Silvertown Modelling: Value of Time Discussion Note

Background to the Modelling and use of VoT

The highway impacts of the Silvertown scheme are estimated using TfL's LoRDM, RXHAM and RailPlan suite of multi-modal models. These models cover the whole of East London in detail, with the rest of Britain covered in reducing detail as you move away from London.

An input enabling the models to estimate travel behaviour are the assumptions about the financial value placed by individual classes of driver on the time they spend travelling. This allows the various costs of different journey choices (including different travel times, parking charges, and potentially road user charges) to be aggregated and traded off against one another. All other things being equal, higher assumed values of time would lead to a greater willingness to pay user charges to save time.

This note sets out the current Values of Time (VoTs) used in the Silvertown project modelling and presents some analysis comparing this with other sources and benchmarks. It describes the rationale for use of a national value which is consistent with government guidance.**Consistency with Department for Transport guidance (WebTAG) and advice from independent experts**

The WebTAG Forecasting & Uncertainty unit (M4, p6, 3.2.6) states that when defining the core scenario *'The national assumptions from the TAG Data Book should not normally be varied without very strong evidence'*. The TAG data book referred to here includes dataset 'A1.3.1 - Values of Time per person'.

Also in the WebTAG assignment unit (M3.1, p17, 2.10.16) *'In the case of a highway assignment model which operates with a demand model, it is better if the values of vehicle operating cost and value of time derived from TAG unit A1.3 can be retained in the base year assignment without amendment and they are changed in forecasting in line with the advice in that unit*'.

Further, Dr Denvil Coombe was appointed the role of independent expert advisor on river crossings modelling as well as on development of TfL's Strategic modelling capability. Use of a national value is in line with his advice with national values being used in all of TfL's Strategic Modelling since 2008.

Evidence from other data sources

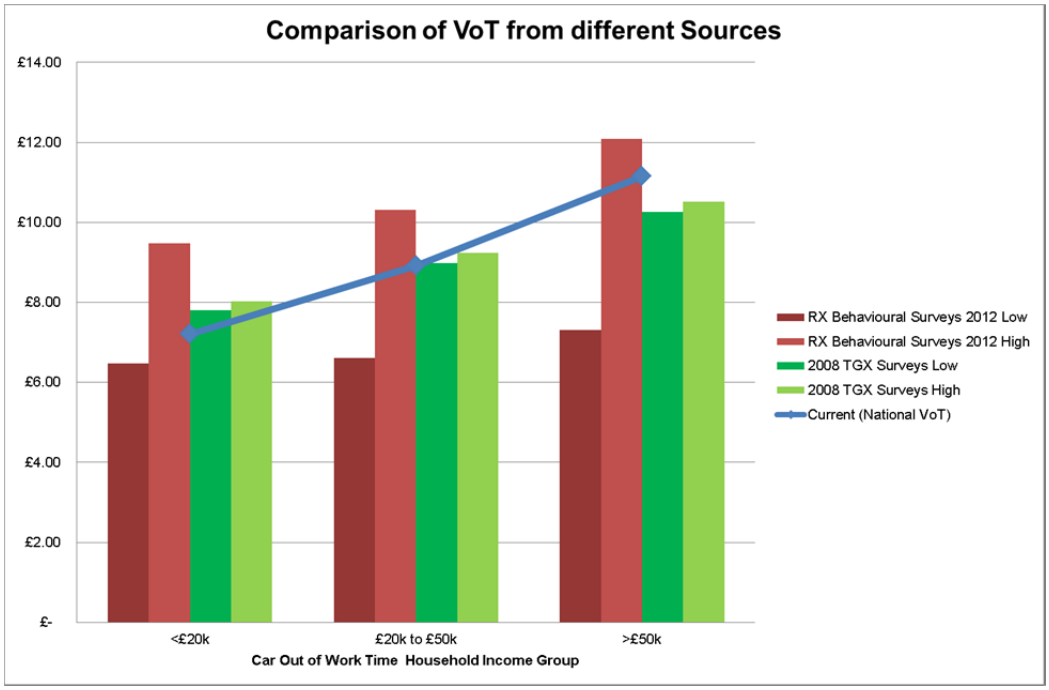
This section presents an analysis of available evidence to determine the extent to which the national VoT adopted in RXHAM is supported by local data.

A. ***Benchmark against other local values:*** VoTs arising from two surveys (undertaken in 2008 and 2012) of users and potential users of existing and potential East London Crossings were compared to the national VoT. This was done primarily

for the out of work time (OWT) (largely commuting) trip purpose as evidence on the other values for other purposes from the surveys is weaker.

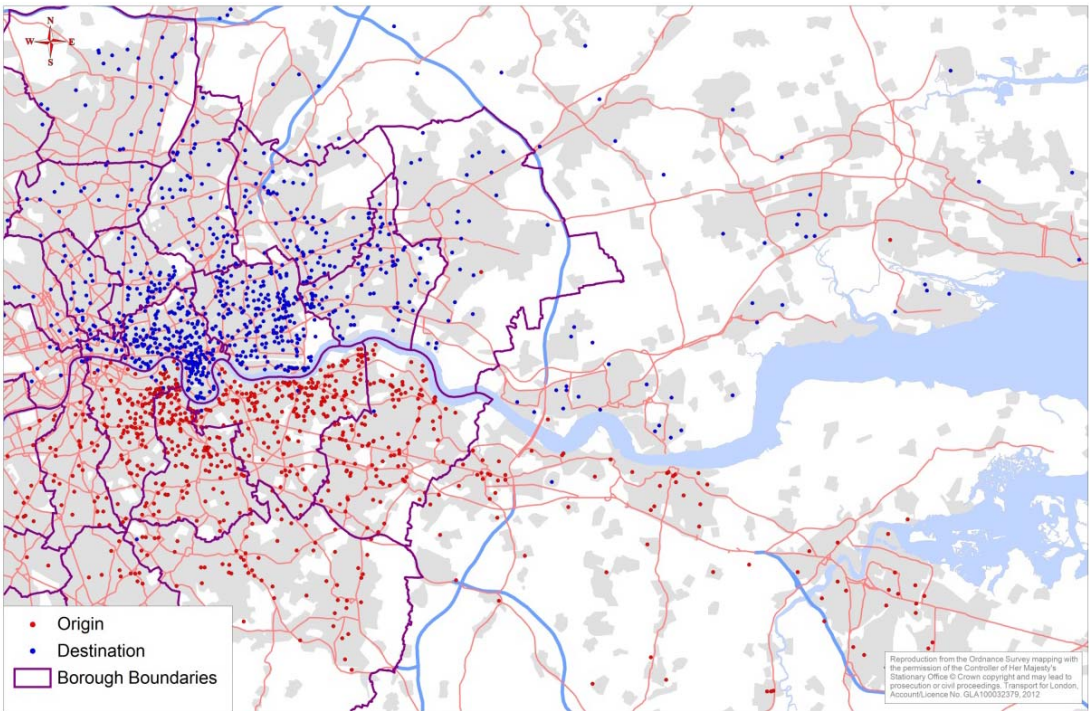
Figure 1 shows the ranges suggested for the VoT from the surveys and compares this to the national VoT. The figure shows that a national VoT, as currently adopted in RXHAM, is well supported by the local surveys as the values fall into the range suggested by the surveys. The low and high values indicate the VoT ranges estimated from each of the two surveys.

Figure 3: VoT comparison between the model and surveys for Cars OWT (Commuting and other purposes)



B. ***Trip patterns and income levels:*** the trips in the East London model have origins and destinations across a wide area including some non London residents, many of whom will use the key routes that are of interest to the Silvertown Tunnel project (in particular the Dartford and Blackwall Tunnels). Roadside interview data collected for the project shows that around 20% of traffic at Blackwall tunnel is from outside London in the AM peak hour (08:00 to 09:00). *Figure 1* below shows the origins and destinations of trips using Blackwall tunnel throughout the day from RSI data in the northbound direction. This broad spread of trip origins and destinations further suggests that the national VoT, rather than a VoT that is calibrated to a specific local area, is most appropriate for RXHAM.

Figure 1: Origins and Destinations of Northbound Blackwall Tunnel Roadside Interviews



Values of time apply to the whole of the modelled area

'True' values are likely to differ between trips to or from specific areas e.g. trips involving central London or outer London, or between trips taking place in East London or West London. Furthermore, on a more local level (e.g. individual wards) it has been suggested that the 'true' values of time could vary by spatial area to reflect the fact that some individual wards have greater levels of deprivation than others. Trips from wards where deprivation is most significant would therefore be expected to have a lower 'true' value of time to reflect the fact that users from these wards would, on average, have an income that is lower than the national average and hence, less willing to pay the user charge.

It should be noted however that the WebTAG guidance does not recommend that VoTs within the model should be varied spatially to reflect any variation in socio-economic factors within the study area.

However, for a highway scheme that includes a user charging element, WebTAG does require the VoTs to be segmented by income. In RXHAM the VoTs are segmented by three income groups for out-of-work car users.

Conclusions

The values of time adopted in RXHAM are in line with recommendations set out in DfT WebTAG guidance as well as advice from independent experts. In addition, the benchmarking of these values of time against observed data have demonstrated that these values of time are appropriate for the Silvertown Tunnel Project.