9/12 tabled by Mr Chris Wilson.

BRIEFING NOTE

Review of Post Opening Traffic Demand for Cross City Tunnel

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Prepared for
Road and Traffic Authority

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Summary

The purpose of this briefing note is to provide a preliminary report on early demand trends for traffic using the Cross City Tunnel (CCT).

The preliminary observations made are;

1. The volume data collected to date is too short to draw firm conclusions regarding the likely future volume trend. However, the analyses do indicate that:
   - there is significant variation in the untolled volumes, and associated tolled volumes in the short run of data; and as a consequence
   - it is statistically possible that the tolled daily volumes could track to a level in the range of 25,000 – 52,000 by December 2006

2. At this point in time, the low levels of capture during the off peak periods is a significant contributing factor to the lower than expected daily usage of the CCT.

3. Preliminary analysis has indicated that should the toll for the main tunnel be decreased to $2.90 for cars, the resultant additional traffic would likely result in a revenue neutral situation.

4. Analysis of the data by hour of day may reveal an optimal solution through differential tolls, i.e. lower tolls during off peak for all vehicles.

1. Introduction

The scope and components of the analyses were as follows;

1. Analysis of the tolled daily volumes for Class 2 vehicles (private vehicles) from opening to the introduction of the toll free period that commenced on Monday 24 October 2005, with a preliminary assessment of the:

    - influence of daily variations and school holidays on tolled daily volumes;
    - underlying 'ramp-up' profile and likely underlying trends in tolled volumes; and
    - variation in diversion levels over hourly periods of a week day.

2. Analysis of the variations and implied 'trend' in the volumes derived from data collected in the period since opening on 29 August to 11 November 2005.

2. Primary Observations

Assessment of the collected traffic data was conducted for each of the tunnel segments, being;

1. East bound main tunnel
2. West bound main tunnel
3. Sir John Young Crescent exit portal

Separate analyses were conducted for;

1. tolled period from opening on 29 August 2005 to 23 October 2005, and
2. untolled period from 24 October 2005 to 11 November 2005.

The analysis relies upon a short run of data and as such the estimates can have a high degree of variance. As more CCT traffic data is received, the statistical reliability of the forecasts can be improved.

3. Diversion Levels and Toll Elasticities

The untolled traffic data received since 24 October only provides a short time series, but one which is sufficient to assess the implied diversion levels and toll price elasticities at this point in time. The diversions are likely to change during the 'ramp up' period. Diversion (%) under tolls, by hour and the total day, for selected weekdays is presented in Figure 1.

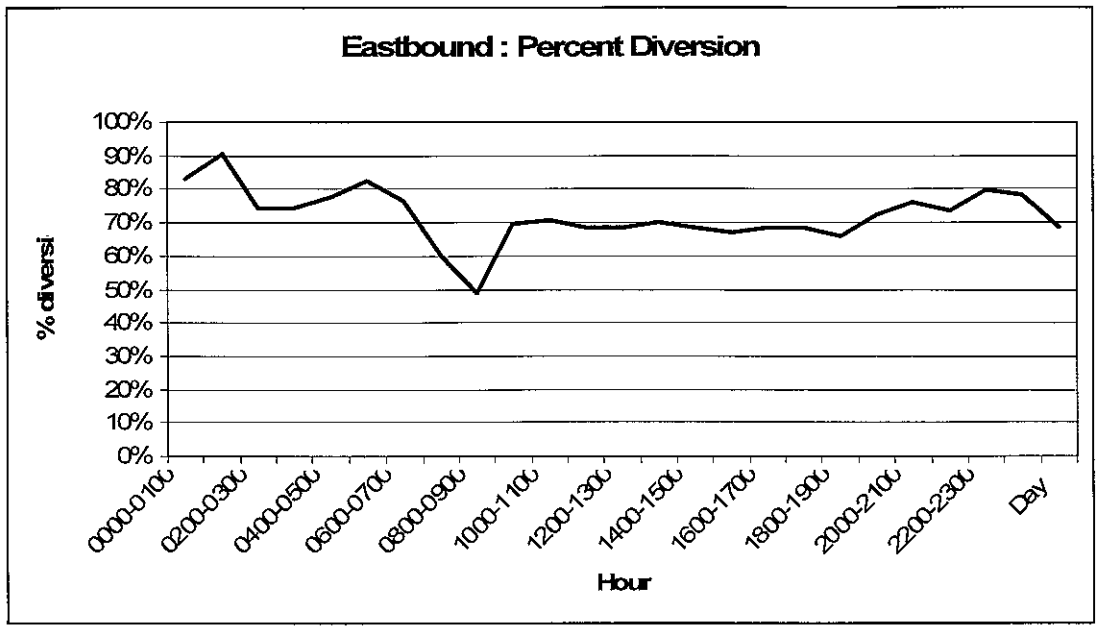

Figure 1 – Diversion (%) under Tolls, by Hour and Total Day – for Sep-Oct 2005

Diversion (meaning that percentage of users diverted out of the tunnel under tolls) is:

- about 50% (and as low as 40% on some days) in the morning peak hour, consistent with levels observed on other toll roads particularly during ramp up periods; but
- higher in non peak periods of the day, implying lower than expected capture in off-peak periods.

Daily volume elasticity and revenue, related to varying levels of tolls is presented in Figure 2. This reflects the relationship between the toll level and tunnel usage as revealed by the initial CCT usage data.

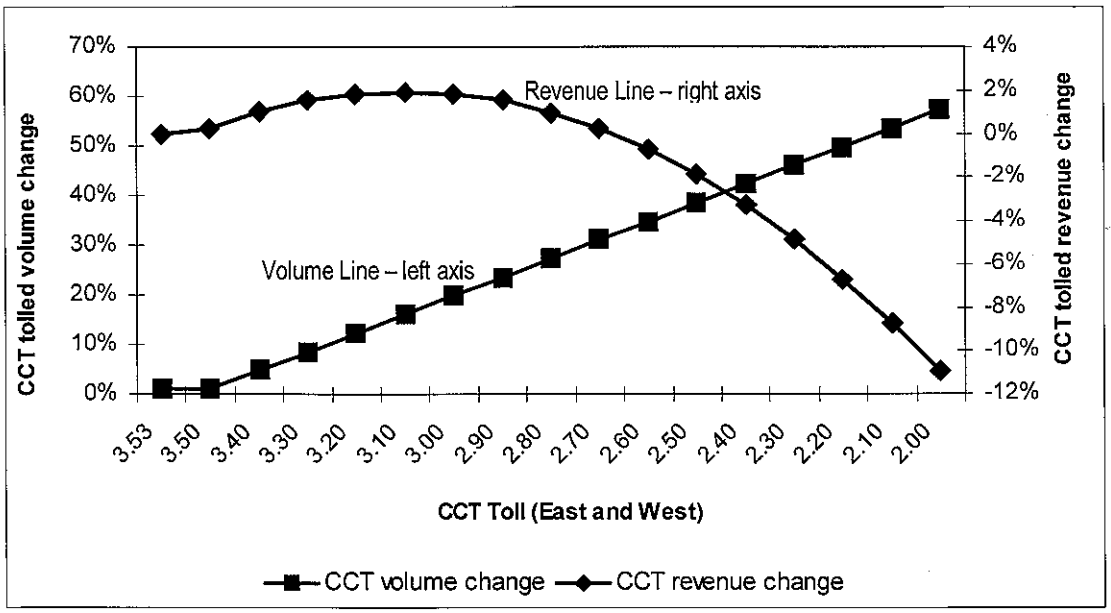

Figure 2 – Daily Volume Elasticity and Revenue Related to Tolls
Note: Percentage on vertical axis against initial observed usage data

Preliminary estimates of elasticities over a $ 3.53 - $ 2.00 range indicate that:

- the tolled revenue curve is possibly revenue positive at a lower toll; with
- an optimum toll in the range of $3.20 to $2.90.

However it should be noted from the level of diversion during off peak hours as shown in Figure 1, could reveal possibilities for optimising toll levels. Clearly elasticity (diversion response to toll level) characteristics of the off peak are different to the peak period.

Further analysis of the data by hour of day may reveal an optimal solution through differential tolls, i.e. lower tolls during off peak.

4. Ramp up and Trends to December 2006

Statistical analyses of the sequence of observed tolled daily volumes and untolled daily volumes, during the untolled period, indicated two possible ramp-up and trend lines through to December 2006. The two possible ramp-up and trend lines are shown in Figure 3, together with the observed and estimated tolled CCT daily volumes. The primary observations are that:

- a log model reflects the 'tapering' effect commonly observed in the ramp-up phase of tollways; and
- a linear model reflects a possible 'upper' trend in tolled volumes.

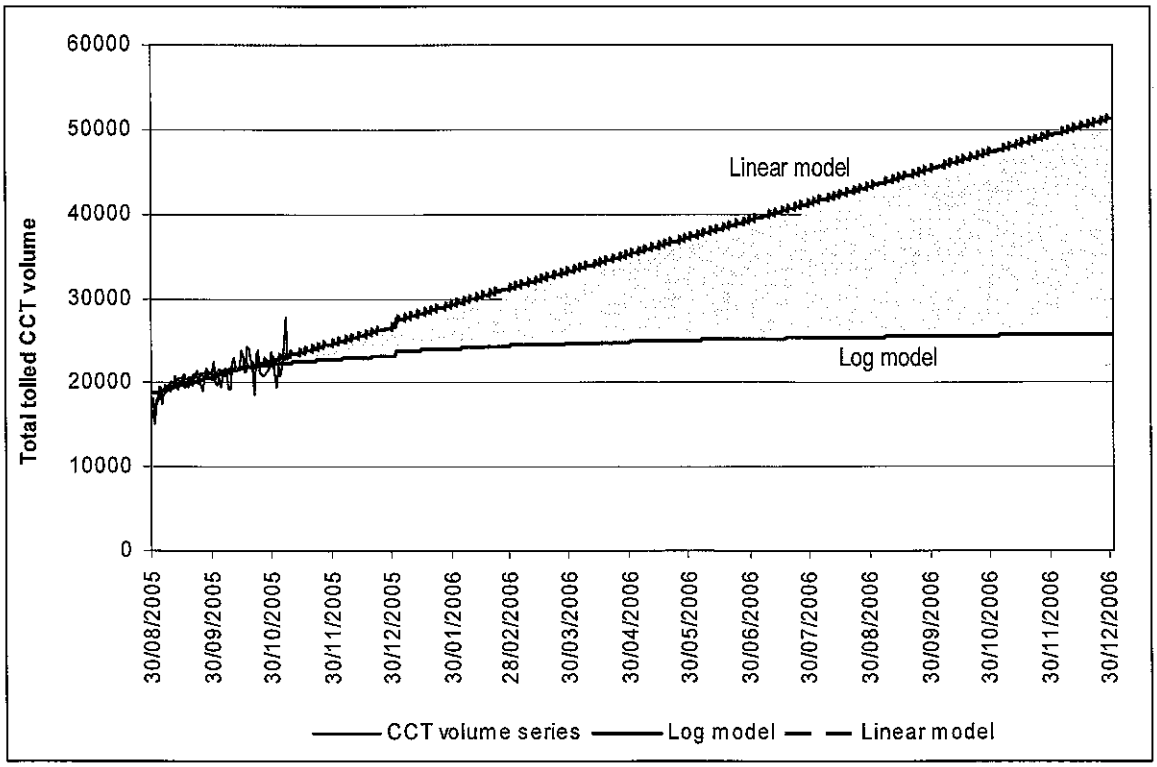

Figure 3 – Observed CCT Daily Volumes and Possible Ramp-up and Trend Forecasts

These two possible statistically valid trend line interpretations have significant effects on the forecasts.

If the total CCT tolled volumes are projected to the end of December 2006, using the log model, and inclusion of the remaining traffic management works, then the tolled CCT volumes are seen to track towards a level of about 25,000 vehicles per day.

However, if a linear model is assumed to hold, then the tolled volumes track towards a level of about 52,000 vehicles day.

This large range illustrates the limited data series to date and the uncertainty in forecasting at this point in time.

5. Other Factors

There are some other factors that could be contributing to lower than expected traffic volumes;

- significant rise in petrol (ULP) price over 2005, particularly since August 2005;
- some traffic management treatments in the CCT corridor not yet being in place;
- low proportion of motorists having electronic toll tag;
- changes in base assumptions applied to the traffic modelling undertaken in 2002; and
- adverse publicity and resulting negative attitude which may be influencing normal driver behavioural response.

Further work and data would be required to estimate such effects.