



the use of one eastbound lane with reversed flow. The PM eastbound peak volumes are also constrained by the upstream intersection at Mary Hill Bypass / Lougheed Highway.

The westbound flow in the PM peak hour is approximately 1900 vehicles per hour. This volume can be accommodated within the provided capacity of the eastbound bridge structure when two lanes are available, however, when only one lane is provided as per counterflow operations, the capacity is exceeded and long queues form along the Lougheed Highway. The reduction in capacity in the westbound direction during the PM peak period, although resulting in congested conditions in the westbound direction, is considered beneficial due to the higher demand being served in the peak eastbound direction through the added capacity provided through the implementation of counterflow across the two bridges.

### **Future (2011) Traffic Demand**

Traffic demand forecasts were generated for the 2011 planning horizon for the North Fraser Perimeter Road. These forecasts assume that the new Fraser River Crossing is constructed and tolls are imposed on this new crossing. During the 2011 AM Peak period, the westbound traffic flow is anticipated to be approximately 4300 vehicles per hour under the High Retention Toll Scenario and 4400 vehicles per hour under the Low Retention Toll Scenario. In either scenario, the westbound demand is forecast to exceed the capacity of the two lane bridge structure that is dedicated to the westbound lanes.

In the opposing direction during the AM peak period, the eastbound flow is anticipated to reach a volume of 2200 vehicles per hour under the Low Retention Toll Scenario and 2400 vehicles per hour under the High Retention Toll Scenario. In both scenarios, the capacity of the one lane provided across the Pitt River in the eastbound direction during counterflow operations would be exceeded. As such, queues would form along the Lougheed Highway and Mary Hill Bypass. The benefit of maintaining counterflow operations (approximately 400 to 600 unserved vehicles per hour in the eastbound direction (3/1) compared to 700 to 800 unserved vehicles per hour in the peak direction (2/2)) is questionable as similar queuing would result in each direction with or without counterflow.

In the 2011 PM peak period, the eastbound traffic flow is anticipated to exceed 4500 vehicles per hour under the Low Retention Toll Scenario and 4300 vehicles per hour under the High Retention Toll Scenario. In either scenario, the eastbound demand is forecast to exceed the capacity of the two lane bridge structure that is dedicated to the eastbound lanes.

In the opposing direction during the PM peak period, the westbound flow is anticipated to reach a volume of 2700 vehicles per hour under the Low Retention Toll Scenario and 2800 vehicles per hour under the High Retention Toll Scenario. In both scenarios, the capacity of the one lane provided across the Pitt River in the westbound direction during counterflow operations would be exceeded. As such, queues would form along the Lougheed Highway approaching the Pitt River Bridge. The benefit of maintaining counterflow operations (approximately 900 to 1000 unserved vehicles per hour in the westbound direction (3/1) and 700 to 900 unserved

vehicles per hour in the eastbound direction (2/2)) in the future is questionable given the similar queuing conditions that will likely result in each direction with and without counterflow.

## Findings

The following findings or conclusions can be drawn from this analysis:

- The capacity of the two bridge structures operating without counterflow (two lanes in each direction) is unable to meet the traffic demands in the peak direction for both the AM and PM peak periods. This is true for the current time frame and the 2011 planning horizon with the Fraser River Crossing constructed.
- Providing counterflow (3/1) into the future with the Fraser River Crossing constructed will likely cause additional delays over and above normal operations - when two lanes are provided in each direction (2/2). In other words, counterflow operations in the future would likely be less optimal when compared to the bridges being left to operate in a normal operations (2/2) configuration.
- Traffic demand forecasts for both the AM and PM peak periods indicate that in the peak direction, three lanes are required across the Pitt River beyond the implementation time frame of the Fraser River Crossing. As a minimum, three lanes would be required in the peak direction with only two lanes required in the opposing direction, therefore implying that a counterflow operation would need to be maintained.