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How Schemes on Red Routes are Evaluated

Martin Lawrence, Senior Consultant, Oscar Faber

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4 March 1999

Acknowledgements

The assistance of the Traffic Director for London in the preparation of this paper is gratefully acknowledged. All the views expressed, however, are those of the author. Oscar Faber, Consulting Engineers are the South East sector consultants to the Traffic Director and provide technical expertise in a number of key areas. The author is currently seconded to the Traffic Director for London's office.

1 Introduction

This paper aims to consider the way in which Red Route schemes are evaluated. How schemes have been assessed in terms of the achievement of the aims which have been set for the Traffic Director will be established, rather than considering the details of economic evaluation techniques, for example.

The following points will be considered or addressed:

- The duties of the Traffic Director;
- The government's aims for the network and how these have changed;
- Examples of particular schemes that have been constructed, a description of their effects and how they have contributed to the achievement of these aims;
- How the operation of the Priority (Red) Route Network (commonly referred to as Red Routes), is assessed as a whole in terms of the effects on traffic speeds and volumes and retail activity adjacent to it. It will consider to what extent these network wide assessments indicate that the aims have been achieved;

- A description of the Bus Lane Enforcement Camera project and consideration of its impacts.

2) The Duties of the Traffic Director

The office of the Traffic Director for London was instituted by the Road Traffic Act 1991 (RTA 1991). This Act imposed a number of specific duties that require the Traffic Director to:

- Introduce the Priority (Red) Route Network (the "Network");
- Monitor the effects of this network on, for example, traffic speeds and retail activity;
- Maintain the infrastructure which comprises the Network, which includes, for example, the signs which indicate where parking is permitted;
- Manage the implementation of the Network;
- Manage any proposed changes to the Network.

The introduction of the Network has been achieved by the Traffic Director working closely with the London Local Authorities, who have prepared the designs for the Red Route measures that have been implemented on roads for which they are the highway authority. These measures are proposed in a Local Plan, which is submitted to the Traffic Director for his approval. On roads for which the Secretary of State (for the Department of the Environment, Transport and the Regions) is the highway authority the designs have been prepared by the Traffic Director and his consultants and approved by the Secretary of State prior to implementation.

At 31 March 1999, Red Route controls had been implemented on 80% of the Network. Radial highways such as the A2, A20 and A10 currently operate as Red Routes, while orbital roads, such as the A205 (South Circular) are presently having key schemes, such as the Catford contra-flow bus lane, completed.

Changes to the Network can be initiated, for example when a currently derelict site adjacent to a Red Route is proposed for re-development and a new signalised junction might be required. The Local Plan variation and notification procedures, which are enshrined within the RTA 1991, permit the Traffic Director to consider the impact of the signalised junction design (to continue the above example). A variation to the Local Plan will be agreed if the proposals do not conflict with (or even enhance) the specific objectives established for the route.

3) "Old" and "New" aims

The Traffic Director's original aims were established by the Government Office for London in August 1992 [1] and were to:

- improve the movement of all classes of traffic on the Network;
- provide special help for the efficient movement of buses;
- reduce the impact of congestion;
- improve the local environment;
- provide better conditions for pedestrians and cyclists;
- be consistent with the Government's objective of not encouraging further car commuting into, or across, central London.

The above aims did specify that conditions for sustainable transport (i.e. non-car modes: bus passengers and operators; cyclists and pedestrians) should be improved.

Revised aims were given to the Traffic Director in February 1998 by the new Secretary of State [2] following the general election in May 1997. These were to:

- "facilitate the movement of people and goods in London - reliably and safely, and with minimum overall environmental impact;
- encourage walking;
- provide better conditions for cyclists and contribute to the National Cycling Strategy;
- provide better conditions for people with disabilities;
- provide priority for buses so as to achieve their efficient movement;
- improve the local environment and reduce the impact of congestion;
- contribute to London's targets for reduced traffic accidents and road vehicle emissions;
- to support reduced car commuting, especially into or across inner London;

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[1] *Traffic Management and Parking Guidance*, Government Office for London, August 1992

[2] *Traffic Management and Parking Guidance for London"*, Government Office for London, February 1998

- to assist measures to reduce traffic on local roads by providing the first choice for non-local traffic, consistent with achieving the other aims for red routes."

The, "New" aims, therefore, place greater emphasis on improving conditions for sustainable modes and reducing the environmental impacts of vehicular traffic. For example, improvements for pedestrians and cyclists are now identified in two specific aims.

To summarise, the "Old" aims were set in August 1992, while the "New" aims were set in February 1998. The schemes that are described in section 4 below were constructed between winter 1997 and summer 1998. These schemes were devised to achieve the "Old" aims that were current when they were planned.

4) The Assessment of Example Schemes

4.1 A1 Upper Street/Liverpool Road Junction: Bus Pre-Signal

This comprised the provision of bus priority measures, a cycle lane and the improvement of pedestrian crossing facilities. It is located in the London Borough of Islington on the A1 Trunk Road, adjacent to the Angel Underground station. Figure 1 shows the scheme layout.

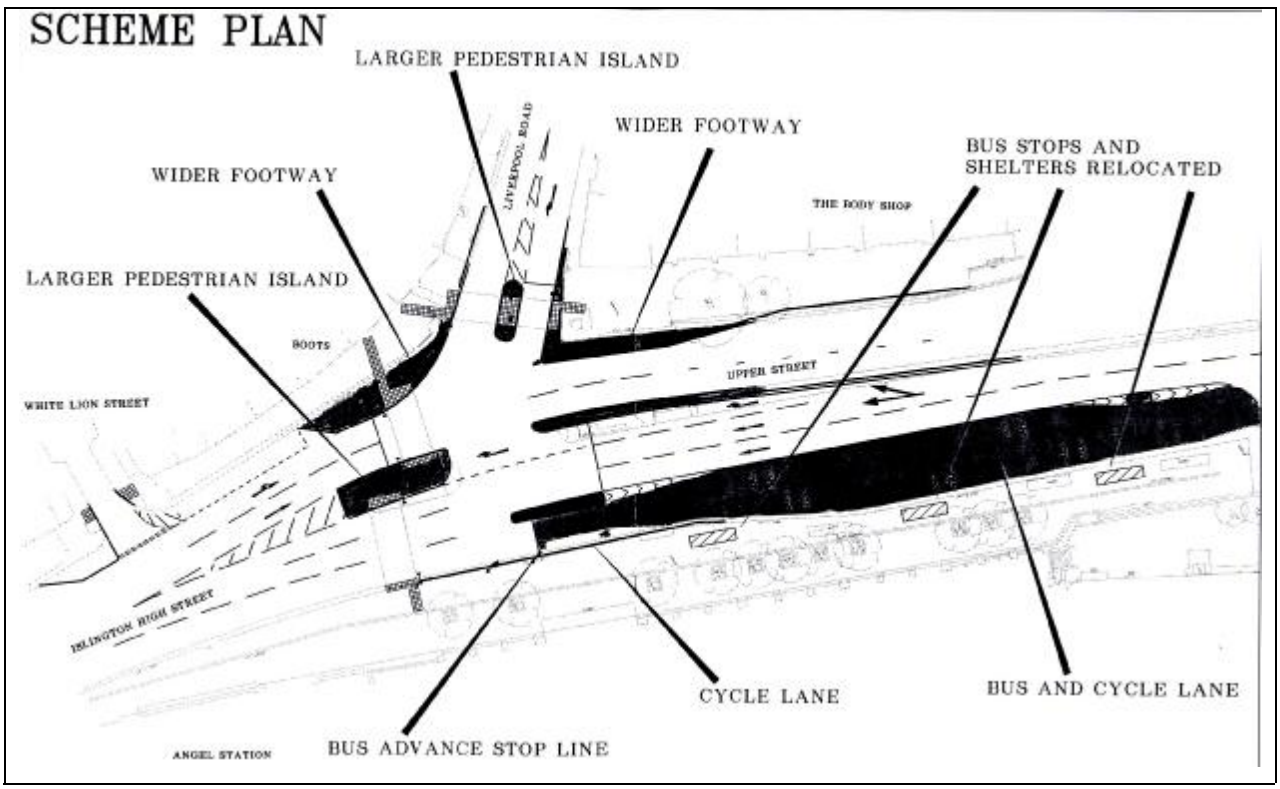

Figure 1: Upper Street/Liverpool Road bus pre-signal scheme

Photograph 1 shows the bus pre-signal in operation. Buses are advancing from the stop line, on Upper Street, while general traffic is held. This enables buses to reach the next downstream-signalised junction, which is only 145 metres away, before general traffic and to easily position themselves should they be routed to turn right at the Upper Street/City Road/Goswell Road/Pentonville Road junction.

A cycle lane is also provided at the nearside of the bus advance area. This enables cyclists to proceed when the bus traffic signal stage operates. Figure 1 also shows the location of the cycle lane, adjacent to the bus advance area.

Large volumes of pedestrians are shown in Photograph 2. This was taken at about 12:30 p.m. on a Saturday. The scheme reduced crossing distances at signal controlled, i.e. "Green Man" facilities, with the aim of making pedestrian movements shorter and safer.

The use, cost and assessment of this scheme are summarised in Table 1[3].

Table 1: A1 Upper Street/Liverpool Road Scheme

Southbound traffic flow per hour:	
Buses	100
Bicycles	200
Cars	900
Cost (1997 £ 000s)	200
Bus journey time improvements Essex Road to Angel (%)	47
Pay back period based on only bus operating cost savings (months)	6

The beneficiaries of the scheme in economic terms can be seen to be bus operators and passengers. However, the scheme also contributes towards the achievement of the, "old" bus, cyclist and pedestrian aims which were current when it was planned. The scheme will deliver improvements in conditions for cyclists, in accordance with the revised aims and facilitate walking.

4.2 A3205 Battersea Park Road: Priority Vehicle Lane

Battersea Park Road and Nine Elms Lane in the London Borough of Wandsworth form a Priority (Red) Route section. A number of measures have been implemented, one of which is the innovative use of a Priority Vehicle Lane which Buses, Heavy Goods Vehicles (HGVs) (heavier than 3.5 tonnes), Taxis and cycles are permitted to use.

[3] *Annual Report 1997-1998*, The Traffic Director for London, June 1998

The commencement of the Priority Vehicle Lane is shown in Photograph 3. The Royal Mail South London (distribution) Centre fronts Nine Elms Lane and HGVs commencing journeys from this depot make use of the Lane as is shown in Photograph 4. The scheme is also close to New Covent Garden and the Priority Vehicle Lane is well used by vehicles serving the market.

A variety of Priority (Red) Route measures have been constructed on this section as indicated in Table 2[3]. Photograph 5 shows, one of these measures, the new Toucan crossing at the Battersea Park Road/Macduff Road junction.

Table 2: A3205 Battersea Park Road/Nine Elms Lane section

North - eastbound traffic:	
Vehicles heavier than 3.5 tonnes (%)	11.6
Buses (per hour)	12
Priority Vehicle Lane Length (metres)	265
Other Priority (Red) Route measures implemented:	
Falcon Road/Battersea Park Road bus advance area	
A section of the Wanbat cycle route: Wandsworth- Battersea	
Environmental enhancement:	
Trees (number)	31
Planters (number)	8

The measures introduced along this section of Red Route will benefit bus operators and passengers, HGV operators, cyclists and pedestrians together with frontages and residents. These measures will contribute to the achievement of the, "old" aims which were current when they were planned and are totally consistent with the modified aims established in 1998.

This section has given examples of scheme types which have been implemented throughout the Red Route network and identified those road user groups that are expected to benefit through their provision. The following section considers how the effects of the Red Route network as a whole, which of course comprises combinations of schemes such as these taken together, are assessed.

5) The Assessment of Network wide effects

Introduction

The Traffic Director assesses the impacts of the Priority (Red) Route Network largely through traffic and retail monitoring surveys. The surveys reported in this paper were carried out when the “old” aims were current. For a more

comprehensive examination of these survey results the reader is referred to the listed reports (given at references 4 and 5).

1997 Traffic Surveys

Traffic surveys are carried out annually and record traffic speeds, parking activity, bus journey times and traffic flow. The surveys discussed here were carried out in 1997 and their results were published in 1999 [(4)]. In the spring of 1997, when these surveys were carried out, 48% of the Network had been implemented. Those sections of the Network which were operating as Red Routes tended to be dual carriageways, where vehicle speeds would be expected to be relatively high. This should be borne in mind when interpreting the survey results.

Average Speeds on the Red Route Network: Figure 2 shows how average speeds have changed on the Network between 1994 (when the, "Before" surveys were carried out) and 1997. Across all the periods surveyed, the average speeds observed in 1997 were higher than those observed in 1994 and 1996. For example, in the PM peak period, average speeds were 14.3 miles per hour in 1994 and 17.3 miles per hour in 1997.

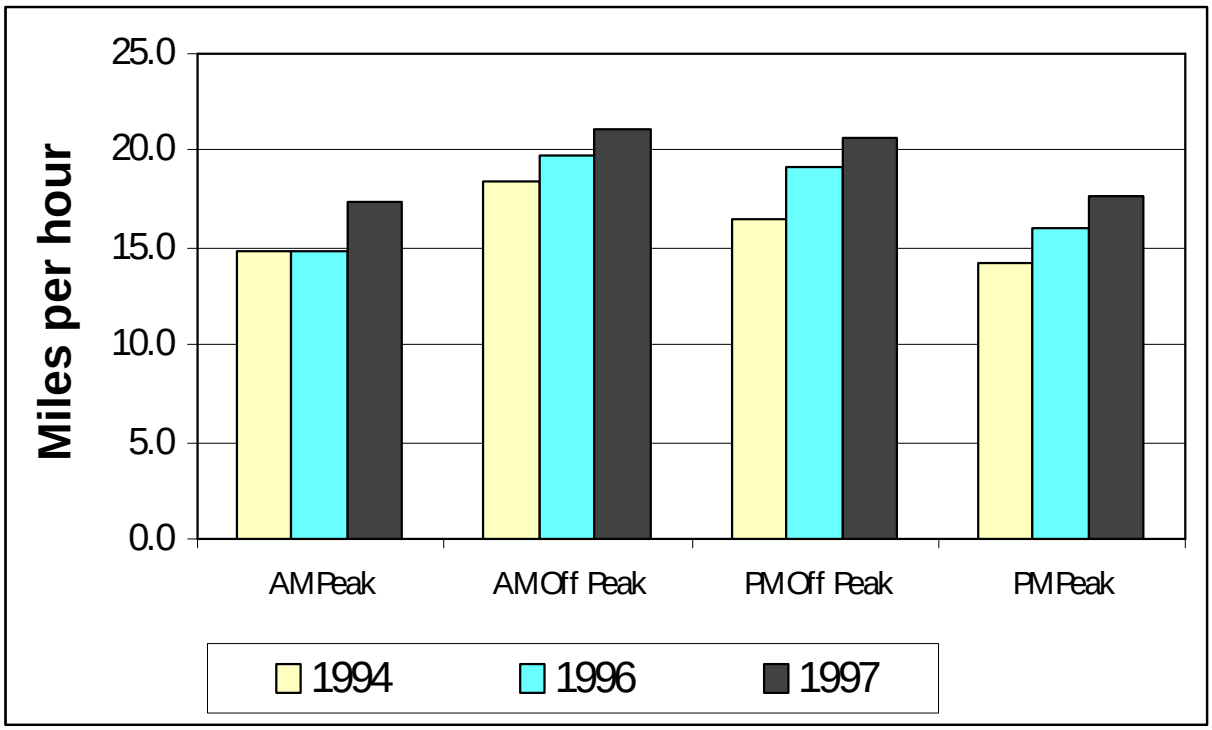

Figure 2: Average speeds on the Red Route Network

[4] *Priority (Red) Routes: Red Routes and Traffic: Results of the 1997 Surveys*, Traffic Director for London and Hyder Consulting, January 1999

The ease with which a journey can be made can be judged not only by the speed at which it is undertaken, but also by the reliability of the journey i.e. to what extent the journey time can be expected to vary when the trip is made a number of times. Compared to the "Before" survey the 1997 results show a 9.6% improvement in journey time reliability for general traffic on the Network.

Figure 2 suggests that the, "Old" aim to "improve the movement of all classes of traffic on the Network" was being achieved when assessed against the criteria of improvements to journey time and reliability.

Mean Bus Journey Times: Bus journey time data has been gathered from a sample of 36 bus routes. When the 1997 survey was carried out eleven of these 36 routes traversed roads where Red Route measures had been introduced on all or part of the bus route. Figure 3 shows the way in which mean bus journey times, expressed as minutes taken to travel a kilometre, have changed during the three years under consideration. When the data is expressed as the sum of journey times for all the times of the day surveyed ("all periods" on Figure 3), mean bus journey times have declined from 3.75 minutes per kilometre in 1994 to 3.67 minutes per kilometre in 1997. If the individual time periods are considered separately, a decline in journey times between 1994 and 1997 can also be observed. This analysis would suggest that the, aim of "providing special help for the efficient movement of buses" was being achieved in 1997 as an increasing proportion of the Network was implemented.

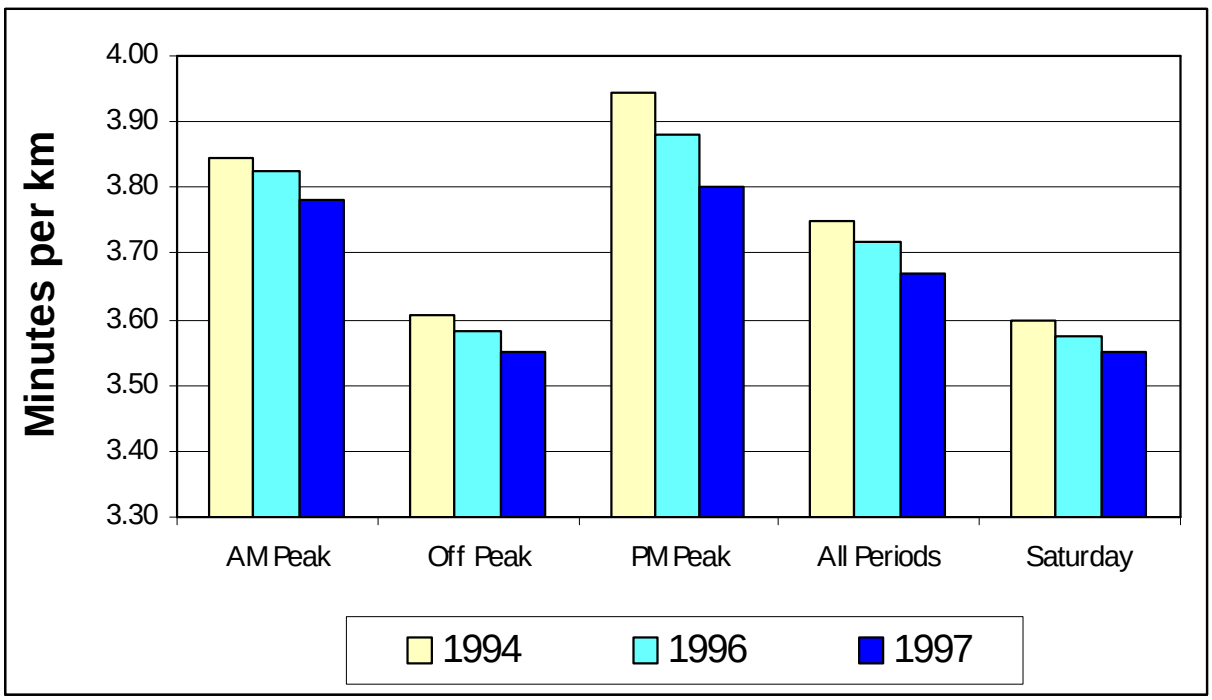

Figure 3: Mean bus journey times

Average Lane Flow of All Vehicles for ATC Sites: A number of advanced Automatic Traffic Counters (ATCs) have been installed on the Network. Figure 4 shows the average flow of vehicles in each lane, counted at the ATC sites, between January 1995 and September 1997, for different time periods during the day. The plot of average vehicle flows suggests that these flows have remained generally constant, apart from those fluctuations that have occurred due to seasonal variations, such as the Christmas holidays, for example. This is consistent with the Government's objective, "of not encouraging further car commuting into, or across, central London" and the relatively constant vehicle flows suggest that this aim has also been achieved.

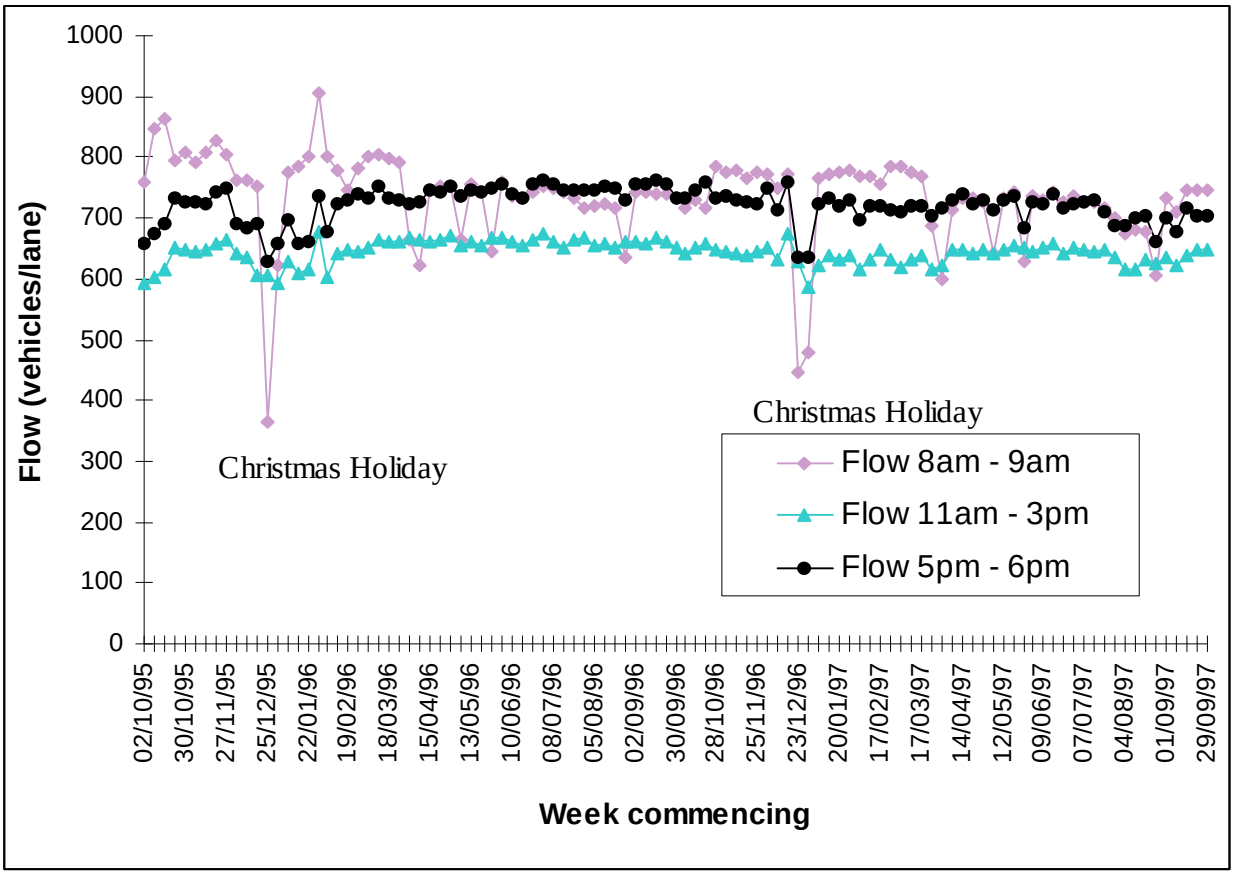

Figure 4: Average lane flow of all vehicles for ATC sites

1997 Retail Surveys

Retail surveys have been carried out annually since spring 1994 [(5)]. They consider activities at a sample of, "shopping centres". These range from small parades of shops to larger centres, such as that adjacent to Holloway Road, for

[5] *Priority (Red) Routes: Red Routes and Retailing: Results of the 1997 Surveys*, Traffic Director for London and Colin Buchanan and Partners, October 1998

example, in north east London. In 1997 the implementation of Red Route measures had reached the stage where 14 of the 37 shopping centres in the sample were subject to Red Route controls. Essentially, the surveys assess changes in trading activity and estimate the extent to which Red Route controls have affected these changes in retail trade.

Average Pedestrian Flows: Figure 5 shows the difference in average pedestrian flows experienced at all shopping centres (in the sample) where Red Route controls had been implemented (shown as, "All Implemented" on the x-axis) and those centres where Red Route controls had not been implemented (shown as, "All Unimplemented" on the x-axis).

Pedestrian flows are seen as an indicator of the vitality of a shopping centre. However, they can change quickly over short time periods. The pedestrian flows shown on Figure 5 have been derived from counts conducted over longer periods over a number of days in order to minimise this variability.

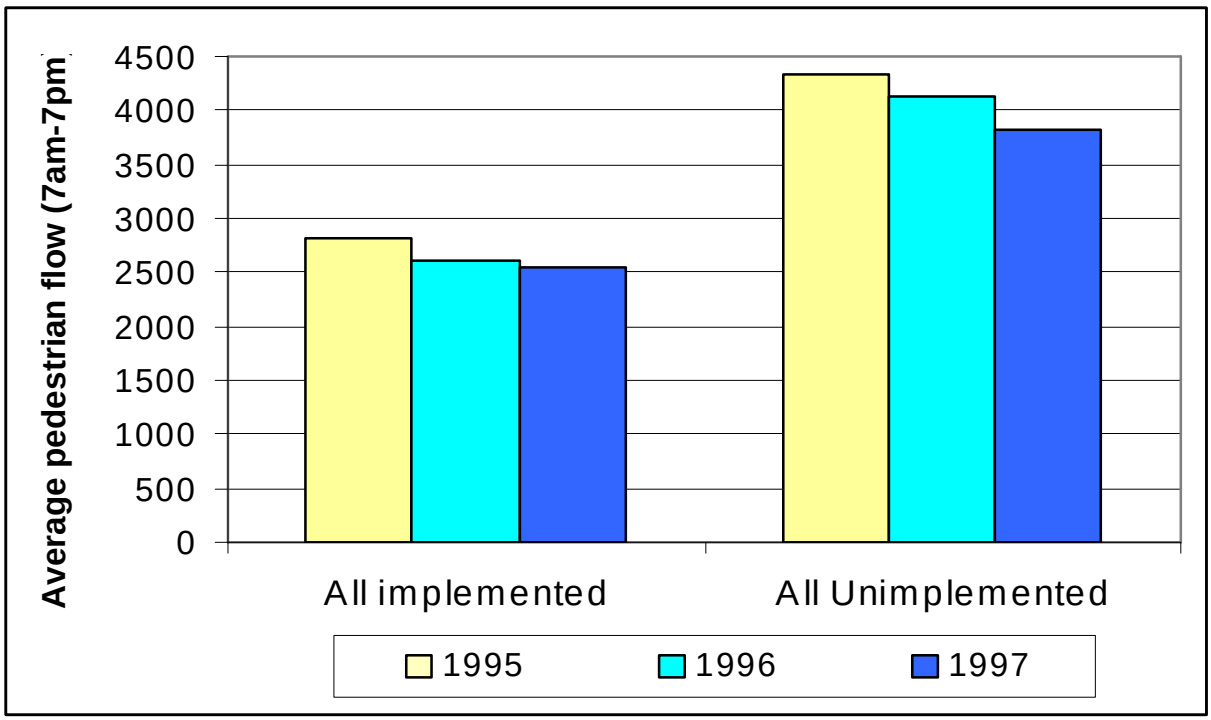

Figure 5: Average pedestrian flows (7 a.m. – 7 p.m.)

Considering the Unimplemented Centres first, pedestrian flows have declined by 13% between 1995 and 1997 and by 7% between 1996 and 1997. At the Implemented Centres, the equivalent flows have declined by 10% between 1995 and 1997 and by 3% between 1996 and 1997. This reduction in walking activity is of growing concern and will shortly be addressed when a National Walking Strategy is introduced. However, the surveys suggest that the implementation of

Red Route controls does not have an adverse effect on the volume of pedestrian flows, rather that they have arrested the decline in walking activity. The smaller decline in pedestrian flows at Implemented Centres could also be seen as contributing towards the achievement of the, "Old" aim, "to provide better conditions for pedestrians and cyclists".

A number of factors, other than the provision of Red Route controls, could be influencing this smaller decline in walking at Implemented Centres. For example, they may be faring better in the competition with out of town centres to attract trade.

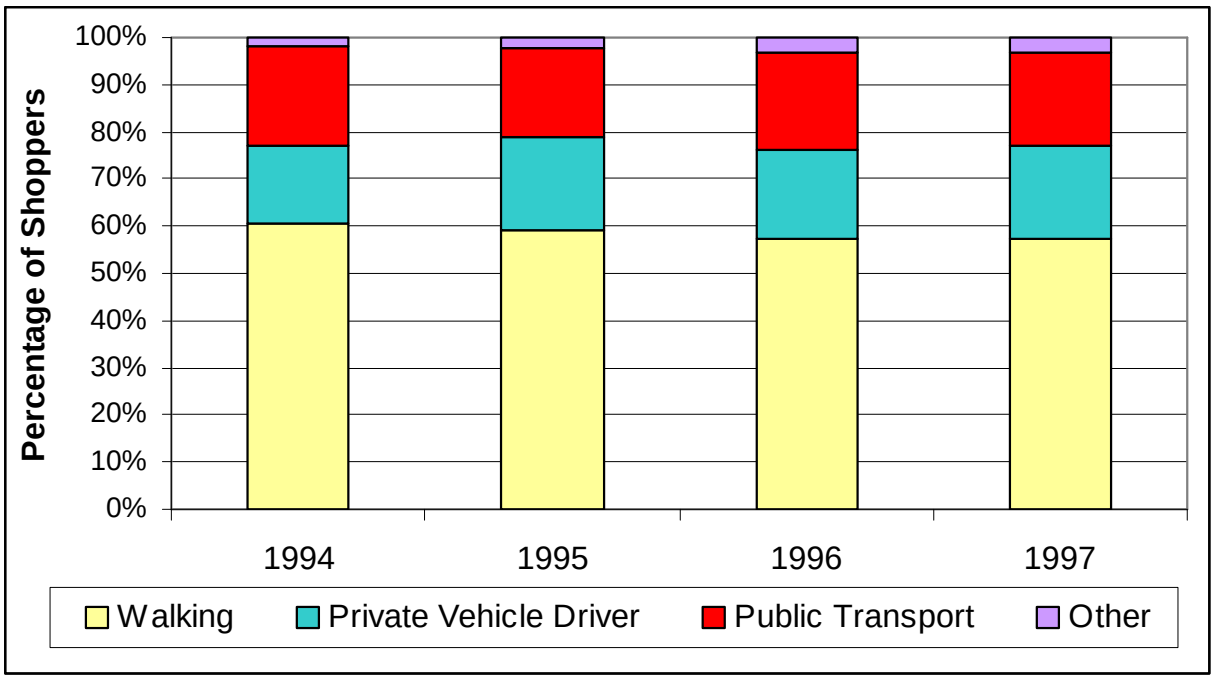

Figure 6: Main Mode of Transport to Sample Shopping Centres

Main Mode of Transport to Sample Shopping Centres: The main mode of transport used to access the sample shopping centres (i.e. Implemented and Unimplemented) is shown on Figure 6. This Figure indicates that the modal choice for shopping centre visitors has remained constant over time. The proportion of visitors using each mode is similar whether Implemented or Unimplemented Centres are considered. In each case, 56% of shoppers come to the Centre on foot while a further 20% take public transport. The proportion of visitors driving a private car to a Centre has remained constant at about 24% over the four survey years. When only Implemented Centres are considered the proportion of visitors arriving as private car passengers remained at 24%, as it was in 1996. Consequently, the introduction of Red Route controls has not had any effect on the proportion of car-borne shoppers at the Implemented Centres.

This would indicate that retailers' fears that the introduction of Red Route controls would lead to a reduction in trade have been unfounded.

Retailers' perceptions of the mode used by customers to reach their shops were also considered in the surveys. This suggested that 19% of retailers believed that over 50% of their customers were car-borne, "passing trade" in 1995, 1996 and 1997. Conversely, 35% of retailers believed that less than 10% of their customers were car-borne, "passing trade" in 1995, 1996 and 1997. This would indicate that retailers' perceptions have remained constant. The customer's mode of transport perceived by retailers can be contrasted with the observed mode choice shown on Figure 6.

Having given an indication of the way in which the network wide effects of Red Route measures have been assessed and the way in which these effects can be related to the aims that have been set for the Traffic Director, the final section of the paper describes the Bus Lane Enforcement Camera project and how this contributes to the achievement of the Traffic Director's aims.

6) Bus Lane Enforcement Cameras

The Traffic Director piloted the use of bus lane cameras to improve bus lane efficiency. Detection and prosecution of those who use bus lanes illegally, or obstruct them, will improve bus journey time and reliability. This scheme is consistent with the Traffic Director's aims to provide priority for buses and a general requirement of the Secretary of State to accelerate the deployment of new technology, for traffic control purposes, on London's roads.

Photograph 6 shows an example of the road signs, which indicate where Bus Lane Enforcement Cameras (BLECs) are in operation. Photograph 7 shows a roadside post-mounted camera. BLECs were initially trailed in North east London, in 1997[(6)], and are now being introduced across London. They essentially use video film evidence to prosecute private vehicle drivers who contravene bus lane regulations [(7)]. The trial area in North east London covered 61 bus lanes on both Red Routes and roads for which the relevant London Borough was the highway and traffic authority. Cameras are mounted on both roadside posts, as shown in Photograph 7 and in buses as shown on Photograph 8. The bus-mounted cameras have a close-up lens to record any offending

[6] *Bus Lane Enforcement Cameras: The London Area Scheme,* Traffic Director for London, July 1997

[7] *Bus Lane Enforcement Cameras: A new Approach to Enforcement,* Traffic Director for London, November 1998

vehicle's registration number and a wide-angle lens to enable the circumstances in which any offence occurred to be viewed so that any mitigating circumstances can be considered. The roadside cameras have two cameras in order to provide the same images.

Staff assess video tapes at a secure operations centre, which is located at College House within the Traffic Director for London's office, and identify alleged offences. A police officer then decides whether an offence has been committed and issues a Notice of Intended Prosecution. The offending driver can either pay a £20.00 fixed penalty or go to a Magistrates Court and have his/her case heard. The Bus Lane Enforcement Cameras and the video tape images they record have been subjected to exhaustive tests by both the Home Office and Metropolitan Police to ensure that such images are suitable for use in court as evidence.

The beneficiaries of the BLEC scheme are, of course, bus operators and passengers, although as yet no quantification of the Bus Lane Enforcement Camera benefits has been published. The BLEC scheme will contribute to the achievement of the, "new" aim to, "provide priority for buses so as to achieve their efficient movement".

7) The Future

In terms of the implementation of the Priority (Red) Route Network, as it is currently defined, and the achievement of the various aims which have been discussed in this paper, it is expected that by the end of 1999 Red Route controls will be operational on the entire Network. Complementary Red Route features (such as the Bus Pre Signal scheme described in Section 4.1 above) are expected to be constructed by the end of 2001[8].

As explained at the October 1997 Transport Economists' Group Meeting [(9)], the Greater London Authority will become operational, under an elected London Mayor, in July 2000. A new organisation, "Transport for London" will provide the means through which the Mayor's transport strategy is achieved. It is envisaged that the current functions of the Traffic Director will be taken over by Transport for London (TfL). The details of the way in which TfL will function are currently being finalised by the various bodies involved which include: London Transport, Docklands Light Railway, the Public Carriage Office, the

[8] *Annual Report 1998-1999*, The Traffic Director for London, June 1999

[9] *The Greater London Authority*, Tony Travers, Greater London Group, LSE and Keith Gardner, London Planning Advisory Committee, October 1997 meeting reported in *The Transport Economist*, Volume 25, Number 1

Highways Agency, the Traffic Director for London and the Traffic Control Systems Unit.

8) Conclusion

This paper has considered, in general terms, the way in which schemes on Red Routes are evaluated, not simply in terms of financial return but in delivery of specific objectives or aims. It has sought to explain how individual schemes, considered in isolation, are assessed and how the gross impact of schemes, implemented across the Priority (Red) Route Network considered as a whole, has been estimated.

The Traffic Director for London was set, "new" aims in February 1998 which feature a shift in emphasis towards priority for buses, goods vehicles, cyclists and pedestrians. The individual and network wide schemes discussed here have been judged against their achievement of the, "old" aims, because these schemes were planned, or the surveys assessing their effects were carried out, when the "old" aims were current. Individual scheme assessment has, as a minimum, attempted to identify who the beneficiaries are and, where possible, the benefits accruing to certain user groups have been quantified. For example, the Upper Street/Liverpool Road Scheme discussed in Section 4.1, reduced bus journey times between Essex Road and the Angel by 47% to the benefit of bus passengers and operators.

Network-wide monitoring has enabled the effects on traffic flows and speeds [(4)] and retail activity [(5)] to be assessed. An indication of the conclusions that might be drawn from this monitoring has been considered. For an in-depth treatment the reader should refer to the reports.

Both individual scheme assessments and network-wide monitoring suggest that the, "old" aims have been achieved. This experience suggests that, when individual and network-wide scheme effects are assessed, it is very likely that the, “new” aims will also be achieved. This ability to accommodate change, albeit subtle, in the aims set for the Priority (Red) Route Initiative does confirm the flexibility of the approach.

9. Discussion

Peter Gordon (Chiltern Railways) suggested that not all schemes for the benefit of pedestrians yielded as great a gain for this user group as might have been assumed by the planners. The TDfL cited the Pelican crossing outside the University of Westminster on Marylebone Road where high peak usage caused pedestrian delays.

Martin Lawrence replied that in reviewing schemes that were proposed to be implemented on Red Routes, specifically the "notification" and Local Road Local Plan variation schemes (referred to in Section 2 of the paper), of which he had direct experience, the Traffic Director considered in some detail the impact of providing, "Green Man" or Pelican crossing facilities. This consideration extends, to among other things, estimating how long pedestrians would have to wait at a particular "Green Man" crossing point if the traffic signals in question were to operate at the proposed cycle time. Here it is important to ensure that the traffic signal cycle time was not such that pedestrians would have too long a wait for the, "Green Man" and hence possibly be tempted to cross the road before the "Green Man" signal was given. Hence the detailed assessment of schemes attempts to ensure that pedestrians do not experience undue delays and the length of time for which a green man signal is displayed at Pelican crossings, and traffic signal cycle times at junctions with green man facilities, have been set in such a way as to generally avoid this occurrence.

Peter Yendall (Oscar Faber) stated that the shift in emphasis to encourage walking and to consider the needs of pedestrians has meant that the use of some types of facility, such as divided crossings, is now being questioned. In addition, derogatory terms such as a "Sheep Pen" to describe an area for pedestrians surrounded by guard-railing in a central reserve is out of favour. Single crossing movements are preferred, minimising pedestrian delay. Under the current approach crossing facilities for pedestrians are being provided, at signalised junctions even though vehicle delay has been imposed, through the traffic signal operation, in order provide convenient crossing opportunities for pedestrians. Therefore the balance is being shifted from convenience for private car users to, in these instances, greater ease of movement for pedestrians. One example that shows the results of taking such an approach is the junction of Marylebone Road and Baker Street, where at grade pedestrian crossings have been provided where previously pedestrians were routed through a rather unsavoury tunnel on the western Marylebone Road approach to the junction. These facilities have been carefully designed to give progression for the dominant pedestrian flow, preventing delay to large numbers of people standing in the central island and helping to overcome the problems referred to by Peter Gordon.

Rose Rendall joined the discussion on facilities for pedestrians as they are an area of particular interest for her. She cited the problem of pedestrians walking down the centre of busy wide roads (three traffic lanes in each direction) and in doing so being on the road side of pedestrian guard-railing on the Kings Cross and Euston areas.

Martin Lawrence answered that in taking the needs of pedestrians into account, as he had just described, a number of factors were considered. These included

pedestrian safety, directness of routing (in relation to pedestrian desire lines) and their ease of manoeuvrability along a particular route. In the particular instance of the pedestrian guard-railing provided on the central reserve on Euston Road, if one were to consider providing a pedestrian walkway by widening the central reserve and providing "green man" facilities so that pedestrians could safely access it (as he understood the questioner to be suggesting) a number of issues would have to be considered. These would include:

- the extent to which the central reserve would need to be widened to accommodate a pedestrian walkway that would, in turn, be wide enough to accommodate (for example) people pushing buggies/prams;
- whether or not the pedestrian facility would lie on an existing pedestrian desire line;
- and if it was be necessary to widen the central reserve, would there be any implications for vehicular traffic flow. If it were necessary to narrow existing traffic lanes what would be the likely impacts on wide vehicles, such as buses and Heavy Goods Vehicles (HGVs) since the improvement of the ease with which these two categories of vehicles can move on the Red Route network is also included in the Traffic Director's aims and an acceptable balance would need to be achieved.

Ross Ides (ICE) asked for an explanation of how it was possible to claim benefits from both the reduction in accidents and overall increases in traffic speed as it was commonly believed that was a strong link between accident occurrence and traffic speed.

The speaker responded that average traffic speeds were referred to in his presentation. These increases in average traffic speed were most likely to be the result of a reduction in stop-start interruptions to vehicle flow, rather than increases in free-flow vehicle speeds. One is considering an average speed that is calculated from a sample of observed speeds. An increase in average speed can be achieved through a reduction in stop-start conditions (and consequently there being fewer very low speeds in the sample) rather than an increase in free-flow speeds (and consequently there being more higher speeds in the sample). Red Route measures aim to reduce stop-start conditions essentially through attention to detail in their planning, design and enforcement and, where it is appropriate, they attempt to reduce free-flow speeds through, for example, the introduction of speed cameras.

John Cartledge (London Regional Passenger Committee) asked about shopkeeper resistance to Red Route schemes and if this had changed over time.

Martin Lawrence referred back to the statistics he had presented earlier, which had been obtained by the 1997 Retail Monitoring Survey [5]. These indicated that the perceptions of retailers, trading in the Unimplemented Centres, had remained constant, over time. Nearly 20% of respondents believed that more than 50% of their customers used a private car, the true figure remained constant at about 24%. It is possible, though, that retailers are gradually coming around to the view that business is not being driven away. In response to John's second question about road user compliance to Red Route measures, Martin said that the evidence, which can be found in the 1997 Traffic Survey [4], was that there has been a decline in the number of illegal stopping acts on the Priority (Red) Route network as the Red Route measures themselves had been implemented.

Tim Elliot (ICE) asked about the evaluation of overall benefits for the network as a whole. In particular, he asked whether any special consideration was given to the fact that the scale and scope of the implemented network was changing over time. There was also the influence of exogenous factors outside the control of the Red Route Initiative to be considered.

The speaker confirmed that the Retail Monitoring and Traffic surveys have been carried out every year since 1994 and a separate report is published each year. These surveys have been able to assess the extent to which traffic speeds, for example, have changed on the Priority (Red) Route network as the Red Route measures themselves have been progressively implemented on various sections of this network. The survey methodology was set up in year one to enable this type of comparison to be carried out.

The Retail Monitoring Surveys take account of those exogenous factors, outside the control of the Traffic Director, which influence the volume of trade. This is achieved by considering how a number of primary and secondary factors, as they apply to each of the surveyed centres, have changed since the surveys were started. The primary factors are those exogenous factors while the secondary factors are those over which the Traffic Director would be expected to have some influence. The primary factors measure overall trends in retail performance and comprise turnover and shop vacancy rates, while the secondary factors include the proportion of shoppers who drive to the centre in a private car. When attempting to assess the affect of Red Route measure implementation on those shopping centres in the sample, the surveys consider these primary and secondary factors.

Graham Kelly (ICE) observed that if there had been measurable improvements in traffic speeds there ought to have been benefits for car users.

Martin Lawrence agreed that this was the case and stated that the increases in average bus speeds, which he had referred to in the presentation, were quite slight and it may be possible that bus passengers did not always perceive the higher speeds indicated by these averages. In response to Graham's second question about reviewing achievements against the revised aims, rather than the old ones that were in effect when the schemes were planned and designed, Martin confirmed that this would be done.

Discussion report by Stephen Bennett, Independent Rail Consultant

Photograph 1: Buses move away from Upper Street/Liverpool Road bus pre-signal stop line

Photograph 2: Large volumes of pedestrians using the “Green Man” crossing at Upper Street/Liverpool Road (from outside Boots as shown on photograph 1)

Photograph 3: Start of priority vehicle lane on Nine Elms Lane

Photograph 4: Nine Elms Lane - Royal Mail HGV using the priority

Photograph 5: The “Toucan” crossing at Battersea Park Road/Macduff Road junction

Photograph 6: Bus lane enforcement camera

Photograph 7: Post-mounted static bus lane enforcement camera

Photograph 8: Bus-mounted bus lane enforcement camera (The two camera lenses can be seen to nearside of the destination blind)

London River Services

Andy Griffiths, General Manager, London River Services Ltd.

Paper presented to the Transport Economists' Group
University of Westminster
26 May 1999

Early History

From the earliest times up to about the middle of the 19th Century the River Thames was the main highway of London. The earliest mention I have found to date of an organised passenger service on the Thames is the "long ferry" between Gravesend and London in about the year 1293. The fare was one halfpenny for each person.

In 1815 the first steamboat "The Thames" appeared on the river and was run to and from Margate. Its success was immediate and within three years there were six steamboats employed on the Margate service.

A service between Richmond and Queenhithe was started in 1816 with calls at Isleworth, Brentford, Kew, Strand-on-the-Green, Mortlake, Barnes, Chiswick, Hammersmith, Putney, Wandsworth, Battersea and Chelsea. By 1840, a regular hourly service was maintained between Hungerford Market (Charing Cross) and Greenwich with calls at London Bridge, Old Shades and Shadwell. Another service of steamboats also operated between London Bridge and Vauxhall, the fare for any distance being one penny.

Between 1852 and 1878 river steamboat services were very popular with vessels plying on the river from the City to Chelsea every 10 minutes throughout the day. Regular services also operated between the City and Hungerford Bridge and from Hungerford and London Bridge to Greenwich and Woolwich.

However in 1878, the "Princess Alice" belonging to the London Steamboat Company returning from an excursion to Sheerness collided with the "Bywell Castle" and sank in Galleon's Reach. It was estimated that over 600 were on board and only 58 were saved. This disaster caused the public to lose confidence and the company was obliged to go into liquidation.

For several years prior to 1896, the steamboat service on the Thames left much to be desired. The boats ran irregularly, and there was no service on which the public could rely, causing general public dissatisfaction.

The Last 100 Years

The London County Council (LCC) resolved to provide London with an efficient steamboat service. After some initial parliamentary difficulties, the LCC succeeded in receiving Royal Assent on 15 August 1904 to the Thames River Steamboat Service Act 1904. The Act empowered the LCC to enter into an agreement with the Conservators of the River Thames for the transfer of their piers to the Council and also purchase other piers by agreement. The Conservators of the River Thames transferred seventeen piers to the Council and nine piers were acquired from other interests.

The capital outlay by the County Council on the purchase of a fleet of thirty paddle steamboats and for the acquisition and improvement of the piers was £301,080. The service was inaugurated on 17th June 1905 and boats ran at 15-minute intervals daily throughout the year over a 12-hour operating day between Hammersmith and Greenwich. The service lasted only 3 years and during that time carried almost 10 million passengers but incurred losses of £162,500.

A campaign for the re-introduction of regular river services was conducted in the 1930's. A book entitled "No boats on the River" was written by A. P. Herbert and published in 1932 and contained a Technical Essay by J.H.O. Bunge setting out plans for a Waterbus. In 1934 a public inquiry concluded that "they were not convinced that any such regular service would attract sufficient traffic to be self-supporting".

During World War II, at the height of the "Blitz" on London, when land services were at time disrupted, the London Passenger Transport Board ran, at the request of the Government, an improvised service between Westminster and North Woolwich from 13th September 1940. Public response, however, was poor and the service was withdrawn at the beginning of November 1940. During the 50 days of operation just over 50,000 tickets were issued. A net working loss of £10,589 was incurred. Uncertain weather, slow speeds and operating difficulties were largely responsible for the Board's decision to abandon the service.

In the 1951 Festival year, traffic on the river was good and over five million people were carried. But, no attempt was made to capitalise on the River's popularity for passenger transport purposes.

Several further attempts were made to establish regular passenger transport services on the River - the most recent being Riverbus. Commencing in May 1987 as Thames Line becoming Riverbus in December 1988. Riverbus was

owned mainly by Olympia and York with a small P&O holding. The service ran between Chelsea and Greenwich every 20 minutes. Riverbus collapsed along with Olympia and York in 1992.

Thames 2000 Initiative

In 1997, the Cross River Partnership (CRP), a consortium of public and local authorities, private sector organisations, and voluntary bodies with an interest in promoting the use of the River Thames, began working on the development of proposals for a Thames 2000 initiative. This sought to develop new river piers and boat services, to facilitate links between Central London and the New Millennium Experience site at North Greenwich in the short term, and to provide a longer-term legacy of boat service and piers.

The CRP concluded that a new agency (provisionally titled the Thames Piers Agency) should be established to deliver the key elements of the initiative, and to take long term responsibility for developing river passenger transport in London. Its immediate objectives would be to procure the new Millennium boat services, and to secure the development of new piers at Blackfriars and Waterloo to provide dedicated berths for these services. In the longer term, it would also acquire the public piers owned and operated by the Port of London Authority (PLA) and develop, promote and co-ordinate riverboat services on the Thames whilst integrating them as much as possible into other transport modes.

London Transport's Role - Formation of London River Services Limited

The view was formed that the Thames Piers Agency should, in due course, be absorbed into the proposed Transport for London (TfL). Any necessary legislation would be incorporated in a government bill for creating a new body called the Greater London Authority.

For the interim period, it was proposed and agreed that the new body should be established as a subsidiary of London Transport (LT). Thus, on 18th December 1997, London River Services (LRS) was formally incorporated as a limited company, to assume the role envisaged for the Thames Piers Agency.

Piers

On 1st April 1999, LRS acquired the following piers, formerly owned and operated by the PLA: Embankment (formerly known as Charing Cross), Festival, Greenwich, Westminster and Temple (which is exclusively leased to the Temple Pier Company). Tower Pier is currently being re-built and it still owned by the PLA, although it is managed by LRS. Tower Pier will be formally

transferred to LRS upon completion of the re-building project, which will now be in December 1999.

In addition to these six piers, LRS has acquired and operates Bankside Pier, previously owned and operated by the London Borough of Southwark. LRS is building a new pier at Blackfriars (completion of which is expected by December 1999). Thus LRS owns and operates eight piers in total. In addition to taking over the piers, ten PLA pier staff, including the Piers Manager, transferred to LRS on 1st April 1999.

In addition to the re-building of Tower Pier, Westminster Pier will be re-built by LRS and it is expected that the new pier will be in place by Easter 2000. The new pier at Blackfriars and the re-building of Tower and Westminster piers has been made possible through funding from a number of sources, namely: The Millennium Commission, the Single Regeneration Budget, the Corporation of London, and the ring-fenced grant from the Government Office for London (GoL).

The Millennium Wheel Company is building a new pier at Waterloo adjacent to the wheel (to be known as the "BA London Eye") and the New Millennium Experience Company is building a new pier at the site of The Millennium Dome.

There are many other piers on the Thames in private or local authority ownership - these are unaffected by LRS' acquisition of the PLA piers business.

Riverboat Services

Vessels carrying more than 12 passengers and plying for hire on the Tidal Thames must have a current Maritime & Coastguard Agency (MCA) Certificate and be under the control of a suitably qualified Master. On the Thames, this is normally a licensed Waterman. The boat operators pay to use LRS' piers in accordance with agreed charges as published by LRS from time to time.

Boat services fall into two broad categories, namely Scheduled Services and Chartered Services:

- Scheduled Services are those that either operate between two or more piers or operate circular cruises on a regular, timetabled basis. Those services which connect two or more piers are operated under Licence to LRS pursuant to Section 3(2) of the LRT Act 1984. Amongst other things, this places a duty on LRS to determine fares and service levels. Access to piers is pre-booked on an ongoing basis, subject to the terms of the licence.

- Charter Services are booked on an "as-and-when" basis (subject to there being a berthing slot available) and are typically used for corporate trips or private parties. Pier berthing facilities are also licensed by LRS for such services and are allocated on a first come first served basis.

Funding

Whilst an initial grant was made to cover the costs of setting up the Company and acquisition of the piers, LRS is required to operate without revenue subsidy from Central Government. LRS must therefore cover the costs of its day-to-day operations through its activities, primarily by charging boat operators for access to its piers. This also means that riverboat services must be operated commercially, as they will not receive any capital or revenue support from LRS.

Riverboat Services to the Dome

LRS has recently commissioned two new riverboat services which will serve the Millennium Dome. The first, known as the "Millennium Express" service will connect the Millennium Wheel Pier at Waterloo with the Millennium Dome Pier calling additionally at Blackfriars. Four, 515 passenger capacity boats will operate a half-hourly service during the period of opening hours of the Dome itself. The service will start on 1st January 2000 and operate until 31st December 2000, longer if the Dome remains open into 2001. The service will be operated by City Cruises plc.

The second service, the "Greenwich Shuttle" will connect Greenwich Pier with the Millennium Dome Pier. Two 60 passenger capacity vessels will provide a broadly 20 minute service, with the journey time in either direction just 10 minutes. White Horse Fast Ferries (WHFF) will be operating this service, due to commence on 1st January 2000 and ending on 31st December 2000. Again, it is proposed that the service be extended if the Dome remains open into 2001.

Legacy Services

The award of licences for riverboat services to the Millennium dome has provided the catalyst for adding new services to the network of riverboat services on the Thames, thus providing a lasting "legacy" as the Dome closes. When announcing the £21 million of investment in new Piers and vessels, the Deputy Prime Minister, John Prescott, said *"Our aim is to put the heart back into London's river and put the river at the heart of a modern transport system for the capital in the 21st Century"*.

As such, LRS have commissioned two legacy services, the first of which is known as the Central London Fast Ferry.

Central London Fast Ferry

The Central London Fast Ferry (CLFF) is operated by WHFF and commenced on 1st June 1999. Two 60 passenger capacity vessels operate between Festival (Waterloo from January 2000) and Rotherhithe (Nelson Dock, Holiday Inn) calling at a number of piers including Westminster (from Spring 2000), Embankment, Blackfriars (from December 1999), Bankside, London Bridge City, Tower (from December 1999) and Canary Wharf.

It is proposed that Westminster, Waterloo, Embankment and Blackfriars piers will, in due course, all use WHFF's innovative "V Berth" docking system. A slot (in the shape of a V) is cut into the end of the pier with the bow (front) of the boat docked into the recess created. The advantage of this system is that it is much faster than traditional side-on docking and access to the boat is on one level. The boat also rises and falls with the pier thus ensuring safe and securing boarding and alighting.

A second legacy service, provided by City Cruises plc, will link Central London with Greenwich.

Fares and Ticketing

Because of its powers under the LRT Act 1984, LRS will determine the fares to be charged for riverboat services operated under licences issued pursuant to Section 3(2) of the Act. Riverboat operators will submit their proposals to LRS for their consideration and approval. In determining fares, LRS will have regard to:

- Operators' proposals and commercial judgements.
- The existing levels of fares for comparable services.
- The nature of the service and the amenities and other customer service aspects being offered.
- The sustainability of the services, facilities and amenities.
- The effects on other operators.

Travelcard

The possibility of including scheduled riverboat services in the Travelcard scheme or some form of discount on ordinary boat fares to Travelcard holders is proving very difficult but remains under review.

Integration and Marketing

In line with the Government's aspirations for improved integrated transport, LRS has a duty to integrate riverboat services, where practicable, with other land based public passenger transport services. It is envisaged that this will initially be achieved through carefully considered signage and passenger information. LRS will also integrate riverboat services into its other forms of passenger information systems (e.g. maps and the Travel Information Service).

The Future - Transport for London

In May 1998, Londoners voted in favour of an elected Mayor and Assembly for London. One of the Mayor's key roles will be to oversee the co-ordination of transport provision. This will be achieved through a new organisation known as Transport for London (TfL). It is proposed that the activities of London Transport (including LRS) will be taken over by TfL.

Discussion

David Starkie (Economics-Plus Ltd) enquired about what sort of relationship London River Services (LRS) has with the ferry operators and how are fare and service levels, and pier access arrangements determined?

A: Fares are determined by LRS dependent on the facilities and service levels offered by the ferry service operator. Service levels are agreed between the operators and LRS. LRS also determine which ferry service, and where appropriate pleasure service, operators have access to piers at various times.

Peter White (University of Westminster) asked what fare structure is envisaged?

A: The flat fare for the central London service will be £1.90, which is comparable with a London Underground Zone 1 single ticket of £1.40. Concessionary fares have been agreed for elderly pensioners resident in the former-GLC area. It is anticipated that the fast ferry operator will be able to draw passengers from a number of markets.

David Starkie pointed out that total operator investment in ferries and piers has been £21 million and that total investment in piers has been £16 million. Why were the piers constructed at the chosen locations?

A: The decisions as to where investment would be made were taken before LRS came into existence. There were a number of donor organisations who provided funds and they may have been able to wield some political influence as to where piers were to be constructed.

Eileen Hill (The MVA Consultancy): Does LRS plan to develop other piers to serve other catchment areas?

A: The definite proposals to develop further piers are:

- Vauxhall Cross, EFRA site - proposed by the developer;
- Battersea Park - proposed by Wandsworth Council. The Council hopes to secure funding to provide a pier in order to provide access to the Park and possibly a redeveloped Battersea power station.
- The Tate Gallery want to develop a service between its premises on Millbank and its new gallery at Bankside. Such a service would require pier provision.

Beyond Wandsworth a 5-mph speed limit applies which curtails the viability of commuter services.

David Starkie commented that there is the possibility of using Cadogan Pier (which is adjacent to Albert Bridge in Wandsworth) to provide a commuter service from there to central London, or of providing a service from a pier adjacent to the Royal Arsenal, Woolwich. LRS would be able to vary the fees for pier use dependent on the intensity of the service.

Roland Niblett (Colin Buchanan & Partners): will the new craft continue to operate on the Thames once the ferry services to/from the Millennium Dome have finished?

A: The "Millennium ferries" will complement or replace parts of the existing fleet, which is fully utilised during peak periods. It is envisaged that these ferries will stay on the Thames.

Stephen Bennett (Independent Rail Consultant): What role did LRS play in setting up the competition for the licenses to operate ferry services?

A: Initially there were seventeen expressions of interest. These diminished when it became clear that there was no revenue or capital subsidy available. There are sufficient operators on the Thames to provide a competitive field from which bidders for operating licenses are drawn. This field ranges from husband and wife teams to ferry services owned by French companies.

As far as the renewal of franchises is concerned, a commercial judgement can be made as to whether franchise should be extended or re-let. This judgement would weigh, for example, the franchise holders' proposed vessel improvements against the strength of the market for the particular route on which the improved vessel would operate.

David Starkie asked why should an activity that may cater mainly for tourists be regulated? The provision of hotel beds, for example, is not regulated.

A: The regulation of ferry services allows fare levels to be consistent between operators. For example, children's fares apply to children of the same age using different operator's craft.

LRS does regulate fares. This is virtually a rubber-stamping of the operators' proposals, judged against the public interest.

Roland Niblett asked if there is an intention to restrict entry into the market?

A: There is a need to balance competition between operators against the strength of the market for various routes. For example, a certain route may only have a low level of demand a consequently could only support a service provided by one operator. There is no intention to restrict entry to those markets where demand is strong enough to support a number of operators.

Stephen Bennett: Is the intention to increase to number of piers in order to expand the number of journey opportunities?

A: Yes, LRS would welcome the opportunity to provide further piers. However, at present further piers at only two locations are likely to be commercially viable, namely, at Westminster and at the Tower of London. Therefore strictly commercial opportunities may be limited. If this is so, LRS would seek to provide further piers in partnership with other organisations as I outlined for the Vauxhall Cross, Tate Gallery and Battersea Park sites.

Report of discussion by Martin Lawrence, Senior Consultant, Oscar Faber

TEG NEWS

NOTICE OF ANNUAL GENERAL MEETING
The Transport Economists' Group will hold its AGM on **Wednesday 22nd March 2000 at 5 p.m.** Transport Studies Group University of Westminster 35 Marylebone Road London NW1 5LS

MEMBERSHIP NEWS

[details of membership omitted from this version]

Don Box,
December 1999

MEETINGS 2000

Meetings will be held at 5.30 for 6pm in room 205 of the Transport Studies Group at the University of Westminster, located at 35 Marylebone Road, London NW1 5LS. The building is on the south side of Marylebone Road, close to Baker Street Underground Station and is passed by numerous buses.

March 22 **Annual General Meeting at 5 p.m.** followed at 6 p.m. by:

The potential for reducing the number of short car journeys
Roger Mackett, Centre for Transport Studies, University of London

April 26 **Analysis of Congested Networks**
Professor Peter Hills, Dean of Faculty of Engineering, University of Newcastle

May 24 **Green Transport Plans - the costs and benefits**
David Pontefract, Regional Director, Oscar Faber

June 22 **The London Mayor's Transport Strategy**
Keith Gardner, LPAC/GLA Transition Team

A joint half-day conference with the Transport Planning Society will be held in May/June on the theme of *'New Approaches to Transport Appraisal'*. It will be addressed by speakers from the DETR, London Transport and possibly other organisations, with the opportunity for discussion. Attendance for TEG and TPS members will be free, with a charge to other delegates. The venue will be in central London. Further details will be circulated as soon as possible.

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