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**To:** General Purposes Committee **Date:** January 12, 2016  
**From:** Victor Wei, P. Eng. **File:** 01-0150-20-  
Director, Transportation THIG1/2015-Vol 01  
**Re:** **George Massey Tunnel Replacement – City Comments on Project Definition Report**

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**Staff Recommendation**

1. That the Ministry of Transportation and Infrastructure (MoTI) be advised that while the City supports the objectives of the George Massey Tunnel Replacement Project to ease traffic congestion at the existing tunnel area, improve transit and cycling connections and replace aging highway infrastructure to enhance public safety, as described in their Project Definition Report, the following issues must be addressed by MoTI prior to advancing the project for further design and the procurement process:
  - (a) Provision of further details to demonstrate how the overall project will:
    - (i) Have a net zero or positive impact to agricultural land, and
    - (ii) Maintain, protect and enhance the City's riparian management areas and environmentally sensitive areas through a net gain approach;
  - (b) Determination of how the toll rate will be implemented so that it would be fair, equitable and part of a region-wide mobility pricing policy consistent with the Mayors' Council vision for regional transportation investments in Metro Vancouver;
  - (c) Immediate commencement of discussions by MoTI with the Cities of Vancouver and Richmond to jointly establish a contingency plan to address any potential increased traffic queuing on Highway 99 at the approach to the Oak Street Bridge;
  - (d) Collaboration with the City to identify appropriate infrastructure improvements to minimize any negative impacts from the widened bridge crossing and associated interchanges on the local road network including Steveston Highway, Westminster Highway, No. 5 Road, Van Horne Way, and Rice Mill Road;
  - (e) Encouragement of project proponents by MoTI to achieve a creative and innovative iconic design of the new bridge that recognizes its significance of being the largest bridge to be built in British Columbia; and
  - (f) Facilitate excellence in supporting sustainable transportation options through:
    - (i) Partnership with TransLink to ensure that the transit stops within the Steveston Highway and Highway 17A interchanges are operational on opening day,

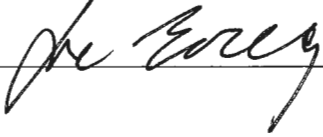

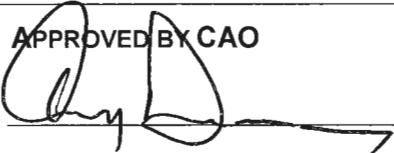
- (ii) Provision of a multi-use path for pedestrians and cyclists on each side of the new bridge of sufficient width to safely accommodate all users in order to:
  - i. Improve safety by minimizing the crossing of Highway 99 on- and off-ramps at Steveston Highway that are planned as free flow,
  - ii. Minimize circuitousness and maximize convenience, and
  - iii. Better address existing and future demand;
- (iii) Inclusion of pedestrian and cycling facilities as part of the new Steveston Highway and Westminster Highway interchanges and on both sides of the Blundell Road overpass, and
- (iv) Provision of improved pedestrian and cycling facilities on Shell Road as part of the widened Shell Road overpass.

2. That the BC Environmental Assessment Office be requested to extend the deadline for comments on the draft Application Information Requirements from February 10, 2016 to March 15, 2016 to provide the City with sufficient time to provide meaningful input.



Victor Wei, P. Eng.  
 Director, Transportation  
 (604-276-4131)

Att. 4

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Parks Engineering Sustainability Policy Planning	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

## Staff Report

### Origin

Further to staff memoranda and reports providing regular updates on the George Massey Tunnel Replacement (GMTR) project and, more recently, the release of the Project Definition Report<sup>1</sup> (PDR) and Technical Briefing presentation<sup>2</sup> to the public on December 16, 2015 as well as the Draft Concept<sup>3</sup> (released early January 2016), this report provides staff comments on the PDR vis-à-vis the six project objectives endorsed by Council in June 2014 and other issues arising from Council's discussions on this project. These comments, upon endorsement by Council, would then be forwarded to the Ministry of Transportation and Infrastructure (MoTI) for consideration as part of its current Phase 3 consultation on the project that will close on January 28, 2016.

### Findings of Fact

#### Project Scope

The geographic scope of the GMTR project is from Bridgeport Road in the north and the Highway 91-Highway 99 interchange in Delta in the south. The project has the following primary elements:

- A new 10-lane bridge replacing the existing George Massey Tunnel at the current location.
- New interchanges at Westminster Highway, Steveston Highway and Highway 17A.
- Median HOV/bus lane between Bridgeport Road and Highway 91 in Delta with transit stops on either side of the bridge within the Steveston Highway and Highway 17A interchanges.
- Dedicated transit connection between Highway 99 and the Bridgeport Canada Line Station.
- Provisions for future rapid transit
- New bridge to include a multi-use path for cyclists and pedestrians on the west side only.
- Replacement of Highway 91 overpass north of Westminster Highway interchange.
- New Blundell Road overpass with no connections/ramps to Highway 99.
- Widen Shell Road overpass.
- New connection between Highway 99 and Rice Mill Road.
- Decommissioning of the tunnel with the extent to be determined as part of the Environmental Assessment (EA) process.
- Replacement of the Deas Slough Bridge.
- New southbound exit to River Road in Delta.

The 10 traffic lanes on the new bridge will be comprised of one HOV/transit lane, three general purpose lanes and one climbing/merging lane in each direction. The project scope does not identify any improvements at the Oak Street Bridge.

The bridge will be designed to accommodate future rapid transit and will have the same vertical clearance as the Alex Fraser Bridge (i.e., 57 m from the high water mark). The project scope does

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<sup>1</sup> Available online at: <http://engage.gov.bc.ca/masseytunnel/files/2015/12/GMT-Project-Definition-Report-Dec-2015.pdf>.

<sup>2</sup> Available online at: [http://engage.gov.bc.ca/masseytunnel/files/2015/12/GMT-2015-12-16\\_Technical-Briefing-Presentation.pdf](http://engage.gov.bc.ca/masseytunnel/files/2015/12/GMT-2015-12-16_Technical-Briefing-Presentation.pdf)

<sup>3</sup> Available online at: <http://engage.gov.bc.ca/masseytunnel/files/2016/01/PDR-Concept-Dec-2015.pdf>.

not include dredging of the Fraser River. The PDR states that removing the tunnel would increase the water draft by less than two metres and that the tunnel is not the shallowest point within the main shipping channel of the Fraser River; the Steveston Cut at the mouth of the river is shallower.

### Project Funding

The PDR states that the Province intends to fund the project through user tolls and is also seeking a contribution from the federal government towards the project. In response to questions from the media regarding a funding contribution from Port Metro Vancouver (PMV), Minister Stone stated that PMV was a stakeholder and the two parties are in discussion on potential funding support from PMV towards the project. Minister Stone further indicated that the GMTR project and the major projects in TransLink's Regional Transportation Strategy (i.e., expansion of rapid transit in Vancouver and Surrey plus replacement of the Pattullo Bridge) are all equal priorities for the Province in seeking funding support from senior government. The Province also remains committed to one-third funding support for the major projects in the Regional Transportation Strategy.

### **Analysis**

#### Council-Endorsed Project Objectives

At the June 23, 2014 Council meeting, six project objectives were endorsed and forwarded to the Ministry of Transportation and Infrastructure (MoTI) for its consideration in the development of a preferred project scope of improvements. The next six sections briefly state the project objective and staff's analysis and recommendations with respect to the consistency of the PDR with the project objective.

#### Project Objective 1: Land Use Impacts

*Project Objective: Ensure a net zero or positive impact to agricultural land.*

The draft PDR concept contains a conceptual drawing for the new Steveston Highway interchange (Attachment 1) that indicates a smaller footprint than the existing interchange, achieved via grade separation of the ramps (i.e., three levels), which suggests that there may be surplus land within the southeast quadrant that could be returned for other (e.g., agricultural) uses. However, this design is not shown in sufficient detail to indicate the exact land requirements with dimensions to confirm that the proposed interchange footprint is indeed less than the existing and by how much. This conceptual design is also subject to further change and will not be finalized until the procurement stage.

The PDR does not identify the extent of any required widening of Highway 99 north of Steveston Highway interchange. GMTR project staff have verbally advised staff that up to an additional 18 m of right-of-way will be required on the west side of Highway 99 between Blundell Road and Steveston Highway, which would also impact the City's parkland at the Gardens site. Separately, however, MoTI staff (who are not part of the GMTR team) reviewing a development application for a property adjacent to the west side of Highway 99 advised City staff within the Development Applications department that up to an additional 25 m of right-of-way will be required. Despite these off-setting elements, a fact sheet for the project states that the project design features "*Net zero impact to Agricultural Land Reserve by minimizing land*

*requirements for roadway and repatriating for agricultural use surplus lands created by developing more efficient interchanges.”*

Staff have kept the GMTR team apprised of the current review of the City’s Backlands Policy particularly with respect to the potential establishment of a farm access road and how any required Highway 99 widening may impact adjacent properties and the location of the road. Staff have also stated that it is the City’s expectation that the GMTR project would respect and address any requirements of the City’s Backlands and Environmentally Sensitive Areas (ESAs) policies, including any requirements associated with Riparian Management Areas (RMAs), which are designated on both sides of Highway 99. Staff will continue to provide input to the GMTR team to encourage a positive impact to agricultural land (beyond a net zero impact) as well as to ensure the protection and enhancement of the City’s RMAs and ESAs, consistent with Council’s objective.

*Staff Recommendation:* Staff recommend that the City seek further details from the GMTR team to substantiate how the overall project will have a net zero or positive impact to agricultural land as well as maintain, protect and enhance the City’s RMAs and ESAs through a net gain approach.

#### Project Objective 2: Support Regional Transportation Vision

*Project Objective:* *Any expanded peak-hour lane capacity on a new bridge should be dedicated to a specific use (e.g., transit, HOV, trucks) rather than open to general purpose. The project should also include effective improvements to support the increased use of transit, cycling, carpooling and walking in the vicinity of interchanges.*

Of the expanded peak hour lane capacity (i.e., beyond the existing three general purpose traffic lanes) of two additional vehicle lanes, one lane is dedicated for HOV/ transit use while the other lane is identified for climbing/merging but will be open to general purpose traffic, which is not entirely consistent with the Council objective that any additional lanes be dedicated to a specific use.

The PDR states that the new bridge will be tolled which, if applied strategically, may help support regional goals for 2045 that more than one-half of the region’s trips to be by means other than private vehicle and for kilometres driven by auto to be reduced by one-third. The PDR contains no information on the toll rate or how a toll would integrate with the Province’s existing tolling policy. In response to questions from the media regarding a provincial review of the tolling policy, Minister Stone stated that the review will await the results of the public consultation phase of the PDR and that the Ministry invites any public comments on the provincial tolling policy. With respect to the toll rate, Minister Stone stated that the rate has not been determined as:

- the potential funding contribution from the federal government has not been confirmed (a contribution may either reduce the toll rate or the length of repayment period), and
- setting a toll rate now would unduly influence the procurement process.

The PDR also states that traffic diversion to the non-tolled Alex Fraser Bridge is anticipated to occur only during weekday evenings and weekend (i.e., outside of peak periods). Minister Stone

stated that only 14 per cent of traffic using Highway 99 is expected to divert to the Alex Fraser Bridge.

Given that the long-term funding strategy for the Mayors' Council vision is predicated on the implementation of a region-wide mobility pricing policy, the construction of a new tolled bridge presents an opportune moment to initiate work on this policy in partnership with TransLink, particularly as the region's existing and planned tolled facilities will be located solely on bridge crossings linking the region south of the Fraser River,<sup>4</sup> which also raises questions of fairness and equity.

Regarding the PDR's compatibility with other aspects of the regional transportation vision, further discussion of improvements to support increased use of sustainable transportation options is provided under Project Objectives 4 and 6 below.

*Staff Recommendation:* Staff recommend that the City seek clarification as to how the toll rate will be implemented to ensure that it will be fair, equitable and consistent with the Mayors' Council vision for regional transportation investments in Metro Vancouver.

### Project Objective 3: Reduce Congestion

*Project Objective:* Travel times, reliability and GHG emissions from idling vehicles should be improved along the entire corridor including connecting roadways and not be simply moved to further downstream.

The PDR states that a 10-lane bridge with a one transit/HOV lane in each direction will eliminate congestion from opening day and accommodate future traffic growth, with no significant congestion to at least 2045. The average commuter is estimated to save 25 to 35 minutes daily in travel time, which would also reduce GHG emissions due to idling of vehicles in congestion at the approaches to this crossing.

With respect to the Oak Street Bridge, the PDR states that the current traffic signal operation at Oak Street-70<sup>th</sup> Avenue is a constraining factor in terms of limiting capacity but does not identify a traffic management strategy to address potential congestion at this location, which is the primary cause of traffic queuing at the Oak Street Bridge. The PDR states that "*there won't be additional cars crossing the Oak Street Bridge because of the new bridge*" as any increased trips to Vancouver are anticipated to be accommodated by a mode shift to transit use. Staff will seek detailed multi-modal travel demand forecast analysis from the GMTR team to substantiate this finding.

The PDR further states that "*because people know that they're no longer going to be stuck in traffic at the George Massey crossing – saving up to 30 minutes a day – they may change their preferred travel time. This could make queue lengths at Oak Street a little longer during the busiest part of rush hours,*" thus recognizing that there will be queuing.

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<sup>4</sup> The Golden Ears Bridge and the Port Mann Bridge are existing tolled facilities while the Pattullo Bridge replacement and the Massey Tunnel replacement are planned as tolled facilities.

In addition, the business case for the PDR states that “for the Richmond local road network, an increase in northbound traffic is forecast for the busiest hour of the morning peak period” based on traffic modelling predictions for 2045.

Staff Recommendation: Staff recommend that MoTI be requested to commence discussions immediately with the Cities of Vancouver and Richmond to jointly establish a contingency plan to address any potential increased traffic queuing on Highway 99 at the approach to the Oak Street Bridge.

#### Project Objective 4: Supporting Connections

Project Objective: The project scope, design and budget should include connecting pedestrian, cycling, transit, and related roadway improvements at both ends of the crossing and along the Highway 99 corridor.

The documents identify potentially significant impacts to the City’s local road network not only in the immediate vicinity of the new interchanges (e.g., Westminster Highway (see Attachment 2), Steveston Highway and No. 5 Road) but also with new connections beyond the interchanges that would impact local roads and trails such as Van Horne Way-Bridgeport Trail (see Attachment 3) and Rice Mill Road. While both of these new local connections would have the potential benefit of significantly enhancing highway access to and from the adjacent areas, the PDR does not provide any details as to the scope of these connections, the magnitude of potential traffic volumes or any needed improvements to the local roads (for motorists, cyclists and pedestrians) to accommodate these changes in traffic volumes.

Further information is required (e.g., forecast traffic volumes and details of highway improvements) to assess any required improvements for all other road users (pedestrians, cyclists, transit) to accommodate the potential changes in traffic patterns. Per the Council objective, any local roadway tie-ins triggered by the project should be included in the design, scope and budget of the overall project.

Staff Recommendation: Staff recommend that the GMTR team collaborate with the City to identify appropriate infrastructure improvements that will minimize any negative impacts from the widened bridge crossing and associated interchanges on the local road network including Steveston Highway, Westminster Highway, No. 5 Road, Van Horne Way, and Rice Mill Road.

#### Project Objective 5: Iconic Bridge Design

Project Objective: The new bridge should provide a provincial and regional legacy by incorporating a creative architectural design to signify it as an iconic visual gateway.

The new bridge will be the largest to be built in British Columbia, the longest cable-stayed bridge in North America and one of the widest. At about three kilometres long, the bridge will be 65 per cent longer than the Port Mann Bridge and 32 per cent longer than the Alex Fraser Bridge. The current PDR shows a rendering of the new bridge being similar to the Alex Fraser Bridge and other recently built cable stay bridges (i.e., Port Mann and Golden Ears Bridges).

Being the first river crossing on Highway 99 when entering the western part of the region from the south, the new bridge will be a “gateway” to Canada’s Pacific coast, not just Richmond, and

should make a strong, elegant statement. Opportunities exist now during the planning process and before the procurement process to encourage the design of a spatially and visually attractive bridge without resulting in substantial increase of project cost. These architectural features may include:

- streamline the two towers to create a unique look from other recently built bridges;
- add decorative elements to the towers to improve the proportions and expression;
- incorporate night-time lighting (solar-powered if possible) that gives the bridge a memorable signature/postcard image; and
- create a must-see outdoor shoreline experience along both sides of the Fraser River that entices bridge users to visit, look at the view and enjoy the amenities.

*Staff Recommendation:* Staff recommend that project proponents be encouraged by MoTI to achieve a creative, appealing and innovative iconic design for the new bridge that recognizes its significance of being the largest bridge to be built in British Columbia.

#### Project Objective 6: Sustainable Transportation Options

*Project Objective:* Promote excellence in facilitating sustainable transportation options including the potential of rapid transit in the near future.

The project scope identifies transit stops integrated within the Steveston Highway and Highway 17A interchanges complete with “*safe and convenient walkways.*” These accesses should be designed to also accommodate cyclists to facilitate the integration of transit and cycling. The PDR is not clear if the stops will be operational on opening day. GMTR staff have verbally advised that discussions with TransLink remain on-going regarding funding for and operation of the transit stops. The PDR also states that the dedicated transit/HOV lanes will “*support potential future rapid transit expansion.*” Further design details would also be helpful to demonstrate how rapid transit can be accommodated on the new bridge in the future.

The new bridge as well as the new interchanges and overpasses in Richmond also present key opportunities to significantly improve regional and local pedestrian and cycling connections not only across the Fraser River but also east-west within Richmond across Highway 99. All of the new interchanges and overpasses are located on or impact existing and planned cycling routes. With respect to the new bridge, the PDR states that there will be a shared multi-use path on the west side only with no details as to what form of facility, if any, will be on the east side. Consistent with this Council objective, a multi-use path of sufficient width to safely accommodate all users should be provided on both sides of the bridge to:

- *Enhance Safety:* the conceptual design for the new Steveston Highway interchange (Attachment 1) identifies that there will be “no traffic lights,” which implies that pedestrians and cyclists will need to cross highway on- and off-ramps that have free flow movements where motorists are potentially travelling at relatively higher speeds. A multi-use path on both sides of the bridge would help minimize the number of ramp crossings given the user’s origin and destination. A pathway on both sides would also provide an adjacent safe refuge for motorists whose vehicles become disabled.



- *Minimize Circuitousness*: the origins and destinations of cyclists and pedestrians in Richmond are not limited to areas west of Highway 99. For those coming from or destined for points to the east (e.g., Riverport), a multi-use path on the west side only would increase circuitousness and inconvenience. The new bridge should provide the same level of directness and connectivity for pedestrians and cyclists as it does for motorists.
- *Accommodate Demand*: the provision of cycling and pedestrian facilities on the new bridge is anticipated to increase demand, particularly for commuter and recreational cyclists (e.g., cycling clubs that already use Richmond as a training ground) and cycle tourism (e.g., to/from Tsawwassen Ferry Terminal). Moreover, as the new bridge will have a 100 year service life, it would be prudent and cost-efficient to include a multi-use path of sufficient width on both sides of the bridge at construction to accommodate future growth in demand.

In addition, with respect to the new interchanges and overpasses in Richmond included as part of the project scope, pedestrian and cycling improvements should include:

- *Steveston Highway and Westminster Highway Interchanges*: protected pedestrian and cycling facilities in each direction including safe and convenient crossings of Highway 99 on- and off-ramps and connections to existing facilities at each end;
- *Blundell Road Overpass*: protected pedestrian and cycling facilities in each direction; and
- *Shell Road Overpass*: opportunities for protected pedestrian and cycling facilities in each direction on Shell Road, including an extension of the Shell Road Trail (which currently terminates at the overpass due to right-of-way constraints) north towards Cambie Road and provision of a new multi-use pathway connection to the west to Odlin Road.

*Staff Recommendation*: Staff recommend that the GMTR team be advised that the project should facilitate excellence in supporting sustainable transportation options through:

- Partnership with TransLink to ensure that the transit stops within the Steveston Highway and Highway 17A interchanges are operational on opening day,
- Provision of a multi-use path for pedestrians and cyclists on each side of the new bridge of sufficient width to safely accommodate all users in order to:
  - Improve safety by minimizing the crossing of Highway 99 on- and off-ramps at Steveston Highway that are planned as free flow,
  - Minimize circuitousness and maximize convenience, and
  - Better address existing and future demand;
- Inclusion of pedestrian and cycling facilities as part of the new Steveston Highway and Westminster Highway interchanges and on both sides of the Blundell Road overpass, and
- Provision of improved pedestrian and cycling facilities on Shell Road as part of the widened Shell Road overpass.

#### Other City Interests

- *Tunnel Decommissioning*: the PDR states that the tunnel will be decommissioned once the bridge is operational based on a rationale that the tunnel does not meet modern seismic

standards and would require significant rehabilitation and ongoing operating costs, which are not defined. The media release for the PDR states that the tunnel is nearing its end of life and many of its major components have about 10 years of useful life remaining before they need to be replaced, including the lighting, ventilation and pumping systems.

The PDR also states that removing portions of the tunnel would increase the water draft at this location by less than two metres, which would not appreciably change the mix of vessels using the Fraser River because of other constraints in the shipping channel, including an existing Metro Vancouver watermain located at approximately 600m downstream of the tunnel. Based on preliminary information provided by Metro Vancouver staff, this watermain is not planned for replacement until 2035 to 2040. Staff will monitor and provide input on the tunnel decommissioning as part of the upcoming Environmental Assessment (EA) process (see further discussion below of the EA process).

- *Mid-Island Dike*: staff have advised the GMTR team that the City has a long-term flood protection plan that utilizes Highway 99 as a mid-island flood barrier or dike and therefore would like the project to incorporate features that serve a diking purpose where possible. As the fact sheet for the project states that the project will provide “*Improved flood resilience in Richmond and Delta by enhancing existing dikes within the project limits*,” staff will seek further details on these proposed improvements.
- *Relocation of BC Hydro Transmission Line*: prior to tunnel decommissioning and construction of the new bridge, BC Hydro must relocate its existing transmission line that runs underground through the tunnel and overhead on either side of the tunnel adjacent to Highway 99. BC Hydro held a public consultation process in November 2015 to obtain feedback on three alternatives: (1) overhead crossing; (2) underground crossing; and (3) attached to the new bridge. BC Hydro has identified an overhead crossing as the technically-leading solution but has not yet confirmed the chosen alternative. As endorsed by Council, staff will continue to advise the agency that the City’s preferred options are either an underground crossing of the Fraser River or attached to the new bridge.

### PDR Public Consultation Period

The PDR was released on December 16, 2015 and the Phase 3 public consultation period for the PDR runs from that date to January 28, 2016. At the time of writing this report, opportunities for the general public to provide feedback on the PDR are limited to an on-line survey as there are no public open houses planned with respect to the PDR. As discussed further below, there will be two public open houses in January 2016 related to the Environmental Assessment (EA) process; however, these open houses will be focussed on the potential effects (environmental, economic, social, heritage, and health) that might result from the project rather than the PDR per se. Staff are also aware of at least one stakeholder meeting (i.e., workshop on cycling-related elements) that will be held January 12, 2016 and which staff will attend.

Staff requested the GMTR team to consider extending the PDR consultation period beyond the end of January 2016 given that engagement would likely be low during the holiday season. The Executive Project Director advised that the existing consultation period was lengthened to allow for the holiday period (i.e., from four to six weeks), there will be additional opportunities for

comment in January and February 2016 for the Project Description (PD) and draft Application Information Requirements (dAIR) as part of the EA process.

### Environmental Assessment Process

The regular meetings of the GMTR team with City staff have also served to prepare for the upcoming British Columbia Environmental Assessment (BCEA) process for the project. On December 16, 2015, the BCEA Office (BCEAO) announced that the GMTR project is a reviewable project under the BC *Environmental Assessment Act*. Staff received e-mail correspondence from the BCEAO regarding the announcement, which included a web link to the GMTR project and documents including the Project Description.

MoTI has elected to issue a PDR in addition to the British Columbia Environmental Assessment process requirement for a Project Description. As such, much of the project business case details are contained within the PDR, whilst the Project Description contains technical project details relating to the scope of the environmental assessment.

On January 7, 2016, the BCEAO released the public consultation plan for the environmental assessment of the project that outlines the approach and types of public and stakeholder consultation and engagement activities undertaken to date and proposed to be undertaken by MoTI throughout the Pre-Application and Application Review stages of the EA to fulfill the BCEAO's public consultation requirements. The major components of the planned public consultation for the EA are summarized below.

#### 1. Pre-Application Stage (December 2015 – June/July 2016)

A 31-day public comment period on the Project Description and Key Areas of Study document prepared by MoTI will occur from January 15 to February 15, 2016. Two BCEAO-led open houses will be held during this period (staff will attend the open house in Richmond):

- Richmond: Tuesday, January 26, 2016 at the Sandman Inn (10251 St. Edwards Drive) from 2:00 pm to 8:00 pm; and
- Delta: Wednesday, January 27, 2015 at the Delta Town and Country Inn (6005 Highway 17A) from 2:00 pm to 8:00 pm.

The BCEAO has also confirmed January 21, 2016 as the date for the first Environmental Assessment Advisory Working Group meeting. City staff will be participating in both the GMTR Working Group meetings organized by the BCEAO as well as the ongoing GMTR meetings coordinated between the City and the MoTI GMTR team. Staff will continue to provide regular updates to Council on these processes. The staff comments on the PDR outlined in this report will be used as basis for comments on the Project Description and Key Areas of Study document.

Information in the Project Description (PD) and Key Areas of Study document will be used to develop the Application Information Requirements (AIR) document for MoTI's application for an EA Certificate. The BCEAO has sent all Working Group members a link to the PD and Key Areas of study as well as the dAIR, indicating that the documents will be reviewed at the January 21, 2016 working group meeting and seeking comments on the dAIR by February 10, 2016.

Based on recent discussions with the BCEAO, staff anticipate a minimum of one more round of Working Group consultation for the dAIR.

The expectation of the BCEAO for the City to provide comments on both the Project Description and Key Areas of Study document and the dAIR by the specified deadlines within the overlapping review periods is unrealistic.

Staff Recommendation: Staff recommend that the BCEAO be requested to extend the deadline for comments on the dAIR from February 10, 2016 to March 15, 2016 to provide the City with sufficient time to provide meaningful input.

## 2. Application Review Stage (June/July 2016 – November/December 2016)

Once the final application is submitted, a minimum 45-day public comment period will occur on the Ministry's application. At least two BCEAO-led open houses in Delta and Richmond will be held during the public comment period, similar in format and location as for the Pre-Application phase. Open houses will be complemented by continued online engagement, stakeholder meetings and daily drop-in opportunities at the project office in Ironwood Mall. Working group meetings will continue throughout this period.

## 3. Post-EA Approval (On-going, 2017-2022)

Following the EA, MoTI will continue to consult and engage with stakeholders and the public as the project moves into procurement, construction, and post-implementation operations and monitoring. Consultation and engagement activities may include:

- Providing updates on the Project website and to the Project database and responding to public enquiries that arise from these updates.
- Presentations to community groups on request.
- Consultation with property owners about proposed noise mitigation measures in their area.
- Development and implementation of construction environmental management and mitigation monitoring plans

### Supplementary Documents on Project Website

At the time of and subsequent to the release of the PDR, a number of supplementary documents were posted to the project website at [www.masseytunnel.ca](http://www.masseytunnel.ca). Staff reviewed the key documents and provide the following highlights:

- Business Case (dated October 2015): as shown in Table 1, the project has a user benefit/cost ratio of 1.2 to 1 and a total benefit/cost ratio (when economic development costs are included) of 2.1 to 1, based on a project capital cost of \$3.5 billion and a real discount rate of six per cent. Additional non-quantified social, community and environmental benefits include improved emergency response capability,

Table 1: Benefit/Cost Ratio for Project

Item	Present Value (2014\$M)
Total Net Project Cost	\$2,016
Travel Time, Reliability, Operating Cost Savings, Safety/Seismic Benefits	\$2,485
User Benefit/Cost Ratio	1.2:1
Economic Development Benefits	\$1,652
Total Benefits	\$4,137
<b>Total Benefit/Cost Ratio</b>	<b>2.1:1</b>

reduced GHG emission from idling vehicles, and enhancements to Deas Island Regional Park and shoreline habitat. Sensitivity analysis indicates that even with a higher discount rate (7.5 per cent) and a lower traffic growth projection rate (20 per cent lower), the benefit/cost ratios remain positive at 1.5:1 and 1.7: 1 respectively.

The seismic design standard of the new bridge will be significantly improved from the current seismic resistance of the tunnel. The level of seismic event that would lead to a tunnel failure is estimated at 1 in 275 years whereas the current design standard for the new bridge will be 1 in 2,475 years.

The document states that other Ministry infrastructure adjacent to the tunnel also needs significant improvement if the tunnel is not replaced including the Rice Mill Road and CN Rail overpasses on the north side.

The business case concludes that the preferred procurement option is a long-term (30-year) partnership with private finance that includes operation, maintenance and rehabilitation, and that tolling is the preferred mechanism for recovering the capital costs. Transportation Investment Corporation (TI Corp), a Crown corporation, is proposed to undertake the GMTR project as its second tolled project after the Port Mann Bridge.

The business case also acknowledges that the new bridge will be more visible and have higher traffic noise levels than the tunnel. The PDR states that noise walls will be installed at “*key locations along the highway*” but does not specify the exact locations. Staff suggest a need for noise attenuation along the Highway 99 southbound off-ramp approaching Steveston Highway in order to mitigate traffic noise impacts to the adjacent City park. As part of the EA process, staff will monitor the visual, noise and air quality impacts of the new bridge.

- *Capital Cost Estimate* (dated September 2015): the report states that the bridge “will very likely be a cable stayed bridge.” The deck will be suspended from two towers – one on each side of the Fraser River – that will each be about 210 m high, which is equivalent to a 60 storey building. The report also provides a proposed project schedule (Attachment 4). Per the schedule, construction will commence in the third quarter of 2017 and be completed by the end of 2021. Tunnel decommissioning, assumed to be removal of the middle four segments and mechanical, electrical and other components as well as back-filling of the approaches, will occur from the third quarter of 2021 through to the first quarter of 2023.

### **Financial Impact**

None.

### **Conclusion**

MoTI has released the Project Definition Report for the George Massey Tunnel Replacement project and is now seeking feedback from stakeholders and public on the project scope and funding options as part of its Phase 3 consultation that will close on January 28, 2016. The Province has released the Project Description and Key Areas of Study for public comment by

February 15, 2016 and provided working group members to the first dAIR for comment by February 10, 2016.

As the new bridge crossing is expected to result in benefits to Richmond in terms of easing severe traffic congestion near the areas of the existing tunnel, improving transit and cycling connections as well as replacing aging highway infrastructure to enhance public safety, staff recommend that the Ministry of Transportation and Infrastructure be advised that the City supports these project objectives as noted in the PDR. Before the project is advanced further to the detailed design and procurement process, however, the various issues outlined in this report must be addressed.

Staff will continue to update Council on future EA timelines for City comments and provide details accordingly.



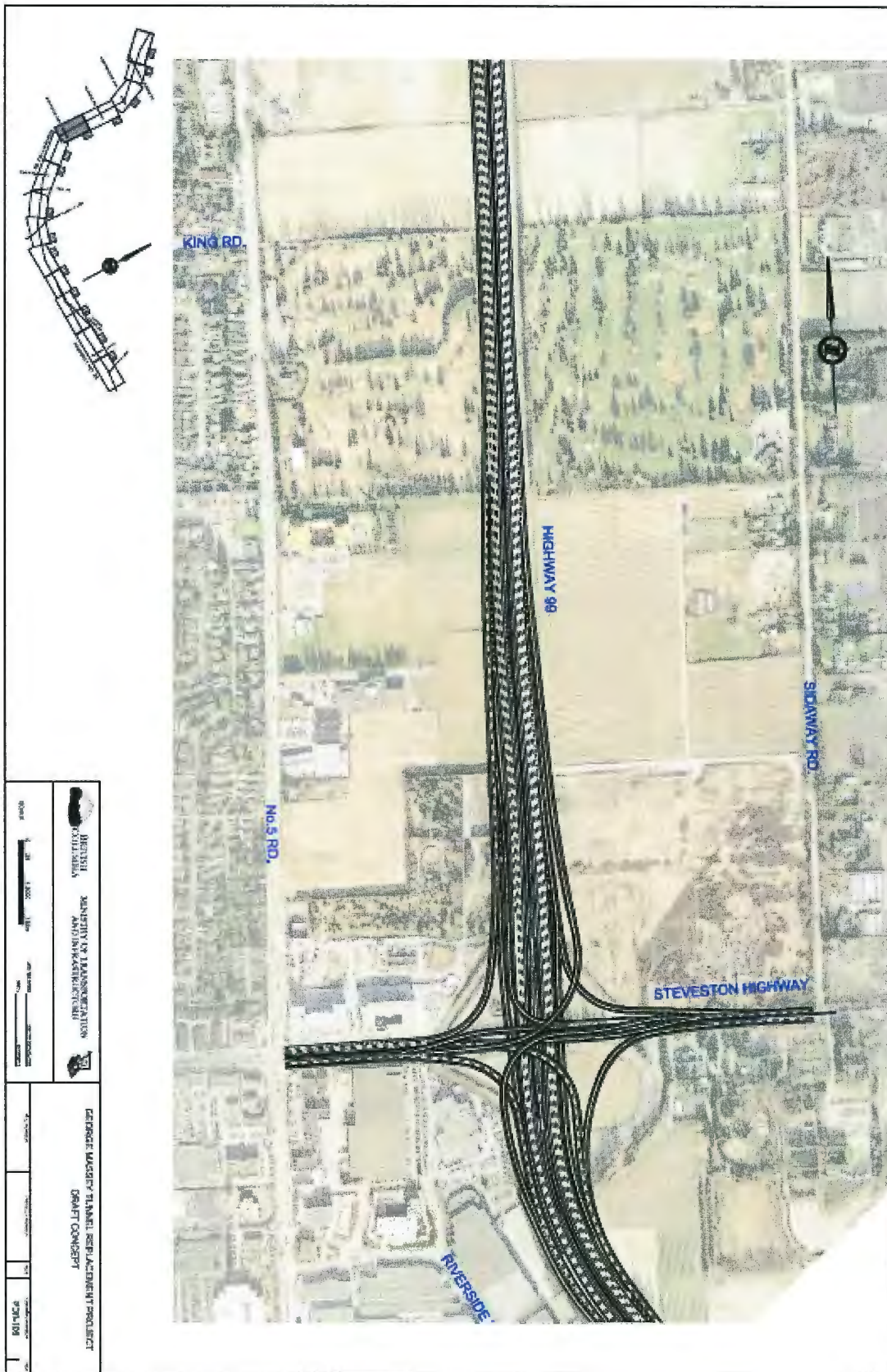
Joan Caravan  
Transportation Planner  
(604-276-4035)

JC:jc

- Att. 1: Current Conceptual Design for Steveston Highway-Highway 99 Interchange
- Att. 2: Current Conceptual Design for Westminster Highway-Highway 99 Interchange
- Att. 3: Current Conceptual Alignment of Dedicated Transit Ramp at Bridgeport Road
- Att. 4: Proposed Project Schedule

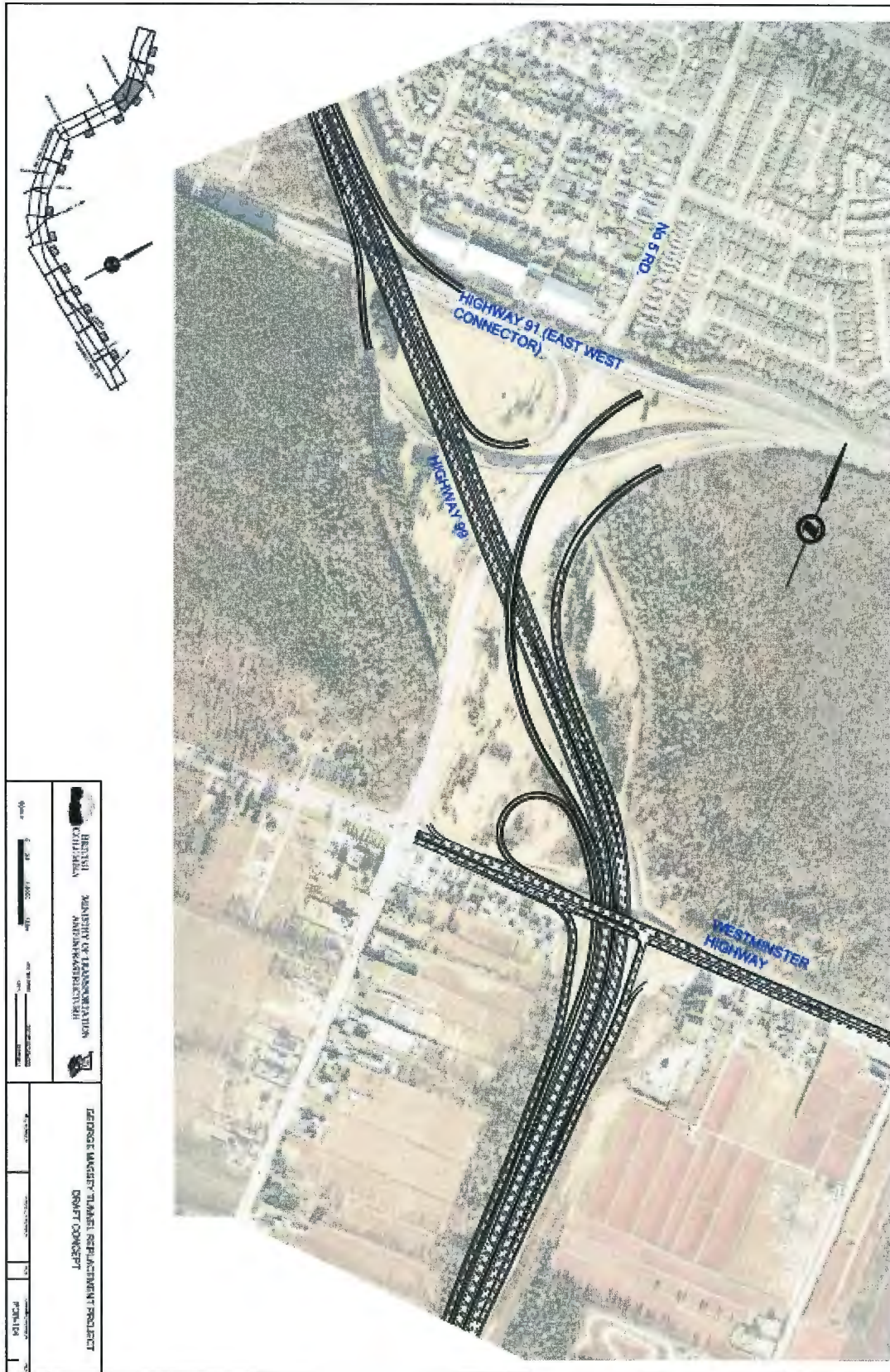


Current Conceptual Design for Steveston Highway-Highway 99 Interchange





Current Conceptual Design for Westminster Highway-Highway 99 Interchange





### Current Conceptual Alignment for Dedicated Transit Ramp at Bridgeport Road



### Proposed Project Schedule

PROPOSED PROJECT SCHEDULE  
George Massey Tunnel Replacement Project

