

Evidence presented to the Transport Committee on the West London Tram

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1. Compendium of evidence

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Full versions of the evidence submitted are available on request from Danny Myers on either danny.myers@london.gov.uk or 020 7983 4394.

Summaries of the evidence submitted are below.

Anne Marksman

There seems to be little overall benefit of the WLT. The purpose of the tram is to improve speed and reliability, however most journeys along the Uxbridge Road are short and users are happy with the existing bus service. The construction of the tram however, would cause huge disruption increase congestion, divert traffic to nearby streets, impact negatively on properties and cause the destruction of a large number of trees. The cost is also very high.

A more appropriate response would be to improve the cyclepaths and introduce air conditioning to buses. This would ensure more people switched from cars to public transport.

Dave Benton

The tram would lead to traffic being diverted onto local streets, which would bring constant noise and air pollution. It would also switch people from a seating environment on the buses, to a 70% standing environment on the tram.

There would be 60% less stops which would not improve access, and the disruption over 5 years would be enormous. The cost has almost doubled since the initial proposal.

The current consultation is a smokescreen, in reality TfL have already made the decision to go ahead with the tram.

Improvements on the bus service along the Uxbridge Road will be sufficient if parking restrictions are adhered to and bus lanes properly policed.

Electric Trolleybus Group's Response to the WLT

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

The Uxbridge Road can be very busy, however it is no worse than many other comparable routes, and indeed better than some. There is no evidence that supports TfL's prediction of a doubling in usage of the corridor. Indeed, the construction period of the tram is likely to increase traffic problems.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Trolleybuses provide the same service as trams, except for no guidance and lower capacity. However, this can easily be overcome by more trolleybuses on the road. A more frequent service would be more attractive to customers. Trolleybuses provide the same ease of access as trams and could be segregated in the same way.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

Cost estimates for trolleybuses are over estimated, in fact an equal trolleybus scheme to that proposed for the tram would be 50% of the present estimated costs.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

These schemes have very little in common with the WLT. Patronage and a modal shift from public to private transport can be achieved by trolleybuses just as well as trams.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The WLT would have a limited and localised effect on the environment. A trolleybus scheme would have equal environmental effects but at a lower cost. This would make money available for other schemes that would provide benefit to many more Londoners.

- What evidence is there that new tram schemes provide economic regeneration to an area?

There is little evidence to show that property prices would increase anymore with a tram scheme than a trolleybus scheme. Both show a commitment to a permanent public transport system. It is the overall characteristics of the system, in terms of reliability and frequency that produce the end results, not simply the specific vehicles used on them.

Appendix A – Trolleyway Costs

Appendix B – West London Transit

Appendix C – Trolleyway Cash Flow

Ealing Friends of the Earth

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

Significant traffic problems exist throughout the Uxbridge Road, with particular congestion spots in Acton, Ealing, Hanwell and Southall, many busy junctions. Buses are frequently delayed by congestion making journeys long and unpredictable. Rat running in nearby residential streets is an increasing and politically contentious problem. Statistics from the Office for National Statistics show that population growth in Ealing has led to significant increases in car ownership, especially in the number of households with 3 or more cars. Planned developments and housing growth will ensure this trend will continue. Between 4 and 8 million car journeys are estimated to be removed with the introduction of the tram, which is the only solution to reduce road traffic and rat running through residential areas.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Buses are not segregated, bus lanes are not continuous and do not have junction priority, and many cars park or use bus lanes illegally. TfL are right to dismiss other alternatives as they have lower passenger capacity, leading to more vehicles on the road; do not enforce segregation which means less reliability and do not make the most efficient use of road space. Trams are seen as a long term commitment to high quality public transport.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

No comment.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

Croydon Tramlink demonstrates the importance of good traffic management and rigorous enforcement of traffic regulations, as well as simple ticketing and ensuring trams complement rather than compete with existing modes of transport. Increased land values and property prices have provided economic development, regeneration, as well as causing unemployment to fall by 9% overall and by 35% in the most deprived area. Trade has increased rather than decreased in many areas. Tramlink has particularly benefited children, the elderly and the disabled.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The reduced number of car journeys will reduce air pollution and greenhouse gas emissions. There will be a reduction in road building and car parks, thus enabling land to be retained as open space. Bus routes may be rerouted to ensure better connections with the tram, improving public transport in the surrounding area.

- What evidence is there that new tram schemes provide economic regeneration to an area?

Land values will increase, and the tram supports urban commercial and retail centres.

- Other comments

The timescale imposed on the responses may result in skewed, incomplete and less well considered results.

The Chair of the Transport Committee, Lynne Featherstone, has a lack of objectivity as she has recently spoken out against the tram at a public rally and made several statements that are incorrect or at odds with existing statistics.

Greenside Residents Action Group

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

Whilst the Uxbridge Road is a major arterial road traffic stress is not at intolerable levels. The route is well served by the Underground and the 207 and 607 bus routes, which are not even busy outside peak times.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

A multi-mode flexible transport solution would be preferable. Properly policed bus routes would insure all traffic was kept moving. A monorail would be a more flexible solution. There has also been little explanation of how the extension of Congestion Charging would interact with the tram around Shepherd's Bush.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The costs seem too high for any possible benefits, and it is likely that the tram would make a loss. It is likely that the public would foot the bill for any additional costs. Patronage numbers are overestimated and there is no evidence to support them. There has also been no cost analysis for car drivers, forced to elongate their journeys.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

There will be an adverse effect on the environment, as many trees will be lost in the construction period, traffic will be diverted onto residential roads and the construction period will be extremely unwelcome to all residents.

- What evidence is there that new tram schemes provide economic regeneration to an area?

On the contrary, local businesses can expect a drop in trade. There will be very restricted access for deliveries and customers will shop further afield, particularly in the soon to open White City Retail Park. Shepherd's Bush Market will suffer particularly. TfL has not considered the loss in profits for local traders when drivers can no longer drop in to shops to make small purchases, or to buy fast food.

Hammersmith and Fulham Cyclists

HF Cyclists are very concerned that the proposed tram will encroach on the already limited provision for cyclists around Shepherd's Bush Green. There is no consideration paid to the needs of cyclists and in particular, the Goldhawk Road junction is unworkable. The cycle lane will be removed, and pedestrian access highly reduced and along many parts of the route it seems that essential traffic will also be restricted.

HF cyclists recommend that the only way to deal with this is to use a single track running from Shepherd's Bush Market to the terminus by Wood Lane junction. However, the group has not been adequately consulted and a new approach from TfL is needed.

Hammersmith and Fulham Historic Buildings Group

The proposed tram would be detrimental to the visual amenity of the historical buildings and townscapes of the Uxbridge Road, Shepherd's Bush and Hammersmith. There would be a negative visual environmental impact due to the removal of trees, encroachment onto common land and the poles, tram tracks and platforms of the tram. It would be very difficult for traffic to move down the Uxbridge Road and it would therefore move into residential areas.

Jeffrey Asante

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

There are significant problems on the Uxbridge Road around Acton and Ealing town centres, and Southall and Shepherd's Bush. In addition, there are often problems on the A40 from Wood Green to East Acton in the evening. Growing patronage has meant that the 207 is often very crowded, and the 607 is also becoming affected. Patronage is growing, and buses have not been able to cope despite increased numbers. There is a likelihood of further traffic increase, with the White City Shopping Centre opening in a few years.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Only trams can provide the solution to congestion on the Uxbridge Road. More buses will increase traffic problems, and trolleybuses must be segregated in the same way as the tram to work effectively, however they have a smaller passenger capacity.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

TfL's figures seem to offer the most cost effective solution. By 2011, the WLT would have lower operating costs than buses, as well as generating a higher income. A long term solution must be sought.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

There must be capacity to allow growth, i.e. for frequency to increase where necessary.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

Regeneration will occur, particularly around stations, and with new bridges being built. Reduced traffic will lead to an improvement in air quality, with nitrogen dioxide and particulate matter being greatly reduced.

- What evidence is there that new tram schemes provide economic regeneration to an area?

Cheaper rent in West Ealing, Southall and Acton will attract investment, as will the entire area served by the tram, just as in Croydon.

London Borough of Ealing

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

There are traffic problems throughout the Uxbridge Road, as it is currently used for parts of longer journeys, instead of as a distributor road. Narrowing of the road through town centres and at junctions means that there are regular delays, often started by small perturbations. This spreads to residential side roads, evidenced by calls for traffic calming measures. Buses are often caught up in traffic jams, in Ealing this is particularly bad. TfL modelling suggests congestion will get worse, particularly along residential roads if there is no change in transport modes.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

There are other alternatives, but none that offer the cost effectiveness, high passenger capacity, maximum sustainable access to town centres or efficient use of road space as trams do.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

Ealing Council does not feel qualified to comment on this, however, it is believed that the tram is the most cost efficient and effective, as well as addressing borough objectives of “restraining car traffic and promoting public transport”.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

A recent report into the Croydon Tramlink has shown that initial opposition has mainly turned to support, it has promoted social inclusion, promoted and increased use of local businesses and has been of great benefit to those with impairments. However, it is

noted that the WLT will be set in a different urban, political and socio-economic context than the Tramlink.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

TfL's traffic modelling shows a reduction in 4 – 8 million car trips which will undoubtedly reduce vehicle emissions and noise levels, as well as promoting economic activity and investment.

- What evidence is there that new tram schemes provide economic regeneration to an area?

The tram can facilitate movement of labour resources, and allow employers to recruit more widely, particularly having a positive effect on unemployment. Businesses often experience an increase in activity, and new businesses are attracted. Property prices often rise and all of these factors can contribute to an increase in confidence in the local area.

- Additional points

The tram is essential for the continuing prosperity of the borough, and to increase the efficiency of the primary communication and transport corridor. A sustainable, environmentally friendly and commercially viable solution must be found. Currently, there are signs of growing economic decline and social exclusion, particularly in Hanwell, West Ealing and Southall.

London Borough of Hammersmith and Fulham

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

The Uxbridge Road is one of the busiest and most congested roads in the borough. Radical action must be taken to improve public transport, traffic levels, congestion and pollution, before they have an adverse effect on the economy. However, there is concern that the tram will push out traffic into residential streets, and TfL must be committed to a solution that will benefit the entire borough, not just the Uxbridge Road.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Intermediate modes of transport such as guided buses are generally thought to be unsuitable as there do not allow other vehicles to share the road. New technology has been used in France but this is unproved and capacity is lower. It is generally thought that trams are the best solution.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

There is support for TfL's predictions on the capital and operating costs of the tram, and if correct, then the tram is the most cost effective public transport solution. However, there are two points of concern. Firstly, the size of the tramway would potentially cause difficulties in accessing frontages, and may displace traffic to residential streets. Secondly, other tramways, such as in Croydon, have used old sections of railways, which significantly improves journey times. The WLT would be sharing road space and may not be much faster than buses.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

One problem with the Croydon tram was the large and unattractive overhead support masts, this was overcome in Nottingham by suspending cables from buildings. In Sheffield there was a lack of co-ordination with land use and transport policies as some housing estates served by the tram were demolished.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The WLT would have a significant positive effect on the environment, but must be complemented with traffic calming and streetscape enhancements.

- What evidence is there that new tram schemes provide economic regeneration to an area?

Croydon Tramlink has reduced unemployment by 35% in some areas, and high levels of investment through higher property prices, up to 7 times the initial investment costs. The tram alone would not facilitate regeneration, but should be seen as part of a package of measures, including land use policy and training schemes.

London Borough of Hillingdon

There is a lack of detailed information on the proposed route through Hillingdon in particular which junctions would be affected and which roads would be closed. The council is concerned over several issues:

- A 50% reduction in road capacity, causing traffic to be displaced onto residential streets. TfL provide no information about how this would be dealt with.
- That the proposed route does not travel through Hayes Town Centre, which is vital to gain Hillingdon council's support for the scheme.
- The Uxbridge Terminus has several problems as the proposed route goes through Windsor Street, a designated Conservation Area, and along the High Street, one of the busiest pedestrian areas in Uxbridge.

- The potential depot site is also a matter of contention. The Council would not support a depot at Southall Gas Works because of adverse effects on local conservation areas, or Springfield Road Retail Park for similar reasons, and also because of the effect on traffic and local businesses.

Appendix A – Letter to Bill Hamilton

Appendix B – Letter to Tim Finch

London Borough of Hounslow

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

Whilst the Tram would not fall within Hounslow's boundaries, the borough recognises that there is a problem of congestion on the Uxbridge Road, and it is likely to increase. The WLT will bring transport and economic benefits to a significant part of West London.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Trams are not the only segregated methods, however, they are the only practicable one. Physically guided busways would have little advantage over the tram, and trolleybuses have operational limitations, do not offer improved access and cannot accommodate increased patronage.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The council has not had the opportunity to independently verify TfL's operating cost assumptions.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

There is concern that other tram schemes have not achieved predicted patronage levels, however they do not necessarily have a lot in common with the WLT. As the WLT running along a major bus route and would operate in a regulated environment, it is believed that there would be high levels of existing patronage, as well as attracting more through the quality of the service.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

There would be significant improvements as a modal shift from private to public transport occurred. Noise and emissions would be reduced, and traffic calming measures

would aid this further. The council is aware of local opposition to the scheme due to concerns over diverted local traffic into residential streets. Improved traffic management must be introduced to complement the tram.

- What evidence is there that new tram schemes provide economic regeneration to an area?

The tram will improve the local environment and streetscape, and provide accessible and reliable transport, which in turn will increase the catchments for jobs and social services. Trams are also seen as a permanent commitment to public transport.

London Chamber of Commerce and Industry

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

Whilst there are congestion problems on the Uxbridge Road, it is no more extensive than any other route of a similar nature across London. The LCCI believes the Uxbridge Road has been chosen for its suitability for a tram scheme, rather than the unique nature of its traffic problem. The westwards extension of the Congestion Charging Zone is likely to increase traffic levels in Hammersmith and Fulham, possibly contributing to increased traffic on the Uxbridge Road. The WLT will also displace traffic into residential streets as drivers seek alternative routes.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

The LCCI does not believe it is qualified to comment on detailed aspects of travel planning, however, it feels that trolleybuses are an attractive alternative as they can be integrated into the present traffic flow. The LCCI would like TfL to reconsider its dismissal of trolleybuses.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

Costs are difficult to predict because they are largely based on customer numbers. The tram will be competing against existing bus and tube systems, as well as Crossrail, if construction goes ahead. The Chamber accepts that trams can provide an efficient modal shift from private to public transport. There is significant concern that there has not been detailed study of the effect of the WLT on the local economy. Deliveries and access will be restricted both during construction and whilst operational.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

The National Audit Office report into light rail systems points to shortfalls in patronage, and the limited impact these systems have had on reducing congestion, pollution and road accidents. In particular, the Croydon Tramlink has made a financial loss because of

lower passenger numbers than predicted. It is unclear as to whether the WLT provides good value for money.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

It is unclear as to whether any environmental improvements will occur, as traffic will be displaced to residential streets.

- What evidence is there that new tram schemes provide economic regeneration to an area?

The tram scheme may act as a catalyst for regeneration, however, it must work in conjunction with other measures.

London Forum of Amenity and Civic Societies

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

There are serious concerns that the modelling is inaccurate and several factors have not been taken into account.

Firstly, the issue of traffic displacement has been severely underestimated. A report produced by the Chiswick Protection Group on the likely impact of the WLT shows all traffic on the Uxbridge Road would be displaced to residential streets because the road is too narrow to accommodate both trams and cars. Certain streets in South Acton, around Shepherd's Bush Green and Chiswick are of particular concern. The possible extension of Congestion Charging to west London would further displace traffic, clogging up residential areas. Related to this is the additional concern that businesses would be adversely affected, restricted access to cars around West Ealing Broadway and Acton High Street causing a decline in shop usage and deliveries becoming more difficult. This would be detrimental to regeneration. Secondly, TfL has overestimated the projected patronage of the WLT as it will not meet most car users journey requirements. The third concern is access to the tram. The increased distance between stops will cause problems for the elderly, those with children and the disabled.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Not enough consideration has been paid to 'bendy-buses' because trams are supposedly more environmentally friendly.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The money would be better spent on alternative public transport. Orbital and local transport systems would more useful for local residents, connecting them to places of work, shops and other local amenities. There could also be links to Crossrail stations that followed a similar route to the proposed tram.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

Transport Minister Alistair Darling in July of this year said cost increases had occurred during recent light rail projects in Manchester, Leeds and Hampshire. The WTL would not be able to co-exist with other traffic unlike other schemes.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The tram would actually harm the environment due to removing trees, redirecting traffic through residential areas, building tram stops and overhead wires, and traffic delays.

- What evidence is there that new tram schemes provide economic regeneration to an area?

Restricted access by delivery vehicles or customers to shops would lead to the closure of such premises and therefore not aid economic regeneration.

- Further responses

There is now concern that TfL now plan to divert traffic away from Acton in the direction of the A4. This will bring further noise, pollution and danger, and will hinder access to businesses.

After viewing reports indicating that there has been a serious increase in air pollution in Chiswick recently, the London Forum again wishes to express concern over environmental damage likely to occur in the area. The future opening of the White City Retail Park, the extension of Congestion Charging westwards and the WLT forcing all non-tram traffic onto residential streets will only add to pollution.

Appendix A – Chiswick Protective Group
 Appendix B – EIA for White City Retail Park
 Appendix C – Chiswick High Road Pollution
 Appendix D – Minister Statement

Peter Morgan

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

Any congestion on the Uxbridge Road is typical for a road of its type, and a tram would increase traffic problems. TfL has provided no data to show that use of the road or buses has increased significantly in the last ten years, and there is no evidence that more public transport is needed along the route - any additional journeys would be car borne. Subsidy costs are a concern.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

The WLT is not segregated. Bendy buses are a better form of public transport.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The tram has not been fully costed and public transport schemes have a history of running over budget. Road improvements are a more effective and efficient way to improve travel and transport.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

Croydon Tramlink was undercosted, especially in the construction costs. Passenger numbers have been lower than predicted and it has been losing money. The cost of delays to other traffic because of the priority the tram gets has never been estimated. Proof that Tramlink has generated any modal shift from car to tram has never been produced. With regards economic regeneration, the Tramlink has possibly contributed to local people travelling to Wimbledon and other areas to shop instead.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The WLT would damage the environment due to tree removal, congestion and delays in local areas and lengthening journeys for many people. No statistics on road accidents have been produced, so there is the possibility that accidents have increased since the introduction of the tram.

- What evidence is there that new tram schemes provide economic regeneration to an area?

The Tramlink may have led to an increase in house prices, and there is some evidence it has reduced unemployment in some areas. It is highly questionable as to whether the WLT is the best way of achieving economic regeneration; road improvements are a better way of doing this.

Appendix A – PJM Analysis of A4020

Quadrants Residents Association

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

There is a massive problem from Southall to Shepherds Bush, with traffic often at a standstill.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

Buses get caught in traffic jams even with the existence of bus lanes. Trams are the only solution.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

It is difficult to comment on the cost assumptions without more financial knowledge, but efficiency and the environmental impact of trams would ensure their usage.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

They contributed to regeneration and local transport needs, providing a valuable service to deprived communities.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

Many people would use a reliable form of public transport rather than a car.

- What evidence is there that new tram schemes provide economic regeneration to an area?

Buses cannot contribute to regeneration but the tram would provide long term development. There is concern that other residents groups with better transport links are opposing the tram.

- Other notes

It would be beneficial to know what opponents to the tram suggest as a solution to the transport needs of Southall, being as it is a very deprived area with poor existing transport links.

Robert Feldman

There seems to be little overall benefit of the WLT. The purpose of the tram is to improve speed and reliability, however most journeys along the Uxbridge Road are short and users are happy with the existing bus service. The construction of the tram however, would cause huge disruption increase congestion, divert traffic to nearby streets, impact negatively on properties and cause the destruction of a large number of trees. The cost is also very high.

A more appropriate response would be to improve the cyclepaths and introduce air conditioning to buses. This would ensure more people switched from cars to public transport.

Royal Borough of Kensington and Chelsea

The council has not formally agreed its policy on the WLT and as the line does not enter the borough, only particular issues of concern to the borough have been highlighted.

There are clear problems over funding – capital costs are prohibitive and revenue limited. All other schemes have incurred financial problems, and the WLT appears poor value for money.

The frequent bus service along the Uxbridge Road have well sited stops, the tram would have fewer stops further apart. This would cause problems for the disabled and less mobile.

The current design principles for trams in this country would have a major impact on the street scene. Continental schemes do not need such extensive restructuring, thus TfL should promote these methods within the Health and Safety Executive.

The Royal Borough of Kensington and Chelsea has not been consulted by TfL on the WLT. Weaknesses in TfL's traffic modelling have been identified. There has been no estimation of the effects of diverted traffic on the proposed extension of Congestion Charging. The boundary road is one of the main alternative routes for traffic away from the Uxbridge Road. Also, there has been no traffic modelling either during the day or in the evening. This is expected to be a problem.

Save Ealing's Streets

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

The Uxbridge Road is no more so congested than any other radial routes leading out of London. There is no reason to believe that traffic will get any worse on this road, than on any other. Evidence from the Symonds Report concludes that traffic flows have changed very little on this route in the last 25 years, therefore TfL may have overestimated future growth of congestion.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

The tram is only partly segregated, on some areas it shares a single route with traffic. The existing bus routes serve the Uxbridge Road well, and journey times could be further improved with more rigorous enforcement of bus lanes. They also offer greater flexibility in cases of closure or need for change; easier access for children, the elderly and disabled, as stops are closer together; no loss of trees and the avoidance of the disturbance during construction.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The National Audit Office in its report on light rail has highlighted the tendency of promoters to overestimate benefits and underestimate costs. SES does not believe it can fully comment on the cost assumptions, as it does not have access to the full

breakdown of costs, including capital costs and net benefits, as well as risk assumptions and provisions for dealing with them. This information has been requested, but never made available. There are concerns over the high level of public subsidy, £48 million a year for 30 years, and that the money directed towards the tram could be better invested in existing public transport systems.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

The Croydon Tramlink has brought substantial benefits as it proves a transport route where none existed previously. However, the WLT would replicate existing systems. Furthermore, the Tramlink runs mainly along disused railway track, whereas the WLT would have to be integrated into the current traffic flow on the Uxbridge Road. Tramlink currently operates at a loss, and if the same happened with the WLT, the public subsidy would be even higher than estimated. There are also concerns that light rail systems are not well integrated into other public transport services, this would notably be a problem at Ealing Broadway station.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

There would be a negative impact on the environment as residential streets would bear the brunt of displaced traffic. There is also concern over the loss of trees that would be removed along the route, and the construction of the tram infrastructure – power lines, cable supports and platforms – will harm the character of conservation areas.

- What evidence is there that new tram schemes provide economic regeneration to an area?

There is little information on how the tram would contribute to regeneration, in fact it may well harm the local economy and town centres. In particular, the construction period would cause severe disruption, and tram may encourage passengers to bypass local town centres in favour of larger new developments.

Save Shepherd's Bush Streets

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

There is not a traffic problem on the Uxbridge Road and reference is made to a survey carried out by TfL asserting bus users were happy with the service and no congestion was reported.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

The alternatives have not been properly examined and properly policed bus lanes would be better option.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The costs estimated by TfL are too high and the money could be put to better use, for example in maintaining proper bus lanes. There were significant financial failures in other tram schemes in Sheffield, Croydon and Birmingham. TfL has overestimated the passenger usage of the WLT and there is concern with the initial capital financing plans.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

The WLT is not comparable with the Croydon scheme, as it would be primarily running on roads, whereas in Croydon, the tram runs on 6/7ths old railway track and 1/7th down city streets. The Nottingham tram was built to connect villages with no previous public transport routes.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

Traffic would be forced into residential streets, causing pollution, and front gardens, properties and trees along the proposed routes would be removed for the tram. Furthermore, the extension of Congestion Charging in Kensington and Chelsea would force drivers into Shepherd's Bush and cause gridlock.

- What evidence is there that new tram schemes provide economic regeneration to an area?

The tram would be an economic disaster as deliveries to small businesses would be virtually impossible and passenger usage would drop because of the reduced number of stops. The tram would benefit the new shopping centre in Chelsfield, rather than the shop owners in Shepherd's Bush.

Stamford Brook Residents Association

TfL's consultation process is undemocratic and seriously flawed. It is unclear as to what the objective is and exactly what areas have been included in the consultation. Also, there is concern that respondents do not need to identify themselves, which could lead to abuse. In addition, many businesses have not received the document, and there have been discoveries of large volumes of questionnaires dumped on waste ground. There is too much scope for TfL to interpret responses, there should be a single question for people to answer 'yes' or 'no' as to whether they want the tram. This flawed process by TfL is of huge cost to the public.

West London Alliance

- Is there a traffic problem now on the A4020; is traffic going to get worse? If not, what assumptions made by TfL are incorrect?

The Uxbridge Road is heavily congested and will not improve without improvements in public transport along the route and in the surrounding areas.

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

There are segregated alternatives to the tram such as guided and trolley buses, however the tram would provide the least disruptive and most suited method.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

The West London Alliance does not feel qualified to comment; however, we believe it is the most cost effective way to increase patronage of public transport.

- What can be learnt from other tram schemes such as those recently developed in Croydon and Nottingham?

There are a number of differences between the Tramlink and the WLT, as the WLT is run entirely on the road, whereas Tramlink has relatively small levels of street running. Tram and bus services must be co-ordinated, and transport policies must be joined up to regeneration, housing and environment policies. Concerns with the WLT are generally regarding disruption that will be caused by construction.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

There will be a major reduction in traffic, and this must be managed with a simultaneous programme of traffic calming and streetscape improvements in side streets.

- What evidence is there that new tram schemes provide economic regeneration to an area?

High quality, accessible public transport is an integral part of economic regeneration. The Croydon Tramlink has shown that it can bring investment, and facilitates greater movement into and out of an area, providing particular employment opportunity improvements. Businesses have reported an increase in customers and business activity. Trams are viewed as a permanent commitment to public transport, whereas buses are not viewed with such permanency.

West London Resident's Association

- Are trams the only alternative segregated method to buses? Are the reasons TfL cite for dismissing other alternatives, such as trolley buses, justified?

There is a need for a more flexible and inexpensive service, trams cannot provide this. The number of stops would be reduced, inconveniencing those with children and the elderly. Congestion charging would be a better way of tackling traffic problems.

- Are operating cost assumptions correct? Overall, taking into account operating costs and capital costs, does the tram deliver the best return on investment?

Pricing seems unrealistic, for example, capital costs do not include depot costs. Furthermore, the subsidy provided to trams is 10 times higher than that provided to buses. Furthermore, patronage has been overestimated, with little evidence to support TfL's figures.

- What evidence is there that the environmental improvements will occur as a result of the West London Tram across the wider area beyond the A4020?

The WLT would force Uxbridge Road traffic on to residential side streets, increasing pollution. Residents living close to the Uxbridge Road would suffer from restricted access and vibration from passing trams.

- What evidence is there that new tram schemes provide economic regeneration to an area?

There is no evidence to support this.

2. Transcript of the Informal Meeting of Local Groups, 6th September, 2004

The following people were in attendance

Assembly Members

- Lynne Featherstone (Chair) London wide Members for the Liberal Democrats
- Roger Evans (Deputy Chair) Conservative Member for Havering and Redbridge
- Darren Johnson, London wide Assembly Member for the Green Party.
- Murad Qureshi, London wide Member for the Labour Party.
- Peter Hulme Cross London wide member for the UK Independence Party.
- Richard Barnes, Assembly Member for Ealing and Hillingdon,

Witnesses

- James Haskings, Policy Officer of the Greater London Action on Disability (GLAD).
- Stephen Aselford, GLAD.
- Vivek Sharma from Quadrant Residents Association from Southall,
- David Lomas of the London Cycling Campaign (resident of Ealing)
- John Beeston, Chair of the Ealing Passenger Transport Users Group, also representing Southall Chamber of Commerce
- John Gashion - Committee member of Ealing Passenger Transport Users Group,
- Peter Eversden, the Chairman of the London Forum of Civic and Amenity

Societies

- Nick Woolven of Save Ealing Streets.
- Anthony Lewis of Save Ealing Streets
- Jane Ashley of Save Ealing Streets
- Mike Tyzack from Ealing Friends of the Earth
- Nick Ferriday, also of Ealing Friends of the Earth
- Christine Eborall, Ealing Friends of the Earth
- Virginia Ironside – Save Shepherd's Bush Streets
- Chris Noonan - Greenside
- Peter Scott-Presland, Director, Transport for All

Lynn Featherstone (Chair): This is an informal meeting of the Transport Committee. On 16 September, we are having a formal meeting of the Transport Committee which will be attended by Transport for London (TfL) and various other witnesses who are going to be answering our questions. Our questions will be greatly formulated from what we hear from all of the groups here tonight.

We are here to learn about some of the issues, because some of us, depending on the area in London we represent and what brief we have, have been involved to a greater or lesser extent in this issue. The Transport Committee, however, has not come to a formal conclusion as a committee on the West London Trams, although it has had an afternoon seminar on trams.

There are, as you will be aware, a variety of opinions surrounding the tram. The Committee wants to find out what everybody feels from their particular perspective so that we can put these questions robustly to TfL and the other people coming on 16 September.

John Beeston, Ealing Passenger Transport Users Group: Thank you, Chair. The president of the Chamber apologises for not being able to attend. He is in Spain at the moment, but he has given me a letter.

'We write to confirm that this Chamber of Commerce is against the proposed tram, as are all the traders within the Southall area, as they feel it would drive them out of business. The proposed route of the tram being along the Southall Broadway would mean that private motorists would be barred from using it, not to mention emergency vehicles, and you will appreciate that if people cannot use their cars to go shopping, then they will go somewhere where they can use their cars, thus shops will be forced out of business.

You may be aware that in a recent article published in the *Southall Gazette*, it was reported that the Southall traders accused those against the tram as being selfish. The *Southall Gazette* had to print a retraction the following week, saying that the Southall Chamber of Commerce is against the proposed tram.

Be assured, we will do all in our power to ensure that our members will not be forced out of business by your proposals. Do what the majority of people want and abandon your plans for the tram, and save the taxpayers of this country a great deal of money and our members worry about their businesses. No to the tram.'

It is signed by Manjit Lit, president of the Chamber of Commerce.

Lynn Featherstone (Chair): Right, thank you for that. I would just like to clarify that the committee is a scrutiny committee; it has no direct powers. Sometimes the tone or words that he used implied that we have direct executive power over the decision. We do not. We can give a recommendation, a conclusion, or a report. We are not an executive group influence. I would like to clarify that, because I do sometimes think people believe that if I say, 'yes,' it goes. No, it is not like that. I might very well wish it were, but that is not how it works.

Did the members of the Chamber of Commerce actually carry out any surveys amongst the people who use their businesses?

John Beeston, Ealing Passenger Transport Users Group: Yes, they did. In the past, they have had purpose meeting. I also note they are three-quarters within the Southall parliamentary constituency. Because of my involvement with the public transport in the area anyway, I am quite well known. I often call into various businesses along The Broadway. I have frequently been stopped by business people who ask, 'Is it true they are going to try to put a tram down this road?' They then indicate places where they would not be able to load and unload.

To a man, they seem to be against the tram, for good reason. A lot of Southall trade comes from way outside the area. We have a lot of people coming from other regions

of the country and abroad to carry out their shopping. It tends to be a cash-and-carry-type operation, where goods are bought in bulk, and they do need to load.

Lynn Featherstone (Chair): On that loading issue, do you know if the businesses are in discussions with TfL about how the Mayor would facilitate their business? Clearly, they do need to load and unload. Has the Mayor said, 'that is tough,' or do you know where they are in that conversation at all?

John Beeston, Ealing Passenger Transport Users Group: Well, Southall Broadway is a single strip of shops fronting the road with a lot of residential properties built right up against the shops. There are always fights, sometimes creating quite violent arguments, because people cannot park outside their own homes. There has been a long campaign to get a car park provided for shoppers and others. If it were suggested that some of the residents' parking spaces be given over to enable vehicles to load and unload just off The Broadway, it would aggravate an already difficult problem.

There simply is not space for vehicles to park for even a short time, and this would hamper the normal deliveries and collection of goods by the shoppers. It is a very, very difficult situation.

Murad Qureshi (AM): I am just interested about the makeup of your membership, actually. I have not really picked up any idea of the numbers of your members and what businesses you actually do represent, if you are going to present yourself as the representative of business in Southall.

John Beeston, Ealing Passenger Transport Users Group: I believe there are in excess of 100 members now. I did not get that information before I came. I should have done.

There was, at one stage, a rival organisation, The Broadway Traders' Association, led by Mr Sidu, but the opposition to the tram has caused them to unite with Southall Chamber of Commerce to present a united front.

Murad Qureshi (AM): In terms of sector, though, as well, it sounds as though you are just representing the retailers. There are other businesses, no doubt, in Southall.

John Beeston, Ealing Passenger Transport Users Group: There are not too many businesses now. Most of the manufacturing industry has moved out of the town. It is more a chamber of trade than a chamber of commerce.

Darren Johnson (AM): You are concerned about the impact on local businesses. Have you studied the impact on businesses in other places where there are trams, because I do not particularly see Croydon being devastated and ravaged by the tram scheme.

John Beeston, Ealing Passenger Transport Users Group: But in Croydon, the roads are much wider. Southall trade tends to be conducted in a different way, with whole families coming along. People come from other areas to enjoy shopping in Southall.

This morning, I spoke to Sheffield Chamber of Commerce, and they confirmed that during construction of the tram, over a period of six to eight years, a lot businesses

went out of business, but they say that now that the tram is open, those that have remained are trying desperately to attract trade back and are using the presence of the tram in their advertising. This is done for two reasons: first, to enable other Sheffield residents to know where the business is, and second, because of the sympathy vote they hope to gain. They hope that they can persuade people in Sheffield to try to build up their businesses again.

Darren Johnson (AM): Do you think there are lessons to be learnt from other tram schemes in terms of how we implement them and how we overcome some of the difficulties, or is the lesson for you that there could never be any sort of tram scheme anywhere in West London?

John Beeston, Ealing Passenger Transport Users Group: I think Southall is a very heavily populated area, and the majority of shoppers using The Broadway live almost within walking distance of The Broadway. If a relief road were to be built, and if the tram were to take other passengers away from the town centre, it would be a better mix of the shopping centre.

If I put on my other hat now, Ealing Passenger Transport Users Group would like to see the tram serve the new town that is going to be built near Southall station, rather than transporting yet more traffic down an already congested Broadway.

Roger Evans (Deputy Chair): Can we just get something clear about your objection for the benefit of the committee? Are you saying that the construction period will be what is damaging to business, or are you saying that once the tram is in place, it will continue to be a problem for business? In other words, do we just have to get over a construction problem, or is it the actual running and operation of a tram that is the problem?

John Beeston, Ealing Passenger Transport Users Group: I believe it is both. They need to be able to deliver goods to their businesses. Their customers need to be able to collect a year's supply of rice or a six month's supply of fashion goods, for example. They cannot do that if they cannot have access to The Broadway and to be able to stop and load and unload. There are generally concerns about the way trade will change.

Richard Barnes (AM): Where will that business go, if it goes away from Southall?

John Beeston, Ealing Passenger Transport Users Group: Wembley has quite a large Indian shopping centre, the Ealing Road of Wembley. Hounslow has a smaller Asian shopping centre. Or, it would move to another part of Southall, the King Street area to the south of the railway station.

Lynn Featherstone (Chair): I should say the committee is going to Croydon on Wednesday and the whole of the route on Thursday. Some of us have already done it a number of times, but all the members are going to view it inch by inch.

Vivek Sharma, Quadrant Residents Association: I am just going to spend a bit of time to explain a bit more on the business case. When the committee goes to Southall, if you can look behind the shops, you will see there are alleys there. In the consultation we did with Ealing, we highlighted that as an area where loading and unloading can take place.

The population of Southall is 65,000 out of 300,000 in the London Borough of Ealing. The Southall Chamber of Commerce have 100 members. Most of them do not even live in Southall. Once upon a time, they were from Southall. They have made their millions from Southall, but now they have left Southall. They do not want to change the status quo of the business in Southall. That is their main gripe.

Let us look at what Southall is. Southall is a deprived area. The figures show that. It is largely an ethnic minority community there. If you look all throughout London Borough of Ealing at Hanwell, Greenford, Northholt, Perivale, Ealing, Acton, these communities are all serviced by a Tube link. We have just one British Rail station, and we have the bus routes.

We have the highest rate of unemployment in Southall. We have, just on the index on the deprivation side, I am going to quote from the Office for National Statistics, which basically says that four out of five wards in Southall were the worst 20% of all wards in England; none in Ealing, Greenford, or Hanwell. On the 2000 index of housing deprivation, two wards in Southall were among the 10 worst in England.

So, we have different problems to Ealing, and these are serious problems. If, in London, we can regenerate Southwark with the Jubilee line, if we can regenerate Brixton, if we can regenerate Tower Hamlet, why can we not regenerate Southall? This is the one opportunity we have got to regenerate this place, and if we do not regenerate it now, we will never have it, and you will have the largest ghetto in West London on the doorsteps of the very privileged area of Ealing.

We have seen people come and go, seen people promise us in Southall things, and we have never got it. We have never seen anything. We have always had great promises, but where is the delivery? The youth in Southall are ashamed of Southall. They want to move out. That is how you have made it in life; you move out of Southall, because Southall is S-H-I-T, with no facilities for the youth or the people.

Is that the kind of place we want to cultivate? People who have made something of themselves coming from ethnic minority communities want to leave. They are not putting anything back into the community. All those professionals now have moved to other areas where there is good schooling and good transport links for their work in the City and elsewhere locally, as well.

You have got a whole wave of new communities coming into Southall from different countries. Where is the future for them? Two things that are a given: housing is going to go up with the Gas Works and everything else, and the level of car usage is going to go up as well. On the health side, we have got the highest air pollution rates in Southall on The Broadway, South Road. Mortality rates in Southall are the highest – respiratory diseases, coronary heart diseases.

People are in this system where they will use the car, even to make short journeys, because that is a mindset now. They are not coaxed and encouraged to use alternative methods of transport. I am not saying the tram is a be-all and end-all, but at the moment, it is the only thing on the table offering us something to get out of this deprivation. It might not regenerate Southall, but it will be a trigger and a kick-start for other things to come and attract other people.

Do I ever shop in Southall Broadway? No, because there are no shops there for me. It is all tourist shops, gold shops, sari shops, restaurant shops. How many times in my daily life do I use those shops? It caters for a tourist community.

We fought for controlled parking zone (CPZ) in Southall. The business community were against it. The president of the Chamber of Commerce had the chance to build a car park in Southall. What did he build? He built flats and shopping units. They are out for a quick buck, and if you listen to them over the 65,000 people who are saying, 'We want better public transport links to address the local needs,' then what is going to happen is 10 to 20 years from now, things will kick off in one shape or another. The feeling from the street is 'No one cares about us. No one listens to us. Who cares? Two fingers up to the police, and two fingers up to authority.'

Drugs are a massive problem in Southall. When you do not give kids facilities, and you do not give them some sort of hope, of course they are going to go to drugs. They are going to go to a life of crime, and newer communities will emulate that. You look at all the community leaders. Most of the community leaders and most of the business community do not live in Southall. Once upon a time, they did. I accept that. We have seen them come and go, but what about people like us? Who is fighting for us, the guy who is just trying to go to university or get a job in Heathrow Airport, trying to make something legally, legitimately, honourably in his life?

That is why I am pro-tram, and I hope that when you go to Southall, you just look at the vibe. On the outside it looks very buzzing and vibrant, and 'what a great place this is.' Do you really think, however, that people live like that every day? Do you think that Asian people every day have to eat only Indian food or shop only for Indian clothes? No. To a degree it has been forced upon us by the lack of investment from our local authority and from influential people, like the businessmen, who do not want the status quo to change, because they are fearful of the change that is going to happen.

So, that is my request to you. Also, look at the illegal street trading that happens on Southall Broadway. We have raised that as an issue. I have written to the Ombudsman regarding that. People such as disabled people and people with little kids cannot walk on the pavement. We even said in the transport meeting that if a tram has got to go down the Uxbridge Road, we want the council or whoever it is to do a compulsory purchase order (CPO) of that land to increase the width of pavement so people can walk safely.

Lynn Featherstone (Chair): You have spoken very compellingly.

Richard Barnes (AM): Vivek, your commitment to Southall is beyond doubt, and of the years I have known you, it has grown in intensity. The reality, however, is that the tram line will go straight down the Uxbridge Road. It will not go down South Road. It will not serve the 4,500 houses planned for the Gas Works site. It will not link in with Southall Station. It will not link in with anything north or south of the Uxbridge Road. At the St Margarets Road-Uxbridge Road crossing, traffic will be blocked so it is directed down South Road, and indeed, past almost where you live.

How do you think that will actually add to regeneration?

Vivek Sharma, Quadrant Residents Association: The one example you have cited is not going to add to regeneration. This is the question that you should be posing to

TfL, to say, 'Fine. The whole aim of the tram is get people to use it. Now, where are we going to get those people to use it? You have got to look at other feeder buses going to the tram route, so people can access that.'

Yes, there are going to be problems, and to be honest, if you want to demolish my house, and if you want to get the cars coming down my road, I do not have a problem with that, because at the end of the day, sometimes you have to take a bit of pain to look at the greater good.

There is a 65,000 population in Southall, and with the Gas Works it will most likely go to 85,000. That is going to be one third of the population of the London Borough of Ealing, and no one has said to me yet, 'Here is an alternative for you.' So, it does not matter what questions you ask me, I will just say to you, 'There are the problems, and you give me a viable solution.'

Richard Barnes (AM): You plea that the youngsters have got nothing to do. Would you suggest that they will be riding on the trams as an alternative? How will that add to regeneration?

Vivek Sharma, Quadrant Residents Association: From a regeneration perspective, why I would be proud to say, 'Yes, the tram has gone into Southall,' is: one, there has been some form of investment taking place – and we are talking about a substantial amount of investment; and two, it is linking Southall to other areas, such as Ealing and Uxbridge, where there are a lot of colleges, a higher level of education which we are currently not getting in Southall, and there is Thames Valley University.

A lot of people from Southall might work in the council or Ealing Hospital. It would get those people to stop using their cars or buses for whatever reason, and say, 'Come on. Let's use the tram.' It is going to give local people a pride in the area, as well. It is not going to damage it; it is going to enhance it. People will feel, 'Hey, there is something happening here. We are connected to the rest of London. We are not this goldfish bowl of Asians that people look at and think, Oh, you must be Asian. You all must be like this. You all must like this food.'

No, we are British, as well, and I am a second-generation Asian, who was born and bred in this country. I try to take the best things out of my parents' community, and I try to say, 'Well, at the end of the day, bottom line, we live in this country. I am going to give something back to this country, as well, and I do not just want to be in a goldfish bowl, where people just look at me and say, 'Oh, these people are Asian. Let them have their own way of doing things.' No, we do not. We want to be linked in with everyone else. We want to be accepted as the rest of Ealing.

When you go through on your tour from Southall to Ealing, you will see that there is a difference. There is just a different vibe, and you will think, 'Hey, these are two separate places.'

Lynn Featherstone (Chair): I know that already.

Vivek Sharma, Quadrant Residents Association: Okay, so does that answer the question?

Richard Barnes (AM): Not really, but you have put your passion into the programme.

Vivek Sharma, Quadrant Residents Association: I will make a good politician one day.

Peter Hulme Cross (AM): My question is: if the tram drives away businesses, as our friend has said it will, that is also going to increase unemployment in the area, so how can that be beneficial?

Vivek Sharma, Quadrant Residents Association: Number one, if you analyse the businesses, you look at who they are employing. They do not pay minimum wage, and they employ illegal immigrants. This can be testified to by the number of raids done by the police and other law enforcement agencies in that area.

What about the big players? (Sir Gulam) Noon, (Chairman and Managing Director of Noon Products Ltd), is a massive player now. He is a lord or a something of the Labour Party now. He is worth millions. He is not on the Southall Chamber of Commerce. These other big, big players who are worth mega-millions in Southall are not represented there, so I think it is a fallacy to say employment is going to go down. Most of the people who live in Southall will either work at Heathrow Airport and maybe the associated Heathrow Village, or they could be people who have gone through the system, gone to university, and they are working either in the City or other areas like that.

So, there is a handful of people who you are saying will be losing their jobs. I think it will also attract what I would like to see, which is western retail shopping outlets for our community. I want them to go there and provide jobs for local people. People can leave school, get jobs with them, go on their management training scheme, and develop these people, because the people doing the jobs for the traders who are in the Southall Chamber of Commerce will not be doing those jobs in two years' time. It is a stopgap; you do it for a little while, and you move on to something else.

Peter Hulme Cross (AM): It does sound like you would like to see the tram there so that the people who live in Southall can have better access to places like Uxbridge and Heathrow and what have you. Is that so?

Vivek Sharma, Quadrant Residents Association: Correct.

Peter Hulme Cross (AM): Because you think that is actually where the employment opportunities are, as well as education and so on?

Vivek Sharma, Quadrant Residents Association: Currently, knowing from my community where people work, where people travel, where people shop, that is where they will go: Uxbridge, Ealing, Heathrow.

Peter Hulme Cross (AM): But that will not necessarily assist in the regeneration of Southall. It will create a ghost town of Broadway and Southall.

Vivek Sharma, Quadrant Residents Association: No way, because regeneration is not done just on one thing: 'Oh, we have got the Tube there; we have got the tram there; regeneration is going to happen.' It is a first building block; it is a stepping stone to a bigger picture of regeneration.

Ravi Jain, Southall Regeneration Partnership: I am Ravi Jain, and I am one of the directors of the Regeneration Partnership and Southall Community Alliance. Southall Regeneration Partnership recognises the tram in Southall is not fully appreciated, and part of the reason is the information which is made available at this moment and the options that are put forward does not add to the address of knowledge. As a result, everybody has got more questions than they have answers.

It has also divided the community, in the sense that the residents are more in favour of it than the business community, and there are certain factions in the business community that are totally opposed. Some of their reasons are quite right, but it will be a failure, because there is no study done which will indicate what the exact economic impact of the tram is going to be on the local community.

We are also trying to work out what will be its relationship with the Gas Works site, which is one of the very big developments, and we would like to see that integrated. The provisions which will make it possible can only be possible if they reach comprehensive provisions. Within the Partnership, we are working with the Heathrow Partnership to make sure that there are comprehensive provisions, and we are influencing those decisions and that work, rather than it trickling down, in fact, which we somehow made the cut.

The plea which we are going to make is that if alternatives are looked at and put forward in the community, it will take away a considerable amount of anxiety about it, and there could be a lot more informed debate. We would like to see it linked up with the Gas Works site, because it would be one of the biggest developments in Southall. If that were to go ahead and triumph, those two things could have a remarkable potential for the regeneration. So we are supporting it, provided other options are taken on support as well.

Peter Hulme Cross (AM): I see that, in this document I have got somewhere here, the Gas Works site was previously the favourite to garage the trams and to maintain them, but TfL have now proposed an alternative site – in fact, two alternative sites – and they say that they do not think the Gas Works site is suitable any longer. They have issued this document as a consultation. I do not know if you have seen it, so, what is your view on that one?

Ravi Jain, Southall Regeneration Partnership: The difficulty at this moment which is coming is we have got no clear information, either about the Gas Works site development – because they are going to put forward their application next month, and then we will see information. The same thing with TfL and tram. We are still looking at options, and unless those options, along with the Crossrail are made available, we are in no position to look at it. What will be the firm plan, if we do look at it.

Richard Barnes (AM): There was a time when the Southall Regeneration Partnership, before it became the Heathrow City whatever it is, campaigned and studied for bypasses round Southall, which was about six or seven brown field sites, going from the Hayes Bypass Roundabout round through West End Road, I think it is called.

If you had a choice between projects of the bypass round Southall and the tram, which would you go for?

Ravi Jain, Southall Regeneration Partnership: I can give my personal opinion.

Richard Barnes (AM): That is what everyone else is doing tonight.

Ravi Jain, Southall Regeneration Partnership: I think bypass will be a better option, because that opens up Southall, because at this moment, it is completely landlocked.

Richard Barnes (AM): Thank you.

Vivek Sharma, Quadrant Residents Association: I was going to say, do you live in Southall?

Ravi Jain, Southall Regeneration Partnership: I live in Northolt.

Vivek Sharma, Quadrant Residents Association: Okay, so I would have to live with all the traffic fumes, would I not?

Ravi Jain, Southall Regeneration Partnership: If tram were to come, it is not going to reduce that traffic. If that site is open to help bypass, a new road, which is going to be an east-west corridor.

Lynn Featherstone (Chair): I will let you come back once, but we are not going to have tribal wars here, because we have not got time, but if you want a quick...

Vivek Sharma, Quadrant Residents Association: I would agree totally that anything that has to happen in Southall to regenerate Southall has to be a co-ordinated approach. It cannot be tram only; it cannot be Crossrail only. Some of the questions you are asking have to be thrown back to TfL to say, 'Look, if Crossrail is going to happen, if tram is going to happen, what is your proposal to link it?'

I took the TfL guys when they did the roadshow; I showed them there, and I gave them some ideas to say, 'This is how we can link it.' Our end goal is to improve public transport, is to reduce car usage, and improve the quality of life for people there. That is a TfL question, and I agree that pressure should be put on them, through your group, to say, 'Come on, let us get some answers instead of just walking it around.'

Lynn Featherstone (Chair): Okay, thank you to the Southall contributors. We will use your views. That is the point: to use all of your passions and different views and put them to TfL, because whatever our political views, this is the committee in session.

David Lomas, London Cycling Campaign: Thank you. Well, first, perhaps it is obvious, but the bicycle is the most efficient, quietest, lowest impact form of transport there is. Please do not put people off using it. Do not reduce people's wish or ability to use bicycles. The key to that is, if you want build a tram, or indeed anything that affects transport around any set of streets, you design it right. That is one of the major lessons from Nottingham, Croydon, Sheffield, Wolverhampton, and elsewhere.

To that end, consultation with cycling groups is a good thing, and I must say TfL are doing that. We are meeting TfL this Wednesday to go over the detail of the design around Ealing. Now, a lot of studies have been done about the effect of trams on cycling, and there are concerns. There are no perfect

systems, purely because you have dug something into the road, and a bicycle has got to get past it or across it.

Now, very shortly, there will be published a major study of cycling and trams by Nottingham University that tries to get a lot of experience of continental systems, such as Freiburg, Karlsruhe, Basel, and so on, and several British systems, that comes up with a lot of real detailed engineering stuff. If TfL could look at that, that would be great. I have got a draft with me, if you want. I am afraid it is a bit of a doorstop at the moment.

Lynn Featherstone (Chair): I think we should have it, and the scrutiny officer can read it.

David Lomas, London Cycling Campaign: The principle concerns we have got are space. Putting a tram down a road involves taking space. That is a fact of life. What is our major concern, our biggest concern, is the space left for the cyclist. If we are shoe-horned into a tiny gap, so that traffic comes past your elbow at speed, there is nothing more guaranteed to put people off. That is a big concern. It is the biggest worry. When people will say, 'I cannot cycle in traffic,' they mean they hate cars coming a few inches from their right hand, which does happen a lot.

Another one is crossing the tracks, particularly at night or when they are wet. The fatality in Sheffield, the injuries in Croydon. You must cross at or near a right angle, which sounds fairly obvious, but it has been missed. It was missed in Sheffield, and one cyclist is dead. Greater than 60 degrees is the recommendation of Her Majesty's Railway Inspectorate.

Getting past trams is also an issue. A modern tram stop is built up. If you have been to Croydon, you will know it is about 30 cm high to allow level access, so you can get a buggy, wheelchair, or whatever straight onto the tram. This means it is an obstruction, and it has to be next to the track, or within 30 cm. So, any cyclist has to cross the tracks to get past it. That was one of the major concerns. We are in the middle of doing a poll by email. We have got some dozen responses. That was one of the big ones: 'How do I get past a stop?'

Other things? Okay, coherence of the route east-west. The Uxbridge Road is a major cycle-commuter route in Ealing. A stunning number of cyclists come back and forth east-west using that road. If they have to be diverted, stop-start, and go round houses, that will be a mess. Continuity north-south is also important. People do not only want to go east-west. Continuity north-south matters. People live and shop either side. I know I do. I live south of it; my supermarket is north of it.

That is it in a nutshell. Please design it right.

Peter Hulme Cross (AM): I have come off a bicycle quite a lot of times, but one time I really remember was when my front wheel got stuck in some tram lines, and I suddenly found my front wheel inside the tram lines. It jammed, and I came off, and I really remember that one, so, I am likewise concerned, and I do not know how you design around that one.

David Lomas, London Cycling Campaign: It can be done. You end up occasionally having to make a sort of jug-handle manoeuvre. You go slightly left, and then try to

get as near normal to the tracks as possible. Most of the injuries in Croydon have actually happened in the wet, because obviously rubber and wet steel have almost no friction.

You cannot get round it. One of the lessons that the Nottingham-McClintock study came up with is that even experienced cyclists do have concerns about trams, and they do have problems. There is no way of getting around them altogether. Tram tracks just need care, thought, and one hopes, very careful design. With good design, you can get round it – I lived in Milan for a year, and cycled up and down cobbled streets and tram tracks all the time.

Roger Evans (Deputy Chair): Mr Lomas, just so we can be clear about the general concept here, do you feel that TfL's approach should be to design a cycle route which co-exists on that piece of road with the tram, with all those difficulties, or should they be designing cycle routes which are maybe a street away on either side, where possible, and you would like to see it completely segregated?

David Lomas, London Cycling Campaign: The former. Taking parallel streets is only worthwhile occasionally. If you lengthen a journey too much – the guideline CTC study is about 10% distance or time – cyclists will not do it. It will put them off. It can be done; they can coincide. Some of the design that TfL have done, particularly in West Ealing, in the detailed drawings that I have looked at, is very good indeed. Some of it is still under development. It can be done.

Roger Evans (Deputy Chair): So you are saying that if we were to put the cyclists into an adjacent road, then they would not use the facility? They would just try and squeeze on there with the tram anyway?

David Lomas, London Cycling Campaign: It depends. It depends what you mean. It depends how often they have to chop, change, lose priority, stop, wait for traffic lights, wait for gaps in traffic, and so on. Most of the time, there is space for a decent cycle lane to go with the tram. Periodically, there is a tendency to squeeze in some very narrow lanes, which is going to make it sticky.

James Haskings, Greater London Action on Disability: I am going to briefly say what GLAD are doing on this at the moment, and then I will let Stephen explain from an electric tram user, because Stephen uses the Croydon tram, which is why we have invited him along tonight.

First of all, for the actual consultation itself, only two out of the five disability organisations in the area of the proposed tramlink were consulted by TfL, which we thought was pretty bad. I have been on the telephone to all the organisations in that area to find out if they received a consultation document or if they had any views. I have agreed to meet with Danny Myers to have a proper chat once I have consulted those members properly. GLAD especially wants to consult our member organisations in those areas that are affected so that we can give you a good response to include in your reply, as well.

From our general opinion, and speaking to some member organisations, they actually think the tram will be good for disabled people, because it allows more access than buses do at the current time.

Another person we thought you should be asking opinions of is actually Transport for All, which used to be known as DaRT. Their director is here tonight, Peter Scott-Presland, so you may want to invite him to speak later.

Stephen Aselford, Greater London Action on Disability: Croydon trams were built within three years on the streets. What we organised in Croydon was a working party of various residents' groups and business groups so they could meet every now and again with the developers of Croydon Tramlink, because obviously, over the three years it was being developed, there were problems in Croydon.

It was quite a useful feedback for London Transport, as it was then, and the Croydon Tramlink, to get a two-way feed with local residents' groups, businesses, and environmental groups within the area. I think there was a group of eight or nine that met about every six weeks over a three year period while it was being built. That faced, beyond doubt, quite a lot of the problems and fears that local residents had while the building was working.

The other thing is, they had proposed paths from main roads to the tram stops with lighting, but where we had problems in Croydon was paths from housing estates, for example around the Arena stop. The council's housing department owned the paths, and it was after the Tramlink was built they decided people would use the path to get to the tram, so then they closed the path up for two weeks while they put the lighting in. I think something like that should have been seen at the beginning.

Also, the other thing is, where you have got private developments near the tram stops, like supermarkets and home warehouses or whatever you have got, try to get them involved to get them to look at their access arrangements. Down at Waddon Marsh, we had a large supermarket, and to get to it from the tram stop, you had to climb over a three foot wall. They have now put in an entrance there.

It is things like that that should never have happened in the first place. The landowners who own these places should have gotten together with the developers to provide better access for their customers.

The other thing is a High Street or main road tram shop could be useful while you are developing the scheme, because then all the enquiries to it about tramlink could go into that, and therefore, at the end of the day, could be handed back to the tram company to provide a local information service for the trams and also possibly another information office to sell bus passes and that sort of thing.

On another point, a person from Southall said that Croydon roads were all wide, and that is not true, because George Street, Croydon is a narrow street. It goes down one way, and it provides access into the town centre, and therefore, that is not a very wide street.

So, three things you ought to look at when you come to Croydon is possibly George Street, the Arena and the housing estates around it, and the Waddon Marsh retailer area. Those are the sites that have benefited from the Tramlink.

Lynn Featherstone (Chair): Does George Street have shops on it and the tram?

Stephen Aselford, Greater London Action on Disability: Yes.

Lynn Featherstone (Chair): And it has no traffic?

Stephen Aselford, Greater London Action on Disability: It has access traffic.

Lynn Featherstone (Chair): So traffic can actually move along, and park, load, and unload? I am just looking at a few of the points made by Southall Commerce.

Stephen Aselford, Greater London Action on Disability: There is parking for deliveries and that sort of thing.

Lynn Featherstone (Chair): Okay, well that will be checked out anyway. I am glad you said you would get together with Danny, because what is very interesting is the level of consultation with disability groups in the area. I am quite surprised actually. I would have thought there would have been a wider consultation for TfL with disability groups in the area, but we will follow that up.

Richard Barnes (AM): Can I ask you just to make sure that you remember that the tram road goes from Shepherds Bush to Uxbridge, and if you do get in touch with disability groups, then please make sure it is all of them?

James Haskings, Greater London Action on Disability: One of the areas that we are talking to is Hillingdon, local groups there.

Richard Barnes (AM): Your informal bit today, it comes in general, not in a specific group.

James Haskings, Greater London Action on Disability: Because we have not been able to consult our member organisations properly in that area, it being the summer period, I have agreed to meet Danny over the next couple weeks to actually give a proper response.

Peter Eversden, London Forum of Civic and Amenity Societies: Thank you, Chair. I would like to include in my general comments a few comments about the Acton situation, because although Save Ealing Streets represents all the residents in Acton and the effect of the tram, the Acton diversions affect people who live in the London Borough of Hounslow. I represent two societies in that borough who are affected, but TfL did not consult anyone in that borough, because they said that they were only going to consult people along the route of the road.

So, we have people who live four or five hundred yards from the Uxbridge Road and use it as one of their transport routes, but they have not been consulted. They have now, this time round, received the consultation leaflet, but you have probably read in the press of the number that were found dumped and left on street corners, and there is some question as to how many people know.

The Acton situation: the residents there face something that no one else faces along the route. They are told that their whole High Street will close in both directions. This is not the diversions of one route of traffic or on north or south as in the other, but all traffic. So, they met throughout 2003 with TfL in the local consultative meetings, and they decided to work out what to do, because TfL already said, as it says on page seven of their report, that a lot of the journeys are dogleg journeys. They only use part of the

Uxbridge Road. They are actually heading and finishing north or south of it, and even though there may be a modal shift, TfL still estimate that the numbers would drop to 20,000 vehicles a day.

Therefore, the Acton residents were very concerned what to do with this when their High Street was totally closed. They spent all those weeks in all those meetings working out how to cope, where to route the traffic, reluctantly admitting in the end that they would probably have to go for compulsory purchase and demolition. They agonised over the locally listed and the statutory listed buildings they would have to get rid of, but Ealing Council were quite encouraging. They said, 'There are regeneration opportunities in this. For the shops that have no rear access and would close because there are no deliveries, we can rebuild those into new frontages. We can get the advantage of extra accommodation, etc. Perhaps we have to go for this disastrous thing of allowing the tram and the traffic, and so on.'

It took hours of people's time, and TfL have totally ignored it and have come up with their original plan to totally close Acton High Street and lose all of their shops, all of those businesses, etc.

If you look at the route, you will find that you have indicated to you many of the routes that the traffic would take. If you come to page 17 and look at Acton, you will find that it just says, 'Traffic will be diverted northwards up Steyne Road.' It does not tell you where it will go. The only place it can go is to the A40 motorway. Now, TfL have said on page eight that they want traffic to use the A40 instead, so, all the eastbound traffic on the Uxbridge Road – 20,000 vehicles – is diverted up the single-lane Steyne Road. It arrives at the A40. It turns right onto the A40. It turns right down the x`. The M41. It then joins 32,000 return car trips a day that the London Borough of Hammersmith tell us will be introduced by the White City retail park entering into the middle of the M41. It then is on the M41, which, if Ken Livingstone has his way, will be the Congestion Charge ring road for the extension.

However, all that traffic then gets itself down to Shepherds Bush. Now, it didn't want to go to Shepherds Bush. It wanted to be in East Acton, so, it now turns westwards, and it heads back to Acton where it wanted to be, but at Shepherds Bush Green, instead of joining the four lanes of westbound traffic that it would have now, it will join the traffic on the southbound side of the Green, which will be changed to two lanes each way to accommodate the tram. So, you have the 20,000, the 32,000, the diverted Congestion Charge vehicles all trying to head westwards in two lanes. They will eventually find their way back to East Acton or wherever they wanted to be.

That is really quite disastrous. It would bring West London to a gridlock state and cost millions in extra delivery charges, lost business, etc. Look at the other side just for a moment. The traffic is coming from Shepherds Bush towards Acton. Again, all has to be diverted, because the whole High Street is closed. This is diverted into roads which, if you read the London Borough of Ealing Committee of January, the residents had demanded something was done about them, because those roads have become impossible to live on.

There was a petition to the area committee in January saying to the council, 'Please stop all this traffic.' TfL, however, have chosen those roads to put all the traffic down, and those roads would be six roads with five junctions, instead of the straight Acton High Street. Are those junctions going to be traffic-light controlled? Are they going to

be give-ways? I do not know, but whatever it is, it is a massive delay. So they have all this horror in both directions. It just sounds completely illogical, and it does not seem as though TfL have done a good job on this at all.

I know I am running out of time, so I have a few more general comments. We have the tremendous loss of trees. In the side streets through which all this traffic will be diverted, we have already implemented controlled parking for residents on both sides of the street. Many of them are single lane only in certain sections, with everyone waiting for a passing space. These are the ones TfL want to use. Pollution and danger. And then, TfL want to spend £665 million, when by 2006, they will be £565 million in deficit already. Putting on your hats as Assembly Members with some influence over the budget, I would like you to consider whether the Mayor is being wise.

Lynn Featherstone (Chair): We will be looking at funding.

Peter Eversden, London Forum of Civic and Amenity Societies: Also, the consultation, if it does reach people, is a little flawed. It talks about the removal of all these trees, the overhead wires, the dangers and the difficulties that will be imposed, but then it says, 'One of the advantages that TfL rates is it will improve the Uxbridge Road. How high do you rate this?'

So, there is a lot of anger by my member societies along the road that they spent all this time in consultative groups, and nothing has come out of it. They still face what they think will be absolute horror, and they will lose their businesses, their shops, and their facilities. Thank you.

Lynn Featherstone (Chair): Thank you. Certainly in listening to your description of the 52,000 cars, or whatever it was, going round Shepherds Bush Green, it sounds... I sit here, and I have listened to all sides of all of this, and I cannot wait to get TfL and say, 'Why did you chose that?' and put that point to them. You have to believe that TfL and the Mayor are doing this for a good reason, not a bad reason, but what you describe is so illogical, you have to get TfL on the hook and say, 'Why? Why that?'

Richard Barnes (AM): You said after a long period of consultation, your members in the Acton part of Ealing have failed to influence the outcome of the consultation process. Have any of your members reported to you, at any part of the whole of the Uxbridge Road, that they have managed to influence TfL and its proposals for the tram, or does all remain as it was in the beginning?

Peter Eversden, London Forum of Civic and Amenity Societies: I will leave that to Ealing Streets, because I think they know more than I do. I have only had two other pieces of feedback, and the result has been, 'We had hoped for more.' Most of the feedback I have had from our members is that the model which TfL commissioned from some organisation in Oxford, I think, does not show the present rat runs. Therefore, since these diversions are going to become gridlocked, and drivers will seek rat runs to get round them, they will join the present rat runs, and those are not predicted to increase in volume. That has angered a lot of people who live on them.

Richard Barnes (AM): One of the diversions through Acton ends up at a gate-controlled railway crossing. Have TfL indicated they are going to do anything about that crossing, or are they just proposing it will be left to create more congestion? I am thinking of Churchill Road.

Peter Eversden, London Forum of Civic and Amenity Societies: I think the diversion is Steyne Road. TfL appear to want to use the A40 motorway.

Richard Barnes (AM): It will go down there, and a lot end up round Churchill.

Peter Eversden, London Forum of Civic and Amenity Societies: I know a lot will try, and I think this is what we are facing: that people's own decisions on where they will drive will make this absolutely disastrous, because they will not necessarily use the diversions. No one is going to drive along the Uxbridge Road knowing they are going to be diverted four times and neatly follow all of the diversions, knowing it is going to happen again and again. They will use Pope's Lane and Bollo Bridge Road and all the rat runs they know now to the disadvantage of all the people who live on them.

John Gashion, Ealing Passenger Transport Users Group: Could I just briefly say, because the Member mentioned Churchill Road and diversion, a diversion for the tram was proposed along Churchill Road to run not over the level crossing, but down the side of the railway back to the Uxbridge Road at that point, but TfL has ignored it. In the meantime, the local authority had listed some of the buildings in Churchill Road...

Richard Barnes (AM): They are all working together, are they not?

John Gashion, Ealing Passenger Transport Users Groups: ...that would have had to come down. That was two or three properties.

Lynn Featherstone (Chair): I do have a letter from Ealing Friends of the Earth, at one point, citing four examples of changes that TfL have made. Clearly, in that sort of thing you would expect some changes. I can read them out if anyone is interested, but as Friends of the Earth is presenting later, I will wait for them.

John Beeston, Ealing Passenger Transport Users Group: I had hoped that we could have spoken with our EPTUG hat on about Southall, because I find myself in agreement with Mr Sharma, but I see a different solution. For the first time for generations, there is not just one major project planned for Southall, but four: the whole new town with massive facilities, office blocks, shops, temples, and leisure facilities and 4,000 homes, which is adjacent to the railway track; the possibility of a new gateway road which will take all the unnecessary east-west through traffic out of The Broadway and the High Street; the possibility that Crossrail will provide fast train links through to the Maidenhead and out to Kent and Essex; and finally, the tram.

Whilst all three centre on Southall Railway Station, it gives us a real chance to develop that massive site east and west of the station and really regenerate the town. One project, however, that does not even talk to those other three is the tram. As my colleague said, The Broadway is already full of successful businesses. Why put that in jeopardy and not face the real task? Integrated transport was strongly recommended in the Government Audit Commission's Report. Turning to the wider issue of the tram plan, there has been no attempt to integrate the tram with any other form of transport. There is no attempt to take the tram closer to Ealing Broadway station, etc.

We are also concerned about the cost of the tram, which at best will only do what the existing successful bus service does now. By the time the tram is up and running,

congestion charging and road pricing will be commonplace and could achieve the same effect on the Uxbridge Road as the tram, and for far less cost.

It seems we are learning nothing from this Government report, yet the Minister has used this report to turn down tram plans in the cities of Leeds, Bristol, South Hampshire, etc., as well as extensions to the Manchester tram and the West Midlands tram.

Lynn Featherstone (Chair): I can assure you we will put the funding to them. That is all we can do in the case of funding, but we do understand the Audit Commission...

John Beeston, Ealing Passenger Transport Users Groups: There should be integration of transport at Southall Station.

John Gashion, Ealing Passenger Transport Users Groups: First of all, can I say too much emphasis has been put on comparisons with Croydon. Croydon is 17 miles, but only two of those miles are on the streets, and even part of that two miles is reserved track for trams only. The Uxbridge Road is going to be 13 miles, and all but a few yards is going to be on the street, as we stand at the moment.

The cost is £648 million, at present, and in our view, that is not good value for what they are promoting. We think that perhaps another £100 million should be spent on it, and what we are thinking of, some of these have already been mentioned. The journey time has got to be cut. It is no good having the same journey time as the present 607 bus route. It has got to be that six or more major road junctions have got to have flyovers or 'fly-unders.' They talk about precedence for trams at traffic lights, but if you have got complicated junctions with filter lights and all the rest of it, and you have got two trams every three minutes, I do not think the circuit at the traffic light sequence is ever going to get to the end before it is interrupted by another tram. There is that point.

Their document misses out probably the most problematical area, which is the Ealing Hospital, Brent Bridge, and the road up to Hanwell Broadway. They have just not mentioned at all how they are going to get round that. Also, we have mentioned the diversion in Acton. The idea of that, of course, was to save closing the High Street, certainly in one direction, if not both, and the tram, if it went in the one direction, would serve Acton Central Station. It would stop right outside the station, and a TfL representative also saw it as an idea for reversing trams to back towards Uxbridge without the driver having to change ends on the thing, because he could carry on in the same direction and turn the reverse way at the bottom of the road.

The other point, which has been mentioned, the depot branch which, until tonight, I thought was going to be on the Gas Works site, we had suggested should be extended to the station in Southall and carry a passenger service, with that service running off from Hayes Bypass towards Uxbridge, not towards Ealing, because people could get off the trains, Crossrail or whatever, at Southall and go out towards the Uxbridge area which has no mainline railways.

Finally, a word about capacity of the trams. They are supposed to carry 300, but in fact only 70 of those will be seated, which is less than 25%. This is not a good idea, for all the arguments they have put up about better treatment for the disabled and this sort of thing, as opposed to double-decker buses. They perhaps need to be reminded that the old trolley buses on that road used to seat 89%.

Jane Ashley, Save Ealing Streets: We developed a spontaneous local group of residents and linked up with a number of other residents along the route across the borough. Our position on the tram has always been open-minded about the principle of the tram until very recently. Basically, we have spent the last two years talking to TfL in great detail about how the tram scheme can be improved. We have always been really worried about the problems of traffic being diverted off the Uxbridge Road onto the residential streets round. You have heard the example. Acton is the prime pressure point remaining, but there are a number of others along the route.

We have always said that we think there, and in other places, demolition would have been a much better solution. If you are going to spend nearly three-quarters of a billion pounds on a scheme, spend a bit more and unblock those pinch points. Make it into a proper scheme. We have found – Acton is a good example, but in other places also – very limited success in terms of persuading TfL to make it a system that actually works better for the rest of the community.

The second thing we wanted to do – and this would have helped in some of the areas, especially in Ealing – is integrate the tram far better with other sorts of public transport. In particular, we thought you could get round Ealing pinch point by bringing the tram into the station, which is going to be a Crossrail station, and that would make a lot of sense. Again, we have not managed to do that, and by this summer, there became increasing disillusion among the groups up and down the route. People started to say, ‘Well, actually, we do not think this scheme is worth it. It is a very imperfect scheme. It is a huge amount of money, and if it is going to cause all these problems...’

Not only that, the trees issue came to the fore. Some of the diversions that were suggested would bring down trees, and then it turns out there are a huge number of other trees along the route, with a lot of environmental problems being created by this, to probably some gain, but how much? What I just want to address briefly here, because we have not touched on it all – and it is not something that Save Ealing Streets has been talking about the last two years, either – is: how much better is the tram than a bus, and why is it so much better?

We have become increasingly sceptical about what TfL have been saying is the great advantage, as we have looked more closely, and the information has started to unfold on that. They are saying that a tram is much better than buses, because it will attract a huge number of additional people, compared to buses. You have probably seen their chart that has got buses very small and trams very large.

The first reason is: why in principle can buses not meet the same kind of speed and frequency as trams? Actually, you can lay on more buses. It would be controversial, but you can have a similar level of road priority for buses. You can do it. Okay, they take smaller numbers of people, but there is no reason why you cannot do more without giving up the road in order to do that.

They say it will cause all kinds of difficulties with doing that. In particular, they say that it is more expensive to operate the cost of buses once you get more than 4,000 passengers an hour. That seems to us an absolute nonsense of an argument, when what is really at stake here is the huge capital cost. The tram is going to be costing nearly £50 million a year, every year, mainly in terms of capital repayment, but some the

operating deficit. Buses, by comparison, cost a tiny amount of operating deficit. They are talking about just £5 million a year. It is a huge amount of money different.

It seems to us, you could do an awful lot in terms of improving buses, improving priority, laying on extra buses. They have justified their figures by giving very, very high increases of growth, and the National Audit Office has said that, very often, promoters of tram schemes do inflate the figures. We are just staggered. They have got the 207 and 607 going up by about 3 million by 2011 to 27 million, but with the tram, there is an extra 70 million passenger-journey-per-year of growth. It is really difficult to make sense of why that is there. They have got people transferring from trains and Tubes to the tram. That is really implausible that people would be transferring there, especially if you have got Crossrail stopping at all these stations, which is a new development that was not expected before. Now, not only is it stopping at Ealing, but also at Southall, Hanwell, West Ealing, Acton.

In addition to the bus growth, they have got extra people transferring from walking; they have 4 million doing that. They have got people transferring from other bus routes, not the 207 and 607. We just think that there has been a certain amount of inflation that is going on in that sense. I think the Croydon scheme is so different, because it opened up new routes. We have heard a lot about how different it is, because only one-seventh was on the road, but here, the plan has to be justified by what it adds over buses. We have got a route; it has already got public transport. In Croydon, there were people who were transferring to the tram, because a lot of those routes did not have public transport before and because they were using old railways and so on, and they cut a huge amount off journey time. We think you have to look at Croydon very much in that context.

Here, they have got to say not only why it is better than buses are now, but also why it is better than buses could be in 2011. They have said to us through the consultation group buses could be very, very different. They would have superb access compared to now. They would not look like today's buses. So, you have got to ask those kind of questions about what does it really add.

Maybe that kind of nebulous idea 'People prefer rails to wheels' adds something. Maybe it does, and maybe it would encourage some more people to get out of their cars to do it, but does it encourage enough to justify £48 million a year to be spent on the borrowing to do that? Our conclusion is: 'Well, we do not really think so.'

Peter Hulme Cross (AM): Is it not true to say that through this area from Ealing Hospital, as our friend pointed out, there is absolutely nothing in this consultation document as to how they are going to cross over the River Brent? Coming up Hanwell Broadway, that is going to be partially closed, which would make it difficult for cars going along that Broadway. In other words, it would displace them onto streets either side. The same would be true of West Ealing, where cars would be displaced along Singapore Road and along Leeland Terrace, and so on, either side.

Then you get Ealing Broadway, where the tram would effectively block Ealing Broadway and would divert traffic into the road along Haven Green, which would then take away a number of mature trees along Haven Green, and then we come to Acton. So the whole story along that stretch is a massive displacement of cars that would use that onto other roads, residential streets along either side.

Jane Ashley, Save Ealing Streets: That is absolutely right. One of the key things we always feared was that this was about displacement of traffic from the main road to the residential areas on either side. The key point about the Uxbridge Road is that all around it are residential streets, so if you stop it, it has got to filter through somewhere.

TfL always said initially, in principle it would not be such a problem. Then they did their modelling, and they showed us the modelling of 2011 with a tram and without a tram, and what does it show: major reduction along the Uxbridge Road; lots of streets, all round the edges, with major increases. Even their own figures are suggesting that, so that is precisely what does seem to be happening; it is displacement. Of course, it seems to us that good environmental practice must be that cars are kept on main A roads, not on residential areas.

Lynn Featherstone (Chair): Can we just ask what sort of percentage increase it shows?

Jane Ashley, Save Ealing Streets: It is quite complicated at the moment. What it shows on the Uxbridge Road is a major decrease, which they have listed as more than 25% reduction. Many of the roads off the Uxbridge Road show a major increase, which they define as more than 25%. Figures were not given out as to whether it was 200% or 50%. They just gave it as more than 25%.

Lynn Featherstone (Chair): The only reason I ask is that many of the similar scare stories were around during the Congestion Charge consultation. I followed the modelling very closely on that. TfL were reasonably accurate, and there was no real increase in rat runs, so I was just interested that their own modelling is showing an increase in...

Jane Ashley, Save Ealing Streets: In other areas.

Lynn Featherstone (Chair): Jane is saying to me that that is what the modelling says. We are going to have a look at the modelling ourselves, and when TfL is here, we will ask them all of that, but if that is true, there is a differential, then, between what they have shown us at the time of the Congestion Charge, as opposed to now on this scheme.

Jane Ashley, Save Ealing Streets: I think the complication is you cannot just look at numbers of streets, if they only model certain streets. What they have told us in the consultation groups is if one street has a major increase, it will filter through to the streets around them, so, the increase might not be as big as the major increase they give, but a lot more streets will be affected. Given, however, they have only indicated 'more than 25%', and we do not know how much more than 25%, there could be huge increases on some of these streets.

Lynn Featherstone (Chair): Well, I think that is something that we need to look at. Traffic modelling is usually a fairly inexact art, because traffic...

Jane Ashley, Save Ealing Streets: It is all very rough and ready to save themselves, is it not, but it does give a clear picture of a big cut in traffic on the Uxbridge Road, and not that much of that can be due to the cut in transfers to the tram. In Croydon it was only...

Lynn Featherstone (Chair): I think it is something we need to take another look at.

Darren Johnson (AM): Just quickly, I know we keep making the analogies with Croydon, and yes it was a different scheme, but there were a lot of very similar fears locally about cutting up the town centre and making it dangerous, concerns about rat running, concerns about cyclists, and so on. Nonetheless, some of the leading proponents of the campaign against the Croydon Tramlink are now actually leading campaigners for the extension of the Croydon Tramlink.

Jane Ashley, Save Ealing Streets: It would be rather nice if it happened, and we shall see.

Darren Johnson (AM): Could it be that there is just a lot of fear about this project? There are a lot of concerns about the modelling and stuff like that, but basically, at the end of the day, it could be a good thing, and people just have not yet really had their eyes opened to this potential.

Jane Ashley, Save Ealing Streets: It has not been sufficiently appreciated? In some ways, if they go ahead, would it not be fantastic if that were the case, but there would have to be absolutely massive cuts in traffic in order to prevent the kind of displacement we are talking about. That is what is hard to envisage. Even if it cuts traffic by 50%, where it is closed, there would be an awful lot displaced onto other routes.

I do, however, think it is terribly important, when you come back to Croydon, to remember that they talk about controversy over the little ring. Only one-seventh of the track in Croydon is on the road. The rest is railway lines and so on, so it is a tiny amount. It was a sort of ring road round the centre, which is completely different from the Uxbridge Road, which is the main highway which links up all these communities along the route. So it is such a different scheme.

Plus which, in Croydon, they even built a bypass in one of the areas where they were worried about traffic that would be displaced, before they built the tram. It is such a big, wide open area, they can do that. They can build bypasses. The tram planner proudly said to us, 'We built this to take traffic that might be displaced beforehand.' In this area of West London, there simply is not the space to put up bypasses to take displaced traffic.

Murad Qureshi (AM): Just to elaborate on your point, an observation that I saw with Congestion Charging, all the posh amenity societies in the centre of town got it completely wrong, because the displacements did not happen, and the rat runs and whatever did not appear the day after. The ward I represent in the city of Westminster, right on the boundary, was potentially going to be one of the victims of that scenario, and actually, quietly, if you talk to them now, they will say that their worst fears did not materialise.

I can see the same happening here, in your instance. Whilst yes, modelling may not be a perfect science, I think there is actually a bigger switch than people realise. One of the biggest switches we have seen in the last four years is onto the buses, particularly from ABCs. I daresay members of your amenity societies are probably the most likely group to switch onto public transport once the availability and its accessibility becomes better.

Jane Ashley, Save Ealing Streets: That may be. Sure, let us encourage everyone to switch, and I wholly support that. We all want people to use public transport more in every sense, and I feel very uncomfortable about opposing what seems to be a great investment in public transport, because I am really committed to it. There are, however, so many possible uses of the money in London on public transport and on all sorts of other things. Whether this is a cost effective way of doing it, I am becoming increasingly sceptical. As to the modelling, I think it is difficult to...

Lynn Featherstone (Chair): The point I was making was that the fears are the same, but actually TfL's modelling is showing different things, between the two, so that is why I want to go back to TfL, because on the Congestion Charge, it showed no great displacement. Quite frankly, people did not believe that, and there were fears, but you are saying the modelling actually, as far as you are aware, yours maybe had showed that.

Richard Barnes (AM): We are drawing a lot of false comparisons here. I do not think you can compare the congestion zone, where there is no physical impediment, to the Uxbridge Road, where there is a constant physical impediment every three minutes in either direction. It is a completely different thing.

Ealing Council, I understand, is responsible for traffic management, and I understand that they are looking at a zone half a mile either side of the Uxbridge Road to manage and control traffic. To what extent have you been consulted over that process? Has it been dealt with completely separately to the tram, or has it been an integrated process, so that your views and experiences over the tram consultation cedes the other? Have you been asked?

Jane Ashley, Save Ealing Streets: Yes, we have been asked, to be fair. They have had groups – and it has largely been the same people who have been discussing the tram – about how they would like to mitigate the effects of traffic in the residential areas, and people have come up with solutions.

The question mark is, given it is TfL's project for the tram, and it seems to be Ealing who are dealing with this. Whether there is sufficient commitment to doing these kind of traffic mitigation measures, I do not know. But they are conducting that in, I think, probably a quite sensible and reasonable way, actually.

Peter Eversden, London Forum of Civic and Amenity Societies: May I respond on that, because that borough does not own the roads half a mile each side. Hounslow and the residents in Hounslow and the residents groups in Hounslow, through which the traffic will be deliberately diverted, have not been involved by Ealing, because they are not part of that borough.

Lynn Featherstone (Chair): Ealing are not working at officer level with Hounslow?

Peter Eversden, London Forum of Civic and Amenity Societies: They are probably working at the officer level, but the residents have not been invited into another borough to give their views, when they are within half a mile of the road.

Lynn Featherstone (Chair): I am sure we will bring that up with TfL on 16 September.

Nick Woolven, Save Ealing Streets: The local traffic consultation was done by the London Borough of Ealing, and it was different from the Local Government Commission (LGC) processes, which were run by TfL. The result of that was that the traffic management, for instance, in West Ealing, ended up discussing how to mitigate something which had been identified to TfL as a fundamental problem – the Lido junction – and nothing had been done in the TfL plan to resolve it.

Effectively, the local traffic management plan was just trying to solve a problem that had been made by the tram scheme, and many, many hours were spent in discussion with TfL, trying to describe and identify ways of resolving the actual problems of that junction. They were all ruled out as being ‘non-core scheme,’ whatever that means.

Anthony Lewis, Save Ealing Streets: I just wanted to caution a little bit against the comparisons, both with Croydon and with the Congestion Charging area. If you think of the Congestion Charging area, it is right in the centre of the city and is roughly a circle; it is a little area, with radial routes leading to it. Therefore, you can stop anywhere you like along your radial route, abandon your previous form of transport and carry on with something else. The same is true of Croydon. The tram leads into Croydon from various directions, with the centre of Croydon as the central node, if you like.

Uxbridge Road is a very different beast. The whole dynamics are totally different. They have got, instead of radial routes leading into a node, a linear system linking sub-centres, but each of those sub-centres – whether it is the centre of Acton, the centre Ealing, going right onto central Southall and so on – they, in turn need not just east-west transport, which is all they will get with the tram, and particularly when Crossrail comes in, and the stations assume greater importance, they will need stuff feeding in from every direction. They will become mini-nodes themselves, which the tram will not serve or will only partially serve, so there has got to be, again, a much more widely co-ordinated system of bus and other public transport routes, which is what the National Audit Report has indicated.

Stephen Aselford, Greater London Action on Disability: I would just like to make the point that one thing the Croydon tram did displace is some bus services from the town centre, as well as traffic, because the New Addington Estate used to have a bus every three minutes. It now has a tram every seven minutes, and also, the feeder bus network around the Addington Estate which is quite successful.

Also, I do not know if I mentioned before, for a lot of disabled people, it is very useful, because the trams tell you what the next stop is by audio and visual means. A lot of disabled, blind people, and people with buggies are using the trams a lot more than they would coming in by car. Thank you.

Peter Hulme Cross (AM): I only had a quick point, but it was covered actually by the two gentlemen previous to me. The comparisons with Croydon and the Congestion Charge really do not stand up. What we are talking about here on the Uxbridge Road, as Anthony said, is linear. The Uxbridge Road is a line, and it carries 27,000 cars a day.

What is proposed is putting in what comes down to a light railway. It is the size of a Tube train two and a half carriages long, and the proposal is to put that down the centre of the Uxbridge Road. It is so big, it is going to block or partially block the road in four places. Now, common sense tells you that is going to displace an awful lot of cars. Those 27,000 cars are going to be displaced onto other streets. That is the

problem. It is not a solution. It is a draconian measure which is going to create many more problems that it aims to solve.

Lynn Featherstone (Chair): This is the difficult issue for everyone listening to all of these very valid points that everyone is making. It is, 'Convince us that it can work.' I do not think anyone is philosophically, politically, or morally against the tram. I think most people actually appear to be in favour of it, but the question is, 'Can you believe what TfL is saying?'. It seems impossible or difficult to believe the answers or that they are the solutions as promised, because I think most people would buy into this.

Mike Tyzack, Ealing Friends of the Earth: I just want to put the whole thing in context. The big problem in the London Borough of Ealing is traffic. For example, traffic in Ealing grew by 11% between 1991 and 2001 and is likely to grow just as much in the next 10 years. It will certainly grow more than in central London, and there are three reasons for that: public transport is not as good in Ealing as it is in central London; there is no congestion charge anywhere in the London Borough of Ealing; and we have got a booming economy and a population set to grow, because of lots of developments.

We have got Terminal Five at Heathrow, the third runway at Heathrow, the planned expansion of retail in the Ealing Centre, development of the Southall Gas Works site, and development in Acton. The effects are already apparent, and are set to get worse. We have got congestion for many hours a day; we have got rat running through residential roads already; we have got people paving over front gardens and destroying trees to park in their front gardens.

What can we do? Well, we can try to stop the expansion. Some of us did try to stop Terminal Five without success. We may stop some of it, but realistically, I think most of it will go ahead.

We could push for a congestion charge in West London. This would reduce the amount of through traffic, so that we have only got traffic which needs to come. Alternatively, we could improve public transport.

There seem to be four ways that you could improve public transport. I am sure everyone would like an extension of the Tube from Ealing Broadway, but it has already been agreed that would be too expensive, so it is not on offer. If we improve buses, we have got to install continuous bus lanes to give buses priority over the other traffic, and these will be just as contentious as the current plans for the tram, but the modal shift will not be high enough to justify it. Jane has asked why. The simple thing is blokes in cars do not want to get out of their car to get on a bus. I got out of mine, because someone nicked my car, and I could not afford another one, but most blokes have got their car, and they simply want to stay in them.

Also, the running costs for buses are higher per passenger, so buses actually give less value for money. When you get up to a certain critical mass of buses, they get in each other's way. We have heard people locally in Westminster complaining that there are too many buses in Oxford Street now. That is what we would get in Ealing if we tried to put on buses to cope with this expansion that we are expecting.

Another possibility is we could bring in trolley buses, but again the modal shift is not high enough. Also, they would be the first trolley buses in the UK for a very long time, so it would be a bit of an experiment, and I am not sure I want to be part of that kind of

experiment. Also, cars feel that they can park in trolley bus lanes. They do not seem to park in tram lanes, but they park in bus lanes and trolley bus lanes. So they are not as effective.

Alternatively, we could have trams. That is our fourth choice, and the modal shift from car to the tram is better than any other sort of public transport. Rat running down residential roads would not be as bad with the tram as it is going to be without the tram. Now, there has been quite a lot of discussion about the effects of traffic being sent down residential roads.

We looked at the maps that TfL did that showed the effects with and without the tram. Particularly, we looked at the charts predicting 2011 without the tram and 2011 with the tram. Where they have mentioned a street, they have actually meant a group of streets, so they have mentioned about 60 streets or 60 local areas. We colour-coded those according to whether they were going to get less traffic, have about the same traffic, or have worse traffic with the tram or without. This is just Ealing itself, not the whole borough. There were quite a lot that were going to get less traffic, there were quite a lot that were going to stay the same, and there were 16 that were going to get worse.

The ones on Uxbridge Road, we did not count, because we knew they would be better. And the main roads, like the North Circular, get more traffic, but then that is what they are for, so nobody minds those. The thing was the 16 roads that are going to get worse, but they are actually in the minority, so more people are going to benefit...

Lynn Featherstone (Chair): That was in 2011?

Mike Tyzack, Ealing Friends of the Earth: 2011, with or without the tram, so traffic is growing anyway.

Lynn Featherstone (Chair): Did it look at where the Crossrail might get built?

Mike Tyzack, Ealing Friends of the Earth: No, this was looking not with Crossrail.

Lynn Featherstone (Chair): I know it is a bit of a myth, but...

Mike Tyzack, Ealing Friends of the Earth: No, they did all this in 2003, when Crossrail was not known about. So, summing up, we would like to see a congestion charge and the introduction of a tram. I do not think congestion charge on its own would do it. The tram, as you can see, on its own might not be perfect. Now, we admit that the scheme on the table is not perfect, but it is...

Lynn Featherstone (Chair): Is that a congestion charge along the Uxbridge Road or an area charge?

Mike Tyzack, Ealing Friends of the Earth: I think I will leave that to others to decide where it needs to go. The problem is traffic, and we are trying to deal with traffic.

Richard Barnes (AM): Yes, but you can put a congestion charge in Northolt, and it would not help the Uxbridge Road. Where are you thinking about?

Lynn Featherstone (Chair): Are talking about the Heathrow one, or are you talking about...?

Richard Barnes (AM): Yes, the Heathrow one.

Mike Tyzack, Ealing Friends of the Earth: I want the congestion charge anywhere where there is a lot of congestion where we would like to solve it, and I think we have agreed we would like to solve it in the whole of the Uxbridge Road through the borough, and probably Shepherds Bush, as well, although I cannot talk for Shepherds Bush.

Richard Barnes (AM): You are saying to us you want a congestion charge down the Uxbridge Road.

Mike Tyzack, Ealing Friends of the Earth: For that area, I think that would be one way, in addition to the tram, because...in this area...

Richard Barnes (AM): You might be Friends of the Earth, but you are not friends of Ealing.

Mike Tyzack, Ealing Friends of the Earth: We admit the scheme on the table is not perfect, but it is a damn sight better than doing nothing, and it is better than improving the buses.

Just as an aside on the story about Acton, I was rather mystified about this diverted route, because that is news to me. If I were driving a car, I would not be going the way that the man said, because you read a map, and you can find out where to get. Also, the consultation document that I got gave me a choice of whether I wanted the traffic to be diverted, or whether I wanted to demolish some property to widen the road. I was for demolishing property to widen the road so that we have traffic and trams down the road.

Lynn Featherstone (Chair): You wanted demolition?

Mike Tyzack, Ealing Friends of the Earth: We did not, initially, but when we looked at all the options, that is what you are left with. Certainly, we do not want lots of traffic being sent down residential roads.

Lynn Featherstone (Chair): Okay, Christine.

Christine Eborall, Ealing Friends of the Earth: I just want to talk a bit more about the socio-economic benefits of the tram as we see them and from the research we have looked at. Currently, as you have gathered, the Uxbridge Road is regularly congested, and the 207 and 607 buses are held up, especially in peak hours. The journey is slow and unpredictable, and buses are crowded, which means that they are an unsatisfactory means of transport for many people. The bus lanes are not continuous. They operate in variable hours. People still park in them, and in Southall, the traders are continuously lobbying councillors to allow people to park in the bus lanes. I kid you not.

There is also heavy congestion on the north-south roads at junctions with the Uxbridge Road. I hope that your site visit is actually going to include a ride on a 207 bus from Shepherds Bush at least to Southall, because you would learn a lot just by being on that

bus and seeing how many times it has to pull out of its bus lane and how many times it has to stop.

Trams will, as plenty of research shows, provide a vastly better public transport system: faster, smoother, quieter, more reliable, predictable journey time, and pleasant and comfortable. People's journeys to work, college, shops, and leisure facilities will be much shorter, and they will be predictable. In other places, trams have revolutionised people's work journeys and saved them hours each day. Trams will also improve journeys to school. Over half the high schools in the borough will be within 10 minutes' walk of the tram. Many of our high schools in London Borough of Ealing are oversubscribed, and that will give parents a greater choice with the tram and will still enable them to send their children to school out of the borough on a safe, reliable mode of public transport.

Trams, of course, are also accessible to all, as we have already heard. They are the only form of public transport that is. Many people cannot or will not use buses because of access problems, and they are uncomfortable, and the ride is jerky. Tubes and trains both are difficult for many people, partly because of steps and partly because they are quite expensive. Trams are a huge improvement for the disabled, as has been already said. At the moment, disabled people in our borough have to rely on taxis and Dial-a-Ride, and Dial-a-Ride is not as reliable as one might wish.

Trams are obviously much better for the elderly, mobility impaired, and mothers with small children. Research we did in Acton last year as part of car-free day with elderly people in Acton, asking them about public transport, showed that although they are using buses, they are actually quite scared of buses in a lot of ways. They are difficult for old people to use. Lots of things that the more able-bodied and younger of us would take for granted actually begin to intimidate older people, and we have an aging population, as do most places.

The other thing about trams is, again as research shows and TfL's plans suggest will happen, it will improve transport in the wider area, because the bus routes will be altered to improve the interchange with the tram, and that will mean that more places are accessible by a combination of tram and bus.

The second point about the tram is that it will revitalise our town centre. Now, this is something that has already been discussed, but only really in the context of Southall. We have got town centres along the Uxbridge Road that are already declining: that is Acton, Ealing, West Ealing, and Hanwell. Shops are closing. In fact, I heard only today that WHSmith in West Ealing is going to close on Saturday, which is yet another nail in the coffin of West Ealing. The streetscape is scruffy. There are high levels of traffic, congestion, and pollution, which I will come on to in a minute, and there are concerns about anti-social behaviour, particularly in Ealing.

The Ealing town centre public consultation, which was conducted in 2002 and resulted in a big report, showed widespread concern about the state of Ealing, and the 'Queen of the Suburbs' is missed. You probably know that was the nickname for London Borough of Ealing in the good old days. It just is not that any more.

There is accumulating research evidence that trams invigorate town centres by making it easier for residents to get out and also making it easier for people to come in to shops, leisure, and work. The permanence of trams symbolising a positive commitment to an

area by local and central government definitely has an impact for inward investment. Again, I will come back to that.

So, the Uxbridge Road tram will enable many more people to come right into all those declining centres along the Uxbridge Road. In the borough as a whole, it is estimated that a total of 286,000 more people will be within 30 minutes public transport of the shops and facilities in those local centres than now. That is 20% more for Acton, 13% more for Ealing, 24% more for Southall, and a whopping 33% more for Hanwell, which is really struggling hard.

Research shows that shops, leisure facilities and other businesses benefit from the tram in several ways. Trams provide better access for customers in a larger catchment area, access to a wider pool of staff, and better public transport, which means lower staff turnover and staff arriving on time. A commitment to public transport, as I indicated, makes businesses more confident in investing in the area. It is not ephemeral, like bus lanes. The tram is there for, one hopes, at least 50 years.

Trams also do create a modern and successful image and bring a buzz and a sense of vitality to the area. Again, there is a lot of evidence for this already in Nottingham and also in Sheffield and Croydon. Trams also increase economic activity and help to contribute to regeneration, and you have probably seen the research by the Royal Institute of Chartered Surveyors and others which proves that trams increase land values in the areas they serve, which is a reflection of increased economic activity.

Residential property prices have increased along tram routes. Trams provide a useful scheme for marketing an area, and in other places where trams have been put it sites that have been undeveloped for many years have the development kick-started. Residential areas have become more attractive as they become better able to provide access to jobs, shopping, and other facilities, so you tend to get demographic change, over time.

Thirdly, the tram will increase employment and reduce social deprivation. Vivek Sharma already talked about social deprivation in Southall, and he gave us some statistics for that. Ealing itself is well-heeled, but the other parts of the borough are not, and we really must not let Ealing call the tune on this. All the other areas of the borough are much more deprived, and as Vivek said, four out of five wards in Southall and one in Acton were at the bottom 20% percent most deprived wards. In contrast, in Ealing all six wards are in the top 60% least deprived in the country.

In the borough as a whole, as in other parts of London recruitment and retention of key workers in the public sector: social workers, police, teachers, hospital staff, is a problem, and in 2003, as I think maybe you know, Ealing Council social services had the highest level of agency social workers in the whole of England, and at least some of that is down to recruitment problems.

So, as I have indicated, research shows that there are four main ways that trams help employment and social issues. They provide wider access to jobs, better access to community facilities and shops, better access for people with disabilities, and better personal safety, which is important for people travelling, with things like CCTV, lighting, and electronic information at the stops. This is especially important for women.

As you have probably seen from the research from Colin Buchanan and Partners, Croydon Tramlink has dramatically reduced unemployment, particularly in the most deprived area, and I accept that its public transport links were poor, but not so very, very different from Southall, which has poor public transport links. Unemployment reduced by 35%, and it has been particularly good at enabling part-time working for women.

I personally think this is a really important thing. Because it provides cheap, reliable, and predictable public transport, it makes part-time working feasible, because it enables women – and those actually taking them on – to have a long enough working day to make it worthwhile, but still be in time to pick up the kids and manage the often complicated childcare arrangements of many single-parent families and families in which parents work shifts and things. Childcare really is incredibly complicated where you have got women and partners working different hours. It really is. I speak from experience.

Finally, let us go on to the environmental side of it. As you will know, London Borough of Ealing was designated an air quality management area in 2000, because nitrogen dioxide and particulates in the borough are predicted to fail Government objectives. Most of the Uxbridge Road is predicted to exceed both objectives. The Uxbridge Road is one of the hotspot areas. Air pollution is particularly bad in Acton and in Southall, because of the congestion on the Uxbridge Road and the surrounding streets.

Apart from the tram, and the possible London-wide low-emission zone, Ealing Council really does not have any policies to deal with this. The only other thing they have got left are little local schemes, which one of our councillors describes as 'bottom up solutions,' which clearly are just dependent on funding being available. There is nothing else. Last year, all the air quality objectives were exceeded in Ealing, and this year ozone guideline already is, and we are only in the beginning of September. They are not going to achieve the National Air Quality Strategy objectives in Ealing. There is no question.

Trams are proven to get people out of their cars. Modal shift of 15-20%, and up to 50% at weekends in some areas, can occur, but the 15-20%, according to another piece of research that I am sure you have already looked at, the research on the benefits of light rail, shows that that kind of modal shift has been achieved in all the light rail and tram systems in England so far, and it can be a lot higher at weekends.

Therefore, less congestion and pollution occurs. Therefore, it is better for everyone. This is a huge benefit, and I will come on to what happens to the traffic, if I can.

Lynn Featherstone (Chair): I have been very kind so far. You have one minute to conclude.

Christine Eborall, Ealing Friends of the Earth: All I am going to say, then, is safety is very good. There are fewer accidents with the tram than without, because there will be less traffic rat runs through residential streets. I do not know where Jane has been, but we do have figures for with and without the tram, and we do have absolute figures for those potential increases that she said she did not have. They were made available at the traffic management meetings, which were the last series of consultation groups and were conducted by Ealing Council, as opposed to TfL. These figures were available there. From that, it is possible to calculate that the amount of traffic going down the

Uxbridge Road will decrease from the 27,000 everyone quotes to about 19,000 a day. That is 8,000 less, 30% less.

Where will it go? About 6% will switch to the tram; 11% will use local roads, so there will be an 11% increase in traffic overall on the local roads, but that is less than it will be without the tram; and 13% will avoid the area altogether. The reason for that is traffic evaporation. This is a piece of research you need to read, if you have not already read it, which proves that traffic evaporation is not a figment of people's imagination. It happens, and...

Lynn Featherstone (Chair): Christine, I have to stop you. You have made many points, and you have made them well.

Peter Eversden, London Forum of Civic and Amenity Societies: May I have the right of reply to the point by Mr Tyzack? I was criticised for saying that the traffic is blind diverted up to the A40 motorway. He says they will find other ways of getting there. It should be understood by the committee that the residents in Ealing borough have already, over the years, petitioned for and succeeded in closing all entrances to the A40. There is no alternative, so therefore, I think the committee should be aware that what TfL is saying is going to cause what I said.

The other point is if there are still any rat runs left, and Mr Tyzack is right and people find them...

Mike Tyzack, Ealing Friends of the Earth: I was not talking about rat runs. I was talking about Churchfield Road, for example, or that kind of way...

Peter Eversden, London Forum of Civic and Amenity Societies: No, I am sorry, if there are any other roads left which are alternatives to the one that TfL say, then it is going to add to the pollution in those. I want the committee to realise that Steyne Road is the only one in this booklet in which you are not shown where the traffic is going. That is irresponsible to enter a consultation with that left wide open.

Richard Barnes (AM): Perhaps it evaporates.

Lynn Featherstone (Chair): I think we will not get into a discussion of exactly where traffic will go.

Roger Evans (Deputy Chair): I know you will be disappointed to be asked this by someone who is a member of the Transport Committee, but can you explain the concept of traffic evaporation and how it relates to this scheme in particular?

Christine Eborall, Ealing Friends of the Earth: 'The allocation of road space from general traffic is often predicted to cause major traffic problems on neighbouring streets. The paper reports on two phases of research resulting in the examination of 70 cases of road space reallocation in 11 countries. The findings suggest that predictions of traffic problems are unnecessarily alarmist, with people making' – this is the key sentence – 'a far wider range of behavioural responses than has traditionally been assumed.'

What it means is that once drivers know that the Uxbridge Road has a tram, and there is less space available for them, what they do will take place over a wide area, and many

people will avoid the area altogether, so it is quite wrong to suggest that 27,000 vehicles will be fighting to find their way through local streets. It simply does not work like that.

Roger Evans (Deputy Chair): Are you saying that those people will use the tram because it is available, and it is a better alternative, or are you saying they will just go somewhere else?

Christine Eborall, Ealing Friends of the Earth: It is a mixture of things. Some people will switch to the tram, and that is the modal shift I talked about, 15-20%. Obviously, however, there will still be a number who wish to drive in West London or...

Roger Evans (Deputy Chair): Excuse me, 13% is above and beyond the modal shift figures which are projected...

Christine Eborall, Ealing Friends of the Earth: That is right. So what happens is that some people avoid the area altogether. They will use a much wider part of West London than just the Uxbridge Road corridor, so these sorts of problems that people have got so concerned about where it has happened, and as we have already said, a lot of roads are blocked off. The reason that TfL's maps do not show any change in rat running, which Jane said was a disappointment, is because there will not be any change in rat running in some of those roads. Those roads already are at capacity, and they are already protected.

This is true in Acton, and as has just been said, a lot of roads are already blocked off and one way, so people cannot actually use them for rat running any more. That is what will happen in Ealing when the traffic management schemes were put in, the ones that have been planned by Ealing Council. Rat running will be controlled, so what will happen is that it will be pushed outwards and outwards, out of the area, so that in fact, the total amount of traffic in the area will be a lot less. That is what traffic evaporation is.

Lynn Featherstone (Chair): Can I just say, Roger, we have Professor (Phil) Goodwin (Professor for Transport Policy, Centre for Transport Studies, UCL), who is an expert on traffic coming to the committee meeting on 16 September, so we can put these questions to him directly. We will start with absolute relevance to the particular scheme, because whilst there is a general principle on disappearing traffic, which I would certainly agree with, there may be cases, and I want to hear what he has to say about this particular scheme and its particular geographical and other issues.

Nick Woolven, Save Ealing Streets: In direct alignment with that point, obviously the capability of traffic to substitute or to evaporate is based on whether or not the cost of the journey is increasing beyond just pushing people away from driving, or the public transport infrastructure is replacing them on their route. We have consistently asked TfL for the source and destination survey information, because they did do a lot of surveying last winter, and they have never given it to us. If they had given it to us, we would be able to understand the plausibility of the assumptions that they are making.

Lynn Featherstone (Chair): Perhaps we will ask them for it then.

Nick Woolven, Save Ealing Streets: I think you ought to, yes please.

Peter Eversden, London Forum of Civic and Amenity Societies: Christine you did enumerate the advantages of the tram at some length, but one thing that perhaps we ought to consider is that the tram will stop in 41 places between Uxbridge and Shepherds Bush, whereas the 607 bus stops in 72 places.

Mike Tyzack, Ealing Friends of the Earth: That is the 207. The 607 stops in 18 places.

Peter Eversden, London Forum of Civic and Amenity Societies: I am sorry, the 207. I always get them mixed up, actually. Thank you. The 207 stops in some 72 places. Now, this means, of course, that the average distance between tram stops is over 500 yards, which you know is difficult for elderly, people with shopping, and people with children.

Christine Eborall, Ealing Friends of the Earth: Sure, but if you actually look at the detailed consultation document that TfL has put out, it explains that, although that is the average distance between stops, in the more populated areas, it will be about 200 metres, which is not so very different.

The other point to bear in mind, however, is that, apart from the much superior accessibility that trams give, which enables a lot more people to use them than can use buses at the moment, the bus systems will be re-routed, to some extent, to integrate with the trams. That will mean that people can use the bus, and it will then straightforwardly integrate with the tram. Then they can move onto another bus if they need to, so that the system will be much better integrated with buses, at least, although not with Tubes, as we said, at the moment. That, you could argue, will more than compensate for what you are talking about.

Peter Eversden, London Forum of Civic and Amenity Societies: The 207 and the 607 will be replaced by the tram, and actually they do not stay on the Uxbridge Road. They actually branch off at certain places, I think.

John Gashion, Ealing Passenger Transport Users Groups: In Uxbridge. The gentleman is right.

Christine Eborall, Ealing Friends of the Earth: Okay, well, at Uxbridge. I am afraid Uxbridge is outside our patch.

Richard Barnes (AM): Can I ask a very brief question? You said Uxbridge is outside your purview. How many members do you actually have in Ealing, so I can get some idea of perspective? I remember watching your rally on the Green. How many Friends of the Earth in Ealing?

Christine Eborall, Ealing Friends of the Earth: In terms of Ealing Friends of the Earth, we have about fifty.

Richard Barnes (AM): How many?

Christine Eborall, Ealing Friends of the Earth: About 50. In terms of members of Friends of the Earth in the London Borough of Ealing, because it is a different organisation, Friends of the Earth National, about 250.

Virginia Ironside, Save Shepherds Bush Streets: I am the new Chair of Save Shepherds Bush Streets. I will not take very long, because in fact, our position is very much the same as Jane Ashley's. The only difference between the two organisations is that we have been against the tram from the start, and Save Ealing Streets have been sort of vaguely in favour and now have come out against it.

We are in a particularly interesting position in Shepherds Bush, because our Council, Hammersmith & Fulham, although they are for the tram in principle and want desperately to say 'yes' to the tram, they just cannot yet, because the plans simply do not work. This is a very interesting position to be in, and I think partly because it is difficult to know what advantage the tram will be to Shepherds Bush, which is where the tram actually ends.

We have not been consulted at all by TfL. We have had to fight even to get onto their email list. It is an odd situation. We feel that the tram will be not an environmentally brilliant thing, but an environmental disaster. Like Jane, we are not anti-tram. We are frightfully 'pro' the idea of people getting out of their cars and of great public transport, but we do not feel that this is the particular answer.

I am just going to mention a few things that I do not think have been mentioned, just very briefly. We have actually mentioned the buses, but that is a very crucial point, this fact that there will be 40% fewer stops along the route than there are with the existing bus service, which does mean disabled people and women with pushchairs will be much less well-off.

The other thing is that it is not a tram. The whole idea that it is a tram, to which nobody seems to have really paid attention, is rubbish. A tram is something, we know from old illustrations in children's books. This is a train. Even in the consultation document, it is completely wrongly illustrated as being about the size of two buses. It is not like that. It is a lie, that illustration. It is 40 metres long, and it is a train. It will rattle along the Uxbridge Road, making, I feel and we feel, the whole of the Uxbridge Road like some terrible American highway and destroying a lot of the character and charm of the areas along the route.

The trees are one thing that really do concern us. There are no less than 1,000 mature trees along the proposed route, and they will be replaced by six metre high metal poles and lines of overhead cables. The small businesses in Shepherds Bush will almost certainly suffer to the point of extinction, and not just because of the many compulsory purchase orders of properties along the route. If the four-year nightmare road works do not stop people getting to them, then fewer stops, their inability to get deliveries once the tram is in place, and the fact that the last tram stop is in the very centre of Chelsfield will certainly put the nail in their coffin.

This is something that has not really been mentioned. Chelsfield is the giant new shopping centre which is being built on the old White City site, which will mean that the small ethnic and local shops in Shepherds Bush will be forced to close. The fact, of course that there is such a link between the tram and Chelsfield cannot help but arise in most residents, businessmen, and shop owners the suspicion that there may well be a hidden commercial interest behind all this green talk.

We, too, are very concerned, naturally, about traffic coming into residential streets and the fact that, honestly, we do fear gridlock with not only the fact that the West London

Congestion Charging will be coming to Kensington and Chelsea. Chelsfield only have limited car parking spaces, and actually I am not so sure that the Uxbridge Road will be that terrible, but Goldhawk Road and the A40 will be absolutely 'chocka.'

I do not know the figures, but the figures that we have had are that the Croydon tram has only decreased traffic by 4%, and Tramlink is in the red to the tune of £100 million, because passenger numbers are not what they anticipated. Croydon, as we have been talking about, is a completely different ballgame, and actually has attracted more than are likely to come on this tram idea.

My final point, apart from the costs – and again, all this has been talked about – is the consultation. The truth is that many of our residents have not had their documents at all. The results of a poll carried out by our local paper a couple of weeks ago revealed that only 40% of residents along the route have received the papers, while people living as far away as Richmond and Brent are getting consultation papers, even though they live nowhere near the scheme.

The roadshows have been an absolute mockery. They have been manned by out of work actors. When we have put questions to them, we have not had replies. 'You will get a reply in 14 days,' they said. Nobody has had a reply. We are not happy with the way TfL have treated us. We do not feel that they are bending over backwards to allay our fears at all, and we feel, like Save Ealing Streets, that a better bus service would be the answer, at least to start with.

It truly will be if they could have much better buses with disabled people with all the things that Stephen Aselford was talking about, a nice thing saying when the next one was coming, a properly policed bus route, and all that. There is a lot of room for improvement with buses, which would surely be the first step before making this vast investment of over half a billion pounds in a tram that we do not really know whether it is going to be any good or not, and suspect that it is not going to be.

Lynn Featherstone (Chair): I was just thinking that I have not had any figures myself, and just remind me to ask TfL what efforts they have done, if Crossrail goes ahead and is proposed to finish X years after the tram, what reductions in traffic that might bring as well, because I think all these things need to be put together.

Darren Johnson (AM): I just have a quick question on the trees issue. Have you had confirmation that over 1,000 trees will definitely be lost?

Virginia Ironside, Save Shepherds Bush Streets: No, I have not had confirmation that they will definitely be lost, but there are 1,000 trees along the route, and definitely some of them will go.

Darren Johnson (AM): I do not think anyone argues that there are over 1,000 trees along the route, and some of them will be directly in the path of the tram and would have to be removed, but many more either would be nowhere near the path of the tram at all, or would just cause a minor obstruction which could be dealt with by pruning branches, rather than...

Nick Woolven, Save Ealing Streets: ...destruction when they are re-laying the rail.

Darren Johnson (AM): Well, that is something that we will take up with TfL when we get them here.

Lynn Featherstone (Chair): Can I just clarify, in that the actual document said there are up to 1,000. They cannot be definite about what proportion of them will or will not be destroyed at the moment, and they are saying that they will replant, although maybe not in exactly the same place. I think we cannot be too damning about that. We do not know, at this point. They are just being realistic. Some will go; they cannot say how many.

Jane Ashley, Save Ealing Streets: They do say 'significant potential,' which...

Lynn Featherstone (Chair): Well, I know it strikes fear, but...

Jane Ashley, Save Ealing Streets: There are also another 800, apparently nearby, which might be...

Lynn Featherstone (Chair): I am sure we will all be counting when TfL are here.

Peter Hulme Cross (AM): In this consultation document, the plan of Shepherds Bush Green, at the moment you have traffic going round it on three sides, but this plan shows it blocked on one side, and the traffic in fact going in two directions on the other two sides of that triangle. What is your assessment of the effect that will have?

Virginia Ironside, Save Shepherds Bush Streets: This is really what Chris Noonan will be talking about, because he is from Greenside, which is specifically about the Green. Our view is that it will cause absolute mayhem, but I think Chris Noonan is a better person to address that.

Roger Evans (Deputy Chair): In that case, we will hear from you now Chris.

Chris Noonan, Greenside Residents Action Group: Last, but hopefully not least. My energy has kept up, as have your listening abilities at this late hour.

Greenside Residents Action Group is a lobby group based for the streets just off Shepherds Bush Green, because that is the town centre and, of course, like any town centre, faces far more problems, whether it is economic problems or social problems, and so on. We have been very active with Hammersmith Council over the last 11 years.

Basically, we have seen this as another Millennium Dome. It is the Mayor's version of another Millennium Dome as a potential white elephant, getting close to a billion pounds of investment and likely to lose money. Anybody you talk to, as soon as you tell the amount it is going to cost, they are just absolutely shocked that you can be spending in the order of £30 million per kilometre to do this, without having looked at the other alternatives.

We see the fundamental problem that a lot of the public transport routes around London, such as trains and Undergrounds, are not going to where people live these days. A lot of them were put in the best part of 100 years ago. This is a problem. Ealing has got good links into the centre, except for coming down to Acton; it is a bit of a problem for Acton as to how you get into town, etc. We have fundamentally been against that, and have wondered why they have just looked at the tram, rather than

addressing the macro problem of transport in London, saying, 'should we be doing like the Asian cities and putting in monorails and things like that,' that would maybe fly down the A4 or along the A40 or something. There are other options that need not be more expensive than this, according to research of things done in other cities.

If we come to Shepherds Bush in particular, let us come onto the point you were raising about the north side of the Green. That has been mooted for some time by council, but as Virginia has said, council have not opened up consultation with anybody on the issue of consequences with the tram. There has been quite a bit of consultation on aspects of Chelsfield, but they have actually contained the meetings specifically to the four corners of the site. They have refused to discuss what would happen with transport and all the side roads, etc., saying, 'Ah, that has got to be looked at when get our views on the tram.'

So, we have not heard from council that they plan to shut the north of the Green, but in fact, that is what the tram requires. The Shepherds Bush Green, according to the Chelsfield research – and they did loan me a document which was their own internal document at one point in time – appears, according to their document, to carry an average of 2,000 cars per hour at peak times. Any of you who happen to be sitting in your car and able to listen to the radio at 5.00pm, all you ever hear is the gyratory at Hanger Lane and Shepherds Bush Green. Every day it is on the radio as gridlocked.

I am around Shepherds Bush Green a lot, because I am one of these multi-mode people who do less walking, but I do ride a bike, I do ride a motorbike, and I do drive a car, but the car very rarely. I use a bike and a motorbike around London a lot, and coming down to Holland Park to get around the Green at 5.00pm even on a motorbike can take me 20 minutes for the last two miles, which is ridiculous. What will it be like when the north side is blocked off? We have got 2,000 cars per hour on two sides of the Green.

Now, that is not taking into account, as somebody mentioned before, the Chelsfield site, where they estimate, according to their optimistic dreams, 64,000 people a day going to the Chelsfield centre. That is what they need to make it pay. Now, their architects and their planners have, again, in discussions with Greenside Group, admitted that they have been pressured by council to provide only 3,500 parking spaces on weekdays. That can increase to 4,500 at weekends. Where do the other 1,000 come from? We asked the question, 'Does that include street parking?' and we did not get an answer. If 1,000 were on the site, why are they not available every day. Are you lumping in the street, which is cleared for parking on Saturday and Sunday?

They were basing their modelling on the fact that 40-50% of people would go to Chelsfield by car, and apparently, they did admit that the average across the country for major shopping centres was just over 70%. As I said, they had to compromise, because Hammersmith would not allow them planning for more parking there. We are talking about 2,000 cars an hour now, at peak hours, not counting Chelsfield, which is supposed to survive only if it draws people in from all over the west of London there, so God knows what it is going to be like.

As a result, people around Shepherds Bush see that the only beneficiary of the tram project is going to be Chelsfield. That is where it goes and ends. They are concerned about the massive gridlock that already exists and will get worse at the early morning and evening rush hour periods. Then they are concerned about the closure of roads as another factor. For example, my particular road, Pennard Road, on the TfL maps that I

saw in my local library, became a two-way street. When I sent an email off about that, I got a reply back a day or so later, saying, 'Perhaps it was a mistake.' I do not know if it is or not. If my road becomes a two-way street, it means no parking for approximately 100 houses, because my road is directly behind the Empire, and it is the most stressed road in the borough for parking. This is the fundamental problem.

So, we have got all this concern about the rat runs. I will come back onto that. There are also the issues of traders. We work very closely with traders on Goldhawk Road and their trade association and with Shepherds Bush Market. These guys are just totally terrified that if everything feeds only into Chelsfield, their businesses will effectively close. Along the north of the Green, if any of you know it, the predominance of trade on the north of the Green are food shops, outlets. All along, they have got McDonald's, KFC, Jenny's, and a whole load of others, which mostly rely on people stopping to grab a quick bite and go on in their car. When people cannot drive there, where are they going to get their trade from? They all believe that their food shops will effectively close down, because people who go to Chelsfield will shop inside the food court there.

Equally, at the moment a lot of people get off buses by Hammersmith and City Line station and go to the market. The fear is that they will just move on into Chelsfield centre, so the traders are very concerned about their livelihood. Then, there is the other issue that on the Uxbridge Road, shops do not have back alleyways for deliveries. Everything has to be delivered off the Uxbridge Road. Some of these trucks are fairly large, and again, as many of you know, going down it the road widens and narrows at different places. There are quite a few places round there where it will not be practical for deliveries to be made on the main road.

When we raised that with TfL at the meeting, the comment was, 'Well, the trucks can park round the corner.' Well, you know what lorry drivers are; they are a law unto themselves. They are not going to push a barrel 200 metres to deliver to your door.

Lynn Featherstone (Chair): They will park on the tramlines.

Chris Noonan, Greenside: They will park on the tramline or whatever, but they do what they are going to do. Comments have been made about how they block the Uxbridge Road already on the cycle lane and the bus lane for their deliveries. They are their own law, and they will either not deliver to them, or they will block. So, it is not logical.

Other things, like the length, as Virginia mentioned, of the train on the road. One of the things that TfL had was a bus stop at the bottom of Frithville Gardens. That bus stop would actually have meant the road had to close. The TfL guy who was discussing that at the public meeting failed to understand that that was a cul de sac. He thought that there was a little way out at the top that you could climb through. In fact, it is a park.

So, we have always been against it from the point of view of the impact on the local economy. We are against it from the point of view of rat runs, anyway, along Goldhawk Road and the like. Just by way of concerns about the environment, I thought, in closing, to throw a couple of numbers at you. If, for example, you decide when you reach Ealing in your car that you want to get to Shepherds Bush, but you do not want to use the Uxbridge Road, and you divert, either up to the A40 or down to the A4, you will actually add between three and four miles to your route, according to when I have

done it. It depends whether you cut down Old Oak Common Lane, or whether you have gone to the M41 link.

That would be six to eight miles a day. If all the cars – and they do not all do that – but if all 27,000 cars did it, that is 162,000 miles a day. That is equivalent to 12,500, 40% of the daily total, driving the whole length of the Uxbridge Road. It would use another 27,000 litres of petrol a day. It would actually cost another 13,500 man hours per day in driving time, based on the average of 11 to 12 miles per hour that people move in London. This is one of the reasons why, at one of the TfL forums in Shepherds Bush Centre, I put to their staff – although as Virginia did say, they were all hired from an agency; nobody worked for TfL – I put to them that I would like to see a proper, full economic cost-benefit analysis, the kind one would expect in this situation, of the impact upon society at large, not just looking at the tram on its own.

We know the tram is going to cost a fortune and lose a fortune, but what about the impact on the rest of us who have it coming out of our pocket one way or the other as drivers. I did get one of these nice letters back, assuring me that I would get a full response within 14 days, and that is the last I ever heard from TfL. I never had another communication and was not invited to consult. Then, I got this shock the other day when Danny called me and invited me to this meeting. I thought, 'My God, somebody does take an interest in what we have got to say.'

Lynn Featherstone (Chair): But we are not TfL.

Chris Noonan, Greenside: Yes, but you are not TfL. Enough said. I have hopefully made a few points.

Lynn Featherstone (Chair): Okay, thank you for that. I think it is interesting, and I saw Friends of the Earth shaking their heads at the fishes being counted, but it would be interesting to know if the diversion gives the extra mileage. This is the situation. I think everyone tonight has been incredibly genuine and honest about where they stand. Clearly, there are pros and cons, and those pros and cons are different all along the route, so it is a tremendously complex issue, which TfL have had difficulty grappling with. It is a huge, mammoth project, so I think we all have to be a bit kind to each other on this and understand some of the complexities around it.

Thank you for raising those issues, because it makes you think, and these will all be put to TfL.

Richard Barnes (AM): Given you have got Chelsfield in Shepherds Bush with roughly 275,000 people a week visiting the shopping centre, and at the other end of the tram, you have got the Uxbridge re-developed shopping centre, where there are 260,000 people a week visiting, do you think the objective of the tram is to serve retail industry?

Chris Noonan, Greenside: I have trouble understanding what the objective is, because I look at the broad issue of the transport system, and as far as Shepherds Bush is concerned, we have good communications. People like and use the 207 and 607. We use the Central Line a lot. If people want to come from Uxbridge to Ealing and that is a problem, then, okay, maybe put a tram in from Uxbridge to Ealing, or whatever. Link it up at The Broadway. That is being selfish. They could do that.

From Ealing itself, there are already routes to Shepherds Bush that are well-established. As I say, I ride along the Uxbridge Road on my bike nearly every day. It is the doctor's orders, and I actually normally ride to the North Circular, and I do not go up it or down it. I pass or get squashed against the kerb, depending on whether they are moving or not, these 207 and 607 buses, and apart from rush hour, they pretty well empty. There is hardly a soul on them, and they are every few yards. There is always one at a bus stop along the road. They go about every six minutes, these things.

At peak hours, they are busy, but I sat one day at Shepherds Bush, and I counted seven of them in a row coming round the corner by the top of the market, and I reckon there was no more than 40 people on those seven that came by within the five or six minutes while I was standing by the market. They are under used at the moment. Then we have got the Tube line, again, which is packed at rush hour. The rest of the day, it is pretty much empty. As a selfish London ratepayer for the last 30-odd years, I wish to God they would put the £600-odd million into the Tubes and get them running properly, rather than a new toy for the boys.

Peter Scott-Presland, Director, Transport for All: We just recently changed our name from DaRT, which meant the Dial-a-Ride and Taxicard Users Association. We were not consulted, as well, and I was quite surprised about this, because we are the only organisation in London which campaigns for accessible transport on behalf of elderly and disabled people. Indeed, we are the only organisation in the country which does that exclusively.

On the whole, we are very much in favour of trams. We think this is a good thing. They are, by far, the most accessible form of transport. Docklands Light Railway comes close, the Jubilee Line does not, and it should. Buses are nowhere. Buses are dangerous to disabled people. We represent disabled people, and people think of that as wheelchair users, but by far the majority of disabilities is related to age. That means that people spend many years of their lives being not steady on their pins, being very frail, having brittle bones, and being vulnerable, and trams represent a quantum leap in transport for that group of people.

Now, we are talking about over a million disabled people in London. We are talking about over 300,000 people who, at the moment, rely on door-to-door services in one way or another. We are talking about people who have to use Taxicard, have to use Dial-a-Ride, have to use social services transport, have to use education transport, have to use community transport. Yes, I agree there should be cost benefit analysis, but one of the things I think that needs to be taken into consideration with that is the amount that could be saved on door-to-door transport by providing safe, reliable, and truly accessible mainstream public transport. The average cost of a typical journey, one door-to-door journey in this city is about £15-20 – just one journey – and that needs to be actually factored into this.

We were not consulted, so there are burning questions that we would like to ask. I am going to put those questions to you in the hopes that you also will ask them to TfL. Is that possible?

Lynn Featherstone (Chair): Yes, and any questions that we do not actually have time for in session, we will certainly ask TfL or tell TfL that we will submit them in writing, and they will answer, because under those circumstances, they do.

Peter Scott-Presland, Director, Transport for All: The first question I have is obviously we should draw lessons from the way the Croydon tram was constructed and designed, and there are real lessons to be learnt. We would like an assurance that those lessons will be learnt. Stephen went on about the difficulties there. I would actually ask about design issues of trams, because one of the things about the Croydon tram is those seats are bloody uncomfortable.

An awful lot of our older members suffer from arthritis of the spine, spondylitis, osteoporosis. They need seats that do not jolt their spine, and trams, like the bendy buses, are actually not so well-designed for a very large number of disabled people. We would like disabled people involved in the design work on trams.

The second thing is during the work actually to ensure that streets are still accessible to disabled people. The Croydon Tramlink while it was being built actually made large parts of Croydon Centre inaccessible to disabled people while they were going on, because accessible routes around the works were not kept in place. We want an assurance that contractors will actually be held to that obligation.

We would also like, as has been mentioned, the integration of transport and the importance of linking up with other things. We would like to talk to TfL about integration with door-to-door services. We think that people who are involved in the West London Tram should be talking now to Dial-a-Ride and to local community transport about where interchanges are and where people can actually be brought to the tram and taken away at the other end, because they are also talking about getting over a quarter of a million people that cannot make it to their nearest bus stop, anyway, but door-to-door provides that kind of powerful solution.

We would also like to talk about integration with hospitals and hospital transport. For many of our members, the most frequent journeys they make are actually to their GP and hospital. We do mention transport needs to link up with those medical services, and you need to do this now and factor it into the plans.

Lynn Featherstone (Chair): Thank you. That was very helpful. Can I just ask you: are there the people who have to use Dial-a-Ride, because they cannot reach even a bus stop, so they would not be able to go to a bus to access the tram anyway?

Peter Scott-Presland, Transport for All: What we are talking about is door-to-door services actually joining up with the tram itself.

Lynn Featherstone (Chair): Yes, but have you done any research of people who would actually use Dial-a-Ride to take them to this integrated spot where they could get on the tram?

Peter Scott-Presland, Transport for All: We have got this situation at the moment where one part of TfL I do not think is talking to another part of TfL. There is a pilot programme, applying what is called 'Travel Training,' which is actually done by Dial-a-Ride to make people aware of what public transport is available that they can use, and they are taking people to join up at a point. East Croydon Station is a classic example.

Lynn Featherstone (Chair): So, you are saying that TfL are running this, are they?

Peter Scott-Presland, Transport for All: Well, it is a pilot at the moment. It is coming in October, I believe, and there are only going to be six travel advisors. It is quite a technical area, and travel awareness and travel assistance for people taking you along. It is going to be huge. It is going to be much, much bigger, because what is happening, as public transport becomes more accessible, there are people who actually have not been able to use public transport for 10, 15, or 20 years, and who now could, if they had the confidence. It is largely a confidence issue and a skills issue, and that can be taught.

Jane Ashley, Save Ealing Streets: Could I ask a quick question on this, because when we had a presentation from TfL about buses of the future, how they would develop compared to trams, I am pretty sure that they said to us that they would be equally pushchair-friendly, accessible, and so on. Is that really the case, or is that not the case, or do you know anything about developments on buses?

Peter Scott-Presland, Director, Transport for All: There is a much-vaunted design for a bus for London, which is way, way down the line at the moment. All I can report is buses now are a battlefield. The buggies hate the wheelchairs, the pensioners hate the school kids, and everybody hates the driver. So the tram, because of its size, is actually potentially the vehicle where those battlefields can be resolved, where there is actually room for everybody. That is what trams can do that buses cannot, as far as we are concerned.

Jane Ashley, Save Ealing Streets: Once you are on it, as opposed to getting onto it.

Peter Scott-Presland, Transport for All: Well, I am talking about feeder systems as well.

Lynn Featherstone (Chair): I was just going to say that there has been a lot of work done on buses and disabled access, and there has been quite a lot of work ongoing on driver training, like putting down the ramp. Anyway, I am not going into that whole area.

Peter Eversden, London Forum of Civic and Amenity Societies: I think those feeders systems are really an important issue for the committee to consider. We want integrated transport strategy from TfL. We want to understand where the orbital links and the links from where you live and where you work and where you go to the hospital and where you go to your leisure...

Lynn Featherstone (Chair): We will certainly be addressing the integration. From what everyone has said tonight, there are some severe gaps.

Roger Evans (Deputy Chair): Just a point on our philosophy of design of public transport, which I think has come out of something you have said there, Peter. It has been, seemingly, a policy of TfL in recent years to design public transport carriages, whether they are trains, or buses, or trams, with fewer seats, so we can get more wheelchairs into them. What you are telling us is actually, the majority of the people you represent are people who do not have a wheelchair, but who do need a seat. Certainly, I see far more competition between elderly people who are unsteady on their feet for seats than I do between wheelchairs for space on our public transport.

What I am really asking you is: when we design our new trams, buses, and trains, should we actually be putting more seats into them? Have we got the balance wrong here?

Peter Scott-Presland, Transport for All: I think it is horses for courses, if I can put it that way. I think it depends on what kind and what size of vehicle you are designing, where it is going, and what the purpose is. I think designing a vehicle which actually is accessible to everybody is extremely difficult, and design always involves compromise in some way or another. I think a lot of depends on where you put the seats. A lot of it depends on how you get rid of those steps which at the moment have to go over wheel access to wheel bases.

A tram, because it is so big, you have actually got the opportunity to have doors that go straight into the wheelchair spaces. You will have doors that go straight into seating spaces. The size brings more flexibility in the way that the little single-decker bus obviously does not have.

One interesting thing, when you say you do not see many wheelchairs on buses, it is again this vicious circle of lack of confidence. You go out once, and the ramp does not work, so you never go out again. Every time I go on Croydon Tramlink, I see people walking on two sticks; I see people with wheelchairs. It is an absolutely regular thing, once you have got the truly accessible system, but if there is even a gap in accessibility, as far as vulnerable, uncertain people are concerned, it puts you off.

Peter Hulme Cross (AM): I was just going to say the old gentleman who lives opposite me is a pensioner. Because of the closure of post offices in the local area, instead of going to his local one, he now has to go to Leeland Road. He used to be able to walk, but what he has to do now, in fact, is telephone Dial-a-Ride, and they come and drop him off in Leeland Terrace, where Sainsbury's and the library are and which is a short walk from the Leeland Road post office.

So, he goes and collects his pension, and he then comes and sits outside the library and waits for Dial-a-Ride to come and pick him up again. Now guess what? With the tram, of course, this particular road, Leeland Terrace is going to take the overspill from the Uxbridge Road, so he will not be able to do that. I do not know what the solution is, but certainly Dial-a-Ride will not be able to drop him off or collect him there any longer.

Peter Scott-Presland, Director, Transport for All: DaRT, for example, has 1,000 members in the seven boroughs that are most directly affected by this. I would hope that we could do a meaningful consultation with our members for precisely those kinds of issues that you are talking about, because I do not think that kind of consultation, specifically un-picking the knot with local disabled people, has actually happened yet.

Lynn Featherstone (Chair): I want to extend my thanks to all of you for coming tonight and giving such valuable, useful, informative contributions which will inform the questions that we put to TfL on 16 September. I have no doubt there will not be a perfect answer to this in the end, because there cannot be, and I have no idea which way it will go. All we can do is raise the questions and make sure everything that has been said is thought of and addressed. We are not going to agree, all of us, on this, but we will have done our best to put the case, so thank you very much, all of you, for coming.

There will be a report afterwards. I do not know what form that will take at the moment, or whether it will be consensual or not, but that will take a while after the meeting on 16 September. Thank you very much for coming.

RESPONSE FROM TFL RE: WEST LONDON TRAM CONSULTATION

A number of the representatives attending the Assembly Transport Committee's evidence session on 6 September made inaccurate statements about the current consultation on the West London Tram. I am writing to set the record straight.

James Haskins, representing Greater London Action on Disability (GLAD), claimed that only two of the five disability organisations in the area of the proposed tram had been consulted by TfL. In fact, TfL wrote to over 30 disability organisations at the start of the consultation and has contacted GLAD on a number of occasions to seek its help in setting up opportunities to consult locally.

Peter Scott-Presland, representing Transport for All, claimed that DaRT/Transport for All had not been consulted. In fact, TfL wrote to Peter Scott-Presland at the start of the consultation.

Virginia Ironside, representing Save Shepherd's Bush Streets, claimed not to have been consulted. Again, she was sent a letter at the start of the consultation.

Various witnesses criticised information and consultation exercises held, in some cases, over a year ago. We accept that some of the earlier consultation stages could have been handled better in places. However, I am proud of the way in which we have conducted the current consultation and firmly believe that people working, living or travelling through West London have been given every opportunity to give their views on the proposed scheme.

Please also find attached answers to the written questions the committee asked about the West London Tram Consultation.

Bill Hamilton
Head of Group Public Affairs

TFL RESPONSE TO QUESTIONS FROM LONDON ASSEMBLY ARISING FROM 6TH SEPTEMBER INFORMAL MEETING

Cycling

How is the tram going to cater for north-south and east-west movements of cyclists?

The West London Tram project team is fully aware of the LCN+ routes and current design standards. We recognise that as far as possible, existing cycle lanes should be retained as part of the design of the new highway / tramway layout. Where this cannot reasonably be achieved, stakeholders (Surface Transport, the affected highway authority and cycling groups) will be consulted to agree an alternative route for the cycle lane.

Designers will pay particular attention to junction design and the design of other natural crossing points for cyclists to ensure that a crossing angle as close to 90° to the tracks is achieved.

We received a number of very detailed comments about particular junctions along the route at our meeting with cycling representatives on 8 September 2004. These comments are being fed into the ongoing design work.

Is there a danger that where the tram uses very tight road space that cycle paths could be squeezed - bearing in mind that the evidence we have heard would suggest that cyclists are put off by parallel routes away from commercial streets?

The tram route is an LCN+ route and therefore the design will, as far as possible, adhere to the principles laid down in the design.

In a very limited number of cases, the tram/highway alignment may displace an existing cycle lane. TfL will discuss with interested parties including cycling organisations the replacement options.

In general terms, TfL must consider the safety of all users of the corridor; consideration will be given to some parallel cycle routes where road widths are restricted or where cyclists' safety is compromised.

Disabled access

Can TfL guarantee that a condition of their construction contracts will to be provide adequate alternative diversions for disabled pedestrians?

TfL will, as part of the mitigation proposals contained in the Environmental Statement, include provisions for ensuring that construction activities do not disrupt facilities for disabled people. For example, access to town centres for disabled people's transport facilities would continue.

TfL will ensure, during the letting of the construction contracts, that appropriate protection is given to disabled and mobility-impaired people.

In all these matters, TfL's Equality and Inclusion Unit would contribute to the drafting of all contract documentation, comment on designs and legal obligations, as well as help review the project with relevant external groups.

Transport for All would like disabled people involved in the design work on trams to prevent the installation of uncomfortable seats which are a barrier to use for disabled users.

TfL will contact Transport for All and other relevant organisations to discuss this issue.

Transport for All would like to discuss the integration of the tram scheme with dial a ride schemes and to what extent this could be also be integrated to include stops near GP's and hospitals?

TfL will contact Transport for All to discuss these matters.

We would also welcome seeing how the lessons learnt from the "Travel Training" pilot TfL are currently running incorporated into any future tram plans.

TfL welcomes this suggestion. The travel training project in Greenwich is focusing on people with learning difficulties. TfL recently hosted a seminar on this issue and also wider issues around people with physical disabilities. The net outcome of this is that Dial-a-Ride are recruiting 5 travel trainers who will operate a pilot scheme to facilitate use of mainstream transport services by people with disabilities. The objective now is to draw together learning from places such as Greenwich and also other parts of the UK and even abroad to develop a consistent approach to this issue. There would clearly be an opportunity, once a methodological consensus has been agreed, to work with local authorities to promote use of the tram by disabled people.

Consultation

What consultation has there been with disabled groups about the tram? GLAD informed us that TfL has only contacted two of their five regional offices?

TfL wrote to over 30 disability organisations at the start of the consultation and has contacted GLAD on a number of occasions to seek its help in setting up opportunities to consult locally.

What consultation has there been with residents in Hounslow - who although may not be along the proposed tram route - would nevertheless be potentially affected by the rerouting of traffic?

TfL recognises that people in Hounslow will have an interest in the proposed tram. The distribution area of the consultation documents included all of the borough bar a small area in the southern part of the borough. TfL wrote at the start of the consultation to over 150 community and voluntary groups in the borough and to more than 80 schools and colleges. Recognising the potential impact of the tram in Chiswick, we held a consultation roadshow there, and presented to a meeting of LB Hounslow's Chiswick Area Committee. A range of articles and adverts appeared in local papers with circulations in the borough.

Impact on local businesses

In evidence taken from the Southall Chamber of Commerce and London Forum of Civic and Amenity Societies, concern has been expressed about access for delivery vehicles at commercial premises at particular points along the route (Southall Broadway & Acton High Street). What can be done by TfL to help business and customers un/load their vehicles at certain pinch points along the route - in particular at Southall Broadway and Acton?

Design work to date has identified that there are some businesses that could have difficulty with loading and access. Should the scheme proceed, TfL will be talking to all affected businesses in the New Year to understand their requirements, and discuss any necessary alternative arrangements. This could include access at different times of the day for loading and unloading.

Could the effect of the Westward extension of the Congestion Charge alter the proposals for the tram particularly around Shepherd's Bush?

Now that the western extension of the Congestion Charge is progressing to a consultation on a scheme order, the WLT Project team is discussing the traffic implications with the Congestion Charge team. Once this is fully understood, the design of the tram proposals will be re-examined to see if any changes are necessary. If this is the case, further consultation may be required at a local level. The implications of traffic flow are currently being modelled and will shortly be discussed with the local boroughs.

3. Transcript of the Formal Evidentiary Hearing on the West London Tram, 16th September 2004

Lynne Featherstone Chair: The West London Tram is a proposal by the Mayor which is exciting the whole of west London, one way or the other, and we have before us today TfL, in the form of Mike Bartram, Head of Consultation; Bill Hamilton, Head of Public Affairs; and Tim Jones, Project Director of West London Transit. I have to say, the committee has been to Croydon and to west London. Tim (Jones) and the committee members spent four and a half hours together on the Uxbridge Road, and it has been very interesting. The committee has also, for your information, taken informal evidence and views from all of the groups along the whole route, which is quite an array.

We also have Councillor Stephen Sears from the borough of Ealing; Professor Phil Goodwin, who we have used to do a bit of research as an expert in what happens to traffic, traffic displacement, and whether traffic really disappears; and Professor Chris Wright, who has been advising us on some of the possible alternatives. I understand that we are first to take a five-minute presentation from Bill Hamilton, just to update us on the progress of the consultation and perhaps how we may best fit into that in our unified – or disparate, as the case may be – positions.

Bill Hamilton, Head of Public Affairs, TfL: Thanks very much. I will just take a couple of minutes to set out where we are in the project in terms of its overall lifespan and the role that consultation is taking. Clearly, the history of this project is particularly well known. Our consultation and discussions with local councils, stakeholder groups, and individuals have been taking place over at least the past three years. However, I think it is important to remember in the ‘heat of the moment’ that we are very aware at TfL that we currently do not understand everyone’s concerns or have all the answers at this stage, and that is why we are consulting.

I am sure that the committee have probably heard this before, but the consultation is not actually a referendum on the project. It is much more than that. What we are trying to do is to understand the concerns of the local people and make sure that, as far as possible, we take them into account during the next stages of the scheme’s development.

I do want to make it very clear that the consultation is taking place at what is a relatively early stage in the lifecycle of this project. It is not at a point where the final go-ahead to build something is about to be given. That is not where we are. There is a long way to go yet. Should TfL decide to seek powers to build this scheme, we would continue to talk to local people and all those affected by the proposal about our plans for preparing an application under the Transport and Works Act, and we are not there yet. That decision has not yet been taken. If we do take that decision to move forward under the Transport and Works Act, that would be examined at a public enquiry with an independent inspector, and evidence would be taken from all sides in the debate. Only once that inspector had reported to the Secretary of State for Transport and all the hurdles cleared would the project actually be given the final go-ahead. To put it simply, there is still a long way to go.

Now, I understand that there have been some concerns about our consultation, and certainly I am the first – and I have recognised it here at this committee before – to recognise that some of our previous consultation work has not been, if you like, the best in the marketplace. However, we have learnt from some of the mistakes that TfL have made in the past in terms of our consultation, and I am very pleased to say that, as a professional who has been involved in planning and consultation for 25 years, I am very, very proud of Mike (Bartram) and his team and the work that has been done over the past few months – and is continuing to be done – on consultation in this scheme.

We have sent out documents to over 410,000 households in a wide area throughout west London. I am sure the committee must have seen some of the many advertisements about the consultation that we have placed along the route recently. We are taking every measure to ensure that the leaflets and documents get out as far as possible. No delivery scheme can guarantee 100% in the first round, but we have a free telephone hotline, and we have been advertising that. If people have not received the material, they have been ringing up, and we have been sending our company back out, where necessary, to redeliver in places where there has been a failure the first time round.

Thus, we are doing absolutely everything we possibly can, and funnily enough, at one of the road shows, a resident said to me – and this was her words – ‘You would have to have been living on Mars not to know about the West London Tram Project along the Uxbridge Road over the last few months.’

In addition to the actual public consultation, I wrote separately to over 2,000 stakeholders informing them of the consultation and encouraging them to give their views.

Finally, the committee will no doubt have the words of the Mayor from yesterday’s Question Time fresh in your ears. As the Mayor pointed out, ‘Explicit funding for the scheme has not been finalised at this stage.’ However, as you will have seen from your visit, doing nothing along the Uxbridge Road is not an option, and TfL is committed to improving public transport and tackling congestion along this corridor. That is why the West London Tram Project is before you today.

Lynn Featherstone (Chair): Just a point of clarification: when will the decision to proceed with drafting a Transport and Works Act application take place?

Tim Jones, Project Director, West London Transit: First of all, we will have to wait until the consultation period is finished. Secondly, we will be discussing that with the Mayor and his advisors, plus the TfL board, in the coming weeks. We are planning our own activities towards that end at this moment in time, but we have not made a decision yet to formally go for it, as it were.

Cllr Stephen Sears, London Borough of Ealing: I am the cabinet member for planning and transport in the London Borough of Ealing, and I am here to explain to you why the London Borough of Ealing supports the West London Tram Scheme. Principally, it is a problem with public transport capacity. Uxbridge Road and the 207 and 607 bus routes which serve it are actually operating at capacity. Over 30% of people who visit Ealing Broadway, the principal town centre on the route, travel in by bus. The buses are full of passengers, and the road is full of buses.

We have reached the limit, certainly on the Uxbridge Road in west London, where the improvements to the bus system can actually deliver improvements in public transport generally. In addition to enhancing the capacity of the public transport route, we are looking for environmental improvements. We are looking for reductions in vehicle emissions, noise, and traffic congestion, which is recognised in my borough as second only to crime and public safety as a matter of public concern. On a more subjective level, we are looking for an improvement in the quality of the street environment, the amenity of the environment. The experience of the Congestion Charge in reducing the traffic levels in central London demonstrates the benefit that can flow from that.

This is not just a sort of technical question relating to transport. It is about the social and economic health of our communities. Although west London and Ealing are, relatively speaking, affluent areas, there are pockets of deprivation in those boroughs, and we think that the tram will contribute to the economic viability of our area and its social cohesion. It will obviously reduce the travel time to all parts of the route from all other parts of the route. That will mean that the town centres and the employment, education, and training opportunities that exist in west London will be accessible to a wider number of people. Consequently, people who live in the more isolated and less affluent areas will be able to travel to take advantage of the benefits that are on offer in other parts of the route.

Although we have a very successful town centre in Ealing and, to some extent, in Southall, minor centres like Acton and Hanwell are not so successful. Thus, by improving the public transport along the corridor, we will actually serve to regenerate those areas.

What we have got to recognise most of all is that the situation we are facing is not a static one. We are not in a situation where the level of traffic, the level of population, the level of employment will not change. We are looking at increasing employment opportunities and increased population, particularly with higher-density developments in our town centre areas. This will inevitably mean that there will be increased desire to travel and potentially, increased traffic and congestion, as well as greater pressure on the public transport infrastructure.

We think that existing policies will not be adequate to this task, and the tram is an opportunity to create a public transport system for the Uxbridge Road corridor which is actually fit for the purpose. It will bring environmental, social, and economic benefits and will demonstrate, across London, the benefits and the practicalities tram public transport systems can make to a sustainable future for London.

Peter Hulme Cross (AM): Councillor Sears, Ealing Council is contributing some £700,000 to the West London Tram project, is that correct?

Cllr Stephen Sears, We provided that amount for our contribution to the work needed to take the project forward in this financial year, yes.

Peter Hulme Cross (AM): Have you examined any other options, apart from the tram project?

Cllr Stephen Sears: The public transport options have been the subject of TfL investigations, and the trolley bus and the guided buses are the obvious other options

which have been considered. We have no reason to disagree with the conclusions. I find their arguments totally convincing. The costs will not be commensurate with the benefits for the lesser options, if you like. We will spend an awful lot of money, and we will not achieve the same results. The tram system represents much the better value for money.

Peter Hulme Cross (AM): What if I were to tell you that one of the options that you mentioned would provide the same benefits of the tram system, in fact, perhaps slightly more, at about one-eighth of the cost and be implemented in a much shorter space of time with much less disruption?

Cllr Stephen Sears: That is not the conclusion of the TfL studies that the council has been provided with.

Peter Hulme Cross (AM): That was demonstrated to myself and other members of the committee yesterday at a very interesting meeting we had, and the gentlemen who can back me up in those claims are sitting here in the audience.

Cllr Stephen Sears: I am not saying there are not alternative points of view, but from the evidence I have seen, the alternatives to the tram will not deliver the reliability, the travel time, and the capacity that the tram system offers. Actually, without the pair of us praying in aid of various experts, I think it is a matter of common sense here. The tram system will have a dedicated pathway. It will have priority on the whole network. It will be a high-quality route from the point of view of the passengers, and one of the problems in attracting people out of their cars and onto public transport operations is the perception that bus travel represent a sort of inferior operation or inferior quality of service.

I think the tram will actually provide exactly what people are looking for: something which is fast, reliable, and has a consistent performance. On that basis, the case for a tram as a solution to the problem is actually unanswerable. What we are potentially in danger of doing, by choosing a 'lesser' option, as it were, is investing a substantial amount of money in something which will not have a medium- to long-term future and might only be a short-term fix. To some extent we are doing that already. Investment in bus priority initiatives results in marginal benefits, which are then eroded by increasing congestion. What we need here is a step change in the performance of public transport on the Uxbridge Road corridor.

Peter Hulme Cross (AM): According to what we heard yesterday, all of those benefits that you have enumerated would be available with a trolley-bus system at much less cost.

Cllr Stephen Sears: That is not the conclusion of the work that TfL has done.

Lynn Featherstone (Chair): Given this is TfL's analysis, we will bring this back to TfL in due course in the meeting.

Peter Hulme Cross (AM): If I could just conclude, therefore, you are prepared to throw in your hand with West London Tram, and also £700,000 worth of Ealing's taxes, on the basis of your conviction that that is the system to go with?

Cllr Stephen Sears: On the basis of the evidence that has been presented to us by TfL, the professional advice I have received from officers within the London Borough of Ealing, and, I suppose, an intuitive understanding, shared by myself and my colleagues, that this analysis actually makes sense. You are inviting me to rely instead on a presentation about which I have no knowledge.

Roger Evans (Deputy Chair): Councillor Sears, you talked about the regeneration benefits, particularly for Hanwell and Acton, and we certainly heard from Southall residents about the need to regenerate their area as well. Could you tell us what plans Ealing Council has in place to regenerate those centres in the meantime? Are you doing anything else apart from the tram?

Cllr Stephen Sears: Yes, we have a comprehensive programme of town centre development strategies which look at the areas in the town centre which the council has some control over – the street environment, the open spaces, lighting, street furniture, and so on. In each of the town centres in Ealing – not just on the Uxbridge Road, but across the whole borough – we have a plan of action in place to improve the environment. West Ealing, for example, has recently benefited from a partnership we have with Groundwork West London, which has improved the street scene, put in new street lighting, and new hangers for banners for events.

Essentially, we are doing what we can to make those centres an attractive location to do business.

Roger Evans (Deputy Chair): Naturally, of course, you will be making sure you do not have to rip out all of that stuff when the tram is put in, I presume. Beyond making the centres look better – and they do look good; we have been down there and had a look round – do you have any capital projects, that is serious bits of investment that you as the council are doing to improve these centres, or are you relying on TfL coming in with a magical solution and doing it for you?

Cllr Stephen Sears: We are a catalyst here. We are not investing in providing particular facilities in the town centres, because that is really not the game we are in at this stage. We do not have that level of resources. What we are doing is using the planning system to encourage developers to set up landmark developments in our town centres, and we have identified over 90 sites across the borough for which planning briefs have been prepared to encourage people to think about what kind of development would be appropriate in those areas.

That is having some success. The fact that we are taking a proactive approach, rather than simply waiting for developers to turn up on our doorstep, is encouraging them to think about the borough of Ealing as an opportunity to develop residential, retail, and leisure facilities.

Roger Evans (Deputy Chair): What I am trying to get at here is: what is your plan B? What happens if you do not get the tram, because it costs too much, or because it fails at consultation?

Cllr Stephen Sears: The problem we are going to face if the tram does not actually come to west London is that the development will take place anyway. There will be increased population. There will be increasing employment opportunities. There will be greater levels of travel. The potential economic prosperity of our area will potentially be

choked by congestion and a lack of road space as people try to solve their transport problems by using private cars. That is a problem that confronts the whole of London, essentially, and many large cities.

Murad Qureshi (AM): Councillor Sears, to what extent is Ealing Council support for the West London Tram reflected by the other local authorities affected by this proposed investment?

Cllr Stephen Sears: I am not here to speak for the other boroughs. It is true to say that Hillingdon and Hammersmith & Fulham have, to some extent, changed their views as time has gone on, but Tim (Jones) can give you a more detailed exposition of their current positions.

From our point of view, we are very conscious of the fact that 50% of the route mileage is in the London Borough of Ealing, and all of the principal pinch points along the route are actually within our borough. This is why Ealing is the focus of the debate. Moving out into Hillingdon, you have essentially dual carriageway for most of the way to Uxbridge town centre, which was originally designed for exactly this kind of system. In that sense, it is not really an engineering problem. There is a relatively short stretch moving into Shepherds Bush at the eastern end of the route. I am not saying that the views of the other boroughs are unimportant, but I think Ealing is central to this debate.

Murad Qureshi (AM): I just get the impression they are sitting on the fence.

Cllr Stephen Sears: I would not want to disagree with that.

Darren Johnson (AM): There is obviously a lot of concern from certain sections of residents of your borough. Do you not see analogies with the introduction of the Congestion Charge? There was almost a sort of mass hysteria about the effects of this in terms of rat running and everything else, and when the charge was introduced, those problems did not materialise. There was a similar situation in Croydon, where there was a lot of opposition to the Croydon Tramlink, but once it was up and running, the vast majority of local residents came to love and use it. Do you see a similar scenario for Ealing?

Cllr Stephen Sears: That is probably quite true, actually. There is a lot of public concern, but I do not think it is representative of the population as a whole. I think it is based on a couple of false assumptions. One is that there is going to be a massive diversion of traffic onto residential streets, which I do not think will happen, anyway, and we have plans available to confront it if it does happen.

The second assumption is that somehow the situation at the moment is tolerable and will remain so indefinitely. I do not think that is true, either. In fact, the projections of traffic flows that TfL have done prove that the situation is going to deteriorate quite markedly over the coming years. The Congestion Charge is interesting, because of course the *Evening Standard*, bizarrely in my view, campaigned vociferously against it, whereas I think most of its readers are public transport users who might benefit from the improved environment in central London once the Congestion Charge came into effect. Not many people read and drive at the same time.

Lynn Featherstone (Chair): I do not think we can understand the *Evening Standard*.

Cllr Stephen Sears: Quite. We have the same issue reflected, to some extent, in our local media in Ealing. I do not think that is representative of the general view, as the various polls that have been commissioned by TfL demonstrate. This was referred to earlier, the effectiveness of the consultation. It is quite common for people to attack the integrity of a consultation procedure if they do not like the proposal, but if it has been conducted incompetently, then the balance of advantage will not lie on one side or the other. Consequently, the suggestion is essentially that the consultation is being deliberately skewed, and I do not think there is any evidence for that.

I think the evidence from a scientific polling undertaken by independent organisations demonstrates quite clearly there is a very high level of support for this project. Most people intuitively know that the current situation cannot continue.

Lynn Featherstone (Chair): I am sorry, but I need to move on now. Thank you very much. We could spend all day with each of you, I am quite sure, but we have a lot to get through, so I am going to move along now. There are issues around possible alternatives, or not, and the technical aspects of possible alternatives, and we asked Professor Chris Wright to give us his advice on these issues. You have also heard about the trolley-bus briefing that we had yesterday.

Professor Chris Wright: To start with, I suspect that the West London Tram Scheme will do what it sets out to do. When a road gets full of buses, it never actually gets full. Most of it is still space, but each bus needs a space round it, and what you have to do is join them together. That is what the tram does. You do not get any more people on a tram than you do on a bus per square metre of floor space. If you could join buses together, they would effectively achieve the same object, but the trouble with buses is they are not that easy to steer.

Consequently, at the moment, conventional trams have an advantage, and people like them. Research has shown it is partly because of the permanence of the tracks. It gives a convincing, solid impression. They are readable. Also less well understood is the question of the quality of the ride, but trams do not lurch about like buses do, so that could be important. Finally, buses have a poor image by comparison. In Germany, it has been estimated that trams give you a 30% extra demand compared with buses, other things being equal, which demonstrates a sort of extra quality that they seem to have.

I would like to paint a little scenario for you. It is rather cheeky of me to do it like this, but I would like you to imagine, perhaps, that the West London Tramway is finished. One dark night at the depot, the engineers secretly get to work. They add rubber-tyred wheels to the four corners of the tram. The wheels are hidden by a skirt and their position clear of the ground, so they do not actually do anything. The next day, the tram is wheeled out, and the passengers do not actually notice what has happened.

The next night, the engineers come along and lower the rubber-tyred wheels onto the road surface, so they are actually carrying a lot of the weight. The tram is still guided by its steel wheels running along steel rails, so the passengers still cannot tell the difference. The next night, the engineers come along and take away the steel wheels and the bogeys. They weigh several tonnes each. Instead, they bolt on plywood dummies painted to look like real wheels and bogeys.

When the tram pulls out the following morning, the passengers notice that, if anything, the ride is slightly smoother. What they do not know is the bus is being guided by a video camera, an optical guidance system. The driver operates hands-off. The passengers are quite pleased about this because, as far as they are concerned, the ride is quieter, smoother, and has all the qualities of the old tram, except there is a slight reduction in noise and rumble. What they are riding in, of course, is a bus. It is a guided bus.

The bus arrives at the end of a traffic jam, which is there because a conventional tram further up the line has broken down. The other trams cannot get round it, so there is a long queue. The driver of the guided bus turns the steering wheel and under manual control goes round the traffic jam and straight down the road. The guided bus, of course, can also be routed along side streets. It can penetrate housing areas; it can get closer to where passengers want to be.

The technology of this sounds like science fiction, but actually, it is here already. 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 track. As a matter of fact, you can now buy cars which have an optical guidance system called a ‘lane-departure warning system.’ The lane-departure warning system looks at the white lines on the motorway. If you wander out of your lane, it shakes your seat. You can buy one now. The technology for this is not science fiction; it could not be, because you cannot sell a car that is potentially dangerous.

These systems are pretty well developed. The question mark is whether they are well-enough developed not just to do their job, but to do their job under the very arduous conditions that will arise on the West London Tram Route. The problem, I think, is that the decision to build conventional trams now is probably all right, but this is probably the last year in which you would make a decision like that. In ten years’ time, nobody will be buying them, I suspect. The guided buses will be taking over the market. They will not need expensive rails that are difficult to maintain and do represent something of a hazard to some road users.

These guided buses will be coupled into pairs. The fuel economy and the capacity will be about the same as, or possibly better than, conventional trams, so TfL really do face a dilemma here. Things are moving so fast that the wrong decision now could leave a city inheriting a tramway for a long time – tramways do last a long time, and tram vehicles last for 30 years – at a time when the balance of the decision is moving away from trams and into something else.

I would like to make a suggestion. It is conceivable that it is possible to go ahead with the tram scheme in London, planning for steel wheel on steel rail during the initial stages, but allowing for a gradual switchover to rubber-tyred vehicles running over the same path in future years. In fact it is possible – conceivable, not easy, but it is possible – to run buses and trams over exactly the same path in parallel. You could mix the two. Planning a hybrid route would be difficult, but it would, in the longer run I suspect, lead to a cheaper and more flexible system.

Peter Hulme Cross (AM): Why would one want to put in a tram system, which means digging up a road and putting in a bed a foot-and-a-half deep with rails and embedding those all along the road, when the technology for the bus is here already? There are

130 systems throughout Europe which use a trolley-bus system, not necessarily exactly the guided bus that you mentioned, but something very similar – a trolley-bus system – very successfully.

Thus, when that technology is here now and is, in fact, proceeding by leaps and bounds, why would you want to put in rails when you could simply go to rubber-tired vehicles straight away?

Professor Chris Wright: I find that difficult to answer, because I am not sure that I would put in the rails, but I can understand TfL wanting to go that route right now. It is well tried, it is conventional, and it is very robust. The problem with the sorts of guided buses that I am talking about is that we do not actually know how robust they are in public service, and it will be a few years before we do.

I would say that is it essential, I think, that the buses are, in fact, guided. Conventional trolley buses are driven by the driver. A guided bus needs, I think, an optical electronic system, and that is the weak point. That is the thing that we do not know enough about yet. We do not have the operating experience.

There is a second reason for doing it. The second reason might well be that it is the conventional tram that people actually want. As I understand it, members of the public – Councillor Sears will know this much better than I do – do not actually like buses, do not know what a guided bus is, and have never seen one. In fact, I have to admit with some shame, I have not seen the optically-guided cities or this bus. I would love to. Apparently, it was flown into Manchester a little while ago for people to have a look at it.

People do not have a picture of what it is they ought to be comparing with the tram, so we are all carrying around in our mind a picture of an outdated technology, which we like, without anything to compare it with. Therefore, a transition would give the public a chance to become accustomed to the idea of something that looks like a tram and runs on a tram route, but in fact, the technology underneath works in a slightly different way.

Peter Hulme Cross (AM): I would suggest to you that there is a lot of experience. I mentioned that there are approximately 130 other installations of trolley buses throughout Europe, and these are increasing. The experience clearly is there, and my information leads me to believe that these last for some 50 years, which is a long period of time. It is not as though they wear out, and they provide all the advantages of the tram that we have heard about, but at a fraction of the cost and without all this digging of the rails.

A trolley-bus system, for example, could be up and running, from conception of the work, within six to eight months at about one-eighth of the cost of the tram.

Professor Chris Wright: I am not sure about the one-eighth of the cost, but there is one vital detail missing there. Only two systems in Europe that I know of are being constructed with electronic guidance as part of the package. There is a problem with manually steered vehicles. In heavy traffic, you really want your public transport transit vehicle to be guided on a path that other road users can see and understand.

One of the reasons that trams are very effective in traffic is the tracks. Other drivers see the tracks; they know exactly where the tram is going; they keep just sufficiently out of the way; and the road space gets used more efficiently. Buses driven by hand are a little bit more erratic. They need more clearance, and other drivers give them more clearance. They cannot be coupled together in pairs. Only when you have a guaranteed track can you start thinking about coupling vehicles together in pairs to get the kind of capacity that the West London Tram Route needs. Thus, the guidance, for me, is vital. The existing trolley-bus schemes do not have that, and I doubt if they match up to what this route needs.

Peter Hulme Cross (AM): There is one other advantage that a trolley bus has, and that is that it can proceed under its own power. If there is a power cut, then it can carry on under its own power. If there is a van parked in the wrong place, a tram would be halted totally; it could not go around the van, whereas a trolley bus can do that, because of its very flexibility. It is much more flexible than a tram solution. For example, if you want to go past Ealing Hospital, the tram will stop at a certain distance from Ealing Hospital. With a trolley bus, you could go right up to the doors of it, so you have much greater flexibility.

Professor Chris Wright: Exactly, and it is the guided trolley bus that I am suggesting. The guidance, of course, can be switched off, and that is where it scores, because if there is an obstruction, as you say, you can actually drive round it. Nevertheless, I do think it is an important element here that some form of guidance is built in so that for most of the time on the key route, the driver drives hands off. That is where you get the most capacity benefits.

Peter Hulme Cross (AM): Could we just pursue one other item of this flexibility? With a tram, it is 43 yards long, and it carries some 300 people. The time that the tram would be operational is something like from 5.00am to midnight. With a trolley-bus system, you have the flexibility of having a small one, which could be running during the night hours. You could expand it to a much larger vehicle for the rush hour, and then you could contract it to something between the two for the times of the day that are not so busy. Therefore, you could, in fact, run a 24-hour service with your trolley bus, simply because of its flexibility, whereas that is impossible with a tram.

Professor Chris Wright: I think I am suggesting a vehicle – the sort of vehicle that is being developed now with CiviS technology – which is so much like a tram, I would not want to claim too much for it. I would not want to claim that it is very easy to couple and uncouple, and that a tram, by comparison, is more difficult to couple and uncouple. Essentially, you are looking at the same vehicle with a different underbelly.

Elizabeth Howlett (AM): I thought I was with you, Professor, but I am now lost. Can you explain to me what is the power for a guided bus? It is optical. Now, if something gets in the way of this optical power, what then happens?

Professor Chris Wright: The power comes from overhead wires in the same way as a tram. It can do; it does not have to.

Elizabeth Howlett (AM): Right, I wondered about that. It is the same as the trolley bus?

Professor Chris Wright: It can do. It could be a diesel, but I suspect on the West London Tram Route you would be looking at electric power. The optical guidance system is what steers it.

Elizabeth Howlett (AM): The overhead cables and overhead guidance, does that interfere with anything else that is there, because BT still have overhead wires coming into some houses? Will it interfere with other things?

Professor Chris Wright: It probably will, yes, and whichever route you go down – trolley bus or tram – you are faced with essentially the same problem of having to remove overhead obstructions. That is inevitable. There is a slight disadvantage with a trolley bus. You have got to put up two wires, instead of one.

Elizabeth Howlett (AM): Yes, that is right. I only know this because of watching American films, I have to say. That is very interesting. You said that trams will increase demand by 30% by the public. On what do you base that?

Professor Chris Wright: I think it was Professor Topp in Germany, who was employed by the German Government and the Ministry of Transport until a few years ago. He collected the results of several surveys of passenger ridership, tracking the changes that occurred when trams were brought in to replace buses. His conclusion was that switching from buses to trams increased passenger demand by 30%.

Elizabeth Howlett (AM): Would that include through traffic? It would not really, would it? Trams could only facilitate local traffic. Through traffic through London – I am thinking east-west – would not suddenly use trams for a small part of their journey, so is a 30% increase absolutely guaranteed?

Professor Chris Wright: No, it was just an observation about what typically happens when you switch from buses to trams. You get 30% more passengers, and it is as simple and as crude as that. You could not say with any confidence, and I would not say, that the West London Tram Route would immediately attract 30% more passengers. It could be a lot more; it could be a lot less.

Elizabeth Howlett (AM): If TfL decided to incorporate a tram down here, you were talking about preparing for dual use. Would that not mean a higher cost in the initial stages – capital investment?

Professor Chris Wright: It would, and a lot would depend on the route of the proposed guided trolley buses and their axle load, and whether the engineers felt it was necessary to widen the slab. I will try to make this very brief. A tram runs on a concrete slab with rails that are slotted into it. The concrete slab is only as wide as the axle of the tram. It is quite narrow, because the wheels of the tram are only four feet eight and a half inches apart. A bus needs a much wider track, so it might be necessary to change the specification of the supporting slab to make it much wider so that buses can run essentially on the same surface.

Darren Johnson (AM): I have a very quick question, mainly for TfL, I think. Some opponents of the tram seem to be holding up guided trolley buses as some sort of panacea. Given the length of the vehicles and that you will be having the same, fixed route, would you not expect, if TfL made a decision to switch to a guided trolley bus

today, think that Save Ealing Streets and others would be running equally vociferous campaigns against the trolley bus as they are against the tram?

Bill Hamilton, Head of Public Affairs, TfL: I think the answer is ‘yes.’

Roger Evans (Deputy Chair): I would just like to ask a technical question about the trolley bus. You say the guiding system is optical, following a line painted on the road. What happens on those rare occasions when we get snow on the ground?

Professor Chris Wright: It does not work is the short answer.

Roger Evans (Deputy Chair): Would it be able to switch over to manual driving?

Professor Chris Wright: Oh yes, that is an important part of the system that the driver does have a steering wheel and because of that he can switch off the guidance.

John Biggs (AM): I have a very quick question, and I apologise for being late. I have read the briefing papers and your report, with which I was impressed. It seems obvious to me that one of our conclusions must be that we must be open to new technology. There may be cheaper and as effective ways of implementing mass rapid transit on roads.

I just wanted to clarify this. The underlying question is that, although in theory it could be proved to be the opposite, in reality it is very unlikely that any of these alternative systems could happen without having dedicated road space applied to them. In other words, I know there are concerns about the West London Tram and the fear that it will take away road space and force rat running onto adjoining streets. None of the technologies you propose would do anything other than grab a piece of road space which would have to be dedicated for either technical or safety reasons.

Professor Chris Wright: The advantage of the optical guidance system is that you just paint a line and the bus goes wherever you paint it.

Roger Evans (Deputy Chair): If you wanted to have high-frequency, two-minutes’ service – bang, bang, bang, bus, bus, bus, – without there being impediments through parked lorries or whatever, you would have to have very strict enforcement or segregation of the road space.

Professor Chris Wright: Yes. It is important that the guided bus have a track or something that looks like a track, even if the track is just a piece of road that is clearly differentiated in the same way that the steel rails of the tram are clearly differentiated. Those rails send out a signal. They say, ‘This is where I am going; keep out of my way,’ and you would have to do the same thing for a guided bus.

Nevertheless, other vehicles can still use the road space and overlap with a tram. Similarly, it is possible – and in fact it would have to be the case – that in congested areas there would be overlaps between conventional traffic lanes and the space used by a guided bus. That is why you cannot have a curb-guided bus on this route, but an optically-guided bus is possible, because you have total flexibility.

Elizabeth Howlett (AM): May I ask TfL what is the latest plan for procuring and financing the West London Tram Scheme? Is it right that there would be a need for an annual subsidy of something like £48 million?

Tim Jones West London Transit: Yes, that is right.

Elizabeth Howlett (AM): Where are you going to get it from?

Tim Jones, West London Transit: The funding for the model we are proposing at the moment is being developed. We have not agreed a funding strategy. We have suggested a variety of ways of bringing the private sector into this project in a way in which they are happy to bear the risk. Clearly, there are lots of lessons to be learnt with the other tram systems in the UK, particularly Croydon. You will have noticed the figures we gave in the board paper of 29 April. That is our estimate, at this moment in time, of how much the project will cost, year-on-year, for the debt repayment. Of course, that takes into account the revenues and the rest of it.

We suspect that the procurement strategy has a long way to go. It is going to be at least nine months to one year before we are close to having a good model agreed with Treasury. That would have to be done in advance of the Transport Works Order, in any event.

Lynn Featherstone (Chair): There is an estimated 44 million patronage, which is made up of 27 million ex-bus users and 17 million new passengers. What do you show in your projections for the amount of time it will take to get that 17 million onto the tram?

Tim Jones, West London Transit: It is about four years. The business case that we have put together at the moment shows 31 million using the system in 2011, which was the original opening date. A year afterwards, it would be 35 million, and the year after that, about 40 million. After four years, you would get up to the 44 million.

Lynn Featherstone (Chair): We are given to understand that Crossrail – well, in fact, I do not understand, but I am given to understand – that Crossrail will increase the ridership of the West London Tram, but I do not understand why or how.

Tim Jones, West London Transit: I think that is yet to be proven, Chair. In the work we have done at the moment with Crossrail, Crossrail put together their own model a year or so ago based upon the original West London Transit modelling that was done in 2002. It shows that, in general terms, going from west to east in the Uxbridge area there may well be more people using it so they can actually access Hayes. Do not forget, this was when Crossrail was not stopping at Southall.

Lynn Featherstone (Chair): Have they subtracted the people who might nip onto Crossrail and not use the tram?

Tim Jones, West London Transit: What they are saying is that there will be additional people using the tram because they want to actually go west down the Uxbridge Road towards Hayes station to get onto Crossrail.

There is then a fairly indifferent change in patronage as it goes through Southall and into Hanwell. The patronage then picks up on the West London Tram Project, for

obvious reasons, in West Ealing and Acton because people want to access this at Ealing Broadway.

That was two years ago. Yesterday, I sat down with the Crossrail team and asked the modellers to begin properly to model what would be the impact if Crossrail were stopping at Southall, and how the West London Tram Project would be affected. Therefore, we are now starting a second round of detailed modelling. I suspect that it will be round about January or February before I know the results.

Lynn Featherstone (Chair): To me, the same route for the tram and Crossrail seems like a lot of money going on the same place. What capacity will Crossrail take away that might have used the tram?

Tim Jones, West London Transit: Very little.

Lynn Featherstone (Chair): Is that what modelling shows?

Tim Jones, West London Transit: That is what the modelling shows. It is very little. The two projects are serving two completely different purposes. Of course, Crossrail is carrying large amounts of people going from east to west and longer distances.

Lynn Featherstone (Chair): I understand the difference.

Tim Jones West London Transit: We have always said, and we have always maintained – and you have heard it from Stephen Sears – that the tram scheme is a local transport scheme. It is actually carrying people around locally and on the surface, and it is very much acting as if it were a very, very improved bus network. For that purpose, people will use it, so you will get a lot of schoolchildren, people visiting shops and employment, and so on.

Roger Evans (Deputy Chair): We hear a lot about the need for this in Ealing, Southall, and Acton, but how important is it to the business case that the tram actually goes as far as Shepherds Bush at one end and Uxbridge at the other?

Tim Jones, West London Transit: I think it is very important. We are trying to look at arterial routes coming into London. We are looking at whole corridors. Therefore, it would be wrong, in my opinion, to start carving out little bits of corridors just because they are congested now. You have to look at how these corridors function and have always functioned. Let us not forget there was a tram scheme on this road from Uxbridge to Shepherds Bush in 1902, and it closed down in 1934 in favour of a rubber-tired vehicle.

You have to see how that whole corridor works. One of the premises of the project, of course, is to look at the two central bus routes, the 207 and the 607, and the fact they are to capacity now at 23 million. That is why we are looking at a whole route network. It also allows, where there is less demand – and, yes, our models show there is less demand towards Uxbridge – that in the years to come, there is highly likely to be an expansion of growth in the Hillingdon area, and therefore you have a system that can actually take the demand. Consequently, you have to do the whole thing; you cannot just look at one particular aspect in isolation.

Roger Evans (Deputy Chair): That sounds like you are looking at it as a commuter route.

Tim Jones, West London Transit: I would not use the words ‘commuter route,’ but as I said earlier, it is actually linking about seven communities, and people use it for more than commuting. It is for leisure, it is for children to get around, it is for the elderly, it is for employment, it is for all uses. Therefore, I would not say it is purely for commuters, no.

Roger Evans (Deputy Chair): You see, I am just not clear talking to people involved with this what it is actually for, what the vision is behind this scheme. If it is following a commuter route, then why stop it at Shepherds Bush? People do not commute to Shepherds Bush; they are going into town, so why not take it any further?

Tim Jones, West London Transit: The Mayor has already asked me to do that, but you have to start somewhere. I cannot design a labyrinth of trams all over London. The important thing is that you begin to look at these arterial routes and say, ‘Right, let us have a look at this patronage. Let us have a look at the usage on this corridor first. Let us try to get this piece of infrastructure right.’ In doing so, you ensure that, whilst you do it, you are interlinking with the rest of the network.

Let us not forget, you have got a very significant interchange at Shepherds Bush – two interchanges actually, with the Hammersmith & City Line included. You also have significant interchanges at Ealing Broadway, Ealing Common, and of course, Uxbridge itself. I wish there were more interchanges, because that is what the public transport system needs. Nevertheless, here we are; we are starting, and we are actually looking for ways to expand that.

The way we serve the Southall Gas Works site is a good example – and no doubt you have other questions on it – of how TfL are working with the developers to try to help them, and of course Ealing, get a solution for that area of London that involves not only the tram, but also how the bus network feeds into that. Now is the time to discuss these plans with Crossrail, as I have just mentioned. Just because we are looking at tram systems does not mean to say we are looking at that in isolation. We are looking at the whole of that network and all of the transportation system, of course, including the highway.

Roger Evans (Deputy Chair): You say the buses are at capacity, but they are not at capacity along the whole of their route, are they? I have to say, when we went to have a look at the link, which was during commuter time in the morning, it was quite busy, but the 207 bus did not appear to be particularly full, certainly as far down as Southall. Also, the road did not appear to be particularly crowded, either, until you got down to Hanwell.

Tim Jones, West London Transit: There are days that you will go down there, and it seems to be fairly free-flowing. There are other days when it is extremely congested. You probably chose a good day. The whole question about the buses running empty is rather subjective. The buses do group together, and you will have to ask London Buses how they sort that out. It was interesting: when I was standing in Hanwell, three 207 buses went through. One was relatively full, but the others were fairly empty and immediately after that was a 607 bus, which was packed.

Now, if you take away the four buses and put a tram there, you have a much more efficient system of moving people around, both in the inter-peak and during the peak.

Roger Evans (Deputy Chair): If you were to stop at Southall – say we cut that end off the tramlink, apart from getting to the depot, obviously – would it still stack up for a business case?

Tim Jones, West London Transit: We have not done that full analysis. My contention has always been that, of course, it would save you an awful lot of money. There is 7.5 kilometres of tramway into Uxbridge, and it would save in the order of £85-90 million. There is something like 15-20% less benefit you will get, and there is a case for doing that. Having said that, I will go back to my previous argument that even if the patronage is low now, who knows what might become of the patronage in 5-10 years' time.

Roger Evans (Deputy Chair): It could go anywhere on that basis, could it not?

Tim Jones, West London Transit: Yes, it could.

Roger Evans (Deputy Chair): Why send it to Uxbridge? Why not send it to Heathrow? You know people are going to want to go there.

Tim Jones, West London Transit: Believe me, people have asked me to look at that as well. I have also had people asking me to see if we can take it out to the A40 and to put a depot in either. It is never-ending what people are asking me to do, but you have to start with a certain line and believe that you can actually run the project, and it is beneficial.

The board paper is very clear that the cost-benefit ratio is good, it is wholesome, it is positive at 1.5. That takes into account all the additional costs that I have put into that project to make it much more reflective of the other schemes that are being procured at this moment in the UK. Thus, I do believe it is right to look at it from Uxbridge down to Shepherds Bush.

Roger Evans (Deputy Chair): Does it stack up because that bit to Uxbridge is cheaper to build per mile and, therefore, it reduces the cost-per-mile of the scheme?

Tim Jones, West London Transit: We do not do it like that. You price the whole project. It is going to be easier to build because the road is wider up there, which is good. Of course, that has advantages when you come to commission the system. Nevertheless, just because it is easier to build does not mean to say that it is not an essential part of the whole system.

Lynn Featherstone (Chair): Having listened to some of the advice on possible alternatives and, indeed, the briefing yesterday on the trolley bus, can we just ask you about that cost-benefit analysis? On the benefits of selectability that are included, did you do a cost-benefit analysis of an equivalent usage of an alternative?

Tim Jones, West London Transit: Yes, we did. Out of the feasibility study that took place in 2000 a summary was produced, and it has been widely publicised. It is called the *Uxbridge Road Transit: Summary Report*. In that report, we do a three-way

comparison between traditional buses; an enhanced bus, which is the trolley-bus solution; and the tram.

Lynn Featherstone (Chair): I raise it really, because there have been allegations that the pricing of the trolley bus was vastly inflated, which would have made it an unfair comparison. Is that so?

Tim Jones, West London Transit: I do not accept that, Chair. I have looked at the cost of the trolley bus since that time. We believe that there is a substantial amount of infrastructure to put in for a trolley bus – not least the fact that you will need a depot that is twice the size of a tram depot – and that, if you start looking at the disbenefits because you are not creating that segregation, the disbenefits will rise. Thus, car users will be worse off under a trolley bus system, in our view, than under a tram system. Therefore, the cost-benefit ratio is also lower.

If you look at that report, it suggested a trolley bus cost-benefit ratio of around about 2.6 to the then comparison at 3.5. If you start applying the reality of costs and the reality of disbenefits, you are highly likely, in my view, to get to a cost-benefit ratio of less than one. If that were the case, then we would not be recommending that to the TfL board as the right way to go forward.

Lynn Featherstone (Chair): It is a shame it is not proven.

Peter Hulme Cross (AM): Other tram systems in other cities up north have not proved profitable and, in fact, even the Croydon tram has been struggling to survive and is only on a lifeline at the moment. The Secretary of State has pulled the plug on some other tram systems that have been mooted. Yet on this tram system, at a cost of some £668 million, a huge capital investment, if your 44 million projected passengers do not materialise, you are going to be in deep trouble right from the start, I would suggest.

Tim Jones, West London Transit: I do not know what your question is.

Peter Hulme Cross (AM): My question is the viability of this project. It is an extremely expensive project, and it seems to depend on passenger numbers.

Tim Jones, West London Transit: First of all, Croydon Tramlink is probably one of the most successful transportation systems in London.

Peter Hulme Cross (AM): Is it profitable?

Tim Jones, West London Transit: It carries 20 million people a year, and just because the way of financing that particular project has run into difficulties does not mean to say that there is not a case for the tram scheme. As I understand it, the Croydon Tramlink just about washes its face operationally, as do the other systems.

Thus, everyone accepts, as does the Government, that the infrastructure for a tram costs an awful lot of money, just like Crossrail costs an awful lot of money, just like the West Coast costs a lot of money. Infrastructure does cost a lot of money. The key points about the tram systems, as determined in output from the National Audit Office (NAO) report, are: are they going to the places where they are designed to go; are they meeting people's needs; are they competing with buses; and are they competing with

cars? All these issues must be looked at when promoting a project such as the West London Tram Scheme.

I am entirely satisfied that all of the recommendations that came out of the NAO report have easily been met with West London Trams. Also, in April the board did its own review of that report and gave us a 100% tick in the box that we are meeting all of those objectives. Therefore, I believe that the scheme before you is not only affordable, it will also generate the patronage that we are projecting.

Can I just comment on the patronage? When I first came to the project some two years ago, the patronage was predicted somewhere in the order of about 70 million. As a result of the analysis that my team and I have done, we have moved that down considerably to 44 million. We are pulling it down for the very reason that we do not want to be accused of over-egging the patronage. We do believe the 44 million is achievable. Moreover, if we do get to that figure, we easily have the capacity in that system, without significant expansion, to push it way beyond 60 million. Therefore, you have a tremendous system that will be good for 15-20 years. That is the most important thing we are looking at as a transportation system. It is not a 'now' fix; it is a 15-, 20-, or 25-year fix. That is why we are heartily recommending it.

Elizabeth Howlett (AM): I was going to say some of the things that have just been said. I think the funding is a bit flaky. You are relying on the goodwill of the Government and of local businesses. It is difficult at this moment to tie them in, because there is nothing really concrete for them to get tied into; it is just aspirational. Then, you are relying on the fare box, and as you know in Croydon – I know; it is around my patch – the fare box just does not pay for the tram. The tram is great, but it does not 'wash its face,' as you seem to think it does. It does not. So, the expectation that perhaps this would, in fact, 'wash its face,' as you say, I think is pie-in-the-sky, frankly.

Lynn Featherstone (Chair): Okay. I am going to move on to the next section. I think the business case and the funding issues are huge for us. It seems an awful lot of money to be at risk.

We will move on to the physical, environmental, and social impact of the tram. I have to say, in all of my dealings with all of the trams and all the visits over to that part of the world, as well as the informal groups who came in, the one issue that jumped out from everybody was the issue of traffic displacement. Darren Johnson raised earlier the fear about the displacement of this 27,000 cars into streets, and that is why we invited Professor Goodwin, who is an absolute expert on this to talk to us today.

I would say that my understanding is – and that is a point of clarification for us through TfL – that the modelling about the rat running does show significant increases in streets, around Ealing for example. Regarding the fears around the Congestion Charge, my understanding, from the office of Derek Turner (former Managing Director of Street Management, TfL), was that the modelling on rat running showed at 1-3% increase. TfL's modelling never projected a huge increase in rat running. Therefore, the fears – although they were huge, and indeed, probably encouraged by the *Evening Standard*, were unfounded.

I suppose the question that I will raise after the Professor's presentation is that the TfL modelling for the West London Tram Scheme does show a significant increase in rat running. Therefore, I would like clarification about whether those fears are unfounded

again, or whether those fears are actually confirmed. I would just like you to think about that.

John Biggs (AM): I do not need an answer to this, necessarily – although I would love one – but I would like it to be put into record of the meeting that a number of points have been made about whether the West London Tram will ‘wash its face’ in business terms. I think it is somewhat mistaken and spurious to address it in that way because I am not aware of any urban mass transit systems which do provide a profit, unless, of course, you write off all the capital. Even then it becomes challenging, because you have to generate enough money to start renewing the assets after a while. I think the argument that it should not be supported, because it does not make a profit is rather spurious and disingenuous, and I would like that to be read into the record of the meeting. We do not want to have another of these reports out of the Transport Committee which claims that evidence was not received that it was not profitable, and therefore it should not be supported, when I do not think any sane transport planner or expert would argue...

Lynn Featherstone (Chair): Your scrutiny of the Mayor is unimpeachable.

John Biggs (AM): ...I do not think any sane transport planner or expert would argue that it could make a profit.

Lynn Featherstone (Chair): John, that is enough. I get the point you are making. We have heard what you have to say.

John Biggs (AM): That will appear in the record of the meeting, and I hope it will help furnish a more balanced report. Thank you.

Lynn Featherstone (Chair): Your defence of the Mayor is admirable.

Elizabeth Howlett (AM): That is not what your Government is saying these days, is it?

Lynn Featherstone (Chair): Excuse me, this is an evidence session, not a ‘bash the Mayor session’, in particular.

Elizabeth Howlett (AM): No, I was bashing the Government.

Lynn Featherstone (Chair): Professor Goodwin, we are intrigued to know where these 27,000 cars are going to go, and if there is a 25% increase in someone’s road, assuming they only have one car per hour per road, whether that is a problem.

Professor Phillip Goodwin, Director of Transport Studies Unit, Centre for Transport Studies, University College London: I should first apologise for not having sent you a paper in advance, but if what I have to say is of any interest to you, I can certainly send one after the event.

The problem is a fairly simple one, misleadingly simple. This scheme, as indeed many other schemes of interest in urban transport in London and throughout the world, takes away road capacity currently being used by a general mix of traffic dominated by cars. The question is an intuitively obvious one: therefore, what happens to the traffic? It has got to go somewhere; it is going to cause a problem.

That is the question. I have had an overview of the traffic modelling work that TfL has done, and I have also seen a summary of a submission that I gather was made to you by Friends of the Earth last week on the same topic. I should say I am not remotely in the position to have been able to make my own independent calculations street-by-street of the traffic impacts of this scheme. I am not in a position to say, 'Right, X thousand on this street, and Y thousand on that street.' It would be possible to do so as a sort of double-check on the TfL forecast, but that is not what I am proposing to say.

What I am proposing to do is something rather different, which is not based on modelling at all. It is based on the actual practical and research experience that has accumulated over about the last five to eight years around the world of what really does happen to traffic when road capacity is reduced, whether it has been forecast or not. It is now surprisingly common to see this happening. All pedestrian areas clearly involve potential traffic diversion, as do most bus lanes; most street-running light rail systems; cycle lanes; roadworks, for that matter; natural disasters, such as earthquakes and the like; and maintenance programmes, such as bridge repairs.

We have actually got very many cases where, intentionally or unintentionally, road capacity has been reduced. In London we have cases like the 'ring of steel', Hammersmith Bridge, Vauxhall Cross, bus lanes going back now 30 years, Trafalgar Square, and so on. I should say, however, that most of the practical and useful experience that we have found is not in London or the UK. The much larger and more radical schemes, until now, have been common in other countries, especially in some of the European countries which were 20 years ahead of us in the matter of pedestrianisation and the revival of public transport as a determined urban transport strategy.

We have collected several hundred cases, but of them only about 60 or so actually have the traffic counts and the data available in a way which enables conclusions to be drawn. I suppose there is bad news and good news, and there is also a bit of complicated political news, as well. The bad news is that in virtually every case, the local press, local residents, lobby groups, computer models, and in many cases, professional advisors are minded to forecast that the outcome of any significant reduction in road capacity, in almost any circumstances where there is any level of congestion at all, will cause very serious problems, usually described as traffic chaos. That is so common that it is almost universal.

The good news is that nearly as universal is the experience that the outcome is less chaotic than forecast. It is nearly always in that direction. There are very, very few cases – if any – where the forecast has been, 'Yes, no problem, it is going to be fine,' and the outcome has been traffic chaos. When that has happened, that is usually a completely unintended and unplanned experience without any supportive measures attached to it.

There is actually a reason why it happens in that way, which is why the experience always works this way round. You will remember that something similar happened in the launch of Congestion Charging. There have been some words about that already. The reason is that it is clear that the flexibility of, not all, but a proportion of drivers to adjust their behaviour is greater than the standard form of traffic models allow. The simple question that I started with essentially sees a change of route as being the only way that you can adapt to a reduction in road capacity: 'Oh, well, if I am not going that

route, I have still got to make the same journeys at the same time of day, same origin, same destination, same method of transport, but I will have to go that way, will I not?' The alternative routes virtually always involve, in urban conditions, some degree of rat running.

That is the source of the intuitive expectation that it is going to cause chaos. It is also, unfortunately, still the practice of some traffic modellers – although, I am glad to say, not TfL – to think that the type of computer model which says a change of route is the only adaptation possible is a useful tool for transport planning. It is not. What we now know from the study of these cases is that there are something like 20 or so different behavioural adaptations, especially in the long run, that people can do. They can change the time of day that they travel – for a proportion of journeys, not for all of them. They can change their method of transport, clearly. They can change the frequency at which non-regular journeys are made. They can change the origin and the destination. Thus, in the longer run, all these things enter into decisions about where people work, where they live, where they do their shopping, and what sort of lifestyle they have.

We call, as it were, the sum total of all these other reactions – not counting the change of route – 'disappearing traffic.' I apologise for that phrase; it is quite misleading because, as you will understand, nothing actually disappears in that sense. These are not vanishing people. It is traffic displaced from the route under consideration, which does not reappear on the alternative routes from those origins to those destinations. Every single example that we found is a special case. They are all unique, but there is a general pattern. The range is very wide; in some cases, something like 2-3% of the traffic on the affected route does not reappear on alternative routes – 2-3% disappears, if you like. In other cases, more than 50% is simply not reappearing. All that depends on what the alternatives are and what time period you take it over.

The average of the 60 or so cases that we have looked at – for what an average is worth – is slightly over 20% of the traffic is displaced and does not reappear on alternative routes. The median – the sort of halfway case – is that it is about 10%, but all this is very different. It tends to be a bit less when road capacity is reduced as a result of bus lanes than when it is reduced as a result of other, more radical proposals. The reason for that, I think, is simply because most bus lanes are less ambitious and less comprehensive than the other schemes. They are simply smaller so they have smaller effects.

Generally speaking, this is good news. It is saying that people are more adaptive than they are given credit for in the computers or in the local press. Things sort out; people do not, day after day, go on experiencing intolerable conditions. They do something else. Sometimes that something else is better; sometimes it causes long-term problems that you have to confront, but that is the way the world works.

What seems to be one of the most decisive influences on how much a displaced-traffic problem you have is the scale and seriousness of the complementary policies other than the one under consideration. It is not simply a question of how much road capacity the tram would take away. There was a half-sentence that Councillor Sears dropped in about rat running, and I thought, 'Let us not lose that.' He said, 'Well, we have got policies to take action on that.' That seems to me to be not just significant, but absolutely vital. The traffic conditions are sufficiently flexible and volatile that you do

not have to have problems you do not want, provided you have the political courage to take the necessary supportive action.

If I could make a comment on what is obviously of interest to the committee, this issue of whether buses would be a better alternative than trams. I am a great supporter of buses and bus priority; I always have been. The problem that we observe in the experience to date is really a political one: politicians simply have not been prepared to give the same degree of reserved priority to bus systems that they have been to tram systems, and this is in many, many countries, not only the UK. For some reason, it seems to be acceptable to have the radical complementary policies which make a tram system succeed in the best cases, which political authorities are reluctant to give in the case of the, admittedly cheaper, bus-based system.

In a nutshell, what I am saying is there is sufficient experience now in urban light rail systems in congested conditions and in many other transport contexts, as well, where road capacity is taken away, to say that this does not have to be a decisive barrier, provided you take the complementary measures necessary to avoid it.

Roger Evans (Deputy Chair): Thank you for that explanation of something that seems to make sense when you look at it in that light. Certainly, what Friends of the Earth were saying to us last week seemed to be much more mystical than the way that it has been presented to work to us today.

It is interesting, but I think what we would really like to know here is: what is the implication of this for the particular transit scheme that is under discussion?

Professor Phillip Goodwin: I am not going to try to pretend that I have the complete set of alternative modelling capabilities to give a better answer than TfL's, but my intuition is they have still somewhat underestimated the degree of disappearing traffic – if I could use that phrase – that one could get. If anything, they have erred on the side of caution, therefore, in the business case, rather than optimism.

It is part of the same process of progressively revising down the figures in order not to appear overoptimistic. I am not terribly happy with that. It is what happened with Congestion Charging. If you look at the successive models that were made for Congestion Charging, each made a smaller forecast of the traffic impact in order not to seem too optimistic. That was the cause of the underestimate of the revenue impact. One person's caution is another person's adventure, really. In this case, once one is allowed a full range of behavioural responses and a complementary and supportive policy context in the local area, what we have is a business case that is actually stronger than has been suggested to you, not weaker. That would be my feeling.

Roger Evans (Deputy Chair): I am being pushed to speed up here a little bit, so just quickly, you mentioned Congestion Charging. Another scheme that we are looking at which is current at the moment is the plan to extend Congestion Charge in a westward direction, such that, in fact, the boundary will be very close to where the end of the tram line is in Shepherd's Bush. Have the two schemes been looked at together, and would you expect them to be looked at together when we do traffic modelling?

Professor Phillip Goodwin: Not by me in detail, but in general terms it seems to me to be one of the revealed truths of urban transport planning of the 21st century that sticks and carrots together are more effective than either are separately. Thus, it does

seem to me that it makes sense to see any extension of congestions charging in connection with a complementary improvement in public transport. That, however, is a very general comment. It obviously does not tackle the specifics of this particular scheme.

Roger Evans (Deputy Chair): Would you be surprised if they were not considered together?

Professor Phillip Goodwin: I suppose nothing surprises one, but I would hope that if they had not been looked at together already, they will be by first thing tomorrow morning.

Peter Hulme Cross (AM): I would like to get back to specifics, I am afraid, to TfL. The transport modelling shows that for certain streets close to the Uxbridge Road, particularly those around certain town centres, traffic levels will be significantly higher with tram than without. What do you propose to do to minimise disruption to local residents? I can give you some example streets: in West Ealing, Singapore Road and Leeland Terrace; or in Acton, Churchfield Road, Bollo Lane, and Bollo Bridge Road.

Tim Jones, London Transit: I do not know how much you want to go into detail, and how much time you have.

Lynn Featherstone (Chair): We are very, very short on time.

Tim Jones, West London Transit: I am more than happy, Chair, to answer these questions in a separate session, if that helps. Interpreting the model, particularly in a committee or assembly like this, can often be misleading.

Lynn Featherstone (Chair): I would thank you for that. I would propose to the committee that we actually do have an informal session where we can ask the myriad of questions that we have about this issue, which is of absolute critical importance to more of the groups that...

Darren Johnson (AM): Some of these technical questions may be better as written questions, as well.

Lynn Featherstone (Chair): We have a whole list of written questions going to TfL, as well. Therefore, I thank you for that, if you are agreeable, Peter

Peter Hulme Cross (AM): Yes, I am agreeable. I think that is a very generous offer.

Lynn Featherstone (Chair): We would bring that back into formal evidence anyway, but let us do that on another occasion.

Peter Hulme Cross (AM): I do, however, think it has to be an interactive session. It is all very well having written answers, but they are not...

Lynn Featherstone (Chair): No, Tim (Jones) will come to us with his maps and modelling, and we will grill him. Then, if we wish, we can bring that into evidence from the informal meeting, as we did with the groups who came to us Monday week. Thank you for that. That is helpful.

Murad Qureshi (AM): Tim Jones, last week at the site visit, you talked about how the movement of cars would be throttled as it goes along. We heard about dogleg trips north and south from Peter Hulme Cross. I understand TfL have done a study on this, but it has not been made available to us. Could you make that available to us?

Tim Jones, Project Director, West London Transit: This is the Origin and Destination Surveys. There is some information available. The trouble is that most of it is actually in the computer. There are millions of pieces of data which go into the computer and which show the behaviour of people and where people are getting on, whether it is public or private transport. What we are trying to do is assimilate that now and try to get it into some form of readable format. The best thing you have at the moment is the attachments and the board paper, which do show where the patronage is coming from, and that is shown pictorially. I do not know whether you were actually given that.

Lynn Featherstone (Chair): We do have that, but when would it be in a format that we could access?

Tim Jones, West London Transit: We are working through it at the moment. I suspect it will be a week or two because we just have not done that for public consumption; there is just so much information.

It is also worth saying that some of the information that we get, we do get from London Buses. They do what they call a 'BOD' survey, in other words, a bus origin/destination survey. That is done every five years, so I can tell the Assembly that the latest we have are for about 1998. Thus, they do need updating anyway. Of course, we are constantly updating that information, but it is based upon a whole series of questions that you ask people, and it is that data which is then feed into the particular public transport model, known as Rail Plan. Nevertheless, I will be able to get something for you, perhaps in a week or two. If you give me two weeks, that would be helpful.

Murad Qureshi (AM): That certainly would be very useful. Some of those movements I was totally new to. I do not use the Uxbridge Road, so I am not au fait with all of those movements which were expanded upon in the site visit.

Tim Jones, West London Transit: We will try to get those to you.

Peter Hulme Cross (AM): Madam Chairman, we are supposed to report on this I think very soon – within the two weeks.

Lynn Featherstone (Chair): 8 October. Well, we are not going to have it in time for that.

Tim Jones, West London Transit: We can negotiate something. I will see what I can do.

Bill Hamilton, TfL: Chair, if it helps, then we can negotiate dates. That 8 October date is not an absolute, utter line in the sand. If you are meeting shortly after that, and your report would come in slightly later, I am sure we could negotiate something that fits to allow you to consider it in more detail.

Lynn Featherstone (Chair): I think that would be helpful, because far be it for me to refer to party politics, but there is a series of conferences coming up, which is also going to mess with the timetable of getting members together in terms of consideration.

We have a section now on displacement pinch points, which is centred round Acton. Is that something we particularly want to cover here, or could we do this in the informal session in detail when we are looking at the maps and the modelling? I am looking particularly at Peter (Hulme Cross), because this is his speciality. We have five minutes if we rush it now, and I actually think it is so serious – Acton High Street, the displacement issues, and the three options around it – that we should, as soon as possible, convene to look at that. Is that agreeable?

Peter Hulme Cross (AM): Yes. If we can go into Acton in some detail in a separate session, then I would be agreeable to that, because from TfL's point of view, Acton is probably the hardest nut to crack of the pinch points. Therefore, we should really go into it in some detail and find out exactly what they propose, because there are some very difficult questions, I would say.

I do want to put one question which follows on, if I may. You want to divert traffic onto the A40 Western Avenue. It comes along Uxbridge Road; it comes up Gunnersbury Lane, and it meets there at a junction which is always congested. You are then going to divert that traffic up Steyne Road, and that traffic that wants to go to Shepherds Bush, you are going to divert it onto the A40. What congestion do you reckon would happen in Goldhawk Road and Holland Park Avenue? What do you anticipate arising from halving the road space available in Shepherds Bush Green, because you are intending to grass over the top of Shepherds Bush Green, so instead of having a gyratory system there, you are just going to have the roads on the other two sides of that triangle, which will be bi-directional?

Do your figures take into account the 32,000 extra car trips a day that are anticipated into the White City Retail Park? Also, when the Congestion Charge is extended westward, it is going to end roughly around Holland Park Avenue, and people are probably going to try to circumvent it just along that road, which will increase traffic there as well. Therefore, it seems to me that there is a recipe for disaster waiting to happen in this whole area.

Tim Jones, West London Transit: I will answer that in two or three ways. First of all, we have always accepted that the development of the modelling of the project we would have to take in stages. I have mentioned one stage of development relating to Crossrail. We are embarking on the interrelationship between the western extension to Congestion Charging and the project. We do have in the model already the impact of the White City development, and I can actually tell you that the southern interchange that is being designed will take 50% of the public transport that is likely to come through the West London Tram Project. Thus, we are already taking that into consideration.

Just to correct you slightly, we are not actually grassing over the north side of the Green. We are saying that there will be access all along that frontage for shops. It will just be better for people to access those shops and have an interrelationship with the Green, which of course they are not now doing.

Again, the same issue comes back. These are quite detailed modelling scenarios which Peter is putting to us, and I have to say that we are still in stages of development with all these issues. Just like Acton, Shepherds Bush Green is very complex, and we have to do a lot of 'what if' scenarios. I can explain that when we have the more detailed session.

Lynn Featherstone (Chair): The officers will try to set that up as soon as they can after the meeting.

Elizabeth Howlett (AM): Chairman, can I ask whether we can have at that meeting details about any compulsory purchase orders that are intended to be made, either on private residences or commercial properties?

Tim Jones, West London Transit: I can answer that question now. It is fairly easy to answer. We have already made it quite clear that during the early stages of the development certain properties were earmarked for total demolition. We stated that fact in March 2004. During the consultation, we have been listening to a variety of options – and Mike (Bartram) can give you more details of that – about areas that we potentially have still a way to go to redesign.

A classic case is near what we call by the Lido Junction and whether more demolition is required to make that junction work more effectively. I can say that any property that has a hint of being affected, Bill (Hamilton) and Mike (Bartram) have gone out in person, with a letter, to talk to those people. When we come to the final 'bagful' of land and property that we will require, we would have to come to the TfL board for approval because, as I understand it, the board has to give consent that compulsory purchase powers will be given as part of the Transport and Works Order.

There are, however, lots of little bits of property, little bits of verges and little bits of garden, that we will inevitably have to take to ensure that we have the right balance between the tramway, the remainder of the highway, and the footpaths. We will come back and talk to people, almost certainly next year as we progress towards the Transport and Works Order, about the extent of compulsory purchase. That is what we will do.

Elizabeth Howlett (AM): Full market value will be paid?

Tim Jones, West London Transit: Market value is part of what we call the Compensation Code. The Code actually represents a whole range of Acts of Parliament that have been passed, and TfL are renowned for dealing extremely fairly when they have exercised its compulsory purchase power to purchase land and property. Of course, they have an expensive history, and as I understand it, very few of those issues eventually end up in the Lands Tribunal. Most people are actually dealt with extremely fairly.

Bill Hamilton, TfL: I would just add that in our visits to those owners where we envisage 100% acquisition, I have taken along with me a property expert from the TfL properties department. The owners and managers on hearing what the compensation and acquisition package is have always been relatively positive about that in terms of the compensation that is payable. Just to back up Tim (Jones), the proposals there are very clear. They are in writing. It is not a case of negotiating with owners. They have clear rights, and we have clear obligations that we must undertake when we acquire property through compulsory purchase.

Elizabeth Howlett (AM): Do you consult with the local authority?

Bill Hamilton, Head of Public Affairs, TfL: Of course.

John Biggs (AM): I have a very simple question. Professor Goodwin apologised for not presenting a paper to us, and I am torn between being grateful and disappointed. He did mention – and I have forgotten the number already; it was either 28, 32, or 56 – alternate behaviours of people displaced by a scheme such as this, and I was wondering if there were a paper that could be provided to us that would help us when we are looking at the rat running and displacement issues at this other session, Chair.

Lynn Featherstone (Chair): That is very helpful, John. I am going to move on now to the last section, which is just about the trees.

Darren Johnson (AM): This is for TfL. We have had concerns outlined to us that trees may be cut down for other reasons. Obviously, ones that are directly in the path of the tram are going to have to go, but we have had concerns expressed that other trees may have to go, as well. What are the criteria for the removal of trees, other than the obvious need where it is actually in the way of the tram?

Tim Jones, West London Transit: I do not think there is. We will seek to ensure that any tree felling is kept to an absolute minimum.

Darren Johnson (AM): Unless it is in the way of the tram, it is not going to go down?

Tim Jones, West London Transit: Unless it is in the way of the tram, it is not going to be removed.

Darren Johnson (AM): Okay, that is clear. In Croydon, I believe they had a replacement policy of three replacements for every tree that was cut down. Is there a similar scheme planned for west London?

Tim Jones, West London Transit: We have not devised a policy at the moment. I think that will be very much a matter between TfL and the respective boroughs that are affected. That is the first thing. Secondly, I would say that on all the schemes I have been involved with, it is at least two-to-one.

I think it is more than just replacing trees. I am sure you will agree that vast areas have no flora or fauna within the context of the highway, and I would seek to encourage our designers to look at not only replacing the trees – and that could be saplings or more mature trees – but also to look at substantive flora and fauna, which actually complement the whole of the tram scheme, to get a much better feel right the way through the corridor. We will be doing that very much with the local authorities.

Darren Johnson (AM): Therefore, we would definitely be looking at an increase in trees and biodiversity, rather than a decrease?

Tim Jones, West London Transit: Yes, absolutely.

Lynn Featherstone (Chair): Thank you. That concludes, as best we can in such a short space of time, this session. There are a series of other questions that we will send

to you for written answers. There were such a range of issues that were presented to us, from businesses closing in Southall to God knows what. There were very serious questions that people, for whatever reason, felt had not yet been answered by TfL. It is only right that we do have a specialist session sparing the public from maps, diagrams, traffic flows, preps, and all of those things. They are nonetheless very important, because my judgment is that is the critical issue, really, for the majority of people who are genuinely concerned about the tram.

I thank you all for your contributions today. They were tremendously interesting. I desperately hope you are right. Thank you.

4. Effects of Reducing Traffic Capacity of Roads on Travel Choices

Phil Goodwin

Professor of Transport Policy, University College London

Introduction

The West London Tram proposal, in common with most street running light rail systems in urban areas in the world, requires a certain degree of reduction in traffic capacity of the roads along its route. Note that this refers to 'traffic capacity' ie the volume of vehicles able to pass along the street per hour (usually measured in 'car-equivalents', pcu, ie allowing for the fact that buses and lorries take up more road space per vehicle than cars). It does not imply that the total capacity of the road is reduced, in terms of the number of people who can move – in nearly all normal situations, the provision of reserved track for use of trams, or indeed buses, should increase the total capacity of the road. Thus when we speak of 'reducing' capacity it would be better to say 'reallocation' of the capacity for the favoured class of vehicle.

In nearly all cases when this is suggested, there is concern that the spillover of traffic from the main road to the side roads, or to alternative routes, will cause serious traffic problems in the surrounding area. This is especially a worry when those surrounding streets already suffer from the degree of congestion – if they have to cope with not only their own traffic, but the displaced traffic from the tram route, surely they will not be able to cope? This concern is so widespread that it is almost a universal rule – suggestions for trams – or for bus lanes, or for pedestrian areas, or for road closures, in all countries, are initially greeted with opposition from local residents, local press, and sometimes traffic experts, who fear the consequences.

Yet, somehow, cities throughout the world continue to invest in new tram systems, and pedestrian shopping streets, and bus lanes, and cycle lanes. Many of them are a great success. We have collected a set of press reports from around the world, which are typically of the form of a front page headline

'Traffic Chaos Starts Next Saturday With The New Scheme'

followed a week or a month later by a page 7 news item

'The new scheme got off to a good start with few of the predicted traffic problems'

So the question that arises is – what's going wrong? Or, more accurately, - what's going right?

The facts and figures

This section is based on a research study carried out by Sally Cairns, Carmen Hass-Klau and Phil Goodwin, for what was then London Transport and the DETR, published in 1998. (It followed on from a 1994 study by the Government Advisory Committee SACTRA, showing that building new roads in conditions of congestion nearly always

generated some extra traffic, which explained why the M25 filled up so quickly after its construction).

The study collected all the available evidence from real world examples where road capacity had been reduced, and good before-and-after traffic counts had been made. The study was updated recently by Cairns, Atkins and Goodwin. Altogether it covers detailed figures from 70 locations in 11 different countries, together with less detailed figures and information from about 200 others. The cases included not only deliberate reallocation of road capacity for policy purposes, but also road closures due to maintenance and repairs (eg Hammersmith Bridge), and even cases where roads had been closed due to disasters such as earthquakes.

The Appendix Table gives a list of the main schemes – full details of exactly what happened are accounted in Cairns et al (1998, 2002). The Appendix figure then shows for each of these what the traffic counts were, before and after the scheme, considering both the affected road and also the alternative routes or surrounding streets. Each bar on the figure shows the overall change in traffic after the road capacity was reduced or reallocated.

The most important single lesson from this analysis is that in nearly all cases, the total volume of traffic after was less than the total volume before. (There were a few exceptions, mainly in the case of closing a town centre to traffic at the same time as opening a new bypass: in these cases the extra traffic induced by the bypass was larger than the traffic reduction from the closure). The normal case showed that there was, to some extent, a reduction in the total amount of traffic.

The amount of traffic reduction, however, varied widely from place to place. Sometimes it was nearly zero – generally the places where the amount of capacity reduction was very small and/or the traffic problems were not very severe anyway. At the other extreme, there were a few major town centre pedestrianisation schemes, especially in Germany, where the traffic-free area was so big, and the policies supporting it so extensive over a period of twenty years or more, that there was a traffic reduction over a much wider area than any specific part of the scheme could account for.

But the more normal case showed a median traffic reduction of 11%, and an average reduction of 22%, of the traffic previously recorded on the treated road. This should be compared with a reduction of about 40% on the road itself – that is, about half the diverted traffic appeared on the surrounding streets, and the other half ‘disappeared’. This proportion varied from place to place, being influenced in part by whether it was made easy, or difficult, for traffic to divert.

Whatever the explanation for this, considered below, the simple observation of fact is important. It means that you cannot simply work out what the traffic effects will be, subtracting the amount displaced, and saying that the rest will reappear on the surrounding streets. That may be logical, but it is not true.

The question then, is why this should be the case?

Explaining ‘Disappearing Traffic’

The question of what happens to the displaced traffic is important. But it does need a certain mental shift: we sometimes think of traffic as though it were water under

pressure in a pipe. If we reduce the capacity of the pipe, the water doesn't disappear, it simply comes out more slowly. Every drop which went in at one end, must come out sooner or later.

But traffic flow is not exactly like that. This may be seen by considering two different types of response which drivers might make.

The first type of response is the one you make when you suddenly come up against an unexpected delay, half way through your journey. It might be road works, or an accident, say. In that case there are really only two options open to you – either you patiently join the queue and slowly filter through, or you divert to a different route (if there is one), adding to the traffic there, and probably going out of your way. It is common experience that the choice is often six of one or half a dozen of the other, and both are worse than your normal traveling conditions. This is the mental picture we have when we talk of 'diverted traffic'.

The second type of response is the sort you make to a long-standing, or permanent, change in road conditions, where you know perfectly well what is happening, because it was the same yesterday, and last month, and there is no reason to expect it to be different tomorrow, and next month, and next year. In that case you have a much wider range of choices open to you, depending on two main things: (a) how big the change is, and (b) how long a time period we are talking about.

The evidence on this is partly drawn from the same case studies as considered above, but also from other evidence as well – surveys and questionnaires asking people what they have done, or would do, in a variety of different circumstances; statistical analysis of long term trends in traffic and travel; observations of the effects of other transport policies which alter the choices open to travelers, such as public transport fares, congestion charging, park-and-ride, service improvements (and cuts); parking control, etc. There is a very long tradition of empirical study of these questions, informed by research studies from the 1970s onwards on the motives and constraints which determine people's choices in the context of their family responsibilities, work, and preferred activities and life-styles.

The conclusion of all these studies is contained in several hundred reports, and the relevant parts recently summarised in presentations by Goodwin, Cairns, Dargay, Hanly, Partkhurst, Stokes and Vythoukias. As a brief summary we suggest the following.

A. Components of Responses to Changes in Travel Conditions

1. Responses which intensify traffic
 - Changes in driving style, acceleration, deceleration, speed, gaps between vehicles, reaction times, 'squeezing'
2. Responses which spread traffic out
 - Change of route
 - Change of time of day at which journey is made (eg peak-spreading)
3. Personal responses which alter the total volume of vehicle traffic
 - Change between public and private transport
 - Change between vehicles and walking or cycling
 - Change of destination to nearer or more distant places
 - Change of frequency of trips
 - Reallocation of journeys and jobs between members of the household
 - Car-sharing
 - Change in where to live or work
 - Change in life-style, eg in-house or out.
4. Institutional responses which change patterns of travel
 - New developments (housing, workplaces, shops, entertainment centres)
 - Growth and decline of facilities

Now all these things do happen, but not all are reasonable responses to every single change, and some of them take quite a long time. Therefore in assessing any particular case, it is necessary to consider – for example – how many of the car trips are necessary and how many are optional? What proportion of the population will be changing their home or workplace in any one year? (This is usually for other reasons entirely, of course, but at that point re-considering what trips to make). How variable is the traffic flow from day to day due to natural random events and occurrences? What is the policy of the local authority towards signing, one-way roads, cul-de-sacs, traffic calming in residential streets? What information is available to travelers after they set out on their journeys, and before? What proportions of the traffic are local, medium-distance, and through?

All this will affect the scale of the responses, and in particular the speed. But what we can say is that the 'immediate chaos' happens so rarely, and lasts such a short period of time, that *enough* of these responses are short term to explain what really happens. And we do have fairly strong evidence that all the 'personal' responses listed in the table above take several years to work through – around 5 years for most of the effect, though with some effects still working through even after ten years. The institutional responses, in some cases, can be much slower, especially for development patterns, but not always: the economic developments and impacts on property prices often seen to result from (well-designed) tram schemes in many countries can be quite swift.

The problem of traffic forecasts and computer models

All major schemes are assessed using some form of computer modeling to calculate the traffic effects. It must be remembered that all models, by their nature, are simplifications of reality, and one of the things they simply is the complexity of travel

choice. The longest established methods only really deal with the 'change in route' choice, and even the biggest and best methods still do not include all the different responses listed above – they typically include change of method of transport and destination, but not always walking, not always frequency of journeys, not always time of day of the journey, and rarely the institutional responses.

This means that in general the official forecasts tend to underestimate the degree of traffic reduction following a major reallocation of road capacity, and hence overestimate the problem of diverted traffic, provided that suitably supportive and remedial policies are in place. However, this is a generalization and I have not yet carried out a detailed review of the West London figures.

+ 10 page appendix

5. Technical aspects of the West London Tram proposal

by Professor Chris Wright

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Summary

This report comments on technical aspects of the West London Tram scheme, in particular, the viability of the tram and track system in comparison with possible alternatives, and how the scheme might develop in future years.

In technical terms, there is no reason to believe that the TfL scheme will fall short of its objectives. With relatively conventional technology, the proposed scheme should offer a service that is robust, reliable, popular with passengers, and contributes a greatly increased capacity for passenger movement along the West London corridor.

However, Members of the London Assembly will want to be reassured that (a) the objectives themselves are the right ones, and (b) there is no better alternative. Here, the case is not so clear. There is evidence that new tramways are not competing with bus services in terms of capital and operating costs per passenger-kilometre delivered. The National Audit Office report of April 2004 contends that of the five schemes built in Britain since 1992, only one has achieved its target passenger volume. Three are running at a loss and one is just breaking even (the fifth, Nottingham, was opened in 2004 and no performance figures are yet available). Although the TfL Information Sheet 23 gives some information on the Benefit-to-cost ratio (BCR) for the WLT scheme, there is no comparable information for the more advanced bus alternatives that are now being taken up by operators outside the UK.

In the short term, the WLT scheme may be justifiable on the grounds that none of the advanced guided bus alternatives are yet feasible given the particular characteristics of the route and an overarching requirement for reliability in service, and there are considerable risks in opting for a less well tried system that may turn out to be insufficiently robust for the traffic conditions along the WLT route without further development and testing.. There is no reservoir of operating experience with these systems in Britain. Nevertheless, Members of the London Assembly may care to consider the implications of the rapid development of guided bus technology and the likelihood that within a few years, most new rapid transit systems could be very different from the one envisaged by TfL.

Under these circumstances, it would be prudent to consider a modified strategy: to press ahead with a conventional tram scheme but to configure the infrastructure so that it can be adapted to advanced guided bus working in parallel with the trams in future years.

Introduction

As set out in Information Sheet 23, TfL have given five main reasons for pursuing the West London Tram (WLT) scheme. It will

- (i) produce the capacity to support growth
- (ii) deliver a highly segregated, reliable service

- (iii) reduce operating costs per passenger
- (iv) offer a highly attractive service to compete with car travel and generate high mode shift
- (v) encourage necessary environmental improvements and aid regeneration.

The aim of this report is to provide an independent review of the scheme from a technical point of view. The report comments on the viability of the proposals, compares them with possible alternatives in the light of recent developments in other European countries, and suggests a longer-term view of how the scheme might develop in future years.

The report is divided into four main parts: a review of current tram technology together with brief details of systems that have been commissioned in recent years, a review of potential alternatives including advanced forms of guided bus, and the conclusions.

Trams and tram technology

Austria, Italy, Switzerland, and countries throughout Eastern Europe have an unbroken tradition of tramway operation. Major cities have inherited a permanent way system that is now proving invaluable as they modernise their rolling stock. In other countries, tramways are being revived, with sophisticated (and expensive) vehicles, segregated track to provide fast journey times, and efficient fare collection. They include 5 cities in Germany¹. Paris is planning a major expansion. One report lists 45 cities in the USA where existing systems are being extended, or new systems being planned or are under construction².

The state of the art

These cities are not all buying the same kind of tram. There is no standardisation. In fact, the vehicles now on offer cover a wide technological spectrum ranging from the simple and robust vehicles typical of Eastern European systems to the sophisticated and complex ultra-low-floor vehicles recently introduced in Vienna.

Britain's new tramways lie somewhere in the middle of this technological spectrum. The five new tramways that have opened in recent years (Croydon, Manchester, Nottingham, Sheffield, and the West Midlands) differ in two main ways from the old-fashioned tram systems that were abandoned during the 1950's. Firstly, they are more sophisticated in engineering terms, borrowing on experience accumulated in continental Europe. Secondly, they are prestige projects, relying on priority arrangements at traffic junctions together with segregated track wherever possible to ensure quick journey times with minimum interference from other street traffic.

STEEL WHEEL ON STEEL RAIL

Trams are distinguished by their steel wheels, which run on steel rails. Most of the wheels are attached to swivelling bogies so they follow the track alignment accurately around sharp curves. Note that a conventional bogie with solid axles is intrinsically stable. A solid axle forces the wheels that are attached to it to rotate at the same speed, and since the running faces are slightly conical in shape, any small deviation of the bogie from the track centreline means that the 'outer' wheels must cover more ground than the inner ones. The result is that if it deviates for some reason to one side, the

bogie will tend to return to the centre of the track automatically. The wheel flanges rarely come into play, and wear is minimised.

Although there is no standard layout, modern trams often consist of two articulated cars supported on three bogies. Two bogies are powered, with a central 'trailing' bogie in between. Power bogies take up more room and are therefore located under high-floor areas at the front and rear. The central bogie is not really a bogie at all, but a steel frame forming an integral part of the central body section, to which the wheels are attached via short stub axles. The low floor then passes through the gap between the wheels. This arrangement effectively replaces two heavy bogies with a single, lightweight frame, but the wheel flanges of the centre section tend to wear more quickly than those attached to the power bogies because they rotate independently and do not centre themselves automatically on the track in the same way as wheels having solid axles.

INDEPENDENT HUB DRIVE

In recent years, designers have experimented with a completely different approach, doing away with bogies altogether, and replacing them with all the wheels mounted on stub axles. This arrangement is lighter than a conventional bogie, and also permits a lower floor. The ultra-low floor (ULF) vehicles commissioned for Vienna in 1996 have a motor fixed vertically above each wheel. Each pair of wheels is attached to a portal frame that is steered through a system of links so that the wheels follow the track alignment. Each portal frame supports the rear of the preceding body section and the front of the next via a 'pendulum suspension'³. Like the Viennese ULF tram, the Chemnitz Variotram has independent electric hub drive.

Both these types of tram lack the inherent stability of a conventional tram with regard to 'hunting' on straight track, owing to the lack of a solid connection between nearside and offside wheels, although in both cases the motor torque is controlled electronically so that, in effect, each pair of wheels is electronically coupled. However, an 'electric axle' may itself be subject to dynamic oscillations, and the maximum speed is limited accordingly.

Advantages of trams

The particular advantages of trams over other forms of public transport are as follows:

- (i) Trams have a lower rolling resistance per unit weight than equivalent rubber-tired vehicles, and they use an electrical overhead power supply; hence they are pollution-free at the point of use.
- (ii) Depending on the quality of the track and the suspension, trams can give a smooth ride.
- (iii) Cars can be coupled together to make larger units capable of carrying high passenger loads, while the infrastructure occupies a relatively narrow strip of land that can overlap with areas of carriageway used by other traffic.
- (iv) Trams have a long life. The cars for the Manchester Metrolink system, for example, are expected to last 30 years, with a major overhaul every 10 years.

- (v) Passengers like them.

It is important to stress that passengers *prefer* trams to buses. Apart from giving a smoother ride, trams integrate well into shopping streets because they are clean and they move in a predictable way. The tracks are reassuring: pedestrians can tell at a glance whether there is a tram service operating in the area, and visualise where the service might take them. Consequently, a modern tram system tends to attract more passengers than an equivalent bus system; one report⁴ suggests a 30% increase in ridership as the ‘tram bonus’ in Germany.

CAPACITY

The passenger-carrying capacity of a tram or a bus depends mainly on the floor area of the passenger compartment together with the mix of seated and standing passengers. Modern European trams are 2.6m wide, only a little wider than the maximum width of 2.55m allowed for buses, so one would expect a rail vehicle 35m long to hold roughly twice as many passengers as an 18m-long articulated single-deck bus, and this indeed turns out to be the case. The fourth column of Table 1 gives figures for a selection of bus, tram and metro systems; the number of passengers per vehicle is between 6 and 7 per metre length. The exception is the Hong Kong Mass Transit stock, which is wider than European stock, and carries passengers at a higher density.

For planning purposes, it is more important to know the maximum number of passengers that can be carried per single track per hour. Various estimates have been put forward for the maximum line capacities of different modes, and some representative values are given in Table 1. The table includes details of actual flows carried by the Sheffield Supertram and Midland Metro, which together span the capacity range for the ‘new’ generation of light rail systems constructed in Britain since 1994. In principle, trams can run at service intervals much shorter than the ones shown, and most new systems are designed with the aim of building up the fleet size and increasing the service frequency to cope with future expansion in demand. A realistic upper limit would be in the region of 6 000 passengers per hour with conventional articulated units running at 2-minute intervals. The anticipated capacity of the WLT scheme at 5 500 passengers per hour is close to this value. By comparison, the maximum capacity of a reserved bus lane is about 4 000 passengers per hour, this being the value observed at one of London’s busiest bus lanes in Streatham⁵.

Furthermore, trams can be coupled into pairs for peak running. If the service interval remains unchanged, then coupling the cars in pairs will double the capacity of the line.

Table 1: Passenger flows carried by selected public transport services

Mode	System	Overall train or vehicle length	Passengers per train or vehicle	Peak service interval (minutes) ^a	Line capacity (passengers/h, single lane or single track)
BUS	Single-deck rigid	12m	71	5	850
	Double-deck	12m	85	5	1 020
	Articulated	18m	120	5	1 440
	Observed max capacity of a reserved bus lane				4 000

TRAM	Midland Metro, Birmingham – Wolverhampton	24.2m	158	6	1 450 ^(b)
	Stagecoach Supertram, Sheffield	35m	250	5	2 820
	Vienna ULF type B	35m	220	5	2 640
	Theoretical maximum with 200 passengers per tram at the minimum practicable service interval		200	2	6 000
METRO	London Underground	130m ^(c)	1200 ^(c)	2	36 000 ^(c)
	Hong Kong Mass Transit, Metro-Cammell stock	176m	2480	2	80 000

Notes:

^aService intervals drawn where possible from the operator's timetable; otherwise they are notional values assumed for the purpose of this comparison.

^bLine capacity is the operator's quoted 'design' capacity.

^cIndicative figures only: operating characteristics vary among lines.

Disadvantages

Trams, however, do have number of disadvantages compared with other forms of road-going public transport. One of the most telling is that the concept of a steel wheel running on a steel rail ties the operator to an ageing technology that carries several penalties including weight, high energy consumption, noise, and vibration.

WEIGHT

Trams are much heavier than buses, partly because they are more solidly built to ensure that the body does not crush in the event of a nose-to-tail collision. They are, however, getting lighter. Weight savings are achieved by following the same design logic as cars and buses, with the roof and floor carrying loads so that the whole body acts structurally as a tube. The materials include welded steel box-sections for the basic framework, and aluminium or sheet steel for the infill panels. The Bombardier vehicles used on the Croydon Tramlink weigh 36 tonnes empty. Although in relation to capacity, these vehicles are lighter than most, the dead load per passenger is still 173 kg compared with the 120 kg typical of modern buses.

ENERGY CONSUMPTION

Consequently, the energy saving associated with a steel wheel running a steel rail is not as great as one might imagine. In congested traffic, the tram wastes more energy than a bus during braking and acceleration because the dead weight per passenger is greater. While the electric motors themselves are efficient, the generating stations that supply the electrical energy are dependent on fossil fuels, and after all the losses in combustion, transmission and so on are taken into account together with the greater weight of trams compared with buses, there is little or no saving.

The effects on fuel consumption are summarised in Table 2, which also includes energy consumption by buses and cars for comparison. It is based on the results of a survey carried out by TRRL during the 1990's⁶. Trams and conventional diesel buses consume roughly the same amount of energy per kilometre, for every passenger carried.

Table 2: Estimates of energy consumption per passenger-km for car, bus and tram systems

<i>Transport mode</i>	<i>Energy consumed (MJ per passenger-km)</i>
Car (urban)	2.0 – 2.4
Diesel bus (urban)	1.1 – 1.5
Tram	1.0 – 1.7

The main advantage of electrical power for transit systems is that the pollution takes place at the generating station, not in the town centre where the vehicles spend much of their time, and where people are perhaps most sensitive to exhaust emissions.

NOISE AND VIBRATION

For bystanders, trams can seem noisy. A peculiar feature of the steel wheel running on a steel rail is that it acts like a loudspeaker cone, amplifying the squealing of the flange as it grinds against the rail on curves. Other problems include the rumbling of the wheels as they travel over turnouts, and the whine of the motors and the step-down gear transmission drives.

Engineers have tackled the squeal by providing rubber inserts between the tyre and the wheel disc, and the most recent railcar designs incorporate deep skirts to reduce noise emissions, not only on the body but also on the bogies themselves, so that the wheels are largely hidden from view. On very sharp curves, automatic ‘greasers’ can be installed on the track to lubricate the inside edge of the outer rail. The motor while can be dealt with by acoustic shielding.

VIBRATION

Difficulties can still arise, however, with low-frequency vibrations, which propagate through the ground to surrounding buildings. Even modern trams rumble, and the rumbling is more noticeable on street-running track sections where the rails are embedded in concrete slabs rather than on sleepers, which seem to provide a more resilient base. Vibrations are particularly noticeable when the wheels pass over rail discontinuities at turnouts and crossovers. They can be reduced by (a) minimising the weight of the bogies and wheels (the ‘unsprung weight’) (b) continuous welded rail, and (c) ‘flange running’, in which the bottom of the rail groove is raised at crossings so that it supports the wheel flange as it passes over the gap. Furthermore, in particularly sensitive areas, the slab itself can be laid on a resilient high-density polyurethane matting. LA Members may wish to monitor this aspect of the scheme as it progresses, to ensure that problems with neighbouring property owners are avoided through suitable design.

DISRUPTION DURING CONSTRUCTION PROCESS

The construction process for street-running tramways tends to be disruptive, more so than local residents might expect. The logistical problems are quite challenging, especially for crossings at road junctions, where traffic diversions are inevitable.

Underground services may need to be moved, and a working area established under cramped conditions. Turnouts and crossings may be pre-welded, and they are awkward to manoeuvre into place. Standard rail stock normally arrives in 18m lengths, often pre-curved. Any mistake in the delivery schedule may delay the whole project, because it is not usually possible to turn rails end-over-end in a city street if they happen to arrive the wrong way round.

Examples of UK tram systems

The Table in the Appendix lists the five tramways in the UK opened since 1992 (it does not include the Blackpool system, which has operated continuously since 1885, but has not yet been modernised).

Although it is not immediately obvious from the Table because the route conditions differ from scheme to scheme, the overall costs per route kilometre for the later schemes are higher than those for the earlier ones. This is partly because the prices for trams are rising over time. Every system is different, with the car weight and floor height, for example, tailored to suit the local topography and operating conditions. Moreover, the technology is still developing. Manufacturers have not been able to converge on a standard pattern and reduce their costs through volume production.

Delivery

CONSTRUCTION TIME

Commissioning a new tram system takes time. UK experience suggests that the biggest single hurdle is finance. In the past, promoters have struggled for many years before securing sufficient funding to make a start. Also, complex negotiations are required to secure the approval of various statutory bodies, to negotiate rights of way, and gain public support. From that point on, a scheme may take four or five years to complete. Against this background, the projected timescale for WLT seems realistic, assuming that investors can be convinced that the scheme is worthwhile.

COSTS

Orders for new trams rarely exceed 50 units at a time. Most operators require vehicles to be built at least partly to their own specification. This in turn implies a certain amount of design and development work, together with a systematic test programme before the trams can go into service. With such small batches involved, trams are about ten times more expensive than conventional buses per unit of floor area. For example, the articulated units for the Manchester Metrolink cost just under £1 million each in 1992, and those for the Sheffield Supertram system £1.75 million.

It is not possible to give a 'typical' cost figure for the track because it varies greatly according to the nature of the route. A system that is built largely on existing, disused rail track will be much cheaper than a new route carved through developed land. Moreover, street-running sections tend to be more expensive than segregated sections, because of the need to divert services. Most of the new systems built in Britain are made up largely of segregated track, often on disused mainline right-of-way, with only relatively short street-running sections. So far, prices seem to have worked out in the region of £5m or more per route kilometre overall. WLT will be expensive (£21m per

km) because of the high proportion of street running and the demanding nature of the route.

Operating costs for tram systems in Europe are generally reckoned to be on a par with an equivalent bus service, provided the system is working near full capacity⁷.

Is there a better alternative?

A recent study⁸ of modern rapid transit systems implemented in different countries within Europe was carried out to determine the various factors associated with commercial success. Contrary to expectation, the investigators found that neither high operating speeds nor newness of the vehicles was important. Rather, passengers favoured a dense and easily accessible network and a smooth ride, together with an obvious commitment from the local authority to supporting public transport services.

Moreover, respondents tended to prefer trams to buses. Opinions differ why this should be so. Some say that the permanence of the rail tracks is reassuring, and all agree that conventional diesel buses have a poor image. However, questionnaire results can be misleading, because when asked to express a preference, respondents will not necessarily take into account the improvements that have occurred in bus technology over the last ten years. Some of the new guided bus systems are electrically powered like trams (which gives a smoother acceleration profile), and if the riding surface is of sufficiently high quality, a smoother ride than steel wheel on steel rail. Most people in Britain have never seen one.

In fact there are three main alternatives to a conventional tramway:

- Bus rapid transit (BRT)
- Diesel roller-guided bus
- Electric guided trolleybus

They are all (a) more flexible in operation than trams, and (b) cheaper than trams. Flexibility comes from the ability to run like a conventional bus over ordinary roads. Hence a BRT vehicle or a guided bus can penetrate housing districts where a purpose-built track would be uneconomic. The ability of vehicles to fan out over different routes on normal roads means that in comparison with a tramway, the system allows a higher proportion of passengers to complete their journeys without having to change vehicles en route. It is more accessible.

Bus rapid transit

A Bus Rapid Transit (BRT) service is really a conventional bus service running on an upgraded route. The route usually consists of reserved lanes with raised platforms and sheltered bus stops. It is a low-technology solution but one that is proving successful in New world countries⁹. The best-known schemes are operating in Ottawa (Canada), Brisbane (Australia), Bogota (Columbia) and Curitiba (Brazil). The Ottawa Transitway accommodates 10 000 passengers per hour in each direction. A BRT system, however, requires a considerable area of carriageway, and would not easily fit into the confines of the West London route.

The diesel roller-guided bus

A guidance system brings further benefits. A roller-guided vehicle, for example, can operate on a track that is only 2.6 m wide compared with a conventional bus lane width of 3.75 – 4.0 m, a saving of roughly 30% in land area. In fact, there are several other benefits of guidance, each small, but in combination, they amount to significant improvement in terms of line capacity and overall journey speed:

- (i) The system is self-enforcing, because other vehicles are unlikely to stray onto the track.
- (ii) The driver is relieved of much of the burden of vehicle control and the time lost at bus stops is correspondingly reduced, because alignment of the vehicle for accurate docking is achieved automatically, with a narrow gap between the entry platform and the edge of the footway. Hence the guidance system enables both reduced deceleration and acceleration times together with reduced boarding times. In turn, passengers benefit from a quicker journey time while the operator can achieve shorter headways and higher passenger turnover with a given number of vehicles.
- (iii) A guided bus can accelerate and brake more quickly than a tram and is therefore quicker, especially on routes with closely-spaced stops.

There are several ways of guiding a bus. The simplest method, and the one that has achieved the greatest mileage so far in operational service, uses mechanical rollers. An otherwise standard bus is equipped with two rollers mounted on lever arms at the front of the vehicle and bolted to the front stub axles. When the driver steers into the flared entry of a guided section, the rollers come into contact with the raised concrete kerbs. The guide kerbs are typically 180 mm high, roughly twice the height of a normal street kerb. On leaving the guided section, the driver takes hold of the steering wheel and drives in the normal way. Short breaks, 6-9m long, can be designed into the guideway to accommodate crossing traffic movements. They can be negotiated hands-off at 60 km/h. The system is simple, robust, and safe, because even if a roller fails, the bus is at least partly constrained within its concrete 'channel'.

On a guided busway, the track usually consists of two parallel reinforced concrete slabs laid *in situ*, with a slightly rough surface to provide skid resistance. The vertical tolerance is the same as for any concrete road. The surface will last for about 20 years without treatment, although an anti-skid coating is normally laid on junction approaches.

The first modern system of this kind to be put into service was the Mercedes 'O-bahn', which has operated successfully in Essen and Mannheim since the early 1980's. Since then, however, interest has waned. The best-known example is probably the 12 km diesel-powered system in Adelaide, Australia, which runs on a specially constructed elevated guideway through parkland separating the city centre and its north-eastern suburb¹⁰. The Adelaide system was opened in 1986 and runs at speeds of up to 100 km/h.

The first trial of a kerb-guided bus in the UK was carried out by West Midlands PTE in Smallheath, Birmingham over an experimental 600m section of route between 1984 and 1987, but the focus of attention has since moved to West Yorkshire, which has implemented several new schemes in Leeds since 1995¹¹. The recently-launched Crawley

Fastway scheme linking Gatwick airport with nearby towns has been highly successful. None of the current UK schemes uses overhead current supply.

The cost of the Leeds guided bus track, excluding any necessary modifications to statutory undertaker's services such as water mains, electricity conduits and suchlike, and excluding associated roadworks, traffic signal refurbishment, and land costs, is roughly £1000 per metre, or £1 million per kilometre, for a single lane. Higher costs have been reported for schemes elsewhere⁷, roughly between £2.5 million and £4 million per kilometre at year 2000 prices. In principle, the guideway does not have to be continuous, and the overall cost can be much less if the buses run for a substantial part of the route on ordinary traffic lanes or bus lanes. However, on the WLT route this would not provide the level of service required to maintain target journey times.

Advanced guided bus systems

Articulated trolleybuses that look like trams can now be seen operating in many European cities. They differ from conventional buses in that they have electric motors powered from a twin cable overhead supply, thereby reducing fuel costs and exhaust pollution. Many have diesel engines or battery back-up so they can run off-line for limited distances. French and German manufacturers have specialised in dual power systems, producing vehicles equipped with overhead pantographs, regenerative braking, and transversely mounted diesel engines for off-line running.

The leading contenders are the Irisbus^{12,13}, Bombardier TVR¹⁴, the Translohr¹⁵ vehicle, and the Phileas¹⁶, all sophisticated vehicles that look and feel like trams, albeit with rubber-tyred wheels. Features of the more advanced systems include

- electric power from an overhead supply or hybrid diesel-electric motors,
- electric transmission with independent wheel hub drives,
- low floors,
- modular articulated rolling stock units that can be linked together in the same way as tram units, to provide greater passenger-carrying capacity, and
- all-steering axles.

All are guided in some way: via a central groove, through electronic signals emitted from devices embedded in the carriageway, or by optical means.

CENTRAL GROOVE

Compared with a raised kerb, a central groove has the advantage that the track can overlap with road space used by conventional vehicles. The Canadian-based Bombardier company has developed two systems. The first, Transport sur Voie Reservé (TVR) is a low-floor vehicle 24.5m long. It carries 200 passengers, but has a limited top speed of 70 km/h. It is electrically powered from an overhead supply cable, and it can also run off-line under diesel power. It is steered by metal rollers engaging a central guide rail mounted in a narrow channel so that its top is flush with the road surface. The guide rail acts as the current return, so that only one overhead cable is needed. Schemes using this system have been implemented in France, in the cities of Nancy and Caen. They have suffered from teething problems including noise, and guidance failures¹⁴. The second Bombardier system, 'Guided Light Transit' (GLT), is based on a light rail vehicle

with a long, double-articulated body and a low floor. It is supported on four rubber-tyred bogies, each provided with a separate guidewheel.

The Translohr vehicle also uses a central guide rail. It began public service trials on a 1.5 k stretch of the Trans Val de Marne route (TVM) in Paris in October 2000. The Translohr is an all-electric vehicle relying on an overhead cable power supply with a battery back-up to provide for short excursions off-line, and a control cab at each end.

ELECTRONIC GUIDANCE

However, there are at least two electronic guidance systems, each having both advantages and disadvantages. The first was developed by Mercedes-Benz with AEG guidance technology, and it depends on underground cables to provide an electromagnetic signal. It is currently used for service vehicles in the Channel Tunnel¹⁷. The guidance technology was originally developed for industrial use, to guide robot vehicles around factory floors. Twin longitudinal conductor cables are buried 20-30 mm under the carriageway surface on either side of the centreline, and supplied with a low-intensity AC current. The currents are 180 degrees out of phase, thereby generating a magnetic field pattern that is vertically aligned above the track centreline. The vehicle is equipped with twin antennae connected to a microprocessor control unit. The control unit senses any departure from the track centreline and initiates corrective inputs to the steering mechanism via hydraulic cylinders.

Cable guidance is more complicated than mechanical systems such as the roller guideway and the central groove, but it has the advantage that the conducting loops can be used to exchange information between the vehicle and the operator's control centre. The information includes the precise location of the vehicle, which can be used to generate real-time bus-stop information. The loops can also act as a communications link for triggering bus priority arrangements at signal junctions.

The second electronic system, called *Phileas*, involves permanent magnets buried in the carriageway at 4m intervals, for which no current supply is needed¹⁶. The vehicle's control system 'reads' the magnetic field and applies steering corrections in a fashion analogous to that of the AEG system. The vehicles are low-floor internal combustion/electric hybrids, with electric hub drive, all-wheel steering, and a design speed of 80 km/h. They are manufactured by a Dutch consortium Advanced Public Transport Systems BV (APTS). Trials have been carried out in Eindhoven in the Netherlands.

OPTICAL GUIDANCE

The CIVIS project, in the author's view, represents the future of bus and tram systems. It began trials in the year 2000 and is now being implemented in Rouen and Caen. The vehicle – named *Irisbus* – was designed by a consortium^{12,13}. Like the *Phileas*, it is an articulated low-floor vehicle with electric hub drive. It uses an optical guidance system that monitors the progress of the vehicle through a dashboard-mounted video camera. The video signals are processed to identify guidelines painted on the carriageway surface, and the results fed to the steering system to supply corrections as necessary.

The most attractive feature of the optically guided system is that the installation of a guided route is, in principle, cheaper and simpler than with any other method. It does not interfere with the movements of other vehicles as would a kerb-guided system. UK

bus operators are cautious about the technology, which has science fiction overtones, but in reality, technology of this kind is already being marketed for safety-critical applications on private cars, where legislation imposes very strict safety and reliability standards. The recent emergence of systems of this kind reflects rapid progress in the field of artificial intelligence together with the falling costs of microprocessors and software as against the rising costs of 'hard' infrastructure such as steel rails and kerbs.

Conclusions

In technical terms, there is no reason to believe that the TfL scheme will fall short of its objectives. With relatively conventional technology, the proposed scheme should offer a service that is robust, reliable, popular with passengers, and contributes a greatly increased capacity for passenger movement along the West London corridor.

The difficulty is that the objectives as set out in Information Sheet 23 are narrow. Members of the London Assembly will want to be reassured that (a) the objectives themselves are the right ones, and (b) there is no better alternative. Here, the case is not so clear. It is normal practice when planning a project on this scale to demonstrate how the scheme measures up against possible alternatives in terms of value for money. Although some information on the Benefit-to-cost ratio (BCR) is given for the tram scheme, there is no comparable information for the more advanced bus alternatives that are now being taken up by operators outside the UK.

In fact, there is evidence that new tramways are not competing with bus services in terms of capital and operating costs per passenger-kilometre delivered. The National Audit Office report of April 2004 contends that of the five schemes built in Britain since 1992, only one has achieved its target passenger volume. Three are running at a loss and one is just breaking even (the fifth, Nottingham, was opened in 2004 and no performance figures are yet available).

Hence the justification for a new tramway must lie elsewhere: as a stimulus to development, signalling the local authority's commitment to providing a quality service, and a flagship for promoting public transport within a wider transport strategy. In the short term, the TfL scheme may be justifiable on the grounds that none of the advanced guided bus alternatives are yet feasible given the particular characteristics of the route and an overarching requirement for reliability in service. There is no reservoir of operating experience with these systems in Britain.

Nevertheless, Members of the London Assembly may care to consider the implications of the rapid development of guided bus technology and the likelihood that within a few years, most new rapid transit systems could follow the Irisbus pattern. Costs are likely to fall as the manufacturers open up a wider market. By contrast, tram prices are rising.

TfL clearly faces a dilemma. Technically, the WLT scheme could be obsolete by the time it is commissioned. On the other hand, there are considerable risks in opting for a less well tried system that may turn out to be insufficiently robust for the traffic conditions along the WLT route without further development and testing. Under these circumstances, LA Members may care to consider an alternative strategy: to press ahead with a conventional tram scheme but to configure the infrastructure so that it can be adapted to guided bus working in parallel with the trams in future years.

This might require a few minor changes to the geometrical alignment, but the most important challenges would arise in connection with the power supply and the pavement structure. Trams draw their supply current from a single overhead cable; the circuit is completed via the wheels in contact with the track, which acts as the return. Electric trolleybuses use two overhead cables, but a twin-cable overhead layout is not compatible with the conventional tram pantograph arrangement. It may, of course, be possible for electrically powered buses to emulate the trams and deliver the return current via trailing shoes in contact with the track, although as far as I am aware, no-one has tried this before.

A more difficult problem arises in connection with the supporting slab. Guided buses need a much wider base than that usually specified for supporting the steel rails of a tramway, and if the extra width were built into the WLT plan, this would add considerably to the construction costs. On the other hand, guided buses could use the same platforms and passenger facilities, and benefit from the priority arrangements at junctions.

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Principal features of the five modern tramways in the UK

<i>Location</i>	<i>Year opened</i>	<i>Route length</i>	<i>Fleet</i>	<i>Motors</i>	<i>Dead weight per articulated unit</i>	<i>Floor height in lowest section</i>	<i>Passengers per articulated unit</i>	<i>Overall cost</i>
Croydon Tramlink	2000	28 km ⁽¹⁾	24 twin-car units with articulated centre section, Bombardier ¹	AC induction	36t	400mm ⁽¹⁾	208 ⁽¹⁾	£200m ⁽⁸⁾
Manchester Metrolink, Phase 1	1992	31 km ⁽²⁾	26 twin-car units, GEC Alsthom ²	DC	48t ⁽²⁾	915mm ⁽²⁾	201 ⁽²⁾	£ 145m ⁽⁹⁾
Midland Metro, Birmingham – Wolverhampton, Line 1	1999	20 km ⁽³⁾	16 twin-car units with articulated centre section, Ansaldo Trasporti ⁴	DC	34t ⁽³⁾	350mm ⁽³⁾	160 ⁽³⁾	£145 m ⁽⁴⁾
Nottingham Express Transit (NET), Line 1	2003 (planned)	16km ⁽⁵⁾	15 articulated units, each in 5 sections, Bombardier	DC	40t ⁽¹⁰⁾	300mm ⁽⁷⁾	190 ⁽⁷⁾	£200m ⁽⁷⁾
Stagecoach Supertram, Sheffield	1994	29 km	25 units each with three articulated sections, Siemens	DC	53t ⁽⁶⁾	450mm ⁽⁶⁾	250	£ 270m ⁽⁶⁾

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