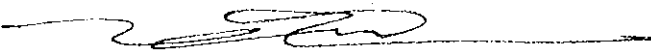




To: Public Works and Transportation Committee *To Public Works & Transportation - Nov 21, 2007* Date: October 26, 2007
From: Victor Wei, P. Eng. File: 10-6350-01/2007-Vol 01
Director, Transportation
Re: **TRANSIT PRIORITY LANE AND TRAFFIC MANAGEMENT INITIATIVES FOR
RUSS BAKER WAY-ARTHUR LAING BRIDGE CORRIDOR**

Staff Recommendation

1. That the construction of a northbound transit priority lane on Russ Baker Way between Gilbert Road and Cessna Drive to be funded by TransLink, as described in the attached report, be endorsed with a view to completing it by August 2008.
2. That the Director of Transportation be authorized to execute a Memorandum of Agreement with YVR and TransLink to confirm the three agency partnership of the proposed transit priority lane project.
3. That the RCMP be requested to provide regular enforcement of the proposed transit priority lane and report back on the effectiveness of and any additional resource requirement for the enforcement on an annual basis.
4. That the following traffic management initiatives for the Russ Baker Way-Arthur Laing Bridge corridor be endorsed:
 - (a) Retention of service for a tow truck (point duty) at the south end of the Arthur Laing Bridge during the weekday morning peak period to attend to northbound traffic incidents on the bridge for a two-year trial period starting in mid-2008 at the cost of \$35,000 per year at a total cost of \$70,000 which would be submitted as a candidate project to be considered for funding from the 2008 surplus; and
 - (b) Installation of a video traffic monitoring camera in the vicinity of the Russ Baker Way/Cessna Drive intersection at the cost of \$40,000 to be considered as part of the City's 2009 capital program which would result in an impact of approximately \$1,000 per year on the annual operating budget.
5. That staff report back to the Public Works and Transportation Committee on the effectiveness of the proposed stationing of the tow truck at the south end of the Arthur Laing Bridge at the end of the two-year trial period.


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

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| ROUTED TO: | CONCURRENCE | CONCURRENCE OF GENERAL MANAGER | | | |
|-------------------|--|--------------------------------|-----------------|---|--------------------------------|
| Engineering | Y <input checked="" type="checkbox"/> N <input type="checkbox"/> | <i>Mr. Freese</i> | | | |
| Finance | Y <input checked="" type="checkbox"/> N <input type="checkbox"/> | | | | |
| RCMP | Y <input checked="" type="checkbox"/> N <input type="checkbox"/> | | | | |
| REVIEWED BY TAG | YES <input checked="" type="checkbox"/> <i>KLW</i> | NO <input type="checkbox"/> | REVIEWED BY CAO | YES <input checked="" type="checkbox"/> <i>KLW</i> | NO <input type="checkbox"/> |

Staff Report

Origin

At the February 26, 2007 regular Council meeting, Council considered a staff report that outlined and assessed four traffic management initiatives for the Russ Baker Way-Arthur Laing Bridge corridor and passed the following resolution:

1. *That the following four traffic management initiatives for the Russ Baker Way-Arthur Laing Bridge corridor be assessed further by staff in working with Vancouver International Airport Authority, TransLink, and the City of Vancouver:*
 - a) *Stationing of a tow truck (point duty) at the south end of the Arthur Laing Bridge during the weekday morning peak period;*
 - b) *Installation of a video traffic monitoring camera in the vicinity of the Russ Baker Way/Cessna Drive intersection;*
 - c) *Southern extension of the northbound high occupancy vehicle (HOV) lane on Russ Baker Way to the north end of No. 2 Road Bridge; and*
 - d) *Submission of Russ Baker Way for the inclusion in TransLink's Major Road Network.*
2. *That staff report back on the outcome of the above assessment and if applicable, an implementation strategy of the proposed traffic management initiatives for Council's approval.*

This report summarizes the implementation and funding strategies for the three traffic management initiatives comprising:

- a) the tow truck service,
- b) the installation of a video traffic monitoring camera and
- c) the southern extension of the northbound high occupancy vehicle (HOV) lane.

A status update is also provided on the submission of Russ Baker Way for inclusion in TransLink's Major Road Network.

Analysis

1. Tow Truck Service

In the previous February 26, 2007 report considered by Council, several select bridges in the Metro Vancouver area were assessed along with the Arthur Laing Bridge. However, the Arthur Laing Bridge is the only one which is not monitored by tow trucks in case of any traffic incidents. Information from ICBC indicates that there were an average of 127 crashes per year during the five years from 2001 to 2005 although YVR records only indicate 22 incidents during 2006. Also, in the last few years, the City has received a significant increase in number of complaints on the delayed responses to traffic incidents on the Arthur Laing Bridge particularly in the morning peak period. As this bridge is part of the Russ Baker Way corridor which is one of the key commuter corridors for Richmond residents, the provision of tow truck service would support local, regional and provincial sustainability efforts by maximizing the efficiency of existing infrastructure.

Over the past few months, staff have carried out discussions with YVR staff regarding the feasibility of implementing tow truck service on the Arthur Laing Bridge. Although staff had identified the possible resulted mutual benefits of the tow truck service to both parties, YVR reiterated in their letter to the City dated September 18, 2007 (**Attachment 1**) that they would not participate in this pilot project as they did not consider it as high priority. Instead, they preferred to focus their efforts in dealing with the traffic issues on the Vancouver side of the Arthur Laing Bridge. YVR would, however, agree to allowing a tow truck to be stationed by the City in their road right-of-way at the south end of the bridge.

As such, subject to Council's endorsement on pursuing the tow truck service as a City's initiative, staff propose to prepare a Request for Quotation (RFQ) for tow truck services on the Arthur Laing Bridge, which would include the following duties:

- perform traffic patrol Monday to Friday (except statutory holidays) from 0600 to 0900 hours for northbound traffic;
- mobilize a patrol vehicle to the scene of any observed or reported obstruction within five minutes from the time of the occurrence and clear the obstruction from the roadway within ten minutes of the occurrence;
- depending on the severity of the accident, readily remove vehicles involved in an accident with any other resulted debris and eliminate any hazards such as oil that may cause slippery roadway conditions;
- report all incidents effecting the movement of traffic on or within the roadway or structures being patrolled, including the approaches to the structure, to the RCMP and the City; and
- complete a daily log book noting all traffic disruption incidents and their circumstances on the patrolled roadway.

The tow truck service is proposed for an initial two-year pilot program and evaluated after that time to determine its effectiveness and feasibility for extension. A two-year duration is proposed as a one-year duration would not provide sufficient stable traffic patterns required to determine the long-term need for the tow truck service. In addition, the two-year period would provide information on a "before and after" impact of the Canada Line as well as address incidences during the 2010 Olympic Game events. The estimated annual cost for staging one tow truck for three hours (6:00 am to 9:00 am) during weekdays is approximately \$35,000 per year.

2. Installation of a Video Camera

Over the past few years, staff have been planning to install video monitoring cameras along major traffic corridors in conjunction with the installation/expansion of the City's fibre optic cable network. The Russ Baker Way-Arthur Laing Bridge corridor has been identified as a desirable location.

At this time, staff propose to install a pan-zoom-tilt camera in the northeast quadrant of the Russ Baker Way-Cessna Drive intersection. This camera would be supported on its own pole complete with back-up power with images fed back continuously to the Traffic Control Centre for internal-external distribution. The proposed camera would be installed in early 2009 at which time the new signal system upgrade would be completed to allow for further expansion of the city's video camera monitoring system, including additional cameras along the Russ Baker Way corridor. The proposed camera could also be integrated with TransLink's proposed iMove project, which is a regional traveller information system that will feature over 120 camera feeds of traffic conditions across the Lower Mainland.

The estimated cost for the installation, equipment and software for the Russ Baker Way/Cessna Drive location is \$40,000.

3. Russ Baker Way Bus/HOV/HPV Lane vs. Bus Only Lane

Following the February 26, 2007 resolution by Council, the City, in partnership with TransLink and YVR, retained a transportation consultant (R.F. Binne and Associates Limited) in June 2007 to carry out a traffic operational analysis and functional design of a northbound multi-purpose high occupancy vehicle (HOV) / high priority vehicle (HPV) / transit priority lane on Russ Baker Way between south end of the Arthur Laing Bridge to the No. 2 Road Bridge (**Attachment 2**).

Based on the consultant's findings, the preliminary cost estimate for the multi-purpose lane is \$2.5 million. The study also concluded the following number of expected users of the added lane:

- During AM peak hour - a total of 1,617 passengers (1,190 by bus, 160 by HPV, and 267 by HOV) with an average travel time saving of 7 minutes for buses and 13 minutes for HOV/HPV, and
- During PM peak hour - a total of 1,324 passengers (860 by bus, 200 by HPV, and 264 by HOV) with an average travel time saving of 6 minutes for buses and 18 minutes for HOV/HPV.

It should be noted that the times savings for the buses are estimated for the section of Russ Baker Way between Gilbert Road and Cessna Drive. Between the intersections of Cessna Drive and Miller Road, TransLink buses utilize Cessna Drive and not Russ Baker Way in order to access the Airport Station bus loop.

Given that the majority of benefits was found to be directly related to transit users who represent the majority (up to 75%) of the benefiting users of the HOV/HPV/Transit lane facility, it was deemed desirable to reduce the project scope to focus on facilitating the transit users in order to significantly improve the rate of return of the infrastructure investment. To this end, upon detailed review of the cost components and transit ridership information, the consultant was directed to prepare a modified and reduced design for a transit only (priority) lane for a shorter section from Gilbert Road to Cessna Drive where it is currently utilized by buses.

As a result, the estimated cost for the shorter, modified transit priority lane (**Attachment 2**) is \$410,000 including contingency and detailed design, and the key benefits of the modified transit priority facility were summarized as follows:

- During AM peak hour - a total of 1,190 bus passengers were found to benefit from an average travel time saving of 7 minutes, and
- During PM peak hour - a total of 860 passengers were found to benefit from an average travel time saving of 6 minutes.

To quantify the rate of return for investment, the yielded benefits in passenger-minutes per \$1000 invested are summarized for the AM and PM peak hours. The resulting benefit-to-cost ratios are as follows:

Time Benefits per \$1000 Invested

| | AM | PM |
|-------------------------------------|------------------------|------------------------|
| Multit-purpose transit HOV HPV lane | 5.8 passenger-minutes | 6.2 passenger-minutes |
| Transit priority lane | 20.3 passenger-minutes | 17.4 passenger-minutes |

In summary, the change in scope to a transit-priority only facility reduced the cost from \$2.4 million to \$410,000 (over 80% reduction) while still retaining approximately 70% of the benefits. Furthermore, anecdotal information from both TransLink and City staff indicates that the travel time savings for buses could be as much as 10 minutes or more with the modified scope.

TransLink has agreed to fund 100% of the detailed design and construction cost of the transit only lane with the understanding of the following:

- the new transit lane would utilize the recently widened portion of Russ Baker Way at the BCIT access,
- YVR would maintain the transit priority lane as part of their current responsibility for Russ Baker Way, and
- the Richmond RCMP would provide regular enforcement of the transit priority lane.

Partnership Arrangement

Construction – TransLink has agreed to assume 100% funding responsibility for the construction of the proposed transit priority lane, therefore, TransLink would be responsible for the construction of this facility. YVR has recently constructed an acceleration/deceleration lane at the BCIT access on Russ Baker Way (approximately \$180,000 in value), which they have agreed to converting it to form part of the proposed transit lane to minimize the extent of additional pavement widening.

Enforcement - YVR has agreed to support the transit priority lane on Russ Baker Way with the understanding that enforcement by the Richmond RCMP would be provided to ensure public compliance with the transit priority lane. As the RCMP currently carry out regular enforcement on the existing HOV lane at the south end of the Arthur Laing Bridge, it is proposed that the enforcement be expanded with possible additional resources to include the transit only lane. It should be noted that the proposed increased enforcement would also yield increased traffic fine revenue returned to the City through the Provincial Revenue Sharing Grant. The proposed design of the added lane has included two new police enforcement areas with landscaping screening to prevent violating drivers’ visual detection of police presence.

Subject to Council’s endorsement of the above partnership arrangement, staff propose to work with YVR and TransLink to prepare and execute a Memorandum of Agreement outlining the responsibilities of each of the three partnering agencies to implement and operate the proposed improvement.

4. Inclusion of Russ Baker Way in the Major Road Network (MRN)

Staff are continuing discussions with TransLink and YVR regarding the inclusion of Russ Baker Way and Arthur Laing Bridge in the Major Road Network (MRN) through the Major Road and

Transportation Advisory Committee (MRTAC) of TransLink. It is anticipated that a comprehensive review of MRN eligibility jointly by TransLink staff and a special MRTAC Working Group will commence in late 2007 or early 2008. Richmond staff are expected to participate in this special working group.

Financial Impact

Tow Truck Service

The recommended tow truck service at the south end of the Arthur Laing Bridge during the weekday morning peak period to attend to northbound traffic incidents on the bridge for a two-year trial period starting in mid-2008 is estimated at the cost of \$35,000 per year. It is proposed that the total cost of \$70,000 be funded from any arising 2008 surplus, which would reduce funding availability for any other requests. If Council approves of this request and subsequently decides to maintain this additional level of service, then the resulting tax impact would be 0.03% (2008 figures).

Video Traffic Monitoring Camera

The proposed video traffic monitoring camera in the vicinity of the Russ Baker Way/Cessna Drive intersection is estimated at a cost of \$40,000, which is proposed to be considered as part of the City's 2009 capital program to be funded from the Roads DCC program. The operating budget impact will be approximately \$1,000 per year on the annual operating budget.

Transit Priority Lane

TransLink has agreed to fund 100% the construction cost of the proposed transit priority lane from Gilbert Road to Cessna Drive at an estimated value of \$410,000.

In order to provide adequate regular enforcement on the proposed lane, it is proposed that the RCMP be requested to provide regular enforcement as and when required of the proposed transit priority lane and report back on the effectiveness of and any additional resource requirement for the enforcement on an annual basis. The increased enforcement may yield increased traffic fine revenue returned annually to the City through the Provincial Revenue Sharing Grant although it would not be fully recovered.

Conclusion

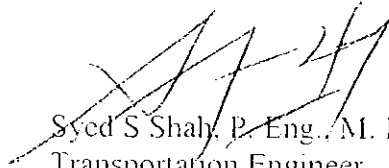
Staff have now developed a jointly supported arrangement with YVR and TransLink to implement the proposed tow truck service, video camera and transit only lane for the Russ Baker Way-Arthur Laing Bridge corridor. If endorsed by Council and subject to available funding and other priorities:

- the tow truck service would be implemented by mid-2008;
- the video traffic monitoring camera would be implemented by 2009; and
- the transit priority lane from Gilbert Road to Cessna Drive would be completed by September 2008.

The above traffic management measures are consistent with the City's long term sustainability goal to maximize the efficiency of the existing roadway infrastructure and facilitate increased reliability of transit services along key commuting routes.



Donna Chan, P.Eng. PTOE
Manager, Transportation Planning
(4126)



Syed S Shaly, P. Eng., M. Eng., MITE
Transportation Engineer
(4049)



September 12, 2007

Mr. Victor Wei, M. Eng., P. Eng.
Director, Transportation Division
City of Richmond
6911 No. 3 Road
Richmond, BC
V6Y 2C1

Dear Mr. Wei,

Re: Proposed Traffic Incident Response Initiative for the Arthur Laing Bridge

Thank you for your letter dated August 24, 2007 concerning the above referenced topic. In addition, thank you for the updated information from ICBC indicating that on average there are 127 accidents per year on the bridge versus the 42 noted by Vancouver Airport Authority's Operations (YVR OPS).

It is likely that the discrepancy is the result of YVR OPS only being notified of serious traffic accidents. ICBC more has information on all accidents resulting in damage to vehicles. Quite possibly many of the 127 accidents resulted in relatively minor damage and the vehicles were able to clear the bridge under their own power. Certainly only a limited percentage would require the services of a tow truck.

As you are aware, the Vancouver Airport Authority (YVR) believes the major issue surrounding the Arthur Laing Bridge results from congestion and poor roadway layout on the Vancouver side of the bridge. Unfortunately this area lies outside the jurisdiction of both YVR and the City of Richmond.

| | |
|---------------------------------------|--------------------|
| RECEIVED IN TRANSPORTATION | |
| Date: | <u>Sept 23/07</u> |
| By: | <u>[Signature]</u> |

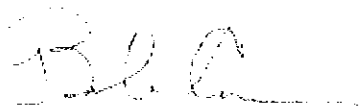
As part of the scope of the current study looking at the feasibility of an HOV/HPV on Ross Baker Way, YVR has requested that the consultant review potential improvements on the Vancouver side to improve flow in the corridor. Once these recommendations are received, we intend to approach the City of Vancouver and engage in discussions on how to implement these ideas.

We appreciate Richmond's willingness to work together with us in this regard. In addition, we are prepared to review traffic patterns on the bridge related to weaving in the north-bound direction near the Granville Street exit which is a source of congestion as well as accidents.

Given the above, the Airport Authority does not see the requirement for a tow truck at the Arthur Lang Bridge as a high priority. We prefer to focus our efforts on the traffic issues previously listed. However, we have no objection to the City of Richmond placing a tow truck at the south end of the bridge, north-bound direction as requested.

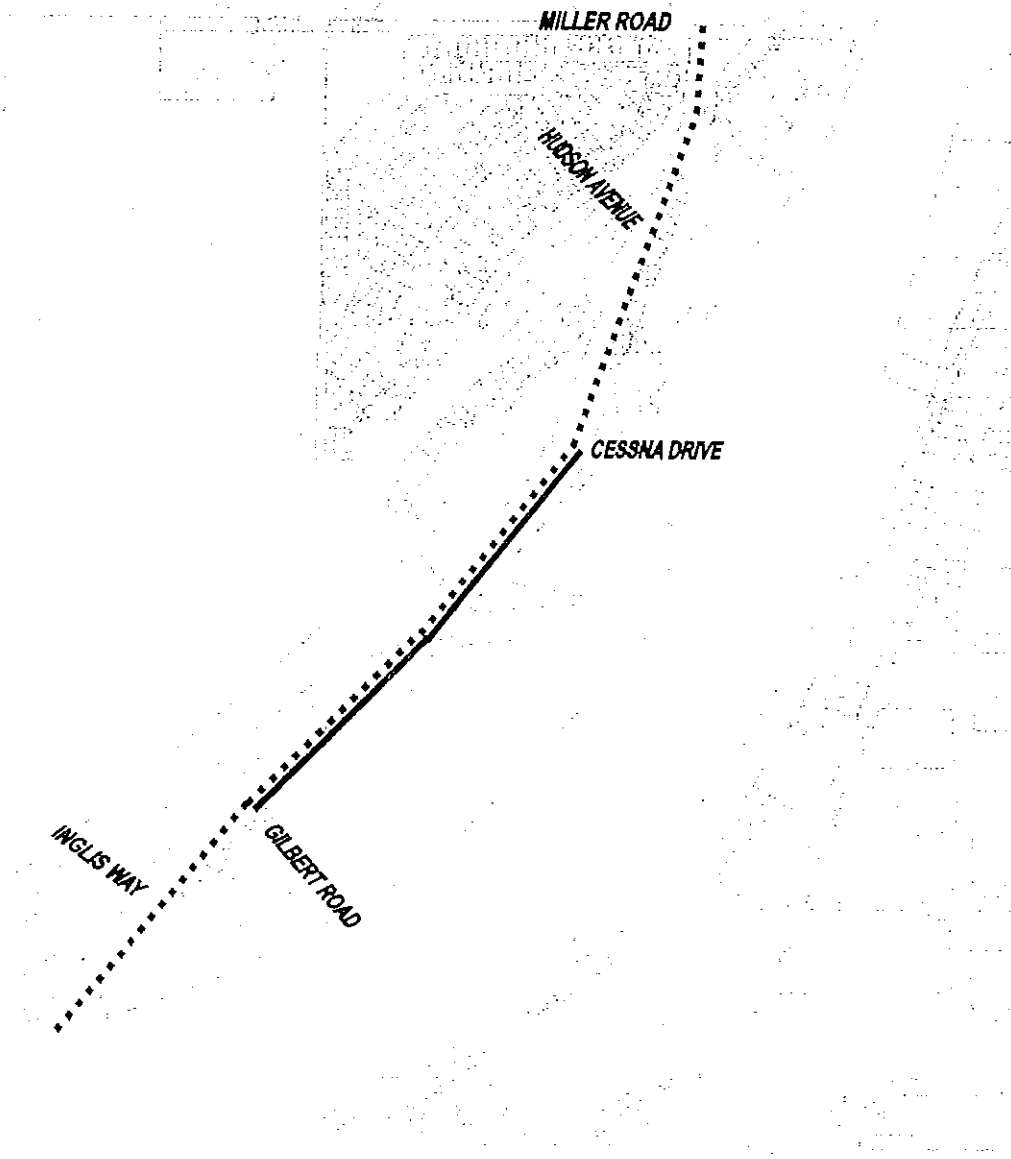
We are grateful for the City's commitment to improve conditions in this corridor and look forward to working together to maximize the utilization of the existing road network.

Sincerely,



Bob Cowan
Sen or Vice President, Engineering

Proposed Russ Baker Way Transit Priority Lane



Legend

- Multi-purpose transit/HOV/HPV lane (Original concept not recommended)
- Transit priority lane (Recommended)