

## Appendix B: Freight Journey Time Reliability Executive Summary - Faber Maunsell

### Introduction

- 1 In earlier research undertaken on behalf of West Midlands Authorities <sup>(i)</sup>, the business community and resident groups within the West Midlands indicated that journey time variability is a more critical issue than the absolute journey time; the length of time that a journey takes to complete. This was found particularly to be the case for commercial vehicle fleet operators attempting to deliver goods and services within tight delivery windows. Since very little was known about projecting or evaluating the impact of journey time reliability on operating costs it was felt that further consideration should be given to research into this area within the West Midlands.
- 2 The aim of this research was to provide an assessment of the degree of time sensitivity of freight operations within the West Midlands and to allow estimates to be made relating to the amount of additional time operators build into their planning schedules, the reasons for this and the potential financial savings and industry benefits that could be achieved if the reliability of journey times could be improved. The research has enabled an informed estimate to be calculated as to the overall cost of congestion to the freight industry within the West Midlands.
- 3 To gain an understanding of the freight sector in the West Midlands a variety of research was undertaken. The main area of the study was telephone interviews which were conducted with 355 freight operators within the West Midlands. This research formed the basis of the study and provided quantifiable information. In order to add depth to the information generated by the telephone interviews, 40 in depth interviews were conducted; 20 with freight operators, 20 with freight receivers. Interviews were also carried out with the two trade organisations that represent the road haulage sector in the United Kingdom and a desk based literature review was undertaken.

### The West Midlands Freight Industry

- 4 The majority of firms who took part in the telephone survey (65%) only operate during the day. One third of firms operate both day and night. The majority of firms spoken to operate 4 and 5 days a week (67%).
- 5 Of those companies questioned as part of the telephone survey, just over half (51%) experience customers providing them with time delivery slots of two hours or under although this does vary by industry and operator type. The in-depth interviews indicated that all of those who operate haulage experience some

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i West Midlands Congestion Research (Accent), June 2006 and Business Surveys (Ecotec) June 2006

deliveries to delivery windows at some time. The provision of delivery windows has implications on the way that companies operate. With the creation of a delivery window this restricts the freedom to work around congestion or predicted congestion.

- 6 Although many firms are subject to delivery windows, most (74%) do not incur financial penalties for late deliveries.
- 7 However, missing a delivery slot can have knock on effects further up the delivery schedule and re-delivery costs are borne by the haulier. Generally, the recipients of goods are less affected by late deliveries as staff due to unload goods can be put onto other tasks. Only when a late/missed delivery halts a production line or similar can the repercussions be major for the recipient. However, only around 10% of late and early loads are never accepted.

### **Journey Time Reliability – Missed Deliveries and Journey Time Planning**

- 8 The telephone survey indicated that 48% of the firms do not miss any deliveries each month. However, the median number of time sensitive deliveries that are missed is between one to five per month and between six to ten deliveries are early.
- 9 The amount of time lost by drivers and vehicles ‘sitting around waiting’ is of concern to all hauliers. The median amount of time lost per day indicated by the telephone survey was sixteen to thirty minutes. However, over one third (36%) felt their drivers lost in excess of three quarters of an hour waiting (base 48). Firms who built a contingency into their delivery schedules had longer waits at their destinations than those that did not allow contingency time.
- 10 Just over a quarter of companies surveyed for the telephone survey always built in contingency for their schedule. The telephone survey suggests that the average number of minutes added to a one hour journey in contingency time is 28 minutes, almost 50%. However, the majority of companies never build in contingency (56%). The further afield the delivery is, the more likely it is that contingency will be added into journey times.
- 11 Adding contingency time makes little difference to the number of missed deliveries although it does appear to result in a higher proportion of waiting time due to early arrivals. This might suggest over estimation of journey time, pointing to unreliable/variable journey times.
- 12 Also, those operators who incur fines for late delivery build contingency into delivery schedules. It appears that the costs of waiting at destinations if early are lower than any fine they might incur for being late.

- 13 Different organisations consider different factors when estimating their delivery schedules. However, firms indicated the following were important in estimating journey times:
- Delivery schedules;
  - Demand;
  - Journey distance;
  - Anticipated congestion;
  - Working Time Directive; and
  - Off loading times.

### **Congestion In the West Midlands**

- 14 Over three quarters of respondents to the telephone survey agreed that congestion is a problem in the West Midlands (81%) and that it affects their business (78%). Almost 60% agreed that congestion was a major factor in missed deliveries or collections.
- 15 However, congestion is not the only element considered when planning delivery schedules. Off loading time, the Working Time Directive and delivery window deadlines are as important considerations in journey time scheduling as congestion. Road works and poor urban traffic management were also mentioned as causes of delay.
- 16 Most of the companies taking part in the in-depth interviews worked round congestion as much as possible, for example operating prior to the morning peak or at night. Those firms operating at night were able to make more deliveries / collections at this time due to the lower traffic levels. Of the sixty one respondents in the telephone survey who did avoid certain times of day; the AM peak was the most commonly avoided along with Monday and Friday.
- 17 Whilst the majority of respondents never used the M6 Toll to avoid congestion (53%), those that used it sometimes tended to do so “in an emergency” to meet delivery windows.
- 18 Just over half of the freight operator in depth interview respondents believe that journey time has increased by up to a quarter in the last five years. However, they were unable to be sure if this was due to the impact of the Working Time Directive or whether increasing congestion has been responsible. It was felt that if this trend of longer journey times were to continue, the implications of the Working Time Directive would increase meaning that more drivers and vehicles would be needed to do the same work as at present. This increase in drivers and vehicles would have an obvious negative knock-on effect in terms of congestion, further exacerbating the existing problems.
- 19 The overall benefits of decreased congestion can be summarised as follows:

- improved fuel efficiency;
- lower CO2 emissions as fuel efficiency is increased;
- the potential to reduce fleet size;
- better utilisation of drivers; and
- improved job satisfaction.

## Cost of Congestion

- 20 To estimate the cost of congestion within the West Midlands conurbation, we have considered how much working time is lost due to congestion to those operating vehicles from the West Midlands conurbation.
- 21 From the telephone survey we have estimated that the cost of lost time to the freight industry in the West Midlands due to congestion is £216 million per annum.

## Benefits of Journey Time Reliability

- 22 The possibility of improved journey time reliability was discussed with the respondents in the telephone survey. The options with the largest proportion for the responses were:
- could take on more business; and
  - increase amount of deliveries per day/shift.
- 23 If journey time reliability was improved, more work could be done with the same amount of staff and vehicle investment and productivity would increase.
- 24 However, when this was discussed during the case studies some of the companies interviewed felt that they could only deal with as much work as they were getting at present. One out of town warehouse retailer felt that if they received more vehicle movements per day due to reduced congestion they would have insufficient warehouse capacity. Other companies felt that it would only be an advantage to the hauliers and not to those receiving goods.
- 25 Some receiving companies went as far as saying that with an increase in journey time reliability they would expect an increase in the price charged by their transport service providers. This was demonstrated by the fact some of the operators said that with an increase in reliability they would look to add value added services like guaranteed delivery time to their customers and hence increase their costs.

## Road Pricing

- 26 A minority of operators felt that road pricing could potentially improve journey time reliability but would need to be assured that the incremental benefits outweighed the additional costs.

- 27 Eighteen percent of respondents to the telephone survey would like to see more roads tolled around the West Midlands.
- 28 Many of those who supported road pricing cited caveats with their agreement. For example, fuel tax levels would have to be changed or the funds raised from road pricing would have to be ring fenced and put into school transport or road infrastructure.
- 29 The freight industry viewpoint as described by the trade associations (Road Haulage Association & Freight Transport Association) is that industry is already over taxed and that the freight industry, as essential road users, should be exempt from road pricing and that the cost of fuel and road tax should be reviewed before any road pricing scheme is implemented.
- 30 There were concerns from industry over how a road pricing scheme would be policed to prevent over use of non-tolled roads simply shifting the areas of congestion. One bulk operator raised specific concerns about unscrupulous operators driving their vehicles down unsuitable alternative non-tolled routes, which would allow them to undercut on price and could be a potential danger to the public. Operators were also concerned about how foreign trucks would be policed.

### Comparison to DfT Guidance

- 31 The conclusions from this study are found to be divergent from the models of costs used in DfT WebTag (Transport Analysis Guidance Website - Department for Transport's website for guidance on the conduct of transport studies). However in summary, the operational costs for the average haulage vehicle were higher than the model of costs as created by WebTag, the costs of employment and fuel are approximately accurate but the other non-fuel operational costs are not under represented by between 161% and 270%.
- 32 This project has identified non-fuel operational costs are far higher than represented in Webtag.
- 33 A possible cause of this significant under representation is that as these operational costs are a function of distance rather than of time, which would not be an issue assuming that all vehicles can operate in an efficient way. Some of the costs are associated with distance travelled are such as wear on tyres, but many of the costs such as depreciation are the same what ever the distance travelled. Therefore as congestion increases, and as the vehicles work less efficiently taking on less work either because their journey time increases or because they take on less work because of concerns with Journey Time Reliability, this problem will be increasing.