



To: Public Works and Transportation Committee **Date:** June 7, 2006
From: Victor Wei, P. Eng. **File:** 10-6350-07-01/2006-Vol
Acting Director, Transportation 01
Re: **RICHMOND SUB-AREA TRANSPORTATION STUDY - STAGE 2 (BLUNDELL AND STEVESTON INTERCHANGES) AND FUTURE GEORGE MASSEY TUNNEL IMPROVEMENT**

Staff Recommendation

1. That the attached report titled *Richmond Sub-Area Transportation Study - Stage 2* (Blundell and Steveston Interchanges) and Future George Massey Tunnel Improvement, dated June 7, 2006, be received for information.
2. That staff continue to carry out joint discussions with the Ministry of Transportation and the Greater Vancouver Transportation Authority (GVTA) on the recommendations of the *Richmond Sub-Area Transportation Study - Stage 2* study, upon completion of the respective internal review by these agencies, with a view to reaching a consensus on implementing highway improvements in the Fraserport area and negotiating the project funding and implementation arrangements.
3. That the City write a letter to the Provincial Government, with copy to Greater Vancouver Transportation Authority and the Corporation of Delta, requesting:
 - the inclusion of George Massey Tunnel crossing improvements in their capital plan for implementation shortly after the completion of the Gateway Program;
 - any future expansion of the tunnel crossing capacity be designated for the movement of commercial goods and services, transit, cyclists and high-occupancy vehicles, but not single-occupant private automobiles; and
 - the timing of implementing the Blundell and Steveston interchanges or other alternative highway improvements acceptable to the City to support the Fraserport industrial area be targeted for completion no later than 2013 and not be contingent upon the timing of improving the tunnel.
4. That staff be directed to report back periodically on the progress of pursuing the above initiatives with the Ministry of Transportation and Greater Vancouver Transportation Authority.

Victor Wei, P. Eng.
Acting Director, Transportation (4131)

Att. 3

| FOR ORIGINATING DIVISION USE ONLY | | | | | | |
|-----------------------------------|-------------------------------------|-------------------------------------|--------------------------|---------------------------------------|-------------------------------------|--------------------------|
| ROUTED TO: | | CONCURRENCE | | CONCURRENCE OF GENERAL MANAGER | | |
| Engineering | Y | <input checked="" type="checkbox"/> | N | <input type="checkbox"/> | <i>Healey</i> | |
| Policy Planning | Y | <input checked="" type="checkbox"/> | N | <input type="checkbox"/> | | |
| REVIEWED BY TAG | | YES | NO | REVIEWED BY CAO | YES | NO |
| | <input checked="" type="checkbox"/> | <i>DM</i> | <input type="checkbox"/> | <i>DM</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Staff Report

Origin

At the April 20, 2006 Public Works and Transportation Committee (PWTC) meeting, the following resolution was referred to staff for the preparation of a discussion paper:

“That the City write a letter to the Provincial Government requesting the crossing capacity of the George Massey Tunnel be expanded, and direct staff to pursue the project and report to the Public Works & Transportation Committee on a periodic basis”.

In discussion on the referral, the Committee requested that the implications of the future tunnel expansion on adjacent properties and the area land use growth patterns also be discussed in the report.

As the *Richmond Sub-Area Transportation Study - Stage 2* (Blundell and Steveston Interchanges), a joint study between the Ministry of Transportation (MoT), Greater Vancouver Transportation Authority (GVTA) and the City of Richmond, is now 95% completed (Executive Summary to be finalized), this report responds to the above referral as well as proposes the next steps to be taken by the City to pursue the Blundell and Steveston interchanges immediately north of the tunnel along the Highway 99 corridor.

Analysis

1. Richmond Sub-Area Transportation Study - Stage 2 (Blundell and Steveston Interchanges)

Over the past few years, the City has been working jointly with the BC Ministry of Transportation (MoT) and GVTA in planning and preliminary design studies of a new Blundell Road Interchange as well as the widening of the Steveston Highway Interchange. In 2002, the planning study was completed. In October 2004, a Stage 2 preliminary design study titled *Richmond Sub-Area Transportation Study – Stage 2* was initiated and is now 95% completed. As discussed in the recent April 3, 2006 report to Council titled: *Review of Freedom to Move and Gateway Program Documents – Implications on Highway 99-Blundell Road Interchange and George Massey Tunnel Improvement Plans*, the key findings of the current study are:

- a recommended full Blundell Road interchange (Attachment 1) to accommodate the truck traffic from the Fraserport area in the mid-term (i.e. within 5 to 10 years);
- preliminary cost estimates are in the range of \$32 M to \$37 M for the Blundell Road Interchange (including land costs) and approximately \$5 M to \$6 M for the Steveston Highway Interchange widening;
- possible provision for ramp control or other mitigation measures for eastbound to southbound movement during extreme congestion periods caused by the tunnel;
- existing HOV lanes to be retained;

- a possible funding strategy involving potential funding partners such as the Province of BC, GVTA, Fraser River Port Authority (FRPA), area developers, the Federal government, and the City; and
- there may be potential negative impacts related to additional on and off-ramp traffic weaving among through traffic along Highway 99 (including the curb lane HOV) due to the close proximity of the Blundell Road Interchange to the existing interchanges at Steveston Highway and Westminster Highway.

As for the concerns of the potential negative impacts of new ramps on through traffic operation, the study indicates that Highway 99 has the capacity to handle the anticipated increase in traffic outside of the afternoon peak hours. During these peak hours, one possible mitigating measure would be to manage the flow of on-ramp traffic through ramp metering, where a traffic signal would be installed at the freeway entrance point.

Since Highway 99, including the proposed Blundell Interchange, is entirely under the jurisdiction of the Ministry of Transportation, any potential operational concerns must be addressed to their satisfaction. To this end, staff has been working very closely with both the Ministry and TransLink over the last several months to reach a consensus on the appropriate strategy to address these concerns. This consensus has not yet been achieved to date as both the Ministry and TransLink are currently reviewing the recommendations of the study. If consensus cannot be reached, other options may need to be explored, including an alternative highway connection to Highway 91 with the proviso that any alternative causing further segregation of farmlands in Richmond would not be acceptable to the City. Staff will report back on this issue once a thorough assessment is completed by these agencies.

Despite the possibility that other Highway 91 connection alternatives may need to be examined to provide the much needed highway improvements to service the Fraserport area, staff still consider the Blundell Interchange option to be the best strategy for this area as it would provide two points of highway access for the Fraserport lands to ensure reliability for goods movement. For reference, Attachment 2 illustrates the current proposed Blundell Road-Nelson Road corridor by the City, including the Blundell Road Interchange and the area of east Richmond which it would serve.

In light of the pressing need to facilitate existing demand for truck movements in the area, the pursuit of and support for the improvements at Blundell and Steveston interchanges, or any other alternatives acceptable to the City, should not be dependent upon the timing of the George Massey Tunnel improvement which is considered as a longer term initiative.

Next Steps:

With the receipt of the 95% completed report from the study consultant by the three agency partners, the following next steps by the City are recommended:

- The Ministry of Transportation, GVTA and the City of Richmond conduct thorough separate internal reviews of the study results and consider the recommended improvements arising from the study.

- The three agencies meet to jointly discuss improvements that can be supported by all parties. The final scope of improvements and levels of commitment for implementation from each organization will also be determined. Upon mutual agreement on the scope and commitment for the improvements:
 - The three agencies to explore supplementary funding sources and programs, such as those offered by the Federal government for the Pacific Gateway Strategy and other funding opportunities from benefiting property stakeholders in the area.
 - A joint funding and implementation agreement to be negotiated with a view to completing the interchange improvements by 2013.
- Work with TransLink to include Blundell Road and Nelson Road in the Major Road Network (MRN) as neither of these roads is currently in the regional network. This work will include identifying any impacts on the rest of the MRN.
- Staff to report back periodically on the progress of the above work prior to any commitment by the City towards the highway improvements.

2. George Massey Tunnel

The proposed Blundell Interchange is part of the Highway 99 system where the most congested point is located at the George Massey Tunnel. As such, this crossing was the subject of discussion at the April 20, 2006 PWTC meeting, where the referral to staff mentioned above was made.

As part of the PWTC discussion on the proposed letter to the Provincial Government on improving the George Massey Tunnel, staff were directed to provide discussion on the likely implications of expanding the crossing capacity on both the area land use growth patterns and the adjacent properties to the highway. The following sections briefly describe each of these areas of impacts.

Impact on Area Land Use Growth Patterns

As noted in the April 3, 2006 report to Council, although the capacity improvement at the tunnel has long been recommended since 1989, indications today are that from the Province's perspective its implementation timing is likely to be beyond the next 10 years.

If the improved crossing is not properly managed with appropriate transportation demand management (TDM) measures such as the designation of added capacity for use by goods movement, transit, cyclists, and high-occupancy vehicles, the expansion of the tunnel could very well encourage further residential developments at a higher than expected level and therefore urban sprawl south of the tunnel which would be contrary to the Liveable Region Strategy Plan (LRSP). As a result, there could be a significant increase of through commuter traffic travelling through Richmond on Highway 99 and potentially other local roads.

Therefore, similar to the principles contained in the recent Council resolution on the proposed twinning of the Port Mann Bridge (in the report titled *Proposed Twinning of Port Mann Bridge*

presented at the January 10, 2005 Council meeting), the City could support the expansion of the George Massey crossing provided that such expansion of capacity be designated for the movement of commercial goods and services, transit, cyclists and high-occupancy vehicles, but not single-occupant private automobiles.

Furthermore, a collaborative approach is required to pursue this significant project with a joint assessment by the province, GVTA and the affected municipalities of the impacts of the expansion of the tunnel on adjacent roadways, regional growth and transportation goals. This joint effort should also include developing and integrating the appropriate complementary regional road improvements, transit related enhancements, and transportation demand measures as part of this project to support the guiding principles of the LRSP.

It should be noted that any tunnel capacity improvement should also consider ensuring that deep sea vessels are able to pass the tunnel area with sufficient clearance as this improvement could be essential to support the future development of the deep sea terminal being considered at the Fraser River Port Authority lands.

Impact on Adjacent Properties

The existing right-of-way width of Highway 99 through Richmond ranges as follows:

- 30 metres between the Oak Street Bridge and Bridgeport Road;
- 60 - 210 metres between Bridgeport Road and Highway 91;
- 420 metres between Highway 91 and Westminster Highway;
- 60-200 metres between Westminster Highway and Steveston Highway; and
- 65-270 metres between Steveston Highway and the Tunnel entrance.

It is expected that any future expansion of the tunnel would also necessitate the continuous widening of the Highway 99 corridor through Richmond and Delta. At a broad level, the following briefly presents the two likely scenarios for minimum and maximum highway right-of-way requirements in Richmond.

Possible Minimum Requirement –

The existing pavement width of Highway 99 including shoulders is approximately 30 metres. It appears that except for the narrowest section of the highway corridor north of Bridgeport Road, the existing right-of-way surplus of at least 30 metres could theoretically accommodate the widening by two traffic lanes on both sides of the highway totalling 7.5 metres in each direction, or 15 metres in both.

Possible Maximum Requirement –

Based on information from the Ministry of Transportation's most recent report *George Massey Tunnel Expansion Planning Study* (1991) on the required Highway 99 widening for the future expansion of the tunnel, the additional right-of-way required for widening as a Third Tube option was found to be a minimum of 20 metres on each side for a total of 40

metres. This would result in a total minimum highway right-of-way width of 100 metres. This would have significant impacts on adjacent properties through Richmond.

At this time, without carrying out any up-to-date technical review of the tunnel improvement strategy, it is uncertain as to which of these scenarios would be closer to the actual requirement to support the future crossing expansion. Regardless, the tunnel will continue to be a major bottleneck for the movements of trucks, transit, and cyclists if no improvements are made in the longer term. As the provincial focus at present is on implementing the elements of the Gateway Program, it is essential that immediately upon completion of this program, planning work be initiated to shift the focus to the Massey Tunnel crossing to address its increasing deficiencies.

3. Pacific Gateway Strategy Action Plan

In support for the need for highway improvements to the Fraserport area in Richmond is the Pacific Gateway Strategy (PGS) Action Plan which was recently completed on April 30, 2006 and made available on the Ministry of Transportation's website:

(http://www.th.gov.bc.ca/PacificGateway/documents/PGS_Action_Plan_043006.pdf).

This PGS builds upon the work of the BC Ports Strategy (released March 2005), which establishes growth targets for container goods based on forecast traffic demands and sets out a long-term vision to 2020.

Excerpts from the PGS report state the following:

“A fundamental shift is taking place in the global economy with Asia occupying an increasingly central role in world trade. At present, China is Canada's second largest trading partner and British Columbia's largest offshore trading partner, accounting for 60% of growth in world trade. As key gateways to Asia, Canada's west coast ports, airports and supporting road and rail networks have tremendous potential to capture significant opportunities being presented by these growing markets. ... because improvements to Western Canada's aging transportation infrastructure have fallen significantly behind comparable US investment levels over the last decade, a comprehensive strategy is needed to compete effectively for this trade.”

The PGS action plan identified several infrastructure and policy initiatives in order to ensure adequate transportation capacity is in place to meet targeted trade traffic demand in 2020. These initiatives include a Fraser Richmond Terminal Highway Access targeted for 2006-2010 and a North-South Passenger/Freight Corridor including the Massey Tunnel targeted for 2016-2020. These two improvements in Richmond are endorsed by all participating agencies (including Richmond staff) and key stakeholders including the Federal and Provincial governments. See Attachment 3 for a map outlining some of the recommended initiatives.

It should be noted that, at this time, the Action Plan is not considered as a capital programme nor a funding plan. As stated in the document, it is a plan for future action to begin greater coordination of industry stakeholders and government in assessing, planning and implementing

critical transportation infrastructure and policy initiatives required to meet Pacific Gateway Strategy objectives.

Financial Impact

None at this time.

Conclusion

The jointly-funded technical study on the Blundell Interchange, *Richmond Sub-Area Transportation Study - Stage 2*, is now 95% complete. Overall, based on the findings of the study, the interchange is recommended as it was found to yield long term net benefits for road users and economic development in the region. However, much work has yet to be carried out in reaching a consensus among the funding partners – Ministry of Transportation, TransLink, and the City – on the appropriate mitigation measures to address the potential traffic conflicts on the main highway resulted from the new ramps.

If no mutually acceptable measures are found, alternative locations for highway connections may need to be explored with the proviso that no further farmlands would be bisected, despite staff's position that the Blundell Interchange option is still considered to be the most effective road network arrangement for the area. Regardless, the pursuit of and support for such highway improvements should not be dependent on the timing of the George Massey Tunnel capacity improvements. The recently released Pacific Gateway Strategy Action Plan suggests the need for a Fraser Richmond Terminal Highway Access (Blundell Road Interchange as a possible option) in the 2006-2010 timeframe and a North-South Passenger/Freight Corridor including the Massey Tunnel in the 2016-2020 timeframe.

With the completion of the current study, internal reviews are now being conducted by each of the three agencies: the Ministry of Transportation, TransLink, and the City. Staff will continue to carry out discussions with the Ministry and TransLink on the recommendations of the study upon completion of the respective internal review by the agencies with a view to reaching a joint commitment to pursue the timely implementation of the Blundell and Steveston interchange or any other alternative improvements acceptable to the City and negotiating the project funding and implementation arrangements.

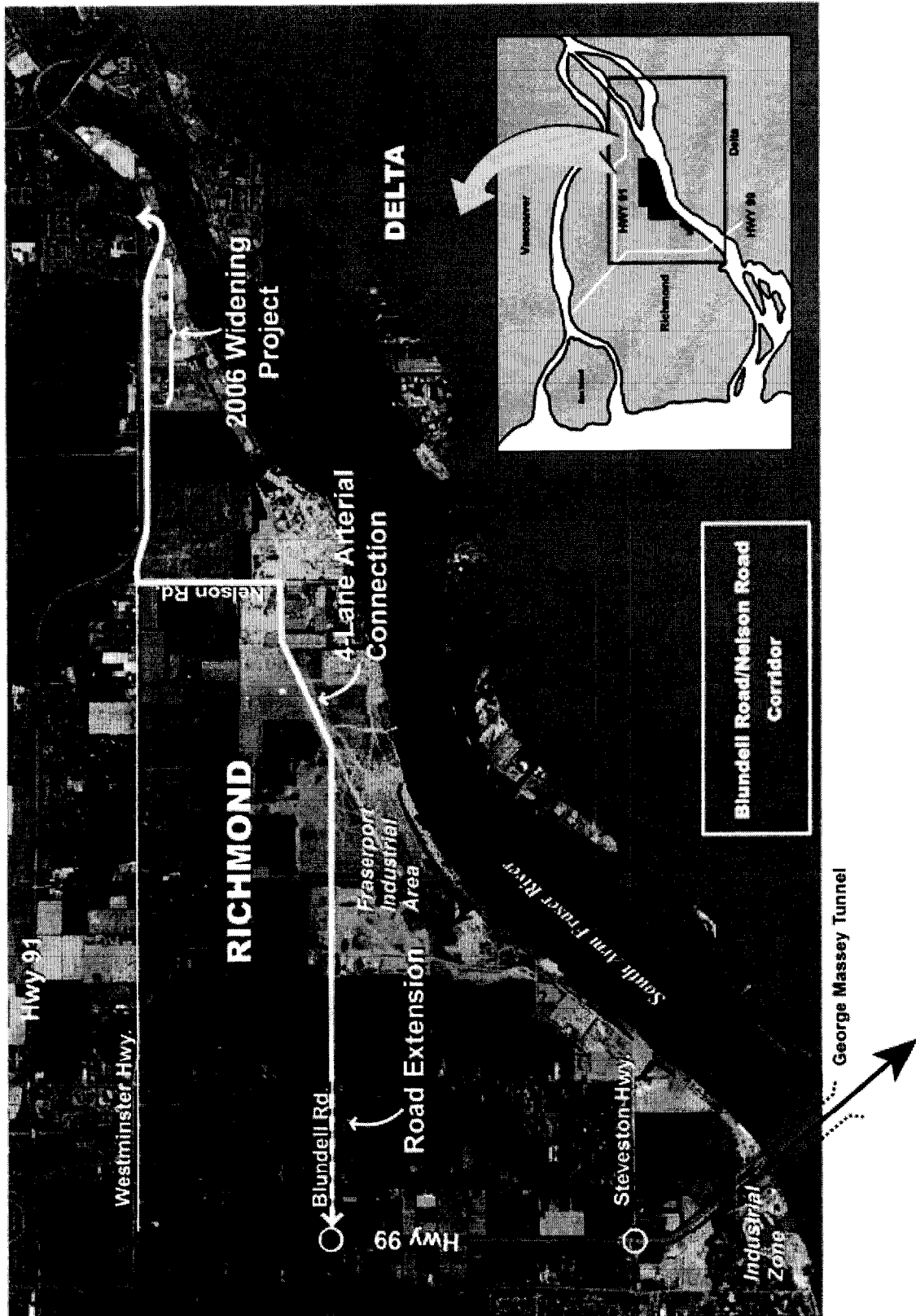
In response to the referral, staff also recommend that the City write a letter to the Provincial Government, with copy to Greater Vancouver Transportation Authority and the Corporation of Delta, advising them on the pressing need for actions on implementing both the highway improvements for the Fraserport area and the George Massey Tunnel in a collaborative and responsive manner.



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DC:lce

Blundell Road/Nelson Road Corridor, East Richmond Area



FRASER PORT SUPPLY CHAIN INITIATIVES

Targeted 2006-2010 Initiatives:

- 4** South Fraser Perimeter Road (SFPR)
- 5** North Fraser Perimeter Road (NFPR) including Pitt River Bridge
- 7** Trans-Canada Highway including Port Mann Twinning
- 6** Major Road Network Upgrades
- 8** Golden Ears Bridge
- 9** Pattullo Bridge
- 10** Land Border Crossing Upgrades
- 11** Southern Rail Corridor Upgrades*
- 12** Lower Fraser Rail/Road Grade Separations
- 13** New Westminster Rail Bridge (NWRB)
- 14** Kicking Horse Canyon Highway Upgrade
- 15** Fraser Surrey Dock Expansion
- 16** Fraser River Channel Deepening
- 17** Fraser Richmond Terminal Development
- 18** Fraser Richmond Terminal Highway Access

Targeted 2011-2015 Initiatives:

- 33** Trans-Canada Highway Upgrades between Kamloops and Banff*

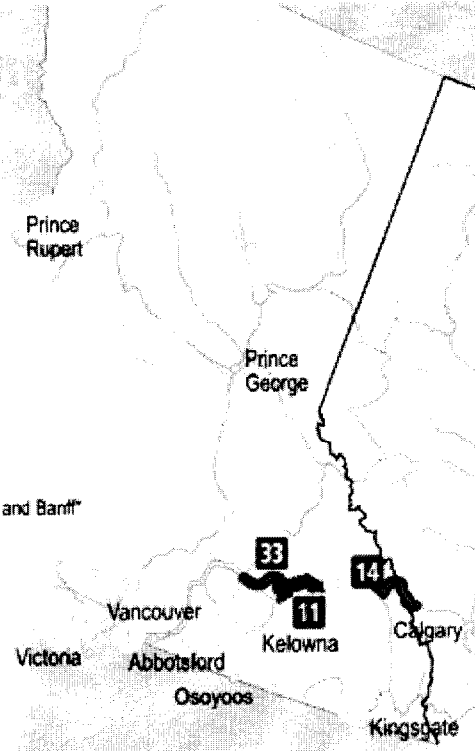
Targeted 2016-2020 Initiatives:

- 34** North-South Passenger/Freight Corridor including Massey Tunnel

Operational and/or Process Improvement:

(Not shown on map)

- 28** Inland Container Terminals
- 29** Short Sea Shipping
- 25** Intelligent Transportation Systems
- 30** Marketing and Public Relations
- 31** Identification of Additional Capacity Enhancing Initiatives and/or Operational Efficiencies



* This extends beyond B.C. border. Refer to Cross Provincial Initiatives Map.

