

# THAMES GATEWAY BRIDGE – PUBLIC INQUIRY

## INSPECTOR'S QUESTIONS: 28 MARCH 2006

INQ/25

### 1 **TFL/265: Changes In Accessibility**

- 1.1 Paragraph 5: Map 4 identifies wards in 9 Boroughs in west and south London modelled to have increases in accessibility as a result of the scheme. Paragraph 5 lists the three ways in which the model has generated those results. The first two bullet points in paragraph 5 identify changes in the network and changes in travel time. The third way in which the results were generated is described as "noise in the model". Is the model less "noisy" in the five boroughs nearest the scheme than in the west and south of London? If so, why?
- 1.2 Paragraph 7: speculates that accessibility changes in some parts of London remote from the scheme might arise from traffic changes on the M25 consequent upon the scheme. What are the locations and magnitudes of those traffic changes?

### 2 **TFL/264: Additional Junction Analysis Information**

#### *Introduction*

- 2.1 TFL/246 arose from a request (day 61, page 3, lines 8 to 25) for the following additional information in respect of junctions 3, 4, 6 and 7:
- The final proposed layout.
  - Locations of stop lines at traffic signals.
  - Location of each link used in the TRANSYT assessment.
  - Extent of the queue space in each link, illustrated as described. This has not been provided in the case of junction 6.
  - A note, in each case, of the constraint that defines the queue space. This has not been provided.

#### *Scope Of This Note*

- 2.2 It appears that the TRANSYT assessment of the performance of junction 3 (A13/A406, the northern end of the scheme) does not comply with the guidance of the TRANSYT User Guide (TFL/119/A, published by the TRL). Assessment in compliance with the Guide appears to indicate that congestion at this junction is likely to occur during the PM peak with the scheme in place in the assessment year. The assessments of junction 6 (Pettman Crescent) and junction 7 (Eastern Way/Harrow Manor Way roundabout) are inconclusive, for the reasons given. This note explains how those working conclusions were reached and invites TFL's comment.

### *Limit Queues*

- 2.3 Section 11.4.6 of the TRANSYT User Guide explains that it is important that queues on circulating links of signalised roundabouts do not extend back around the roundabout so as to block the upstream junction. TRANSYT's outputs for each link in the junction include the "mean maximum queue" length (MMQ) but, as explained in sub section 11.4.6.1 of the Guide, this is likely to be exceeded in 50% of cases (that is, in half of all cycles of operation of each set of traffic signals during the assessment period). The Guide therefore recommends that an allowance should be made for the cases when the queue will, in real life, be longer than represented by TRANSYT, to avoid the roundabout locking up. That is done by reducing the modelled length of the queuing space, and perhaps by other measures too at the designer's discretion to ensure confidence that the actual range of queue lengths can be accommodated in the space available.
- 2.4 The Guide recommends a two-stage approach to the assessment of available queuing space in such circumstances. Firstly, the allowable queue length in each link is identified, initially in metres and then in pcus (passenger car units) on the basis that each pcu occupies 5.75m in one lane. Secondly, the number of pcus is reduced by a factor of typically between 60% to 75%.
- 2.5 TFL has done the first of these but apparently has not, in the work reported in TFL/210 and TFL/244, done the second. TFL/119 reports (on its 44<sup>th</sup> page, at "card type 38") limit queues on the roundabout at junction 3 (A13/A406) which are between 66.7% and 50% of the available space as reported in TFL/210.

### *Assessment Findings*

- 2.6 The assessment set out in Annex 1 of this note leads to the following findings:
- i) At the A13/A406 junction (junction 3) in the PM peak, TFL's assessment in TFL/210 finds the queues at 3 links in the junction to be too great for the space available, to the extent that the upstream junction would be likely to be blocked. TFL suggest that this situation could be ameliorated if drivers in the lanes in question were to shift to spaces in adjacent lanes (Mr Smith, day 22, page 80, line 3). There is no evidence of the effect such behaviour and the subsequent merging as drivers regained their correct lanes would have on the saturation flows at the stop lines and hence the junction capacity. Nor is it clear how this mechanism would operate when two adjacent lanes are queuing over capacity. Even so, if the assessment in TFL/210 were correct, it would remain the case that the mean maximum 41 queuing circulating vehicles at the A406 entry node would not fit into

the available 39 spaces, and the A406 exit from the roundabout would therefore be obstructed to an extent even if drivers shifted lanes to maximum effect when the MMQ formed.

However, application of the limit queues reported by TFL in TFL/119 to the queue lengths reported in TFL/210 suggests the following conclusions in the PM peak case:

- a) The upstream junction would be likely to be often blocked by 3-lane queues from the A406 entry (queuing across the A406 exit) and the A13 (east) entry (queuing across the A13 eastbound exit) and by a single lane queue less frequently tailing back around the roundabout from the A13 (west) entry (i.e. queuing across the A13 westbound exit).
  - b) TFL have suggested that this latter might be avoided by traffic shifting from one lane to another. On the other hand, the sum of the three circulatory MMQs at the A406 and A13(east) nodes is not less than the total (unfactored) circulatory queue space available and so it is likely that on at least half of all cycles the queues would extend as described in a) above.
  - c) Insufficient data is provided to allow assessment of conditions at the Royal Docks Road entry to this junction: the maximum queue lengths are not measured.
  - d) Nevertheless, with two of the four exits often blocked and another blocking intermittently, it seems likely that the junction would lock up frequently during the PM peak.
- ii) At the Pettman Crescent junction (junction 6) the assessment is inconclusive. It might suggest that circulatory queues from the Plumstead High Street entry to the junction would obstruct the Nathan Way entry in the PM peak. The queue length evidence given in TFL/264 appears inconsistent with that in TFL/210 and no illustration of the queue lengths is provided. The evidence requested on Day 61 would allow a conclusion to be reached.
  - iii) At the Eastern Way/Harrow Manor Way junction (junction 7) in the PM peak, TFL's assessment in TFL/210 finds the queue at one link to be too great for the space available. Application of the assessment method in the TRANSYT Guide with limit queues set at 66.7% of the measured queue length suggests that two circulating queues upstream of the Eastern Way (east) entry to the roundabout would be likely to exceed the space available. These are modelled as the two outer

traffic lanes on this section of the roundabout, likely to be used, for example, by traffic from Eastern Way (west) moving towards Harrow Manor Way and obstructing traffic seeking to enter the junction from Carlyle Road. No queue limit was set in the TRANSYT assessment by the designer in this case and so the design might not be optimised to minimise queuing. The finding is therefore inconclusive.

### *Questions*

- 2.7 i) TFL are asked to provide the reference or references in the TRANSYT User Guide that support the approach taken by TFL to the assessment of queue lengths at the junctions in question. If some other source is relied on, please provide that and evidence of its reliability.
- ii) TFL's comments on the matters set out here are invited.

### **3 TFL/219: LTS Forecasts**

- 3.1 Tables 4a, 4a1, 4a2 and 4b set out estimates of traffic flows. How do the assessments underlying those tables allow, in the a.m. peak period and the 24-hour case, for any effect of traffic induction associated with the scheme?

