

Down the Uxbridge Road

The Transport Committee's Response to the West London Tram
Consultation

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1. Introduction

- 1.1 Transport for London's (TfL) proposed West London Tram scheme stretches along the Uxbridge Road (A4020) from close to the M25 through to within a tube stop of Zone 1. The 20 km stretch of road passes through several town centres and areas of dense population such as Shepherd's Bush, Acton, Ealing, Hanwell and Uxbridge.
- 1.2 The construction of the tram and tramway is expected to last three and a half years and is projected to cost somewhere in the region of between £463 and £648 million. On opening in 2011, it is expected that 32 trams calling at a total of 40 stops would ferry a patronage that could exceed 44 million passengers a year between and along a route passing from Uxbridge Town Centre to Shepherd's Bush Green.
- 1.3 The construction of the scheme is not part of the Mayor's current five-year transport plan but there is funding set aside to continue the development of the scheme up until 2006. In between now and the summer of 2006, the scheme will have to go to a public enquiry in the autumn of 2005 before the Mayor makes a final decision to proceed with the scheme or not, based on the Government's spending review in the summer of 2006.
- 1.4 The scheme could significantly alter transport patterns in West London and alter the physical landscape of many of its town centres. This report is the London Assembly Transport Committee's formal response to Transport for London's consultation on these West London Tram proposals.
- 1.5 TfL have been conducting discussions with local councils, stakeholder groups, and individuals for over three years and the current consultation does not represent a referendum on the project, rather an opportunity for TfL to understand everyone's concerns about the project. TfL readily admit that they do not have all the answers to concerns that will be raised but are keen to take on board any issues raised before they proceed with the next stage of planning the project.
- 1.6 Indeed over the three years the project has evolved in response to concerns raised. For example, the number of sections of the route that will have shared use between both tram and road vehicles have significantly increased and original patronage figures have been reduced to present a more cautious and realistic business case.
- 1.7 TfL has contacted over 400,000 households in West London as well separately contacting over 2000 stakeholders encouraging responses to the consultation.
- 1.8 The most vocal concern raised by local residents and campaigners has centred around the fear that traffic displaced from the Uxbridge Road could end up on local, residential streets. Additionally, there is concern that disruption during and altered flows and access arrangements after the construction of the tramway could prove harmful to local businesses along the route.
- 1.9 To compose its response, the Transport Committee has written to over 60 organisations canvassing their views on the proposals met informally with a

number of local groups and gone on site visits along the proposed route as well as to the tram scheme in Croydon. The Committee also held a formal evidentiary hearing on 16th September where it questioned TfL and a number of academic experts on the West London Tram.

1.10 TfL give five main reasons¹ for advancing with the proposals for a West London Tram. They are:

- It will produce sufficient capacity to support projected population growth and the consequent rise in both road use and public transport demand
- It will deliver a highly segregated and reliable service
- It will reduce operating costs per passenger
- It will provide a highly attractive service to compete with car travel and will therefore generate high modal shift
- It will encourage necessary environmental improvements and aid regeneration

1.11 The Transport Committee sought views on six questions from a variety of experts, local groups and organisations.

- Is there a traffic problem now on the Uxbridge Road; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?
- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?
- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?
- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?
- What evidence is there that environmental improvements will occur as a result of the West London Tram across the wider area beyond the Uxbridge Road?
- What evidence is there that new tram schemes provide economic regeneration to an area?

1.12 The results from TfL's consultation will be known in Spring 2005. The Transport Committee will return to question TfL on the progress made on the Committee's recommendations and the status of the overall project itself.

1.13 For this consultation, we needed to satisfy ourselves:

- That there really is a problem that needs addressing;
- That TfL's proposals are the most appropriate scheme for the area;
- If the huge expenditure is financially sound and;

¹ TfL Board Paper, 29 April 2004, Agenda Item 2

- What would be the impact of the proposals.

This report sets out the process the Committee pursued in considering the consultation.

2. Is there a problem on the Uxbridge Road?

- 2.1 The first question to ask must be “is there a problem on the Uxbridge Road?” TfL’s answer is “if there is not one now, there will be”. London’s population is projected to increase by 800,000 in the period to 2016 and West London is expected to account for 17.5 per cent of this growth (140,000 people). Along with these people in 45,000 homes it is projected that this part of London will also see some 86,000 new jobs.
- 2.2 As a result of this, TfL modelling predicts that both car ownership and public transport demands will continue to rise steeply in the area. TfL cite the example of a rise of 38 per cent in public transport trip destinations. Total travel to Central London from the West London Tram corridor is expected to grow by 17 per cent.²
- 2.3 Uxbridge Road connects a number of town centres including Shepherd’s Bush, Acton, Ealing, Hanwell, Southall and Uxbridge and in this corridor buses dominate public transport. There is no parallel rail corridor which can take pressure off the buses.
- 2.4 TfL and those in favour of the tram argue that, by 2011, there will be inadequate transport capacity along the Uxbridge Road to meet the demands of the growing population in West London. The expected increase in bus patronage that is likely to take place between now and 2011 (rising from 23 million to 27 million) exceeds bus capacity even with a planned new bendy bus network in place. Bus journeys will be slower, more prone to bunching and less reliable.
- 2.5 It is argued that a new, largely segregated tram scheme would meet this growing demand well into the future as well as delivering numerous other benefits to West London including a reduction in road traffic congestion and harmful vehicle emissions and the regeneration of many deprived wards, particularly around Southall and Acton.
- 2.6 Those against the scheme question the assumptions that TfL make about projected passenger numbers and actual demand. Critics point to tram schemes in Croydon and Nottingham where patronage has fallen short of initial projections and services have run at a significant loss to their operators once opened (though Croydon now makes a slight operating profit). They therefore question the validity for adopting such a radical approach when other options – such as more effective enforcement of segregated bus lanes and parking restrictions – do not appear to have been pursued as determinedly as the tram proposals.

COMMITTEE VERDICT

If the scale of TfL’s projections is accurate it would seem sensible/essential to enhance/support public transport in the area to ensure a sustainable growth in population and employment.

² TfL Board Paper, 29 April 2004.

3. Does it have to be a tram, or are there alternatives?

- 3.1 The Transport Committee accepts that something should be done along the Uxbridge Road corridor. The Committee was keen however to assess the alternatives to the tram, such as trolleybuses, and enlisted the expertise of Professor Chris Wright of Middlesex University, to provide an independent assessment of the technical benefits of both the tram and its alternatives³.
- 3.2 Professor Wright concluded that there was no reason to suppose that the West London Tram would fall short of its objective to deliver a robust, reliable, and popular service that would increase the capacity for passenger movement along the Uxbridge Road. However, Prof Wright concluded that it was unclear that the tram was the only option available to deliver such a service.
- 3.3 The biggest single advantage that the tram possesses over its alternatives is its capacity. Current capacity along the Uxbridge Road corridor is 2200 passengers an hour⁴. The West London Tram would be able to carry 5120 passengers an hour – a figure that exceeds projected demand in 2011 and beyond. The tram, according to TfL, also delivers a cheaper service per passenger km (taking only operational costs into account) that is also more reliable than the current service provided by a bus.
- 3.4 TfL have explored and ruled out other alternatives. Fully segregated busways were considered too expensive and require too much land take. Other bus alternatives such as the guided bus or the trolley bus were considered to have too little capacity to meet demand for the level of investment that would be required.
- 3.5 The Committee received a diverse range of cost estimates for delivering Trolleybus or Guided Bus schemes along the Uxbridge Road⁵ that undercut TfL's own estimate that a trolleybus would cost 70% of the cost of a tram. The Committee would have welcomed the opportunity to have examined the detail of TfL's costings. Professor Wright's evidence to the Committee also suggested that a guided bus may be able to deliver a scheme at about 25% of the cost of tram.
- 3.6 Professor Wright drew attention to six additional advantages that the tram can offer over alternative modes of public transport, particularly buses.
- i. Pollution free at point of use
 - ii. Give a smooth passenger ride
 - iii. Cars can be coupled together giving the tram a degree of flexibility in service provision
 - iv. Infrastructure occupies a relatively narrow strip of road which can overlap with other road use

³ Available as part of separate evidence paper which can be downloaded from <http://www.london.gov.uk/assembly/reports/transport.jsp>

⁴ 510 passengers an hour for the 607 bus; 1682 for the 207 bus.

⁵ Tbus, a private Trolleybus firm that run Trolleybus schemes across Europe most notably in Salzburg, approached the Committee with an estimate that they could deliver a Trolleybus scheme at 12.5% of the cost a tram.

- v. Trams can last up to 30 years
 - vi. Trams are popular
- 3.7 Just how popular trams are is a matter of contention. A report in Germany suggested that “the tram factor” might have added 30% additional patronage.⁶ However, as stated in the previous chapter, new tram systems in the UK have over estimated potential patronage and the extent to which the popularity of trams can add to passenger numbers needs to be treated cautiously. Therefore it would be incumbent on TfL to ensure that the tram is integrated into to the rest of the network as far as possible.
- 3.8 Trams are also expensive and disruptive. As stated in the previous chapter, the West London Tram is expected to cost between £463 and £648 million and is expected to take three and a half years to construct. Elsewhere in the UK, underachieving schemes and inappropriate risk transfer have pushed up the price of operating tram schemes and this, coupled with heavy capital repayments, leaves the West London Tram potentially requiring an annual £50m subsidy⁷ (a more detailed assessment of the business case is given in Chapter 4).
- 3.9 Local businesses have also expressed their concern that the three and a half year construction period could see some businesses forced to close along the route.
- 3.10 However, the information given via the public consultation papers made available by TfL makes it difficult to compare alternatives to the tram thoroughly and the Transport Committee would have welcomed the opportunity to compare cost benefit ratios for other alternatives to the tram.
- 3.11 Professor Wright considered three alternatives to the tram. They are:
- i. Bus rapid transit
 - ii. Diesel roller guided bus
 - iii. Electric, guided trolleybus

In summary, Prof Wright arrived at the following conclusions regarding these alternatives.

- 3.12 **Bus Rapid Transit**
Essentially a bus service, the route usually consists of reserved lanes with raised platforms and sheltered bus stops and has generally been considered a successful, low technology solution. However the amount of carriageway required prevents its use along the Uxbridge Road.
- 3.13 **Diesel Guided Roller Bus**
Requires only 2.6m width of track (over 1 metre less than a bus lane) and is self-segregating through raised kerbs (which are normally twice the height of normal kerbs). It saves boarding/alighting time through automatically aligning itself to the kerb. It is also able to brake and accelerate more quickly than a tram. Established in Germany in the early 1980’s it has been used in Leeds and around Gatwick with success.

⁶ Topp HH (1999) - Innovation in tram and light rail systems

⁷ TfL Board Paper, April 2003

- 3.14 However, both TfL and LB Ealing point out that the raised kerbs required for this approach prevent access to either side of the road and diminish the potential for flexibility that automatically comes with tram rails being “flush” with the road surface.
- 3.15 **Advanced Guided Bus Systems**
Of all Prof Wright’s proposals, the CIVIS project which uses the *Irisbus*, and is in use in Caen and Rouen, presents the most compelling alternative to the tram. The optically guided system is in principle cheaper and simpler than any alternative. Advanced Guided Buses differ from conventional buses in that they have electric motors powered from a twin cable overhead supply, thereby reducing fuel costs and exhaust pollution. The system also has modular rolling stock units that can be linked together in the same way as tram units, to provide greater passenger-carrying capacity, when necessary. As Professor Wright concluded in presenting his paper to the Transport Committee:
- Buses of this kind are being built; they follow a painted line in the carriageway. They look and feel like trams; it is just that they have rubber tyres, and they do not need steel rails – which, let us face it, is a 100-year-old technology – to keep them on track⁸.
- 3.16 Such systems also have the advantage of being able to disengage from the overhead electric wiring to get around congestion and to penetrate housing areas close to the main route.
- 3.17 Professor Wright concedes that TfL might not be in a position to consider an advanced guided bus system for the Uxbridge Road as “there is no reservoir of operating experience with these systems in Britain⁹.” There are therefore considerable risks in opting for a less well-trying system that may not prove robust enough for the Uxbridge Road. Further development and testing is required before the system could be relied upon to satisfy the requirements for the Uxbridge Road.
- 3.18 However, Prof Wright points out that the guided bus technology is developing rapidly and that costs for such schemes are likely to fall as demand increases, especially across Europe. The costs of tram schemes meanwhile, as highlighted by the National Audit Office, are increasing. There is an additional concern that by the time the proposed West London Tram is opened in 2011, trams could represent an “obsolete” technology.
- 3.20 Guided Buses also require very similar infrastructure to the tram, minus the track, and a similar level of segregation and land take. There is therefore the potential for TfL to proceed with the planning for a West London Tram and explore the potential for the route to be adapted to guided bus technology. Such a decision would allow the project flexibility in the medium-long term. Initially, TfL could opt for the cheaper guided bus in 2006 if funding for the tram cannot be secured in the 2006 spending review. In the long term, should

⁸ 16th September 2004, London Assembly Transport Committee

⁹ See Chapter 5 of separate evidence paper downloadable from <http://www.london.gov.uk/assembly/reports/transport.jsp>

demand increase to such a degree as to warrant a tram, the infrastructure in place would allow this.

- 3.21 This incremental development is a long-term strategy that the Mayor is keen to pursue in other parts of London. Both the East London Transit and Greenwich Waterfront Transit are bus-based proposals that in the long term may well switch to a tram¹⁰.

COMMITTEE VERDICT

There is widely held scepticism among local residents and the Committee that the tram is the only viable solution to meet the growing demand for public transport along the Uxbridge Road corridor.

The Committee acknowledge the considerable public concerns about the proposal. We would be interested in a further exploration of guided bus technology to understand its costs, its ability to overcome those concerns, even though it would appear to require similar degrees of segregation to the tram, and whether such a system can provide the capacity that TfL's projections suggest is required.

The Committee would welcome the opportunity to comment upon such work before TfL's scheduled application for a Transport and Works Order in the Spring of 2005.

¹⁰ Mayor's Press Conference, 12th October 2004 at <http://www.london.gov.uk/webcasts.jsp> at 28 minutes

4. Does the business case stack up?

- 4.1 Transport for London's proposals for the tram state that the cost of implementing a tram scheme would be approximately £650 million and its year-on-year costs¹¹ would require a further subsidy of about £50 million a year¹².
- 4.2 TfL have calculated that the project delivers approximately £610 million worth of passenger benefits over a 30 year period comprising travel time savings, improvements in perceived comfort and greater reliability. When other potential benefits are considered (such as reduced congestion, improved air quality and the regeneration of deprived areas) TfL conclude that the project would deliver a significant net gain to West London¹³.
- 4.3 In addition to this perceived net benefit, TfL's decision to proceed with the tram is also supported by calculations made around alternatives to the tram¹⁴, such as the current bus service and a segregated bus service. TfL found that the tram became the most cost effective alternative at a midway point between current levels of patronage and projected increases in the levels of patronage anticipated between now and 2011. As stated earlier, it is TfL's belief that buses alone would not be able to meet anticipated levels of demand by 2011.
- 4.4 To arrive at these conclusions TfL have had to work to a number of projections about passenger numbers along all points of the proposed route, and the costs and potential benefits of the proposed tram scheme, bus priority schemes and trolleybuses. It is these projections and assumptions that the Committee sought to examine further.

Passenger Projections – Along the Route

- 4.5 TfL projections for peak hour use of the WLT along the route vary greatly. Eastbound, predictably the most popular direction for the route (in the morning peak), passenger projections vary from about 400 an hour at Uxbridge, rising to 2000 an hour at Southall, peaking to over 5000 between Ealing Broadway and Ealing Common Station before dipping to about 4500 just before the tram's final destination at Shepherd's Bush where there is an inevitable sharp dip. Westbound, evening demand peaks at 2800 an hour again at Ealing Common Station before levelling out at about 1000 an hour from Southall Park onwards.
- 4.6 The greatest demand for the tram would appear therefore to be east of Southall. TfL's projected service patterns also reflect the lower demand for public Transport west of Southall. 10 trams an hour will serve the Uxbridge to Hayes section of the route; 20 an hour east of Hayes.
- 4.7 The Committee remains unconvinced that the section of the tramway west of Southall is necessary to the achievement of two of the project's key objectives – a reduction in congestion or the need to support regeneration. Another key objective, the need to provide greater public transport capacity, appears to hold

¹¹ Including capital repayments and operational costs

¹² These figures and all other figures referring to the business case and passenger projections are taken from the TfL board paper, West London Tram Project, Item Number 2, 29th April 2004.

¹³ This is expressed in a positive cost benefit ratio range of between 1.5 and 2.3

¹⁴ TfL set capacity levels against the cost per place/km for the tram, bus and bus priority schemes.

no pressing case west of Southall. TfL are keen to avoid “carving out¹⁵” sections of key arterial routes, such as the Uxbridge Road, and also point out that the anticipated population growth in Hillingdon could further increase demand for the service west of Southall. However, the Committee would be keen to know how the removal of the western section of the tram from Hayes would impact on the overall business case and perceived net benefit of the West London Tram.

- 4.8 It is clear that a different scale of demand exists to the East as against West of Southall and that there are considerable regeneration opportunities in Southall slightly off the proposed route of the tram. The Committee would be keen to know how the business case of a tram terminating at Southall and/or serving more directly its regeneration opportunity sites compares to that for the current proposal. In any event an explanation of how the tram proposal links to regeneration at Southall should be provided.
- 4.9 The Committee heard compelling evidence about the need to regenerate Southall and how the West London Tram could act as a significant lever in supporting these aims. Indeed, in Croydon, evidence suggests that the Tramlink has been key to delivering greater employment growth and increases in property values in areas served by the tram¹⁶. However, local groups that the Committee met felt that the proposed route of the tram through Southall represented a missed opportunity.
- 4.10 The Gas Works site, which sits approximately 500 metres north of the proposed route, will be developed into at least 4,000 new homes and is a key concern. The Southall Regeneration Partnership would like to see the site integrated into the plans for the tram and envisage that if this were achieved and proved successful it could have “a remarkable potential for regeneration¹⁷.”
- 4.11 The Transport Committee is keen for TfL to state how they plan to integrate the Gas Works site in Southall and whether it is feasible to have a loop for the tram to connect the site to the main route. The scope for this development is further enhanced by the fact that the proposed depot for the trams lies between the route and the Gas Work site. As Vivek Sharma of the Quadrant Residents’ Association told the Committee:

Our end goal is to improve public transport, is to reduce car usage, and improve the quality of life for people there. [It] is a question for TfL, and I agree that pressure should be put on them... to say, ‘Come on, let us get some answers instead of just walking it around’¹⁸.

Passenger Projections - How reliable are they?

- 4.12 Any assessment of the passenger projections for light rail/tram schemes has to be seen in the context of the National Audit Office’s (NAO) report *Improving Public Transport in England through Light Rail* (April 2004). The report highlighted that in three of the tram schemes that the NAO examined passenger

¹⁵ London Assembly, Transport Committee, 16th September, 2004

¹⁶ ‘Economic and Regeneration: Impact of Croydon Tramlink’ Colin Buchanan & Partners on behalf of the South London Partnership, July 2003

¹⁷ Transcript of the Informal Transport Committee, 6th September 2004

¹⁸ As above

projections had fallen well short of actual patronage, often leaving operators running at a loss. Shortfalls ranged from 24% on the Croydon Tramlink after three years and 45 per cent on the Sheffield Supertram after eight years of operation.

- 4.13 One of the main factors behind such shortfalls was over optimistic forecasting of passenger numbers. In a submission to a tram seminar which the Transport Committee hosted in April 2004, Robert Bain of Standard & Poors - a leading credit assessment firm - detailed the technical problems inherent in arriving at accurate passenger forecasts. In the past, the restricted ability to establish passenger behaviour from similar tram schemes has prompted schemes to use surveys to arrive at future projections. These transport surveys themselves are vulnerable to inaccuracy because of a number of variables, such as sample sizes and timing.
- 4.14 TfL have had the advantage of drawing from the lessons learnt from previous schemes. TfL's own modelling suggests that between 44 and 58 million passengers will use the tram. TfL have based their business case calculations on the conservative end of these projections. TfL anticipate achieving a 44 million patronage four years into the project¹⁹, in line with Department for Transport guidelines, which expects patronage to mature over a five-year period.
- 4.15 The 207/607 buses, which operate along the proposed route, have a current patronage of 23 million. It is anticipated that this will grow to 27 million by 2011. These passengers are expected to transfer automatically to the tram once it is operational, as the 207 and 607 routes will be terminated. The additional 17 million passengers will transfer from a mixture of other bus routes, the tube and rail network and their cars.
- 4.16 Other contributory factors to inaccurate projections in the past, such as the potential to overestimate a tram's competitive advantage and to underestimate competitors' responses, appear less relevant to the WLT proposals. The potential competition along the route - the 207 and 607 bus routes - will be removed by 2011 and the Mayor regulates the competition through tube and bus fares.
- 4.17 However conservative an estimate 44 million passengers a year may represent, it is still equates to almost a doubling of current demand along the route between now and 2015. Eight million of these passengers will be derived from a combination of people switching from cars to tram and an anticipated growth in demand for journeys along the route.
- 4.18 The 607 bus route travels the proposed tram route. It is an express service stopping only 20 times along the route and taking on average 60 minutes to complete its trip. The 207 stops 74 times and takes 101 minutes to cover the full route. The proposed tram will stop 40 times and will take 65 minutes along the route. 34 bus stops previously served along the Uxbridge Road will no longer be served by public transport.
- 4.19 Along the proposed route there are a number of pinch points -for example Southall Broadway and Acton High Street where it yet to be determined

¹⁹ The TfL business case shows 31 million using the system in 2011, on the original opening date, rising to 35 million in Year 2, 40 million in Year 3, taking four years to reach 44 million.

whether the tram will be segregated and there remains the possibility that the tram will not be prioritised and will have to share the use of the road with regular traffic²⁰. It is unclear whether the 65-minute journey outlined in consultation documents reflects this potential for the journey time to be increased. Indeed at both pinch points there are also enforcement concerns about delivery and heavy goods traffic which could further delay the tram.

- 4.20 The tram could therefore operate, in terms of journey time and number of stops at a mid point between the current 207 and 607 bus routes. Even accounting for the fact that very few passengers are expected to use the full length of the route, it is unclear whether this represents an improvement on current levels of service.
- 4.21 The knock on effect of a longer journey time could be to diminish the attractiveness of the tram to car users and to limit the anticipated growth in demand for journeys along the route. This was a problem identified by Standard & Poors in their assessment of previous tram schemes which, in arriving at over optimistic ridership projections, have relied on too short a journey time and the prediction that the tram would be perceived as a “superior commodity” to other transport modes. The eight million additional patronage that TfL have allocated to a switch from car use and growth in demand may therefore be critically examined to test whether it has taken these risks into account.

Risk Transfer

- 4.22 The projected annual revenues for the tram based on a 44 million patronage are £28 million, with operating and renewal costs being priced at £21.3 million. The vulnerability outlined above of a potential 8 million additional users allied to the schedule for the growth in passenger demand (31 million in Year 1 rising to 44 million in Year 4) would suggest that the WLT can reasonably expect to operate at a loss in its first two to three years.
- 4.23 Uncertainties about passenger projections will clearly pose a revenue risk to the operation of the West London Tram. As the recent National Audit Office report demonstrated, over-optimistic revenue assumptions have led to difficulties in the operation of some of Britain’s new tram and light rail systems. It is therefore important that revenue risk is understood and, as far as is reasonable, minimised in the development of the tram proposal.
- 4.24 Any urban mass transit schemes struggle to make a profit and, when capital and renewal costs are factored in, are almost inevitably going to make a net loss that requires a public subsidy of some sort. The Committee is pleased to note that the Croydon Tramlink is now operating profitably²¹ but this hasn’t always been the case since its opening in May 2000.
- 4.25 The Croydon Tramlink has been built, operated and maintained by Tramtrack Croydon Limited, a private company which has borne all construction and

²⁰ It has been decided that for practical reasons that a stretch of the route in Hanwell will also be shared use.

²¹ Tim Jones, Transport Committee, 16th September, 2004

revenue risks²². The construction risk was kept to a minimum; the Tramlink was built to budget if not to schedule²³. However the revenue risk has proved less secure. It has taken four years for the Tramlink to operate profitably. It is a situation that is mirrored elsewhere where schemes have operated under similar construction and operational arrangements – most notably with the Midland Metro and the Sheffield Supertram, which both operated with heavy losses for the first few years.

- 4.26 In the NAO report on light-rail schemes, Tramtrack Croydon Limited expressed frustration that their revenue risk, due to last 99 years, was dependent on areas of public policy over which they had no control – such as fare levels for alternative transport modes, traffic priority and road provision. There are also concerns that as Tramtrack Croydon Ltd are operating to such narrow profits they will not be able to support the capital renewal that will be required in the medium-term.
- 4.27 The environment in which West London Tram will operate will be different, for a number of reasons, not least because since Tramlink was given the go ahead in the 1990's, TfL has replaced London Transport and now holds virtually all the policy levers, including fares, which is obviously key. In addition, when light rail/tram schemes now seek funding or investors are markedly more reluctant to consider light rail schemes. An illustration of this was when Amey, the consortium leader for Tramtrack Croydon Ltd, recently sold a large portfolio of its private finance initiative projects to John Laing PLC, and Tramlink was specifically excluded from the deal because of its risk profile²⁴. Another knock-on effect has been that private contractors, aware of the risk in tram schemes, are seeking greater profit margins and as a result projected operational costs have risen significantly²⁵.
- 4.28 Comparisons between Croydon and the WLT are therefore difficult to make. Nonetheless the difficulties experienced by Croydon Tramlink though can inform future decisions about the possible construction, operation and capital renewal of the West London Tram.
- 4.29 Due to the problems experienced in Croydon and elsewhere, Transport for London are in the process of revising their funding mechanisms for the procurement of the construction and operation of tram schemes. A decision is not expected for at least nine months. Any new funding mechanism will no doubt seek to address the inappropriate transfer of risk to the private sector that has led to an inflation of operational costs and has placed at risk the ability to deliver necessary capital renewal.

²² The only risks borne by the public sector were around works connected with the diversion of public services, for bus services that ran parallel to the proposed scheme and the general level of fares in relation to inflation for a limited period of time.

²³ The total cost of construction was £200m; £125m of which was government subsidy. The construction lasted six months longer than anticipated.

²⁴ Robert Bain, Standard & Poor, *Tram and Trolley Bus Seminar Report*, April 2004

²⁵ See 3.6 (page 31) of NAO report *Improving public transport in England through light rail*, where financial organisations, including John Laing plc, are either avoiding light rail or seeking greater profit margins for taking on the revenue risk. The NAO conclude that this is obviously not in the best interests of the public sector.

4.28 Until the Committee is aware of how the West London Tram will operate financially, we cannot reach a firm view as to whether the business case is sound and the scheme viable.

The Committee has concerns on the following five points:

- **The credibility of TfL's passenger projections**
- **The viability of parts of the proposed route**
- **The financial burden of debt repayments**
- **Assumptions underlying the business case**
- **Management of project risk**

The Committee would welcome an independent analysis of these points prior to TfL's application for a Transport & Works Act in Spring 2005.

4.30 The Committee accepts that an element of public subsidy is to be expected on major infrastructure projects but also considers it essential that the business case should be robust enough for a clear and appropriate transfer of risk between both public and private sector partners. A situation where an inappropriate transfer of risk to the private sector undermines the prospect of vital capital renewal in the future must be avoided. A balance between providing incentives to the private sector, protecting the public purse and guaranteeing certain levels of service should be established.

5. Where will the traffic go?

The key point about the Uxbridge Road is that all around it are residential streets, so if you stop [traffic], it has got to filter through somewhere²⁶.

- 5.1 TfL and local residents have identified eight points along the route²⁷, where significant upheaval in traffic flows and the streetscape will occur if the West London Tram scheme goes ahead. All of them are east of Hayes. The main fear that campaigning local residents have, particularly along the Ealing to Shepherd's Bush stretch of the route, is that this upheaval will force the traffic that currently uses the Uxbridge Road onto residential roads that do not have the capacity to cope.
- 5.2 The counter argument to this fear, as put by TfL and LB Ealing, is that traffic is already prone to use these residential streets because of rising congestion levels, and that this situation will get worse between now and 2011. TfL's transport modelling suggests that levels of traffic along residential streets with a tram in place will actually be lower in 2011 if a tram is built than if it isn't.
- 5.3 Furthermore, traffic modelling maps that compare scenarios illustrate that, with the tram, there will be a dramatic decline (of between 254 cars an hour and a 1000 cars per hour) in traffic during both peak and inter-peak periods along the Uxbridge Road – especially in the town centres of Southall, Hanwell, West Ealing and Acton.
- 5.4 However, planned diversion routes do show significant increases in traffic levels, with notable pockets around the same town centres, but many adjacent residential streets also show a decline in traffic levels. The main arterial roads for West London – the A4/M4 and M40/A40 – show either a marginal increase or decrease in traffic levels of less than 5%.
- 5.5 This chapter examines TfL's transport modelling, the assumptions that lie behind the modelling and supporting research, and considers how applicable this is to the Uxbridge Road.

Transport Modelling

- 5.6 Transport modelling is the method used to estimate the patterns of journeys taken by foot, car, or public transport. It measures and predicts the movements of people, crunching numbers on where people live, work and shop and how they travel to perform these functions. TfL then validate the findings with research into what is actually happening on the streets of London. This overall process produces models that are able to adjust when certain factors change, such as, for example, a new tram scheme.

²⁶ Jane Ashley, Save Ealing Streets, Informal Transport Meeting, 6th September, 2004

²⁷ These "pinch points" are Lady Margaret Road (Southall), the Iron Bridge (Hanwell), St Georges Road (Hanwell), West Ealing Town Centre and the Lido Junction, Ealing Broadway, Acton High Street and Shepherd's Bush Green.

- 5.7 Transport modelling is inevitably a precarious science but TfL claim that the models developed to predict movement around the WLT proposals are some of the most advanced used to date. TfL can also point to the accuracy of their modelling for the congestion charge which rightly predicted the minimal impact the scheme would have on roads adjoining the scheme's border.
- 5.8 TfL accept that there are limits to their traffic modelling, and in particular the models they have presented to the public during the consultation period. The modelling isn't able to factor some barriers to traffic movement, such as parked vehicles, blocking narrow stretches of the route, which is a concern of the Committee particularly in Southall and Acton. The modelling also has not yet been able to factor in the potential impact of the western extension of the Congestion Charge and Crossrail. Nor has the current modelling inputted the proposed traffic calming measures along nearby residential streets.

The Committee recommends that, before the spring of 2005, TfL should conduct revised traffic modelling which would include the effect of local traffic management measures, the possible westward extension of the congestion charge and Crossrail, and make the results of this modelling available to the Committee.

- 5.9 TfL's latest and publicly available modelling for the West London Tram, unlike with the congestion charge, does however predict that there will be significant increases in traffic along residential roads²⁸.
- 5.10 Most of the residential streets that according to TfL's transport modelling, will witness a "major increase"²⁹ in traffic levels per hour in a Tram-No Tram scenario in 2011 are clustered around the town centres through which the tram will pass. In Southall, it is apparent that a handful of residential streets³⁰ either side of the Broadway will have to endure a major increase in traffic levels if a tram were to be built.
- 5.11 For some roads, the major increase means different things; for example Ranleigh Road will have 25% more traffic if a tram were to be built. However, this only represents an additional 31 vehicles per hour in either direction; roughly only an extra car every two minutes. Other streets, such as Dane Road will have to face a major increase that will see approximately 113 additional vehicles an hour, which equates to an extra two cars every minute.
- 5.12 TfL's modelling anticipates that a significant portion of eastbound traffic will leave the Uxbridge Road at junctions such as the Parkway, west of Southall or at Greenford Road. So by the time the tram reaches West Ealing, where the Broadway is entirely closed to traffic, the parallel residential streets – Singapore Road and Leeland Terrace – will experience an additional 83 and 10 vehicles an hour respectively (levels which still represent major increase from a no tram scenario).
- 5.13 However, peak time levels record significantly less additional traffic than inter-peak levels around specific streets, especially on streets immediately adjacent to

²⁸ All figures quoted are for peak time traffic.

²⁹ Major increase is equal to more than 25% per hour

³⁰ Including Ranleigh Road, Beaconsfield Road, Dane Road and Carlye Avenue.

high streets. For example, Leeland Terrace and Singapore Road in West Ealing will experience additional 400 and 300 cars an hour respectively – between 6 and 7 additional cars a minute. This could be attributed to the tendency for retail activity to take place outside of peak hours.

- 5.14 Other streets that will see a significant increase, during peak time, in traffic levels in Ealing include Gordon Road, which runs north and parallel to the Uxbridge Road and Haven Lane which veers north and away from the Uxbridge Road towards the North Circular.
- 5.15 As the route reaches Acton, TfL's modelling suggests that the roads that will bear the brunt of the potential restrictions along Acton High Street will be those roughly one block east of the High Street, just north east of Ealing Common and the Uxbridge Road/North Circular junction. Crefield Road and Creswick Road will absorb most of the eastbound traffic before the Gunnersbury Lane and Steyne Road junction is reached. Consequently, according to the modelling, Steyne Road and Churchfield Road, the roads immediately north of Acton High Street, will actually register only minor decreases or only marginal increases respectively in traffic levels per hour.
- 5.16 Acton High Street represents one of the most contentious and logistically difficult "pinch points" along the route. One of the intentions of the scheme is, where viable, to "throttle back" eastbound traffic onto other larger, arterial roads such as the M4 or A40. By the time traffic reaches Acton a substantial number of drivers will have already been encouraged onto the A40 or M4 because of the limited access along the Uxbridge Road. Consequently, none of three options for Acton High Street (shared use, partial or total closure to traffic) allow for eastbound traffic to use Acton High Street.
- 5.17 The assumption therefore that local traffic will have successfully been "throttled back" pervades in the choices left open for Acton High Street. The modelling does not offer alternative outcomes for each of the three options listed in the consultation and so it is difficult to estimate the impact of each option on the immediate area, certainly for westbound traffic.
- 5.18 However, some of the assumptions behind the throttle back are disputed. Local campaign groups claim that the vast bulk of journeys along the Uxbridge Road are for either small local journeys or north-south dogleg journeys. Hence, the potential for the "throttle back" of eastbound traffic will be reduced as most journeys, they contend, only duck in and out of the Uxbridge Road and consequently residential streets will have to bear far greater numbers of cars than previously or even projected by TfL. There is also a concern that certain local trips by car – for example, travelling east from one side of Acton to another – will be rendered longer and more difficult.
- 5.19 The counter argument to such concerns was put to the Committee by Professor Goodwin. Responses to the reallocation of road space (in this case from car to tram) are varied, and are not confined to drivers' rerouting. Professor Goodwin, a leading expert of the behaviour of traffic from University College London, submitted a paper to the Committee (see Appendix) which outlined how people, when made well aware that a significant change has taken place, make a number of changes to behaviour. Some do reroute; others switch transport mode; others

alter the frequency or timing of trips; others alter the nature of their journeys. In the long term and more radically, people make decisions about where they live or work based to varying degrees on the transport choices available.

- 5.20 Professor Goodwin's extensive research shows that in 62 cases across Europe which he examined where road space was reallocated away from car use, only 12 witnessed a net increase in traffic volume on directly affected and parallel routes, and 30 recorded a net decrease of more than 10%. Indeed he concluded his presentation to the Committee with the assertion that he suspected that current modelling (though not necessarily TfL's for the tram), due to the overcautious environment surrounding the compilation of business cases for trams, had a tendency to over estimate traffic levels. More work need to be done to establish whether the West London Tram shares the characteristics of schemes where a net increase of traffic was observed, or more like the cases where there was a decrease and make this work available to the Committee.
- 5.21 Road reallocation projects that showed a net gain shared certain characteristics. They were meticulous in their planning and implementation (for example, timing a launch of a scheme at a traditionally quiet time of the year such as school holidays); they monitored carefully issues of controversy; they made the public fully aware that there could be teething problems; and large-scale projects were phased in. The West London Tram shares some, though not all, of these characteristics.
- 5.22 The weight of evidence would therefore suggest that fears about traffic displacement onto residential streets might be overstated. Experience would seem to suggest that people find alternatives to their previous travel patterns for the very simple reason that they have to. Consequently, road reallocation schemes have a tendency to prove successful in reducing traffic levels because, if properly implemented, they leave little room for any other outcome. The success of the scheme in reducing traffic levels will come at a price and this is likely to be paid by certain communities along the route who will be disadvantaged by the tram.
- 5.23 A tram represents a radical solution to the perceived congestion problems along the Uxbridge Road. Its success in reducing net traffic levels along the corridor appears likely. However, modelling cannot record whether local communities are reluctant to change their behaviour, or perceive the change necessary or whether they have concerns that the changes brought about by a tram would provide a net social benefit to the area.

I feel and we feel, the whole of the Uxbridge Road [would become] like some terrible American highway, destroying a lot of the character and charm of the areas along the route.³¹

- 5.24 The West London Tram project is still evolving but it is clear from the evidence the Committee received that TfL has some way to go to placate local fears about the impact the tram may have on local communities and local travel patterns. A likely reduction in traffic levels would represent a tangible success for West

³¹ Virginia Ironside, Save Shepherd's Bush Streets, Informal Transport Meeting, 6th September, 2004

London, but it could prove to be a hollow one, if TfL fails to achieve a supportive consensus from West Londoners directly affected by the tram.

- 5.25 The Committee looks forward to examining the developments in the West London Tram project following this latest round of consultation and hopes that TfL will answer positively the concerns expressed in this response.

COMMITTEE VERDICT

The Committee would find it easier to come to a firm conclusion about supporting the tram if TfL would provide revised modelling data and fuller detail on the tram's potential impact.

The Committee supports the view that the West London Tram scheme is likely to produce a net overall reduction in traffic but appears to cause an increase in traffic on those side streets affected along the route.

TfL needs to work closely with concerned residents and business interests to ensure that side effects of the scheme are minimised and actively managed with the objective of an improved transport service while maintaining and improving residential and environmental quality in the area.

6. Summary of Committee's findings

1. Is there a problem along the Uxbridge Road?

If the scale of TfL's projections is accurate it would seem sensible to enhance public transport in the area to ensure a sustainable growth in population and employment.

2. Does it have to be a tram, or are there other alternatives?

There is widely held scepticism among local residents and the Committee that the tram is the only viable solution to meet the growing demand for public transport along the Uxbridge Road corridor.

The Committee acknowledge the considerable public concerns about the proposal. We would be interested in a further exploration of guided bus technology to understand its costs, its ability to overcome those concerns, even though it would appear to require similar degrees of segregation to the tram, and whether such a system can provide the capacity that TfL's projections suggest is required.

The Committee would welcome the opportunity to comment upon such work before TfL's scheduled application for a Transport and Works Order in the Spring of 2005.

3. Does the business case stack up?

The Committee has concerns on the following five aspects to the business case:

- The credibility of TfL's passenger projections
- The viability of parts of the proposed route
- The financial burden of debt repayments
- Assumptions underlying the business case
- Management of project risk

The Committee would welcome an independent analysis of these points prior to TfL's application for a Transport & Works Act in Spring 2005.

4. Where will the traffic go?

The Committee would find it easier to come to a firm conclusion about supporting the tram if TfL would provide revised modelling data and fuller detail on the tram's potential impact (to be provided to the Committee in the Spring of 2005).

The Committee supports the view that the West London Tram scheme is likely to produce a net overall reduction in traffic but appears to cause an increase in traffic on those side streets affected along the route.

TfL needs to work closely with concerned residents and business interests to ensure that side effects of the scheme are minimised and actively managed with the objective of an improved transport service while maintaining and improving residential and environmental quality in the area.