

# GEORGE MASSEY TUNNEL REPLACEMENT PROJECT

## SUMMARY ASSESSMENT REPORT

With Respect to

the Application by the British Columbia Ministry of Transportation and Infrastructure  
for an Environmental Assessment Certificate  
pursuant to  
the Environmental Assessment Act, S.B.C. 2002, c.43

Prepared by:

Environmental Assessment Office  
January 19, 2017



# 1 Introduction

This summary assessment report provides an overview of the environmental assessment (EA) of the proposed George Massey Tunnel Replacement Project (GMTR) conducted by the Environmental Assessment Office (EAO). This report cross-references relevant sections of EAO's Assessment Report, where more in-depth analysis and discussion can be found.

## 2 Project Description

The British Columbia Ministry of Transportation and Infrastructure (MOTI) is proposing to:

- Construct a 10-lane, clear span bridge over the Fraser River;
- Replace three interchanges at Westminster Highway, Steveston Highway and Highway 17A;
- Widen approximately 24 km of Highway 99 to accommodate dedicated transit and High Occupancy Vehicle (HOV) lanes from Bridgeport Road in Richmond to Highway 91 in Delta;
- Replace the Deas Slough Bridge with the south approach of the new bridge;
- Restore Green Slough to its historical alignment;
- Construct multi-use pathways on either side of the new bridge for cyclists and pedestrians; and
- Decommission the existing George Massey Tunnel (Tunnel), which would include removal and disposal of the four in-river Tunnel segments, and flooding and backfilling the two Tunnel approaches.

GMTR would become part of the provincial highway system and would be part of the Highway 99 corridor in BC's Lower Mainland, between the Bridgeport Road interchange in Richmond and the Highway 91 interchange in Delta (see Figure 1-1).

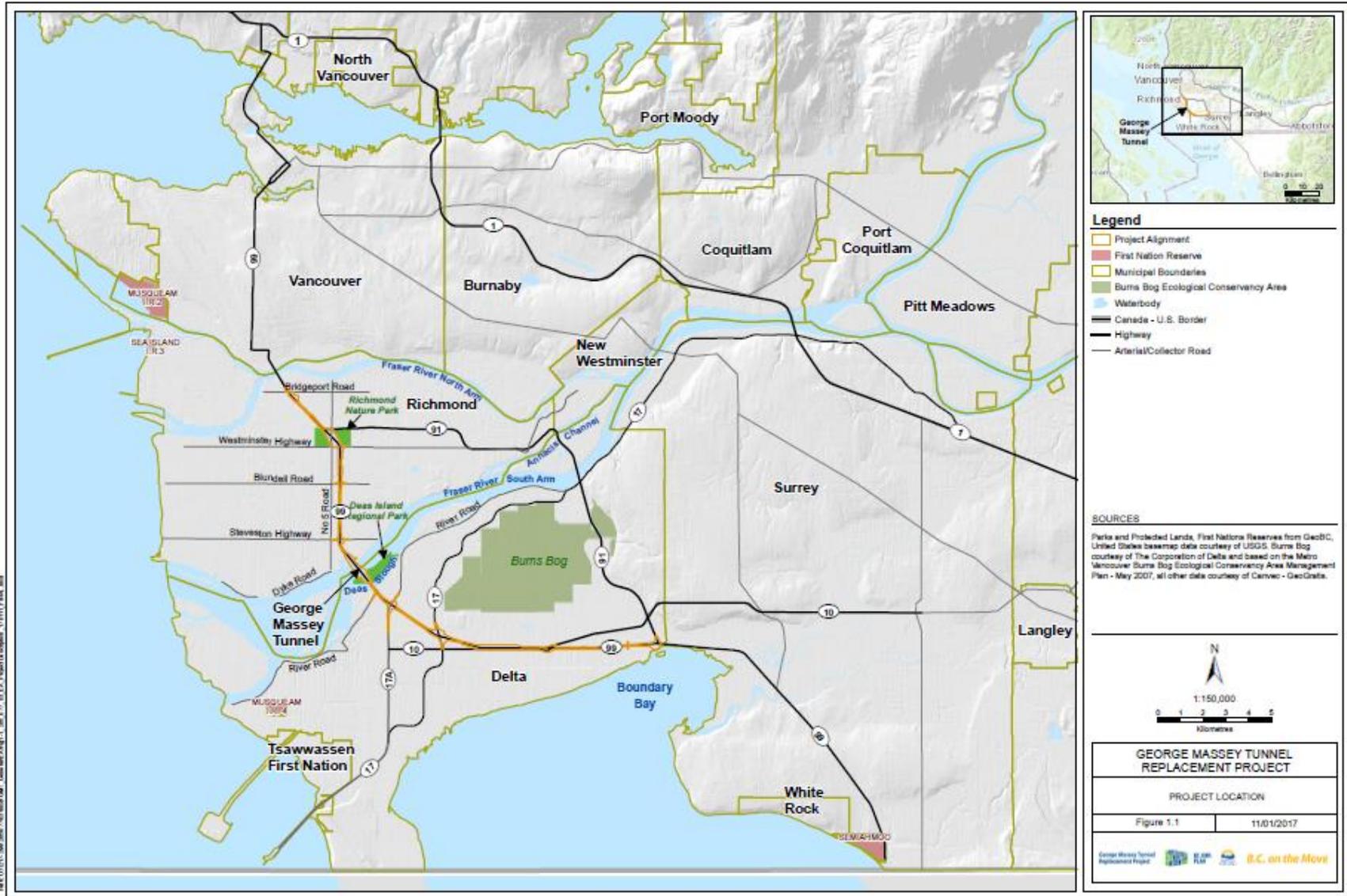
GMTR is proposed to start construction in 2017 and would be expected to be open for use in 2022. Tunnel decommissioning would start in 2022, after the new bridge is commissioned.

The GMTR alignment is located entirely or partially within the asserted traditional territories, and/or Treaty lands of Cowichan Tribes, Halalt First Nation, Katzie First Nation, Kwantlen First Nation, Lake Cowichan First Nation, Lyackson First Nation, Musqueam Indian Band, People of the River Referrals Office, Penelakut Tribe, Hwlitsum<sup>1</sup>, Semiahmoo First Nation, Stz'uminus First Nation, Squamish Nation, Tsawwassen First Nation, and Tsleil-Waututh Nation.

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<sup>1</sup> This reference to the Hwlitsum is not intended to signify any change in the position that the Province may have taken in other contexts in relation to the duty to consult with this group.

Figure 1-1: Location of the George Massey Tunnel Replacement Project



### **3 Strategic Context**

The Tunnel is currently an important link in the regional and provincial transportation system, carrying an average of approximately 80,000 vehicles a day. According to MOTI, traffic through the Tunnel is expected to grow to approximately 100,000 vehicles per day by 2045 as a result of planned growth in population and employment within the region. The Tunnel provides an essential link between the Corporation of Delta (Delta) and the City of Richmond (Richmond), and connects to key gateways such as Vancouver International Airport (YVR), Peace Arch and Pacific Canada-U.S. border crossings, BC Ferries' Tsawwassen terminal, Deltaport, and Boundary Bay Airport.

Transportation infrastructure in the Lower Mainland is planned and operated by a range of local, regional and provincial government agencies that are responsible for different parts of the system, including local roads, provincial highways, transit, and cycling and pedestrian facilities. The demands on transportation infrastructure in the region are constantly evolving in response to growth in population and changes in land use. EAO understands that due to the integrated nature of the system, all agencies have an interest in the overall performance of the regional transportation network and that ongoing dialogue on the performance of the system is part of the process of planning and operating the system.

MOTI has indicated that the rationale for GMTR is supported by ongoing monitoring of the performance of the Highway 99 corridor. GMTR has been proposed by MOTI to address both the current and anticipated congestion challenges on Highway 99.

### **4 Environmental Assessment Process**

#### **Pre-Application Stage**

On December 16, 2015, EAO determined that GMTR was reviewable pursuant to the Reviewable Projects Regulation, as it would include dismantling of an existing shoreline facility that would entail direct physical modification of foreshore and submerged land, and modification of a public highway over a continuous distance greater than 20 km. Consequently, EAO issued an order under Section 10 of the *Environmental Assessment Act* (the Act) requiring GMTR to undergo an EA.

On March 7, 2016, EAO issued an order under Section 11 of the Act (Section 11 Order), which set out the scope, procedures and methods for the EA. EAO conducted the EA in consultation with a technical working group composed of representatives of federal, provincial and local governments, with the mandates and skill sets relevant to the review of GMTR, as well as representatives of potentially affected Aboriginal groups listed on Schedule B of the Section 11 Order. EAO consulted the Aboriginal groups listed on Schedules B and C of the Section 11 Order.

A public comment period was held between January 15 and February 15, 2016 with two open houses, held in Richmond and Delta. More than 750 members of the public attended and approximately 450 comments were submitted during this time. Following a review and comment on the Project Description and Key Areas of Study (Project Description/Valued Components) by the public and on the draft Application Information Requirements (AIR) by the working group, EAO issued the final AIR on May 24, 2016.

On May 30, 2016, MOTI submitted an Application for an EA Certificate to EAO. On July 25, 2016, EAO concluded that MOTI's Application contained the information specified in the AIR; at that time EAO also issued a Section 24(4) Order, retroactively extending the Application screening period by 25 days. The extension was in response to MOTI's request to allow additional time to consider comments from the working group and EAO during Application screening.

### **Application Review Stage**

The up to 180-day Application Review stage of the EA started on July 27, 2016. Comments were provided to EAO on the Application by the working group, including Aboriginal groups, and the public.

EAO undertook public consultation activities during the course of Application Review, including holding a 61 day public comment period between August 3 – October 3, 2016, and three public open houses, in Richmond and Delta. One hundred and twenty public comments were submitted during the public comment period for Application Review. All public comments, and MOTI's responses to these comments, were considered by EAO in completing the EA.

EAO completed the EA and, on January 19, 2017, referred to Ministers for decision.

### **Other Required Authorizations**

If certified, GMTR would require various permits from federal, provincial and local government agencies. The key provincial permits would be provided by the BC Ministry of Forests, Lands and Natural Resource Operations for the construction of project components and the decommissioning of the Tunnel, under the *Land Act*, and *Water Sustainability Act*. Federal authorization would be required from Fisheries and Oceans Canada, Transport Canada, Vancouver Fraser Port Authority and Environment and Climate Change Canada to carry on the proposed work for constructing the project components and decommissioning the Tunnel.

A list of key permits and authorizations is provided in Table 1.2-1 of the assessment report.

## **5 Key Conclusions of the Environmental Assessment**

In conducting this EA, EAO considered the potential adverse environmental, economic, social, heritage and health effects, including cumulative effects, of GMTR. EAs in BC use valued components as an organizing framework for the assessment of the potential effects for proposed projects. Valued components are components of the natural and human environment that are considered by the proponent, Aboriginal groups, public, scientists and other technical specialists, and government agencies involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical or other importance. EAO's assessment report for GMTR is organized around the following valued components and intermediate components assessed in the Application.

<p><b>Environmental Effects</b></p> <ul style="list-style-type: none"> <li>• Air quality (section 4.1)</li> <li>• River hydrology and morphology (4.2)</li> <li>• Sediment and Water quality (4.2)</li> <li>• Fish and fish habitat (4.3)</li> <li>• Marine mammals (4.3)</li> <li>• Underwater noise (4.3)</li> <li>• At-risk amphibians (4.4)</li> <li>• Terrestrial wildlife (4.4)</li> <li>• Vegetation (4.5)</li> </ul>	<p><b>Socio-Economic Effects</b></p> <ul style="list-style-type: none"> <li>• Agricultural use (5.1)</li> <li>• Land use (5.2)</li> <li>• Visual quality (5.2)</li> <li>• Marine use (5.3)</li> <li>• Traffic (5.4)</li> </ul> <p><b>Heritage Effects</b></p> <ul style="list-style-type: none"> <li>• Heritage resources (6.1)</li> </ul> <p><b>Health Effects</b></p> <ul style="list-style-type: none"> <li>• Human health (7.1)</li> </ul>
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The assessment also considered how accidents and malfunctions (section 8.2) and effects of the environment on the project (section 8.3) could affect these valued components. These assessments were based on the Application provided by MOTI, supplemental materials, and consultation with the working group, including Aboriginal groups, and the public.

EAO's assessment report assesses the impacts of GMTR on all valued components, identifies key mitigation measures for each and reaches conclusions on their residual effects, none of which are determined to be significant. To ensure the effects of GMTR are sufficiently mitigated, EAO proposes 38 conditions to be included in the EA Certificate, if issued, along with a Certified Project Description.

The remainder of this section provides a summary of the key issues and concerns that were the focus of the EA, which include potential impacts to traffic, marine navigation and concerns related to Tunnel decommissioning, and potential adverse effects to fish and fish habitat. A detailed discussion of the assessment of each valued component and summary of issues can be found in the assessment report.

**Traffic Effects**

GMTR would include changes to Highway 99 and related road, transit, cycling and pedestrian networks, that are expected to improve existing traffic congestion and result in travel time savings and increase travel time reliability.

The Tunnel is scheduled to be decommissioned after the new bridge is constructed, to minimize potential traffic disruption during the construction period. However, during construction there are expected to be minor traffic delays as a result of construction-related vehicles interacting with regular traffic flows and a reduction of speed as vehicles enter construction zones. Infrequent full highway closures are expected, although closures would be scheduled for overnight periods or weekends to minimize traffic impacts. During peak-periods, such as weekday mornings and afternoons, current traffic throughput rates would be maintained so that travel times and congestion-related delays would be minimized. For off-peak traffic, lowered speeds through active construction zones would have a minor impact on travel times of one to two minute increases. MOTI's key mitigation measure during construction includes the development of a traffic and access management plan that would identify and address traffic management risks and approaches for managing traffic and communicating with stakeholders and the public.

The public and members of the working group raised several comments that questioned the proposed benefits of GMTR as it relates to reported congestion-relief and travel time savings, and in particular the potential for GMTR to increase traffic congestion at other crossings, particularly at the Oak Street Bridge and Alex Fraser Bridge. Working group members, and in particular Richmond and Metro Vancouver, noted that future traffic impacts at these other crossings may not be fully understood without further detailed analysis and additional modelling, as a result of uncertainty or low confidence in traffic models or assumptions made.

The Application included traffic modelling to estimate future traffic volumes at the new bridge and other Fraser River crossings, which is summarized in Table 1. The Application noted that without GMTR, there would be an increase of annual average daily traffic at nearby Fraser River crossings compared to current levels, but that GMTR would result in a minor decrease in traffic at the majority of Fraser River crossings. An exception is the Alex Fraser Bridge, which the Application estimated would experience a 17% increase in daily traffic by 2045, due to diversion from the new bridge, in response to the implementation of tolls during off-peak hours. The Application noted that some drivers currently choose to take the Alex Fraser Bridge instead of the Tunnel because of Tunnel congestion, even though it takes them out of their way to do so. In the future, it is expected that some midday, overnight and weekend traffic would choose to use the Alex Fraser Bridge rather than the new bridge to avoid tolls, although it is expected that there will be available capacity at the Alex Fraser Bridge during these times. During peak periods, and based on MOTI’s experience with the Port Mann Bridge, it is expected that peak period traffic would be more willing to pay the toll on the new bridge, when the benefits of avoiding peak period congestion at Alex Fraser Bridge are highest.

**Table 1: Two-way Annual Average and Daily Traffic Volumes at the George Massey Tunnel Crossing and on Adjacent Fraser River Crossings, With and Without the Project**

	2014-2015	2045	2045
Crossing	Measured	Without Project	With Project and Tolloed
George Massey Tunnel / new bridge crossing	81,000	100,000	72,000
Alex Fraser Bridge	107,000	120,000	140,000
Knight Street Bridge	92,000	94,000	93,000
Arthur Laing Bridge	76,000	90,000	91,000
Oak Street Bridge	80,000	87,000	85,000

The public and members of the working group also commented that the new bridge would result in a traffic bottleneck at Oak Street Bridge for northbound traffic. Oak Street Bridge traffic volumes have dropped between 2010 and 2015 since the introduction of the Canada Line, although the intersection of Oak Street and 70<sup>th</sup> Avenue is expected to remain congested for northbound rush-hour traffic in the future. Traffic conditions would be influenced by a number of factors, including increases in traffic from regional population and economic growth, as well as future operation of the signal lights at 70<sup>th</sup> Avenue. If northbound commuters change their preferred travel time to take advantage of potential time savings from the new bridge, there may be longer queue lengths at Oak Street during peak rush hour. However, it is expected that there would be an overall travel time savings for northbound commuters at this time as a result of decreased overall congestion from GMTR. It is also expected that the infrastructure included in GMTR, such as dedicated transit/HOV lanes, in conjunction with tolling, would support and

enable a mode shift towards greater use of transit and a reduction in single occupancy vehicle traffic across the Oak Street Bridge.

During the EA, Richmond expressed concerns that there was no analysis included in the Application of the potential impacts of increased traffic on local Richmond roads and intersections as a result of GMTR improvements, and no identification of mitigation measures. Richmond was of the view that MOTI should be responsible for funding and implementing any necessary local road improvements to address the impacts of future traffic volumes.

In addition to regularly meeting with Richmond to discuss these concerns, MOTI provided Richmond with supplementary analysis during the EA which reported that current serious congestion at the Tunnel during peak periods leads to delays to the local Richmond road network. The analysis predicted that GMTR would eliminate congestion delays and idling at the Tunnel, providing relief for a number of local Richmond roads, in particular for adjacent north-south municipal roads. MOTI also noted that a number of the aspects of GMTR were developed specifically to address Richmond's concerns and existing business impacts related to severe congestion.

EAO proposes conditions to address several of the concerns related to traffic during construction and operations. EAO proposes a condition requiring that a traffic and access management plan be developed, that would include measures to avoid or mitigate potential adverse effects to cycling, pedestrian and vehicular traffic and public transit service. The plan would also include measures for traffic control and re-routing scenarios, and how these would be communicated to stakeholders, emergency responders, municipalities and adjacent land users. EAO also proposes a condition requiring the establishment of a transportation working group for Highway 99, which would include municipalities, emergency service providers, health authorities, TransLink and Aboriginal groups. This transportation working group would ensure there is a forum to identify and discuss the operations of infrastructure along Highway 99 and integration with adjacent infrastructure. Operational traffic monitoring would be undertaken and reported to the transportation working group.

Considering the analysis summarized above and discussed in section 5.4 (traffic) of EAO's assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that GMTR would not have significant adverse residual effects on traffic.

### **Tunnel Decommissioning and Marine Navigation**

GMTR would include construction activities in the Fraser River South Arm and Deas Slough that have the potential to temporarily affect navigation, and commercial, recreational and Aboriginal fisheries, particularly during installation of the new bridge deck and decommissioning of the Tunnel.

Bridge deck installation is expected to be undertaken in two-day stretches per week, over approximately 18 weeks, and would involve lifting pre-fabricated deck segments from barges in the Fraser River. When the central segments of the bridge deck are installed, a temporary, one-directional navigation channel within the river would be implemented to allow construction and marine traffic to proceed safely. Larger vessels traveling through the channel during this time would be assisted by tug boats. A two-way navigation channel would be maintained during construction of the northern and southernmost portions of the bridge spans and vessels would be able to travel in both directions.

Full closures of the Fraser River South Arm navigation channel and Deas Slough are expected to be limited during construction and would be undertaken with substantial advanced notice and with early consultation with users of the river. Occasional closures of the deep draft channel, near the centre of the river, are expected during Tunnel decommissioning, and may last 8-10 hours up to twice a week, over a period of approximately 14 weeks.

MOTI would submit a Notice of Works form addressing the requirements of the *Navigation Protection Act* for construction activities in the Fraser River South Arm or Deas Slough that may interfere with marine use. The submission would include proposed measures to ensure accessibility of the navigation channel during construction and would also include the establishment of navigation protection zones to be maintained during marine-based construction activities. Navigation protection zones would be established in consultation with a marine users group to designate areas where navigation can occur safely during construction and would be delineated by navigational aids such as lighting or signage.

MOTI proposed key mitigation measures to reduce potential adverse effects resulting from construction and Tunnel decommissioning activities, which include: developing a marine access management plan that describes the measures to minimize potential construction-related access effects; scheduling Tunnel decommissioning during the least-risk timing window for the protection of juvenile salmon and eulachon; monitoring to assess the effectiveness of mitigation measures during construction; and continuing to consult Aboriginal groups in the development and implementation of mitigation measures and construction schedules and timing. MOTI also committed to avoid restricting or impeding access to the river during construction for Aboriginal fishers during fisheries openings.

Construction activities are expected to have a low-to-moderate magnitude effect on access to waterways and marine traffic volume, although access restrictions would be limited in duration and vary depending on the nature of the specific construction activity. No potential adverse effects on marine use are expected during operations due to the clear span bridge design over the Fraser River and Deas Slough. Removal of the Deas Slough Bridge is expected to improve navigability in this area.

Concerns were raised by members of the public and Aboriginal groups regarding the decommissioning of the Tunnel, asserting that removal of the Tunnel would facilitate large-scale, capital dredging of the Fraser River in the future to allow for an expansion of marine traffic. Requests were made by the public and some Aboriginal groups that the EA should consider potential future dredging and expansion of marine traffic in the cumulative effects assessment, and some groups requested that MOTI leave the Tunnel *in-situ* following the opening of the new bridge, to ensure future capital dredging could not occur. MOTI clarified that removing the Tunnel was necessary to eliminate future risk of damage to the new bridge and potential impact to shipping associated with significant seismic activity; to meet the Province's best practices regarding management of obsolete infrastructure; and to provide opportunities to restore Fraser River habitat. MOTI also noted during the EA that Tunnel removal would not result in changes to the size of vessels using the Fraser River, as the top of the Tunnel is level with the bottom of the river. Other factors, such as the width of the river, and the Metro Vancouver water main to the west of the Tunnel, limit the size of vessels that can navigate the river.

During the EA, EAO sought information from the Vancouver Fraser Port Authority, a member of the working group, about any potential future dredging plans for the Fraser River and the Vancouver Fraser Port Authority confirmed that there are no plans to undertake capital dredging in the Fraser River in the near future and that doing so would not be economically viable.

During the EA, Aboriginal groups, including Musqueam Indian Band, also raised concerns that due to relatively short fisheries windows in the Fraser River, any potential in-river construction activities that have the potential to impede access to Aboriginal fishing would be serious. They expressed concerns that the level of detail of MOTI's marine access management plan included in the Application, did not give them confidence that Aboriginal fisheries would not be affected. During the EA, at the request of EAO, MOTI submitted an outline of the proposed marine access management plan.

EAO proposes a condition requiring MOTI to establish a marine users group that would include government agencies, commercial and recreational marine users and Aboriginal groups, although EAO understands that some Aboriginal groups have requested that they be consulted by MOTI separately from the marine users group. EAO also proposes a condition requiring MOTI to develop a marine access management plan, in consultation with the marine users group and Aboriginal groups, that would identify existing traditional navigational routes, fishing areas, harvesting areas, commercial shipping use, Aboriginal groups' use, and any associated timing windows. The plan would also demonstrate how any disruption caused by construction to access for members of Aboriginal groups to carry out marine-based traditional use activities would be avoided or mitigated. In response to concerns that Tunnel decommissioning activities may impede or restrict access during limited fisheries openings, EAO also proposes a condition requiring MOTI to ensure that access to Aboriginal or commercial fisheries are not impeded, at any time during construction, where Fisheries and Oceans Canada sets openings for fisheries.

Considering the analysis summarized above and discussed in section 5.3 (marine use) of EAO's assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that GMTR would not have significant adverse residual effects on marine use.

### **Fish and Fish Habitat**

A number of fish species rely on aquatic habitats throughout the lower Fraser River during different life stages, and are of commercial, recreational and Aboriginal importance, including Pacific salmon, sturgeon, eulachon, trout and char.

The new bridge would be a clear span structure over the Fraser River South Arm with no instream piers. However, the assessment predicts permanent loss of fish habitat on the edges of Deas Slough and Green Slough due to a small overlap with the bridge approach support piers, which is expected to meet the definition of serious harm to fish under the *Fisheries Act*. MOTI committed that unavoidable effects on Deas Slough and Green Slough would be offset through the development of comparable habitat, to be described in a fish habitat offset plan, which would be developed in consultation with regulatory agencies and Aboriginal groups.

Activities associated with Tunnel decommissioning, including removal of sediment and the protective rock apron and concrete mattress on top of the Tunnel sections, have the potential to result in physical injury or direct mortality of fish from crushing or entrainment, and from potential exposure to elevated levels of total suspended solids. Tunnel removal is expected to commence in mid-summer after freshet flows have receded, and extend into the winter low-flow period. The estimated increase in total suspended solids is considered low, given the natural variability of suspended sediment seasonally and annually in the river main channel.

During the EA, the public and Aboriginal groups raised concerns regarding the effectiveness of fish habitat offsetting and proposed fish habitat enhancement opportunities, risk of underwater noise effects on fish, and that least-risk timing windows do not take into account upstream migration of adult salmon.

The Application proposed key mitigation measures to reduce potential adverse effects on fish and fish habitat resulting from instream construction and Tunnel decommissioning activities including the development of a fish and fish habitat management plan that describes measures to avoid or minimize potential adverse effects to fish and fish habitat, as well as a fish habitat offset plan that describes measures to offset any unavoidable footprint effects. Instream construction activities within Deas Slough and Green Slough would be conducted within areas of temporary infill or scheduled during periods of low tide. Sediment removal for Tunnel decommissioning is proposed to occur between July 16 and February 28, the least-risk timing window for the protection of juvenile salmon and eulachon. Adherence to this timing window would avoid or minimize the potential for harming these species. MOTI noted that other important fish species, such as sturgeon, would receive some level of protection by adhering to the least-risk timing window. MOTI also noted that sediment removal works anticipated as a result of Tunnel decommissioning are comparable in methods, but substantially smaller in scale and dredge volume, to annual maintenance dredging of other parts of the lower Fraser River. An underwater noise monitoring program would be implemented for activities that have the potential to generate underwater noise. In the event that an injury threshold were to be either exceeded or negative effects to fish noted, the activity would cease until additional mitigation measures were implemented.

EAO proposes a condition requiring MOTI to develop a fish and fish habitat management plan that would include mitigation measures and monitoring to ensure fish injury or mortality risks are avoided during in-water construction activities.

A *Fisheries Act* Authorization for serious harm to fish is expected to be required, based on consideration of project design and project-related unavoidable footprint effects that are expected to require offsetting. During the EA, MOTI submitted for review its Fisheries Authorization Application to Fisheries and Oceans Canada, which included a proposed fish habitat offset plan. EAO also proposes a condition requiring that a fish habitat offset plan be developed that includes measures to offset footprint effects through the development of onsite comparable habitat designed to maintain or improve productivity of the aquatic ecosystem.

Considering the analysis summarized above and discussed in sections 4.2 (hydrology) and 4.3 (fish and fish habitat) of EAO's assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that GMTR would not have significant adverse residual effects on fish and fish habitat.

### **Other Identified Effects and Proposed Conditions**

EAO's assessment report assesses the impacts of GMTR on various other valued components, and identifies key mitigation measures for each and reaches conclusions on their residual effects, none of which are determined to be significant. To ensure the effects of GMTR are sufficiently mitigated, EAO proposes a number of other conditions, which are discussed in the assessment report and listed in the Table of Conditions.

## 6 Aboriginal Consultation

EAO undertook consultation activities and produced an Aboriginal consultation report (Part C of the assessment report), which is included with the referral package for Ministers. This report details the consultation that occurred throughout the entire process, the issues that were raised by Aboriginal groups, the relevant mitigation and accommodation measures, and EAO's assessment of the seriousness of the potential impacts on each Aboriginal group's asserted or determined Aboriginal rights, including title, and treaty rights (Aboriginal Interests). A summary of Part C including EAO's consultation, key issues raised by Aboriginal groups, and EAO's conclusions about the potential impacts of GMTR on Aboriginal Interests is provided in this section.

Fifteen Aboriginal Groups were identified by EAO to be consulted on GMTR. These groups are specified in the legal order issued by EAO under Section 11 of the Act.<sup>2</sup> Throughout the EA, EAO consulted with the following Aboriginal groups at the middle to higher end of the Haida spectrum: Cowichan Tribes, Halalt First Nation, Katzie First Nation, Kwantlen First Nation, Lake Cowichan First Nation, Lyackson First Nation, Musqueam Indian Band, Penelakut Tribe, Hwlitsum, Semiahmoo First Nation, Squamish Nation, Stz'uminus First Nation, Tsawwassen First Nation and Tsleil-Waututh Nation. These Aboriginal groups were also invited to participate as members of the working group, comment on EA documents, and meet directly with EAO to discuss issues and concerns. EAO also delegated some procedural aspects of Aboriginal consultation to MOTI with these groups.

In addition, EAO shared information with People of the River Referrals Office, provided opportunity to comment on key EA documents, and offered to meet directly.

A more detailed description of the specific consultation activities and conclusions are discussed in section 14 of the assessment report.

Some of the general themes and issues raised by Aboriginal groups during the review of GMTR were:

- Adequacy of consultation;
- Economic impacts, including tolling of the new bridge;
- Health and human safety, including air quality;
- EA process and methodology;
- Social and cultural impacts;
- Cumulative effects and the high volume of new and proposed major projects in Vancouver/on the Fraser River;
- Potential expansion of shipping traffic facilitated from removal of the Tunnel;
- Accidents and malfunctions, including spills and other water quality effects during construction;
- Access restrictions to areas important for practice of Aboriginal rights, including fishing areas during construction;
- Protection of archaeological and heritage resources;
- Need for cultural awareness and project-related participation opportunities; and
- Other Aboriginal and treaty rights;

Section 13 of the assessment report includes a summary of each of these concerns as they relate to potential impacts on Aboriginal Interests (i.e. hunting, trapping, gathering, fishing and marine harvesting, other traditional and cultural practices, Aboriginal title), as well as other interests (accidents

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<sup>2</sup> [http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic\\_document\\_430\\_39946.html](http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_430_39946.html)

and malfunctions, health and human safety, socio-economic issues, cumulative effects, etc.). Relevant commitments by MOTI and EAO's conditions and responses, where available, are presented, along with accommodation measures, in relation to how they would address key Aboriginal Interests and concerns.

The Aboriginal consultation report includes sections that describe the key concerns raised by each Aboriginal group, the consultation undertaken with each Aboriginal group, and EAO's conclusions about the potential impacts of GMTR on each Aboriginal group's Aboriginal Interests.

In addition to discussing a range of concerns related to the potential impacts of GMTR, including concerns with the regulatory process, many Aboriginal groups also raised a concern about on-going opportunities to be consulted if GMTR were to proceed. EAO's proposed conditions include a number of management and monitoring plans on which Aboriginal groups would be consulted and also a condition that would require MOTI to submit updated Aboriginal engagement reports to EAO in consultation with Aboriginal groups. EAO also proposes a condition requiring that opportunities be offered for Aboriginal groups to participate in construction monitoring.

Specific to the concerns of Aboriginal groups related to a potential disruption of access to Aboriginal fishing and navigation on the Fraser River, EAO proposes a condition that would require MOTI to ensure access to fisheries is not impeded through construction during Aboriginal or commercial fisheries openings. In addition, EAO proposes a condition that would require MOTI to consult Aboriginal groups on the development of a marine access management plan that would include a description of how any disruption to an Aboriginal group's access caused by GMTR would be avoided or mitigated, or how construction schedules for marine-based activities would be communicated.

EAO also proposes a number of other conditions that would serve to address concerns raised by Aboriginal groups regarding potential impacts of GMTR, including requiring consultation with Aboriginal groups on conditions that are related to Aboriginal Interests. These proposed conditions include: an archaeological and heritage resources management plan; an Aboriginal cultural awareness and recognition plan; a noise management plan; an agricultural management plan; a fish and fish habitat management plan; a fish habitat offset plan; a water quality management plan; a drainage and stormwater management plan; a riverbed and hydrology management plan; wildlife and wildlife habitat management plans for construction and operations; a marine mammal management plan; a vegetation management plan; a traffic and access management plan; and a plan for site preparation in advance of construction. Other proposed EAO conditions referenced throughout this report include engagement with Aboriginal groups.

Impacts on Aboriginal Interests were assessed for each individual Aboriginal group and for each category of rights (e.g. fishing, hunting and trapping, gathering, and other traditional and cultural interests), where relevant. These impacts are described based on the level of seriousness of potential impacts, after mitigation, from negligible to serious, defined as follows:

- Negligible impact – no detectable impact or any change from current conditions;
- Minor impact – ability to exercise the right is minimally disrupted;
- Moderate impact – ability to exercise the right has been diminished or disrupted; and
- Serious impact – ability to exercise the right has been significantly diminished.

In some instances, EAO used hyphenated levels of impacts (e.g. minor-to-moderate), which indicates that the impacts fall between the two categories. EAO recognizes that the potential impacts on any Aboriginal group may vary in time and space. That is, impacts on Aboriginal Interests in one area of an

Aboriginal group's territory are not the same as elsewhere, and impacts during construction are not the same as during operations.

The impact assessment reported for each Aboriginal group is the greatest expected impact on the Aboriginal Interest as a result of routine construction and operations. Table 2 of this Report summarizes the EAO's conclusions regarding the depth of consultation owed to each Aboriginal group, the potential project-related impacts on Aboriginal Interests for each Aboriginal group, and the overall range of potential project-related impacts. It also identifies EAO's conclusion regarding the greatest potential impact on each Aboriginal group's Aboriginal Interests. As shown, one Aboriginal group is expected to have up to a minor-to-moderate level of impact, eight would have up to a minor level of impact, and five would have up to a negligible level of impact.

**Table 2 - Summary of EAO's conclusion for depth of consultation and impacts to Aboriginal Interests by Aboriginal group**

Aboriginal Group	Depth of Consultation	Assessed Impact on Aboriginal Interest					Aboriginal Title	Greatest Assessed Impact on Aboriginal Interests
		Freshwater Fishing, and Marine Fishing and Harvesting	Hunting and Trapping	Plant Gathering	Other Traditional and Cultural Interests			
Cowichan Tribes	Mid-to-high	Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor	
Halalt First Nation	Mid-to-high	Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor	
Katzie First Nation	Low	Negligible	Negligible	Negligible	Negligible	-	Negligible	
Kwantlen First Nation	Low-to-mid	Negligible	Negligible	Negligible	Negligible	-	Negligible	
Lake Cowichan First Nation	Mid-to-high	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor	
Lyackson First Nation	Mid-to-high	Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor	
Musqueam Indian Band <sup>3</sup>	Mid-to-high	Minor-to-Moderate	Negligible-to-minor	Negligible-to-minor	-	Minor	Minor-to-Moderate	
Penelakut Tribe	Mid-to-high	Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor	
Hwlitsum	See Penelakut Tribe	See Penelakut Tribe	See Penelakut Tribe	See Penelakut Tribe	See Penelakut Tribe	See Penelakut Tribe	See Penelakut Tribe	
People of the River Referrals Office	Low	None	-	-	None	-	None	
Semiahmoo First Nation	Low-to-mid	Negligible	Negligible	Negligible	Negligible	-	Negligible	

<sup>3</sup> EAO notes that "Cultural Continuity" and "Sense of Place and Spirituality" were assessed in place of "Other Traditional and Cultural Interests" for Musqueam Indian Band upon their request (see section 14.7 of the assessment report).

Squamish Nation	Low-to-mid	Negligible	Negligible	Negligible	Negligible	-	Negligible
Stz'uminus First Nation	Mid-to-high	Minor	Negligible-to-Minor	Negligible-to-Minor	Negligible-to-Minor	Minor	Minor
Tsawwassen First Nation	Treaty	Minor <sup>4</sup>	Negligible-to-Minor <sup>5</sup>	Negligible <sup>6</sup>	Negligible <sup>7</sup>	N/A (Treaty Nation)	Minor
Tsleil-Waututh Nation	Low-to-mid	Negligible	Negligible	Negligible	Negligible	-	Negligible

In general, EAO is of the view that construction and operation of GMTR would result in a minor level of impacts on Aboriginal groups' Aboriginal Interests during the construction phase and a negligible-to-minor level of impact on Aboriginal groups' Aboriginal Interests during the operation phase. There are a range of factors that contributed to a greater assessed impact on some Aboriginal groups' Aboriginal Interests, including: a greater number or proportion of traditional use sites or areas that would be impacted by GMTR; identification of key sites or areas of importance identified by the Aboriginal group that would be impacted by GMTR, and; ways in which GMTR could impact cultural or experiential aspects for an Aboriginal group. This information was made available by Aboriginal groups through the EA process.

### **Weighing of Impacts to Aboriginal Interests with Other Interests**

In weighing the impacts of GMTR on Aboriginal Interests as set out in EAO's assessment report and summarized above, EAO recommends that Ministers consider the following facts in the context of potential impacts on Aboriginal Interests:

- The nature of GMTR and its importance to the local, regional, and provincial economy;
- Resources or values that may no longer be available for future generations; and
- Benefits of GMTR to affected Aboriginal communities.

#### *Importance to provincial and regional economy*

MOTI estimated the benefits and costs of GMTR, which assumed a 10-lane bridge (with dedicated transit/HOV lanes, multi-use cyclist/pedestrian pathways, replacement interchanges, highway widening, and tolling), compared to the baseline option of maintaining the four-lane Tunnel.

<sup>4</sup> Assessment of impact on Tsawwassen First Nation fishing rights, including harvesting aquatic plants, under the Tsawwassen First Nation Final Agreement.

<sup>5</sup> Assessment of impact on Tsawwassen First Nation right to harvest wildlife and migratory birds under the Tsawwassen First Nation Final Agreement.

<sup>6</sup> Assessment of impact on Tsawwassen First Nation right to gather plants under the Tsawwassen First Nation Final Agreement.

<sup>7</sup> Assessment of impact on Tsawwassen First Nation right to practice Tsawwassen First Nation culture under the Tsawwassen First Nation Final Agreement.

GMTR benefits considered in the business case include:

- Quantified and unquantified user benefits, including reduced travel time, reliability and vehicle operating cost savings, traffic safety, seismic risk reduction, benefits to cyclists and pedestrians, or benefits to future transit;
- Economic development benefits, including increased economic activity and employment, both during construction and in the longer-term;
- Social and community benefits and considerations such as: improved community connectivity, improvements to Deas Island Regional Park, improved emergency response capability, and restoration of the Fraser River shoreline.

According to MOTI, the capital construction cost is expected to be approximately \$3.5 billion. GMTR would generate economic impacts through direct expenditures on goods and services, creation of employment opportunities and generation of tax revenues for local, provincial and federal governments. Construction is expected to provide \$518 million in tax revenue, including direct construction revenues of \$162 million accruing to the federal government and \$135 million to the provincial government.

Operating expenditures would generate up to \$4.0 million per year in tax revenues, including \$2.2 million to the federal government, \$1.6 million to the provincial government.

MOTI estimates that planning and construction expenditures for GMTR would result in direct employment benefits of more than 11,000 direct full-time equivalent (FTE) jobs. Indirect employment benefits would account for more than 8,500 FTEs in businesses that support and supply the direct construction activities. Employment during operations (road and bridge maintenance, tolling, administration) is expected to be in the range of 60 to 90 permanent direct jobs, primarily full-time. The majority of construction and operations jobs are expected to be filled from within BC, as has been the case with other Lower Mainland transportation projects in recent years.

Social and economic benefits are expected for local and Aboriginal communities, including training and education and employment opportunities.

#### *Resources or values available for future generations*

As described above and in the assessment report, traditional subsistence activities, such as hunting, gathering, and in particular, fishing, may be altered as a result of construction and operation of GMTR which could manifest itself through changes to local harvesting locations (including fishing sites and particularly during construction), behavioural alteration or sensory disturbance of environmental resources.

Although EAO believes there could be potential impacts to resources or values of importance to Aboriginal groups, the majority of this disturbance and impact would be expected to be negligible-to-minor. EAO is of the view that MOTI has made efforts to demonstrably understand and avoid high value areas for Aboriginal groups, by building on or adjacent to existing disturbed lands along the Highway 99 corridor, minimizing clearing wherever possible, designing the bridge to be a clear span across the Fraser River, and committing to ensure access to fisheries is not impeded through construction during Aboriginal or commercial fisheries openings in the Fraser River. Further consultation and analysis to support the development of management and monitoring plans prior to construction will require that

any additional key mitigation measures are implemented to ensure potential impacts are minimized, as required by EAO's proposed EA Certificate conditions.

### *Benefits to affected Aboriginal communities*

MOTI has indicated that GMTR would support employment, contracting and business development for Aboriginal groups including as follows:

- Offering capacity funding to support consultation activities;
- Identifying training and capacity building partnerships or other arrangements to increase opportunities for Aboriginal participation;
- Encouraging and supporting the use of Aboriginal and local businesses by encouraging suppliers and subcontractors to adopt local procurement; and
- Ongoing active engagement with Aboriginal groups to ensure that local Aboriginal communities benefit directly from GMTR, including opportunities related to employment, training and contracting.

MOTI is either actively engaged in, or will be pursuing, on-going long-term benefit agreement negotiations with the Aboriginal groups discussed above, although has not yet finalized agreements with Aboriginal groups as of January 2017. These benefit agreements would include opportunities related to employment, training and contracting.

## **7 Public Consultation**

Public consultation during the EA is intended to provide multiple opportunities for the public to understand the project and provide input to inform the EA. MOTI was required to prepare a public consultation plan early in the EA that set out MOTI's consultation objectives and activities. Through the course of the EA, MOTI submitted two public consultation reports to EAO describing the progress in implementing its public consultation plan.

EAO hosted the following two public comment periods and five open houses during the EA:

- The 31-day public comment period on the draft Valued Component Selection document was held from January 15 to February 15, 2016 and 450 public comment submissions were made. Two public open houses were held: one in Richmond on January 26, 2016 and the other in Delta on January 27, 2016. Approximately 750 people attended.
- The 61-day public comment period on the Proponent's Application was held from August 3 to October 3, 2016 and approximately 120 public comment submissions were made. Three public open houses were held: two in Delta (on August 17 and September 13, 2016), and one in Richmond on September 12, 2016. Approximately 500 people attended.

Many issues were raised by the public through the submitted public comments during the pre-Application and Application Review stages. These comments and MOTI's responses were considered by EAO and are discussed further in the relevant sections of the assessment report. Key issues raised by the public helped inform EAO's assessment of GMTR, including requests for supplemental information during the EA, the completion of EAO's assessment report, and the development of EAO's proposed EA Certificate conditions. Table 3 provides a summary of key issues, EAO conclusions and proposed conditions.

**Table 3 - Summary of key issues, EAO conclusions and proposed conditions**

Key Issue	Section in EAO's Assessment Report	EAO's Conclusion and Proposed EA Certificate Condition
<p><b>Traffic</b> – Concern that GMTR would result in increased traffic and congestion during construction and at other crossings, such as the Oak Street Bridge and the Alex Fraser Bridge, during operations.</p>	<p>Section 5.4 (Traffic)</p>	<p>EAO assessed the potential residual adverse effects on traffic and concluded that GMTR would not have significant adverse effects to traffic.</p> <p>EAO proposes a condition requiring the development of a <b>traffic and access management plan</b> that will include measures to avoid or mitigate potential effects associated with construction and operations to cycling, pedestrian and vehicular traffic, and levels of public transit service.</p> <p>EAO acknowledges the concerns raised by members of the public and the working group with respect to potential adverse effects to traffic within and beyond the Highway 99 corridor during operations. In response, EAO proposes a condition that would require establishing a <b>transportation working group for the Highway 99 corridor</b>, where issues related to traffic monitoring will be discussed. The condition would also require the reporting of operations traffic conditions after the first and third year of operations.</p>
<p><b>Public Transit, Cycling and Pedestrian Routes</b> – Members of the public requested that GMTR include a light rail line to improve public transit. Further concerns were expressed that GMTR should have greater focus on transit generally.</p>	<p>Sections 5.2 (Land use) and 5.4 (Traffic)</p>	<p>EAO understands that MOTI has worked with TransLink and local municipalities, including Richmond, Delta and Metro Vancouver, to identify the improvements that could be incorporated into the project design to provide needed capacity improvements, while also further encouraging alternatives to single occupancy vehicles on this corridor. EAO notes that the new bridge would be built to also accommodate potential future rapid transit.</p> <p>EAO proposes a condition requiring the establishment of a <b>transportation working group for the Highway 99 corridor</b>. MOTI would be required to monitor and report on operations traffic conditions, including transit ridership, cyclist traffic and pedestrian traffic, after the first and third year of operations.</p> <p>EAO also proposes a condition requiring the development a <b>traffic and access management plan</b>,</p>

Key Issue	Section in EAO's Assessment Report	EAO's Conclusion and Proposed EA Certificate Condition
		which would include measures to avoid or mitigate potential effects associated with construction and operations to cycling, pedestrian and vehicular traffic, and levels of public transit service.
<p><b>Potential Future Dredging and Industrialization of the Fraser River</b> – Concern that the purpose of removing the Tunnel is to deepen the channel accommodate further industrialization of the Fraser River.</p>	Section 5.3 (Marine Use)	<p>EAO requires a cumulative effects assessment be completed as part of an Application for an EA Certificate, which includes consideration of any past, present, or reasonably foreseeable projects. EAO is not aware of any plans to dredge the Fraser River beyond regular maintenance dredging, therefore this potential future activity was not considered within the scope of the EA.</p> <p>MOTI clarified during the EA that the rationale for removing the Tunnel is to eliminate the future risk of damage to the new bridge and impact to shipping associated with significant future seismic activity; to meet MOTI's best practice regarding management of obsolete infrastructure; and to provide opportunities to restore Fraser River habitat. In addition, MOTI noted during the EA that removing the Tunnel would 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.</p> <p>During the EA, the Vancouver Fraser Port Authority confirmed that the port authority has no plans to dredge the Fraser River to create a wider or deeper navigation channel<sup>8</sup></p>
<p><b>Project Alternatives</b> – Concerns on the need for GMTR and whether other alternatives to GMTR were considered.</p>	Section 2.5 (Project Benefits and Purpose) and Section 2.4 (Alternative Means of Undertaking the Project)	<p>EAO is aware that MOTI undertook consultation prior to entering the EA process which focused on the need for improvements at the crossing and exploring options for replacing the Tunnel. Reports summarizing MOTI's early consultation can be found on MOTI's website (<a href="http://www.masseytunnel.ca">www.masseytunnel.ca</a>).</p> <p>MOTI evaluated five alternatives for the replacement of the Tunnel, which are described in greater detail in section 1.4.2 of the Application. The Application reported that the preferred alternative of replacing the Tunnel with a new bridge would have the greatest</p>

<sup>8</sup>[http://a100.gov.bc.ca/appsdata/epic/documents/p430/1479850750565\\_TbKyY05SGkPhPPnbFtrbTf8sv70n7L6vhvVdTFbdRI4F6C561Jht!1319920707!1479850386706.pdf](http://a100.gov.bc.ca/appsdata/epic/documents/p430/1479850750565_TbKyY05SGkPhPPnbFtrbTf8sv70n7L6vhvVdTFbdRI4F6C561Jht!1319920707!1479850386706.pdf)

Key Issue	Section in EAO's Assessment Report	EAO's Conclusion and Proposed EA Certificate Condition
		<p>ability to improve access across the highway between communities, pedestrian and cyclist accessibility and connectivity between agricultural areas on either side of the corridor. It also would involve the least amount of in-river disturbance, and have the greatest positive influence on local air quality.</p> <p>The Application proposed the replacement of the existing Tunnel with a 10-lane bridge, which EAO assessed during the EA.</p>
<p><b>Tolling</b> – Concerns regarding the price of the tolls, as well as the potential increase of traffic congestion at other locations if drivers switch to other crossings to avoid paying a toll on the new bridge.</p>	<p>Section 2.2.3 (Tolling) and Section 5.4 (Traffic)</p>	<p>EAO is aware that there continues to be discussion regarding funding future transportation initiatives in greater Vancouver and that a number of road pricing options have been suggested, including that all bridges in the region should be tolled. EAO anticipates that discussions regarding regional tolling will continue in the future and that any changes to the Provincial Tolling Guidelines may affect additional crossings, which EAO understands MOTI would consider in advance of the new bridge opening, if certified.</p> <p>EAO assessed that, based on the modelling presented in the Application and discussions with the working group, GMTR would result in a minor decrease in traffic at the majority of Fraser River crossings. An exception is the Alex Fraser Bridge, which the Application estimated would experience a 17% increase in daily traffic by 2045 due to diversion from new bridge, in response to the implementation of tolls during off-peak hours.</p>
<p><b>Air Quality and Climate Change</b> - Concerns about emissions from GMTR and potential effects on the regional air quality, as well as greenhouse gases (GHG) and climate change.</p>	<p>Section 4.1 (Air Quality)</p>	<p>EAO assessed the potential residual adverse effects on air quality and concluded that GMTR would not have significant adverse effects on air quality and that air quality would generally improve as a result of GMTR. Forecasted GHG emissions are also expected to largely decrease as a result of GMTR.</p> <p>EAO proposes a condition that would require the development of a <b>construction environmental management plan</b> that would include the means by which air quality during construction would be addressed.</p>
<p><b>Agriculture</b> – Concerns about the potential effects to farmland in Delta and Richmond, the</p>	<p>Section 5.1 (Agricultural use)</p>	<p>EAO assessed the potential residual adverse effects on agricultural use and concluded that GMTR would not have significant adverse effects.</p>

Key Issue	Section in EAO's Assessment Report	EAO's Conclusion and Proposed EA Certificate Condition
removal of land from the Agricultural Land Reserve, and potential impacts of increased salinity at the 80 <sup>th</sup> Street pump station resulting from Tunnel decommissioning.		EAO proposes a condition requiring the development of an <b>agricultural management plan</b> that would include post-construction monitoring requirements, the methods to identify and inform farm operators of potential disruption, a description of how the acquisition of land parcels would be offset, and monitoring of salinity levels at the 80 <sup>th</sup> Street pump station.
<b>Fish and Fish Habitat</b> – Concerns about the potential effects of the Tunnel removal on fish and fish habitat in the Fraser River.	Section 4.3 (Fish and Fish Habitat and Marine Mammals)	<p>EAO assessed the potential residual adverse effects on fish and fish habitat and concluded that GMTR would not have significant adverse effects on fish and fish habitat.</p> <p>EAO proposes a condition that would require the development of a <b>plan for offsetting the loss of habitat</b> in Deas Slough and Green Slough and a monitoring program to evaluate the effectiveness of mitigation and offsetting measures.</p> <p>EAO also proposes a condition requiring the development of a <b>fish and fish habitat management plan</b>, which would include mitigation measures to be implemented, identification of reduced risk work windows, as well as identification of underwater noise monitoring to be conducted.</p>
<b>Public Consultation and EA Process</b> – Concern that public consultation was not adequate and concern with the rigour of the EA process and neutrality of EAO.	Section 3 (Assessment Process), including Section 3.6 (Public Consultation).	<p>EAO considered all public comments received during the public comment periods and MOTI's responses during the EA. EAO has conducted public consultation in accordance with the Public Consultation Regulation pursuant to the Act.</p> <p>EAO's working group is the principal forum for the technical review of proposed projects undergoing an EA. The working group provided advice to EAO and MOTI on technical issues which fell within each working group member's mandate. The working group is made up of provincial, federal and local government staff with the mandates and skills relevant to the review of a proposed project and representatives of potentially affected Aboriginal groups.</p> <p>During Application Review, EAO requested additional reference materials and supplemental information from MOTI to support the review of GMTR. EAO's requests were primarily driven by concerns raised and requests submitted by the public, working group and Aboriginal groups. All of the supplementary information provided</p>

Key Issue	Section in EAO's Assessment Report	EAO's Conclusion and Proposed EA Certificate Condition
		by MOTI to EAO during the EA was made available on EAO's website at <a href="http://www.eao.gov.bc.ca">www.eao.gov.bc.ca</a> .

## 8 Local Government Consultation

The following local and regional governments were invited to participate on the EAO working group: City of Richmond (Richmond), Corporation of Delta (Delta) and Metro Vancouver.

Richmond expressed several areas of concern, which included:

- Traffic, including: impacts to local road systems; potential increased congestion at the Oak Street Bridge; the rationale for a 10-lane bridge versus 8-lane bridge; and MOTI's traffic modelling assumptions used in the Application;
- Drainage concerns, including from the new bridge;
- Potential adverse effects to agriculture and land use;
- Potential effects to the Richmond Nature Park and Garden City Lands;
- Project design and visual effects, particularly related to the new Steveston interchange;
- Potential increased noise and decreased air quality as a result of GMTR in nearby residential areas;
- Downloading of major expenditures onto local governments for road improvements;
- A request for a net gain of Environmentally Sensitive Areas and Riparian Management Areas; and
- Interest in there being a federal EA of GMTR.

Metro Vancouver expressed several areas of concern, which included:

- Insufficient consideration of alternatives to a 10-lane bridge;
- Lack of integration of GMTR into the regional growth strategy and transportation network;
- Ecological disruption to the Fraser River estuary, an important habitat for salmon and birds;
- Impacts to Metro Vancouver infrastructure, including water mains and sewer lines;
- Recreational and ecological disruption on Deas Island Regional Park;
- Downloading of major expenditures onto local governments for road improvements;
- Negative effects on transit ridership and affordability;
- Insufficient consideration of climate change and air quality;
- Lack of transparency and consultation with respect to design and business case; and
- Interest in there being a federal EA of GMTR.

Delta noted the importance of the Highway 99 corridor for the movement of people and goods and expressed its support for various aspects of GMTR, including:

- Reducing traffic congestion for Delta commuters;
- Addition of more lanes and ability to accommodate future rapid transit and light rail; and
- Creating opportunities to pedestrians and bikes that currently do not exist.

During the EA, Delta also provided comments related to ensuring that GMTR provide for public transportation and transit, and avoid potential effects on agricultural use, including the salt wedge in the Fraser River and the 80<sup>th</sup> Street Pump Station.

EAO has considered the concerns of and potential effects to local governments during the EA and these concerns are discussed further in the relevant sections of the assessment report. Key issues raised by local governments helped inform EAO's assessment of GMTR, including requests for supplemental technical information during the EA, the completion of EAO's assessment report, and the development of EAO's proposed EA Certificate conditions.

## 9 Federal Government Participation

The following federal departments with specialist information or expert knowledge participated in the evaluation and the review of GMTR:

- Environment and Climate Change Canada provided comments and information related to their regulatory and statutory responsibilities for wildlife and wildlife habitat, species at risk, wetlands, and air quality;
- Transport Canada provided comments and information related to their regulatory and statutory responsibilities related to marine use and navigable waters; and
- Vancouver Fraser Port Authority provided comments and information related to their regulatory and statutory responsibilities related to river hydraulics and morphology and marine transportation and use.

This knowledge and input helped inform EAO's assessment of GMTR, including requests for supplemental technical information during the EA, the completion of EAO's assessment report, and the development of EAO's proposed EA Certificate conditions.

## 10 Conclusion

Based on:

- Information contained in MOTI's Application and the supplemental information provided during Application Review;
- MOTI and EAO's efforts at consultation with Aboriginal groups, federal, provincial and local government agencies, and the public, and MOTI's commitment to ongoing consultation;
- Comments on GMTR made by Aboriginal groups, federal, provincial and local government agencies, as members of EAO's working group, and MOTI and EAO's responses to these comments;
- Comments on GMTR received during the public comment period, and MOTI's responses to these comments;
- Issues raised by Aboriginal groups regarding potential impacts of GMTR and MOTI's responses and best efforts to address these issues;
- The design of GMTR as specified in the proposed Schedule A (Certified Project Description) of the EA Certificate to be implemented by MOTI during all phases of GMTR; and
- Mitigation measures identified as proposed conditions in Schedule B (Table of Conditions) of the EA Certificate to be undertaken by MOTI during all phases of GMTR.

EAO is satisfied that:

- The EA process has adequately identified and assessed the potential adverse environmental, economic, social, heritage and health effects of GMTR, having regard to the proposed conditions set out in Schedule B (Table of Conditions) to the EA Certificate;
- Consultation with Aboriginal groups, federal, provincial and local government agencies, and the public have been adequately carried out and that efforts to consult with Aboriginal groups will continue on an ongoing basis;
- Issues identified by Aboriginal groups, federal, provincial and local government agencies, and the public, which were within the scope of the EA, were adequately and reasonably addressed during the review of the Application;
- Practical means have been identified to prevent or reduce any potential adverse environmental, social, economic, heritage or health effects of GMTR such that no direct or indirect significant adverse effect is predicted or expected;
- The potential for adverse effects on the Aboriginal rights and title of Aboriginal groups has been avoided, minimized or otherwise accommodated to an acceptable level; and
- The provincial Crown has fulfilled its obligations for consultation and accommodation to Aboriginal groups relating to the issuance of an EA Certificate for GMTR.