further comment.	----------

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29	Fraser Health	Section 7.1 (Health Effects Assessment)	Human Health	Should include the assessment of health effects from: -potential effects from changes to surface and ground water -potential effects from changes in drinking water sources -potential effects from contaminations and changes to soil and sediment -potential effects from changes to food (fish and agriculture) - other potentially significant and reasonably foreseeable human health impacts *all of these health effects should include (in their assessment) existing conditions, mitigation measures, residual effects and cumulative effects Spatial boundaries should include the project area, as well as secondary areas impacted by changes in traffic flows/ volumes	The Human Health Risk Assessment (HHRA) conducted in support of the environmental assessment will include a consideration of air contaminants near Highway 99. This assessment will be supported by predictions of air contaminant deposition to soils and uptake by plants that are subsequently consumed by humans. Modelling of the deposition of airborne contaminants to surface waters and sediments in the past has determined that predicted concentrations of transportation related air contaminants in water and biota are generally lower than current analytical detection limits. Human populations in the study area rely almost entirely on the GVRD drinking water supply which does not come from sources adjacent to the Project and, as such, would not be influenced by project related air emissions. For those individuals relying on a groundwater supply directly adjacent to the Project, the HHRA assumes no potential for air contaminant entry into local aquifers, since the types of contaminants that could be deposited would not move readily in dissolved phase and be able to enter aquifers. The Proponent will provide a table outlining the rationale for study area boundaries at the scheduled Working Group meeting.	Fraser Health provided no further comment.	**Further clarification as requested by EAO:** The focus of the HHRA is on Project related air emissions that, via exposure in air, may affect human health. The Proponent has provided information in the past to indicate that human health risks related to the water quality IC, either through re-suspension of historic contaminants in river sediment or exposure to air contaminants that land in adjacent soil/water, or considered a negligible risk and are not considered in the HHRA. The potential effects of previously contaminated soils, or soils contaminated by project related activities, are also not considered in the HHRA as they are similarly considered negligible risks from a HHRA perspective. The Proponent has identified sites in the corridor with some limited potential contamination. Further investigation will be done, as required, as the Project advances and any contamination that is confirmed will be managed in a manner that is compliant with applicable regulations and avoids human health risk. **Note:** The dAIR has been revised to include and assess traffic as an Intermediate Component (IC) which will support the assessment of atmospheric noise, air quality, human health, land use, and terrestrial wildlife. The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and operational phases of the Project. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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30	Fraser Health	Section 8.0 (Accidents and Malfunctions)	Accidents and Malfunctions	Should include potential human health impacts from accidents and malfunctions: -injury, death, mental health -economic losses	The methodology proposed by the Proponent identifies potential accidents and malfunctions that could occur during Project construction or operation, and discusses potential effects on valued components (VC) considered in the Application, including human health. This approach is based on the Proponent's previous experience with similar projects and environmental assessments, and with input from government agencies and Aboriginal Groups.	Fraser Health provided no further comment.	**Further clarification as requested by EAO:** Mental health is one of a number of health indicators used to describe existing health conditions within communities within the HIA. The HIA being undertaken for the Project considers how the Project may result in changes to community health including mental health. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.
31	Fraser Health	Section 9.0 (Effects of the Environment on the Project)	Effects of the Environment	Environmental factor assessments should include potential human health impacts: -disease, injury, death, mental health -potential exposures from hazardous substances -economic losses	The Application will include an assessment of potential Project-related effects on human health as outlined in Section 7.0 Health Effects Assessment of the dAIR. Potential effects of the environment on the Project, and human health-related consequences of such effects, will be discussed in the Application	Fraser Health provided no further comment.	**Further clarification as requested by EAO:** Mental health is one of a number of health indicators used to describe existing health conditions within communities within the HIA. The HIA being undertaken for the Project considers how the Project may result in changes to community health including mental health. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.
32	Environment and Climate Change Canada	Section 1.0 (Overview)	Options Analysis	Recommend that further information be provided on the constraints and assumptions used in identifying possible alternatives for the Project. Alternatives listed in the dAIR are limited to tunnel-only alternatives (5 scenarios). Other technically and economically feasible alternatives should be considered (such as a smaller bridge vs tunnel-only alternatives), or a discussion as to why other alternatives were not considered feasible.	Project alternatives assessed in 2012/13 included different bridge as well as tunnel options. Specifically, Scenario 1 looked at only upgrading the existing tunnel, with no capacity improvements and Scenario 4 and 5 looked at a smaller bridge or tunnel to operate in conjunction with upgrades to the existing tunnel. The Proponent also undertook a high level assessment of a transit-only alternative; however, given the national and provincial importance of Highway 99 and the combined trip purpose/vehicle requirements/origins and destinations of existing traffic as well as planned future population and employment growth, this alternative was found to be insufficient on its own. Instead, the Proponent worked with TransLink and area municipalities to identify transit improvements that could be incorporated into the preferred new bridge Scenario to provide needed capacity improvements while also further encouraging	Response noted.	----------

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					alternatives to single occupancy vehicles on this corridor. This research will be expanded upon in the EA Application, along with a discussion of the work, including extensive public consultation, undertaken to identify and analyze, the five replacement Scenarios. **Section 1.1 of the dAIR has been updated to confirm that an alternatives analysis will be presented in the Application.**		
33	Environment and Climate Change Canada	Section 3.1 (Issues Scoping and Selection of Valued Components)	Issues Scoping and Selection of Valued Components	Recommend assessment of Project effects on conservation lands (including provincial Wildlife Management Areas, the National Wildlife Area, the Migratory Bird Sanctuary) and other conservation areas which are located downstream of the Project	For each valued component (VC) the Proponent has selected assessment areas based on potential direct project related effects, within a Local Assessment Area (LAA) and considered the interactions of the Project on a broader scale, within a Regional Assessment Area (RAA). The RAAs have been scoped relative to the specific VC and consideration for the assessment of any adverse effects and the potential to interact with other currently proposed projects. **Section 3.2 of the dAIR has been updated to include reference to consideration of conservation lands in defining assessment areas and assessing Project related effects.**	Response noted.	----------
34	Environment and Climate Change Canada	Section 3.2 (Assessment Boundaries)	Assessment Boundaries	Request quantifiable criteria attached to Local Study Areas and Regional Study Areas (ex: boundaries are delineated to the point at which project effects can no longer be measured"). This approach ensures that boundaries are ecologically relevant and accounts for situations where project related effects prediction may identify environmental effects further downstream than originally anticipated.	The Proponent will provide a table outlining the rationale for study area boundaries at the scheduled Working Group meeting.	ECCC requests a copy of the table outlining the rationale for the study area boundaries. (Note ECCC did not obtain a copy at the working group meeting).	The Proponent has provided a copy of the table to the EAO, who had uploaded it to the SharePoint site before the Working Group meeting on March 10th, 2016. The Proponent followed up with the EAO, who contacted Environment and Climate Change Canada's Working Group contacts on April 11th, 2016, outlining where the document could be found on the SharePoint site.
35	Environment and Climate Change Canada	Section 4.0 (Environmental Effects Assessment)	Sediment and Water Quality / Fish and Fish Habitat	Request that the LAA and RAA boundaries for fish and fish habitat be extended so that they coincide with the sediment and water quality boundaries presented. (If sediment and water quality are treated in the Application as pathway components to VC's, the boundaries must overlap so the pathways are always linked to measurable endpoints)	Water quality information has been collected both in the South Arm of the Fraser River as well as upland water courses adjacent to Highway 99. The LAA for water quality will be updated accordingly. **Section 4.2.1 of the dAIR has been updated to reflect this change.**	ECCC appreciates the update to the LAA for sediment and water quality; however, gaps remain between the LAA and RAA boundaries for sediment and water quality and fish and fish habitat. Specific instances include: • The northeast and southwest portions of the water quality LAA in the Fraser River South Arm, which are areas that are not	The dAIR will be revised to reflect the following: • The LAA for Sediment and Water Quality will be extended downstream to include Ladner Reach and South Arm Marshes.

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						covered by the fish and fish habitat LAA. • The northeast and southwest portions of the water quality RAA in the Fraser River South Arm, which extends from east of Deas Slough to upstream and from west of Deas Slough out to the Strait of Georgia. These areas are not covered by the fish and fish habitat RAA. In areas with these identified gaps in boundaries, it is not clear how the Application will capture the impact of potential Project-related water quality effects on fish and fish habitat. Therefore, ECCC reiterates the previous comment (provided on Feb. 10. 2016) that pathway components (such as sediment and water quality) should be linked to ecological receptors (fish and fish habitat) in order to properly assess Project-related effects to valued components.	• The LAA for Fish and Fish Habitat will be extended to the west end of Kirkland Island, and the RAA will be extended to the mouth of the Fraser River South Arm to be consistent with the revised LAA and RAA for Sediment and Water Quality. • The LAA for fisheries has not been changed to include upstream areas to the west end of Tilbury Island as there is no potential for direct Project-related effects on fish or fish habitat. **Section 4.2.1 of the dAIR has been revised to reflect the change to the LAA for Sediment and Water Quality noted.** **Section 4.4.1 of the dAIR has been revised to reflect the change to the LAA and RAA for Fish and Fish Habitat noted.**
36	Environment and Climate Change Canada	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Request that the dAIR include description of the indicators and parameters that will be used for the assessment of Project effects.	The dAIR shared with the Technical Working Group includes any applicable and relevant indicators proposed for the assessment of potential project related effects. The Application will list and describe the parameters for each indicator.	Section 4.2 of the DAIR identifies anticipated interactions of Project components and activities with sediment and water quality, but does not include the indicators and parameters that will be used for the assessment of Project effects. For example, impacts to water quality from Tunnel removal on the Fraser River South Arm (project activity) could be assessed by evaluating marine water chemistry (indicator), which would be measured by collecting water samples and analyzing them for TSS, metals, etc. (parameters). The Proponent is encouraged to identify relevant indicators and parameters early in the EA process to allow for feedback from the working group as appropriate.	Potential Project-related changes in sediment and water quality will be assessed in terms of their effects on receptor VCs – i.e. Fish and Fish Habitat, Marine Mammals, and Vegetation. Indicators selected for the assessment of these receptor VCs reflect this approach. Accordingly, specific indicators for assessment of Project-related effects on Sediment and Water Quality are reflected in the above noted valued components and described in the Application.

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. 37	Environment and Climate Change Canada	N/A	Disposal at Sea	The dAIR should note that any proposed disposal at sea activities are to be described and potential impacts assessed with appropriate mitigation and monitoring measures identified	Based on current conceptual design, no disposal at sea activities are anticipated. **Section 1.2 of the dAIR has been updated to reflect this.**	Response noted.	----------
38	Environment and Climate Change Canada	Section 4.0 (Environmental Effects Assessment)	Vegetation / Wildlife	That for all federally listed species, and COSEWIC- assessed species that the Project may impact, that: - assessed on a species by species basis -if a species is not assessed as part of the application, that a clear justification be provided -if a species is assessed through a community indicator, then a rationale as to how this community indicator would achieve a science- based assessment of Project effects be provided -species at risk and vegetation surveys be spatially integrated so that habitat functioning for specific species can be evaluated on a habitat (vegetation community) basis. This assessment should include and evaluate species at risk seasonal use (breeding, migration, overwintering) within the Project area. For all species potentially impacted by the Project with identified critical habitat (draft and final), recommend that: - Any critical habitat potentially impacted by the Project be assessed in terms of the biophysical attribute impacts and activities likely to destroy critical habitat. - Protection and avoidance of critical habitat (including draft, candidate, proposed, and posted as final critical habitat) be documented. - Potential impacts to critical habitat be considered in the respective species' determination of significance assessment.	For all valued components (VCs) the Proponent has followed standard methodology. For something included as a VC, the following criteria were satisfied: 1) Presence in the Project alignment or in a zone affected by it. 2) Interaction with project components or activities. 3) Recognized importance for regulatory, conservation, or cultural factors. Generally red- and blue-listed, SARA-listed species and those species of interest to First Nations were selected. COSEWIC-recommended species were not specifically included unless there were other rationale for selection. COSEWIC-recommendations are based on nationwide threats that are not always reflected as a regional issue. For species considered but not assessed as a VC, a rationale will be provided within the Application. Surveys are spatially based and can be linked to Project-wide habitat (vegetation) mapping. Surveys to understand seasonal use patterns, or sensitive-season only surveys, will be conducted. The method outlined in section 3.0 of the dAIR is followed for the assessment of all VCs identified in sections 4-8. There is no critical habitat identified for any SARA-listed species in the Project alignment. **Sections 4.4, 4.5, and 4.8 of the dAIR have been updated to include a statement that based on studies completed to date, no critical habitat has been identified within/ adjacent to the Project alignment for any SARA listed species.**	Response noted.	----------

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39	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend terrestrial wildlife be assessed as a VC with the following components: - Upland birds (American bittern, great blue heron, roughlegged hawk, peregrine falcon, barn owl, short-eared owl, olive-sided flycatcher, common nighthawk, barn swallow, and bald eagle) - Riverine birds (double-crested cormorant, Caspian tern, and western grebe) and bat species - Aquatic/upland birds: trumpeter swan, Canada goose, cackling goose, gull species, mallard, northern pintail, American widgeon, bufflehead, snow goose) - Small mammals (Trowbridge's shrew, southern red-backed vole, Olympic shrew, and Pacific water shrew). Recommend that species at risk (SAR) be used as a separate valued component (VC) and appropriate species should be selected. Any SAR species used as a VC should represent that species only. Specifically, ECCC does not recommend using SAR species to represent other species/groups.	The Proponent has proposed terrestrial wildlife as a valued component with the following subcomponents: • Upland birds (generally passerines and raptors) • Riparian birds (generally waterfowl, waders and shorebirds) • Small mammals Riparian birds includes riverine birds, and the Proponent will use provincially-recommended survey methods to sample the presence of each. Species at risk included in the subcomponents will be sampled using provincially-recommended survey methods for the group (or species).	ECCC recommends that: • Riverine birds be assessed separately from aquatic/ upland birds: the selection of subcomponents should include aquatic/ upland birds to address connections between marine areas and adjacent agricultural areas which are distinct from riverine birds. • Bats are assessed separately from riverine birds. Bats differ fundamentally from riverine birds in both their ecology and potential effects from the Project.	These bird guilds are studied, and the results analysed, using common approaches. Separating them does not provide for a more effective effects assessment as the effects on the two guilds are similar. As noted in the dAIR, anticipated interactions between Project activities and terrestrial wildlife that will be considered in the Application will include potential disturbance due to an increase in ambient noise and light during construction and operation. Bats are assessed separately as part of the Terrestrial Wildlife valued component.
40	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend that a desk-top analysis and field surveys be conducted to evaluate bat presence, species composition, levels of activity, and habitat use in relation to the ROW (especially in and around Deas Slough) and other features in the Project area. Survey methods recommended include the use of acoustic detectors, mist-netting and telemetry. Identification of summer roosts and hibernacula is important and typically requires the use of all three aforesaid methodologies.	The Proponent conducted nocturnal ultrasonic call monitoring in the spring and fall to assess bat species presence, seasonal abundance, and flight behaviour in the tunnel replacement area of the Project alignment. Suitable habitat features for summer roost and hibernacula do not occur within the Project alignment. Accordingly, summer roost and hibernacula assessments were not included in the survey methods. **Section 4.8.2 of the dAIR has been revised to provide further clarity on methodology used to assess bat presence.**	While suitable habitat features for summer/ winter roosts for Little Brown Myotis may not occur within the Project alignment, they likely do occur in habitats adjacent to it including, for example the Deas Slough area. For this reason, ECCC recommends the use of mist-netting and telemetry to assess any roosting activity by which to determine the need for measures to avoid/ reduce harm to these features/ occupants.	As there is no potential for winter hibernacula for little brown myotis in Deas Slough (rock crevices, caves, etc.) the Proponent will not be conducting such studies. As summer roosts may be present, the Application will include mitigation (i.e., timing windows for construction) to avoid effects on summer roosts.

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41	Environment and Climate Change Canada	Section 4.5 (At-risk amphibians)	At risk amphibians	Recommend that amphibian surveys be conducted during peak movements of adults and juveniles. Road surveys are best conducted during or after rainfall. The results of such surveys should be factored into the assessment of potential effects on amphibians related to habitat loss, water quality changes and malfunctions and accidents. See Attachment 2 on Western Toad for further information.	The Proponent has sampled suitable habitat for pond-dwelling amphibians using habitat suitability, water quality and eDNA methods. Surveys of current road impacts were not conducted because adjacent habitat is generally poor and dominated by introduced species. As such, the use of other survey methods was determined to be more effective. The results of the surveys are used as an input in to the existing conditions and the assessment of the potential effects of the project on amphibians related to habitat loss and water quality changes.	The Proponents' response did not address how survey data will be used to assess effects specifically from malfunctions or accidents as recommended by ECCC. ECCC recommends that the Proponents demonstrate how the results of the surveys provide the necessary information to make decisions in the context of effects from malfunctions and accidents.	Potential accidents and malfunctions scenarios that are reviewed in the Application consider how the effects (e.g., change in water quality) of specific scenarios will potentially impact specific valued components. The results of studies (including survey data on at-risk amphibians) support the assessment by determining if the spatial/temporal scope of potential effects is likely to overlap with the anticipated presence of a valued component. Where potential effects accidents or malfunctions may overlap spatially/temporally with a VC, mitigation is proposed to mitigate the potential effect. Survey data on areas potentially containing at-risk amphibian species will support the development of construction and operational phase Environmental Management Plans which include measures for responding to potential accidents and malfunctions.
42	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend assessing potential downstream effects to wildlife habitat, including wetlands and biofilm due to: - Removal of the existing tunnel (both impacts during removal and any impacts post removal) - Potential increased ship traffic and potential deepening of the Fraser River which could occur to facilitate ship movement.	The assessment of potential changes in river hydraulics due to tunnel decommissioning considers potential effects on downstream riparian and foreshore areas that support habitat values. As the scope of the Project does not include dredging to enhance vessel draft, potential effects related to deepening of the Fraser River are not within the scope of assessment.	The Proponent's response identified 'foreshore areas' but did not identify the specific habitats that contain biofilm. ECCC recommends that habitats supporting a biofilm community be included in assessments of potential downstream effects.	In the event that the assessment of river hydraulics identifies effects on foreshore areas downstream of the Project, the Proponent will provide information on the specific nature of such effects including specific habitat values (including biofilm) that may be affected in the Application.

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43	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend using area of agricultural land as a VC. An analysis of cumulative effects to agricultural land should be included, given historic losses. The use by wildlife of agricultural lands is well established. Agricultural lands adjacent to intertidal habitats are particularly important to wintering waterfowl. These habitats are also important to migrant shorebirds and wintering Dunlin, staging/breeding Sandhill Crane, year-round use by Barn Owl, among others.	Agriculture is assessed as a valued component (VC) and the potential effect on the area of agricultural land is an indicator used in the assessment. Wildlife habitat within the Local Assessment Area (LAA) and Regional Assessment Area (RAA), including that provided by agricultural land, is considered in the assessment of VCs related to terrestrial wildlife. For example, Terrestrial Ecosystem Mapping (TEM) undertaken to support the effects assessment of wildlife VCs, considers the habitat value of a variety of existing land uses including agricultural land. **Section 4.7.2 of the dAIR has been refined to confirm TEM will include identification of agricultural lands.** **Section 4.8 of the dAIR has been updated to include a statement that results of TEM mapping will inform the assessment of potential Project-related effects on wildlife.**	Response noted.	----------
44	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Any SAR species used as a VC should represent that species only. Specifically, ECCC does not recommend using SAR species to represent other species/groups.	Noted. The environmental assessment is focussed on issues that have been identified as requiring specific attention to understand project-related effects as outlined in the EAO's Guideline for the Selection of Valued Components (VCs) and Assessment of Potential Effects. The VCs selected for the Project were determined following a thorough assessment of their value from the perspective of scientific, conservation, Aboriginal Groups' and public considerations, their interactions with the Project, and their presence. Many of the VC assessments include the "full-spectrum" of species, while for key issues of concern there were species-specific studies, e.g., red legged frog.	Response noted.	----------

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45	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	For migratory bird species that the Project may impact, recommend that: -Project effects be identified, assessed, and mitigation and monitoring plans be provided; -If a species is not identified, surveyed, and assessed as part of the Application, that a clear justification be provided; - If a species is assessed through a community indicator, then a rationale as to how this community indicator would achieve a science-based assessment of Project effects be provided. With respect to migratory bird indicators, ensure that species are selected that represent different habitats and guilds reflective of the Project area, including: -marsh birds, - shorebirds, - songbirds that occupy different habitats, - waterfowl, - swallows and cavity nesters. - Migratory bird survey data be evaluated in relation to habitat (vegetation community) use, specifically: species abundance, distribution, and density in each vegetation community of the Project area; and, - The assessment includes and evaluates migratory bird use throughout the year (breeding, migration, and overwintering) within the Project area. - The assessment includes year-round migratory bird surveys in the river, the bridge area, and the foreshore since many birds fly from the foreshore to the river. This recognizes the rationale for designating South Arm Marsh a provincial Wildlife Management Area.	Valued component (VC) selection has been justified for all species including migratory birds based on the expected project interactions. Following the selection of VCs, subcomponents have been selected and surveyed to represent the species and habitats present in and around the Project Area. Generally, migratory birds use is concentrated in the spring to fall period, and studies focussed on that period. Some winter work was completed on migratory birds, generally focussed on raptors as their presence in the study area is highest at that time. **Section 4.8 of the dAIR has been updated to include a reference to the valued component selection rationale which will be included in the Application.**	Response noted.	----------

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46	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend an assessment of increased migratory bird collision risk due to increased vehicular traffic, including in relation to species at risk. Barn Owl is a particularly vulnerable species.	The Proponent has conducted a study to determine barn owl use or dependency on habitat adjacent to the existing Highway 99 right of way based on habitat suitability mapping. As indicated in Section 4.8.3 of the dAIR, potential project related effects assessed in the Application will include collision risk for wildlife, including barn owls.	Response noted.	----------
47	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend a survey of migratory bird movement upstream and downstream of the tunnel in order to assess the potential impact of the project on movement of bird flocks within the area.	Collection of baseline on terrestrial wildlife included survey of bird movement in the vicinity of the Tunnel. Results of the study will be provided in the Application.	Response noted.	----------
48	Environment and Climate Change Canada	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Recommend an assessment of potential downstream and upstream effects on riverine habitats, including wetlands, sloughs, and irrigation ditches (including when the tunnel is removed) as the Project has the potential to impact, water quality and quantity , which in turn may potentially impact habitats used by listed and nonlisted migratory birds and other wildlife species.	A sediment and water quality study was conducted, focusing on collecting information on existing conditions pertaining to the Fraser River South Arm and the main watercourses within the study area, with emphasis on the characteristics of the riverbed, suspended sediments, and water quality. Additionally, the assessment of the potential effects on river hydraulics will help identify potential effects on foreshore habitats. **Section 4.8.2 of the dAIR has been refined to indicate that potential effects of the Project on water quality, and river hydraulics and morphology, have been considered in the assessment of wildlife.**	Response noted.	----------
49	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Achieving the goal of No Net Loss of Wetland Functions: Recommend that the Application clearly identify any federal lands in relation to the Project; and, any potential or required federal authorizations, permits or licenses necessary for the Project, including the likely geographical scope of each or any. See Attachment 1 for further information and guidance.	The Project alignment does not include any federal lands. The Application will identify federal legislation and related requirements in proximity of the Project alignment. **Section 1.1 of the dAIR has been refined to include further detail confirming that proximity of the Project to federal lands will be identified in the Application.**	Response noted.	----------

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50	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Recommend that wetlands (including estuaries), be assessed separately from the vegetation valued component as a separate valued component. Recommend that the wetland and estuary effects assessment include, but not be limited to: - Identification of the potential loss or impairment of wetland ecological functioning in relation to: o wildlife and wildlife habitat; o water quality; hydrology; o plant community make-up; and, o traditional use. Recommend that the wetland and estuary effects assessment further include, but not be limited to: - impacts to FREMP red, yellow and green colour coded areas; and - impacts to un-dyked floodplain forests	Wetlands will be classified according to wetland-specific standards and will be presented in the Terrestrial Ecosystem Mapping (TEM) assessment within the vegetation section. Potential effects on wetlands will be assessed on the basis of spatial extent (area) by ecosystem type (which are valued by provincial blue/red-listings), and water quality changes.	Response noted.	----------
51	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Recommend characterization of baseline vegetative communities within the area potentially affected by the Project. In particular, the Application should include information (distribution, extent and functions) on the following key communities, species groups or ecosystems that have intrinsic ecological or social value, including but not limited to: - Forests (including floodplain and riparian forests); - Riparian ecosystems; - Plant species, including vascular plants, bryophytes, and lichens, and ecological communities of conservation concern; - Traditional use plants; - Invasive species and weeds For rare plant surveys, recommend that the Protocols for Rare Plant Surveys by Penny and Klinkenberg, available through the CDC	Vegetation surveys have been conducted to provincial standards by qualified biologists and the information will be presented in the Application. The assessment includes information for key communities, species and ecosystems. The Application will provide a detailed description of the methods used to characterize existing conditions.	Response noted.	----------

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				and EFlora websites, be used. Recommend that appropriately qualified botanists complete the aforementioned vegetation surveys.			
52	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Recommend federally- and COSEWIC-listed vascular and nonvascular (bryophytes, lichens) rare plant surveys and lichen surveys. Qualified professional botanists with expertise with the listed species will need to be retained to do this work, in particular for non-vascular and lichen species.	Surveys for at-risk vascular plants were conducted. Surveys followed the guidelines established for such work and were conducted by qualified professionals. Non-vascular at-risk plant species were not identified during the preliminary review of at-risk plant species known to occur in the study area. **Section 4.7.2 of the dAIR has been updated to provide further clarification on methodology used in collecting baseline information.**	Response noted.	----------
53	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Recommend that further loss of riparian or upland vegetation be placed in the context of historic losses in the Fraser estuary/delta as a whole and that this should be assessed through a regional cumulative effects assessment	The effects of the Project on vegetation are very small and confined to highly modified ecosystems. It is anticipated that all Project-related effects on vegetation can be effectively mitigated such that no residual effect to riparian and upland vegetation occurs as a result of the Project.	While the Proponent has indicated that all impacts on riparian vegetation will be mitigated, ECCC advises that the RAA would benefit from a description of potential cumulative effects from this Project. .	The methodology adopted with respect to describing existing conditions follows the EAO's *Guideline for the Selection of Valued Components and Assessment of Potential Effects.* Following this methodology, the description of existing conditions provides for a consideration of the effects of previous development on specific VCs. As such, the description of existing conditions for each VC will reference natural or human-caused trends that may have influenced the existing

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							condition or future trajectory of such conditions.
54	Environment and Climate Change Canada	Section 4.7 (Vegetation)	Vegetation	Recommend a regional assessment area be defined in order to evaluate cumulative effects. Cumulative effects on riparian/floodplain habitats, including wetlands, and on the migratory bird and species at risk that these support is a concern, especially given documented historical losses.	The rationale for establishing the LAA and the RAA for vegetation will be provided in the Application and will be shared at the upcoming Working Group meeting in a table that summarizes LAAs and RAAs for all VCs including a VC specific rationale for how they were established.	Response noted.	----------
55	Vancouver Coastal Health	N/A	Layout	Overall, the document could use a cross referenced table that lists the proposed value components (VC), the associated assessment boundaries (time, space etc.), proposed indicators and data / information source, and proposed studies specific to the VC. This could make the documentation easier to read and review.	The Proponent will provide a summary table to facilitate document review in concert with the next Working Group meeting.	Vancouver Coastal Health provided no further comment.	----------
56	Vancouver Coastal Health	Section 1.0 (Overview)	Options Analysis	Health was not considered as a criterion to evaluate the potential crossing scenarios.	Six categories formed the basis of evaluation of potential crossing scenarios; efficiency of transportation, safety, agriculture, environment, jobs and the economy, and social and community considerations. Under each of these categories, criteria were identified, many of which were health related including but not limited to incident response capability, earthquake protection, traffic safety, pedestrian and cycling accessibility, local and regional air quality and noise impacts.	Vancouver Coastal Health provided no further comment.	----------
57	Vancouver Coastal Health	Section 4.9 (Air Quality)	Air Quality	It is suggested that the air quality local assessment area be extended North-West into the City of Vancouver as queue lengths at Oak Street Bridge are projected to be longer during the busiest parts of rush hour once the bridge is constructed (Project Definition Report, pg. 32).	The air quality assessment extends the length of the project scope and includes receptors up to 1km North of Bridgeport, and is focused on what the potential net effects of the Project may be. Currently, there is congestion and queuing of northbound traffic along the Hwy 99 corridor during the weekday morning peak period as a result of the traffic signals at 70th and Oak Street in the City of Vancouver. Queue lengths may get a little longer during this period as a result of the Project as people may change their preferred travel time to take advantage of the significant travel time savings. This would not change the net predicted air	VCH understands that MoTI believes that the changes in queue lengths at Oak Street Bridge are outside of the scope of the project; however, from a health perspective, the affected local air quality would include the shared air space through to 70th and Oak Street. The area North of the project also has a large residential and working population that would be affected by changes in air quality. The Proponent's response to our concerns regarding AQ impact northward beyond the current LAA is unsatisfactory. The proponent argues that while the queue length "may get a little longer"	The dAIR is being revised to recognize and to assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic. The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Liang Bridge. In addition to being beyond the area where physical Project works are being undertaken,

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					quality concentrations of pollutants at peak periods as modelled along the corridor. It is also noted that, without the proposed Project improvements, it is anticipated that queue lengths would still get longer in the future.	during the weekday morning peak period, that as a result of the project " people may change their preferred travel time to take advantage of the significant travel time savings". There is nothing to prevent people to change their travel time presently once across the tunnel. There is no evidence presented that would indicate people will do more of this after the project is completed, or that the project will actually facilitate this choice of when to take the daily commute in a significant way. The proponent also states in its response that "without the proposed project improvements, it is anticipated that the queue lengths would still get longer in the future." This could be true for the weekday south bound afternoon peak period. It may not be true for the northbound morning peak period since at the present, the GM tunnels act as a flow restricting "valve" that moderates the flow northbound to the Oak Street Bridge. Once the project is complete, that "flow restricting valve" will be moved to start at the south end of the Oak Street Bridge and extend to 70th Ave. It has been mentioned that the proponent is not prepared to extend the LAA for AQ northward into the City of Vancouver because the proponent has no jurisdictional capacity to mitigate negative impacts even if they are found. The inability of the proponent to undertake mitigation should not be a reason for not performing an impact assessment when it is justified. Both VCH and Metro Vancouver have expressed concerns with respect to the potential for AQ impacts northward beyond the current LAA for AQ. We believe the concerns are reasonable and an impact assessment is justified. It should be said that the AQ impacts may be different depending on the time of the day, and the direction of traffic flow. It may well be that there could be positive AQ impacts north of the current LAA associated with the project as well as negative impacts. There is no way to know unless an assessment is undertaken. The decision on the LAA for AQ must be carefully made by the EAO. VCH strongly recommends that the LAA for air	future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM). **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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						quality be extended to 2.5km north of the project end (to 70th Ave).	
58	Vancouver Coastal Health	Section 4.9 (Air Quality)	Air Quality	The proponent's presentation at the stakeholder WG meeting on Jan 21 made mention of the improving trends in AQ in the Metro Vancouver airshed over the past decade. It should be emphasized that that the long term improvement trend is no license for the project to release more pollutants. The intention should not be polluting to the max allowed – as though the improvement has given more room to pollute. Rather to minimize air emissions as much as possible for this project independent of the background AQ trend.	Preliminary study results suggest that the Project will help decrease greenhouse gas emissions as compared with maintaining the Tunnel, which supports provincial and federal GHG reduction targets. This is because of reduced congestion-related idling as well as the effect of travel-demand management measures that promote alternatives to the single-occupant vehicle, discouraging growth in vehicle traffic over time. Details on potential effects to air quality will be included in the Application.	Vancouver Coastal Health provided no further comment.	----------

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59	Vancouver Coastal Health	Section 4.9 (Air Quality)	Air Quality	The temporal boundary for the operating phase should be from bridge opening day to 35 years afterwards. The traffic volume will increase over time while the traffic speed may decrease. This will change the AQ emissions/noise levels from vehicles in the corridor. Air dispersion/noise modeling should be done at different times between completion and 35 years out, with different stakeholders agreed to scenarios for traffic growth and congestion projections. AQ emissions and noise should be decreased as much as possible during the construction and operating phase, independent of background trends.	The future conditions for the Air Quality and Noise Assessments have used the reference year 2031 and 2030 accordingly to make effective use of the vehicle fleet emissions forecasts set out by Metro Vancouver, and the Regional Transportation Model. The Project will have been operational for several years and this time frame represents a normalized operational reference point for consideration of potential Project-related effects. For the air quality assessment, Metro Vancouver's emission inventory was used. Metro Vancouver conducts an emission inventory, and forecasts emissions, and the latest emission forecasting by Metro Vancouver includes emission forecasts to 2031. Forecasting emissions, and resulting air quality, further into the future will have more uncertainty as projections of what future regulations may be implemented and available vehicle technologies for new vehicles built are unknown. Therefore, 2031 represents a conservative projection of what air quality is expected to be like in the future with and without the Project. **Section 4.9.3 and 4.10.3 of the dAIR have been updated to include confirmation that rationale for selection of the projected traffic horizon will be provided in the Application.**	Vancouver Coastal Health provided no further comment.	**Note:** The dAIR is being revised to recognize and to assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic and a rationale for the temporal boundary will be provided in the Application. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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60	Vancouver Coastal Health	Section 5.0 (Socio-economic Effects Assessment)	Economic	Proponent believes that the project will have positive effects on economic conditions and therefore is not planning to include assessments economic VCs. There is no way for the EAO, stakeholders, or the public to gauge the veracity of the proponent's conclusions on the economic VC without having the proponents economic analyses included in the final AIR. From the health perspective, it would be important to know how health care costs from chronic diseases as well as acute emergency care are considered by the proponent. Annual health care costs in B.C. account for more than 40% of the total provincial government expense (2014/2015) and a significant proportion is for treating and managing life style related chronic conditions - much of which can be prevented or modified by daily living choices including the method for commuting to work and other transportation choices. Of particular note is the exclusion of information and discussion on bridge toll and other road pricing options and decisions. There are different toll options and the economic and health impacts of the options could be different. Bridge toll as a traffic demand management tool can be health enhancing or be the opposite. Full economic VC cannot be assessed without knowing the proposed bridge toll scheme.	Effects on economic conditions are anticipated to be positive as a result of the Project, and therefore are not assessed as a valued component (VC). The economic pillar of the EAO framework will be considered in the context of project benefits and addressed in the Application. The Application will describe the economic benefits of the Project with respect to users, including travel time savings, reliability and safety benefits as well as employment (jobs created) during construction and operation, and related direct and indirect inputs to the economy. In addition, the Application will discuss tolling in terms of its role in contributing to Project funding as well as its influence as a transportation demand management tool and impacts on travel patterns. **Section 1.1 of the dAIR has been updated to confirm a discussion on tolling will be included in the Application.**	The Application should consider the economic burden of health care costs from chronic disease, particularly that linked to physical inactivity. A reduction of even 1% in physical inactivity, can contribute to an overall reduction in the economic burden of health care costs (http://www.phsa.ca/population-public-health-site/Documents/EconomicBenefitsofRiskFactorReductioninBC_full%20report.pdf, pg. 27). The new bridge may be able to contribute to the reduction in physical inactivity, by shortening commute times, as well as providing alternative methods to cross the bridge (e.g. cycling and walking paths), It should also be considered that the bridge may result in an increase of drivers and cars in the area, which may result in increased inactivity instead. It is important to recognize this important opportunity for improving population health.	The Proponent acknowledges the link between healthy lifestyles and access to a diverse range of transportation choices including walking and cycling. The planning of the Project has provided for improved access for multiple modes of transportation. Accordingly, effects on human health, and health care costs, as a result of decreased physical activity are not anticipated and will not be assessed in the Application. A summary of the results of the HIA, which will consider the link between healthy lifestyles and access to a diverse range of transportation choices, will be presented in the Application.

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61	Vancouver Coastal Health	Section 7.0 (Health Effects Assessment)	Built Environment	Health effects linked to the built environment; indicators that can be used include health effects of the built environment on physical activity, chronic disease, mental health, obesity, respiratory disease, social connectivity. Enhancing g the design of the bridge (e.g. rest areas, view points) and providing connections at the ends of the bridge to existing and proposed park, dyke and trail systems can provide an enjoyable experience for cyclists and pedestrians and encourage recreational use of the bridge.	The Proponent, with guidance from regional health authorities, is undertaking a Health Impact Assessment (HIA) for the Project which will consider broader determinants of health. The findings of the HIA will support the assessment of the health VC. The new bridge will include multi-use pathways, providing new and enhanced opportunities for cycling and pedestrians as well as enhanced connections to community trails, contributing to increased cycling opportunities for all user groups (recreation, tourism, commuters etc.) **The dAIR has been revised to indicate that Section 7.0 (Health) of Part B of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations.**	The project should make use of the opportunity to improve population health by as many actions as possible. The HIA should provide the Proponent with the chance to provide the best opportunity to enhance positive health outcomes and mitigate poor health outcomes.	As noted in the previously, the Project is providing for greater transportation choices in the Highway 99 corridor which will provide a benefit with respect to broader determinants of health. While the HIA is not a requirement of the EAO, the Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BC*EAA*. The HIA is being undertaken concurrently with the Projects environmental assessment under BC*EAA*. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.
62	Vancouver Coastal Health	Section 1.0 (Overview)	Transit	Transportation with regards to Transit must be well integrated and moulded with the Regional Transportation Plan. Consideration should be taken to articulate how the project will assist the region in achieving the Trans Link Regional Transportation Strategy target of having 50% of all trips in the region to be made by walking, cycling and transit. There should be a goal in the proposed project for the mode share for active transportation that reflects the regional transportation strategy. Design of the project for example may need to be analyzed relative to capacity for significantly increasing transit frequency and routes using the crossing if the regional strategy goal for active transport is to be met.	The Application will provide a description of how the Project aligns with, and supports, regional transportation goals and objectives identified in the TransLink Regional Transportation Strategy. The Project scope includes substantial measures to promote alternatives to the single occupant vehicle, including extending transit/ HOV lanes, direct transit connections to Bridgeport Road from Highway 99, multi-use pathways across the bridge and bridge deign that will accommodate future rapid transit.	The Project should align with the current works being completed with TransLink with regards to its Regional South West Area Transport Plan (SWATP). The SWATP consists of the spaces discussed within the Project (Richmond, South Delta, and Tsawwassen) and is using flexible boundaries to provide optimal services to users.	The Project includes significant investment in transit infrastructure that will support TransLink's regional and local plans. The Project team is aware of TransLink's recently started South West Area Transport Plan (SWATP) process, which is expected to continue for the next two years. The Project team meets regularly with TransLink staff and welcomes the opportunity to participate in TransLink's stakeholder consultation for this plan and to work with TransLink to identify opportunities — either within the Project scope or as part of the Ministry's broader commitment to transit — to support the engagement process and subsequent implementation. The Application will provide a description of how the Project aligns with, and supports, regional transportation goals and objectives identified in the TransLink Regional Transportation Strategy.

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63	Ministry of Forests, Lands, and Natural Resource Operations	Preface	Provincial Agencies	Ensure Dike Maintenance Act (DMA) FLNR are consulted. The application is to identify the dikes affected by the projects. The proponent is to contact FLNR Dike Flood Hazard Management Specialist for information and requirements.	Consultation with Ministry of Forests, Lands, and Natural Resource Operations regarding works on and near dikes within the Project alignment will be undertaken prior to construction to identify potentially affected dikes and develop appropriate measures to assure the integrity of flood hazard infrastructure associated with the Project.	Forests Lands and Natural Resource Operations Office (FLNRO) regulate the dike and any changes to the dike or dike foot print will require Dike Maintenance Act (DMA) approval. The 2 Local Governments, as Diking Authorities, however, are responsible for the dikes and their operation and maintenance. The Deputy Inspector of Dike (DIOD) office will work with the proponent and Local Governments to ensure that all dike related issues are addressed prior to the issuance of DMA approval. Drawings showing the existing Dike layer showing the current dike alignment, as well as Cadastral information (especially dike ROWs) on both sides of the bank should be provided to facilitate discussions on the changes to the dikes that will be needed due to the construction of the new bridge. The changes to the dike will result in major works that will be required to meet current provincial dike safety standards which includes upgrading the dikes to comply with the dike design seismic guidelines. It is highly likely the dike alignment across the new bridge construction corridor will need to be optimized to allow for access and maintenance and future upgrades as well as tie into the dike at the adjoining properties. Issues that will need to be accommodated and/or addressed include: • Pump station (the one located west of the highway corridor in Richmond) • The dike crossing the slough especially west of the highway corridor in Richmond • Raising the dike for Sea Level Rise (this will add additional surcharge to the local area which could potentially affect the bridge piles) • CN railway – its location could constrain dike and its alignment DIOD office will work with the MOTI and the local governments to develop an acceptable dike design across the MOTI lands – this includes but not limited to optimization of its alignment to best tie the into the dikes on the adjoining properties, acquisition of Rights of Way with sufficient width to accommodate the future raising of the Dike,	The Proponent will continue to consult with the Ministry of Forests, Lands, and Natural Resource Operations, the Deputy Inspector of Dikes office, the Corporation of Delta, and the City of Richmond regarding works and approvals on and near dikes within the Project alignment.

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						seismic design requirements, and clearances. Possible Temporary realignment of the dike on the Richmond side is likely to be needed during the whole construction period as well as decommissioning of the tunnel. If future changes to the dikes (dike raising) would negatively impact the nearby bridge foundations (especially if the bridge foundations are to utilize friction piles) the DIOD office will work with MOTI and the local governments to put in place an agreement similar to the one in place between MOTI and City of Port Coquitlam for the new Pitt River Bridge – MOTI agreed to bear any additional costs incurred by the LG when any future dike upgrades would negatively affect the new bridge.	
64	Ministry of Forests, Lands, and Natural Resource Operations	Preface	Federal Agencies	The WSA does not supersede any other permit or requirement. There are elements to the decommissioning of the tunnel that could gain from DFO participation. The other three works may be of interest to DFO.	The Proponent has had initial consultation with Department of Fisheries and Oceans (DFO) on the Project. Based on these discussions, DFO has indicated they will become more actively involved at the permitting stage, in alignment with detailed planning and approach for Tunnel decommissioning.	Has there been any communication on elements of the proposed works beyond the Tunnel decommissioning?	As previously mentioned, the Proponent has had initial consultation with DFO on the Project. Based on these discussions it is expected that DFO will become more actively involved at the permitting stage for authorizations required for the Project.
65	Ministry of Forests, Lands, and Natural Resource Operations	Application Summary	Project components	It will be helpful to list each of the 4 components of the project separately. Additionally a fifth component on the cumulative effects.	While the Application assesses the Project as a single component, the four components have been proposed as broad categories of Project activities in terms of how they apply to the Water Sustainability Act (WSA) permitting process. For the purpose of WSA permitting, the Proponent is receptive to submitting applications for specific components to meet the needs of Ministry of Forests, Lands, and Natural Resource Operations.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
66	Ministry of Forests, Lands, and Natural Resource Operations	Application Summary	Project components	Many details on the decommissioning of the tunnel are required. Including but not limited to; • The application is to include the critical path scheduling for completing the tunnel removal, as to ensure the 200 day period for infilling the tunnel depression by river sedimentation is achieved. • How and where the proponent will dispose of dredging • Clarification on disposal of tunnel sections	The Application will provide a description of Tunnel decommissioning activities, methodology, approach, and schedule, as well as modelling results of the post-infilling scenario. An assessment of the potential effects of the Tunnel removal, and off-setting measures as appropriate, will be presented in the River Hydraulics section of the Application. **Section 1.1 of the dAIR has been updated to provide confirmation that the Application will include a**	In addition to the River Hydraulics section, mitigation measures for the decommissioning of the tunnel could be added to other aquatic impact and benefit sections of the Application. The fish and fish habitat section is one of these area.	Potential Project-related changes in River Hydraulics are assessed in terms of their effect on Fish and Fish Habitat. Mitigation measures required for any potential Project-related effects on fish and fish habitat due to changes in river hydraulics will be presented within this section of the Application.

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					description of the anticipated Tunnel decommissioning approach.		
67	Ministry of Forests, Lands, and Natural Resource Operations	Application Summary	Project components	Will there be any temporary roads or temporary highways during construction? The proposed assessment boundaries are around the existing tunnel, proposed bridge, and HWY 99. Is it correct to say that no temporary roads or highways will be built outside of the assessment areas outlined in the dAIR? Please include the details for all works proposed in and about a stream as defined by the Water Sustainability Act. Ensure the application provides the locations of Staging Areas to be used for construction, land and wharves. Are any within the definition of a stream under the Water Sustainability Act	It is assumed that temporary roads may be required during the pre-construction and construction stages to facilitate construction access and staging, as well as temporary traffic detours that may be required. The Application has been developed with the assumption that all temporary and permanent works will be included within the Project alignment. Potential staging areas that will be made available to the contractor encompass areas within the highway right-of-way that have been previously developed and disturbed. Any temporary or permanent works that are to take place will be subject to applicable permitting requirements, including Water Sustainability Act permitting. Applications for these permits will include detailed descriptions and locations of works to take place. If the contractor chooses to develop staging areas on sites other than those identified, site specific environmental permitting and approvals will be obtained by the contractor. **Section 1.1 of the dAIR has been updated to include confirmation that a discussion on construction related facilities, such as temporary roads, staging areas, and wharves, will be included in the Application.**	It will be beneficial if the timelines of information sharing for the proposed works occurred prior to the WSA application reviews and referral processes. Please take timelines into account for WSA Section 11 Changes in and about a Stream applications. It could be difficult for authorizations review and processing to occur by the contractor. It may be beneficial to the project timelines to include as many of the Changes in and about a Stream in the initial applications	The Proponent will take the WSA application review and referral process timelines into account when planning permitting of works. The initial WSA applications will include as many of the Changes in and about a Stream as is practical.

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68	Ministry of Forests, Lands, and Natural Resource Operations	Section 1.0 (Overview)	Traffic Management during Construction	Explain how traffic will be managed during construction? Will it ever be shut off completely, and diverted to the other bridges? Or will traffic be maintained along the HWY 99 route (similar to Port Mann Bridge construction). This is particularly of interest in terms of the works in and about a stream under the Water Sustainability Act.	Traffic will be maintained within the Highway 99 corridor during construction. A Traffic Management Plan will be included as part of the Construction Management Plan that will be developed for the Project. Key stakeholders, including but not limited to local governments, will have an opportunity to provide input on the Traffic Management Plan prior to its implementation. Specific traffic diversions that may be required during construction, including any limited closures of the crossing, will be available in more detail closer to commencement of construction. Any temporary or permanent changes to traffic, such as construction of temporary access roads or detours that may involve works in or about a stream will be subject to applicable permitting requirements, including Water Sustainability Act permitting. Applications for these permits will include detailed descriptions and locations of works to take place. **Section 1.1 of the dAIR has been updated to include confirmation that construction traffic management will be discussed in the Application.**	It will be beneficial if the timelines of information sharing for the proposed works occurred prior to the WSA application reviews and referral processes. This comment is in regards to works in and about a stream under the WSA.	The Proponent will take the WSA application review and referral process timelines into account when planning permitting of works. The initial WSA applications will include as many of the Changes in and about a Stream as is practical. **Note:** The dAIR is being revised to recognize and to assess traffic as an Intermediate Component (IC). The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and a reference to the Traffic Management Plan will be made here. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
69	Ministry of Forests, Lands, and Natural Resource Operations	Application Summary	Project components	Many details on the restoration works in Green Slough are needed.	Works to be undertaken for the diversion and subsequent restoration of Green Slough and applicable permitting requirements will be discussed with Ministry of Forests, Lands and Natural Resource Operations.	Will these works also be included in the EACA Application? The details of the works, impact and benefits to the aquatic community, and mitigation measures from the temporary alterations to area during construction should be included in the EACA and WSA authorizations.	An overview of the proposed Green Slough realignment and anticipated effects and benefits will be included in the Application. The WSA application will contain details regarding the temporary alterations, best management practices, and mitigation.
70	Ministry of Forests, Lands, and Natural Resource Operations	Section 1.0 (Overview)	Applicable Authorizations	If this or these EAC is considering concurrent permitting in terms of Water Sustainability Act authorizations it is encouraged to share this request as soon as possible.	Water Sustainability Act (WSA) permitting for the Project will be applied for separately from the Application for an Environmental Assessment Certificate. **Section 1.2 of the dAIR has been updated to include a statement that the Proponent will not be requesting concurrent permitting under the Concurrent Approval Regulation.**	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------

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71	Ministry of Forests, Lands, and Natural Resource Operations	Section 1.0 (Overview)	Applicable Authorizations	It is important to know if the proponent is seeking to receive Water Authorizations within this application package in terms of concurrent permitting opportunities. FLNR will need to know details on the proposed works in order to ensure the contents of the dAIR fulfill all of the Water Authorization requirements.	Water Sustainability Act (WSA) permitting for the Project will be applied for separately from the BCEAA process. Details of the Project, from a Water Authorization perspective, will be included within a Water Sustainability Act application that will be submitted to Ministry of Forests, Lands, and Natural Resource Operations. **Section 1.2 of the dAIR has been updated to include a statement that the Proponent will not be requesting concurrent permitting under the Concurrent Approval Regulation.**	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
72	Ministry of Forests, Lands, and Natural Resource Operations	Section 1.0 (Overview)	Applicable Authorizations	I understand that this application requests 4 Water Sustainability Act authorizations. One for the transportation routes leading up to the new bridge. One for the new bridge, one for the decommissioning of the tunnel and one for the works associated with the Green slough development. Please separate out how each section will account for all four works separately. Additionally please include the cumulative effects of the four projects. This should be listed in with each section of the dAIR.	This Application is for an Environmental Assessment Certificate under the BC Environmental Assessment Act. Water Sustainability Act (WSA) permitting is not being requested concurrent with the Application. A WSA permit application package will be submitted separately. It is currently assumed that this package will be described as works that fall within four broad categories (upland watercourses, clear span bridge, Green Slough, and Tunnel decommissioning). Cumulative effects are discussed within the effects assessment sections of the Environmental Assessment Application.	The details of the works, impact and benefits to the aquatic community, and mitigation measures from the temporary alterations to Green Slough area during construction should be included in the EACA and WSA authorizations.	An overview of the proposed Green Slough realignment and anticipated effects and benefits will be included in the Application. The WSA application will contain details on temporary alterations, best management practices, and mitigation.
73	Ministry of Forests, Lands, and Natural Resource Operations	Application Summary	Project components	The application is to provide hydraulic modelling that shows a 200 day infill is achievable with minimal mitigation of tunnel depression. Additionally hydraulic modelling determining the tunnel depression is stable and does not move or get larger.	The Application will include the details of the hydraulic modelling and assumed infill following Tunnel decommissioning. Background information on this study will be made available to the Working Group.	What are the timelines for receipt of this study? Please forward the studies to FLNR along with the background information.	Applicable studies and relevant background information will be provided in the Application.

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74	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Please list the fish and fish habitat studies completed to determine how all 4 projects impact or benefit fish and fish habitat. It is understood that the proponent will complete the analysis for all 4 components individually. Additionally the cumulative effects of these projects together with other proposed works in the study area.	Studies undertaken on fish and fish habitat will be outlined in the Application and include: characterization of baseline conditions, assessment of potential effects, identification of mitigation, and assessment of cumulative effects. The scope of the studies includes spatial areas that would potentially be either directly or indirectly affected by the proposed project works described in the Project Description and Key Areas of Study. Background information on this study will be made available to the Working Group. The potential impacts and benefits, as well as mitigation and Best Management Practices that will be applied during works in and about a stream will be described within the Water Sustainability Act (WSA) permit application package.	Will the content and level of detail be similar in the EACA to the content listed in the WSA applications? Please provide the timelines for review of the studies supporting these assessments.	The level of detail provided in the Application and WSA applications will meet the requirements of the respective regulatory agencies responsible for the review of the documents. There are no specific timelines assigned for the review of background studies. It is assumed that the information contained in such studies will be considered as part of the review of the Application.
75	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.3 (Existing Conditions)	Existing Conditions	Consider incorporating information, methodologies from outside of British Columbia. The USGS has many advanced methods, information that could assist in this EACA. The best available information does not need to be limited to BC.	Noted. The Application is being developed using best practices associated with the various disciplines that are undertaking studies to support the environmental assessment. Those that are leading specific studies do consider best practices and information from beyond B.C.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
76	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.4 (Potential Effects)	Potential Effects	It is difficult to exclude with unknowns and unique project elements in terms of the decommissioning of the tunnel. If similar techniques have been employed please include in the EACA as examples.	The Application assumes that the four in-stream segments of the Tunnel will be removed. Applicable permitting associated with Tunnel decommissioning will be applied for prior to decommissioning works. At that time, a detailed decommissioning plan, including specific activities and schedule will be provided. **Section 1.1 of the dAIR has been updated to provide confirmation that the Application will include a description of the anticipated Tunnel decommissioning approach.**	These timelines may be difficult if referrals are to include Tunnel decommissioning along with the other proposed works.	Tunnel decommissioning will not occur until the new bridge has been constructed and is operational. Permitting applications for Tunnel removal are not expected to be prepared and submitted until bridge construction is well underway.
77	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.5 (Mitigation Measures)	Mitigation Measures	The possible impacts and benefits are to be included for all four components of the project. The duration and details of the post construction monitoring should be included.	The Application will include an assessment of effects and benefits for all elements of the Project. Post-construction monitoring requirements will be identified in the Application and confirmed prior to the completion of the environmental assessment process.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------

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78	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.5 (Mitigation Measures)	Mitigation Measures	Include the most optimum time of year to do the works. Taking in consideration the duration of the activities. What is the duration of each of the components? A charted schedule will assist to better understand what will be workable and realistic mitigation measures. There are unique elements to the project. Standard mitigation may not be the best and most applicable mitigation measures. Please include how to implement and monitor mitigation measures.	Throughout the multi-year construction period, least-risk timing windows for fish and wildlife have been proposed within the applicable sections of the Application and will also be included within the Water Sustainability Act permit package to be submitted to Ministry of Forests, Lands, and Natural Resource Operations. Mitigation and monitoring is described in the Application and will be included within a Construction Environmental Management Plan that will be developed prior to commencement of Project construction.	Please note these details are aspects of the WSA application review and referral process. This is in regards to the mitigation and monitoring listed to be included within a Construction Environmental Management Plan.	Noted. The WSA application will contain details on temporary works, best management practices, and mitigation.
79	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.6 (Characterization of Residual Effects)	Characterization of Residual Effects	Quantification and degree of certainty of residual effect required.	Residual effects for each valued component (VC) will be characterized in the Application. The characterization of residual effects will include a consideration of: direction, magnitude, geographic extent, duration, frequency, and reversibility.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
80	Ministry of Forests, Lands, and Natural Resource Operations	Section 3.3 (Existing Conditions)	Existing Conditions	Quantify and qualify baseline.	Baseline conditions for each assessment component are described in detail within each of the effects assessment sections of the Application.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
81	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Include effects to the aquatic community in terms of benthic invertebrates.	Aquatic habitats, which include habitat for fish and other aquatic species (including benthic and aquatic invertebrates), will be a primary area of focus in the environmental assessment. Potential disturbance to benthic and aquatic invertebrates is not, on its own, proposed as a valued component (VC) given the nature of the Project and the aquatic habitats it overlaps with. Aquatic habitats overlapping with the Project occur within a section of the Fraser River that is dynamic, influenced by large flow variations and downstream transport of sand and organic matter. Therefore, aquatic and benthic invertebrates within and adjacent to the Project alignment are expected to be resilient to physical disturbance. Given the temporary and short-term changes in flow and water quality expected from Project activities, it is anticipated that the benthic and	The comment is in regards to impacts and benefits on the aquatic community during construction and post construction	The response provided is in the context of potential Project-related construction and post construction effects.

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					aquatic invertebrates will recover rapidly from any disturbance. **Section 3.1 of the dAIR has been updated to reflect that rationale for exclusion of benthic and aquatic invertebrates as a VC will be provided in the Application.**		
82	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	The description of effects and the measures to avoid or mitigate serious harm to fish should be listed for all of the four authorizations. This could include but not be limited to; • Changes or constriction of flow • Change in aquatic vegetation • Change in shoreline morphology • Changes in substrate composition (effects on habitat structure, cover and food supply) • Re suspension and entrainment of sediments • Assessment of harm or mortality to fish from each of the proposed works	A description of potential effects and mitigation to be applied will be included within the Water Sustainability Act (WSA) permit application, and is also discussed in detail within the applicable sections of the Application. Additionally, mitigation measures will be described in the Construction Environmental Management Plan (EMP) that will be developed prior to construction of the Project.	Please note these details are aspects of the WSA application review and referral process. This is in regards to the mitigation and monitoring listed to be included within a Construction Environmental Management Plan.	Noted. The Proponents WSA submission will include the required description of effects and mitigation measures specifically applicable to the works described within the WSA submission. Mitigation applicable to the Project as a whole will be described within the Application as well as the CEMP that will be developed prior to construction.
83	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.1 (River Hydraulics and Morphology)	River Hydraulics and Morphology	Additional information on the proposed works are needed to determine if the boundaries defined in this dAIR reflect the area required for the EACA. Please note the feeder routes to the new bridge will need to be included if any works are proposed in and about a stream as defined by the Water Sustainability Act.	The Proponent will meet with Ministry of Forests Lands and Natural Resource Operations (MFLNRO) to determine what additional information is required to confirm the LAA and RAA for VCs of interest to MFLNRO and will provide a table outlining the rationale for study area boundaries at the scheduled Working Group meeting. Any temporary or permanent Project components that may involve works in or about a stream, including feeder routes (i.e., watercourses along the Highway 99 corridor) will be included within the Water Sustainability Act (WSA) permit package that will be submitted to MFLRNO.	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------

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84	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Additional information on the proposed works are needed to determine if the boundaries defined in this dAIR reflect the area required for the EACA. Please note the feeder routes to the new bridge will need to be included if any works are proposed in and about a stream as defined by the Water Sustainability Act.	The Proponent will meet with FLNRO to determine what additional information is required to confirm the LAA and RAA for VCs of interest to Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) and will provide a table outlining the rationale for study area boundaries at the next working group meeting. Any temporary or permanent Project components that may involve works in or about a stream, including feeder routes, will be included within the Water Sustainability Act permit package that will be submitted to MFLRNO	Ministry of Forests Lands and Natural Resource Operations provided no further comment.	----------
85	Metro Vancouver	Section 1.0 (Overview)	Traffic	To assist with local transportation planning efforts, Metro Vancouver staff recommend that the Ministry of Transportation and Infrastructure explore the following questions: 1. How much traffic volume (and thus traffic congestion) on the Highway 99 corridor will be diverted to or from the Alex Fraser Bridge corridor on a) opening day and b) after travel behaviour has stabilized? 2. With planned residential and region-serving retail developments in Tsawwassen First Nation and Delta, the catchment for attracting trips through the Highway 99 corridor will expand. How will future trip origins and destinations change from current conditions on weekdays? What are current and future trip origins and destinations on weekends? 3. How will queue lengths change on the Fraser River crossings after project completion? Will the new bridge provide appreciable queuing reductions on the approaches leading to and from the Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge, Queensborough Bridge? 4. How will transportation-related greenhouse gas emissions change as a result of new travel patterns and demands?	The Proponent has discussed traffic and related matters with Working Group members over the past 2 years and significant material regarding this subject is on the web site. The Proponent intends to provide additional opportunity to discuss traffic, and its inclusion in the Application, at the scheduled Working Group meeting. In addition, the Proponent will be meeting with Working Group representatives, including Metro Vancouver, separately to allow for more detailed discussion on traffic considerations associated with the Project. 1. It is anticipated traffic volume will be diverted from Alex Fraser Bridge to the new bridge during rush hour periods. There will be some diversion to the Alex Fraser Bridge during overnight and weekend periods. 2. Project assumptions include known developments such as these based on municipal, regional and development information. Origin destination information is included in the Project Definition Report and on the web site. 3. The new bridge will alleviate the current queues experienced at the tunnel. As the majority of the traffic using the tunnel is destined to or from Richmond and traffic volumes into the City of Vancouver have been dropping over the past 5 years, there will be no appreciable change in queues on the approaches to the Oak St Bridge, Knight St	With respect to each numbered item in the columns on the left: 1) To date, no technical documentation, comprising methodology and quantitative analysis, describing forecast traffic flows on proximate water crossings have been provided to Metro Vancouver. 2) To date, no technical documentation, comprising methodology and quantitative analysis, has been provided to Metro Vancouver on how trip origins and destinations may change as a dynamic result of the new bridge. While Metro Vancouver prepares baseline and future year population and employment allocations for TransLink's regional transportation model, unanticipated highway infrastructure could materially affect the allocations. It is unclear how the proponent has taken into account the dynamics of land use and transportation decisions. Further, the origin and destination data in the Project Definition Report are likely cell phone data collected from vehicles entering and exiting Highway 99. The cell phone data does not represent how trip origins and destinations may look like in the future. 3) To date, no technical documentation, comprising methodology and quantitative analysis, has been provided to Metro Vancouver on how the new bridge will	The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic, that support the assessment of other ICs and VCS, including a rationale for the LAA and RAA for the Traffic IC. Based on this methodology, the Application will provide an assessment of Project-related changes in traffic within the project area and relevant portions of the regional road network proximal to the Project. . 1) The Application will include data on future forecasted traffic conditions at proximate water crossings including the Alex Fraser Bridge. 2) The Application will include traffic forecasts, with and without the Project, using TransLink's regional transportation model to assess future transportation decisions and origin-destinations related to the Project. The regional transportation model is based on assumptions about population and employment growth in different regions of Metro Vancouver which, accordingly, generate traffic. The model also assumes addition of other future

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				5. How will a new bridge affect goods movement within and through the region? Will it support improved connections between the movement of goods and industrial lands?	Bridge or the Queensborough Bridge. 4. The reduction in congestion will reduce idling and greenhouse gas emissions significantly at the crossing. In addition, tolling is anticipated to reduce traffic volumes, further reducing greenhouse gas emissions. 5. Given developments in Richmond and south of the Fraser River, the US Border Crossing, BC Ferries and Deltaport the new bridge will facilitate goods movement through reducing congestion and costs for goods movers and consumers. **Section 1.1 of the dAIR has been updated to include confirmation that the Application will include a discussion on current traffic conditions and predicted future trends.**	affect queues on the Fraser River crossings, including Oak Street Bridge, Knight Street Bridge, Queensborough Bridge, Alex Fraser Bridge, and so on. In particular, the effects on Alex Fraser Bridge should be presented given that it will be the "free alternative" to a tolled Massey Bridge. 4) To date, no technical documentation, comprising methodology and quantitative analysis, has been provided to Metro Vancouver on effects on greenhouse gas emissions and vehicle kilometres travelled. 5) To date, no technical documentation, comprising methodology and quantitative analysis, has been provided to Metro Vancouver on the reductions in congestion and costs for goods movers and consumers. The reference that **"the Application will include a discussion on current traffic conditions and predicted future trends"** should address the specific items listed above. Given the premise of the project is to reduce traffic congestion, it is recommended that the dAIR include a Transportation Valued Component. The Transportation Valued Component should include detail documentation on methodology and quantitative analysis of the effects of a new bridge and without a new bridge on traffic patterns, volumes, queues, vehicle kilometres travelled, and air emissions on the Highway 99 corridor, proximate Fraser River crossing corridors, in particular the Alex Fraser Bridge corridor, and regionwide. The framework for analyzing air quality effects is a model that should be replicated for the Transportation Valued Component. ---------- **(Comment from VCH)** 3. The Proponent states under comments #57 and #97 that "Queue lengths may get a little longer during [the morning rush hour period] as a result of the Project as people may change their preferred travel time to take	transportation infrastructure and its adoption by people in future. As such the RTM is not based on a static set of assumptions about land use and population. 3) The Application will include data on future forecasted traffic conditions at proximate water crossings including the Alex Fraser Bridge, Knight St Bridge, and Arthur Liang Bridge. While the Application will discuss future forecasted traffic trends at such locations to provide context to support the assessment of traffic, future (2030 and 2045) changes in traffic conditions at such locations are influenced by a large number of factors (e.g., planned growth in employment and population, different choices people make about where they live/work, other changes in the regional transportation system). Relative to these factors, the future operation of the George Massey Tunnel is considered to have a negligible influence on queues lengths on other crossings of the Fraser. 4) Changes in greenhouse gas emissions, as a result of the Project, will be discussed in the Application in Section 4.9 Air Quality. 5) The Project is being advanced to address significant congestion at an important link in the regional road network. Reducing such congestion will facilitate the improved movement of people and goods. The Application will provide information to demonstrate reduced congestion in the Highway 99

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						advantage of the significant travel time savings," however, here, the Proponent states that "there will be no appreciable change in queues on the approaches to the Oak St Bridge, Knight St Bridge or the Queensborough Bridge." To assess the full impact of the new bridge, particularly from an air quality and GHG emission stance, as well as for the benefits of improved long-term health by allowing commuters to spend less time in their vehicles, the new bridge's impact on adjacent and potentially affected roadways should also be considered	corridor, including in Part A and Section 6.1. **Traffic as an IC has been added as Section 5.1 of the dAIR.** ---------- **VCH Comment:** The dAIR has been revised to provide for an assessment of traffic as an intermediate component. The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Lang Bridge. In addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM).

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86	Metro Vancouver	Section 1.0 (Overview)	Traffic	The Ministry of Transportation and Infrastructure's Project Definition Report does not mention any refinements to the provincial tolling policy that will permit effective region-wide demand management for the road network – a key principle in Metro 2040, the regional growth strategy, and the Mayor's Vision for Regional Transportation Investments. It is appropriate to test the effects of a system-wide pricing program on traffic volumes, trip origins and destinations, and queue lengths. For example, the toll-free Alex Fraser Bridge may experience additional volumes and congestion in the peak periods, and new growth in the midday period, which is currently operating at free flow. Given the financial struggles of the Golden Ears Bridge and Port Mann Bridge, it would be financially prudent to better understand how different pricing/tolling policy changes could affect the fiscal sustainability of a new 10-lane bridge. Metro Vancouver staff request additional information on different tolling options.	The Project as contemplated is fully consistent with the current provincial tolling guidelines. The Project will increase highway capacity, relieve congestion and result in travel time, reliability and vehicle operating cost savings. Tolling the new bridge will be an effective travel demand management measure for this location. Should a region-wide management system that includes the Province be developed in the future the system at this location may change at that time. The proposed tolling framework includes: a point toll at the bridge; a toll rate for four classes of users including motorcycles, cars, light commercial and large commercial vehicles; and a fully electronic free-flow collection system. Tolls will be used to finance the Project, including the cost of construction, operations, maintenance and rehabilitation. Traffic forecasts for the Project have been based on the current tolling regime for the Port Mann Bridge, as outlined in the Project's business case. Based on the actual experience at Port Mann, combined with an analysis of current origin-destination patterns by time of day, traffic levels at the new bridge are expected to increase during peak periods, and to decline during off-peak periods. Diversion to the Alex Fraser Bridge will be greater during less congested periods, but will be limited during peak periods by existing capacity constraints at Alex Fraser, and also by daytime congestion on the east-west connector portion of Highway 91. It is anticipated that broader discussions regarding regional tolling will continue during the period the new bridge is under construction and any changes in approach would need to be explored in more detail with the public, stakeholders and municipalities.	To date, no technical documentation, comprising methodology and quantitative analysis, has been provided to Metro Vancouver on the assessment of the risk and confidence intervals of the traffic and emissions effects resulting from different tolling regimes. --- (**Comment from VCH)** The health effects of tolling, as well as other considerations for road pricing, should be considered in the HIA.	The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic, that support the assessment of other ICs and VCS, including a rationale for the LAA and RAA for the Traffic IC. Based on this methodology, the Application will provide an assessment of Project-related changes in traffic within the project area and relevant portions of the regional road network proximal to the Project. Both the traffic forecasting and the air quality assessment information presented in the Application will be supported by technical appendices to demonstrate the methodology undertaken is defensible. Confidence levels and technical limitations that may exist will be noted. **Traffic as an IC has been added as Section 6.1 of the dAIR.** --- **Comment from VCH:** A consideration of travel time will be included in the HIA that is being undertaken.

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87	Metro Vancouver	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects	Trans Mountain Pipeline Expansion Projects should be included in the cumulative effects assessment as one of the Reasonably Foreseeable Development and Activities	The proposed Kinder Morgan Trans Mountain Expansion Project (TMEP) will be added to the list of projects to be included in the cumulative effects assessment. **Section 3.10 of the dAIR has been updated to include the proposed Kinder Morgan Trans Mountain Expansion Project in the list of projects and activities considered for inclusion in the cumulative effects assessment.**	Noted.	----------
88	Metro Vancouver	Section 3.1 (Issues Scoping and Valued Component Selection)	Issues Scoping and Valued Component Selection	Should consider the following additional valued components: -Recreation : Deas Island Regional Park and its recreational values are directly and significantly impacted by the proposed project. The assessment area for a recreation values component should include the entire Park and should consider including recreational impacts on trail networks in Delta and Richmond, subject to support from those municipalities. -Infrastructure: The construction of the new bridge and decommissioning of the existing tunnel are anticipated to have impacts on Metro Vancouver Water Services infrastructure (River Road West Main and Lulu Island-Delta Main). Given the potential impacts on this infrastructure, the Ministry should consider adding a valued component for infrastructure. -Visual Air Quality: The science on visual air quality is evolving and a metric may not be available currently to make a quantitative assessment; however, the proponent should make a qualitative assessment of the impact of the project on visual air quality.	Recreation - As recreation activities are both land-based and water-based, potential effects to recreation as a result of the Project are considered under the land-use and marine use valued components (VCs). Potential effects to recreational activities in Deas Island Regional Park are primarily considered in the land use VC. Infrastructure - Potential effects on downstream infrastructure (i.e., Metro Vancouver water mains) are considered under the assessment of river hydraulics which considers potential changes in scour or deposition and movement of the river bed. As discussed with Metro Vancouver at a number of meetings the Proponent does not anticipate any effects on Metro Vancouver infrastructure. Visual Air Quality - Visual Air Quality is affected by pollutant levels as well as weather conditions. With pollutant levels generally forecasted to reduce as a result of the Project in 2031, it is anticipated that visual air quality would also improve as a result. The Project contributes a small percentage of total regional emissions and may result in no noticeable change when compared to regional forecasted emissions in 2031 by Metro Vancouver. Metro Vancouver forecast of smog forming pollutants (pollutants that can impact visual air quality) in the region are forecasted to be slightly lower in 2031 that they were in 2011. Following dialogue with Metro Vancouver, the Proponent is undertaking a qualitative assessment of potential changes on visual aspects of air quality which will be provided to Metro Vancouver. **Section 6.1 and 6.2 of the dAIR have been refined to**	With respect to Recreation: 1) Recreation is not only an aspect of Land Use; rather it is a Valued Component. Please recognize Recreation as a Valued Component 2) Please acknowledge the park in its entirety by describing in more detail how MOTI is considering the effects to the recreational activities in the Deas Island Regional Park as a whole park site connected to the region and its connections as referenced in the Land Use VC. 3) Deas Island Regional Park is connected directly to other trail networks such as the Richmond Central Loop and the Millennium Trail in Delta. Those connections will be impacted by construction (during and after). Please provide information on the following: a. What kind of mitigation options/ guidelines will MOTI provide to the selected contractor(s) to minimize impact on connections during and after construction? b. What assurances will MOTI and the selected contractor(s) provide to Metro Vancouver Regional Parks that the existing connections will be maintained and/or enhanced? 4) Metro Vancouver staff and visitors access the park through the existing MOTI ROW. This access is critical for park maintenance and the park visitor experience. Metro Vancouver Regional Parks would like to	1) Recreation will be included in the Application as an indicator under the Land Use VC. 2) The Proponent has revised the study areas of the following VC's to consider the potential Project related effects on Deas Island: terrestrial wildlife, vegetation, and land use. 3&4) As discussed with Metro Vancouver, the Proponent will continue to work with Metro Vancouver Parks regarding access to the west side of Deas Island, both during and after construction. With respect to Infrastructure: The Proponent recognizes the importance of Metro Vancouver infrastructure and potential Project related effects on facilities such as the Lulu-Island Delta Main downstream of the Tunnel, are considered under the assessment of the river hydraulics intermediate component. As the project progresses, further detail will be developed and discussed with Metro Vancouver. ---------- **Comment from VCH:** Health benefits associated with Project-related improvements to active traffic networks will be discussed under Project

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					confirm that potential Project-related effects on recreation will be addressed in the Application.	ensure that at no time are park users or Metro Vancouver staff restricted from accessing both the east and west sides of the island. Please confirm this access will continue unobstructed during construction and that how it can be permanently formalized following construction. With respect to Infrastructure: 1) Notwithstanding MOTI's position that it "does not anticipate any effects on Metro Vancouver infrastructure", Metro Vancouver requests that Infrastructure be recognized as a Valued Component, given the potential for significant impacts to the regional water system. 2) Potential impacts to Metro Vancouver water mains extend beyond simply the water main considered under the assessment of river hydraulics. For example, the hydraulic assessment report is not relevant or applicable to the River Road West Main. 3) The draft river hydraulics assessment report, as well as the results of preliminary simulation modelling presented to Metro Vancouver, do not support MOTI's position that no effects on Metro Vancouver infrastructure are anticipated. We request that MOTI provide information on the measures to be undertaken to properly protect the Lulu Island-Delta Main and mitigate the impacts of trench migration, following tunnel removal, identified in the report. **(Comment from VCH)** Recreation and active transportation (e.g. using cycling linkages, and addition of multi-use pathways) should be considered under the human health VC as there are clear health benefits should these improvements to active transportation networks be utilized to their maximum potential. This should also be covered in the HIA.	Benefits in the Application. While the HIA is not a requirement of the EAO, the Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BCEAA. The HIA is being undertaken concurrently with the Projects environmental assessment under BCEAA. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.

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89.1	Metro Vancouver	Section 1.0 (Overview)	Utilities	While Metro Vancouver understands that the Ministry plans to design the bridge and off-ramps to avoid relocation of the River Road West Main, revised loading conditions, vibration from ground improvements, temporary works for traffic detours, and construction staging and laydown areas may impact the main. Please confirm that this work will not have a detrimental impact on this regional water main. --- Metro Vancouver staff are concerned that relocation of the River Road West Main may be required for the construction of the River Road off-ramp. If relocation is not required, monitoring and protection of the River Road West Main will likely be required. Please provide additional information on this aspect of work to allow for an assessment of impacts to this main. ----- At this time, it is unclear if the relocation of Green Slough will affect Metro Vancouver's River Road West Main, which crosses under Green Slough. Please confirm that this work will not have a detrimental impact on this main. --------- While relocation of our main is likely not required for the work involved with relocation of BC Hydro's high-voltage transmission line, Metro Vancouver has concerns with the potential impacts of this work. Please provide more information on the related ground improvements associated with this work. Metro Vancouver staff also have concerns that there may be a risk of induced current from the relocated BC Hydro transmission line. Please provide an analysis of possible induced current and mitigation measures to protect Metro Vancouver's infrastructure and its workers.	The Proponent recognizes the importance of Metro Vancouver's River Road West and Lulu Island-Delta water mains as critical elements of Greater Vancouver Water Services infrastructure. As discussed in a number of meetings the Project does not anticipate impacts on this Metro Vancouver infrastructure. The Proponent will continue to work closely with Metro Vancouver staff through the progression of Project design to ensure Metro Vancouver is aware of the project activity in order that Metro Vancouver can ensure the continued integrity of these utilities The relocation of the BC Hydro transmission line is not part of this project. We understand Metro Vancouver have met with BC Hydro to discuss this BC Hydro project that will be complete prior to the major work on the Tunnel. We encourage Metro Vancouver to continue their discussions with BC Hydro. **Section 1.1 of the dAIR has been updated to confirm the Application will include a discussion on utility relocation consideration for the Project.**	In order to properly assess the impacts on Metro Vancouver utility infrastructure, drawings and preliminary design details are requested for the following project components: i. Massey Bridge, including River Road off-ramp and south abutment near River Road West Main ii. Proposed River Road Extension iii. Green Slough Relocation Details of column locations proximal to the River Road West Main and the extent of proposed ground improvement is also requested. While the BC Hydro transmission line is not part of the tunnel replacement project, it is taking place as a direct result of the project and has the potential to impact Metro Vancouver's utility infrastructure. Therefore, MOTI has a significant role in addressing impacts associated with this work. The draft river hydraulics assessment report, as well as the results of preliminary simulation modelling presented to Metro Vancouver, do not support MOTI's position that no effects on Metro Vancouver infrastructure are anticipated. We request that MOTI provide information on the measures to be undertaken to properly protect the Lulu Island-Delta Main and mitigate the impacts of trench migration, following tunnel removal, identified in the report.	The Proponent recognizes the importance of Metro Vancouver's River Road West and Lulu Island-Delta water mains. As the Project enters detailed design, further details will be developed and shared with Metro Vancouver. The transmission line relocation project is under the purview of BC Hydro. The Proponent encourages Metro Vancouver to engage BC Hydro directly with respect to potential effects related to transmission line relocation. Relocation of BC Hydro's transmission line is included in the cumulative effects assessment.

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89.2	Metro Vancouver	Section 1.0 (Overview)	Utilities	--------- Please confirm the scope and timing of tunnel decommissioning and that the necessary measures will be taken by the Ministry to properly protect this critical regional water main. We would note that both of these water mains are critical to the GVWD system supplying drinking water, in bulk, to residents, businesses and industry south of the Fraser River as well as back-feeding the City of Richmond during an emergency. It is imperative that both mains be adequately monitored and protected throughout all phases of the proposed construction work and that interruptions in service be avoided, especially during the peak summer water demand period. ---------- Metro Vancouver requires ongoing access to the west side of Deas Island for maintenance of the Lulu Island-Delta Main. Specifically, our Water District has an air valve on the western tip of the island, which requires regular inspection and maintenance. Please confirm that access will be maintained throughout the construction period as well as after the new bridge is in service.	The Proponent recognizes the importance of Metro Vancouver's River Road West and Lulu Island-Delta water mains as critical elements of Greater Vancouver Water Services infrastructure. The Proponent will continue to work closely with Metro Vancouver staff through the progression of Project to ensure Metro Vancouver is aware regarding the design and construction activities in the area of their utilities. As discussed with Metro Vancouver at a number of meetings the Proponent does not anticipate any effects on Metro Vancouver infrastructure. Metro Vancouver will have the same access to the west side of Deas Island that they have today during construction and in the future. Special communication arrangements will be made during the construction period to ensure adequate access and safety. **Section 1.1 of the dAIR has been updated to confirm the Application will include a discussion on utility relocation consideration for the Project.**	The requested details of the scope and timing of tunnel decommissioning have still not been provided. This information is required by Metro Vancouver in order to properly assess the downstream impact on the Lulu Island- Delta Main. With respect to utilities maintenance, please confirm that existing access through the MOTI ROW to the west side of Deas Island will be formalized with an easement or SRW agreement.	The Proponent will include a description of the proposed Tunnel decommissioning method in Section 1 of the Application. As mentioned during the Technical Working Group meeting (March 10, 2016), the decommissioning process is expected to be the reverse of how the Tunnel was originally installed. The Application will include a detailed overview of the specific activities associated with this process to support the assessment of potential effects and identify appropriate mitigation. **Section 1.1 of the dAIR has been update to confirm the anticipated method of Tunnel decommissioning.** As discussed with Metro Vancouver, the Proponent will continue to work with Metro Vancouver to ensure access to the west side of Deas Island during future stages of Project construction and operation.
90	Metro Vancouver	Section 4.9 (Air Quality)	Air Quality	The BC Modelling Guideline outlines recommended steps for completing modelling projects. This includes creating a conceptual plan as well as a detailed model plan. Including Metro Vancouver in the model planning discussions at an earlier stage in the process may have helped identify and address some of the issues we have noted in the report. As part of the plan, inputs and settings used should be provided. Additional documentation should be submitted with the final report to allow verification of the model settings, frequency of exceedances, the locations of the maximum concentrations (incremental and	The Proponent is preparing a modelling plan based on the BC Modelling Guidelines. The plan will include appropriate additional detail and documentation, and will be provided to Metro Vancouver when prepared. **Section 4.9.2 of the dAIR has been updated to include a reference to the B.C. Modelling Guideline which will guide Project related air-quality modelling.**	Metro Vancouver requests that the modelling plan be forwarded as soon as possible and that it be used as the framework for further discussion on the dispersion modeling component of this project. At the March 3, 2016 workshop on traffic, air quality and health, MOTI staff indicated that a tracking table for comments submitted by Metro Vancouver in April 2015 on the preliminary Air Quality Assessment could be shared. Please provide a copy of the tracking table, along with the modelling plan. The preliminary Air Quality Assessment was unclear as to the source of the traffic data incorporated into the assessment. Please include the appropriate	The modelling plan for air quality, and the tracking table noted will be sent to Metro Vancouver before the Application is submitted. The dAIR has been revised to provide for an assessment of traffic as an intermediate component. The Application, and associated appendices, will provide information on future forecasted traffic flows in the Highway 99 corridor as well as in areas proximate. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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				cumulative), etc.		traffic data in the updated Air Quality Assessment report.	
91	Metro Vancouver	Section 4.9 (Air Quality)	Air Quality	The management of ground level ozone is a key priority in Metro Vancouver's air quality management plans. Metro Vancouver's 2011 Integrated Air Quality and Greenhouse Gas Management Plan and Metro Vancouver Board adopted a "Regional Ground Level Ozone Strategy" in April 2014, which presents the state of scientific understanding about ground-level ozone formation in the region, and establishes broad policy directions to control emissions that contribute to ozone formation. It is imperative to assess thoroughly the potential for the Project to impact ground level ozone levels in Lower Fraser Valley, using the best available photochemical air quality modelling methods. It is also imperative that the key stakeholders (including Metro Vancouver, the Fraser Valley Regional District, British Columbia Ministry of Environment, and Environment Canada) be consulted and engaged in the development of the photochemical air quality-modelling plan (i.e., the methodology, model set-up, meteorology, emissions scenarios, and model evaluation), to ensure that all appropriate regionally specific knowledge is incorporated into the	The Proponent has developed an estimate of potential changes in concentrations of ground-level ozone based on research conducted on ozone formation in the Lower Fraser Valley at UBC (Steyn et. al. 2011). This research captures specific regional knowledge which has been considered and incorporated in the assessment.	Given the known complexity of ozone formation in the Lower Fraser Valley airshed with respect to changes in emissions, and the sensitivity of the maximum point of impingement to air circulation patterns, the estimation method used lacks detail. It is important to note that to appropriately assess impacts on ozone concentrations resulting from the project, modelling must be capable of accounting for changes in emissions of the VOCs associated with traffic specifically, and their reactivity with respect to ozone formation. There was no indication in the information provided that this was accounted for with the approximation method used. Changes in emissions of ozone precursors may have unintended consequences for air quality in parts of the airshed beyond the immediate vicinity of the project. The estimates provided were limited in geographical scope to a broad sub-region within the airshed. Given the points above, without a rationale in the draft report providing justification of why the first-order estimate approach was considered an adequate tool for determining the potential effects of changes in emissions due to the project on ozone levels in the airshed with appropriate	The Proponent recognizes that management of ground level ozone is a key priority for Metro Vancouver and the Project will support Metro Vancouver's Regional Ground Level Ozone Strategy by facilitating a reduction in VOC emissions in the Western portion of the Lower Fraser Valley (Policy Directions A3, B1, B2, and B3). The Project will account for approximately 2% of the total vehicle emissions in the Lower Fraser Valley, and in 2031 approximately 0.4% of total VOC emissions forecasted and 0.1% of NOx emissions in the entire regional airshed, both of which are the main precursors to photochemical ozone formation. Both emissions of VOCs and NOx are expected to be lower in 2031 when compared to the baseline of 2011, which will result in improved air quality within the region. Estimates of changes in ozone levels, using the method described in the draft air quality effects assessment shared with Metro Vancouver indicate the potential for a 0.1 ppb in increase in ozone as a result of the Project. More substantial changes in ozone levels, as a result of the Project, are not predicted as the Project is assumed to not result in new traffic demand over and above that associated with the employment

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				model.		sensitivity, confidence in the results may be considered low. Metro Vancouver requests that photochemical modelling is conducted to determine the impacts on the project on ozone levels in the airshed, and that key stakeholders are engaged in developing the modelling plan.	and population targets identified in the regional growth strategy (Metro Van 2040). Furthermore, current and recent photochemical modelling studies for ozone are largely research based, with many uncertainties. Most models used for photochemical modelling of ozone have accuracy between +-1 to 8ppb. If such modelling was undertaken within the context of this Project, predicted changes in photochemical ozone concentrations would fall within the range of uncertainties of the modelling inputs and internal model physical and chemical equation accuracies. As such, photochemical modelling will not provide any substantive benefit, over the method currently used to support the effects assessment, with respect to assessing ozone formation as a result of the Project.
92	Metro Vancouver	Section 4.9 (Air Quality)	Air Quality	Include a climate change valued component to quantify how the project changes the amount of greenhouse gas emissions emitted from vehicular traffic. Managing and reducing regional greenhouse gas emissions is a key element of Metro Vancouver's mandate. Alternatively, greenhouse gas emissions should be included explicitly in the AQ valued component.	The air quality assessment will consider project-related changes in greenhouse gas (GHG) emissions. Methodology and findings will be outlined in the Application. **Section 4.9 of the dAIR has been updated to include confirmation that potential Project related changes in GHG emissions will be discussed in the Application under the air quality effects assessment.**	Please provide an updated Air Quality and Greenhouse gas technical report for review by Metro Vancouver.	An updated Air Quality technical volume, reflecting input provided over the past year from Metro Vancouver, will be included in the Application.
93	Metro Vancouver	Section 4.9 (Air Quality)	Air Quality	As the PDR states that queue lengths along Oak Street could be longer during rush hours. Vehicular idling can contribute concentrated air contaminants to adjoining neighbourhoods and sensitive receptors. The local assessment area, therefore, should be expanded to at least 70th Avenue and Oak Street in the city of Vancouver. The assessment should consider appropriate mitigation measures.	The local assessment area for the air quality assessment extends the length of the project scope, up to 1km North of Bridgeport, and is focused on what the potential net effects of the Project may be. Currently, there is congestion and queuing of northbound traffic along the Hwy 99 corridor during the weekday morning peak period as a result of the traffic signals at 70th and Oak Street in the City of Vancouver. Queue lengths may get a little longer during peak period as a result of the Project as people may change their preferred travel time to take advantage of the significant travel time savings. This would not	Increasing queue lengths and potential induced vehicle kilometres travelled could contribute to increased concentrations of air pollutants at specific locations, including Oak and 70th. Oak and 70th is the last signal for southbound travelers, and the first signal for northbound travelers. In the context of increased population and employment growth in south Vancouver, it would be prudent to expand the local assessment area to include the Oak and 70th intersection to measure any potential changes to exposure to vehicle emissions and health effects.	Consistent with previous assessments of major transportation projects in the region, the air quality assessment is focused on assessing the change in air quality associated with the Project alignment. It is anticipated that regional air quality will improve as a result of the project. While, traffic volumes may increase or decrease on other roadways and bridges within the region in the future, air quality is still expected to have a net improvement as congestion is relieved along the tunnel corridor.

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					change the net predicted air quality concentrations of pollutants at peak periods as modelled along the corridor. It is also noted that, without the proposed Project improvements, it is anticipated that queue lengths would still get longer in the future.	---------- **(Comment from VCH)** VCH understands that MoTI believes that the changes in queue lengths at Oak Street Bridge are outside of the scope of the project; however, from a health perspective, the affected local air quality would include the shared air space through to 70th and Oak Street. The area North of the project also has a large residential and working population that would be affected by changes in air quality. The Proponent's response to our concerns regarding AQ impact northward beyond the current LAA is unsatisfactory. The proponent argues that while the queue length "may get a little longer" during the weekday morning peak period, that as a result of the project "people may change their preferred travel time to take advantage of the significant travel time savings". There is nothing to prevent people to change their travel time presently once across the tunnel. There is no evidence presented that would indicate people will do more of this after the project is completed, or that the project will actually facilitate this choice of when to take the daily commute in a significant way. The proponent also states in its response that "without the proposed project improvements, it is anticipated that the queue lengths would still get longer in the future." This could be true for the weekday south bound afternoon peak period. It may not be true for the northbound morning peak period since at the present, the GM tunnels act as a flow restricting "valve" that moderates the flow northbound to the Oak Street Bridge. Once the project is complete, that "flow restricting valve" will be moved to start at the south end of the Oak Street Bridge and extend to 70th Ave. It has been mentioned that the proponent is not	---------- **(Response to VCH)** The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic that support the assessment of other ICs and VCS. The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Liang Bridge. In addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM). **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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						prepared to extend the LAA for AQ northward into the City of Vancouver because the proponent has no jurisdictional capacity to mitigate negative impacts even if they are found. The inability of the proponent to undertake mitigation should not be a reason for not performing an impact assessment when it is justified. Both VCH and Metro Vancouver have expressed concerns with respect to the potential for AQ impacts northward beyond the current LAA for AQ. We believe the concerns are reasonable and an impact assessment is justified. It should be said that the AQ impacts may be different depending on the time of the day, and the direction of traffic flow. It may well be that there could be positive AQ impacts north of the current LAA associated with the project as well as negative impacts. There is no way to know unless an assessment is undertaken. The decision on the LAA for AQ must be carefully made by the EAO. VCH strongly recommends that the LAA for air quality be extended to 2.5km north of the project end (to 70th Ave).	
94	Metro Vancouver	Section 4.0 (Environmental Effects Assessment) / Section 7.0 (Health Effects Assessment)	Air Quality / Human Health	Through disposition of the pollutants, the Air Quality valued component also has the potential to impact all of the environmental effects valued components. As such, the air quality assessment should assess the deposition of pollutants within the Air Quality studies areas and identify any potential impacts on Environmental Effects valued components. Analysis of deposition will also be required to enable full assessment of the Human Health valued component, particularly via the chronic risk quotient for multi-media exposures indicator.	Based on the overall reduction in emissions attributed to improvements in fleet performance, it is anticipated that secondary particulate matter formation will decrease in the future with or without the Project. Predicted maximum dry, wet and total deposition was modelled for PM2.5, PM10, and total PM. Project-related changes in the deposition of transportation-related airborne contaminants was modelled for the Criterion Air Contaminants listed above as well as any mobile source air toxins with sufficiently low volatility to partition onto and into soil and plant tissues. This information is then used to support the human health risk assessment undertaken as part of the assessment of the human health valued component.	Noted.	----------

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95	Metro Vancouver	Section 4.0 (Environmental Effects Assessment) / Section 7.0 (Health Effects Assessment)	Air Quality / Human Health	It is imperative that all relevant combustion related pollutants be included in the assessment, but equally important, all relevant pollutants contained in road dust and construction dust must be included. Particularly near a major transportation corridor, existing soils are likely to contain significant historic metals (i.e. lead) and toxic organic (i.e. PAH) contamination. Further, alluvial deposits in construction area spanning the Fraser River may also contain elevated levels of metals and toxic organics. For the purposes of assessing the Human Health valued component, road dust and construction dust must not simply be treated as "total particulate: PM10, and PM2.5; the metallic and organic toxic composition of these dusts must be taken into account.	All relevant pollutants, including road dust and construction dust will be included in the study. Particulate matter composition will be modelled for PM2.5, PM10, and total PM. No long term adverse effects from construction activities are anticipated as emissions will be effectively managed and mitigated through the application of best practices. Soils adjacent to existing roadways will be managed in accordance with the B.C. Contaminated Sites Regulation with appropriate provisions and requirements pertaining to disturbed materials. Substantial monitoring of airborne particulates / dust and dust fall rates was conducted during the completion of several recent construction projects, including similar highway improvement projects. The results indicate that dust can be managed through best management practices for construction. Airborne dust levels and dust fall rates during construction would generally be too low to result in health concerns, even if roadside soils contained elevated levels of some metals or PAHs.	Management plans for construction should include mechanisms for monitoring compliance with the plans.	Monitoring compliance will be included as a component in Environmental Management Plans for the Project.
96	Metro Vancouver	Section 5.0 (Socio-economic Effects Assessment)	Economic	A complete Economic Effects Assessment section should assess the long-term impacts of the significantly enhanced road transportation access on industrial, agricultural, and residential land uses, economic activity, and workforce distribution, as well as associated trips generation, for all the wider areas impacted, not just those immediately beside the bridge and highway construction areas.	The assessment of the land use valued component in the Application will provide a description of how the Project aligns with and supports the implementation of regional and local land use plans, and population and employment projections identified in such plans.	Noted.	**Further clarification as requested by EAO:** A consideration of the potential influence of the Project on predicted regional growth rates and distribution will be included in the assessment of the land use VC. The LAA for land use has been refined to support the assessment of the potential for induced growth as a result of the Project. The LAA in this case will include the municipalities of Delta, Surrey, and Richmond.

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97	Metro Vancouver	Section 5.3 (Land Use)	Land Use	In comparison to the Agricultural Use Valued Component, the proposed Land Use Valued Component assessment areas are deficient. The proposed local assessment area is a 500 metre buffer on either side of the project alignment. The proposed regional assessment is Richmond and Delta. The assessment areas are inconsistent with the geographic scope of Metro 2040, the regional growth strategy. The expansion of highway capacity between Bridgeport Road in Richmond and Highway 91/Highway 99 interchange in Delta will change accessibility in the region, in particular to industrial lands and agricultural lands on both sides of the Fraser River. The potential effects on the distribution of growth in residents and jobs, and the rate of growth at the sub-regional scale are crucial inputs to long-term municipal and regional growth management.	The RAA of the land use effects assessment has been updated dAIR based on recent discussions with Metro Vancouver and the other members of the Working Group. **Section 5.3 of the dAIR has been updated to indicate the revised RAA.**	Noted. We welcome your decision to expand the Land Use Regional Assessment Area.	----------
98	Metro Vancouver		Deas Island Regional Park	Through preliminary discussions, Metro Vancouver staff understand the Ministry of Transportation and Infrastructure plans to install a tunnel recognition site at the location of the existing tunnel portal, and a rain garden under the future bridge. Metro Vancouver staff would like to work with the Ministry on the planning and design of this area to ensure strong ecological and trail connections to the park.	As discussed with Metro Vancouver, the Proponent will continue to work with Metro Vancouver Parks regarding the enhancements associated with Deas Island Regional Park.	1) What is the proposed scope that MOTI will provide in the RFP to ensure that Metro Vancouver Regional Park staff will be able to work with MOTI and their selected contractor(s) on the planning and design of this area to ensure strong ecological and trail connections to the park are maintained and enhanced? 2) What assurances will MOTI and their selected contractor(s) provide to Metro Vancouver Regional Parks to ensure that planning and design of this area to ensure strong ecological and trail connections to the park will be implemented? 3) Please confirm when the planning and design of the area under the bridge will take place. 4) Please confirm if MOTI will maintain the area underneath the bridge or if they will request a maintenance agreement with Metro Vancouver Regional Park Staff to maintain the site post construction. 5) Please confirm what measures will be put in place to ensure invasive species do not overtake the area under the bridge and	The Proponent recognizes Metro Vancouver's responsibility for managing Deas Island Regional Park and will work with Metro Vancouver and contractors to ensure that Project works are undertaken in a way that is supportive of the goals and objectives Metro Vancouver has for Deas Island Regional Park. As discussed previously, further detail will be developed as the Project progresses, and the Proponent will continue to work with Metro Vancouver Parks regarding access and connections both during and after construction.

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						then impact the park. 6) What access will be required, post construction, through the park to access the bridge and memorial site under the bridge?	
99	Metro Vancouver	Section 5.3 (Land Use)	Land Use	Please confirm if there will be any habitat creation work proposed for Deas Island Regional Park as mitigation for environmental impacts of the bridge.	The Project presents an opportunity to create environmental and community improvements on the Fraser River, and at Deas Island Park and Deas Slough. The new bridge will make room to connect both sides of the park, which are separated by Highway 99 and the Tunnel portal today. Plans include improving the foreshore and constructing bio-filtration marshes to treat storm water runoff and create new habitat. The Proponent has held preliminary discussions with Metro Vancouver Parks' staff, and dialogue will continue as Project planning proceeds.	1) What assurances will MOTI provide to Metro Vancouver to ensure that the proposed improvements to the foreshore, the bio-filtration marshes, and the new habitat will be implemented? 2) Please work with Metro Vancouver staff on an MOU or Terms of Reference to provide a framework for planning, design, implementation and maintenance of the ecological enhancements. 3) Plans need to include integrated upland vegetation communities including forested/treed connections between the upstream and downstream Regional Park segments. 4) When will the planning and design of the Deas Island Habitat enhancements be completed? Will this process be led by MOTI or the selected contractor(s)? 5) How will the ecological enhancements be maintained post construction? Will MOTI be requesting a service agreement with Metro Vancouver Regional Parks to maintain these assets?	Mitigation identified in the Application, including improving the foreshore and constructing bio-filtration marshes to treat storm water runoff, will become conditions of approval should an Environmental Assessment Certificate be granted for the Project. As previously discussed with Metro Vancouver, the Proponent will continue to work with Metro Vancouver Parks regarding the enhancements associated with Deas Island Regional Park, including vegetation and habitat measures as well as maintenance provisions. As the Project progresses, further detail will be developed and discussed with Metro Vancouver.
100	Metro Vancouver	Section 5.0 (Socio-economic Effects Assessment)	Visual/ Noise	Concerned with impacts to park experience:- Please consider opportunities to manage debris and noise associated with bridge operation. The construction of the large bridge deck and possible aerial transmission line will impact the park views. Mitigation of this impact is challenging given the scale of the proposed bridge. Incorporating the BC Hydro transmission line into the bridge structure as opposed to building standalone towers would be desirable. Please consider the park	Potential noise and visual effects associated with bridge operation is being considered in the Environmental Assessment Application. Mitigation, if required, will be identified. All works on the Project will be within Ministry right-of-way. The transmission line relocation project is a BC Hydro project. There is existing overhead hydro lines on Ministry right of way and this may continue. The Proponent is currently waiting on BC Hydro to make a decision on their preferred alternative. BC Hydro plans to meet with stakeholders once they have determined their approach.	1) Noise, debris, shading and visual effects from the bridge will impact the park. The impacts can and should be modeled pre-construction. Please provide the visual modeling and description of the viewshed under the bridge. 2) The bridge and transmission line relocation projects will have considerable visual and physical impacts on the park. Incorporating the hydro transmission line into the bridge structure would reduce these impacts. Please confirm if MOTI is working with BC Hydro to explore this option, and what role	1) Potential noise, visual, shading, and related effects associated with the new bridge will be identified in the Application. The visual assessment will include viewpoints on Deas Island and the Millennium trail in close proximity to the new bridge. 2) The transmission line relocation project is under the purview of BC Hydro. The Proponent encourages Metro Vancouver to engage BC Hydro directly with respect to potential effects related to

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				user experience and viewshed 'under' the bridge in its design.		it can play to reduce the impacts from the transmission line relocation project on the park.	transmission line relocation. Note: Relocation of BC Hydro's transmission line his included in the cumulative effects assessment.
101	Metro Vancouver	-------	Park Access	Construction And Long-Term Maintenance Access Construction access through Deas Island Regional Park is not desirable from a park visitor perspective, and existing park infrastructure is inadequate to support this type of use. No formal request for access during construction has been proposed by the Ministry. Although no formal request has been made to Metro Vancouver Regional Parks staff, access through the Regional Park will likely be required for long-term maintenance of the Ministry's bridge and BC Hydro's transmission line. Pursuant to Metro Vancouver Regional Parks Bylaw No. 1177, 2012, all commercial access through or on Metro Vancouver Regional Parks must undergo a permitting process. Please provide information on future maintenance access requirements.	As discussed with Metro Vancouver, the Project is not planning on requiring access through Deas Island Regional Park during construction. Light vehicle access may be required post-construction for maintenance purposes, and will be determined as design work advances. Access to the Metro Vancouver Lulu Island Delta Main will be maintained throughout the construction period as well as after the new bridge is in service. The Proponent will determine future maintenance access requirements and work with Metro Vancouver to confirm both Ministry access and Metro Vancouver access to Ministry right of way in the area.	1) Please work with Metro Vancouver staff to secure the required permits for construction and/or maintenance access through the park 2) Please confirm the nature of access required post construction and complete and expand the impact assessment to include the area and park assets this will impact. Park roads and trails may require upgrades to support access. Some roads and trails may not be suitable due to adjacent sensitive habitat.	1) The Proponent will acquire relevant permits for Project related works within the park. 2) As previously mentioned, light vehicle access may be required post-construction for maintenance purposes. Maintenance access requirements will be discussed with Metro Vancouver as design work advances.

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102	Metro Vancouver	Section 7.0 (Health Effects Assessment)	Health	The insertion of Health Impact Assessments into the Environmental Assessment process for the George Massey Tunnel Replacement Project will help the Ministry of Transportation and Infrastructure and all stakeholders to better understand the potential health benefits and consequences for nearby communities. Page 28 of the Ministry of Transportation and Infrastructure's Project Definition Report describes some of the results of a benefit-cost analysis which "compares quantified congestion-relief, safety and long-term economic benefits with Project costs". A Health Impact Assessment approach could assist with the insertion of additional health-related costs and benefits into this analysis.	The Proponent agrees that the Health Impact Assessment (HIA) framework is useful in identifying and analyzing potential health considerations associated with the Project and looks forward to working with Vancouver Coastal Health (VCH) and Fraser Health (FH) in integrating HIA considerations into the Application. **The dAIR has been revised to indicate that Section 7.0 (Health) of Part B of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations.**	Noted. We welcome your decision to undertake a Health Impact Assessment.	----------
103	Metro Vancouver	Section 5.4 (Agriculture Use)	Agriculture	Reasonable geographic scopes for Agriculture, given the importance of agriculture lands to the region's economy and food security. The regional assessment area is consistent with Metro Vancouver's Regional Food Systems Strategy.	Noted.	Thank you.	----------
104	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	General	Preliminary analysis of the conceptual information provided through the GMT project to date suggests that impacts to both Environmentally Sensitive Areas (ESA) and Riparian Management Areas (RMA) are likely along most of the GMT redevelopment corridor within Richmond. Request consideration of these ecological features and functions and mitigation and compensation where impacted by project related effects. In addition, as stated by the Richmond City Council resolution 1) an ecological net gain outcome is requested to be demonstrated in relation to project-related RMA and ESA impacts.	The potential for the Project to interact with environmentally sensitive areas, including riparian areas will be described in the Application. In addition, the Application will identify opportunities for habitat enhancement, including offsetting to address potential effects. Offsetting will meet or exceed applicable federal and provincial regulatory requirements.	City emphasizes that net gain approach is sought for both ecological features (as well as agriculture). Also include potential for Project to interact with City parks. The official ESA designation does not apply to Richmond City parks, however parks are valued for ecological features and functions that are critical to Richmond's Ecological Network that would require off-setting if impacted.	Noted. The land use valued component considers potential Project related effects on parks adjacent to the Project alignment and will be included in the Application. Potential effects of the Project on biophysical values associated with ESA's/ RMA's will be assessed in Section 4.4 Fish and Fish Habitat and Section 4.8 Terrestrial Wildlife.

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105	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	General	Replacement of the term "ditch" with "channelized watercourse(s)" in reference to City's riparian areas adjacent to Hwy 99.	The term 'ditch' has been used to describe the drainage courses adjacent to Highway 99 to help ensure members of the public can easily relate to what is being described. A statement indicating that the term 'ditch' has been used to denote channelized watercourses adjacent to Highway 99 will be added to applicable sections of the Application.	Please ensure that it is emphasized that these areas are under protection of the Provincial Riparian Areas Regulation.	The relevance/applicability of the BC Riparian Area Regulations to the Project and related activities will be discussed in the Application.
106	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Goals	Goal #5-provide multi-use pathways (min 3.5 m width) on both sides of the bridge	The Project will include multi-use pathways on both sides of the bridge, providing new and enhanced opportunities for cycling and pedestrians as well as enhanced connections to community trails, contributing to increased cycling opportunities for all user groups (recreation, tourism, commuters etc.) The Proponent is continuing to work with local cyclist groups and stakeholders on design of the multi-use pathways and connections to regional networks.	Minister Stone announced February 12, 2016 that a working group would be established to focus on the cycling components of the project including connections to regional networks. This group has yet to be established and we request its formation as soon as possible to allow meaningful input on the project design of the cycling components.	As mentioned previously, the Proponent is continuing to work with local cyclist groups and stakeholders on design of the multi-use pathways and connections to regional networks. There have been several meeting with stakeholders on cycling improvements to date. The Proponent is moving forward with the formation of a Cycling Working Group, and held the first meeting on April 20th, 2016. The Cycling Working Group includes representatives from HUB Cycling, City of Richmond, Corporation of Delta, Lower Mainland District and the GMT Project Team. The next meeting of the GMT Cycling Working Group is to be scheduled for mid-May.
107	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Goals	Goal #6- Expand this to include more environmental enhancements in Richmond, not just under the new bridge and in the ROW on Deas Island. Enhance the environment in the Project right-of-way in general (including Richmond and Delta)	The Proponent may consider additional opportunities for environmental enhancements in concert with advancing design details. Potential enhancements include re-vegetation and landscaping at interchanges.	In order to achieve an ecological net gain, the City is seeking environmental enhancements beyond the footprint of the highway interchanges, including habitat enhancement, ecological improvements and tree replacements (at a ratio of 2:1) along the length of the corridor.	As previously mentioned, the Proponent may consider additional opportunities for environmental enhancements in concert with advancing design details.

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108	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Goals	Suggest that a goal be "support regional land use and transportation plans."	The Project was planned with full consideration of regional and local land use and transportation plans. The assessment of the land use valued component in the Application will include a detailed description of how the Project is consistent with, and supportive of, local and regional land use and transportation plans. **Section 5.3 of the dAIR has been updated to clarify this.**	Section 6.2.2: The regional transportation plans to be considered should be the Regional Transportation Strategy (TransLink) and Regional Transportation Investments: a Vision for Metro Vancouver (Mayors' Council on Regional Transportation) not only TransLink's *2014 Base Plan and Outlook.*	The Proponent will consider relevant plans including the "Vision for Metro Vancouver (Mayors' Council on Regional Transportation)" in the Application.
109	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Project Benefits	As per comment on Section 2.2 "a new multi-use pathway"-this should be on both sides of the bridge.	The Project will include multi-use pathways on both sides of the bridge.	No further comment.	----------
110	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Project Benefits	Staff requests expansion of the Enhanced Environmental benefits. These should be expanded beyond air quality/ GHG benefits, to also include habitat, vegetation, and other associated ecological improvements.	A description of anticipated Project-related environmental benefits, including habitat enhancement and associated ecological improvements, will be included in the Application. **Section 1.1 of the dAIR has been refined to indicate that Project-related benefits to the environment will be discussed in the Application**.	Seeking environmental net gain benefits to include habitat enhancement, ecological enhancement and tree and shrub augmentation.	The Proponent will undertake mitigation to address Project related effects and will identify, in the Application, where net benefits have been achieved.
111	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Project components	The figures showing the project components are not complete. Figure 3-1 doesn't show the 2-way transit-only ramp and roadway connection between Hwy 99 and Van Home Way as part of the Project Area (although it's mentioned in Point 2 below). Figure 3-3 doesn't show or mention the connection to Rice Mill Road as part of the Project Area.	The figures included in the Project Description provide an overview of core highway improvement works. Detailed Project concept figures have been provided by the Proponent on the Project website at the following link: http://engage.gov.bc.ca/masseytunnel/files/2016/01/PDR-Concept-Dec-2015.pdf.	The conceptual figures included in the PDR Concept are neither complete (e.g., none of the drawings show a connection to Rice Mill Road) nor sufficiently detailed (e.g., transit-only connection to Van Horne Way) to allow assessment of traffic impacts of the project on the local road network.	The effects assessment considers the reference concept provided to the City and available on the Project website as noted previously. The reference concept provided to the City of Richmond, and available on the Project website, includes the Rice Mill Road connection and the transit only connection noted in the comment. The Application will include additional conceptual design details which will support

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							the assessment of traffic on the local road network. Description of the reference concept, including concept figures, will be included in Part A of the Application under Project Description. As previously discussed, local roads will benefit from the new Steveston Highway and Westminster Highway interchanges in Richmond as well as from reduced congestion at the new bridge.
112	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Project components	Staff requests the integrations of the BC Hydro transmission line relocation within the project scope/ as a project component.	The Proponent has added the BC Hydro Power Line Relocation to the list of projects to be considered in the assessment of Project-related cumulative effects. **Section 3.10 of the dAIR has been updated to reflect this.**	No further comment.	----------
113	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction Facilities	Relating to temporary barge access structures-need to address environmental impacts to the foreshore of these structures as well as the extent of these barge structures.	It is assumed that temporary barge access may be required during construction to facilitate staging. The Application has been developed with the assumption that all temporary and permanent works will be included within the Project alignment. Any temporary or permanent works that are to take place will be subject to applicable permitting requirements. Applications for these permits will include detailed descriptions and locations of works to take place. **Section 1.1 of the dAIR has been refined to provide confirmation that information on temporary construction facilities will be included in the Application.**	No further comment.	----------

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114	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction Facilities	Staff requests further discussion of the barge structure details within the Valued Components review.	It is assumed that temporary barge access may be required during construction to facilitate staging. The Application has been developed with the assumption that all temporary and permanent works will be included within the Project alignment. Any temporary or permanent works that are to take place will be subject to applicable permitting requirements. Applications for these permits will include detailed descriptions and locations of works to take place. **Section 1.1 of the dAIR has been refined to include further detail on anticipated Project-related activities.**	No further comment.	----------
115	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Proposed Construction Activities	All construction activities should take place within Ministry right-of-way.	Project-related construction is anticipated to take place along the Project alignment, within Ministry right-of-way. Some minor property acquisition will be required for interchange/ road widening works. Opportunities for unused right-of-way to be made available for agricultural use are being identified.	The proponent needs to coordinate with the affected local government for any construction activities adjacent to or outside of the Ministry right-of-way.	The Proponent has met with the City of Richmond over 80 times to date and will continue to work with the City regarding Project activities.
116	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Other Structures	Clarification needed: Term "underpasses" refers to the removal of the existing overpass structures?	The term underpass refers to structures that Highway 99 passes through or under. Alternately, a roadway crossing above Highway 99 is described as an overpass.	No further comment.	----------
117	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction Activities; Site Preparation	Address treatment, management, and removal of invasive species located within the project alignment as an integral aspect of EA review	Monitoring and control of invasive plant species will be undertaken during construction. Species for which there is a requirement to control under the B.C. Weed Control Act, R.S.B.C. 1996, c. 487, as well as species that are listed by the Invasive Species Council of Metro Vancouver will be addressed. An Invasive Species Management Plan that includes site-appropriate monitoring and control methods for different species and conditions will be prepared and implemented as part of the Construction Environmental Management	Ensure that the CEMP / Invasive Species Management Plan also includes significant post-construction monitoring period. The City assumes that that the Invasive Species Management Plan will include invasive species management as it relates to soil movement.	The Construction Environmental Management Plan will include an Invasive Species Management Plan which will incorporate measures to address invasive species considerations associated with soil relocation as well as provisions for monitoring. A list of Management Plans (including the Construction Environmental Management

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					Plan (CEMP).		Plan) for all phases of the proposed Project and a description of the contents of each Management Plan will be included in Section 12.0 (Management Plans and Follow-up Programs) of the Application.
118	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Construction Activities; Site Preparation	Need to address management of riparian areas on both east and west sides of Hwy 99 impacted by construction activities and site preparation, as it relates to the net gain approach requested by the City	The potential for the Project to interact with environmentally sensitive areas, including riparian areas will be described in the Application. In addition, the Application will identify opportunities for enhancement, including offsetting to address potential effects. Offsetting will meet or exceed applicable federal and provincial regulatory requirements.	Please specify in the Application the relevant regulatory requirements to guide offsetting i.e. RAR and Provincial Water Act.	The relevance/applicability of the BC Riparian Area Regulations to the Project and related activities will be discussed in Section 1.2 (Applicable Authorizations) of the Application.
119	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Site Preparation	Acknowledge impact of site preparation activities on watercourses within Highway 99 ROW	The impact of site preparation activities on watercourses within the Project Alignment will be included in the Application as part of the assessment of fish and fish habitat VC. Project works will follow best management practices, applicable regulations, and permitting requirements to ensure potential effects on watercourses are avoided or mitigated.	Ensure that these site preparation activities and impacts on watercourses are integrated within the Sediment and Water Quality Valued Component. City requesting review of hydrological modelling etc. to understand impacts of increased impervious areas and stormwater runoff provisions related to final project footprint.	Project activities and interactions with relevant valued components as well as an assessment of potential project related effects are outlined in the Application at the end of each valued component section. . Information on potential influence of changes in impervious surface on stormwater runoff , and the management of stormwater runoff will be included in Section 4.2 (Sediment and Water Quality) of the Application
120	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Waste Disposal	Address disposal of invasive plant waste	An Invasive Species Management Plan that includes site-appropriate monitoring, control, and disposal methods for different species and conditions will be prepared and implemented as part of the CEMP.	Ensure that the CEMP / Invasive Species Management Plan also includes significant post-construction monitoring period	The Construction Environmental Management Plan, which will include an Invasive Species Management Plan, will contain monitoring provisions.

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121	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	New Bridge and Approaches	Based on our previous discussion the statement should read, the new bridge is anticipated to be an 'iconic' cable-stayed bridge.	The new bridge will be notably longer than any existing bridges spanning the Fraser River and the longest in British Columbia. The bridge will be recognized on an international level based on overall length, engineering, and span.	The project's metrics for defining 'iconic' remain vague. For example there is a tremendous difference between the design of the Millau Viaduct in France and the new Port Mann bridge in terms of design character. Length, span, and engineering, in and of themselves will not connote 'iconic'. Recommend that language regarding design character be added to the ensure attention is paid to form and character.	As previously mentioned the size and length of the crossing will be recognized on an international level and consider appearance, form, and compatibility with its surroundings.
122	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Figure 3-1	Shell Road improvements not included. Reconfiguring the Hwy 91 off/on ramps is not noted.	The figures included in the Project Description provide an overview of core highway improvement works. Detailed Project concept figures have been provided by the Proponent on the Project website at the following link: http://engage.gov.bc.ca/masseytunnel/files/2016/01/PDR-Concept-Dec-2015.pdf	The conceptual figures included in the PDR Concept are neither complete nor sufficiently detailed to allow assessment of traffic impacts of the project on the local road network.	1) The effects assessment considers the reference concept provided to the City and available on the Project website as noted previously. 2) The Application will include additional conceptual design details which will support the assessment of traffic on the local road network Description of the reference concept, including concept figures, will be included in Part A of the Application under Project Description. Works at Shell road include the replacement of the Shell Road overpass and the provision of the Odlin/ Shell road multi-use path connection. As previously discussed, local roads will benefit from the new Steveston Highway and Westminster Highway interchanges in Richmond as well as from reduced congestion at the new bridge.
123	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as	Figure 3-2	Reference 4 should speak to pedestrian circulation along Steveston Highway and, traffic flows along Rice Mill Road. Replacing Blundell overpass is not included on the drawing. Widening of the highway is not noted	The figures included in the Project Description provide an overview of core highway improvement works. Detailed Project concept figures have been provided by the Proponent on the Project website at the following link: http://engage.gov.bc.ca/masseytunnel/files/2016/01/PDR-Concept-Dec-2015.pdf	There is no information on the referenced 'concept figures' pertaining to pedestrian and bike circulation. As this project will likely be handled as a PPP design build, and as such process does not provide a mechanism for local government review of the detailed design work as it evolves, staff would like more specific language and some	The Proponent has committed to the provision of pedestrian and cycling infrastructure and to working with local governments with respect to integrating existing and proposed infrastructure. The review of more detailed conceptual

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		the Project Description				graphic depiction of how pedestrians and cyclists are going to be accommodated and respected at major intersections.	designs, to be provided in the Application, will allow for more informed dialogue on this topic and assist in identifying mechanisms for local government and cycling groups to provide input during future stages of design of the Project. Description of the reference concept, including concept figures, will be included in Part A of the Application under Project Description.
124	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Figure 3-3	Reference 6 should speak two multi-use pathways on both sides of the bridge.	The Bridge will include a multi-use pathway on both sides of the bridge, providing new and enhanced opportunities for cycling and pedestrians as well as enhanced connections to community trails, contributing to increased cycling opportunities for all user groups (recreation, tourism, commuters etc.).	Project criteria should specify minimum width of multi-use pathways.	The Proponent will ensure that design specifications for the multi-use pathways can safely accommodate both pedestrians and cyclists using the facility.
125	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Regulatory Engagement	Staff requests the involvement of Department of Fisheries and Oceans and Environment Canada/ Canadian Wildlife Service as George Massey Tunnel Replacement Project Working Group members and project reviewers based on the scope of the project.	The Proponent has had initial consultation with Department of Fisheries and Oceans (DFO) on the Project. Based on these discussions, DFO has indicated they will become more actively involved at the permitting stage, in alignment with planning and approach for Tunnel decommissioning. Environment and Climate Change Canada is participating as part of the Working Group, and will continue to be involved in technical review of the Project throughout the Environmental Assessment Process.	In addition to the permitting stage, the City reaffirms request for DFO to be participatory and active in the Pre-Application stage and Application Review stage, particularly as Fish and Fish Habitat and other associated VC's regarding ecology and water quality are under assessment.	The Proponent would welcome DFO participation in all stages of the BCEAA review of the Project.
126	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Assessment and Key Areas of Study	Staff requested a detailed discussion on each Valued Component presented within the Project Description and Key Areas of Study report through the George Massey Tunnel Replacement Project Working Group meetings	The Proponent intends to provide the opportunity to discuss each of the valued components (VC) at the scheduled Working Group meeting as well as during subsequent phases of the environmental assessment including, but not limited to, the Application Review phase. In addition, the Proponent will be meeting with Working Group representatives separately to allow for more detailed discussion on valued components	City requests an in-person 3rd Working Group meeting that can further discuss the dAIR round 2 comments as well as Application Screening process.	EAO has scheduled and has undertaken a joint meeting with the City of Richmond and the Proponent to discuss specific comments and concerns and the Proponent continues to meet bi-weekly with the City. EAO also hosted a teleconference Technical Working Group meeting to discuss the Application Screening process.

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					specific to the interests of the Working Group member.		
127	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Assessment and Key Areas of Study	Staff requests the proponents incorporate findings from other studies associated with Valued Components of other Fraser River Assessment projects (i.e. Vancouver Airport Fuel Delivery Project, Wes Pac Tilbury Marine Jetty Project)	Findings from past studies associated with other relevant projects, will be reviewed and appropriate information based on this review incorporated into the Application.	Please also incorporate information and findings from the Hwy 99 widening for the Shoulder Bus Lane expansion in Richmond.	The Proponent considered available information form the Shoulder Bus Lane expansion in the planning phases of the Project (Phase 1 and Phase 2). The Ministry reviewed information from previous projects including the Shoulder Bus Lane expansion as part of the general literature search supporting the effects assessment of the Project. Proponent will investigate the availability and applicability of information and findings from the Shoulder Bus lane expansion.
128	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Assessment and Key Areas of Study	There is a need for a fulsome inclusion of cumulative effects relating to large infrastructure project beings undertaken in the region, many of which are on the Fraser River i.e. Fraser Surrey Docks, Vancouver Airport Fuel Delivery Project, WesPac Tilbury Marine Jetty Project, Roberts Bank Terminal II and the Trans Mountain Expansion Project.	Present and reasonably foreseeable projects and activities have been identified for inclusion in the cumulative effects assessment as outlined in the dAIR. Additional projects that have been added to the list of projects (within the dAIR), to support the assessment of project-related cumulative effects, includes the proposed Kinder Morgan Trans Mountain Expansion Project (TMEP). This list will be updated to include additional projects as appropriate, based on input received from the technical working group, prior to finalizing the dAIR.	This comment relates to City Council concern regarding the industrialization of the Fraser River as well as ongoing City comments regarding the cumulative impacts for GHG emissions, vehicular traffic related to the RBT2 project, PMV expansion and other large infrastructure projects being undertaken in the region.	Noted.
129	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Assessment and Key Areas of Study	Need for additional Valued Component relating specifically to Recreation	As recreation activities are both land-based and water-based, potential effects to recreation as a result of the Project are considered under the land-use and marine-use valued components (VCs). Section 5.2 and 5.3 of the dAIR have been refined to confirm that potential Project-related effects on recreation will be addressed in the Application.	City of Richmond provided no further comment. ---------- (Comment from VCH) Recreation and active transportation (e.g. using cycling linkages, and addition of multi-use pathways) should be considered under the human health VC as there are clear health benefits should these improvements to active transportation networks be utilized to their maximum potential. This should also be covered in the HIA.	Health benefits associated with Project-related improvements to active transportation networks will be discussed under Project Benefits in the Application, and will be considered in the HIA. While the HIA is not a requirement of the EAO, The Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BCEAA. The HIA is being undertaken concurrently with the Projects environmental assessment under BCEAA. Key findings of the HIA will be summarized in

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							the Application and the HIA report will be publically available during the Application Review period.
130	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	River Hydraulics and Morphology	The project impacts are states as limited to the decommissioning of the tunnel. Address whether re-opening Green Slough will have any impacts.	The Application will include consideration of the potential effects of the relocation of Green Slough as part of the assessment of the fish and fish habitat VC. A consideration of potential effects on river hydraulics and sedimentation will be considered under the river hydraulics and morphology study. Environmental permitting for the proposed works will be undertaken once the final design is complete. At this time, additional assessment would be undertaken to confirm that the relocated slough does not affect river hydraulics in adjacent areas. The relocation of Green Slough will restore its historical alignment and enhance associated habitat values.	OK. The Proponent stated at the March 10, 2016 Working Group meeting that the effects of re-establishing Green Slough would be included in the river hydraulics and morphology study.	The Proponent confirms that potential effects of re-establishing Green Slough will be considered in the assessment of the river hydraulics IC.
131	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Sediment and Water Quality	Bio filtration areas should be incorporated within the Project design beyond the bridge approach areas, but along the Highway 99 corridor as well	Bio-filtration marshes will be included in the Project design for treatment of storm water from the bridge and approaches. The Highway 99 corridor uses low gradient ditches to manage storm water. Grass verges between the pavement and the drainage ditches will continue to provide effective bio filtration of road runoff along the corridor.	Biofiltration should be considered as an option moving forward for stormwater management and drainage solutions/ innovation along the corridor.	The Proponent agrees that biofiltration is an appropriate option for addressing stormwater management and drainage requirements of the Project and will be including this approach in Project design.
132	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Sediment and Water Quality	Watercourses should be a stand-alone Valued Components, so to evaluate potential hydrological changes pertaining to storm water runoff, water flow amounts, non-point source contaminations, and impacts on City infrastructure. These components all strongly align with the principles of the City's Ecological Network Management Strategy.	The Proponent followed EAO guidance (Guideline for the Selection of Valued Components and Assessment of Potential Effects (EAO, 2013)) as the basis for selecting Valued Components (VCs). Based on this approach , it was determined that the ultimate receptors of Project-related effects on water courses and representative species (i.e. Fish and Fish Habitat, Vegetation, At-risk Amphibians, and Terrestrial Wildlife) would be the appropriate VCs. Water quality and river hydraulics are assessed separately and support the assessment of fisheries and wildlife VCs.	Please note that this comment emerged due to the fact that the Project will incur one of the largest relocation / infills of existing watercourses ever in Richmond. Richmond's watercourses are a major ecological asset within the context of our community, and as such, it is critical that project-related effects on watercourses be comprehensively and thoroughly addressed within the VC assessments, including establishing a net gain approach.	The Proponent understands and supports the City of Richmond's commitment to protecting and enhancing ecological values associated with watercourses in the Project area. The potential for the Project to interact with riparian areas along ditches will be described in Section 4.4 (Fish and Fish Habitat) of the Application. In addition, this section of the Application will identify opportunities for habitat enhancement, including offsetting to address potential

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							effects. Offsetting will meet or exceed applicable federal and provincial regulatory requirements.
133	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Sediment and Water Quality	Need to address post-construction compensation for impacted watercourses.	The Application will identify appropriate off-setting to address potential effects on fish and fish habitat as well as post-construction monitoring requirements for offsetting sites.	No further comment.	----------
134	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Sediment and Water Quality	The proposed GMTR improvements will increase storm water runoff (through increased impermeable areas). It also has potential to impact the size and location of drainage canals or water courses. Given that MOTI storm water system and the City storm water system are interconnected, and that MoTi drainage system relies on the City drainage pump stations for storm water discharge off of Lulu Island, storm water modelling and planned storm water improvement are required components of the GMTR project.	The incremental increase caused by storm water run-off as a result of the Project is expected to be small. This storm water will be held in bio-filtration ponds to attenuate flows to storm water and drainage infrastructure discharged by the City's pump stations. During detailed drainage design, the Proponent will ensure that shared drainage infrastructure can accommodate the needs of all users. Section 1.1 of the dAIR has been refined to indicate that Project-related benefits to the environment will be discussed in the Application.	Request clarification on the calculation of a 'small' incremental increase in stormwater run-off, and how this conclusion was determined. The City expects a background drainage study, stormwater modelling, and associated data to support the project. The City requests review of any drainage studies to date and associated results, so as to determine impacts on City infrastructure, including drainage canals and watercourses. Identification of current and future impervious areas calculations and intended approaches for stormwater management is requested.	Information on how drainage requirements for the Project will be addressed, including performance objectives guiding design, will be included in Part A of the Application which includes a more detailed description of the key elements of the Project including drainage. The final design of drainage infrastructure, will take into account all information that is available to describe existing and future drainage demands. The Proponent has sufficient information on the amount of run-off that will be generated from Highway 99 but will require information, previously requested from the City of Richmond, in order to undertake detailed planning of shared drainage infrastructure so that such infrastructure can meet the needs of both the Proponent and the City of Richmond.
135	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as	Environmental Effects Assessment in General	Detailed habitat and vegetation assessment should be undertaken along the full GMT transportation corridor. The assessments should identify, document and report out on features and functions present within and adjacent to the corridor. Assessments should also be undertaken to address other valued (non habitat) aspects	The Proponent is completing a detailed habitat assessment along the Project alignment. Results of this assessment, including a description of vegetation/habitat features present within and adjacent to the Project alignment, will be provided in the Application. Non-habitat values associated with vegetation including visual buffering and sound attenuation will be considered and discussed under the	As this information is yet to be compiled for the EA, City staff reiterate the need to provide a 3rd Working Group meeting to review this new information and provide comment.	The EAO has scheduled and undertaken a joint meeting with the City of Richmond and the Proponent to discuss specific comments and concerns and the Proponent continues to meet bi-weekly with the City.

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		the Project Description		(e.g. visual buffers to agricultural lanes, natural bio filtration, sound attenuation, GHG mitigation etc.)	appropriate valued components (e.g. Agricultural Use, Atmospheric Noise).		
136	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Effects Assessment in General	The scope of potential effects on at-risk species (amphibians, riparian species, and plant species) be broadened to all species present within the project footprint.	The following criteria were used to assess effects of the Project on sensitive species. 1) Presence in the Project alignment or in a zone affected by it 2) Interaction with project components or activities. 3) Recognized importance for regulatory, conservation, or cultural factors. Generally red- and blue-listed, SARA-listed species and other species of particular interest to First Nations were selected for inclusion as a Valued Component (VC). The Application will provide details and rationale for other species considered. It should be noted that the assessment of the wildlife VCs selected, in many cases, is representative of a broader group of related species. In such cases, the assessment of effects, and proposed mitigation, is applicable to the broader range of related species.	City requests the opportunity to review the full data set of SAR and the broader range of related species within the corridor. Adequate time must be provided for this review.	Details on the studies conducted, including assessment methodology, data collected as part of baseline studies, and assessment of potential Project-related effects, will be presented in the Application. The EAO will determine the timelines for review of the Application by the Working Group.
137	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Environmental Effects Assessment in General	The project design should be prepared with the intent of planning for mitigation, compensation and enhancement of these valued components	Strategies for avoiding or minimizing Project-related effects and opportunities for enhancement of valued components (VC) have been included in Project design considerations, and will be developed further during subsequent stages.	City requests a more fulsome discussion on involvement in these subsequent processes to assure City needs are addressed	The Proponent has met with the City of Richmond over 80 times to date and will continue to work with the City regarding Project activities.
138	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as	Fish and Fish Habitat	Address whether there are any shadowing impacts from the Bridge. Section 5.4.2 (in the Project Description) states that project activities will occur "primarily" within the Highway 99 ROW and that effects can be avoided or mitigated. What about project activities outside the ROW.	The Proponent has considered the potential effects of shadowing within the assessment of the Land Use valued component. The Application considers the potential effect of all Project activities whether within or outside of highway right-of-way and identifies mitigation, where required, on this basis.	No further comment.	**Further clarification as requested by EAO:** The proposed bridge height and the high sediment loads in the Fraser, which limit light penetration, are such that shadowing effects on fish or fish habitat would not occur. Similar bridges on the lower Fraser River, including Golden Ears, Port Mann and

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		the Project Description					Alex Fraser bridge, are not considered to have cause shadowing effects.
139	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Fish and Fish Habitat ; Amphibians	Identify habitat compensation as part of long-term benefit post-construction.	Opportunities for habitat offsetting and enhancement will be identified in the Application. Benefits to fish and fish habitat, over and above addressing project-related effects, will be noted in the Application.	City seeking identification of net gain for habitat compensation and offsetting.	Opportunities for habitat offsetting and enhancement will be identified in the Application. Benefits to fish and fish habitat, over and above addressing project-related effects, will be noted in the Application.
140	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Vegetation	Potential effects need to be expanded to specify that there will be project-related impacts on trees and shrubs within the ROW/ corridor. The ROW and highway expansion includes areas that are not just grassy, but also contain trees and shrubs.	Potential Project-related effects on vegetation, particularly, at-risk plants and plant communities, are being assessed, and will be described in the Application.	This City comment is specific to understanding how this project will mitigate and compensate for shrubs and trees, not simply those shrubs and trees related to at risk plants and plant communities.	Measures to mitigate potential Project-related effects on vegetation, including but not limited to species at risk, will be described in the Application. Vegetation that the Proponent establishes within the right-of-way of the highway will be supportive of the operational requirements and the existing land use within the right-of-way.
141	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Vegetation	The compensation for tree removals be provided at a minimum of 2 to 1 in keeping with Council Policy for tree replacements.	Measures to mitigate potential Project-related effects on vegetation, including offsetting or enhancement will be described in the Application. The Proponent will consider specific opportunities for vegetation enhancements during the detailed design stage.	Please incorporate City's policy for 2:1 tree replacement ratio. Inclusion of tree and shrub losses and compensatory planning is requested.	Mitigation for Project-related effects on vegetation, within the Project area, will be influenced by a number of factors including operational requirements. Where practical, the Proponent will work in a manner that respects the intent of, but is not limited by, the City of Richmond's tree replacement policy. As discussed with the City of Richmond in the past, mitigation that is proposed to address potential effects on vegetation and habitat will seek to provide a net benefit in terms of ecological function. As per the City of Richmond's policy, a QEP will oversee the process of documenting existing and future conditions in order to demonstrate that net benefits has been achieved.

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142	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Terrestrial Wildlife	The documents states there may be loss of habitat but doesn't mention any restoration efforts or potential activities to off-set this	The Application will provide a detailed description of the extent and nature of potential effects on wildlife habitat and proposed measures to avoid or mitigate such effects.	No further comment.	----------
143	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Terrestrial Wildlife	In addition to the focal species identified in the Key Areas of Study/ Valued Components, there needs to be full spectrum analysis of the current species utilization within the project footprint as part of the Environmental Assessment. For example, the City requests an evaluation of, including, but not limited to: -impact of Passerine birds -impact on perch opportunities for raptors -impact on avian movements along the corridor and along the river (i.e.: flight patterns of kingfisher along the river through bridge) -impact on connectivity between Nature Park West and East - impact of nesting birds that use low-lying shrubs along Highway 99 (in addition to raptors)	The Proponent has included terrestrial wildlife as a valued component with the following subcomponents: • Upland birds (generally passerines and raptors) • Riparian birds (generally waterfowl, waders and shorebirds) • Small mammals Surveys of these subcomponents included point count surveys for passerines, and encounter transect surveys for raptors and herons along the Highway 99 corridor. The riverine (included under the riparian subcomponent) bird surveys included night-time and day-time surveys of bird transit along the Fraser River. The surveys were conducted consistent with provincially-recommended survey methods for the group (or species), and details will be included within the Application.	No further comment.	----------
144	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Air Quality	Potential effects should account for increases/ induced traffic that outweigh any improvements gained by a decrease in idling.	For the air quality assessment, the Proponent has taken a conservative approach to traffic forecasting that reflects the higher range of traffic that could be anticipated over the planning horizon. This ensured that the assessment considers any potential effects related to variances in projected volumes.	The conservative traffic forecast should assume an un-tolled crossing. The LAA should be extended to include Oak Street-70th Avenue to assess any potential queuing at the approaches to the Oak Street Bridge	The projected traffic volumes utilized in the air quality assessment are based on the assumption of an un-tolled crossing. The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic that support the assessment of other ICs and VCS. The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight

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							Street Bridge or the Arthur Liang Bridge. In addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM). **Traffic as an IC has been added as Section 5.1 of the dAIR.**
145	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Air Quality	Given Metro Vancouver has regulatory authority over air quality on the region; assume that Metro Vancouver will frame detailed issues relating to air quality associated with this project.	The Proponent has met with Metro Vancouver on several occasions to review the air quality assessment methodology proposed for the Project. Metro Vancouver has reviewed and provided comments, which have subsequently been incorporated into the assessment.	No further comment.	----------
146	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of	Land Use; Water Use	Address adjacent land uses north of Westminster Hwy to Bridgeport Road (e.g., commercial areas near Shell Road/ Cambie Road overpasses).	The assessment of the land use valued component (VC) in the Application will consider potential project related effects along the Project alignment and provide an assessment of how the Project aligns with and supports the implementation of regional and local land use plans.	The Land Use LAA should be extended to include Oak Street-70th Avenue to assess any potential queuing at the approaches to the Oak Street Bridge.	The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic that support the assessment of other ICs and VCS.

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		dAIR as well as the Project Description					The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Liang Bridge. In addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM **Traffic as an IC has been added as Section 5.1 of the dAIR.**
147	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land Use; Water Use	Re ALR land, need to differentiate between requiring viable ALR land that may be actively farmed versus returning vacant land that is in the ALR but not being farmed (i.e., not an even swap that equals a "no net loss").	Current agricultural use, viability, and agricultural capability will be considered in assessing potential Project-related effects on agricultural use, and identifying strategies for achieving a net gain.	The Project should achieve a net gain in agricultural use within each municipality as well as for the entire project. The Project should achieve a net gain in all environmental features (e.g., RMAs, ESAs) not just agricultural land.	Information will be provided in the Application to demonstrate how proposed mitigation and enhancements, with respect to agricultural values associated with the Project, meet the requirements of the Agricultural Land Commission. The Application will identify opportunities for realizing net gains for specific VCs where such gains are achievable.

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148	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land Use; Water Use	Need to address increased traffic impacts on adjacent residents, businesses and local roadways during construction and operation.	The Application will include information describing how traffic management during construction will be undertaken including specific technical plans, performance objectives, and communication requirements that will be put in place to ensure efficient traffic flow throughout the construction period. On completion, the Project is expected to significantly reduce local road congestion. Traffic on either side of the new bridge will benefit from the replacement of the Steveston Highway, and Highway 17A interchanges, as well as from reduced congestion on local roads from traffic waiting to access the Tunnel. **Section 1.1 of the dAIR has been updated to include confirmation that construction traffic management will be discussed in the Application**.	Based on forecast traffic modelling results, the Project needs to address the effects of any increased traffic on local roads during operation that result from new roadway connections (e.g., increased number of interchange free flow off-ramps, Rice Mill Road connection, and transit-only ramps to Van Horne Way) that are part of the Project scope. As required, the Land Use LAA 500-m buffer surrounding the alignment should be extended to fully capture these potential impacts.	Traffic will be assessed as an intermediate component in the Application and will include a consideration of the potential effects on traffic conditions for the areas noted. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
149	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land Use; Water Use	In addition to Environmentally Sensitive Areas, in Richmond Riparian Management Areas are also a significant land use in the Highway 99 ROW, on both the east and west sides of the highway, as designated within the Official Community Plan of Richmond.	Noted. The Application considers land uses within the local and regional assessment areas, including those established within local Official Community Plans.	No further comment.	----------
150	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Land and Water Use; Highway Improvements and Installations of New Structures	Staff reinforces the request that the bridge and roadway improvements support the City's Mid Island Dike concept.	The Project supports flood protection by increasing both the strength and height of the existing dike along the Fraser River within the Project alignment. The City's Mid Island Dike concept, entailing raising Highway 99 through the entire segment north of the tunnel, was reviewed. It was determined that this would result in significant impacts on adjacent lands, costs and other infrastructure.	The City requests further discussion and consideration for the Mid Island Dike concept or features as part of the Hwy 99 improvements.	The Proponent is committed to undertaking further discussion on the Mid Island Dike concept or features with the City. As noted previously, raising Highway 99 north of the Tunnel is not contemplated as part of this Project.
151	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed	Visual Quality	Changes in views to be studied need to be expanded beyond the bridge to include the new interchanges, and the new transit ramp at Bridgeport. Indicate visual impact of the BC Hydro transmission line.	The Project will introduce a new feature to the landscape through the construction of the new bridge, which has the potential to change local and regional visual conditions. A visual quality assessment will be undertaken to evaluate the potential effects of these changes. This assessment focuses on changes in visual	The proposed multi-level interchange at Steveston Highway is not consistent with infrastructure currently in place throughout the Highway 99 corridor and should be included as part of the visual quality analysis.	Anticipated change in visual quality resulting from the proposed upgrades to Steveston Interchange will be discussed in Section 5.5 (Visual Quality) of the Application.

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		in context of dAIR as well as the Project Description			quality as seen from residential areas, public parks, and other relevant viewing locations, and will include the effects of the relocation of the BC Hydro transmission line. New interchanges and ramps are consistent with infrastructure currently in place throughout Highway 99, and are features that align with the presence and use of a primary transportation corridor.		**Section 5.5.1 (Context and Boundaries, Visual Quality) on the dAIR has been updated to reflect this.**
152	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Visual Quality	Visual assessment of the overall project, not just the bridge E.G. Steveston Interchange given it will likely be a 4 tiered system versus the current 2 tier system.	The Proponent will be preparing a rendering of the overall Project including interchange concepts and will arrange further discussion with the City once complete.	Parks presumes the response means multiple renderings will be provided from several viewpoints in Richmond, not just of the bridge.	The rendering will be a digital model that is capable of being viewed from a number of viewpoints.
153	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Visual Quality	As part of the studies, include evaluation of the visual effects of lighting and potential light pollution emitting from the bridge, especially during nighttime hours.	Lighting requirements for the new bridge will be in accordance with applicable highway and bridge design codes. Dark sky compliant lighting, designed to illuminate the running surface and minimize light trespass will be used. The Application will include discussion on the visual effects of the new bridge.	Lighting requirements and standards should include consideration of light pollution effects on wildlife and birds, adjacent properties and land uses, and appropriate mitigation measures.	As noted in the dAIR, anticipated interactions between Project activities and terrestrial wildlife that will be considered in the Application will include potential disturbance due to an increase in ambient noise and light during construction and operation. Lighting requirements for the new bridge are governed by bridge design standards for safe operations. Dark sky compliant lighting, designed to illuminate the running surface and minimize light trespass will be used.
154	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Heritage	Evaluate the merit of the tunnel as well as potential in situ resources.	The Proponent recognizes the historical contribution of the Highway 99 corridor and the George Massey Tunnel. The Proponent is developing a strategy to acknowledge the Tunnel as an engineering success and its role in the area. **Section 1.1 of the dAIR has been updated to indicate a study of the history of the Tunnel will be undertaken and an overview included in the Application**.	No further comment.	**Note:** The study on the history of the Highway 99 corridor will be available to the technical Working Group during the Application Review period.

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155	City of Richmond	Comments submitted on Project Description and Key Areas of Study, reviewed in context of dAIR as well as the Project Description	Health	Should be broadened beyond air and noise to include opportunities for increased physical activity (walking and cycling) and how the project scope can contribute to this via the provision of cycling and pedestrian infrastructure as part of the project scope.	The Project includes a multi-use pathway on both sides of the new bridge providing opportunities for walking and cycling. Broader determinants of health, including a consideration of how the Project will result in benefits with respect to the indicators noted, will be discussed in the Application.	COR - The Proponent also needs to clarify how the results of the Health Impact Assessment will be incorporated into the Project Application. _____ (Comment from VCH) The HIA should cover many of these areas that would affect health beyond air and noise. This should be taken into consideration as the HIA is stated to look at opportunities to increase active transportation and recreation.	While the HIA is not a requirement of the EAO, The Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BCEAA. The HIA is being undertaken concurrently with the Projects environmental assessment under BCEAA. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available during the Application Review period.
156	Tsleil-Waututh Nation		General	Tsleil-Waututh First Nation requires that appropriate sections of the dAIR acknowledge that adequate information-sharing is one threshold within the broader consultation process, and is therefore distinct from consultation on its own accord. This should then be carried forward into the Consultation Plans and Reports.	The Aboriginal Consultation Plan acknowledges that adequate information-sharing is one threshold within the broader consultation process. This understanding will be brought forward in the Consultation Reports and the Application.	Tsleil-Waututh Nation provided no further comment.	----------
157	Tsleil-Waututh Nation		General	Tsleil-Waututh First Nation requests a full evaluation on impacts to ecological services for all ecosystems within the vicinity of the Project. This could be in the form of a separate study compiling information from EA technical reports and cumulative effects.	The Proponent is working with the B.C Environmental Assessment Office, and members of the Technical Working Group, to ensure that the methodology used to support the assessment of environmental values is consistent with current best practice and guidance materials that support the assessment of projects under the B.C *Environmental Assessment Act.*	Tsleil-Waututh Nation provided no further comment.	----------
158	Tsleil-Waututh Nation		General	Tsleil-Waututh First Nation requires that a comprehensive approach to sustainability be incorporated into the Application. This means that mitigation measures are complemented with identification of environmental, social, and economic benefits of the project where possible. Where applicable, it would be helpful to have the project benefits framed within the Provincial and Federal climate change targets.	The Proponent will assess the potential for the Project to interact with the environment, the nature of such interactions, and where appropriate, propose mitigation strategies to avoid or minimize potential adverse effects. Opportunities for net gain following applied mitigation will be identified as benefits where possible. With respect to incorporating a sustainability framework into the Application, the Ministry supports that the five pillars (environment, social, health, economy, and heritage) considered in the EAO process meets this objective.	Tsleil-Waututh Nation provided no further comment.	----------

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159	Tsleil-Waututh Nation		General	For all sections which reference temporal boundaries, Tsleil-Waututh First Nation requests clarification on whether construction and operation phases also include pre-construction and decommissioning activities respectively.	The construction phase includes pre-construction and decommissioning activities.	Tsleil-Waututh Nation provided no further comment.	----------
160	Tsleil-Waututh Nation		General	Tsleil-Waututh First Nation would like to see this project incorporate the potential for 'smart roadway' technology. We request that the Proponent conduct a feasibility study with our engagement.	The Ministry is developing an Intelligent Transportation System Strategy for the Highway 99 corridor as part of the Project scope. Proposed infrastructure includes a fibre optic network connecting the highway to the Regional Transportation Management Centre, cameras providing coverage of the highway, vehicle detection sensors, changeable message signs and additional infrastructure to allow for expansion of the system as new technologies come into use.	Tsleil-Waututh Nation provided no further comment.	----------
161	Tsleil-Waututh Nation		General	It is important that suicide prevention measures be given serious consideration in this project. Tsleil-Waututh First Nation feels that a mixed-methods approach, as suggested by the Proponent, combining hard infrastructure (i.e. barriers) and supporting programming, art installations or otherwise, be pursued. Hard infrastructure is not sufficient on its own. We would like to work with the Proponent to explore options in this regard.	The Proponent recognizes the importance of deterrent measures and is committed to including security fencing as part of the design of the new bridge. The Proponent will work with Tsleil-Waututh to explore other measures that may complement the provision of standard safety measures.	Tsleil-Waututh Nation provided no further comment.	----------
162	Tsleil-Waututh Nation	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	Tsleil-Waututh First Nation does not agree with the cumulative effects assessment method that considers only residual effects of the project that have the potential to interact with other projects and activities as scoped by the EA. Tsleil-Waututh First Nation assesses cumulative effects from a holistic perspective, inclusive of past (pre-contact baseline), present and future impacts on its members, culture, economy, and the environment from all projects across the territory. Tsleil-Waututh First Nation requests that all effects, including those generated by migratory and adaptive measures, be included in the cumulative effects	The methodology proposed for determining residual Project effects and subsequent cumulative effects assessment is based on the EAO's Guideline for the Selection of Valued Components and Assessment of Potential Effects and includes past, present and reasonably foreseeable projects. The Proponent will review the cumulative effects methodology at the scheduled Technical Working Group meeting in March.	Tsleil-Waututh Nation provided no further comment.	----------

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				assessment. We would like to discuss appropriate methods with the EAO and Proponent accordingly.			
163	Tsleil-Waututh Nation	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	We are concerned about increased storm water runoff into the Fraser River, surrounding tributaries, sloughs, and channels. We expect innovative storm water solutions to be designed that will result in no runoff directly entering the Fraser River or adjacent sloughs from the bridge. Bioengineering techniques on land will be encouraged to accommodate an increase in surface storm water runoff and natural water storage. Tsleil-Waututh First Nation requires achieving a "net gain" in water quality through project development.	Bio-filtration marshes have been included in the Project design for effective treatment of storm water from the bridge and approaches. The Highway 99 corridor uses low gradient ditches to manage storm water. Grass verges between the pavement and the drainage ditches will continue to provide effective bio filtration of road runoff along the corridor. Opportunities for net gain following applied mitigation will be identified as benefits where possible. **Section 1.1 of the dAIR has been refined to indicate that Project-related benefits to the environment will be discussed in the Application.**	Tsleil-Waututh Nation provided no further comment.	----------
164	Tsleil-Waututh Nation	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Tsleil-Waututh First Nation will require a comprehensive understanding of the potential ecological impacts of sedimentation as a result of the project. We request confirmation of the depth of sediment grabs to date. If this depth is not sufficient for Tsleil-Waututh First Nation, we will require core sampling methods.	Sediment generation and quality issues will be considered as part of the assessment of potential effects of the Project. An assessment of potential effects associated with re-suspension of sediments through Project-related activities will be included in the Application. Information on the sampling techniques used to support the collection of sediment samples, including the depth of material sampled, will be provided in the Application.	Tsleil-Waututh Nation provided no further comment.	----------
165	Tsleil-Waututh Nation	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Fish and aquatic habitats have been significantly degraded or lost in the Lower Fraser due to filling and dykes. It is therefore even more important to protect the ecological integrity of the remaining habitats – whether or not they are considered highly productive habitat. Tsleil-Waututh First Nation will not support further losses or compromise of slough, marsh or estuarine habitat in the Lower Fraser.	Potential project related effects regarding fish and aquatic habitat will be mitigated and offsetting identified where effects cannot be avoided. In addition, the Proponent has proposed the restoration of Green Slough to its historic alignment resulting in enhanced habitat.	Tsleil-Waututh Nation provided no further comment.	----------
166	Tsleil-Waututh Nation	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Tsleil-Waututh First Nation requests that disturbance to benthic and aquatic invertebrates and their habitat is reconsidered and included in the EA. We have Aboriginal interests in this component.	Aquatic habitats, which include habitat for fish and other aquatic species (including benthic and aquatic invertebrates), will be a primary area of focus for the environmental assessment of the Project. Potential disturbance to benthic and aquatic	Tsleil-Waututh Nation provided no further comment.	----------

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					invertebrates is not, on its own, proposed as a valued component (VC) given the nature of the Project and the aquatic habitats it overlaps with. Aquatic habitats overlapping with the Project occur within a section of the Fraser River that is dynamic, influenced by large flow variations and downstream transport of sand and organic matter. Therefore, aquatic and benthic invertebrates communities within or adjacent to the Project alignment are expected to be resilient to physical disturbance. Given the temporary and short-term changes in flow and water quality expected from Project activities, it is anticipated that the benthic and aquatic invertebrates will recover rapidly from any disturbance. Rationale for exclusion of benthic and aquatic invertebrates as a VC will be provided in the Application. **Section 3.1 of the dAIR has been updated to reflect this.**		
167	Tsleil-Waututh Nation	Section 4.5 (At-risk amphibians)	At-risk amphibians	Tsleil-Waututh First Nation requests that atmospheric noise is also studied to support the assessment of at-risk amphibians in the EA. Atmospheric noise from such activities as construction and traffic can adversely affect wildlife and interfere with frog calls.	Potential effects of Project-related changes in atmospheric noise on wildlife, including amphibians, are being reviewed as part of the environmental assessment for the Project.	Tsleil-Waututh Nation provided no further comment.	**Note:** The dAIR has been revised to include and to assess traffic as an Intermediate Component which will support the assessment of atmospheric noise, air quality, human health, land use, and terrestrial wildlife. The assessment of traffic will include a consideration of changes in traffic during the construction, including Tunnel decommissioning, and operational phases of the Project. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
168	Tsleil-Waututh Nation	Section 4.6 (Marine Mammals)	Marine Mammals	Tsleil-Waututh First Nation requests that potential effects on southern resident killer whales (SRKWs) is reconsidered and included in the EA. SRKWs are of high significance to Tsleil-Waututh First Nation and other Aboriginal groups. Critical habitat for SRKWs is less than 10 km from the Project footprint, and they are an endangered species under the federal Species at Risk Act. There are	The Project is not anticipated to affect southern resident killer whales (SRKW). Based on the results of underwater noise modelling completed to date, underwater noise generated by Project-related activities is not predicted to extend outside of the Fraser River, and therefore will not affect SRKW. In addition, studies completed to date also indicate that the Project is not expected to affect the population integrity of any fish sub-components in the Fraser River	Tsleil-Waututh Nation provided no further comment.	----------

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				currently less than 80 SRKWs, and therefore they must be included	that support SRKW, including Chinook Salmon. **Section 4.6 of the dAIR has been updated to indicate that rationale for exclusion of South Resident Killer Whale from the scope of the assessment will be provided in the Application.**		
169	Tsleil-Waututh Nation	Section 5.0 (Socio-economic Effects Assessment)	Economic Effects Assessment	We understand the Proponents rationale for not including an economic effects assessment and will be reviewing the business case, tax revenue analysis, related employment forecasts, and relevant components of the Land Use section. We understand that a forthcoming study will look at municipal and regional land use plans as they relate to the project. We request a copy of this study for review and comment.	An overview of the how the Project is consistent with municipal land use plans and designations, as well as, municipal and regional growth strategies will be included in the Application. **Section 5.3 of the dAIR has been updated to indicate that an overview of consistency with municipal and regional land use plans as they relate to the Project will be included in the Application.**	Tsleil-Waututh Nation provided no further comment.	**Further clarification as requested by EAO:** Information on economic benefits, including tax revenue generated as result of the Project and direct and indirect employment forecasts, will included in the Project benefits section which is presented in Part A of the Application.
170	Tsleil-Waututh Nation	Section 6.0 (Heritage Effects Assessment)	Heritage	Tsleil-Waututh First Nation understands that a detailed heritage study will be completed as part of the EA. We intend to review and incorporate strategies for protecting our tangible and intangible cultural heritage sites. The dAIR should be amended to allow for this process.	The Proponent has undertaken a Heritage Resources Assessment and provided a copy to the Tsleil-Waututh for review and comment. Intangible heritage resources will be assessed in Part C of the Application; to the extent information relating to intangible heritage resources is made available by Tsleil-Waututh.	Tsleil-Waututh Nation provided no further comment.	----------
171	Tsleil-Waututh Nation	Section 7.0 (Health Effects Assessment)	Health	Tsleil-Waututh First Nation finds the parameters of the health assessment to be inadequate. The social determinants of health in the EA, such as quality of life and well-being and cultural health must be included in the Project Description, AIR, and in the EA. Cultural health is of unique importance to Tsleil-Waututh First Nation as an Aboriginal group. We have provided the Proponent with a potential methodology for this process and will work with the Proponent to incorporate it adequately.	The Proponent understands that health assessments may consider a broad range of determinants of health, including socio-economic determinants of and that the scope of a specific health assessment is defined by the nature of activities and conditions associated with the proposed project. The environmental assessment that is being undertaken for the Project is being scoped to include a consideration of how environmental, social, economic, heritage and health conditions may change as a result of the proposed Project. This is consistent with guidance provided by the BC Environmental Assessment Office. In addition, the Proponent is working with Vancouver Coastal Health and Fraser Health with respect to ensuring that the Environmental Assessment includes a broad consideration of health aspects of the	Tsleil-Waututh Nation provided no further comment.	**Further clarification as requested by EAO:** The results of the health assessment will be considered in Part C in relation to potential Project related effects on Aboriginal Interests in Section 10.1.3 or on other matters of concern in Section 10.2, as appropriate. .

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					Project. As such, a broader range of human health considerations, beyond those related to air quality and noise will be considered in the environmental assessment. The Proponent will review and discuss the potential methodology with Tsleil-Waututh. **The dAIR has been revised to indicate that Section 7.0 (Health) of Part B of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes a recognition of health considerations that are specific to Aboriginal populations.**		
172	Tsleil-Waututh Nation	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	The introduction to this section for all Aboriginal Groups should include a pre-amble discussing what meaningful consultation is, and the metrics used to monitor and evaluate it.	The Proponent has worked with Aboriginal Groups in the development of an Aboriginal Consultation Plan to define and subsequently, support meaningful consultation. Part C of the Application will include a summary of content outlined in the Aboriginal Consultation Plan, including how it is monitored and evaluated.	Tsleil-Waututh Nation provided no further comment.	----------
173	Tsleil-Waututh Nation	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	Tsleil-Watututh requests that that all consultation summaries in this section present a practical balance of quantitative and qualitative information and that the dAIR specify this.	The Proponent will provide both quantitative and qualitative information in this section when summarizing consultation. Section 10.3 of the dAIR has been refined to provide confirmation that the consultation summaries presented in the Application will include both quantitative and qualitative information.	Tsleil-Waututh Nation provided no further comment.	----------
174	Tsleil-Waututh Nation	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	The Issue Summary Table should be accompanied by issue resolution framework that can be applied to all Aboriginal Group concerns if and when necessary.	The Aboriginal Consultation Report will include a summary table indicating the status of identified issues. The table will also outline the process by which the Proponent will address outstanding issues.	Tsleil-Waututh Nation provided no further comment.	----------
175	Corporation of Delta	Section 4.7 (Vegetation)	Vegetation	Will the impacts from reduced natural lighting on landscaped areas under the bridge be assessed?	Lighting requirements for the new bridge will be in accordance with applicable highway and bridge design codes. Dark sky compliant lighting, designed to illuminate the running surface and minimize light trespass, will be used. The effects of shadowing from the new bridge will be assessed in the land use section of the Application.	Corporation of Delta provided no further comment.	**Further clarification as requested by EAO:** The proposed bridge height and the high sediment loads in the Fraser, which limit light penetration, are such that shadowing effects on fish or fish habitat would not occur. Similar bridges on the lower Fraser River, including Golden Ears, Port Mann and Alex Fraser bridge, are not considered to have cause shadowing effects.

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176	Corporation of Delta	Section 5.3 (Land Use)	Land Use	Will the impacts from reduced natural lighting on areas under the bridge be assessed such as the Millennium Trail? Will lighting be provided?	The south approach of the new bridge in the general location of the existing Millennium Trail allows natural light beneath the bridge. Details relating to illuminating the trail in this area will be available as design progresses.	Corporation of Delta provided no further comment.	----------
177	Corporation of Delta	Section 4.0 (Environmental Effects Assessment)	Atmospheric Noise	Will the noise study boundaries change due to piling effects, is the study boundary adequate in the vicinity of the bridge? What standard will be used to assess the community noise impacts due to piling and other construction activities?	The parameters of the assessment area for the noise study are based on the expected project related activities, including pile driving, during construction and operations. The assessment of community noise impacts follows the British Columbia Ministry of Transportation and Infrastructure, Policy for assessing and mitigating noise impacts from new and upgraded numbered highways, April 2014.	Corporation of Delta provided no further comment.	----------
178	Corporation of Delta	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	The cumulative effects from projects from the Gateway Transportation Collaboration Forum, the Deltaport Terminal Road and Rail Improvement Program and future development such as the Boundary Bay Airport Industrial Development should be included in the assessment;	The potential for residual effects of other projects, to interact with those of the George Massey Tunnel Replacement Project will be reviewed, and the nature of such interaction will be discussed in the Application. The list of other projects and activities to be considered in the cumulative effects assessment will be updated to include additional projects as appropriate. The Proponent will review the cumulative effects methodology at the next Technical Working Group meeting.	Corporation of Delta provided no further comment.	**Further clarification as requested by EAO**: Influence of projects and activities that have already been built/conducted, including DeltaPort, BC Ferries Terminal, YVR, and Boundary Bay Airport has been considered in the assessment of baseline conditions of each VC; these projects have, therefore, not been included in the list of current projects and activities to be included in the cumulative effects assessment. Reasonably foreseeable future projects with potential residual effects that could interact with those of the Project will be included in the cumulative effects assessment. ----------
179	Corporation of Delta		Emergency Management	• Routine emergency management including Fire, Police, and Ambulance for vehicle accidents etc. needs to be addressed; It is not clear where this is included in the dAIR. • How will access be maintained during all phases of construction, both for workers and commuters / travellers? • For a major flood event will there be any potential critical times during construction that there may be higher vulnerabilities? For example could a major flood event erode banks and expose piers? Could a major storm with high wind and storm surge affect	Seismic and emergency-response capabilities have been key considerations in Project planning and development. The new bridge will be built to current seismic standards, and the Project will provide additional capacity and features, such as median turnarounds for emergency vehicles, to facilitate timely response to incidents. Further details will be provided in the Application. The Application will include information describing how traffic management during construction will be undertaken, including requirements for specific technical plans, performance objectives and communication requirements that will be established	Corporation of Delta provided no further comment.	**Further clarification as requested by EAO:** The Application will include a discussion of potential accidents and malfunctions that may occur during Project construction, including Tunnel decommissioning, and operation as outlined in Section 8.0 of the dAIR.

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				the bridge / deck during construction? It is not clear where these questions would be addressed in the dAIR. • Will the following questions be addressed in Accidents and Malfunctions and Effects of the Environment on the Project sections: a. How will an earthquake event be handled during construction? b. Would the bridge fall down if it was partly built and we had a major event? c. Would the tunnel be affected if there was a partial or total failure of the partly constructed bridge? d. What are the potential bridge effects and damages for a moderate to large earthquake event during the different stages of construction? Are there one or more critical stages of construction where the structure is at its greatest vulnerability? Will such information be made available to stakeholders so that they can take appropriate action? Should alternate steps be taken at these critical times to speed up construction or take alternate steps to reduce the risk? • Will earthquake warning systems be tied into the construction office so early warnings can be provided so immediate security steps could be taken?	to ensure the efficient movement of traffic and effective responses to incidents during construction. Construction methodologies will be outlined that address prevalent soft-soil conditions and procedures will be established that ensure an effective and timely response to natural events such as floods. In particular, a Traffic Management Plan, which will include sub-plans for Traffic Control; Emergency Response; Advisory Signing; and Implementation, as well as an Environmental Emergency Response Plan will be developed prior to construction and will describe the procedures that will be in place, including effective communications with response agencies and users. Detailed plans and procedures will be developed during subsequent design stages and reviewed with applicable agencies and stakeholders.		
180	Corporation of Delta		Traffic Management during Construction	• Will the potential impacts to traffic flow during construction be assessed? What are the mitigation measures to ensure as little inconvenience, impact and delay as possible? • Safe passage for pedestrians, cyclists and vehicular traffic needs to be maintained including provisions for transit impact, such measures need to be included in the Management Plan for traffic movement during construction; • Plans for effective communication with affected stakeholders should be included as part of the management plan.	The Application will include information describing how traffic management during construction will be undertaken including specific technical plans, performance objectives, and communication requirements that will be put in place to ensure the efficient movement of traffic and continued safe passage for cyclists during construction.	Corporation of Delta provided no further comment.	**Note:** The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The assessment of traffic will include a consideration of changes in traffic during the construction and a reference to the Traffic Management Plan will be made here. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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181	Kwantlen First Nation		Habitat Restoration	SQ would like to have a better understanding of the areas being designated for habitat restoration; will this be in the DAIR or in the following management plans?	The Application will provide details on proposed mitigation for any potential adverse effects. Opportunities for habitat enhancement will be identified, including compensation for offsetting potential effects.	Kwantlen First Nation provided no further comment.	**Further clarification as requested by EAO**: Information on specific habitat enhancement proposals will be provided in the VC section where the effect is identified.
182	Kwantlen First Nation		General	For any reports and management plans we ask that an effort be made to include Indigenous place names of the areas in and around the George Massey Tunnel. This should be incorporated into Section 1.1 of the dAIR under the 'Location of the proposed project relative to Aboriginal Groups' Asserted Traditional Territories and /or Treaty Nation Territories'.	The Proponent will endeavor to include indigenous place names of the areas in and around the George Massey Tunnel in EA-related reports and management plan. The Proponent will revise Section 1.1 of the dAIR so that "Location of the proposed project relative to Aboriginal Groups' Asserted Traditional Territories and /or Treaty Nation Territories" also includes Indigenous place names. **Section 1.1 of the dAIR has been updated to indicate that Indigenous place names of the areas in and around the Tunnel will be incorporated into the description of location of the Project in relation to Aboriginal Groups' asserted traditional territories and/ or Treaty N**ation territories.	Kwantlen First Nation provided no further comment.	----------
183	Kwantlen First Nation	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects	SQ do not feel that the methodologies proposed for assessing cumulative effects will be effective at adequately addressing negative impacts. We feel that the scope is too narrow and that only comparing the residual effects among existing and proposed projects is insufficient. We propose that in addition to a study of residual effects, that there is also a more holistic method that looks at how increased development along the Fraser has affected habitat, fish stocks, wildlife, and how this has impacted Indigenous peoples along the lower Fraser River.	The methodology proposed for determining residual Project effects and subsequent cumulative effects assessment is based on the EAO's Guideline for the Selection of Valued Components and Assessment of Potential Effects. Following this methodology, project focused cumulative effects assessments are not undertaken in cases where project related effects are fully mitigated. The discussion of existing conditions for relevant VCs will include a general consideration of how existing conditions for specific VCs have been influenced by past human activities including development. The Proponent will review the cumulative effects methodology at the next Technical Working Group meeting.	Kwantlen First Nation provided no further comment.	----------
184	Kwantlen First Nation		General	SQ is concerned at the lack of leadership for conservation and protection of the Fraser River. As mentioned at previous meetings, we ask the Province to initiate a study that allows for a better understanding of the whole ecosystem of the lower Fraser River that will lead to a plan that conserves and	In consideration of conservation and protection of the Fraser River, the Proponent has proposed a Project that includes a number of measures to avoid effects on the Fraser River and, where possible enhance existing values. These include: minimizing in-river works by including a clear span bridge in the design; realignment of Green Slough to its historic channel; treatment of	Kwantlen First Nation provided no further comment.	----------

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				improves overall habitat alongside increased development and trade.	storm water from the new bridge and approaches before discharging; and best management practices during construction to minimize effects. **Section 1.1 of the dAIR has been refined to indicate that Project-related benefits to the environment will be discussed in the Application.**		
185	Kwantlen First Nation	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	As mentioned in meetings, SQ is interested in opportunities to collaborate on archaeology work, environmental monitoring, and construction tenders related to the project and would like to be kept up to date on any information related to these opportunities.	As specifically outlined in the GMT Aboriginal Consultation Plan, the Proponent has committed to meet with Kwantlen First Nation and other Aboriginal Groups regarding opportunities related to employment, training and contracting. At the request of Kwantlen First Nation and other Aboriginal Groups, the Proponent has initiated these discussions and will continue discussions regarding Project-related opportunities throughout the Environmental Assessment process.	Kwantlen First Nation provided no further comment.	----------
186	TransLink	Section 4.9 (Air Quality)	Air Quality	Request including the assessment of change in greenhouse gas emissions, VKT's, and mode share in the DAIR. Quantifying these metrics will allow TransLink to respond to its legislated mandate and provide information to assess the project's impacts on identified air quality and human health valued components. Greenhouse gas emissions change should consider traffic impacts during construction, embedded energy in the project, and response of travellers once the project is operational, similar to the assessment of other regional transportation projects.	Predicted greenhouse gas emissions associated with the proposed Project will be discussed in the assessment of the air quality intermediate component (IC). The dAIR will be revised to reflect this. The Application will also provide for a consideration of how the proposed Project supports implementation of the Regional Transportation Strategy including contributing to progress against key metrics identified in the RTS. The baseline, construction, and operational phases will be addressed in the air quality assessment. The Proponent will continue discussions on the air quality assessment with TransLink and other members of the Working Group. **Section 4.9 of the dAIR has been updated to include confirmation that potential Project related changes in GHG emissions will be discussed in the Application under the air quality effects assessment**.	-DAIR notes: "An evaluation of potential Project-related change in greenhouse gas (GHG) emissions will also be included." Would appreciate the clarification in the dAIR as to whether this evaluation will also include GHGs from embedded energy in the project. -DAIR notes "Potential; Project-related change in traffic emissions along the highway during operation". Rather than a geographic scope limited to the area along the highway, suggest GHGs be calculated for the region, per typical practice for similar scale transportation projects. - Reiterate our previous request for the DAIR to include the assessment in the changes in vehicle kilometres travelled (VKTs) and mode share, as these metrics (in addition to GHGs) are fundamental RTS headline targets, and will allow us to respond to our legislated mandate as discussed above.	1) The assessment will not include GHGs from embedded energy. 2) The GHGs will be estimated for the area along the highway and assessed in the context of regional emissions. 3) Traffic has been added as an Intermediate Component in the dAIR. The assessment of traffic as an IC will be supported by anticipated changes in key metrics including VKT and mode share. **Traffic as an IC has been added as Section 5.1 of the dAIR.**

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187	TransLink	Section 3.1 (Issues Scoping and Selection of Valued Components)	Issues Scoping and Selection of Valued Components	Consideration should be given to including change in travel mobility and/ or accessibility as a valued component in the DAIR	Improvements in travel mobility associated with the Project is currently considered as a Project benefit and will be discussed in this context in the Application.	Request consideration be given to the inclusion of change in travel mobility and/or accessibility as a valued component in the dAIR. While a key objective of the project is to relieve traffic congestion in the Highway 99 corridor, and we understand the proponent intends to describe this in the introductory section of the dAIR, TransLink is interested in whether the Environmental Assessment will identify any adverse project traffic impacts, so that potential mitigation strategies might be developed. Such impacts could include, but not be limited to, impacts on other Fraser River crossings and/or Major Road Network (MRN) routes leading to and from the project. This is of particular importance to TransLink given our ownership of several bridges in the region, and our responsibility for the comanagement and planning of the MRN alongside our municipal partners.	Traffic will be assessed as an Intermediate Component. The dAIR will revised to include a description of the methodology for assessing the Traffic IC including identifying the LAA and RAA for the assessment. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
188	TransLink	Section 1.0 (Overview)	Traffic	Estimation of future traffic volumes, and volume change in response to the project, are inputs to the analysis of impacts to valued components including air quality and human health, and drive most of the quantified user benefits. Through the environmental assessment process, we request clarification of the methods and assumptions used to develop project traffic forecasts.	The Proponent intends to provide the opportunity to discuss traffic, and its inclusion in the Application, at the scheduled Working Group meeting. In addition, the Proponent will be meeting with Working Group representatives separately, including TransLink, to allow for more detailed discussion on traffic considerations associated with the Project. **Section 1.1 of the dAIR has been updated to include confirmation that the Application will include a discussion on current traffic conditions and predicted future trends.**	In regards to our requested clarification of methods and assumptions used for traffic forecasting, we appreciate the information shared by the project team to date, and look forward to further collaboration on this important aspect of the assessment.	Noted.
189	TransLink	Section 1.0 (Overview)	Transit	One needed transit element previously identified to the Proponent, but not yet reflected in the Project Description and Key Areas of Study, is a direct ramp to allow buses to exit and enter the median transit/ HOV lanes to and from Highway 17A. Without such access, bus services to and from Ladner, Tsawwassen, and the BC Ferries terminal cannot utilize the transit/ HOV lanes. This bi-directional access remains an important issue and we look forward to	The Proponent is continuing to work with TransLink to explore transit access at Highway 17A. It is not expected that the Project's footprint represented in the dAIR assessment areas will be affected.	We appreciate the work that the proponent has undertaken to date to address this connection, and we look forward to reviewing revised designs that will accommodate this transit movement.	Noted.

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				working further with the Proponent to identify a solution for this connection. The EAO should be aware that accommodating this connection may impact the Project footprint and associated boundaries represented in the dAIR assessment areas.			
190	Transport Canada - Navigation Protection Program		Acronyms	Potentially add TC (Transport Canada), NPA (Navigation Protection Act), and NPP (Navigation Protection Program)?	The acronyms list in the dAIR will be updated to include TC, NPA, and NPP. The Acronyms list in the dAIR has been updated.	No further comment	----------
191	Transport Canada - Navigation Protection Program	Section 5.0 (Socio-economic Effects Assessment)	Economic Effects	Interruptions to commercial marine traffic, although included in the Social Effects section, may have short-term economic effects with the respect to the movement of goods on the Fraser River. Anticipated frequency and duration of interruptions to traffic flow during the construction phase should be identified in section 5.2 of the Application. That may inform whether the statement on page 48 is correct, with respect to there being no anticipated adverse economic effects.	Full closure of the navigation channel will be avoided during construction, and potential interruptions to commercial marine traffic flow are expected to be limited to temporary, short-term restrictions to one-directional traffic. Marine construction staging plans will be developed in consultation with commercial marine users to ensure economic effects associated with the movement of goods on the Fraser River are avoided.	No further comment	**Further clarification as requested by EAO:** Potential effects of the Project to commercial marine traffic will be discussed under the commercial navigation subcomponent in Section 6(Marine Use) of the Application as identified in the dAIR. The marine construction staging plans, developed in consultation with commercial marine users, will include mitigation strategies to avoid or minimize interruptions to marine traffic.
192	Transport Canada - Navigation Protection Program	Section 5.2 (Marine Use)	Marine Use	The marine use sub-component titles may be misinterpreted. TC NPP considers recreational boating (third category) to be a form of navigation (first category). It may be more accurate to rename the categories to differentiate between commercial navigation, recreational navigation, and navigation for CRA fisheries.	Noted. The sub-components will be renamed as suggested. **Section 5.2 of the dAIR has been revised accordingly**.	No further comment	----------
193	Transport Canada - Navigation Protection Program	Section 5.2 (Marine Use)	Marine Use	Regarding use of the term “navigability” as a project related effect: From a regulatory perspective, TC determines navigability through the application of several tests, including known, historical, and potential uses and whether it is navigable in fact. The NPA applies to navigable waterways (by the above definition) that are listed on the Schedule to the Act, which includes the Fraser River. In the context that TC uses and applies the term “navigability”, a waterway or waterbody may only be deemed navigable or non-navigable (only a positive or negative outcome of a navigability	The term "navigability" was used to denote accessibility of the waterways for navigation purposes. The term will be replaced by "accessibility" or "access for navigation purposes", as appropriate in the dAIR and the Application. **Section 5.2 of the dAIR has been revised.**	The word “accessibility” could be interpreted as a True/False condition only. Provided the intent of this section is to describe the impacts on navigation, and not just whether the waterway is accessible or not, then TC has no concerns.	The Proponent confirms the intent of this section is to describe the impacts on navigation.

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				assessment). The condition of the Fraser River as a navigable waterway will not change as a result of this project. Perhaps the dAIR phrase "Navigability of waterways" could be rephrased to read as "Impacts on Navigation" (or similar) to avoid conflicting understandings and application of the term.			
194	Transport Canada - Navigation Protection Program	Section 5.2 (Marine Use)	Marine Use	As per comment regarding section 5.2, the term "navigability" has a different implication in a regulatory context with respect to the NPA. Consider replacing with an alternate term.	The term "navigability" was used to denote accessibility of the waterways for navigation purposes. The term will be replaced by "accessibility" or "access for navigation purposes", as appropriate in the dAIR and the Application. **Section 5.2 of the dAIR has been revised.**	See response to 193 above.	The Proponent confirms the intent of this section is to describe the impacts on navigation.
195	Transport Canada - Navigation Protection Program	Section 5.2 (Marine Use)	Marine Use	The "Marine Act" is missing "Canada" in its name. The Canada Shipping Act also applies to management of marine use in BC.	The Marine Act has been replaced with Canada Marine Act in the dAIR. The Canada Shipping Act has been added to the list of applicable legislation under Section 5.1.2 of the dAIR, and considered in the Application. **Section 5.1.2 of the dAIR has been updated accordingly.**	No further comment	----------
196	Transport Canada - Navigation Protection Program	Section 5.2 (Marine Use)	Marine Use	There may be temporary or permanent effects on private and/or public Aids to Navigation, pursuant to the Canada Shipping Act. Proponent is advised to consult with the Coast Guard, Marine Navigation Services.	Noted. The Proponent is currently in discussions with Canadian Coast Guard regarding potential Project-related effects on Aids to Navigation.	No further comment	----------
197	Transport Canada - Navigation Protection Program	Section 8.0 (Accidents and Malfunctions)	Accidents and Malfunctions	Additional potential categories of accidents and malfunctions include collisions between vessels and/or equipment related to construction and unintended obstruction to navigation (example: loss of bridge deck section in river).	Section 8.0 of the dAIR has been updated to include marine vehicle collision and unintended obstruction to navigation, and these potential scenarios will be considered in the Application. **Section 8.0 of the dAIR has been updated accordingly.**	No further comment	----------
198	Transport Canada - Navigation Protection Program	Section 12.0 (Monitoring & Follow-up Programs)	Marine Construction Plan	Will the Marine Construction Plan include a Marine Communications Plan as a sub-component, or will this be added as a separate management plan on the list? A Marine Communications Plan is likely to be a requirement of any NPA authorizations issued during the permitting phase.	A Marine Communications Plan is proposed as a stand-alone component of the broader Marine Construction Plan. The Marine Communications Plan will be developed in a manner that meets NPA authorization requirements	No further comment	----------

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199	City of Richmond		General	The City requests a detailed discussion on each Valued Component within the dAIR during the Working Group meetings.	The Proponent intends to provide the opportunity to discuss each of the valued components (VC) at the scheduled Working Group meeting as well as during subsequent phases of the environmental assessment including, but not limited to, the Application Review phase. In addition, the Proponent will be meeting with working group representatives separately to allow for more detailed discussion on valued components specific to the interests of the working group member.	City requests, at a minimum, an in-person 3rd Working Group meeting that to further discuss the dAIR Round 2 comments as well as Application Screening process.	The EAO has scheduled and undertaken a joint meeting with the City of Richmond and the Proponent to discuss specific comments and concerns and the Proponent continues to meet bi-weekly with the City. EAO also hosted a teleconference Technical Working Group meeting to discuss the Application Screening process.
200	City of Richmond		General	Please address how the Valued Components will integrate information with respect to the tunnel decommissioning option as well the potential tunnel removal or partial removal.	Tunnel decommissioning is included in the scope of Project components and activities to be assessed as part of the Environmental Assessment. Potential for activities associated with Tunnel decommissioning to interact with the valued components (VCs), the nature of such interactions, and strategies to avoid or minimize potential Project-related effects will be described in the Application.	Would like to know more details on Tunnel Decommissioning, including the two scenarios of removing 4 versus 6 sections and the preferred option moving forward. What are associated impacts of 6 section removal and retention on adjacent dike infrastructure, shoreline ecosystems, fish habitat, and wildlife?	The Proponent will include a description of the proposed Tunnel decommissioning method in Section 1 of the Application. As mentioned during the Technical Working Group meeting (March 10, 2016), the decommissioning process is expected to be the reverse of how the Tunnel was originally installed. The Application will include a detailed overview of the rationale for removing the four segments contemplated as well as specific activities associated with this process to support the assessment of potential effects and identify appropriate mitigation. The Project contemplates leaving the two end sections of the Tunnel in place. This enhances the integrity of dike infrastructure while minimizing effects on fish, wildlife, and the shoreline.
201	City of Richmond		General	In general, studies to be undertaken to support the assessment of the VCs should be complemented with data from a suite of other VC studies recently undertaken to support other EA applications for major infrastructure projects along the Fraser River, as well as local projects such as the Hwy 99 Shoulder Bus Lane expansion. Data from these other studies should be identified and integrated where appropriate, to expand on the breadth of information studied and analyzed as part of the George Massey Tunnel EA application.	Findings from past studies associated with other relevant projects will be reviewed and appropriate information based on this review incorporated into the Application.	Request clarification on the calculation of a 'small' incremental increase in stormwater run-off, and how this conclusion was determined. The City expects a background drainage study, stormwater modelling, and associated data to support the project. The City requests review of any drainage studies to date and associated results. Studies should include a review of existing and future impervious area calculation and an approach for improvements for associated stormwater impacts.	Information on how drainage requirements for the Project will be addressed, including performance objectives guiding design, will be included in Part A of the Application which includes a more detailed description of the key elements of the Project including drainage. The final design of drainage infrastructure, will take into account all information that is available to describe existing and future drainage demands. The Proponent has sufficient information on the amount of run-off that will be generated

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							from Highway 99 but will require information, previously requested from the City of Richmond, in order to undertake detailed planning of shared drainage infrastructure so that such infrastructure can meet the needs of both the Proponent and the City of Richmond.
202	City of Richmond		General	In the event that there is increased shipping, would this be addressed through the Valued Component studies.	The Tunnel is being replaced to improve safety, relieve congestion, accommodate future traffic growth, support transit and offer better access for transit, cyclists, and pedestrians. The new bridge will have a vertical clearance similar to that of the Alex Fraser Bridge. Once the new bridge is operational, the Tunnel will be decommissioned. Currently, Other factors, including the Metro Vancouver water main to the west of the Tunnel, other utility crossings, and the width of the river itself, limit the size of vessels that can navigate the river.	The City reiterates that additional dredging to facilitate increased shipping is a reasonably foreseeable activity as a consequence of the decommissioning of the tunnel and should be addressed through the Valued Component studies and residual effects aspect of the EA.	Dredging to deepen the river and/or to facilitate increased shipping is not a component of this Project.
203	City of Richmond	Section 3.0 (Assessment Methodology)	General/ Mitigation Measures	Last bullet- the City has the following priorities pertaining to natural areas: - Richmond City Council resolutions seek a net gain approach to the City's Riparian Management Areas and environmentally sensitive areas within the project footprint. -The City's Ecological Network Management Strategy emphasizes the City's desire to manage, enhance, and protect our ecological assets. This includes the City's designated ESAs, RMAs and natural areas outside of designated areas. Protection and mitigation of impacts to natural areas is the desired approach. Where mitigation measures are not feasible, the City requests comprehensive compensation measures/ plans to be in place, particularly pertaining to the ESA, RMA and other valued habitat and trees impacted by project activities.	Local interests are considered in the assessment of valued components. Measures to mitigate potential Project-related effects on vegetation, including compensation or enhancement, as appropriate, will be described in the Application. Environmental enhancement opportunities will be developed further during subsequent design stages.	City requests a minimum of a 3rd Working Group meeting in order to better understand how this response addresses City interests related to a net gain of environmental values.	The EAO has scheduled and undertaken a joint meeting with the City of Richmond and the Proponent to discuss specific comments and concerns and the Proponent continues to meet bi-weekly with the City.

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204	City of Richmond	Section 3.1 (Issues Scoping and Selection of Valued Components)	Issues Scoping and Selection of Valued Components	The studies to be undertaken to support the assessment of the VCs should include traffic modelling to assess the impact of: - Changes in regional traffic patterns -increased traffic on adjacent residences, businesses and local roadways during construction and operation	Traffic modeling that has been undertaken to support project planning and assessment of valued components (VCs) includes application of TransLink's Regional Transportation Model (RTM). The modelling considers changes in regional traffic movements, with and without the Project. The Application will include information to describe how traffic patterns may change at locations that are adjacent to, or directly influenced by traffic patterns along the Highway 99 corridor. Information will be provided to illustrate anticipated traffic conditions with and without the Project along the corridor, to adjacent crossings and municipal road networks.	**(Comment from VCH)** The impact on health (health equities) should be considered with regards to changes in traffic patterns and the effects of changes in traffic in adjacent areas to the Highway 99 corridor in the HIA. COR - The traffic modelling needs to consider the changes in traffic patterns with a Project that is tolled and un-tolled. Based on the anticipated traffic patterns, the analysis should identify the local road, transit, pedestrian, and cycling improvements to be included as part of the Project scope that are needed to safely accommodate these changes.	Traffic will be assessed an intermediate component in the Application and potential Project-related change in traffic conditions, and the effect of such changes on VCs, will be considered in the Application. Potential project-related changes in air quality and noise are not assessed beyond the LAA for traffic as the scope of the assessment of traffic is focused on the physical extent of the proposed highway improvements. The future forecasted traffic presented in the Application includes both a tolled and untolled scenario. The assessment of traffic, as described in the revised dAIR, does consider changes in traffic conditions where there is a direct connection between the physical works of the Project and a local or regional road. The assessment of traffic will also assess changes in mode share. **Traffic as an IC has been added as Section 5.1 of the dAIR.**
205	City of Richmond	Section 3.1 (Issues Scoping and Selection of Valued Components)	Issues Scoping and Selection of Valued Components	The studies to be undertaken to support the assessment of the VCs needs to include an analysis of the current species utilization within the project footprint. Expand analysis beyond at-risk species and other species that are focussed in the dair, but the full spectrum of species present.	Background research on wildlife values that could exist in the corridor, and be potentially affected by the Project, was comprehensive and considered the full spectrum of species that could be present based on historical records and scientific literature. While the assessment focuses on specific VCs, the diversity of wildlife and vegetation VCs proposed addresses the utilization of habitat in the Project corridor by the broad range of species.	City staff have not seen this level of species coverage reflected in the dAIR and VC documentation.	The Application will include considerably more detail, with respect to summarizing background research undertaken to support the rationale for the scope of the assessment, and demonstrate that the species focused on in the assessment are appropriate.

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206	City of Richmond	Section 3.2 (Assessment Boundaries)	Assessment Boundaries	City requests the participation of Department of Fisheries and Oceans and Environment Canada/ Canadian Wildlife Service to provide comment on the boundaries determined for VCs for Fish and Fish Habitat, amphibians, Marine Mammals, Vegetation, Terrestrial Wildlife	The Proponent has had initial discussions with Department of Fisheries and Oceans (DFO) regarding the Project. Based on these discussions, DFO has indicated they will become more actively involved at the permitting stage, in alignment with planning and approach for Tunnel decommissioning. Environment and Climate Change Canada is participating as part of the Working Group, and will continue to be involved in technical review of the Project throughout the Environmental Assessment Process.	In addition to the permitting stage, the City reaffirms request for DFO to be participatory and active in the Pre-Application stage and Application Review stage, particularly as Fish and Fish Habitat and other associated VC's regarding ecology and water quality are under assessment.	The Proponent would welcome DFO participation in all stages of the BCEAA review of the Project.
207	City of Richmond	Section 3.5 (Mitigation Measures)	Mitigation Measures	All mitigation measures should seek to produce a net gain, not just no net loss	Mitigation and offsetting proposed to address project related effects will meet or exceed applicable federal and provincial regulatory requirements. Where benefits are expected, over and above addressing project-related effects, they will be identified in the Application.	No further comment.	----------
208	City of Richmond	Section 3.6 (Characterization of Residual Effects)	Characterization of Residual Effects	Geographic Extent- in light of request for cumulative effects analysis (comment on Section 3.10)-suggest Regional Assessment Areas analysis also take into consideration other major infrastructure projects ongoing in the region.	The RAAs for VCs are established in part to provide context for the assessment of cumulative effects. Other regional infrastructure projects, where appropriate, will be added to the list of projects, currently in the dAIR, that will be used to support the cumulative effects assessment. The list provided will be updated to include additional projects as appropriate, based on input received from the technical working group, prior to finalizing the dAIR.	No further comment.	----------
209	City of Richmond	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	Additional dredging beyond maintenance dredging should be identified as a reasonably foreseeable development/ activity	Dredging is a Port of Vancouver responsibility. The Proponent is not aware of any additional dredging plans beyond the regular maintenance dredging by Port of Vancouver. For inclusion in the cumulative effects assessment, projects must be either proposed (public disclosure) or have been approved to be built and are likely to result in environmental effects that overlap with the proposed Project.	The City reiterates that additional dredging is a reasonably foreseeable activity as a consequence of the decommissioning of the tunnel and should be included in the cumulative effects assessment.	For inclusion in the cumulative effects assessment, projects must be either proposed (public disclosure) or have been approved to be built and are likely to result in environmental effects that overlap with the proposed Project. Additional dredging of the river for any purpose beyond the regular maintenance program has not been proposed or approved and accordingly, is not included in the cumulative effects assessment.

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210	City of Richmond	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	As per document, cumulative effects only assessed if there are residual effects present. Regardless of it there are determined to be residual effects for each VC, this cumulative effects analysis should occur regardless. Add Trans Mountain Expansion project to list of Foreseeable Developments and Activities list. Participation of Department of Fisheries and Oceans/ Environment Canada should be requested for this analysis.	The cumulative effects assessment methodology used is based on the EAO's Guideline for the Selection of Valued Components and Assessment of Potential Effects. The proposed Kinder Morgan Trans Mountain Expansion Project (TMEP) will be added to the list of projects to be included in the cumulative effects assessment. This list will be updated to include additional projects as appropriate, based on input received from the technical working group, prior to finalizing the dAIR. **Section 3.10 of the dAIR has been updated to include the proposed Kinder Morgan Trans Mountain Expansion Project in the list of projects and activities considered for inclusion in the cumulative effects assessment.**	The City continues to seek assurance that the cumulative effects related to the unprecedented level of expansion for large infrastructure projects in the region are taken into account for this environmental assessment.	The Proponent has revised the dAIR to include additional projects that would support the cumulative effects assessment of the Project and would welcome further input if other specific projects within the region should be considered.
211	City of Richmond	Section 4.1 (River Hydraulics and Morphology)	River Hydraulics and Morphology	Section 4.1.1 acknowledges the uncertainty in the predictive capacity of the modelling. Given that there is limited practical experience with tunnel removal from a river, the level of confidence of the residual effects will be low. Accordingly, the scope of mitigation measures should recognize this greater uncertainty and the greater likelihood of residual effects. Include an assessment of the impact of tunnel removal on the Metro Vancouver water main.	Potential effects of Tunnel decommissioning on the existing Metro Vancouver water main will be included in the assessment of river hydraulics. Recognizing the limitations of modelling, and the dynamic nature of the Fraser River, a monitoring program will be established following tunnel decommissioning. The results of the monitoring program will guide the application of mitigation, if required, to ensure the integrity of the existing infrastructure.	No further comment.	----------
212	City of Richmond	Section 4.1 (River Hydraulics and Morphology)	River Hydraulics and Morphology	For this analysis, request involvement of Department of Fisheries and Oceans, as well as agency with oversight for tunnel removal/ river geomorphology issues	The Proponent has had initial discussions with Department of Fisheries and Oceans (DFO) on the Project. Based on these discussions, DFO has indicated they will become more actively involved at the permitting stage, in alignment with planning and approach for Tunnel decommissioning.	City request for DFO to be participatory and active in the Pre-Application stage and Application Review stage, particularly as Fish and Fish Habitat and other associated VC's regarding ecology and water quality are under assessment	The Proponent would welcome DFO participation in all stages of the BCEAA review of the Project.

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213	City of Richmond	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Need to expand sediment and water quality studies beyond identified Fraser River South Arm, Deas Slough, ad Green Slough study areas. There are designated riparian management areas (channelized watercourses) within the project footprint, in which water quality and other hydrological changes need to be assessed. This VC does not allow for adequate hydrological analysis of the impact of project-related activities on upland watercourses, and this should be a stand-alone Valued Component.	The assessment of Project-related effects includes potential effects on upland watercourses as part of the assessment of the fish and fish habitat valued component (VC). The dAIR will be reviewed and updated as appropriate to clarify this. **Section 4.2.1 of the dAIR has been updated to confirm upland water courses are included in the assessment of Project-related effects on sediment and water quality.**	City requests review of the project related effects on sediment and water quality.	Sediment and water quality are included in the dAIR and the Application will include an assessment of potential project related effects on water quality and sediment.
214	City of Richmond	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	The proposed GMTR improvements will increase storm water runoff (through increased impermeable areas). It also had potential to impact the size and location of drainage canals or water courses. Given that the MOTI storm water system and the City storm water system are interconnected, and that the MOTI drainage system relies on City drainage pump stations for storm water discharge off of Lulu Island, storm water modeling and planned storm water improvements are required components of the GMTR project.	The incremental increase caused by storm water run-off as a result of the Project is expected to be small. This storm water will be held in bio-filtration ponds to attenuate flows to storm water and drainage infrastructure discharged by the City's pump stations. Detailed modelling of how this incremental water will be managed will be carried out in subsequent design stages.	Request clarification on the calculation of a 'small' incremental increase in stormwater run-off, and how this conclusion was determined. The City expects a background drainage study, stormwater modelling, and associated data to support the project. The City requests review of any drainage studies to date and associated results, so as to determine impacts on City infrastructure, including drainage canals, watercourses and the Nature Park.	Information on how drainage requirements for the Project will be addressed, including performance objectives guiding design, will be included in Part A of the Application which includes a more detailed description of the key elements of the Project including drainage. The final design of drainage infrastructure, will take into account all information that is available to describe existing and future drainage demands. The Proponent has sufficient information on the amount of run-off that will be generated from Highway 99 but will require information, previously requested from the City of Richmond, in order to undertake detailed planning of shared drainage infrastructure so that such infrastructure can meet the needs of both the Proponent and the City of Richmond.
215	City of Richmond	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	As some of the greatest impacts will be at the tunnel exit and entrances, potential effects include sediment transport along the foreshore.	The assessment of potential project related effects associated with tunnel decommissioning assumes the removal of the four instream segments with the two foreshore segments left in place. The Application will include an assessment of sediment transport associated with the Project under the applicable valued component (VC).	No further comment.	----------
216	City of Richmond	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Provide an evaluation of the current hard surface area, additional hard surface areas to be constructed as part of this project, estimated loss of impervious surface, and	The Proponent has considered the influence of additional impervious surface area on storm water management requirements. Storm water management plans, and treatment measures, that take into account	The City expects a background drainage study, stormwater modelling, and associated data to support the project. The City requests review of any drainage studies to date and associated results,	Information on how drainage requirements for the Project will be addressed, including performance objectives guiding design, will be included in Part A of the Application

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				the associated storm water impacts	the increase in impervious area; will be developed further during detailed design.	so as to determine impacts on City infrastructure, including drainage canals, watercourses and the Nature Park.	which includes a more detailed description of the key elements of the Project including drainage. During detailed drainage design, the Proponent will ensure that shared drainage infrastructure can accommodate the needs of all users. To facilitate drainage design for the Project, existing data has been requested from the City of Richmond.
217	City of Richmond	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Legislation to be included - Provincial Riparian Areas Regulation (RAR)	The relevance/applicability of the BC Riparian Area Regulations to the Project and related activities will be discussed in the Application.	No further comment.	----------
218	City of Richmond	Section 3.5 (Mitigation Measures)	Mitigation Measures (general)	In addition to management plans, also need compensation plans to be reference where impacts to ecological habitat and vegetation occur	The Application will include an assessment of potential project related effects on the environment, including habitat and vegetation. Specific off-setting or compensation opportunities will be identified in the Application with site specific plans to be developed during detailed design.	No further comment.	----------
219	City of Richmond	Section 4.3 (Underwater Noise)	Underwater Noise	Does the study boundary include impacts to marine mammals in Georgia Straight (comment form Working Group meeting)	To establish the Local Assessment Area, the Proponent completed modeling of underwater noise, using the data collected from the sampling stations (within the Fraser River channel and Deas Slough), and that data was applied to determine how far under water noise may travel. Based on this analysis and the acoustic environment (e.g., riverbed sediment type, channel morphology) within the Fraser River South Arm, the distance from the Project within which marine mammals might hear underwater noise generated by construction activities was estimated. The Application will outline the rationale for determining the assessment boundaries and measures to avoid or minimize disturbance to marine mammals.	No further comment	----------

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220	City of Richmond	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Need to include forage fish species (pelagic fish), as well as fish species that are found in City's riparian areas/ watercourses (i.e. stickleback)	The selection of sub-components under the Fish and Fish Habitat valued component (VC) was based on a thorough assessment of their value from the perspective of scientific, conservation, First Nation and public considerations, potential interactions with the Project and presence. Consistent with standard practices for EAs, all fish species are not directly assessed. The assessment of fish and fish habitat does however encompass a broad range of habitats that support a broad range of species. As such, potential effects to such habitats will be assessed in the Application and the mitigation proposed to address potential effects on the fish and fish habitat VC, and sub-components, would benefit the broader range of fish species that could occur in the Project area. Information on the presence of fish species, as identified through field studies, will be presented in the Application.	No further comment	----------
221	City of Richmond	Section 4.0 (Environmental Effects Assessment) / Section 6.0 (Social Effects Assessment)	Fish and Fish Habitat/ Land Use	Include BC Riparian Regulations Include applicable data from other EA studies along the Fraser River, to inform the field studies (including local studies such as Hwy 99 Bus Shoulder Lane expansion)	The relevance/applicability of the BC Riparian Area Regulations to the Project and related activities will be discussed in the Application. Findings from past studies associated with other projects, as relevant to the assessment of Project-related effects, will be reviewed and appropriate information based on this review incorporated into the Application.	No further comment	----------
222	City of Richmond	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Also include the potential fish habitat effects associated with the tunnel decommissioning, not just the installation of piers	The Application will outline the potential effects of Project activities, including tunnel decommissioning, on fish and fish habitat as well as measures and best practices to avoid or minimize impacts.	No further comment	----------

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223	City of Richmond	Section 4.5 (At-risk amphibians)	At-risk amphibians	This should be broadened beyond at-risk amphibians to include: -amphibians present in the project footprint -Change reference to Richmond Nature Park (not reserve) -suitable habitat near the Project should also include inland wetlands, bog forests/ bog habitat	The environmental assessment is focussed on issues that have been identified as requiring specific attention to understand project-related effects. Direction from the EAO (Guideline for the Selection of Valued Components and Assessment of Potential Effects) outlines this approach, i.e., "The Guideline defines and explains the use of VCs to focus environmental assessments on those aspects of the natural and human environment that are of greatest importance to society. The VCs selected for the Project were determined following a thorough assessment of their value from the perspective of scientific, conservation, First Nation and public considerations, their interactions with the Project, and their presence. Many of the VC assessments include the "full-spectrum" of species, while for key issues of concern there were species-specific studies, e.g., red legged frog. The reference to Richmond Nature Park will be revised.	City looking for assurance that amphibians and reptiles associated with extensive riparian and bog habitats comprised within the project footprint are adequately protected.	The dAIR includes a VC that focuses on the assessment of potential effects on amphibians. As such, the Application will identify potential effects on amphibians as well as mitigation, where required, to avoid or mitigate potential effects.
224	City of Richmond	Section 4.6 (Marine Mammals)	Marine Mammals	Potential impacts on marine mammal habitat from construction activities	The Application will consider the potential effects of relevant construction related activities on marine mammals.	No further comment.	----------
225	City of Richmond	Section 4.7 (Vegetation)	Vegetation	Expand beyond at-risk species and ecosystems to include other vegetation present in the project footprint, and the adjacent riparian areas and environmentally sensitive areas	The valued components (VCs) selected for the Project were determined following a thorough assessment of their value from the perspective of scientific, conservation, First Nation and public considerations, the interactions with the Project and their presence. Many of the VC assessments include the 'full-spectrum' of species and plant communities, e.g., upland and riparian birds (surveys recorded all bird species) and listed ecosystems (wetlands and unique plant communities); while for key issues of concern there were species-specific studies, e.g., barn owl and barn swallow, and at-risk plant species. For non-avian groups where studies to understand presence and effect are species-specific, key species of concern were selected - consistent with the EAO method noted above. Potential Project related effects on vegetation, particularly at-risk plants and plant communities, are being assessed and will be described in the Application.	City requests an overview of at risk species and ecosystems within project footprint. Impacts to the Nature Park are of particular concern due to the unique hydrological regime, flora and fauna.	Information regarding potential effects on at risk species, vegetation and habitat, will be provided in the Application. The EAO has scheduled and undertaken a joint meeting with the City of Richmond and the Proponent to discuss specific comments the Proponent continues to meet bi-weekly with the City. The Application will include the appropriate information to support a robust assessment on vegetation and other important values.

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226	City of Richmond	Section 4.7 (Vegetation)	Vegetation	Stringent measures should be in place to prevent the spread and introduction of invasive species via construction vehicles or equipment associated with this project. Need to address soil placement and movement, management, treatment, containment (non-spread) and removal of existing invasive species present within project area.	Monitoring and control of invasive plant species will be undertaken during construction. Species for which there is a requirement to control under the B.C. Weed Control Act, R.S.B.C. 1996, c. 487, as well as species that are listed by the Invasive Species Council of Metro Vancouver will be addressed. An Invasive Species Management Plan that includes site-appropriate monitoring and control methods for different species and conditions will be prepared and implemented as part of the Construction Environmental Management Plan (CEMP).	Ensure that the CEMP / Invasive Species Management Plan also includes significant post-construction monitoring period.	The Construction Environmental Management Plan, which will include an Invasive Species Management Plan, will incorporate provisions for monitoring.
227	City of Richmond	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Given the close proximity of the proposed bridge to the South Arm Marshes Wildlife Management Areas and the wildlife utilization occurring in that areas, the following sub-components should be added/ included (but not limited to) -waterfowl (e.g. Northern Pintail, Green-winged Teals, American Wigeon, snow geese) -Passerine Birds (e.g. Marsh Wren, Red-winged blackbird, song sparrow) In addition the following indicator should be added for the entire project boundary and for the bridge in particular Habitat fragmentation/ loss of connectivity.	The proponent has proposed terrestrial wildlife as a valued component with the following subcomponents: • Upland birds (generally passerines and raptors) • Riparian birds (generally waterfowl, waders and shorebirds) • Small mammals Surveys of these subcomponents included point count surveys for passerines, and encounter transect surveys for raptors and herons along the Highway 99 corridor. The riverine bird surveys (e.g. waterfowl, gulls, herons etc.) included night-time and day-time surveys of bird transit along the Fraser River. The surveys used, or were based on, provincially-recommended survey methods for the group (or species). Potential effects of habitat fragmentation/loss of connectivity has been considered in the assessment of potential Project related effects on individual sub components.	No further comment.	----------
228	City of Richmond	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	City is concerned about the project impact on barn owls that utilize the study corridor and how they will be protected i.e. raptor mitigation measures	The Proponent has conducted a study to determine barn owl use or dependency on habitat adjacent to the existing Highway 99 right of way based on habitat suitability mapping. The assessment of potential project related effects also considers collision risk for barn owls.	City would like to understand how the GMTR design can mitigate barn owl collision effects.	The assessment of potential project related effects on Barn Owls and proposed mitigation will be included in the Application.
229	City of Richmond	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Assess opportunities to integrate nesting and or perching possibilities within the study area, including on and/ or under the bridge.	The Application will include an assessment of potential project related effects, including those related to habitat and vegetation. Where mitigation is required, offsetting or compensation may be applied, and a compensation plan will be developed during detailed design. Nesting and perching opportunities will be	No further comment.	----------

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					considered as appropriate.		
230	City of Richmond	Section 4.9 (Air Quality)	Air Quality	The temporal boundary for the operation phase should extend to a sufficient time beyond 2022 (e.g. to be consistent with the Regional Transportation Model). The assessment should include the impact to changes in GHG levels and climate changes and if the project is consistent with provincial, regional and local targets for GHG reductions.	The future conditions for the Air Quality and Noise Assessments have used the reference year 2031 to make effective use of the vehicle fleet emissions forecasts set out by Metro Vancouver, and the Regional Transportation Model. The Project will have been operational for several years and this time frame represents a normalized operational reference point for consideration of potential project related effects. The Application will describe the existing conditions related to air quality, anticipated changes resulting from the Project, and alignment with applicable air quality objectives. **Section 4.9 and 4.10 of the dAIR have been updated to include confirmation that rationale for selection of the projected traffic horizon will be provided in the Application.** **Section 4.9 of the dAIR has been updated to include confirmation that potential Project related changes in GHG emissions will be discussed in the Application under the air quality effects assessment.**	The conservative traffic forecast should assume an un-tolled crossing. The LAA should be extended to include Oak Street-70th Avenue to assess any potential queuing at the approaches to the Oak Street Bridge.	The assessment of potential project related effects on air quality has assumed an un-tolled crossing. The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic, that support the assessment of other ICs and VCS The LAA for the traffic IC includes the physical extent of works associated with the Project and therefor does not include Alex Fraser Bridge, Oak Street Bridge, Knight Street Bridge or the Arthur Liang Bridge. In addition to being beyond the area where physical Project works are being undertaken, future traffic conditions at Oak Street are influenced by are large number of factors including forecasted growth in traffic associated with increases in population and employment growth in the region. While the Application will present information on future trends in traffic at Oak Street, changes to the (existing) Highway 99 corridor are considered to have a negligible influence on traffic conditions at Oak Street Bridge in the future. As such, future changes in traffic at Oak Street are not assessed as a potential effect of the Project. The RAA is the Greater Vancouver Region and includes regional transportation infrastructure, including local and regional roads, which are included in TransLink's Regional Transportation Model (RTM). **Traffic as an IC has been added as Section**

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							5.1 of the dAIR.
231	City of Richmond	Section 4.9 (Air Quality)	Air Quality	Ensure modelling of air quality considers the impact the proposed elevated Steveston interchange and elevated bridge approach ramps may have on dispersal patterns on the adjacent neighbourhood relative to current conditions.	The Air Quality assessment will consider the elevated project infrastructure and its influence on the dispersion of air contaminants.	No further comment.	----------
232	City of Richmond	Section 4.10 (Atmospheric Noise)	Atmospheric Noise	Ensure modelling of noise considers the impact of the proposed elevated Steveston interchanges and elevated bridge approach ramps on the adjacent neighbourhood	The noise assessment will consider the elevation of the new bridge, interchanges, and related project infrastructure.	The select noise-sensitive receptor sites used to establish baseline conditions should include the following locations in Richmond: the Gardens Agricultural Park, the Gardens residential site, Richmond Jamia Mosque and BC Muslim School	Noise receptor locations identified for baseline data collection include those in proximity to the Gardens and the Richmond Jamia Mosque. Other noise receptor locations established for baseline data collection will be also used to assess Project related effects for the Project Alignment.
233	City of Richmond	Section 5.0 (Socio-economic Effects Assessment)	Economic	No economic VCs identified for the potential negative impact of a toll, particularly given its regional inequity (all existing and planned tolled crossings are located solely on bridge crossings linking the region south of the Fraser River) versus mobility pricing.	Effects on economic conditions are anticipated to be positive as a result of the Project, and therefore are not assessed as a VC. The economic pillar of the EAO framework will be considered in the context of project benefits and addressed in the Application. The Application will describe the economic benefits of the Project with respect to users, including travel time savings, reliability and safety benefits as well as employment (jobs created) during construction and operation, and related direct and indirect inputs to the economy. In addition, the Application will discuss tolling in terms of its role in contributing to Project funding as well as its influence as a transportation demand management tool. **Section 1.1 of the dAIR has been updated to include confirmation that a discussion on tolling will be included in the Application.**	Analysis is required to justify the conclusion that effects on economic conditions are “anticipated to be positive.” The effect of tolling should investigated and quantified including: potential impacts of traffic diversion to un-tolled crossings (i.e., increased travel time and VKT, reduced safety) impact on business case analysis if projected toll revenues are substantially lower than anticipated (as with the Port Mann Bridge).	Traffic has been added as an Intermediate component in the dAIR. The assessment of traffic as an IC will include a consideration of predicted changes in traffic volumes in both a tolled and un-tolled scenario. The assessment of traffic as an IC will be supported by anticipated changes in key metrics including VKT and mode share. **Traffic as an IC has been added as Section 5.1 of the dAIR.** The business case for the Project, which is publically available, is based on conservative assumptions regarding traffic volumes and includes discussion regarding both higher and lower growth projections in relation to the benefit cost analysis.

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234	City of Richmond	Section 5.0 (Socio-economic Effects Assessment)	Economic	Seems like an overly simplistic conclusion that no adverse effects are anticipated. The assumption appears to be based on macro-economic analysis, not micro. Clearly, on an individual level there will be for some people an adverse impact due to tolling. This, at the very least should be discussed.	The Project will result in significant user benefits, principally travel times savings and safety benefits. These benefits will be enjoyed by all classes of roadway users due to the reduction in travel times associated with the proposed corridor improvements. The Project's business case provides further detail on the additional benefits of the Project, including economic development and job creation as well as benefits for cyclists, pedestrians, local communities and recreational users. The Project includes specific measures to promote alternatives to the single-occupancy-vehicle. These include: extension of transit/ HOV lanes between Bridgeport Road in Richmond and Highway 91 in Delta; a dedicated transit-only ramp at Bridgeport Road, providing efficient access to the Canada Line Station; transit exchanges at the Steveston Highway and Highway 17A interchanges; as well as multi-use pathways on the new bridge for cyclists and pedestrians. Tolling is designed to pay for the Project while recognizing that those directly benefiting from the new infrastructure in terms of time savings and reliability should help pay for the Project. This ensures that the needed improvements can proceed now, rather than years in the future when improvements will be even more overdue. **Section 1.1 of the dAIR has been updated to include**	□ The construction phase 2017 to 2022 will have negative impacts to businesses in immediate vicinity of the project – for Richmond, these businesses are located in the Riverside Business Park – South of Steveston Highway and West of No. 5 Road – there are approximately 500 businesses and over 7,000 employees that will be impacted. □ Post construction, the businesses in the Riverside Business Park will vastly benefit from improvements to the transportation infrastructure in the area (e.g. proposed dedicated exit/ramp/interchange at Steveston Hwy), including goods movement and employee access, as well as improved access due to anticipated reduced congestion. □ Positive economic benefit could also be achieved if, as part of this project, connectivity to the East is also implemented – e.g. Rice Mill Road and Blundell Road access. □ The economic impacts of the proposed toll structure should be weighed against the anticipated economic impacts from reduced congestion and accessibility (all of these should be studied/demonstrated at a regional level).	The Proponent has, and will continue to, consult with businesses that may be directly affected by Project related activities including changes in access or potential traffic changes. In this regard, the Proponent will be working with the City of Richmond to develop and implement a Traffic Management Plan to ensure business can operate effectively during the construction phase of the Project. In addition, traffic has been added as an Intermediate Component in the dAIR and project-related changes in traffic will be assessed in the Application. The assessment will include a consideration of construction phase effects on traffic and identify appropriate mitigation to address such effects. The Proponent agrees that substantial economic benefits, associated with improved accessibility, will be recognized by local businesses following completion of the Project. **Traffic as an IC has been added as Section 5.1 of the dAIR**

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					confirmation that a discussion on tolling will be included in the Application.		
235	City of Richmond	Section 5.5 (Visual Quality)	Visual Quality	The Visual Quality VC is too simplistic at this time, both in terms of extent and considerations. Recommend further defining it into the following visual and landscape/ experiential impacts. -Visual effects refer to changes in the composition of the landscape's views, people's responses to the changes and to the overall effects with respect to visual amenity. -Landscape effects refer to changes in the physical landscape that may give rise to changes in its character and how this is experienced. This may in turn affect the perceived value ascribed to the landscape.	The Project will introduce a new feature to the landscape through the construction of the new bridge, which has the potential to change local and regional visual quality. A visual quality assessment will be undertaken to evaluate the potential effects of these changes. This assessment focuses on changes in visual quality as seen from residential areas, public parks, and other relevant viewing locations. New interchanges and ramps are consistent with infrastructure currently in place throughout Highway 99, and are features that align with the presence and use of a primary transportation corridor.	The proposed Steveston interchange indicates a four level interchange. This is significantly different both in terms of height and extent, and therefore it is not consistent with the two level interchange currently in place, and requires further analysis in terms of its visual impact.	Anticipated change in visual quality resulting from the proposed upgrades to Steveston Interchange will be discussed in Section 6.5 (Visual Quality) of the Application. **Section 5.5.1 (Context and Boundaries, Visual Quality) of the dAIR has been updated to reflect this.**
236	City of Richmond	Section 5.5 (Visual Quality)	Visual Quality	Include evaluation of the visual effects of lighting and potential light pollution emitting from the bridge, especially during nighttime hours	Lighting requirements for the new bridge will be in accordance with applicable highway and bridge design codes. Dark sky compliant lighting, designed to illuminate the running surface and minimize light trespass will be used. The Application will include discussion on the visual effects of the new bridge.	Lighting requirements and standards should include consideration of light pollution effects on wildlife and birds, adjacent properties and land uses, and appropriate mitigation measures.	As noted in the dAIR, anticipated interactions between Project activities and terrestrial wildlife that will be considered in the Application will include potential disturbance due to an increase in ambient noise and light during construction and operation. Lighting requirements for the new bridge are governed by bridge design standards for safe operations. Dark sky compliant lighting, designed to illuminate the running surface and minimize light trespass will be used.

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237	City of Richmond	Section 5.3 (Land Use)	Land Use	The potential effects should include disturbance due to changes in traffic patterns and access to facilities during operation as well as construction. The potential effects should also include consistency of the project with the Regional Growth Strategy (Metro Vancouver) and Regional Transportation Strategy (TransLink) including how the increase highway and crossing capacity may impact regional population and employment growth forecasts.	The Project scope includes substantial measures to promote alternatives to the single occupant vehicle, including extending transit/ HOV lanes, direct transit connections to Bridgeport Road from Highway 99, multi-use pathways across the bridge and bridge design that will accommodate future rapid transit. The Application will provide a description of how the Project aligns with, and supports, regional transportation goals and objectives identified in the TransLink Regional Transportation Strategy. The Application will include information describing how traffic management during construction will be undertaken including requirements for specific technical plans, performance objectives, and communication requirements that will be put in place to ensure the efficient movement of traffic during construction.	The regional transportation plans to be considered should be the Regional Transportation Strategy (TransLink) and Regional Transportation Investments: a Vision for Metro Vancouver (Mayors' Council on Regional Transportation). Local land use plans for Richmond should include the No. 5 Road Backlands Policy (recent amendment to OCP). Based on the anticipated changes in traffic patterns, the analysis should identify the local road, transit, pedestrian, and cycling improvements to be included as part of the Project scope that are needed to safely accommodate these changes. As required, the Land Use LAA 500-m buffer surrounding the alignment should be extended to fully capture these potential impacts. Need reference to additional study to be undertaken regarding land use impacts and potential induced traffic and how results will be incorporated. Where will the potential effects to local utilities and infrastructure be captured? Where will the potential effects for drainage, including the City of Richmond's Mid Island Dike Strategy, be captured? ---------- **(Comment from VCH)** The Project should align with the current works being completed with TransLink with regards to its Regional South West Area Transport Plan (SWATP). The SWATP consists of the spaces discussed within the Project (Richmond, South Delta, and Tsawwassen) and is using flexible boundaries to provide optimal services to users.	The Proponent will consider applicable regional and local transportation plans including the "Vision for Metro Vancouver (Mayors' Council on Regional Transportation)" in the Application as part of the assessment of potential project-related effects on land use. The land use study referenced at the Working Group meeting on March 10 will be used to support the assessment of the Land Use VC in the Application and will be publically available during Application review. The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic, that support the assessment of other ICs and VCS, including a rationale for the LAA and RAA for the Traffic IC. Based on this methodology, the Application will provide an assessment of project-related changes in traffic within the project area and relevant portions of the regional road network proximal to the Project. Drainage and utilities aspects of the Project will be presented in the detailed project description included in Part A of the Application. **Traffic as an IC has been added as Section 5.1 of the dAIR.** ---------- **Comment from VCH:** The Project includes significant investment in transit infrastructure that will support TransLink's regional plans. The Project team is aware of TransLink's

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							recently started South West Area Transport Plan (SWATP) process, which is expected to continue for the next two years. The Project team meets regularly with TransLink staff and welcomes the opportunity to participate in TransLink's stakeholder consultation for this plan and to work with TransLink to identify opportunities — either within the Project scope or as part of the Ministry's broader commitment to transit — to support the engagement process and subsequent implementation. The Application will provide a description of how the Project aligns with, and supports, regional transportation goals and objectives identified in the TransLink Regional Transportation Strategy.
238	City of Richmond	Section 5.3 (Land Use)	Land Use	Overlap of project alignment with portions of land parcels, as well as designated watercourses (RMAs) in immediate vicinity to ROW on both east and west sides.	The overlap of the Project alignment with adjacent land parcels and watercourses will be assessed within the Agriculture, Land Use, and other relevant valued components (VCs).	Include overlap of Project alignment with City Environmentally Sensitive Areas and Parks as well.	The potential for the Project to interact with Parks and environmentally sensitive areas, including riparian areas will be described in the Application. In addition, the Application will identify opportunities for habitat enhancement, including offsetting to address potential effects. Offsetting will meet or exceed applicable federal and provincial regulatory requirements.
239	City of Richmond	Section 5.3 (Land Use)	Land Use	Considering the size of The Gardens will be reduced due to the widening of the west side of Hwy 99, the impact of the project on the current park plan will need to be assessed relative to park programming and visitor experience due to the reduced size and closer proximity of the ambient sound to the central part of the park.	Potential project related effects related to noise, including changes in noise conditions at sensitive receptors will be assessed in the Application.	No further comment.	----------
240	City of Richmond	Section 5.4 (Agricultural Use)	Agriculture Use	The potential effects should include whether or not any surplus ALR land that can be returned for potential farming is equivalent in viability to the ALR land that will be required by the project.	Current agricultural use, viability, and agricultural capability will be considered in assessing potential Project-related effects on agricultural use, and identifying strategies for achieving a net gain.	The Project should achieve a net gain in agricultural use within each municipality as well as for the entire project.	The Application will identify opportunities for achieving efficiencies and a net gain.

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241	City of Richmond	Section 5.4 (Agricultural Use)	Agriculture Use	Include an assessment of the project's impact on the incubator farms that are currently planned for the eastern side of the Gardens Park	The assessment undertaken for agricultural use will consider both current use and planned use for areas that may be affected, and will include appropriate details in the Application.	No further comment.	----------
242	City of Richmond	Section 5.5 (Visual Quality)	Visual Quality	The spatial boundaries should include the visual quality for all elevated structures that are part of the project, not just the bridge. The assessment areas should include additional radii centred around the Steveston Interchange, Hwy 91 ramps and the transit ramp at Bridgeport Road. The visual quality of BC Hydro choosing an overhead transmission line should also be included. The assessment should also include the shadowing produced by all of the new elevated structures.	The Project will introduce a new feature to the landscape through the construction of the new bridge, which has the potential to change local and regional visual quality. A visual quality assessment will be undertaken to evaluate the potential effects of these changes. This assessment focuses on changes in visual quality as seen from residential areas, public parks, and other relevant viewing locations, and will include the effects of the relocation of the BC Hydro transmission line. New interchanges and ramps are consistent with infrastructure currently in place throughout Highway 99, and are features that align with the presence and use of a primary transportation corridor.	The proposed multi-level interchange at Steveston Highway is not consistent with infrastructure currently in place throughout the Highway 99 corridor and should be included as part of the visual quality analysis.	Anticipated change in visual quality resulting from the proposed upgrades to Steveston Interchange will be discussed in Section 6.5 (Visual Quality) of the Application. **Section 5.5.1 (Context and Boundaries, Visual Quality) of the dAIR has been updated to reflect this.**
243	City of Richmond	Section 5.5 (Visual Quality)	Visual Quality	As noted above, ensure the VC covers both visual and landscape (experiential) impacts.	The Application will address both visual and landscape potential impacts.	No further comment.	----------
244	City of Richmond	Section 6.0 (Heritage Effects Assessment)	Heritage	Include an assessment of the tunnel's heritage merits. Conduct a formal Statement of Significance assessment.	The Proponent recognizes the historical contribution of the Highway 99 corridor and the George Massey Tunnel. The Proponent is developing a strategy to acknowledge the Tunnel as an engineering success and its role in the area. **Section 1.1 of the dAIR has been updated to indicate a study of the history of the Tunnel will be undertaken and an overview included in the Application.**	No further comment.	**Note:** The study on the history of the Highway 99 corridor will be available to the technical Working Group during the Application Review period.
245	City of Richmond	Section 7.0 (Health Effects Assessment)	Human Health	Add Recreation to the Lifestyle Factor sections. Access and Recreation (Fitness and exercise, exposure/ access to nature)	Broader determinants of health will be considered and discussed in the Application including a consideration of how the Project will result in benefits with respect to the indicators noted. The Bridge will include multi-use pathways, providing new and enhanced opportunities for cycling and pedestrians as well as enhanced connections to community trails, contributing to increased cycling opportunities for all user groups (recreation, tourism, commuters etc.) **The dAIR has been revised to indicate that Section 7.0**	No further comment.	----------

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					(Health) of Part B of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations.		
246	City of Richmond	Section 7.0 (Health Effects Assessment)	Human Health	The sub-components to be assessed should include changes linked to increased exposure to traffic during construction and operations (Potential for increased crashes for motorists, pedestrians and cyclists) and increased opportunities for physical activity/ recreation. Include a Health Impact Assessment of the Project.	The Proponent agrees that the Health Impact Assessment (HIA) framework is useful in identifying and analyzing potential health considerations associated with the Project and looks forward to working with Vancouver Coastal Health (VCH) and Fraser Health (FH) in integrating HIA considerations into the Application. **The dAIR has been revised to indicate that Section 7.0 (Health) of Part B of the Application will include a summary of the results of a health impact assessment that considers potential impacts of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations.**	The Proponent also needs to clarify how the results of the Health Impact Assessment will be incorporated into the Project Application. Per the comment from the Lyackson First Nation at the March 10, 2016 Working Group meeting, the HIA should include an assessment of the potential impacts of the Project on at-risk populations that may gather under the bridge.	While the HIA is not a requirement of the EAO, The Proponent recognizes the HIA as a valuable tool to support planning activities by identifying broader determinants of human health beyond those required for assessment under BC*EAA*. The HIA is being undertaken concurrently with the Projects environmental assessment under BC*EAA*. Key findings of the HIA will be summarized in the Application and the HIA report will be publically available. Per the comment from the Lyackson First Nation at the March 10, 2016 Working Group meeting, while not assessed as a VC in the Application, the potential for "at-risk populations" to use/congregate in areas near the bridge will be considered in the HIA. A summary of the results of the HIA will be presented in the Application including any mitigation recommended.
247	City of Richmond	Section 8.0 (Accidents and Malfunctions)	Accidents and Malfunctions	Potential conditions to be assessed should include frost/ slippery conditions on the multi-use pathways, vehicle breakdown and spillage during operation, and vehicle contact with a project component	Routine maintenance activities, including winter maintenance of roadway and pathway surfaces will be undertaken in accordance with established provincial standards and specifications. Additionally, the Application includes assessment of the following potential conditions: **Project Construction** • Incidents resulting in the release of toxic/hazardous materials • Structural failure of a culvert, ditch, detention pond, or sediment containment measure resulting in localized flooding, erosion, sedimentation, or discharge of deleterious material into the aquatic environment. • Damage to utilities resulting in release of deleterious material into the aquatic environment • Accidents involving construction vehicles associated	The Project Application should identify the established provincial standards and specifications for maintenance activities, including winter maintenance of roadway and pathway surfaces.	The Application will reference MOTI specifications and performance standards for road and bridge maintenance activities including provisions for pathways.

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					with the Project, or other vehicles moving through construction areas. • Disturbance of environmentally sensitive habitat due to inappropriate equipment or machinery operation. • Accidents involving construction vehicles associated with the Project, or other vehicles moving through construction areas **Project Operation** Potential accidents and malfunctions during highway operations and maintenance that could adversely affect the environment include: • Incidents resulting in the release of toxic/hazardous materials to environmentally sensitive habitat. • Structural failure of a culvert or ditch resulting in localized flooding or erosion, sedimentation, or discharge of deleterious materials to the aquatic environment. • Failure of a Project component. • Disturbance of environmentally sensitive habitat due to inappropriate equipment or machinery operation. • Accidents involving Project-related vehicles during maintenance.		
248	City of Richmond	Section 12.0 (Management Plans)	Management Plans	The City of Richmond should be included in the Construction management Plan and the Plan should include sufficient notification to and consultation with adjacent residences and business.	The Proponent meets with the City of Richmond every two weeks. The Proponent will continue to consult with the City of Richmond during the development and implementation of the Construction Management Plan. Communication with agencies, stakeholders, and the public throughout construction will play a key role in assuring efficient traffic management during construction of the Project.	No further comment.	----------
249	City of Richmond	Section 13.0 (Monitoring & Follow-up Programs)	Monitoring and Follow-up Programs	The monitoring plans should include the on-going plans to address the potential events identified in Section 9.0 comments above.	Upon completion of construction, the operations phase will commence, which will require ongoing and proactive response to emerging conditions and incidents.	The Project Application should identify the established provincial standards and specifications for maintenance activities, including winter maintenance of roadway and pathway surfaces.	The Application will reference MOTI specifications and performance standards for road and bridge maintenance activities including provisions for pathways.
250	Hwlitsum	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	erection of the silt minimization to minimize impact to salmon fry who survive of photo plankton that need light to grown. The salmon are already cannot sustain a commercial fleet let alone aboriginal food and ceremonial, aboriginal commercial openings. The measure of health Fraser River waters should be clear potable water	The Proponent will identify best management practices utilized during the construction phase to minimize potential environmental effects. This will include specific mitigation to avoid or minimize potential effects on fish and fish habitat.	Hwlitsum provided no further comment.	----------

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				with sustainable healthy salmon population			
251	Hwlitsum	Section 5.3 (Land Use)	Land Use	effects of the Bridge and the use of the land	Land Use has been proposed as a valued component (VC) and the potential project related effects will be assessed within the Application.	Hwlitsum provided no further comment.	----------
252	Hwlitsum	Section 5.2 (Marine Use)/ Section 5.3 (Land Use)	Land Use/ Marine Use	effect of opening the slough to further development and increased house boats	The Project alignment overlaps Green Slough and Deas Slough. Green Slough will be realigned to its historic location but this is not expected to change access by marine vessels. The new bridge will increase the vertical clearance to Deas Slough to about 20m improving access for marine users. In addition the existing Deas Slough Bridge will be removed including bridge piers currently in the water thus restoring habitat. This will be discussed in the Application.	Hwlitsum provided no further comment.	----------
253	Hwlitsum	Section 10.0 (Aboriginal Consultation)		there are no identified land claims settlements of land that are seen as being settled any time soon, and Land and Water rights to be negotiated need consideration, and over half of BC aboriginal live off reserve where mortgage and rental rates are restrictive, Hwlitsum request compensation or land for loss of Aboriginal land rights and claims within their traditional territories that will be affected permanently by the GMTR	Aboriginal Interests, defined by the EAO as asserted or established Aboriginal and treaty rights, will be assessed in Part C of the Application (First Nations Information Requirements). Other matters of concern to First Nations (as identified by First Nations to the Proponent) that do not directly relate to Aboriginal Interests will be assessed under the relevant valued component, and further evaluated, as appropriate, in Part C.	Hwlitsum provided no further comment.	----------
254	Cowichan Nation Alliance	Section 10.0 (Aboriginal Consultation)	Employment Estimates	Information about an employment strategy ought to include proposed Cowichan Nation Alliance member employment plan or other relevant Aboriginal employment procurement plan, regardless of whether it is an accommodation measure.	As articulated in the Aboriginal Consultation Plan, the Proponent has committed to initiating discussions and planning in relation to business/contract opportunities, as were training and employment, during the EA process.	Aboriginal employment plan should not be confined to part C of the dAIR-it needs to be incorporated into section 1.1 entitled “employment estimates” so as to ensure that Aboriginal procurement measures are consistent with overall employment estimate.	Section 1.1 of the Application, as outlined in the dAIR, will describe overall employment estimates based on the proposed Project. Part C will provide information on aboriginal employment considerations and opportunities.

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255	Cowichan Nation Alliance	Section 10.0 (Aboriginal Consultation)	Economic benefits	The proponent and other stakeholders of the project stand to gain large economic benefits from the proposed project. Conversely, the proposed project stands to negatively impact the economic value of the area for use by First Nations. In order to address this imbalance and to appropriately enhance the economic value of the project for First Nations, whose land the proposed project cuts right through, further economic sharing needs to be investigated. This could be achieved through different business arrangements; in particular, the idea of equity partnership stands out as a particularly viable solution. It is understood that the exact specifics of such business relations is outside the scope of the draft Application Information Requirements; however, we ask that the proponent be required to state its intentions to engage the different First nations in discussions and planning regarding business opportunities and partnerships, and that such consultation be meaningful with the end goal of reaching an arrangements that is agreeable to all parties involved.	Potential plans related to Aboriginal employment, training and business opportunities will be documented in Section C of the Application. As articulated in the Aboriginal Consultation Plan, the Proponent has committed to initiating discussions and planning in relation to business/contract opportunities, as well as training and employment, during the EA process.	Cowichan Nation Alliance provided no further comment.	----------

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256	Cowichan Nation Alliance	Section 3.1 (Issues Scoping and Selection of Valued Components) / Section 10.0 (Aboriginal Consultation)	Selection of Valued Components	The ability of First Nation to exercise title and Aboriginal Rights should be identified as a VC. This VC could be labeled as "Aboriginal Use" and included amongst the marine use, land use, and agricultural use under section 6 social effects assessment. Labeled as a social VC and as a sub-section of section 6, Aboriginal Use would become an integrated part of the Application- receiving appropriate consideration, especially in regards to how Aboriginal Rights are affected by the project, mitigation measures, cumulative effects, and a follow-up strategy. By identifying Aboriginal Use as a VC, the Proponent will be required to integrate Aboriginal Consultation into the Application itself. This method of consultation is superior to the current method, which treats Aboriginal Consultation as a side component of the Application. As an additional note, it is important to point out the significance of the economic benefit to the proponent and the adverse effect this will have on First nation's economic opportunities. While the proponent and other stakeholders stand to gain large economic benefits, First Nations will experience a loss in their opportunity to develop their land for economic gain. By adding Aboriginal Use as a VC, the full range of residual effects will be studied, including a full review of these adverse economic impacts, and this will offer a degree of thoroughness that better fulfills meaningful consultation.	Where Aboriginal Group values and perspectives have been provided to the Proponent regarding the proposed Project regarding environmental, economic, social, heritage or health valued components (VCs), they have been incorporated, where applicable, into the Part B assessment of those VCs. The Proponent is following the guidance of the BC EAO regarding the placement of the assessment of potential Project-related impacts on the ability to exercise Aboriginal Interests, meaning asserted or established Aboriginal and treaty rights, in Part C. This component is valued, but must be assessed differently from other valued components because of unique common law duties owed to Aboriginal Groups. Part C is therefore an integral part of the Application. The methods used in Part C to assess potential impacts on the ability to exercise Aboriginal Interests are largely the same as those used in Part B to assess potential effects on environmental, economic, social, heritage, and health VCs. These methods include characterization of any residual effects following the application mitigation measures (considering those for linked VCs and additional measures specific to Aboriginal Interests), the likelihood of identified residual effects to Aboriginal Interests occurring, and the confidence associated with that prediction.	Cowichan Nation Alliance provided no further comment.	----------
257	Cowichan Nation Alliance	Section 3.3 (Existing Conditions)	Existing Conditions	What is the temporal boundary used in consideration of natural and/ or human caused trends to be discussed.	The temporal boundaries for all VCs that are assessed will be presented in the Application.	Cowichan Nation Alliance provided no further comment.	----------

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258	Cowichan Nation Alliance	Section 3.3 (Existing Conditions)	Existing Conditions	1. For any TEK/ TK collected but not included in VC assessment, a rationale for omission must be provided. 2. Where there are instances of TK from different Aboriginal groups that may contradict each other or otherwise be seen as incompatible, the Proponent should design a transparent methodology that seeks to reconcile this such a methodology should be prepared for the Application, with input from Aboriginal Groups.	The Proponent will incorporate TK received, as it completes the relevant sections of the Application. In the event that TK shared by different Aboriginal Groups is contradictory, the Proponent will work with the respective communities to discuss how best to address any conflicting information.	Please confirm whether proponent will provide rationale behind any omission of TEK.	As indicated, in the response provided previously, the Proponent has committed to incorporating TK received from Aboriginal Groups in the context of the Project. In the event that TEK is received, but cannot be incorporated into the assessment, the Proponent will disclose the rationale for the omission to the relevant Aboriginal Group(s). .
259	Cowichan Nation Alliance	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	Attention needs to be paid to how the environmental effects of certain projects that do not specifically overlap the proposed Project do contribute to cumulative effects (e.g. harm to fish populations upstream outside of the project's RAA. Fish travel far distances and encounter the environmental effects of many projects during their life cycle.)	The Proponent will consider specific suggestions about additional projects or activities, not already identified in the dAIR, for inclusion on the list of projects or activities to support the assessment of project-related cumulative effects.	CNA will work to provide suggestion on specific projects and activities that it believe should be included in the assessment on certain marine components (fish and fish habitat).	The Proponent looks forward to suggestions on specific projects from the CNA.
260	Cowichan Nation Alliance	Section 3.10 (Cumulative Effects Assessment)	Cumulative Effects Assessment	Cowichan Nation Alliance notes that the Steveston Diking Project (a City of Richmond initiative) is not included.	The potential for residual effects of other projects, including the Steveston Diking Project, to interact with those of the George Massey Tunnel Replacement Project will be reviewed, and the nature of such interaction will be discussed in the Application if applicable.	Cowichan Nation Alliance provided no further comment.	----------
261	Cowichan Nation Alliance	Section 3.11 (Follow-up Strategy)	Follow-up Strategy	The Follow-up Strategy should include a general monitoring strategy for monitoring the residual and cumulative effects. A general monitoring strategy would establish a timeline for conducting the proposed evaluation, listing the stages at which these elevations would occur and how many would occur in total, and provide a framework for sharing results with Aboriginal Groups and other stakeholders. Ongoing monitoring and reporting will ensure protection of the environment	Proposed follow up and monitoring activities, as required, will be identified in the Application.	Cowichan Nation Alliance provided no further comment.	----------

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262	Cowichan Nation Alliance	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Given that the study on Green Slough will be taking place prior to Project construction and realignment of Green Slough, what measures are in place to study Green Slough sediment and water quality after proposed realignment?	The Proponent will adhere to post-construction monitoring requirements, established by environmental permitting and approval agencies, to ensure that the proposed restoration of Green Slough provides the intended habitat values. Typically, such monitoring occurs for a prescribed period to ensure that the constructed habitat is self-sustaining.	Cowichan Nation Alliance provided no further comment.	----------
263	Cowichan Nation Alliance	Section 4.3 (Underwater Noise)	Underwater noise	Underwater noise sampling occurred at 2 locations to determine assessment areas. The assessment area has yet to be fully defined; when will the spatial boundary be determined?	The purpose of the underwater noise study was to collect information on ambient conditions close to where anticipated project activities may take place and model the potential project related effects. This information was used to inform the study area boundaries for other valued component (VCs)'s such as marine mammals.	Cowichan Nation Alliance provided no further comment.	**Note**: The spatial boundaries for marine mammals can be found in section 4.6.1 of the dAIR.
264	Cowichan Nation Alliance	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	Indicators proposed for describing existing conditions and assessing potential Project-related effects on fish and fish habitat should include loss of and/ or degradation in the quality and availability of food sources for sub-component fish that may substantially affect their food sources	Habitat loss is currently proposed as an indicator. Habitat both directly supports fish sub-components, including aquatic features, and indirectly supports fish sub-components by providing a significant source of food or nutrients (e.g., upstream habitats). Also included are riparian areas, which can provide important functions for adjacent aquatic features supporting the fish sub-components. By considering habitat supporting these fish sub-components both directly and indirectly, consideration will also be given towards food sources and other ecological values/functions which support them.	Cowichan Nation Alliance provided no further comment.	----------
265	Cowichan Nation Alliance	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	What is the rationale for selecting the LAA and RAA boundaries? Because the topic of discussion is fish and fish habitat, it seems that a study of the effects of the project of the Fraser River South Arm is important. The boundary as shown in Figure 4 includes only a small portion of the Fraser River directly surrounding the proposed project. Furthermore, the cumulative effects from various activities (current and proposed will surely be impacted by the proposed project and the assessment area should be increased to include the Fraser River, similar to the boundaries set for the Marine Mammal assessment area.	The proposed local assessment areas (LAA) were established in order to capture potential direct effects on a specific valued component s (VC) while the proposed regional assessment areas (RAA) were established in order to capture potential indirect effects of the Project. The Proponent will provide a table outlining the rationale for study area boundaries at a subsequent Working Group meeting. This information will also be included in the Application.	Cowichan Nation Alliance provided no further comment.	----------

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266	Cowichan Nation Alliance	Section 4.9 (Air Quality)	Air Quality	Whys is "human health" the only receptor of Project-related effects? Terrestrial wildlife should be included here. They are also inhabitants of the lower Fraser Valley airshed (Regional Assessment Area).	Given the scope and nature of the Project, which invokes upgrades to an existing major transportation corridor in an urban setting, it was considered appropriate to focus the wildlife assessment on direct effects on wildlife and wildlife habitat.	CNA would argue that degradation of air quality associated with the Project, particularly during construction, would have a "direct effect" on wildlife. Proponent's rationale for this omission is inadequate.	The Project is predicted to result in improvements to air quality during the operational phase and construction related effects are expected to be fully mitigated using proven mitigation measures. On this basis, the Proponent is confident that the scope of the wildlife assessment is appropriate.
267	Cowichan Nation Alliance	Section 5.2 (Marine Use)	Marine Use	Current and future marine and water dependent land uses identified during desktop assessment for the purposes of collection of baseline information needs to include current and future Aboriginal fisheries. Cowichan Nation Alliance is working to re-establish fishery on the South Arm of the Fraser River.	Marine Use has been proposed as a valued component and will consider the potential project related effects on Aboriginal fisheries in proximity to the new bridge.	Cowichan Nation Alliance provided no further comment.	**Further clarification as requested by EAO:** The Marine Use valued component will consider the potential project related effects on commercial, recreational and Aboriginal (CRA) fisheries. The Proponent will include information regarding existing and desired conditions of marine and water dependent land uses for traditional purposes in Section 10.1.3 of Part C of the Application, where this information has been provided to the Proponent by Aboriginal Groups or was otherwise available from publicly available sources.
268	Cowichan Nation Alliance	----------	--------	Cowichan Nation Alliance Tl'uqtinus village needs to be identified in accompanying maps	The Proponent will endeavor to include indigenous place names on the figures that accompany Section C of the Application.	Cowichan Nation Alliance provided no further comment.	----------
269	Port of Vancouver	Section 4.1 (River Hydraulics and Morphology)	River Hydraulics and Morphology	• We would like to see "navigation" be included in the last sentence on page 16. "The river hydraulics and river morphology study will focus on water levels, velocities and flow patterns (river hydraulics) in the Fraser River South Arm and their influence on navigation, sedimentation and erosion." Rationale - Changes to water levels and/or currents can negatively impact navigation and therefore we would like to see something specific stating any anticipated changes, despite we do not anticipate this project (primarily tunnel removal) will have result in any measurable change.	Potential effects of changes in water levels and currents on navigation will be assessed under the Marine Use valued component (VC). The following sentence has been added to Section 4.1 to clarify this: "Results of this study will be used to inform the assessment of potential effects of change in water levels, velocities, and flow patterns in the Fraser River South Arm on marine use, specifically, navigation." **Section 4.1 of the dAIR has been revised accordingly.**	Port of Vancouver provided no further comment.	----------

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270	Port of Vancouver	Section 4.1 (River Hydraulics and Morphology)	River Hydraulics and Morphology	• We believe Deas Slough should be included. PMV Operations will be keenly interested in potential impacts to the flow spit at Kirkland Bifurcation as well as local structures such as Kirkland Training Wall, Deas Island Bank Protection, Woodward's Training Wall, Lulu Island Delta Water Main and Fraser Wharves. Note: It will be interesting to hear the rationale for such a large Regional Assessment Area.	The potential for the Tunnel decommissioning to alter existing flow patterns and change the flow splits between Fraser River South Arm, Ladner Reach, and Canoe Passage was identified as a Project-related area of interest. To address this subject, flow split between Woodward Reach and Ladner Reach was calculated from the results of flow modelling. The detailed results of these analyses will be included in the Application. Interim results of these calculations suggest that the predicted change in the flow splits would be within the range of natural variability, and that Tunnel decommissioning is not expected to have an effect on the flow split between Woodward Reach and Ladner Reach. This suggests Tunnel decommissioning is not likely to result in the expansion of Ladner Reach through erosion of Deas Island or the nose of Kirkland Island. While Project-related changes are not expected beyond the mouth of the Fraser River, a relatively large RAA that incorporates the adjacent coastal waters was chosen to support tidal simulations, and establish the boundary conditions for the numerical modelling used to predict Project-related effects.	Port of Vancouver provided no further comment.	----------
271	Port of Vancouver	Section 5.2 (Marine Use)	Marine Use	• We note this section was only partially completed so we will reserve comments at this time but do feel what is listed so far is appropriate	For clarity, Section 6.1 of the dAIR, Marine Use, provides a summary of information that will be provided in the Application. The assessment will consider existing conditions and potential effects of the Project relative to Marine Use, which will be described further in the Application.	Port of Vancouver provided no further comment.	----------
272	Port of Vancouver	Section 5.2 (Marine Use)	Marine Us e	• Local and Regional Assessment Areas – We believe the Local Assessment Area should be 1.5kms either side of the tunnel in the main channel and 500m either side of causeway in Deas Slough. The Regional Assessment Area seems reasonable, but if any channel closures are expected we are thinking domestic traffic and recreational craft may divert to the North Arm which is not included at this time. It might be worth consulting with the Marine Industry to see if this should be added	The Proponent has reviewed the proposed Marine Use Local Assessment area in the context of Port of Vancouver's comment, and has revised the boundary as suggested. Section 5.2.1 and Appendix A, Figure 12 of the dAIR have been updated to reflect this. The Proponent has engaged with commercial and recreational marine user groups since 2014, and will continue to consult with these groups during further design, planning, and implementation stages of the Project to identify and address any potential issues and concerns. **Section 5.2.1 of the dAIR has been revised accordingly.**	Port of Vancouver provided no further comment.	----------

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273	Transport Canada	Section 1.2 (Applicable Authorizations)	Authorization Table	Under the Navigation Protection Act, separate authorizations will be required for each of the following; • Alteration of the existing tunnel • Construction of the proposed bridge • Construction, placement, alteration, repair, rebuilding, or removal of any other works impacted by the project (such as pipes, aerial cables, fixed aids to navigation, etc.) that are not part of the temporary works required for construction of the bridge or decommissioning of the tunnel (those would be captured in the top two authorizations). The words, "Permit" and "Approval" should be replaced with "authorizations" as the nature of required documents has not yet been determined.	The Proponent will seek authorizations for all works needing Navigation Protection Act approval in accordance with Transport Canadas requirements. **The text within Table 2: Authorization Table in Section 1.2 has been changed from "Permit or Approval" to "Authorizations".**
274	Cowichan Nation Alliance	Section 10.1.3 (Aboriginal Interests Assessment)	Traditional, Current and Future use	In order to fully assess Aboriginal Interests, the assessment should consider traditional use, current use and future use. It is not enough to only consider traditional and current use. This is particularly important to the Cowichan Nation Alliance as we continue to work to re-establish fishery on the Fraser River. The cumulative impacts of projects in this area continue to affect our land as we try to reclaim this right.	"Traditional" use is the terminology reflected in the EAO's Application Information Requirements Template, dated August 2015. In this context, "traditional" is not used as a synonym for "past" or "historical" use, but to signify use along a continuum. Information regarding past, present, and anticipated future use of lands, waters, and resources in the Project area that may be associated with the exercise of Aboriginal Interests (meaning asserted or determined Aboriginal rights, including title, and treaty rights), as well as an assessment of potential Project-related impacts on the exercise of those Aboriginal Interests, will be presented in Section 10.1.3 of Part C, per EAO requirements.
275	Cowichan Nation Alliance	Section 10.1.3 (Aboriginal Interests Assessment)	Cumulative Effects and Follow-up Strategies	While we are satisfied that this section includes requirements for mitigation measures and characterization of residual adverse effects on Aboriginal Interests, there are additional requirements that should be added to this section including: • A cumulative effects assessment pursuant to section 3.10 • A follow-up strategy pursuant to section 3.11 Adding these two sections is crucial to meeting an appropriate level of thoroughness. The Aboriginal Consultation Section is intended to provide framework for addressing the impact of the project on Aboriginal Interests. In order to fully address the impact this Project will have on our Interests, cumulative effects need to be fully examined and follow-up strategies need to be developed to protect our Interests. Cumulative impacts are a major issue as we continually see more and more activity occurring in and around our traditional territory.	The Proponent will include historical context in Section 10.1.3 of Part C relating to changes in use over time by Aboriginal Groups (i.e., cumulative effects on this use to date), where this information has been provided to the Proponent by First Nations or was otherwise available from publicly available sources. However, there is no EAO requirement to assess incremental cumulative effects on the exercise of Aboriginal Interests separately of the cumulative effects assessments on VCs that are directly linked to the exercise of those Aboriginal Interests. Measures to avoid, reduce, or otherwise manage potential adverse effects of the Project on the exercise of Aboriginal Interests, including follow-up measures that may be proposed by VCs directly linked to the exercise of those Aboriginal Interests, will be presented in Section 10.1.3 Part C of the Application.
276	Cowichan Nation Alliance	Section 10.2 (Other Matters of Concern to Aboriginal Groups)		How will matters of concern be place between section 10.1.3 and section 10.1? Based on the format of the Aboriginal Consultation Section the Proponent will be required to identify Aboriginal Interests (section 10.1.1) and then provide an assessment on how the	The structure of Part C of the Application follows the EAO's Application Information Requirements Template, dated August 2015. Other matters of concern raised by Aboriginal groups in relation to the Project (Section 10.2 of the dAIR) are understood to be those that are not directly linked to the exercise of Aboriginal Interests, and

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				Project will affect these Aboriginal Interests (section 10.1.3). Through this format, impact of the project on our Interests will be thoroughly investigates (should a cumulative effects assessment and follow-up strategy be added to this section). Since we are looking for a guarantee that our Interests will be fully considered, we prefer that our Interests be considered through the section 10.1.3 process. So, what will lie outside of the Aboriginal Interests Assessment and why would these other matters of concern be separate from existing Aboriginal Interests? It may be that section 10.2 provides an appropriate place to list smaller concerns that do not require thorough analysis, however, we do not want to see this section used as a place to list and acknowledge important Aboriginal Interests that require a deeper level of consideration.	therefore require separate consideration. These concerns may be of an environmental, economic, social, heritage, or health nature in relation to how a specific Aboriginal community and its members may experience impacts differently or disproportionately relative to the general population. These concerns will be described in Section 10.2 of Part C of the Application.
277	Tsleil-Waututh Nation	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	Species at risk are not considered under the birds VC. What is the rationale behind this decision?	Bird species within the study area including those that are considered at risk are included. Specific bird species at risk that are potentially affected by the Project have been identified as sub-components (i.e., barn swallow, barn owl, great blue heron), and species-specific studies on them will be conducted and provided in the Application.
278	Tsleil-Waututh Nation	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	The RAA should be large enough to account for all of Deas Island as a complete island ecosystem.	Recognizing Deas Island as a contiguous land unit that supports a regional park and includes interrelated vegetation and habitat values, the LAA for Terrestrial Wildlife will be expanded to include Deas Island and the RAA will be revised accordingly. **Section 4.8.1 of the dAIR has been revised to reflect the changes in the LAA as noted.**
279	Tsleil-Waututh Nation	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	The LAA is too small, especially considering tunnel decommissioning and the increased turbidity levels and sedimentation that will be released downriver. We request that the LAA be reassessed and extended to support a full ecosystem assessment.	The LAA for Sediment and Water Quality will be extended downstream to include Ladner Reach and South Arm Marshes. **Section 4.2.1 of the dAIR has been revised to reflect the changes in the LAA as noted.**
280	Tsleil-Waututh Nation	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	The RAA should be larger as it currently does not encompass enough area downriver of the tunnel. We request the RAA be reassessed and extended to support a full ecosystem assessment.	The LAA for Fish and Fish Habitat will be extended to the west end of Kirkland Island, and the RAA will be extended to the mouth of the Fraser River South Arm to be consistent with the revised LAA and RAA for Sediment and Water Quality. **Section 4.4.1 of the dAIR has been revised to reflect the changes in the LAA and RAA as noted.**
281	Tsleil-Waututh Nation	Section 4.5 (At-risk amphibians)	At-risk Amphibians	We strongly suggest keeping the original LAA assigned for At Risk Amphibians. The LAA should be the project alignment plus 500m either side.	The initial consideration of potential project interactions beyond the current right of way, which led to the earlier and larger LAA, over-estimated the spatial area over which such effects would be expected to occur. The implementation of the effects assessment for at –risk amphibians supports a smaller LAA. There is limited to no movement between off-alignment amphibian habitat (unaffected by the project) and on-alignment habitat that is potentially affected. The revised LAA for at-risk amphibians reflects the field work conducted on the Project and the Professional

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					judgement of discipline specialists undertaking the assessment.
282	Tsleil-Waututh Nation	----------	Tunnel Decommissioning	Tsleil-Waututh requests clarification as to whether all sections of the tunnel will be removed, or not.	For the purposes of the Project Description and determination of values to be assessed as part of the EA, it is assumed that the in-stream sections of the Tunnel will be removed as part of the decommissioning. To provide further clarification, the middle four sections (in river) will be removed. **Section 1.1 of the dAIR has been updated to confirm that the tunnel decommissioning is anticipated to involve the removal of the four in-river sections of the Tunnel.**
283	Tsleil-Waututh Nation	Section 5.2 (Marine Use)	Marine Use	Tsleil-Waututh requests clarification as to whether there is a First Nations subcategory under the Marine Use VC or not and the rationale behind the decision accordingly. It is important that this section account for the future and desired use of Aboriginal Groups.	First Nations is not included as a subcategory under Section 5.2 in the Application. Aboriginal Interests, defined by the EAO as asserted or established Aboriginal and treaty rights, will be assessed in Part C of the Application (First Nations Information Requirements). Other matters of concern to First Nations regarding marine use (as identified by First Nations to the Proponent) that do not directly relate to Aboriginal Interests will be included in Section 5.2, and further evaluated, as appropriate, in Part C. Part C of the Application will assess potential Project-related impacts on the ability to exercise asserted and established Aboriginal rights, based on information available to the Proponent at the time of Application submission.
284	Tsleil-Waututh Nation	Section 5.3 (Land use)	Land Use	Are regional and municipal trade-based growth strategies (i.e. all those linked to the Asia-Pacific Gateway) incorporated into the land use portion of the assessment?	The assessment of the land use VC is supported by regional and local growth strategies and land use plans. The population and employment estimates that support these strategies and plans have been informed by regional, provincial, and national economic development and trade initiatives. As such, regional and municipal trade-based growth strategies are considered in the land use assessment.
285	Corporation of Delta	Section 1.0 (Overview of the Project)	Traffic	The impact on how tolling might influence traffic volumes on other existing Fraser River crossings that are currently tolled and un-tolled needs to be explained, especially the impact to the nearest and un-tolled crossing the Alex Fraser Bridge. The additional impact from a potentially tolled replacement Pattullo Bridge also needs to be taken into account.	Analysis shows that during rush hours, traffic volumes on the new bridge likely will increase, as some people switch from the congested Alex Fraser Bridge to the new bridge to take advantage of the time savings and increased reliability. That is the experience from other tolled crossings, and is what happened on the Port Mann Bridge. Outside of rush hours, the Proponent anticipates that some people will divert to the Alex Fraser Bridge to avoid paying the toll, while others will use it at all times of the day because of the convenience. The dAIR is being revised to recognize and assess traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic, that support the assessment of other ICs and VCS, including a rationale for the LAA and RAA for the Traffic IC. The future forecasted traffic presented in the Application includes both a tolled and untolled scenario. Based on this methodology, the Application will provide an assessment of Project-related changes in traffic within the project area and relevant portions of the regional

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					road network proximal to the Project. **Traffic as an IC has been added as Section 5.1 of the dAIR**
286	Corporation of Delta	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	The proposed locations for measuring water quality including turbidity and salinity during construction need to be identified and discussed with all relevant stakeholders for suitability. Water from the Fraser River is used for agricultural purposes and the Corporation of Delta has a number of control structures within the vicinity of the Project that are used for in-take of water during irrigation season.	The Corporation of Delta will have opportunities to provide input on Environmental Management Plans, including those focusing on addressing potential effects on water quality, prior to the start of construction. Such plans will include the identification of water quality sampling locations.
287	Corporation of Delta	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	Will additional monitoring locations be installed during the decommissioning of the tunnel? What time of year is this expected and how long will it take to complete?	An Environmental Management Plan, specific to Tunnel decommissioning will be developed prior to the start of such works and will include a water quality monitoring component. The Corporation of Delta will have opportunities to provide input on the Environmental Management Plan developed to support Tunnel decommissioning prior to the start of such works. The Tunnel will be decommissioned during the least risk window from a fisheries perspective. All work pertaining to Tunnel decommissioning is anticipated to be completed over the course of one year.
288	Corporation of Delta	Section 4.10 (Atmospheric Noise)	Atmospheric Noise	The proposed locations for measuring noise during construction need to be identified and discussed with all relevant stakeholders for suitability.	The location of receptor sites utilized for the assessment of potential project noise related effects will be included in the Application. If additional sites are recommended for noise monitoring during construction, the Proponent will discuss suggestions with relevant stakeholders.
289	Corporation of Delta	Section 4.10 (Atmospheric Noise)	Atmospheric Noise	The noise from expansion joints along the bridge deck can cause a nuisance to nearby residents and users of the bridge. The potential impacts and mitigation measures for any significant noise impact should be addressed. The type of expansion joint used can also impact cyclists and should be looked into.	The design requirements for the Project will include performance objectives related to the expansion joints to address potential noise as well as ride quality and safety issues for cyclists.
290	Corporation of Delta	Section 5.3 (Land Use)	Land Use	Any impact and subsequent mitigation measures to the Corporation of Delta's dykes and the likely change of ground level at the south end of the bridge needs to be fully addressed.	The Proponent will continue to consult with the Ministry of Forests, Lands, and Natural Resource Operations, the Deputy Inspector of Dikes office, the Corporation of Delta, and the City of Richmond regarding works and approvals on and near dikes within the Project alignment.
291	Corporation of Delta	Section 5.3 (Land Use)	Land Use	The utilisation of spaces underneath the raised alignment on the south end of the bridge should be maximised in order to provide a well-lit recreational space that will enhance the already existing Millennium trail and provide additional benefits to pedestrians and cyclists.	The Proponent will continue to consult with the Corporation of Delta regarding the utilization of space under the southern approach to the new bridge to optimize benefits to users.
292	Corporation of Delta	Section 5.4 (Agricultural Use)	Agricultural Use	All irrigation and drainage culverts and control structures to be impacted by the Project need to be identified.	Potential project-related effects on farm infrastructure, including irrigation and drainage works, will be considered under the assessment of the agriculture VC.

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293	Corporation of Delta	Section 7.0 (Health Effects Assessment)	Human Health	What are the impacts to transit users at the rapid bus stations with regards to air quality and noise, and how will these be mitigated?	A specific assessment of potential project-related effects on transit users will not be provided for in the Application. However, potential project related effects on human health will be considered under the Health VC and will be supported by the assessment of project-related changes in air quality and noise within the LAA and RAAs described in the dAIR. The human health risk assessment supporting the assessment of the health VC is conservative and assumes a high exposure to air and noise. In this regard, it is assumed to capture the potential effects to human health for people using all areas within the Project corridor including transit facilities.
294	Corporation of Delta	Section 8.0 (Accidents and Malfunctions)	Accidents and Malfunctions	Due to the additional marine traffic that is expected during construction to assist in the Project, stringent prevention of spill procedures and suitable mitigation measures need to be developed. A communication plan also needs to be developed with all applicable stakeholders during the event of a spill in the river.	Mitigation to address and respond to potential spills during the construction phase, including a communications plans to inform applicable stakeholders, will be discussed in the Accidents and Malfunctions section of the Application and included in environmental management plans to be developed prior to the onset of construction works.
295	Corporation of Delta	Section 8.0 (Accidents and Malfunctions)	Accidents and Malfunctions	The Tunnel Transportation of Dangerous Goods Regulation Transportation Act does not currently apply to the George Massey Tunnel. It is anticipated that the new bridge and Highway 99 improvements will cater for the movement of dangerous goods? If so how will this impact the emergency services and their operations and procedures?	Responses to incidents on provincial highways, including those involving the transportation of dangerous goods, are governed by the Ministry's road and bridge maintenance standards and specifications. Depending on the nature of such incidents, the maintenance contractors form part of the team, working with other emergency service providers, responding to such events. The movement of dangerous goods on the Bridge is not anticipated to impact emergency services and their operations and procedures.
296	Corporation of Delta	Section 12.0 (Management Plans)	Traffic Management	Will the assessment of traffic management during construction include for the potential partial traffic shift to other Fraser River crossings in order to avoid construction delays? Will specific technical plans, performance objectives and communication requirements be put together for alternative impacted Fraser River crossings?	The dAIR is being revised to recognize traffic as an Intermediate Component (IC). The revised dAIR will describe the methodology for assessing project related changes in traffic that support the assessment of other ICs and VCS, including describing the scope of such effects. The assessment of traffic as an Intermediate Component will include a consideration of potential traffic effects during the construction phase. The assessment will include a consideration of construction phase effects on traffic and identify appropriate mitigation to address such effects.
297	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	(with regards to improving habitat connectivity across Deas Island Regional Park) It is FLNRO's understanding that the middle segments of the tunnel would be removed during decommissioning, while the end segments remained in place. If segments at either end of tunnel remain *in situ*, it is unclear as to how connectivity will be improved.	Connectivity on Deas Island will be improved primarily due to the decommissioning of infrastructure which currently bisects the island. Removal of this infrastructure will allow improved habitat connectivity on the south side of the island.
298	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.5 (At-risk amphibians)	At-risk Amphibians	(with regards to change of LAA of at-risk amphibians) Effects of siltation and run-off during construction, as well as on-going run-off, may extend well beyond the road allowance. FLNRO believes that insufficient evidence has been provided in order to limit the LSA in this manner.	Construction effects will be temporary, and are able to be controlled through standard erosion control and sediment management practices. The management of road runoff (during operations) will be improved in many areas over that currently experienced due to the implementation of new approaches to storm water management including the collection and treatment of such runoff.

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					Mitigation measures available to manage siltation and run off during construction (and operation) are considered to be proven to be effective such that the spatial scope of the assessment can be limited to the LAA described in the dAIR.
299	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.5 (At-risk amphibians)	At-risk Amphibians	FLNRO recognizes the utility of DNA tools to demonstrate the presence of rare amphibians. However, at this time, due to uncertainty inherent in the technique, it does not believe that this tool by itself provides the basis for determining that there are no rare amphibians or reptiles in the vicinity. Use of this tool to demonstrate absence of rare amphibians or reptiles must be supported by appropriate field sampling techniques.	Habitat assessments, and historical data where available, will be used in addition to eDNA methods to understand and determine amphibian presence.
300	Ministry of Forests, Lands, and Natural Resource Operations	Section 4.4 (Terrestrial Wildlife)	Wildlife	Section 4.4.3 Potential Effects indicates: *Based on studies completed to date, no critical habitat has been identified within or adjacent to the Project alignment for any SARA-listed species.* Please provide the studies supporting this conclusion.	Specific studies, and background information reviewed, supporting this conclusion will be included in the Application.

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301	Musqueam Indian Band	Section 1.0 (Overview of the Project)	Tunnel Decommissioning	*A detailed plan for tunnel decommissioning* must be an Application information requirement. At the March 10, 2016 Working Group meeting, the Proponent indicated that it was not intending to include a detailed plan, but only a "reference plan" (i.e., high-level detail), for tunnel decommissioning. This is not an acceptable approach given that tunnel decommissioning is a central component of the overall project and has an as-yet indeterminable set of impact pathways and likelihood of adverse effects on the biophysical environment and Musqueam rights and interests – such determination only being possible with the provision of detailed information on the proposed physical works and activities required. **A detailed plan that sets out the scope for all tunnel decommissioning activities, including the specific methods and equipment to be used, temporary ancillary project components and staging areas, a description of the anticipated post-decommissioning condition of the river bed and foreshore, and the anticipated timing and**	The Proponent will include a description of the proposed tunnel decommissioning method in Section 1 of the Application. As mentioned during the Technical Working Group meeting (March 10, 2016), the decommissioning process is expected to be the reverse of how the Tunnel was originally installed. The Application will include a detailed overview of the specific activities associated with this process to support the assessment of potential effects and identify appropriate mitigation. Key steps in this process include: - Cleaning of the inside of the Tunnel and removal of all non-structural elements - Removal of the rock protection layer surrounding the Tunnel - Cutting of the closure joints between Tunnel elements - Release, lifting, and floatation of Tunnel elements out of the trench using barges and cranes - Transport of Tunnel elements for off-site recycling - Monitoring of the tunnel trench as it naturally fills with river sand over time	More detail on the specific information requirement is necessary to ensure accuracy, clarity and transparency (e.g., it is simplistic and inaccurate to describe the decommissioning process "as the reverse of how the tunnel was originally installed"). Musqueam's request for a detailed plan has not been properly acknowledged or addressed. The response indicates that only an "overview" rather than a "description" of the tunnel decommissioning process will be provided. For an EA that purports to address the adverse effects on Musqueam rights, this lack of detail to the specific activities and components related to decommissioning is unacceptable. In addition, Musqueam requests opportunity to review the specific wording that will be used in the revised version of the dAIR;	The Proponent has provided some additional detail in the dAIR on what information describing decommissioning will be provided in the Application. **The following detail has been included in Section 1.1 of the dAIR under Construction, to describe the method of tunnel decommissioning)** • Decommissioning of the Tunnel and removal of the four in-river tunnel segments, which is anticipated to take place over the course of one construction season (i.e. between freshets), will involve the following key steps: ○ Measures, including adherence to least-risk timing windows to avoid effects on fish and fish habitat and fishing ○ Cleaning of the inside of the Tunnel and removal

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				duration of all decommissioning activities, etc., must be included in the Application and is essential if the Application is to adequately consider the potential effects of the proposed tunnel decommissioning on Musqueam rights on the South Arm of the Fraser River. The AIR must further include a commitment that, should more than one decommissioning alternative be being considered at the time of Application, that all will be subject to full impact assessment across all relevant VCs, and the Proponent will describe how it consulted with all parties, including affected First Nations, on alternatives. A detailed assessment of effects of tunnel decommissioning on the environment and on Musqueam rights must not be deferred until after the EA Certificate has been issued (i.e., put off until the permitting process).	The Tunnel decommissioning scenario described at the Technical Working Group meeting (March 10, 2016) is the scenario for decommissioning that will be described in the Application. If any other decommissioning alternative is identified prior to submission of the Application, it will also be described in the Application and will include an assessment of potential effects, as well as a description of all parties consulted on the alternative scenario. **Section 1.1 of the dAIR has been updated to confirm the anticipated method of tunnel decommissioning noted above**		of all non-structural elements ○ Removal of the sediment and sand fill and rock protection layer surrounding the Tunnel ○ Cutting of the closure joints between Tunnel elements ○ Release, lifting, and floatation of Tunnel elements out of the trench ○ Transport of Tunnel elements for off-site recycling ○ Monitoring of the Tunnel trench as it naturally fills with river sand over time.
302	Musqueam Indian Band	Section 1.4 (Alternatives to the Project)	Project alternatives	Musqueam requests the additional draft criteria be incorporated into the dAIR and used as part of the basis of evaluating alternatives: **1. Avoiding or minimizing further adverse effects on Musqueam Aboriginal rights and title interests and practices;** **2. Least further impact on fish and fish habitat;** **3. Least further impact on other harvested species;** **4. Least impact on Musqueam aquatic restoration priorities;** **5. Least impact on Musqueam physical cultural heritage;** **6. Least impact on visual quality, including Musqueam cultural landscape;** **7. Lowest potential for accidents and malfunctions; and** **8. Least impact on Musqueam navigability.** **Musqueam wants to be involved in a formal Multiple Accounts Evaluation of all proposed Project alternatives.**	In 2013/2014 a multiple accounts evaluation (MAE) was completed for the George Massey Tunnel replacement project. Findings of this evaluation are presented in a report titled "George Massey Tunnel Replacement Project, Evaluation of Crossing Scenarios, 2014" available on the Project web site at the following web address: https://engage.gov.bc.ca/masseytunnel/documentlibrary/. A summary of the work undertaken to identify and analyze the five replacement scenarios, including the MAE methodology used and the findings of the evaluation, will be included in the Application. The five project alternatives assessed included different bridge as well as tunnel options. A scenario involving upgrades to the existing tunnel with no capacity improvements, and two scenarios involving the installation of a smaller bridge or tunnel to operate in conjunction with upgrades to the existing tunnel were included in the assessment. The following evaluation criteria, in addition to capital	Musqueam strongly disagrees that the 2013/2014 MAE has incorporated - in any meaningful sense - MIB's criteria. The contention that somehow a generalized evaluation of environmental and social considerations, without meaningful consultation with Musqueam on project alternatives Musqueam has not been meaningfully consulted on the alternatives analysis to date, and therefore we reiterates our request that an alternatives assessment be undertaken collaboratively with proper consideration of Musqueam criteria.	The Proponent supports that the methodology employed for the MAE provides an appropriate level of analysis to support an assessment of alternatives and will defer to EAO on the adequacy of EA related consultation.

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				As above in MIB-001, all alternatives to the tunnel decommissioning must be included in this alternatives assessment.	costs and risks, were used to support the MAE of the 5 options. These also capture Musqueam Indian Band's suggested criteria. • Efficient transportation for all users: traffic congestion; transit capability; travel time reliability; and pedestrian and cycling accessibility. • Safety: incident response capability; earthquake protection; and traffic safety. • Agriculture: agricultural land effects; and access to/from agricultural areas. • Environment: local and regional air quality; wildlife and terrestrial habitat; and marine life and habitat. • Jobs and the economy: access to gateways and trade corridors; access to business and industrial land; and marine access for goods movement. • Social and community considerations: community access (including across the highway within communities); private property effects; noise effects; and visual effects. The preferred alternative (i.e., project described in the Project Description and Key Areas of Study document), which includes no piers within the mainstem of the Fraser River, avoids potential effects on fish and fish habitat values and has the least effect on navigation during the construction phase. The preferred alternative also rated the highest with respect to meeting safety objectives, including incident response requirements.		
303	Musqueam Indian Band	Section 3.10 (Cumulative Effects)	Cumulative Effects	This section should require pre-industrial temporal boundaries for understanding the trajectory of change of many Aboriginal rights-based harvesting practices and related indicator species. This precedent is already established in Canadian environmental assessment.1	The methodology followed with respect to describing existing conditions follows the EAO's *Guideline for the Selection of Valued Components and Assessment of Potential Effects.* Following this methodology, the description of existing conditions provides for a consideration of the effects of previous development on specific VCs. As such, the description of existing conditions for each VC will reference natural or human-caused trends that may have influenced the existing condition or future trajectory of such conditions.	Proponent must include a pre-industrial temporal boundary to understand the transformation of many Aboriginal rights-based harvesting practices and related indicator species.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.
304	Musqueam	Section 3.10	Cumulative			Musqueam acknowledges commitment to	The Proponent is following EA best

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	Indian Band	(Cumulative Effects)	Effects	**Comment:** The list of past, present and reasonably foreseeable projects and activities to be included in the CEA is too limited. **Requested Change**: Please add the following to the CEA project inclusion list: 1. Current and future shipping activity levels established within the Lower Fraser River by publicly-available scenario analyses, reasonably foreseeable dredging activities, as well as a number of PMV- reviewable projects (e.g., Lehigh Hanson Materials Ltd.'s proposed South Richmond Terminal) on the South Arm of the Fraser River; and 2. Future industrial disturbance scenarios associated with tunnel removal, including dredging of the South Arm of the Fraser River, increased large-vessel traffic and expansion of port facilities, and related rail and road infrastructure, throughout the Fraser estuary.	The Proponent is reviewing the preliminary list of present, and reasonably foreseeable projects currently included in the dAIR and will provide a revised listing in the next iteration that will be circulated to the Technical Working Group. This will include the Lehigh Hanson South Richmond Terminal proposal. The new bridge will be the same height above the water as the Alex Fraser Bridge. Removing the Tunnel and will not result in changes to the size of vessels using the Fraser River South Arm channel, as the top of the Tunnel is level with the bottom of the River. Other factors, including the Metro Vancouver water main to the west of the Tunnel, and the width of the river itself, limit the size of vessels that can navigate the river. Dredging to deepen the river is not a component of this Project and the Proponent is unaware of any plans to dredge the river deeper. **Section 3.10 of the DAIR has been updated to include Lehigh Hanson South Richmond Terminal proposal in the cumulative effects assessment.**	revise project inclusion list to include Lehigh Hanson South Richmond Terminal. However, Musqueam objects to the unsupportable claim that the Proponent and the Crown are "unaware" of industry and government proposals to expand port facilities and activities along the South Arm of the Fraser, which would in all likelihood involve deepening the of shipping lanes. Given the public nature of this information, the Proponent's denial of any knowledge of the potential of the project to induce further commercial shipping development on the Fraser River is not believable; rather, it appears to be little more than an unreasonable refusal to consult on the effects of a strategic decision, as well as the cumulative effects stemming from the tunnel decommissioning component of the Project.	practice with respect to the inclusion of foreseeable projects into the cumulative effects assessment of the Project. The Proponent is prepared to include additional projects that are clearly defined but cannot include generalized future development.
305	Musqueam Indian Band	Section 3.10 (Cumulative Effects)	Cumulative Effects	**Comment:** The Proponent has proposed a cut-off date for consideration of any new future developments that coincides with the EAO's approval of the AIR. Musqueam views this cut-off date is as premature and could potentially limit the scope of the Cumulative Effects Assessment to consider the effects of new projects that may be announced in the near future. Musqueam acknowledges that the project inclusion list will not include consideration of any projects or activities that have not been proposed within a month or two in advance of the draft Application being filed, however, should any major future projects or activities be proposed following that date, a reasonable approach should be taken to ensure that they are considered. **Requested Change**: *Please revise the AIR to*	The Proponent will follow EAO's guidance on including potential future developments in the assessment, if such developments are identified after approval of the AIR, but prior to acceptance of the Application. **Reference to a cut-off date related to incorporating potential future developments has been removed from the dAIR in Section 3.10.**	To be confirmed with the EAO.	It is the Proponents understanding that EAO has followed up with Musqueam on this.

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				reflect the need to accommodate for re-assessment of cumulative effects should any new major projects or relevant information come forward during the Application Review period, and have the AIR indicate that within 60 days of the start of the Application Review period, the Working Group will meet to discuss the cumulative effects assessment, identify any new relevant projects to include, and to require supplemental filings, as necessary.			
306	Musqueam Indian Band	Section 3.1 (Issues Scoping) re: Section 4.2 (Sediment and Water Quality	Selection of Valued Components	The unsupported and unorthodox "Pathway Components" (PC) methodology has been applied to this VC. Musqueam has previous objected to this approach for the following reasons: ▯ Not in EAO VC guidance ▯ Not in CEAA EA guidance ▯ Not supported by peer-reviewed literature ▯ Not supported by accepted EA practice ▯ Appears to be a "shortcut" to avoid significance determination on certain VCs of concern to Musqueam and other parties (e.g., air quality, water quality) Musqueam notes a similar approach was proposed by the Proponent in other project review (e.g., WesPac) but was removed at the request of working group members. **Requested Change: Please revise and re-assign this component as a VC.**	The proposed Project is not subject to review under CEAA 2012. The Proponent has followed the methodology for VC selection provided by the EAO in their guidance document titled "Guideline for the Selection of Valued Components and Assessment of Potential Effects, 2013." Specifically, the determination on whether to assess a component as a VC or a pathway component was informed by the following guidance provided in the document on considering the inter-relationship between candidate VCs: *"A candidate VC may comprise one 'step' of a pathway along which a project effect travels (Figure 4): a change in the candidate VC may lead to another effect on another candidate VC. For example, sediment-laden discharge from a project to a stream may adversely affect water quality and benthic habitat. These changes may consequently affect the health and survival of fish that depend on those habitat attributes. In most cases, rather than include intermediate components as VCs, the assessment should focus on the ultimate receptor or component that is of concern, and select that as the VC. In this example, the most appropriate VC may be fish, and the assessment of potential effects on fish would study and take into consideration the intermediate effects of the project on water quality and benthic habitat."* *(*Page 11, Guideline for the Selection of Valued Components and Assessment of Potential Effects, 2013). Sediment and Water Quality is considered as an intermediate component along the pathway of effects	Musqueam does not accept this response on the following grounds: 1. While we appreciate that water quality effects other VCs, for Musqueam, water quality is an ultimate receptor or valued component in and of itself that must be assessed for project-specific and cumulative effects, and for which a significance determination must be undertaken; 2. The list of VCs should reflect the Crown's willingness to consult with us in a meaningful manner that shows appropriate responsiveness; 3. This down-grading of water quality to a "PC" amounts to a diminishment of the assessment of the Project's impacts to our rights; 4. This practice of not properly assessing water quality for significance appears to be inconsistent and discretionary, and is therefore prejudicial to a proper assessment of effects on our rights.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines. The Proponent supports that the consideration of water quality, as an intermediate component, remains an effective approach for identifying and addressing potential effects on water quality and other values, including aboriginal rights, that may influenced through the pathway of effects.

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					of the Project, with VCs such as fish and fish habitat, marine mammals, at-risk amphibians and vegetation being ultimate receptors of Project-related changes in sediment and water quality. Sediment and Water Quality is therefore assessed as a pathway component, and potential Project-related effects on sediment and water quality will be evaluated in terms of their influence on the ultimate receptor components (i.e. Fish and Fish Habitat, Marine Mammals, At-risk Amphibians, and Vegetation). This is consistent with guidance provided by the EAO as discussed above and is a recognized approach and methodology for such assessments.		
307	Musqueam Indian Band	Section 3.1 (Issues Scoping) re: Section 4.3 (Underwater noise)	Selection of Valued Components	See Comment MIB-007 above. (comment 304) **Requested Change: Please revise and re-assign this component as a VC.**	Consistent with guidance provided by the EAO (as discussed in the response to comment #304), Underwater Noise is considered an intermediate component along the pathway of effects of the Project, with other candidate VCs such as fish and fish habitat and marine mammals being ultimate receptors of Project-related changes in underwater noise. Underwater Noise is therefore assessed as a pathway component, and potential Project-related effects on underwater noise conditions are evaluated in terms of their influence on the ultimate receptor components (i.e. Fish and Fish Habitat, and Marine Mammals).	Musqueam requests that any assessment of underwater noise be subject to a cumulative effects assessment.	The assessment of underwater noise, as an Intermediate Component, provides for assessment of cumulative change.
308	Musqueam Indian Band	Section 3.1 (Issues Scoping) re: Section 4.9 (Air Quality)	Selection of Valued Components	See Comment MIB-007 above. (comment 304) **Requested Change: Please revise and re-assign this component as a VC.**	Consistent with guidance provided by the EAO (as discussed in the response to comment #304), Air Quality is considered an intermediate component along the pathway of effects of the Project, with other candidate VCs such as human health being ultimate receptors of Project-related changes in air quality. Air Quality is therefore assessed as a pathway component and potential Project-related effects on ambient air quality will be evaluated in terms of their influence on the ultimate receptor component (i.e. Human Health).	Musqueam does not accept this response on the following grounds: 1. While we appreciate that air quality effects other VCs, for Musqueam, air quality is an ultimate receptor or valued component in and of itself that must be assessed for project-specific and cumulative effects, and for which a significance determination must be undertaken; 2. The list of VCs should reflect the Crown's willingness to consult with us in a meaningful manner that shows appropriate responsiveness; 3. This down-grading of air quality to a	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines. The Proponent supports that the consideration of air quality, as an Intermediate Component, remains an effective approach for identifying and addressing potential effects on water quality and other values, including aboriginal rights, that may influenced through the pathway of effects.

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						"PC" amounts to a diminishment of the assessment of the Project's impacts to our rights; 4. This practice of not properly assessing water quality for significance appears to be inconsistent and discretionary, and is therefore prejudicial to a proper assessment of effects on our rights.	
309	Musqueam Indian Band	Section 3.1 (Issues Scoping) re: Section 4.10 (Atmospheric Noise)	Selection of Valued Components	See Comment MIB-007 above. (comment 304) **Requested Change: Please revise and re-assign this component as a VC.**	Consistent with guidance provided by the EAO (as discussed in the response to comment #304), Atmospheric Noise is considered an intermediate component along the pathway of effects of the Project, with other candidate VCs such as human health and wildlife being ultimate receptors of Project-related changes in ambient noise levels. Atmospheric Noise is therefore assessed as a pathway component, and potential Project-related effects on ambient noise conditions will be evaluated in terms of their influence on the ultimate receptor component (i.e. Human Health).	Musqueam does not accept this response on the following grounds: 1. While we appreciate that Atmospheric Noise effects other VCs, for Musqueam, Atmospheric Noise is an ultimate receptor or valued component in and of itself that must be assessed for project-specific and cumulative effects, and for which a significance determination must be undertaken; 2. The list of VCs should reflect the Crown's willingness to consult with us in a meaningful manner that shows appropriate responsiveness; 3. This down-grading of Atmospheric Noise to a "PC" amounts to a diminishment of the assessment of the Project's impacts to our rights; 4. This practice of not properly assessing Atmospheric Noise for significance appears to be inconsistent and discretionary, and is therefore prejudicial to a proper assessment of effects on our rights.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines. The Proponent supports that the consideration of noise, as an Intermediate Component, remains an effective approach for identifying and addressing potential effects on water quality and other values, including aboriginal rights, that may influenced through the pathway of effects.
310	Musqueam Indian Band	Section 4.2 (Sediment and water Quality)	Existing Conditions	**Requested Change:** Please add to subsection 4.2.2, re: collection of baseline information on sediment and water quality, a requirement to characterize, through field sampling, the existing levels of contaminants of potential concern (COPCs) in sediments beneath and surrounding the tunnel structure.	Text in the dAIR regarding the collection of baseline information has been clarified and now includes the following: “Sediment quality in the vicinity of the Tunnel will be characterized through field sampling. This will include a consideration of levels of contaminants of potential concern (COPCs) in sediments in the vicinity of the tunnel.” Such field work has been identified for inclusion in the Sediment and Water Quality section to support both project planning and the assessment of potential effects that will be outlined in the Application.	Musqueam is concerned that the reference to sampling "in the vicinity of the Tunnel" does not provided adequate clarity to ensure that sampling is undertaken of sediments that are located both beneath the tunnel and along the sides of the tunnel, prior to the tunnel sections being decommissioned. Please revise appropriately.	The requirement for specificity about where sediment sampling is undertaken to support Tunnel decommissioning is a matter that is appropriately considered and addressed during the Application Review. The Proponent supports that no further revisions are required to the dAIR in regards to this comment.

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311	Musqueam Indian Band	Section 4.2 (Sediment and water Quality)	Potential Effects	**Requested Change:** Please add to subsection 4.2.3, the following requirement: Pending findings of existing condition (i.e., contamination) of Fraser River sediment in proximity to project, *a Human Health Risk Assessment* **must be undertaken** related to transport of COPCs re-suspended through tunnel removal (and other construction activities), and entry of contaminants into the local food sources (e.g., sturgeon, salmon, eulachon) relied upon by Musqueam harvesters.	Text in the dAIR regarding the scope of the human health risk assessment to be reported on in the Application has been refined as follows: If the presence of contaminants of potential concern (COPCs) is detected in Fraser River sediment in proximity to the Project, the potential for resuspension of COPCs as a result of Project related activities will be evaluated. Where it is determined that there is a high likelihood for high concentrations of COPCs to be introduced into local food sources (i.e., fish) a human health risk assessment will be undertaken. The determination of whether to undertake the human health risk assessment will be supported by a rationale, including a discussion of the assumed concentrations of COPCs in the water column. **Section 7.1.3 of the dAIR has been revised as indicated.**	Prior to the dAIR being finalized, Musqueam is seeking clarification for why a HHRA would only be undertaken if there was "high likelihood for high concentrations of COPCs to be introduced into the local food sources" (i.e., the threshold for an HHRA). For instance, it would seem reasonable that even a low- to moderate likelihood of high concentrations of COPCs being introduced into the food system should be sufficient to trigger an HHRA. Musqueam also is seeking clarity on the methodology that would be utilized to make this decision on whether to proceed with an HHRA.	Studies undertaken indicate that levels of contaminants in sediment are extremely low such that Project-related risks to human health, over and above the level of such risks that exist in the general population, would not be detectable.
312	Musqueam Indian Band	Section 5.2 (Marine Use)	Marine Use	**Requested change**: *Musqueam requests that this component of the Marine Use assessment be amended to consider a number of different future scenarios in land and navigable waters use, one of which considers how the removal of the GM Tunnel may induce, along with subsequent dredging activities, increased large vessel traffic along the Fraser River, and considers the benefits and risks across all VCs (and on Aboriginal rights and interests) of both increased dredging and increased large vessel traffic in the Lower Fraser across this range of scenarios.* *It is further understood that MOTI has already commissioned certain studies on this topic. MOTI should be dealing directly with Musqueam re: consultation requirements and inputs/capacity required for effects on Musqueam land and navigable waters use to be properly assessed.*	Dredging to deepen the river is not a component of this Project and the Proponent is not aware of any plans to deepen the channel. As such, the Proponent has not included such scenarios within the assessment of the Marine Use VC. All studies, data, or information used to support the assessment of potential Project-related effects on marine use will be referenced in the Application and shared with the Technical Working Group.	Musqueam objects to the unsupportable claim that the Proponent and the Crown are "unaware" of industry and government proposals to expand port facilities and activities along the South Arm of the Fraser, which would in all likelihood involve the deepening of shipping lanes. Musqueam maintains that the Proponent must be required to consider potential future cumulative effects scenarios related to increased shipping effects on the Fraser River induced by the removal of the tunnel structure. The long-term effects of what amounts to being a key strategic outcome of the proposed tunnel decommissioning must be assessed at this stage.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines. The Proponent is aware of growth in the trade in the region in general and some specific projects are included in the cumulative effects assessment. The Proponent is prepared to include additional, known and defined, projects in the cumulative effects assessment for the Project. There are many barriers with respect to dredging the south arm of the Fraser to support increased shipping and a major dredging program to facilitate enhanced shipping is beyond the scope of the proposed

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							works and would be subject to a separate environmental regulatory process.
313	Musqueam Indian Band	Section 5.3 (Land Use)	Land Use	**Comment:** On March 10, 2016, MOTI informed the Technical Working Group that it has commissioned induced growth studies to assess potential changes in land-use in Delta/Surrey regions caused by the Project's effects on the road transportation system i.e., reduced road travel times). **Requested change**: *Musqueam requests that this component of the Land Use assessment be amended to consider a number of different future scenarios in land use, of which at least one should also consider how the removal of the GM Tunnel may induce (through removal of a key obstacle to deeper dredging of the navigational channel to facilitate large vessel traffic) port development along the banks of the South Arm of the Fraser River.*	The study referenced by MIB is focused on assessing the relationship between the Project and the implementation of existing regional and municipal land use plans, and includes a consideration of the potential for induced development. Accordingly, the assessment of the Land Use VC relates to land use scenarios described within regional and local government plans. Dredging to deepen the river is not a component of the Project and the Proponent is not aware of any plans to deepen the channel.	Musqueam maintains that the Proponent must be required to consider potential future cumulative effects scenarios related to increased use of lands along the South Arm of the Fraser River for industrial (shipping) purposes, induced by the removal of the tunnel structure. The long-term effects of what amounts to being a key strategic outcome of the proposed tunnel decommissioning must be assessed at this stage.	As above.
314	Musqueam Indian Band	Section 3.1 (Issues Scoping)	Selection of Valued Components	*Gap in VCs identified in the dAIR:* **Current Use of Lands and Resources for Traditional Purposes Comment:** Musqueam is concerned that "Part C" of the dAIR does not currently require (1) a cumulative effects assessment, (2) significance determination, or (3) accidents and malfunctions, when considering effects on our rights-based activities. **Requested Change**: **If Part C is not going to incorporate these essential elements of environmental assessment as pertains to our rights, Musqueam requests that the dAIR require an assessment of "Current Use of Lands and Resources for Traditional Purposes" (CULRTP), including a cumulative effects assessment and a significance determination analysis, as a stand-alone VC.** Musqueam notes that CULRTP has become a standard VC for most	Information regarding past, present, and anticipated future use of lands, waters, and resources in the Project area directly linked to the exercise of Aboriginal Interests (meaning asserted or determined Aboriginal rights, including title, and treaty rights), as well as an assessment of potential Project-related impacts on the exercise of those Aboriginal Interests, will be presented in Part C, per EAO requirements. As the environmental assessment for the Project is not subject to review under CEAA 2012, an assessment of potential effects on 5(1) (c) factors, per Section 5 and 19(1) of that statute, is not required.	Musqueam's request for revision has been largely ignored by this response. Musqueam seeks further consultation on this matter, prior to the completion of the dAIR. CULRTP has become a standard VC for most EAs conducted by the EAO over the last several years. To ensure that this EA is not undertaken in a manner that is sub-standard to other Crown assessments, at minimum the Proponent must include a requirement CULRTP VC, or its equivalent in the AIR. Furthermore, an any assessment of effects on Musqueam rights-based harvesting practices and culture must include a cumulative effects assessment and	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.

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				EAs conducted by the EAO over the past few years. It should therefore also be included as a VC in this EA. **Note**: This VC overlaps with federal requirements under CEAA 2012, Section 5(1) (c) that would normally be required in any EA for a project of this scale, complexity and magnitude.		consideration of accidents and malfunctions.	
315	Musqueam Indian Band	Section 3.1 (Issues Scoping)	Selection of Valued Components	*Gap in VCs identified in the dAIR:* ***Economic Conditions*** **Comment:** The assumption that all effects on VCs are expected to be positive is flawed and an unacceptable rationale for excluding the assessment of economic effects of this Project. Not all economic costs and benefits of the project will be distributed evenly, and the most vulnerable sub-populations, explicitly including First Nations, will likely bear greater costs and reap fewer benefits than the general population. For example, in contrast to the Proponent's unsubstantiated claims of a uniform positive economic benefit to all groups and communities located in the lower Fraser valley, Musqueam notes that there is a high likelihood of adverse economic impacts of bridge construction and tunnel decommissioning on Musqueam fishers. Unless this VC is assessed as part of this EA, and the effects are considered severally for Musqueam (i.e., disaggregated from the general population), this impact will not be properly assessed. It is therefore essential not only that this VC be included in the EA, but that any assessment of economic conditions provide disaggregated assessment of economic effects on First Nations. **Requested Change**: A VC for **Economic Conditions must be included.** It is not only essential for assessing effects on the human environment, but it is also one of the "5 pillars" for EA as set out under the EAO's "Guidelines for the Selection of Valued Components and Assessment of Potential Effects" (2013). In addition, the Proponent needs to identify all	Effects of the Project on economic conditions are anticipated to be positive, and the economic pillar of the EAO framework will be considered in the context of project benefits in Part A of the Application. In accordance with EAO methodology, the Application will describe the economic benefits of the Project including user benefits (i.e., travel time savings and reliability), safety benefits, as well as employment (jobs created) during construction and operation, and related direct and indirect inputs to the economy. Throughout the construction period, including decommissioning, least-risk timing windows and applicable mitigation measures for specific activities will be incorporated to minimize impacts to fishers. The assessment of the Marine Use VC will identify potential effects of Bridge construction and Tunnel decommissioning on all users and will identify measures to avoid, reduce, or otherwise manage potential economic effects on the Musqueam Indian Band including, but not limited to, those that may be tied to their rights to fish. This information will be considered further in Section 10.1.3 or 10.2 of Part C, as appropriate. The Proponent acknowledges Musqueam Indian Band's interest in further dialogue on this topic and will coordinate arrangements with the EAO.	Musqueam's request for revision has been completely ignored by this response. Musqueam seeks further consultation on this matter, prior to the completion of the dAIR.	Technical work and consultation undertaken to support the planning of the Project has not identified potential adverse Project related economic effects. The Proponent will work with Musqueam during Project delivery to ensure access for Musqueam to continue to exercise their aboriginal right to fish is maintained and that this potential effect is easily avoided.

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				realistic adverse effects and associated pathways that merit consideration, which will require consultation with Musqueam Indian Band prior to the drafting of the second round dAIR.			
316	Musqueam Indian Band	Section 3.1 (Issues Scoping); Section 5.0 (Socio-economic Effects Assessment)	Selection of Valued Components	*Gap in VCs identified in the dAIR:* ***Socio-economic conditions for Aboriginal peoples*** **Requested Change**: Please add requirement (under Economic and Social VCs) for disaggregated assessment of project effects on the socio-economic conditions of Musqueam community members. **Note**: This VC overlaps with federal requirements under CEAA 2012, Section 5(1) (c) that would normally be required in any EA for a project of this scale, complexity and magnitude.	As the environmental assessment for the Project is not subject to review under CEAA 2012, an assessment of 5(1) (c) factors, per Section 5 and 19(1) of that statute, is not required. Where First Nations have specifically identified socio-economic matters of concern, these matters will be addressed in Part C (Section 12.2).	Musqueam's request for revision has been ignored by this response. Musqueam seeks further consultation on this matter, prior to the completion of the dAIR.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.
317	Musqueam Indian Band	Section 3.1 (Issues Scoping); Section 6.0 (Heritage Effects Assessment)	Selection of Valued Components	*Gap in VCs identified in the dAIR:* **Semi-tangible to intangible Aboriginal cultural heritage** **Comment:** This requirement has been included in the provincial EA for WesPac Tilbury LNG. **Requested Change**: Please add consideration of effects on semi-tangible to intangible Aboriginal cultural heritage (e.g., cultural landscapes) as a VC subcomponent to either the VC for Cultural Heritage or VC for CULRTP (see above). In addition, Musqueam requests the Proponent to consult with us on the scope of this VC prior to its inclusion in the next round of the dAIR.	An assessment of potential effects of a change to the environment on the cultural heritage of Aboriginal people is a specific requirement under Section 5(1) (c) of the Canadian Environmental Assessment Act, 2012 (CEAA 2012). As the environmental assessment for the Project is not subject to review under CEAA 2012, an assessment of 5(1)(c) factors, per Section 5 and 19(1) of that statute, is not required; however, cultural heritage will be considered in the assessment of potential Project-related impacts on the exercise of Aboriginal Interests presented in Part C (Section 10.1.3). The Proponent acknowledges Musqueam Indian Band's interest in further dialogue on this topic and will coordinate arrangements with the EAO.	Musqueam's request for revision has been ignored by this response. Musqueam seeks further consultation on this matter, prior to the completion of the dAIR.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.
318	Musqueam Indian Band	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	**Suggested changes:** *Existing Conditions*: Given the threatened status of white sturgeon and eulachon, Musqueam requests that the Proponent undertake field studies to establish a baseline of current population abundance and distribution of these species within portions of the South Arm of the Fraser River, including Deas Slough, Ladner Reach and the South Arm Marshes.	The comprehensive approach taken to collect baseline information to support the assessment of potential effects on fish and fish habitat is based on assumed project activities that could be expected to have the same or similar effects on the range of fish species that could potentially occur in the Project area. The assessment of potential effects on the threatened species noted takes a conservative approach and	It is unclear to Musqueam what the Proponent intends to undertake for its methodology Musqueam maintains that the dAIR be revised to require the Proponent to undertake field studies to establish current conditions for white sturgeon and eulachon, prior to undertaking an effects assessment. This is essential to properly	Desktop studies on fisheries values in the Project area provide sufficient information to support the assessment of potential effects and the development of effective mitigation.

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				Potential Effects: Musqueam requests that the proponent assess for any potential effects from the project (e.g., underwater noise, increased turbidity) on fish distribution, during construction and operation.	acknowledges the seasonal abundance of such species in the study area, even though the current population abundance (of eulachon in particular, as noted in the literature) may be low. As such, additional information on population abundance and distribution would not result in identifying additional or species specific effects or mitigation and it is not proposed that field work to confirm abundance and/or distribution be undertaken. An assessment of the potential effects of the Project on general fish distribution will be completed and included in the Application.	understanding the adverse effects of construction activities and new bridge structures on fishing resources relied upon by Musqueam as the basis of our proven fishing rights on the Fraser River. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	
319	Musqueam Indian Band	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	**Comment/Request:** Please clarify the nature (including purpose) and extent of the "piers" that are proposed to be installed "along the edges of Green and Deas Sloughs" (p. 31)	The Deas Slough Bridge, with piers in Deas Slough, will be removed and replaced with a clear span. The piers proposed along the edges of Green and Deas sloughs are intended to support the bridge approaches that span Deas Slough. In some locations, due to the narrow peninsulas that form the approaches to Deas Slough, the proposed pier locations may encroach marginally on the fringes of the two watercourses. The Application will provide details on proposed enhancements for any potential adverse effects.	Musqueam Indian Band provided no further comments	----------
320	Musqueam Indian Band	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	**Comment/Request:** Please clarify whether the conclusion that "no critical habitat has been identified within or adjacent to the Project alignment for any SARA-listed species" includes reference to species (and related habitat) for species of special cultural concern to Musqueam, such as white sturgeon and eulachon. Musqueam fishers' knowledge and experience indicates that Deas Slough and adjacent areas are part of the little remaining sturgeon habitat on the lower Fraser River and that sturgeon are effectively a "species at risk" in all but name. **Requested Change**: MOTI and the EAO consult with Musqueam regarding species of special cultural concern, prior to revising the dAIR.	The determination that no critical habitat has been identified within or adjacent to the Project alignment for any SARA-listed species includes consideration of white sturgeon and eulachon notwithstanding that neither the Lower Fraser River white sturgeon nor Fraser River eulachon population is currently listed under SARA Schedule 1, and no critical habitat has been defined for either of these populations. It is acknowledged that the Project alignment overlaps with important habitat for both of these species, and regardless of any status under SARA, the Project team welcomes further discussion regarding species of special cultural concern. The Proponent acknowledges Musqueam Indian Band's interest in further dialogue on this topic and will coordinate arrangements with the EAO	Musqueam requests that the AIR require the Proponent to work with Musqueam to identify critical sturgeon and eulachon habitat in the vicinity of the Project, and further, to require the proponent to assess the potential effects of the Project on that habitat.	Desktop studies on fisheries values in the Project area provide sufficient information to support the assessment of potential effects and the development of effective mitigation. Notwithstanding desktop studies that have been undertaken, and recognizing Musqueam's interest in eulachon and sturgeon, the Proponent is committed to working with Musqueam to identify eulachon and sturgeon habitat in the vicinity of the Project.

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321	Musqueam Indian Band	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	**Comment:** River otters inhabit Deas Island and the Fraser River and should be considered as a subcomponent under this VC. **Requested Change**: Musqueam requests the River otter be used as an indicator species.	River otter are potentially present in the Project area, and will be included in the assessment of potential Project-related effects on terrestrial wildlife. **Section 4.8 of the dAIR has been updated to include river otters as a sub-component.**	Please provide an explanation for why the Proponent does not intend to use river otter as an indicator species for terrestrial wildlife.	The Proponent has revised the dAIR, to address Musqueam comment, to include the river otter as an indicator supporting the assessment of terrestrial wildlife. The Proponent supports that including the river otter in the assessment in this manner provides for a robust assessment of potential effects on this wildlife value. The Proponent would welcome specific feedback on why this approach would not be considered appropriate and effective.
322	Musqueam Indian Band	Section 5.2 (Marine Use)	Marine Use	**Requested Change**: Musqueam's right to fish on the South Arm of the Fraser needs to be integrated into this section. Musqueam requests that under "potential effects" that additional clarity be provided that the Application will assess how Project effects on fish abundance and distribution, as well as disruption to marine access/navigation (due to barge-based bridge construction, pile driving within or adjacent to Deas Slough, demolition of the Deas Slough bridge, and tunnel decommissioning) will potentially interact with – and adversely impact - Musqueam's time-limited opportunities to exercise its fishing rights on the river.	Potential Project-related effects on the exercise of Musqueam's asserted and established Aboriginal Interests will be presented in Part C of the Application, per EAO requirements.	Musqueam is gravely concerned about the Proponent's sole reliance upon the highly-deficient information requirements set out in Part C of the dAIR as a replacement for the assessment of effects on Musqueam's rights-based and commercial Marine Use on the Fraser River. Musqueam seeks clarity on how the Proponent intends to rely upon the EA to assess effects on rights. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	The assessment of potential effects on aboriginal rights is supported by the assessment of ICs and VCS in Part B of the Application. Where there are identified effects on an IC or VC, Part C provides an assessment of such effects may affect an aboriginal or treaty right. Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.
323	Musqueam Indian Band	Section 7.1 (Human Health)	Human Health	**Comment:** The dAIR is missing First Nation-specific health assessment requirements that would be standard under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). The current scope of the proposed "Human Health" assessment is inadequate to address health-related effects from the Project on Musqueam members. Musqueam requests	As the Project is not subject to review under CEAA 2012, an assessment of 5(1) (c) factors, per Section 5 and 19(1) of that statute, is not required. In accordance with EAO methodology, where First Nations have specifically identified health matters of concern, these matters will be addressed in Part C (Section 10.2) of the Application. Information in Part C regarding health matters of	Musqueam is gravely concerned about the Proponent's sole reliance upon the highly-deficient information requirements set out in Part C of the dAIR as a replacement for the assessment of effects on Musqueam health. Musqueam seeks clarification from the EAO and MOTI on the specific language	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.

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				that the conduct of this EA meet, at minimum, the standards of its federal counterparts and conduct a health effects assessment specific to First Nations. **Requested Changes**: 1. A First-Nation-specific health assessment should be incorporated under the Health VC; 2. The scope of a First Nation-specific health assessment should be broadened to consider not only "noise" and "air quality", but all potential adverse effects of the Project components, construction and tunnel decommissioning, on Musqueam health, in particular health impacts related to continued access to sufficient (in quality and quantity) country foods (i.e., fish); and 3. Musqueam requests that sediment sampling be undertaken beneath and adjacent to the tunnel structure (not just the water surface of the tunnel) to determine whether a quantitative human health risk assessment is warranted for the construction phases (esp. removal). If such an HHRA is warranted, Musqueam requests that this study apply modeling techniques to predict changes in COPCs in country foods (e.g., fish).	concern to Aboriginal Groups will be supported by the assessment of the Health VC in Part B which draws on a human health risk assessment to determine potential human health effects on populations living in the Project area in general. In addition, the assessment of the Health VC in Part B of the Application will summarize the results of a health impact assessment that considers potential effects of the Project on broader determinants of human health and includes recognition of health considerations that are specific to Aboriginal populations. Please see responses to comments 308 and 309 regarding sediment and water quality recommendations.	that will be include in Section C to ensure that there is a First Nations-specific health assessment.	
324	Musqueam Indian Band		General	Key information gaps in the Project Description and the dAIR further undermine any effort to establish reasonable and defensible temporal and spatial boundaries for many of the VCs. *For example, it is not possible to set a temporal boundary for the assessment of most VCs without knowing the duration of the potential effects of tunnel decommissioning, nor in many cases is it possible to identify a reasonably accurate spatial boundary for assessing effects on marine use or fish and fish habitat without understanding the specific methods of decommissioning.* **Full disclosure of all details related to the methods, duration and costs of tunnel decommissioning must be provided to the Working Group prior to the next draft of the**	The Proponent will include a description of the proposed tunnel decommissioning method in Section 1 of the Application. As mentioned during the Technical Working Group meeting (March 10, 2016), the decommissioning process is expected to be the reverse of how the Tunnel was originally installed. The Application will include a detailed overview of the specific activities associated with this process to support the assessment of potential effects and identify appropriate mitigation as appropriate.	It is highly problematic that no specific description has yet been provided to Musqueam or the working group about the process of tunnel decommissioning. Musqueam maintains that this information must be provided during the review of the dAIR to ensure that the temporal and spatial scope of assessment for all relevant VCs are correctly calibrated to the scope of potential project effects. Without a description this is not possible.	The Proponent has provided some additional detail in the dAIR on what information describing decommissioning will be provided in the Application. Additional detail on this matter, in the dAIR, is beyond the reasonable expectation of what should be provided in the dAIR.

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				dAIR. Musqueam is requesting full details that would normally be required of any proponent prior to submitting a project of this scale and magnitude to a federal EA process. As Musqueam's constitutionally protected rights are at stake, the rigor of this EA must meet or beat federal standards.			
325	Musqueam Indian Band	Section 4.2 (Sediment and Water Quality)	Sediment and Water Quality	**Comment:** It is noted that one of the key purposes of assessing sediment and water quality is to better understand Project effects on "fish and fish habitat", "marine mammals", "vegetation" and "at-risk amphibians". However, the LAA for sediment and water quality is too small to assess these potential impacts, as it excludes Ladner Reach and South Arm Marshes (or Ladner Marsh). (It is in fact smaller than the LAAs for the other VCs it is supposed to inform) These areas must be included in the LAA as it is possible, if not likely, that sediments re-suspended during tunnel removal would be transported into Ladner Reach and Ladner Marsh. **Requested Change**: The LAA must be further extended downstream from the tunnel to encapsulate Ladner Reach and Ladner Marsh. Please consult with Musqueam directly regarding the specifics of these spatial boundaries.	The LAA for Sediment and Water Quality will be extended downstream to include Ladner Reach and South Arm Marshes. The dAIR will be revised to reflect this. **Section 4.2.1 of the dAIR has been revised to reflect the change in the LAA and RAA as noted.**	Musqueam Indian Band provided no further comment.	----------
326	Musqueam Indian Band	Section 4.4 (Fish and Fish Habitat)	Fish and Fish Habitat	**Comment:** It LAA and RAA for Fish and Fish Habitat are inadequate to capture direct project-specific and cumulative effects on fish and fish habitat. We note that the LAA/RAA for amphibians is larger than the LAA/RAA for fish - an approach that defies logic given the mobility of fish, the SARA-listed status of white sturgeon, and the heightened importance of assessing adverse effects on Musqueam fishing resources. In addition, we note that the LAA does not appear account for barging activities during construction or upstream and downstream effects of tunnel removal work (i.e., changes to	The LAA for Fish and Fish Habitat will be extended to the west end of Kirkland Island, and the RAA will be extended to the mouth of the Fraser River South Arm to be consistent with the revised LAA and RAA for Sediment and Water Quality. The dAIR will be revised to reflect this. The LAA for fisheries has not been changed to include upstream areas to the west end of Tilbury Island as there is no potential for direct Project-related effects on fish or fish habitat. **Section 4.4.1 of the dAIR has been revised to reflect the change in the LAA and RAA as noted**	Downstream extension of LAA and RAA is acknowledged. Musqueam maintains that LAA must be extended upstream to the west end of Tilbury Island as tunnel removal is expected to have effects on river depth in the vicinity of Tilbury Island. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	Technical work on river hydraulics that will be presented in the Application does not indicate changes in river depth as a result of the Project. As such, expanding the LAA for fish and fish habitat is not considered necessary.

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				river flow patterns and sediment re-suspension/ transport). **Requested Change**: The LAA must be expanded (1) upstream to the west end of Tilbury Island and (2) downstream to the west end of Kirkland Island, encapsulating the South Arm Marshes. The RAA must be expanded downstream to the mouth of the South Arm. Please consult with Musqueam directly regarding the specifics of these spatial boundaries.			
327	Musqueam Indian Band	Section 4.7 (Vegetation)	Vegetation	**Comment:** No RAA provided. Lack of RAA is unacceptable for assessing CE on at-risk ecosystems and at-risk species, in particular wetland shoreline habitats. LAA excludes much of Deas Island, Deas Slough and South Arm Marshes (or Ladner Marsh). **Requested Change**: The LAA must be expanded to include all of Deas Island Regional Park and downstream to the 326west end of Kirkland Island, encapsulating the South Arm Marshes. The RAA must be expanded downstream to the mouth of the South Arm. Please consult with Musqueam directly regarding necessary boundaries.	Recognizing Deas Island as a contiguous land unit that supports a regional park and includes interrelated vegetation and habitat values, the LAA for Vegetation will be expanded to include Deas Island, and the RAA will be revised accordingly. The dAIR will be revised to reflect this. The LAA for vegetation has not been changed to include South Arm Marshes as there is no potential for direct Project-related effects on vegetation. As noted in the dAIR, Project-related effects on vegetation are expected to be confined to the LAA and the RAA for vegetation is the same as the LAA. Therefore, no further changes to the RAA have been undertaken. **Section 4.7.1 of the dAIR has been revised to reflect the change in the LAA and RAA as noted.**	Extension of LAA to include Deas Island and respective extension of RAA is acknowledged. Musqueam maintains that LAA should include South Arm Marshes given the potential of tunnel removal to effect vegetation due to changes on sedimentation. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	Technical work on river hydraulics that will be presented in the Application does not indicate changes in erosion or accretion of river sediments. As such, expanding the LAA for vegetation is not considered necessary.
328	Musqueam Indian Band	Section 4.8 (Terrestrial Wildlife)	Terrestrial Wildlife	**Comment:** RAA is much too small for assessing effects on birds. Bridge construction, potentially combined with additional transmission lines, will increase risk of bird collisions with vehicular traffic, bridge and transmission line structures. Car/truck noise and bridge lighting will also have potential to affects bird habitat at Deas Island and South Arm Marshes. **Requested Change**: The RAA must be expanded to include all of Deas Island Regional Park and South Arm Marshes	Recognizing Deas Island as a contiguous land unit that supports a regional park and includes interrelated vegetation and habitat values, the LAA for Terrestrial Wildlife will be expanded to include Deas Island, and the RAA will be revised accordingly. The dAIR will be revised to reflect this. The Project is not expected to have any interaction with the South Arm Marshes that could affect wildlife or wildlife habitat. Furthermore, the South Arm Marshes support a unique ecosystem that is very different from any that could potentially be influenced by the Project, and therefore does not provide	Extension of LAA to include Deas Island and respective extension of RAA is acknowledged. Musqueam maintains that lighting, noise and other potential effects during construction and operation will interact with wildlife (including birds) in the South Arm Marshes, and therefore LAA should include this area. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	Project related noise and lighting at that distance will not be distinguished from background/existing conditions.

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					meaningful comparative context for assessment of Project-related effects or cumulative effects. Accordingly, the revised assessment areas do not include the South Arm Marshes. **Section 4.8.1 of the dAIR has been revised to reflect the change in the LAA and RAA as noted.**		
329	Musqueam Indian Band	Section 4.9 (Air Quality)	Air Quality	**Comment:** RAA is too large to properly measure cumulative effects of "intensified" industrial development on the South Arm of the Fraser River. Please consult with Musqueam directly regarding necessary boundaries.	The proposed RAA is consistent with the boundaries of the Lower Fraser Valley airshed. The Lower Fraser Valley airshed is a managed airshed with management activities supported by a management plan and regional emissions inventory developed by Metro Vancouver. The regional understanding of air quality conditions provided by the proposed RAA is considered appropriate for assessing potential cumulative effects of the Project on regional air quality.	The scope of the RAA for air quality is incompatible with the scope necessary for addressing Musqueam concerns.	The RAA is supported by Metro Vancouver, the key regulator with respect to regional air quality management and this scope is consistent with other regional assessments. The Proponent would welcome specific feedback on exactly how the RAA is incompatible.
330	Musqueam Indian Band	Section 5.2 (Marine Use)	Marine Use	**Comment:** **Currently, this VC appears to be the only social VC provided in the dAIR that the Proponent is proposing to use to assess adverse effects on the Project on Musqueam rights-based fishing. The Project has the potential for serious infringements due to the high likelihood of disruption, particularly during bridge construction and tunnel removal, of our Nation's use of critical fishing sites on the river located at the tidal transition zone on the river in the vicinity of Deas Island. Musqueam has over 60 registered fishing vessels that our members use in order to exercise their rights within very tight time windows, and frequently with very short notice. If we don't have a place on the river to exercise our rights within these time windows, our rights have been seriously infringed. Fishing opportunities on the river are highly significant - culturally, economically, socially - for Musqueam and are protected by the Supreme Court of Canada's *Sparrow* decision.**	The proposed LAA of the Marine Use VC (approximately 1 km downstream of the Tunnel) is considered appropriate for capturing direct potential effects on marine/river uses. Potential Project-related impacts on the exercise of Musqueam's asserted and established Aboriginal rights will be presented in Part C of the Application, per EAO requirements. The spatial boundaries for the Part C assessment are largely based on the outer boundary of traditional territories or otherwise defined areas of use. The Part C local assessment area (LAA) for Musqueam focuses on (but is not necessarily limited to) the overlap of Musqueam territory or otherwise defined areas of use with the LAAs of VCs (e.g., Fish and Fish Habitat) that are directly linked to the exercise of Musqeuam's Aboriginal Interests that may be potentially affected by the Project.	This response has ignored Musqueam's request. It is not acceptable that the LAA for Marine Use does not address effect of increased barge traffic on the South Arm of the Fraser River, especially given the Proponent's unwillingness to undertake a CEA of effects on CULRTP or to consider accidents and malfunctions in relation to Aboriginal rights-based activities.	The Proponent will work with Musqueam during Project delivery to ensure access for Musqueam to continue to exercise their aboriginal right to fish is maintained and that this potential effect is avoided.

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				Due to existing traffic on the river, safety requirements that already displace Musqueam fishers to make way for barges or other large vessels, the proposed use of additional barges for construction purposes indicates that barges may pose both project-specific and cumulative effects on Musqueam fishers on the river, and this would most likely occur between the mouth of the river and the project construction staging areas. In summary: LAA: Too small, ignores effects of construction barges on Musqueam fishers. **Requested Change**: **Musqueam requests that the LAA be extended to the mouth of the South Arm of the Fraser River.** Please consult with Musqueam directly regarding necessary boundaries.			
331	Musqueam Indian Band	Section 5.3 (Land Use)	Land Use	**Comment:** LAA: too small, excludes Deas Island; RAA: Too big to properly assess cumulative effects on Musqueam traditional land use and title lands (i.e., on foreshore areas) **Requested Change:** 1. Expand LAA to include all of Deas Island; 2. For assessing cumulative impacts on Musqueam land uses, use a RAA that follows, with Musqueam territory, 10km buffer area on both sides of the South Arm of the Fraser River. *(Note: if Musqueam's request for a separate VC for CULRTP is met, then the following comments should be applied to both the Land Use VC and the CULRTP VC.)* Please consult with Musqueam directly regarding necessary boundaries.	Recognizing Deas Island as a contiguous land unit which supports a regional park the LAA for the Land Use VC will be expanded to include all of Deas Island. The dAIR will be revised to reflect this. The RAA for the Land Use is consistent with the planning area for the regional growth strategy (Metro, 2040). As such, it is considered an appropriate RAA for this VC. **Section 5.3.1 of the dAIR has been revised to reflect the change in the LAA as noted.**	The scope of the RAA for land use is incompatible with the scope necessary for addressing Musqueam concerns related to project-specific and cumulative effects on Aboriginal rights and title. The current draft of the AIR lacks any clear mechanism for assessing impacts on Musqueam land and resource use.	The RAA for some elements of the land use assessment is Metro Vancouver.
332	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	**Requested Change**: The requirement for TK/TLU information must be changed from being incidental and opportunistic, i.e., "as available", to a mandatory requirement for the Proponent to support the development of	The "as available" wording reflects terminology from the EAO's Application Information Requirements Template, dated August 2015. In the March 2016 version of the dAIR, the Proponent adjusted the dAIR template language to read "as available from	Musqueam does not accept the Proponent's contention that Musqueam's VC scoping document, submitted in November 2015, provides the Proponent with sufficient information to assess adverse effects on Musqueam's rights-	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.

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				a robust project-specific TK/TLU study that would be used to inform the assessment of Musqueam's past, current and desired future use of the project-affected area (focused on an appropriately scaled LSA for CULRTP).	Aboriginal Groups or from publicly available sources." The Proponent, in cooperation with Musqueam, requested and funded a Musqueam study of use and knowledge associated with areas that may be affected by the Project in order to facilitate the provision of relevant information from Musqueam.	based harvesting activities and culture. The Proponent must work to undertake a meaningful TK/TUS assessment (based on Musqueam's VC scoping document) prior to the Application being submitted for formal review. This necessary to ensure a proper baseline is established prior to effects assessment being undertaken. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	
333	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	The assessment of impacts to rights excludes a requirement for cumulative effects to be taken into consideration. **Requested Change**: Revise the dAIR to require consideration of both the historical context of past impacts and reasonably foreseeable future development scenarios throughout the Fraser River Estuary on the opportunity to exercise rights, including title.	The Proponent will include historical context in Part C relating to changes in use over time by Aboriginal Groups (i.e., cumulative effects on use to date), where this information has been provided to the Proponent by First Nations or was otherwise available from publicly available sources. There is no EAO requirement to assess incremental cumulative effects on the exercise of Aboriginal Interests separately of the cumulative effects assessments on VCs that are linked to the exercise of those Aboriginal Interests.	Musqueam requests that the AIR include a requirement for a cumulative effects assessment on Musqueam rights-based activities on the South Arm of the Fraser River. The Proponent must provide Musqueam with resources to undertake studies to ensure that a proper assessment (to meet standard of infringement justification analysis) is conducted. Musqueam also objects to suggestion in Proponent's response that they would be undertaking an assessment of impacts to rights "by proxy", i.e., by relying upon "the cumulative effects assessments on VCs that are linked to the exercise of those Aboriginal Interests." Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	This is well beyond the scope of the requirements of the BC*EAA* process
334	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	The assessment of impacts to rights excludes a requirement for assessing seriousness of infringement and the need for a justification framework on effects to rights. **Requested Change**: **Please add a requirement for assessing seriousness of infringement of Musqueam rights. While in *Sparrow* consultation was considered when assessing whether the Crown has acted in a manner consistent with its fiduciary relationship to Musqueam as the rights**	Part C of the Application will assess potential Project-related impacts on the ability to exercise asserted and established Musqueam rights, based on information available to the Proponent at the time of Application submission. The adequacy of consultation in relation to potential Project-related impacts on Aboriginal Interests, as well as any analysis regarding potential infringement of established rights, will be determined by the EAO subsequent to the submission of the Application.	Musqueam requests that the EAO and Proponent revise the dAIR to provide clarity and transparency to the approach stated here, i.e., that Part C of the AIR does not intend to require the Proponent to undertake any Crown analysis of the adequacy of consultation or justification for infringement on Musqueam's proven Sparrow rights, rather this responsibility lies exclusively with the EAO.	It is the Proponent's understanding that the EAO followed up Musqeuam directly regarding this comment.

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				holder, the 2014 Supreme Court of Canada decision in *Tsilhqot'in* made consultation and accommodation a first step in itself within the justification analysis, finding that it must be first considered whether the duty to consult and accommodate was met before proceeding with determining if there is a valid legislative objective and whether the fiduciary relationship has been maintained. **Alternatively, Part C does not intend to require the Proponent to undertake any consultation, accommodation or justification activities on the part of the Crown in relation to Musqueam's proven *Sparrow* rights, but add a clarification to this effect.**			
335	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	The assessment of impacts to rights excludes a requirement for identification of any required follow-up measures. **Requested Change**: Please add section that requires the Proponent to develop follow-up measures, including monitoring, to confirm, monitor the seriousness of, report to the EAO and affected First Nations, and address via adaptive management, adverse impacts to rights.	Measures to avoid, reduce, or otherwise manage potential adverse effects on the exercise of Aboriginal Interests, including follow-up measures that may be proposed by VCs directly linked to the exercise of Aboriginal Interests, will be presented in Part C of the Application.	The dAIR must be revised to this effect to ensure clarity and transparency surrounding this requirement.	It is the Proponent's understanding that the EAO followed up with Musqueam directly regarding this comment.
336	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	Musqueam Aboriginal title is not acknowledged as a right that needs to be assessed. **Requested Change**: Please add section that requires the Proponent to assess Project- specific and cumulative effects to Aboriginal title.	The Section 11 Order for the Part (Part A, Section 1), issued on March 7th, 2016, defined Aboriginal Interests as "asserted or determined aboriginal rights, including title, and treaty rights". Part C will assess potential adverse impacts of the Project on these Aboriginal Interests, in accordance with Section 10.1.3 of the dAIR.	Musqueam requests that under the Land Use VC (or through an additional CULRTP VC), the Proponent be required to assess project-specific and cumulative effects on Musqueam Aboriginal title land use.	Potential Project-related effects on Aboriginal Interests, including asserted Aboriginal title, are assessed in Part C, per EAO requirements. The findings of the VC chapters in the Application that are of relevance to the Part C assessment are considered in the analysis of potential Project-related effects on Aboriginal Interests, including consideration of any cumulative effects on those VCs. There is no EAO requirement to assess cumulative effects on the exercise of Aboriginal Interests separately of the cumulative effects

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							assessments on VCs that are directly linked to the exercise of those Aboriginal Interests.
337	Musqueam Indian Band	Section 10.0 (Aboriginal Consultation)	Aboriginal Consultation	**Comment:** Part C has provided a very sparse and minimal description of requirements related to assessing impacts on Aboriginal rights and title. The proposed assessment of Aboriginal rights and related interests have been completely segregated into a 2-page section, *Part C - Aboriginal Consultation* ("Part C"). The remainder of the dAIR is silent on how the EA will assess impacts on Aboriginal rights, practices and interests. This is not acceptable; Musqueam's experience with previous EAs and their poor and often ad hoc assessment of effects on Aboriginal rights and title indicates that greater, rather than less, detail on how this type of assessment will be conducted is required. We seek direct consultation with EAO toward identifying the required scope, measureable parameters, assessment methods, and thresholds that will be used in this part of the EA.	Part C of the dAIR is based on the EAO's Application Information Requirements Template, dated August 2015.	This is an inadequate response. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.
338	Musqueam Indian Band	------	General	*Re: Linkage between assessment of VCs in Part B and Part C of the dAIR* **Comment:** Even for VCs with obvious high importance to Musqueam, such as Fish, Marine Use, Land Use or Visual Quality, Part B of the dAIR (i.e., the main section) omits virtually all consideration of the relationship between First Nations activities and potentially impacts ecological values of that fall within scope of assessment. There is no VC included for "current use of lands and resources for traditional purposes" (CULRTP), and the VCs for Marine Use and Land Use are almost entirely oriented towards the general population (i.e., the non-Aboriginal public), when they should include special focus on Musqueam priority rights confirmed under the Constitution and per *Sparrow*.	The linkages between the assessment of potential effects on VCs in Part B and the assessment of potential adverse impacts on the exercise of Aboriginal Interests in Part C will be identified in Part C. See also, responses to Comment No. 312, 315, 320, 328, and 332.	This is an inadequate response. Musqueam requests further consultation on this matter, prior to the completion of the dAIR.	Feedback from EAO to the Proponent has indicated that the methodology employed to support the assessment of the Project is consistent with EAO guidelines.

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				A further limitation is that the assessment of Heritage is wholly focused on physical heritage, i.e., “archaeological resources” and excludes from its scope any consideration of semi-tangible and intangible cultural heritage, e.g., current cultural and ceremonial uses, aboriginal cultural landscapes and our members’ connection to them. In short, the current version of the dAIR strongly suggests that the Proponent does not intend to use the broader EA process - the assessment of biophysical and social VCs - to describe adverse effects on Musqueam Aboriginal rights (including harvesting and incidental rights), title and related interests **Suggested Change**: The dAIR must be revised to ensure that the assessment of effects on the human and biophysical environment is linked to a priority consideration of how these effects will impact Musqueam rights, uses and interests. Musqueam is the priority rights holder within the project area and any assessment that intended to inform consultation, justification and accommodation of infringements on Musqueam rights should therefore include linkage between the rights-impacts assessment and the assessment of biophysical and social components of the environment that are relevant to Musqueam.			