

Tram, Trolley or Guided Bus: What are the best choices for London?

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Chair's foreword

One of the most useful and positive parts of the London Assembly's work is to host seminars where leading experts in particular fields can inform and debate with stakeholders, politicians and local government officers. The publication of these contributions will help Londoners and their representatives to develop opinions based on well-researched information instead of speculation and prejudice.

It was in this spirit that the Transport Committee of the Assembly hosted a seminar into trams, trolley buses and guided busways, with a view to informing ourselves and London about the proposals for tram and bus schemes that the Mayor is promoting through Transport for London.

Peter Hendy provided a rapid but thorough overview of Transport for London's policies, plans and programme in this area. Carmen Hass-Klau contrasted this with what is going on in continental Europe, looking at what London has to learn. She gave us a glimpse of tram projects in Nantes, Paris and Orleans, the Translohr rubber-tyred tram, and bus trains in Utrecht and Hamburg.

Bill Tyson of the Greater Manchester Passenger Transport Executive examined how patronage for a tram system could be attracted and developed in the light of his experience with the well-established modern tramways in the Manchester area. Robert Bain of Standard & Poors outlined the problems and possibilities of obtaining the necessary finance for these projects.

John Henkel of the West Yorkshire Passenger Transport Executive described their experience of accommodating transit systems in existing road networks – something that is currently a major challenge to TfL in designing the West London Transit.

Don Nutt of Steer Davies Gleave spoke to the seminar on building a local consensus behind tram schemes. David Quarmby (Strategic Rail Authority and TfL Board) summarised what we had heard and related it to the question of how we were best to make progress in London.

We were most grateful to all our distinguished speakers and their contributions are printed here. We were delighted that some 80 delegates attended, and that many made their own contributions to discussion at the seminar. Each of the political party groups represented at the Assembly has also contributed a written response to the debate in this report, focusing on the tram/guided bus projects that have featured in the Mayor's proposals.

We are also grateful and greatly indebted to Martin Richards, our consultant, whose work was central to the Seminar's success. I hope the Assembly will continue to host successful seminars like these, which make a very valuable contribution to developing debate and sharing good practice.

Lynne Featherstone
Chair, London Assembly Transport Committee

Membership of the Transport Committee

Lynne Featherstone - Chair (Liberal Democrat)

John Biggs - Deputy Chair (Labour)

Tony Arbour - Conservative

Roger Evans - Conservative

Sally Hamwee - Liberal Democrat

Samantha Heath - Labour

Jenny Jones - Green

Eric Ollerenshaw - Conservative

Val Shawcross - Labour

The Transport Committee's general terms of reference are to examine and report on transport matters of importance to Greater London and the transport strategies, policies and actions of the Mayor, Transport for London, and the other Functional Bodies where appropriate. In particular, the Transport Committee is also required to examine and report to the Assembly from time to time on the Mayor's Transport Strategy, in particular its implementation and revision.

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Executive summary

The London Assembly's Transport Committee organised a seminar on 22 January 2004 with the objective to identify and discuss issues relating to the development and implementation of the four proposed TfL transit schemes: West London Tram; Cross River Transit; Greenwich Waterfront; and, East London Transit. The three modes for discussion were: trams, trolley buses and guided buses.

The seminar was a big success. Seven eminent speakers addressed the seminar on issues such as private finance, problems in accommodating a new system within the existing road network and building local support for delivering and using any scheme. We have attached their papers as part of this report.

The seminar was attended by over 80 delegates from the boroughs, Association of London Government, Transport for London, Passenger Transport Executives, tram and bus operators, Department for Transport, Government Office for London, London Transport Users Committee and a number of other interested transport groups, as well as Assembly Members. Everyone participated in four and a half hours of lively discussion and debate covering: the policy context within which these schemes are developed; the issues surrounding developing a business case and securing the finance; challenges faced by actually implementing the schemes; and, how to move forward so that these schemes can play their part in delivering benefits to London.

However, the debate continues and in this instance we believe that the issues that were raised on the day enable us to take perspectives from the lead Members of each of the four political groups on the Transport Committee which can contribute to this debate. We have attached their papers, each of which sets out thoughts on the way forward for London.

In conclusion, to make efficient progress in developing schemes to reduce London's transport problems, there is a real need to: understand and analyse the transport need and demand; before moving to the choice and design of those transport systems which meet that demand with the best combination of value for money and affordability; then using up to date consultation and involvement processes to help design the scheme at micro level, to ensure that it meets and matches local needs as closely as possible.

In light of the discussions at the seminar and the papers from the speakers, the Committee has made the following recommendations to Transport for London. These are:

- Transport for London should set out their criteria for determining which transport mode to implement in particular locations taking into consideration financial and practical implications;
- Transport for London should consider the feasibility of establishing a strategic cross suburban transport network, which would include exploring major corridors, strategic links, levels of demand, affordability and consultation, initially, at least, based on buses; and,

- Transport for London should consider including up-to-date consultation and communication practices in their consultation toolkit to help them engage more fully with communities so that schemes are designed to meet local needs.

1. Introduction

- 1.1 Light rail, trams, trolley buses and guided buses can play a significant part in improving the appeal and quality of public transport in our largest cities by moving large numbers of passengers quickly, reliably and with less pollution than the car.
- 1.2 The Mayor's Transport Strategy contains proposals for four new intermediate mode schemes but in the three years since the Strategy was published progress has, for a variety of reasons, been slow.
- 1.3 The challenges facing those developing such transit projects include obtaining the necessary private finance, problems in accommodating a new system within the existing road network and building local support for delivering and using any scheme.
- 1.4 The Assembly's Transport Committee wanted to better understand the issues that surround implementing, what at first looks like, an ideal solution to London's transport challenges and so we decided to organise a seminar on 22 January 2004 with the objective to identify and discuss issues relating to the development and implementation of the four TfL transit schemes. The three modes for discussion were: trams, trolley buses and guided buses.
- 1.5 Our seminar was attended by over 80 delegates from the boroughs (Councillors and officers), the Association of London Government, Transport for London (Board members and officers), Passenger Transport Executives, tram and bus operators, Department for Transport, Government Office for London, London Transport Users Committee and a number of other interested transport groups, as well as Assembly Members.
- 1.6 The Committee invited seven eminent speakers to address the seminar on the key aspects of the development, implementation and operation of the above mentioned transit schemes. We include their papers in this Report in sections 7 to 13.
- 1.7 The next section of this Report summarises over four and a half hours of lively discussion and debate covering:
 - The policy context within which these schemes are developed;
 - The issues surrounding developing a business case and securing the finance;
 - Challenges faced by actually implementing the schemes; and,
 - How to move forward so that these schemes can play their part in delivering benefits to London.
- 1.8 Conventionally, the Assembly seeks to reach a consensus on the evidence heard. However, the debate continues and in this instance we believe that the issues raised on the day enable us to take perspectives from the lead Members of each

of the four political groups on the Transport Committee which can contribute to this debate.

- 1.9 Sections 3 to 6 of this Report contain short papers from the Liberal Democrat, Labour, Conservative and Green lead Members, each of which set out thoughts on the way forward for London.

2. Summary of the debate

2.1 This section of the Report condenses the day's proceedings into a short summary. Our seminar was divided into the following sections;

1. TfL's Policies, Plans and Programme

An overview of TfL's transit plans; the actions being taken to progress them and the comparative performance of different modes of transport.

2. Continental Europe: What can London Learn?

A review of experience from continental Europe; the key features of tram, trolley and guided bus and a review of the relative environmental impacts.

3. Getting the Public on Board – obtaining the patronage

Exploring the key factors in obtaining adequate ridership, satisfying both forecasts and financing requirements.

4. Who Pays? - obtaining the finance

Identifying the key requirements needed to secure reasonable financing arrangements.

5. Accommodating Transit Systems in Existing Road Networks

The key implementation and operating issues and ways in which the impacts can be managed.

6. Building a Local Consensus – consultation

Exploring how local stakeholders and opinion formers can best be informed about possible schemes, helping to build a local consensus in favour of the preferred scheme.

7. How best to make progress in London?

Bringing together the information presented and the discussions into a personal view on how TfL might best make progress in the implementation of the schemes.

The policy context

2.2 The Mayor's Transport Strategy indicates a need to improve the capacity, reliability, efficiency, cost and integration of London's transport system. The Strategy also contains proposals for four new intermediate mode schemes;

- ▢ West London Tram;
- ▢ Cross River Transit;
- ▢ Greenwich Waterfront (bus based scheme) and;
- ▢ East London Transits (bus based scheme).

There is also provision for an extension to the existing Croydon Tramlink which has been in operation since May 2000.

2.3 These large-scale capital projects will not start delivering until after 2009/10 at the earliest but this depends on necessary funding being found. In the meantime TfL

is continuing to work and consult on individual projects.

2.4 Trams have higher capacity per vehicle and potentially have higher operating speeds than buses. They can deliver social inclusion and employment benefits. There is also good evidence from Croydon that a modal shift from car use as high as 20% can be achieved.

2.5 In terms of delivery time, bus-based transit schemes can be operational within three years while tram-based schemes have a much longer lead-time before delivery. Because TfL is working to support the London Plan's forecast of a population increase of 750,000 over the next 15 years TfL remains convinced that buses are, logically, the only short-term solution to increasing public transport capacity in London.

Financing the schemes

2.6 New transport systems will require varying degrees of funding from the private sector. However any recent review of U.K. privately financed light rail projects is likely to prompt considerable market wariness. In London, Tramtrack Croydon Ltd., the concessionaire for Croydon Tramlink, recorded an increase in pre-tax losses of 34%, to slightly less than £10 million, and last year stated that limited funds could prevent it from continued trading.

2.7 It is not just in London these problems are surfacing. In Manchester, Altram, the special-purpose vehicle running the city's Metrolink tram, filed accounts showing spiralling losses and interest charges running at about £8 million despite declaring an operating profit of less than £2 million. Overoptimistic passenger projections were blamed and, subsequently, the consortium returned the concession to the Greater Manchester Passenger Transport Executive.

2.8 The history of unreliable patronage and revenue forecasts supports the view that any transit scheme exposing lenders significantly, or in full, to market risk will struggle to achieve investment grade rating.

2.9 Obtaining the patronage is therefore a key element in building a robust business case for any scheme. For this to happen it is important to have robust patronage estimates from the outset; essential that time and resources are spent on pro-actively, sympathetically and positively managing the relationship between the public and the construction process; important to understand the implications of changes to policy for revenue on the system; beneficial to promote and publicise the scheme; and, a good idea to manage expectations of patronage build up.

2.10 Many of the models used to forecast revenues have, in the past, failed to reflect the reality of patronage levels once a scheme is in operation. The forecasting process must be refined and be made more sensitive to local conditions if finance is to be drawn into these schemes with more confidence, and therefore at a lower cost, than currently exists.

Implementing the schemes

2.11 In attempting to implement difficult schemes it is important that the wider vision of the scheme must be related to the community. Not only is good market research needed to present to politicians at the outset, those responsible for the scheme should engage and enthuse with local people and businesses wherever possible.

2.12 Consultation costs money. There are concerns about the increase in cost, and the strain on a limited amount of resources, as a consequence of improved and better consultation. However, it is agreed that money spent on consultation is generally well spent if it leads to a better outcome and has much community input and support.

2.13 Accommodating these schemes in a city like London with dense and congested road networks presents yet more challenges. Croydon Tramlink successfully utilised disused rail lines in the area, which made the development of the system easier but such opportunities rarely exist elsewhere within London, where the National rail network is well used. But any location will

have its own specific problems. What is important is the need to minimise disruption and to provide a service which meets the needs of the local community.

Conclusions

2.14 The question remains: are the levels of patronage intrinsically higher with a fixed route system (tram or segregated bus) than you can achieve with a conventional bus-type operation offering the same frequency and reliability of operation as a tram? If they are then the higher cost of such systems needs to be compared with the limited finance available for which a multitude of schemes will be competing.

2.15 David Quarmby, in summing up the day's debate, posed an interesting question:

"We are inevitably led to the question - particularly relevant when you have a fixed budget - is there an 80/20 rule at work here? That is, can you achieve, say, 80% of the benefit, or performance improvement for, say 20% of the cost? I have a suspicion that bus-based solutions, particularly in a bus-friendly road environment of the kind we have increasingly achieved in London over the past few years, may well be like this."

2.16 But, notwithstanding this view, the attractions of tram, trolley or guided bus schemes are that they have been shown to be more likely to attract motorists out of their cars and that they are more likely to promote economic development and regeneration for the wider community, including businesses.

2.17 In conclusion, to make efficient progress in developing schemes to reduce London's transport problems, there is a real need to:

- Understand and analyse the transport need and demand, before;
 - Moving to the choice and design of those transport systems which meet that demand
- with the best combination of value for money and affordability, then;
- Using up to date consultation and involvement processes to help design the scheme at

micro level, to ensure that it meets and matches local needs as closely as possible.

Recommendations:

- 2.18 The Committee has taken into account the presentations and discussions at the seminar and agreed the following recommendations:
1. Transport for London should set out their criteria for determining which transport mode to implement in particular locations taking into consideration financial and practical implications.
 2. Transport for London should consider the feasibility of establishing a strategic cross suburban transport network, which would include exploring major corridors, strategic links, levels of demand, affordability and consultation, initially, at least, based on buses.
 3. Transport for London should consider including up-to-date consultation and communication practices in their consultation toolkit to help them engage more fully with communities so that schemes are designed to meet local needs.

3. The view of Lynne Featherstone – Chair and Assembly Member

- 3.1 Trams are the flagship of state-of-the-art public transport for the new century. They can carry up to 320 passengers quietly and rapidly with zero local emissions. Unlike the Tube, you can board them from the pavement without endless stairs, escalators, lifts and walkways. Car owners are much more likely to leave the car at home and take a tram than they are to use buses. The quality of ride, reliability and the whole futuristic image of the modern tram has a strong influence in building a strong ridership.
- 3.2 I am keen to support proposals to build tramways on routes where the necessary roadspace is available to accommodate them. On some routes, the benefits of moving large numbers of passengers swiftly and quietly may outweigh the need to displace or exclude existing traffic. Where this is judged to be the case, real skill and diplomacy will be needed to persuade residents and businesses along the route and in areas surrounding the route that the tramway is in their best interests.
- 3.3 The furore that has surrounded the Mayor's proposal to build the West London Transit as a tramway along the A4020 Uxbridge Road between Shepherds Bush and Uxbridge demonstrates that trying to impose a tram scheme along busy narrow urban high streets may well be a serious political misjudgement. TfL's early attempts to consult the public, especially in Ealing and Acton, are now acknowledged to be a textbook example of how *not* to handle a consultation, and we believe the lessons have been well learned.
- 3.4 I've discussed the West London tram proposal with local councillors, residents, and local pressure groups. The route through Ealing and Acton has been inspected on foot and in detail, including a survey of the likely effect on surrounding residential side streets. My transport researcher has attended lengthy consultation meetings organised by TfL (subsequent to the original debacle) and found them to be of high quality. However they only serve to demonstrate both the acute difficulty of running trams down the Uxbridge Road and local opposition to TfL's plans.

3.5 I do not believe that the A4020 Uxbridge Road, especially at Ealing Broadway and in Acton High Street, is a suitable route from a tram scheme, and we recommend that TfL abandons this proposal.

3.6 The Croydon Tramlink, however, has been a very successful scheme in attracting passengers and improving the local economy in the area. In January 2002 TfL appointed consultants to

examine the feasibility of a number of extensions, and the Sutton-Tooting road route was shortlisted with two others. However the focus has now shifted to two "heavy rail options" (Sutton to Wimbledon and Beckenham to Crystal Palace). I strongly prefer the road route as the "heavy rail options" use existing rail lines and therefore add little value to the public transport system.

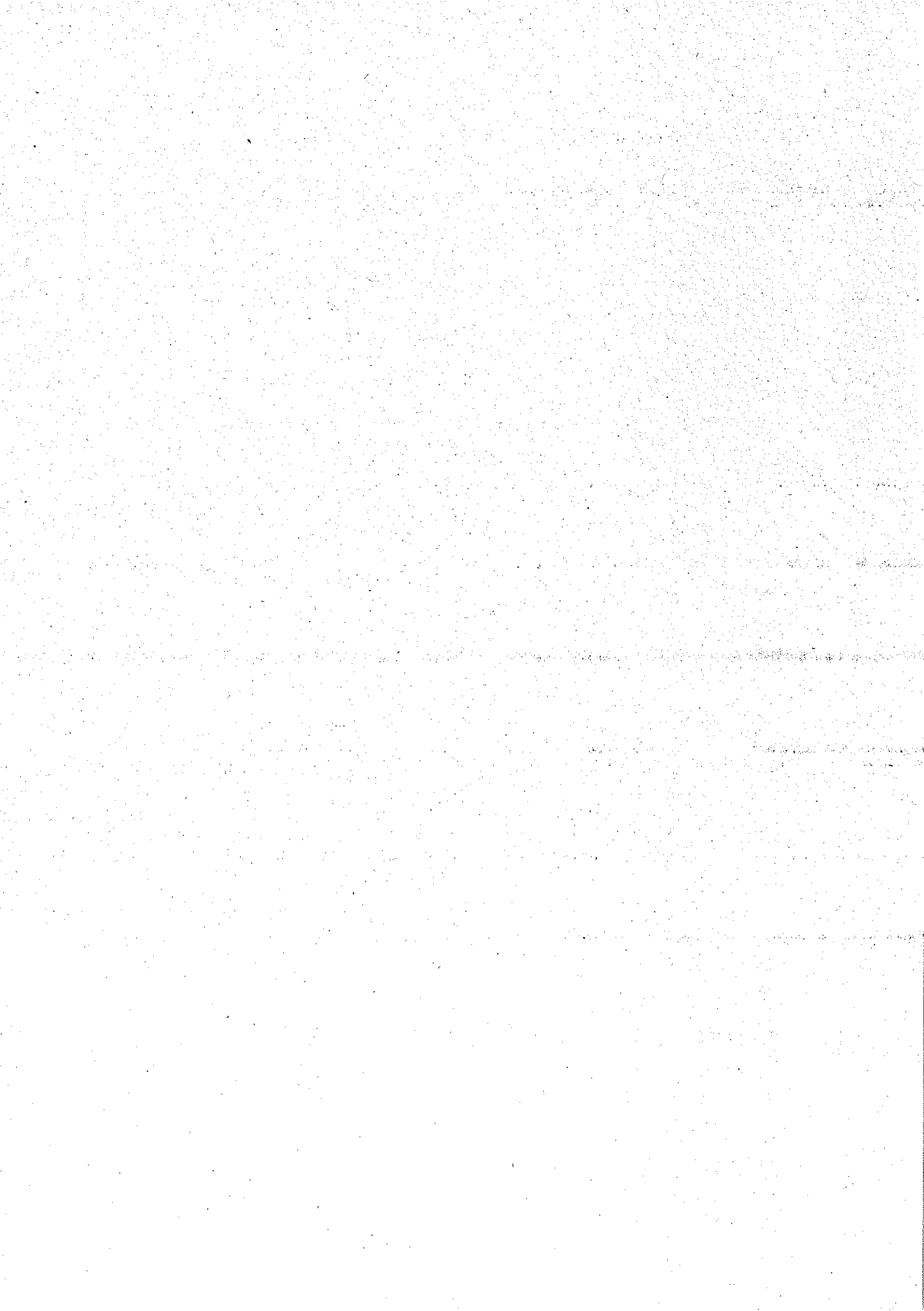
I support TfL's proposals to extend the Croydon Tramlink. I strongly recommend development of the Sutton-Tooting proposal, with a link to the St Helier Hospital and a terminus at Sutton Station where a new transport interchange should be built.

3.7 I believe that the Cross River Transit may well be an example of a tramway proposal where the benefits may outweigh the very considerable disruption to existing traffic use of road space. The ability to move large numbers of passengers swiftly and quietly from central London north to Camden and south to Peckham would deliver a step change in public transport provision to both localities.

3.8 There is a crying need to resolve the ludicrous levels of congestion and pollution along Oxford Street, where 23 bus routes compete for space and it is commonplace to see a dozen largely empty double-decker buses inching nose to tail along the street. **TfL should investigate the feasibility of developing a western spur to the Cross River Transit from New Oxford Street along Oxford Street as far as Marble Arch.** This could provide high quality silent emission-free public transport for Oxford Street shoppers to a range of localities north and south of the Thames.

3.9 Thames Gateway regeneration on the scale proposed by the Office of the Deputy Prime Minister will require a 21st century public transport system. Liberal Democrats are baffled by the political judgement which tries to ram a tram down crowded high streets in West London, and yet decides to fob East Londoners off with a guided bus for the Greenwich Waterfront and East London Transits. With much of the Thames Gateway regeneration area open to new designs and construction, surely new roadways, which incorporate well-designed dedicated tramspace would be far more feasible?

I call for the East London and Greenwich Waterfront Transit schemes to be designed as tramways; and to be linked north and south of the Thames by dedicated tramway paths on the proposed Thames Gateway Bridge.



4. The view of John Biggs – Deputy Chair and Assembly Member

- 4.1 It is interesting that if you visit American cities the tale is often told of how city tramlines were bought up by local bus companies and then closed down, to remove unwelcome competition. In the UK it was more genteel, but in the latter half of the last century trams were essentially seen as outdated technology, clearly inferior to the flexible new technology of diesel buses. By the 1960s, apart from those in Blackpool which were retained for their quaintness, all our trams were gone.
- 4.3 In the UK, Sheffield and Manchester changed that and in London, the success of the Croydon tram has swept aside any residual suspicion that their return to the UK was a provincial phenomenon. However, things move on, and from a political perspective it is worth noting that since Croydon three things have happened.
- 4.4 Firstly, a growing enthusiasm and desire, particularly by municipal leaders and transport planners but also by normal people, to build more tram lines in London. They are seen as reliable, permanent, clean and a modern alternative to road transport, successful at enticing people away from their cars. There are now at least four essentially sane proposals to build lines elsewhere in London, and further plans to expand the Croydon system. They are attractive and clearly can solve problems.
- 4.5 Second, we have seen the beginnings of a backlash, as it becomes apparent that in town centres, those very places where the trams make most sense, they must take road space away from cars, possibly displacing traffic elsewhere. Croydon was an easy win in this respect, because much of it is off-road and in the City centre it works without causing much displacement. The West London Tram scheme is a harder nut to crack and suggests that in future life will not be so easy, with both shopkeepers and rat-run fearing residents organising against the plan. In Somers Town, residents fear that the Cross River Tram will invade a residential district from which they have spent years removing traffic. In other words, trams solve problems but can create them too. They are a part of a toolkit and not a magic wand. And they will occasionally offend other public interests and must seek to accommodate these.
- 4.6 Third, there is a need for a financial reality check. The private consortium running the Croydon Tram has had trouble meeting its financial projections and the cost of the West London route is now above £400million. Outside London, Sheffield and Manchester have both faced challenges in meeting their projections. The bottom line is that trams do not come cheap and they need carefully selected routes and thoughtfully designed feeder networks if they are to achieve a good return on public investment. Trams do need to be built

in the right places, and West London and Cross River look like two pretty obvious places; but we must recognise that in a hierarchy of solutions they are cheaper than either trains or urban motorways (should anyone be crazy enough to want to build one), but more expensive than most else. In London this financial pressure has led us towards looking at other road based solutions – intermediate mode schemes (Greenwich Waterfront Transit and East London Transit), and elsewhere highly prioritized and enforced bus priority measures – that embed, with priority and segregation, the benefits of trams while avoiding their costs. Whether this is achieved by bus priority or by something closer to a tram, or perhaps a trolleybus, remains to be seen and will differ from place to place. The Intermediate Mode schemes planned for east London are worth watching to see how these ideas unfold. And the more general progress with bus priority initiatives is clearly and will continue to be the backbone of road-based public transport initiatives in London.

- 4.7 It is clear therefore, that the justification for individual tram schemes needs to be based on the twin pillars of a robust Benefit-Cost appraisal and a thorough and responsive local consultation. It will be a failure if London does not build more tram lines in coming years but it will be a failure also if we build schemes that do not live up to their expectations of ridership or which cause deep-set traffic problems for other road users.
- 4.8 What both trams and tram-like schemes have shown us, is that in the right places, the politics of congestion and of pollution require us to start taking back our streets from the free-for-all they have enjoyed for the past few generations and giving priority to more sustainable modes of transport and a more pleasant environment.
- 4.9 Unlike some of the other political groups, I am however prepared to recognize that inevitably some interests will be offended by almost any tram proposal. A balanced decision needs to be made but Civic Leadership means that sometimes a great public good should be supported even though there may be local and unresolvable opposition. Sometimes the greater good requires leadership and a bit of bravery. It will be a defeat for all of London if worthwhile transport schemes are defeated by an overly parochial political culture. Strategic Government means strategic decisions to solve London's problems. The Cross River and West London trams should therefore be progressed and further schemes brought forward for consideration.

5. The view of Roger Evans – Assembly Member

- 5.1 Croydon Tramlink has largely been a success, attracting a large number of passengers and delivering economic benefits to the area. The service has achieved top class performance scores and has connected previously remote satellite estates to the centre of Croydon and other employment centres.
- 5.2 The Tramlink has succeeded in winning strong public support in the localities it serves. There is good evidence that there has been a modal shift from car use to the tram as high as 20%. A major benefit of this scheme is that it has limited on-street running, avoiding displacement of other traffic and regenerating old heavy rail routes.
- 5.3 This positive experience means that South Londoners are likely to welcome further extensions to the Tramlink. However, this example illustrates the fact that the success of these schemes comes through broad public support for the plan. The financial planning for the scheme appears to have been overly positive, though, and so greater efforts should be made with future schemes to ensure that all the features are costed in financially. The banks may not continue to be so generous if they continuously find that the pay-back on the schemes they are asked to support is slower than expected.
- 5.4 Proposals for trams, trolley buses and guided buses are frequently popular with the communities they serve while they remain lines on a map. These schemes usually replace existing services (as has been the case with Croydon Tramlink) and, as such, their main selling point is usually the assurance of faster, more reliable transport links.
- 5.5 However, the experience of the West London Tramway has shown that when more solid proposals are put to a community, the people who will be affected by the scheme have real concerns and issues to take with the proposals. We find it worrying that with regard to this scheme, Chris Veasey said at the conference on 22nd January: We have been faced with deliberate misinformation, flawed consultation and restricted participation.
- 5.6 We know that this indicates a level of local hostility to the scheme, which does not bode well for its success. Given that Standard & Poors list 'broad political and public support' as one of the key credit drivers for projects such as these, by not responding to the concerns of the general public, West London Tramway automatically fails to meet one of the main conditions of the financial model.
- 5.7 The concerns of local people regarding proposed schemes should not be

underestimated. Among the concerns cited are:

- Subways and footbridges are often proposed as ways of securing pedestrian crossings. Local people are wary of these as they are seen as risky in personal security terms.
- Communities fear that they will be cut in two by the proposed scheme
- Allocation of road space: many corridors in a city like London are very narrow. Certainly in the case of the West London Tramway, there are fears that the advent of trams will lead to the exclusion or displacement of cars and so congestion will build up elsewhere.

- 5.8 With regard to the last point, Steve Atkins from the Institution of Highways and Transportation stated: We found that the amount of traffic trying to get through the reduced road space declined. Trafalgar Square is an example of how traffic has reduced to fit the amount of space available.
- 5.9 However, the nature of traffic and transport links in many of the areas of outer London where these schemes are proposed are very different in nature from Trafalgar Square, with many people relying on their cars to move between localities which are not linked by public transport. Therefore, we do not believe that this is a concern which is so easily dismissed. Indeed we would question the value of such a philosophy when it comes to managing road space effectively.
- 5.10 It was noted that many proposed schemes were political follies rather than practical proposals which could be justified by projected use. A detailed business assessment was recommended by Standard & Poors before schemes were proposed.
- 5.11 Regeneration benefits are often cited among the justifications for tram, trolley and guided bus schemes. However, where obtaining finance is concerned this is judged as irrelevant and in fact Robert Bain of Standard & Poor's said that this would be stripped out by the capital markets before a scheme is assigned a credit rating.
- 5.12 Some of the schemes (e.g. East London Transit and Greenwich Waterfront Transit) cover relatively short distances. These may fall foul of credit analysis in the sense that their competitive position may not justify the scheme and the characteristics of the sector and the market in which the system will operate may not justify a light transit scheme. Buses are increasingly being shown to be able to meet public demand and in fact at the seminar Peter Hendy stated: There is an implicit assumption that ordinary buses have no ability to create modal shift, which is entirely erroneous. There has been great year-on-year growth of over 10 percent in London. If you make buses more attractive and reliable you can achieve great modal shift.
- 5.13 Though guided bus schemes should increase reliability, gains made to date have been achieved through improvements to the current bus service and this lessens the justification for light transit schemes.
- 5.14 Revenue dependability is assured if the light transit schemes replace existing modes of transport, owing to passengers having limited options. Otherwise the schemes will find themselves competing for a customer-base. While dividing the number of passengers between different modes of transport may be beneficial at peak hours, buses and trams may be running almost empty at other times. This will impact on the overall profitability and hence the long term viability of proposed

schemes.

- 5.15 In his presentation at the seminar on 22nd January, Peter Hendy pointed out that, 'ultimately our actions rely on funding'. All schemes should be the subject of a rigorous financial evaluation before proposals are permitted to progress further.

6. The view of Jenny Jones – Assembly Member

6.1 Modern trams are fast, reliable, sexy, and capable of moving a lot more people around the streets of London than even our fast growing bus network. I therefore support all four of the tram and bus schemes being put forward by Transport for London (TfL) and regard them as an essential part of our strategy for reducing traffic in London by a quarter during the next decade. Trams are an environmentally-friendly priority for London; they could be easily funded by dropping all the plans to build and widen roads in the South East of England.

6.2 However, I accept that trams are not always the right solution for a particular route and area. If a particular tram route is going to be accepted by local people as the best solution to their transport problems, then I believe it is up to me, TfL and other tram enthusiasts to not only make the general case for bringing back trams in London, but listen and provide answers to as many of the specific criticisms as we can.

6.3 Why trams are a good idea:

1. Trams are potentially a much more environmentally friendly form of transport than cars and buses. They don't pollute the local streets and if the electricity used comes from non-nuclear, renewable sources, then trams don't contribute to greenhouse gases either.

2. They can carry far more people than even the most regular bus service and are the obvious next step for dealing with the bus jams, which are becoming a feature of London life.

3. They are a comfortable, fast and pleasant form of public transport, which will persuade large numbers of drivers to leave their cars at home. Traffic reduction is an essential part of our vision of making London a nicer, cleaner and greener city.

4. Our main roads are becoming increasingly clogged up, which costs business in London billions of pounds due to delays and also leads to traffic rat running through residential areas. Beating this spiral of congestion and rat running requires radical solutions and the introduction of trams has to be part of the package of traffic reduction measures.

6.4 Solutions to the problems:

1. Residential areas must be protected from any overspill of cars and lorries if the tram displaces vehicles from the main roads.

Trams will inevitably displace existing road users from some sections of the route. Such changes always generate a degree of opposition and worry. Many drivers

will leave their cars

at home and transfer onto the trams, but some of the existing traffic will be displaced onto surrounding roads and action has to be taken to stop rat running through residential areas. Money should therefore be allocated to the local authority in advance of the scheme going ahead, in order to improve road safety, encourage traffic reduction and deal with the problem of rat running.

2. Trams will replace some existing bus routes.

There are genuine concerns that the range of local bus services and routes will deteriorate as a result of introducing trams. Trams can move a large number of people in a fairly straight line, whilst buses can reach into areas away from the main road network and connect neighbourhoods, which would otherwise be isolated. TfL must combine the introduction of trams with a package of new bus routes which feed into the fast, more direct service being offered by the tram

3. Trams must increase, not decrease, accessibility.

There are understandable fears that the tram tickets will reflect prices on the tube and rail system, rather than the bus system. Also, tram stops tend to be spaced further apart than bus stops, for the simple reason that trams are aiming to cover distances quicker than buses. This means that people with mobility problems have to travel further. There must be a common system for ticketing on trams and buses, with tram and bus stops arranged to allow easy transfer from one to the other, so that short hop journeys on buses can be combined easily with longer journeys on trams.

4. Trams favour local travel rather than long distance commuting.

There is no guarantee that building new transport infrastructure will automatically bring economic benefits. For example, building a new road in London may encourage people to travel further to shop and thus destroy the livelihood of local businesses. It can also lead to skilled labour commuting into the area to work, whilst local people find themselves overlooked. Tram routes and stops should be planned to bring maximum benefit to local businesses and shops.

5. Trams must not displace cyclists from main roads.

Careful attention has to be paid to the plans for mixing trams and cyclists. There are bound to be some places where a balance has to be struck between conflicting priorities, but cyclists shouldn't be marginalized by the sheer weight of tram passengers. The London Cycling Campaign, along with TfL's Cycling Centre of Excellence, should have a more prominent role in being the public advocates for cyclists, when proposals are being discussed.

6. Trams must be safe for pedestrians and not disrupt communities.

There is limited evidence that trams are more dangerous than other traffic and even less than they cause a greater degree of community severance. However, I feel that trams should avoid parklands and that there should be intensive consultations with parents to address their concerns about trams passing near to schools.

7. Local consultation must be done early, and done well.

I strongly believe that trams are needed in London and new routes have to be consulted upon. However, it is clear that Transport for London's consultation process in West London got off to an appalling start and they have had to work hard to make up for the initial loss of public confidence.

7. TfL's policies, plans and programme

Peter Hendy, Transport for London

- 7.1 The Mayor's Transport Strategy indicates a need to improve the capacity, reliability, efficiency, cost and integration of London's public transport system.
- 7.2 The Mayor's Transport Strategy points to a commitment towards expansion of the bus service and seeks greater rededication of road space to public transport. There has already been a significant expansion of the bus system, one of the largest and most comprehensive in any comparable city in the world. There are over 7,500 London buses carrying 5.4million people on over 700 different routes each weekday. This amounts to over 1.6 billion passengers per year.
- 7.3 By such means; TfL is delivering increases in capacity, reducing overcrowding and improving travel times and reliability. In addition bus services are helping to increase capacity to meet demands of economic growth and increasing social inclusion. Research shows that good bus services contribute to the economic vitality of London's town centres.
- 7.4 In the medium term future buses will continue to provide the major part of suburban public transport. Currently only 3% of the road network is dedicated to buses. Case studies support the hypothesis that recent bus priority programmes have been successful in protecting bus speed levels where traffic speeds have declined and early figures for routes serving the Congestion Charge Zone indicate that estimated waiting time has fallen by nearly a third.
- 7.5 Beyond conventional bus priority, road space allocation is a defining issue. Dedicated busways can deliver benefits, but the need for them increases as the amount of land available to provide them declines. They are needed primarily in areas such as Ilford and Barking, where congestion is a major problem.
- 7.6 Buses can carry high flows of passengers, especially where real priority is provided. However, for very high flows it makes sense to see if larger light-rail vehicles are feasible and can be justified.
- 7.7 The Croydon Tramlink service opened in May 2000 and has been extremely successful in attracting passengers and delivering economic benefits to the area.
- 7.8 TfL is presently working on five proposed light transit schemes. The gestation

period for these schemes is long and all those that are proposed have been in active discussion for up to 10 years. These include:

Extensions to Croydon Tramlink

West London Tram

Cross River Transit

Greenwich Waterfront (bus based schemes) and

East London Transits (bus based schemes)

- 7.9 Trams have higher capacity per vehicle and potentially have higher operating speeds. They can deliver social inclusion and employment benefits. There is also good evidence from Croydon that a modal shift from car use as high as 20% can be achieved.
- 7.10 Proportionately, bus priority and busway is less expensive (up to £3.5m per km and often significantly less). Light rail is more expensive to build (£20m per km) however financed. Realistically, there will not be many schemes at the proposed prices (up to £450m for West London Tram) because of the competition within London for the funds available for capital investment.
- 7.11 In terms of delivery time bus-based transit schemes can be operational in three years but tram-based schemes have a long lead-time before delivery.
- 7.12 As a public body, TfL has an obligation to consult effectively on all major transport projects. This reflects legal requirements and TfL's own consultation policy. There are a number of issues around the effect of streetbased schemes, which must be taken into consideration. The West London Tram scheme would be the largest new street tramway in Western Europe but has caused controversy surrounding the impact it would have on the area. The TfL Board will need to carefully consider the scheme's benefits and costs including the level of local support before moving to implementation.
- 7.13 In the short term, TfL is working to support the London Plan's forecast of a population increase to accommodate a population increase of 750,000 over the next 15 years. However largescale capital projects will not start delivering until after 2009/10. Buses are therefore the only shortterm solution to increasing capacity. TfL will continue to consult on individual projects and bring Greenwich Waterfront and East London Transits into operation, provided the necessary funding is found. The remaining proposals require additional development, which we are pursuing. Ultimately our actions rely on funding.

Photo courtesy of Robert Bain

8. Continental Europe: what can London learn?

Carmen Hass-Klau, Environmental Transport Planning

Trams

- 8.1 Of the three transit systems currently on the market (tram, tram on rubber tyre and bus train), the modern tram is the most reliable system with more than a century of experience supporting it. New modern trams are different from the old ones because the passenger capacity can be changed according to the type of train used, up to a maximum of 350. The tram is the only transport mode to have made a comeback in many countries and has been used particularly in France to develop city centres and subcentres. The economic impact of light rail is greater than often thought and there are no negative economic effects for smaller towns or suburbs along the route. Discussing the wider economic effects of light rail would be another interesting subject one could talk about but that is not the topic addressed in this presentation. Light rail, or the tram, is an effective means for restraining cars, it is important in improving the urban landscape and it is a very effective mode for winking car drivers out of their cars because of the good image it enjoys.

Nantes

- 8.2 The first light rail line in France was built in Nantes in 1985. Today there are three tram lines which are crucial for the transport movements in the conurbation. Nantes is one of the few towns in Europe that can actually show a decline in car use over the last 7 years and an increase in environmentally friendly modes including public transport and the third line, which opened in 2000, has been used effectively as a car restraining measure.

Orléans

- 8.3 As the streets in the town centre of Orléans are very narrow, the tram is also narrow. Despite opposition to the scheme, planners were successful in running the line through these streets and the same type of tram is now being used in

Dublin.

Paris

- 8.4 For decades, ring roads and motorways have been built for cars but little thought has been given for public transport orbital connections. Berlin pioneered this concept in the 1930s with two rings. Paris is currently building an outer public transport ring, consisting of tram lines, guided buses and busways. The first tramway opened in 1992, serving lowcost housing

areas and carries 63,000 passengers per day. A second line opened in 1997 and has been a great success in terms of passenger gains. Both lines will be extended, and there are a number of new proposals for trams and guided bus routes.

Trams on Rubber Tyres

- 8.5 The only tram on rubber tyres which is presently technically worth considering is made by Translohr. It uses a single guidance system and has a passenger capacity of 140. Rubber-tyred trams are better able to handle steeper gradients and are able to take tighter curves, than "steel wheel on steel rail". The system has mechanical guidance and normally requires overhead wiring. A system in Padua will open this year and will run without electric wiring in the old part of the city centre, an advantage in the case of historic cities. Another system will open in ClermontFerrand in 2005 and Translohr has just won a tender for a new system in Venice.

Bus Train

- 8.6 The bus train is a fouraxled articulated bus 25 metres in length with a passenger capacity of 140. The bus is manufactured by Van Hool, a Dutch company, and is currently in use in Utrecht, where a light rail line also exists. However, Utrecht does not have the funding to extend their light rail capability. The bus will also be used in Hamburg and Geneva, where capacity needs would justify light rail. Bus trains are a cheaper alternative to trams and they can accommodate a large passenger capacity. In the planning stage, bus trains must be given the right of way to be effective.

Conclusions

- 8.7 The characteristics of the corridor are the most important consideration, not the size of the city. Today it is possible for one city to accommodate a number of different transport modes, but the interchanges among them are a crucial factor. The best practice for innovative tram systems is in France; the longest successful experience of trams can be seen in Switzerland, Germany and the Benelux countries.
- 8.8 The UK's light rail system has not performed as successfully as in other European cities because of: the lack of integration with buses due to deregulation; less radical policies on traffic restraint; and, design standards are less consistent with city culture and tradition.

8.9 The Translohr vehicle is the most promising of the new rubber-tyred transport systems, but there is a lack of practical experience. Their great advantage is that they are 20-25% cheaper than trams; but the bus train is the best value if the budget is limited.

8.9 London has to learn to be more innovative and has to build new public transport systems faster. The best European models for London in terms of public transport planning and construction are Paris and Berlin.

9. Obtaining the patronage

Bill Tyson, Greater Manchester Passenger Transport Executive

Introduction

- 9.1 Public transport exists to serve passengers and estimating the patronage on a new system is a key part of the processes of:
- Getting statutory powers
 - Appraisal and justifying public sector funding
 - Procurement and securing private sector funding
- 9.2 The record of forecasting patronage for light rail schemes has been mixed, although in my opinion, some of the criticism has failed to take into account the complexity of the processes involved.
- 9.3 The reason patronage is so important is that almost all the benefits from rapid transit systems depend on the level of patronage. These are:
- Benefits to passengers themselves
 - Benefits to others that result from passengers changing their travel behaviour (e.g. switching from cars to public transport)
- 9.4 Patronage is also directly related to revenue that in turn can be a source of both capital and revenue funding for the system.
- 9.5 Estimating patronage is a highly technical process and my task today is to give you a strictly non-technical guide to it. This is important, because the complexities of the technical process can often mask important issues.

Outline

- 9.6 This paper divides the problem into a number of issues and seeks, in a non-technical way – to answer the following questions:
- Where will the passengers come from?
 - How many passengers will there be?

- How do we find out?
 - Turning patronage into revenue
-
- How can promoters help deliver patronage and revenue?

Where will the passengers come from?

9.7 This is the obvious starting point. Patronage for a new rapid transit system can come from a surprising number of sources and it is important to understand, and where appropriate, include them all in any estimates:

- People transferring from any services that it has replaced – this was one of the main sources of patronage for the first phase of the Manchester Metrolink system;
- People switching journeys from other modes – from buses, car, walking etc;
- People changing their travel patterns and changing the origins and destinations of their journeys in order to take advantage of the new system. For example people may shop in a centre served by the new system instead of somewhere else. In the longer term, more people may choose to work in the area served by the system as a result of the increased accessibility that it provides;
- People travelling more often;
- People making totally new journeys that they did not make before.

9.8 All these sources of patronage are potentially important although as we will see they differ in the speed with which they build up. Some are also much easier to estimate than others.

How many passengers will there be?

9.9 If we are to estimate patronage we need to know how big these changes will be. This will depend on a large number of factors that can be divided into:

- Those determined by the system itself;
- Those determined externally

Factors determined by the system itself

9.10 At the risk of stating the obvious, the most important factor in this group will be the performance of the system itself compared to alternative modes. A new system can influence several aspects of a journey –

- Time spent walking to and from the vehicle – better penetration of the central area has been a factor in the success of Croydon and Manchester for example.
- Time spent waiting at stops, which is affected by frequency and reliability.
- Time spent on the journey itself, which is influenced by acceleration,

speed, priorities, stop frequency etc. In Manchester the trams had better acceleration than expected and this allowed them to offer faster journey times than had been assumed.

- Time spent interchanging between modes at interchanges and park and ride sites.
- The cost of fares.

9.11 These are all measurable, as we shall see shortly. However, what is equally important is the extent to which people are made aware of the new system and the impact it could have on their journeys. Thus the work to promote the scheme to potential passengers is as important as building the scheme itself. This is frequently overlooked.

External factors

9.12 This is a much longer list that includes:

- Fares and journey times on other public transport modes;
- Competition from other modes (a factor for all systems outside London);
- Costs of car travel, especially the direct costs like fuel and parking – the government's decision to scrap the fuel duty escalator will reduce future patronage on existing and new systems. Congestion charging will increase demand;
- Congestion and journey times on the road network – as traffic congestion gets worse demand for public transport modes that can avoid congestion will increase;
- The population of the area served (one of the problems that beset Sheffield);
- The number of jobs in the area served;
- The level of economic activity;
- Changes in the location of major facilities that generate travel like hospitals, schools and shopping centres.

9.13 These present a number of problems for patronage estimates for two reasons:

- They can be very difficult to predict;
- In many cases they are outside the control of the promoters and the operators of new systems - in this respect London is perhaps more fortunate than other parts of the country.

9.14 More often than not, it is factors on this list that knock patronage forecasts off course. If we are to meet planning forecasts it is essential that we take all these factors into account and build them into our estimates in a transparent way.

How do we find out?

9.15 Despite the "bad press" that patronage forecasting has been getting recently, there is a lot of analysis and data behind the forecasts that are made. We know a lot about the relationships between journey times and fares and patronage.

Modelling techniques exist that allow a whole range of "what if" questions to be asked. This enables estimates of transfer from other modes to be estimated.

9.16 Less is known about the last three sources of patronage that I referred to earlier:

- People changing their travel patterns and the origins and destinations of their journeys;
- People travelling more often;
- People making totally new journeys.

9.17 One of the reasons is that there is very little experience to study. These are almost all longer-term impacts. This makes disentangling them from all the other things that are happening is very difficult. We have some evidence from Manchester and Sheffield that new trips and travelling more often account for between 10% and 15% of total trips on the system. This leaves changing travel patterns as the biggest "black hole" in estimates and this can particularly affect schemes that open up new catchment areas for jobs and other travel activities.

Converting patronage into revenue

9.18 This is often where things start to unravel, unless great care is taken. One reason is that the modelling on which most of the patronage forecasts are based does not cover the whole day – quite often the morning peak and an average off-peak hour are used. Thus patronage depends also on the factors that are used to multiply the model results up to a full year. This is made quite explicit in the modelling but I doubt if anyone knows exactly what the right numbers are.

9.19 Another reason is that the modelling that produces the patronage estimates sometimes assumes a single "average" fare for all journeys between two points. This may be based on the fare levels prevailing on existing modes or is derived from them. Fare structures are more complex. Even in London whilst there is a flat fare on Tramlink of £1:

- The elderly, children under 11 and some others travel free;
- 11-15 year olds and New Deal card holders pay 40 pence;
- Oyster card holders only pay 70 pence;
- Travelcard and Bus Pass users pay less than the full fare.

9.20 The "average" fare and total revenue are very sensitive to the proportions of passengers paying each of these fares. Suffice to say that outside London, the basic fare structures are often even more complex – for example on Metrolink we have a structure that is more like the Tube with several zones. This may not matter too much for the economic appraisal but it is essential for the revenue estimates.

9.21 A third potential pitfall in converting patronage to revenue is the speed with which patronage builds up. The different sources of patronage will switch to the new system at different rates. For example, passengers switching from a mode that the new system had replaced will do so fairly quickly, as will those switching from other modes.

9.22 In other cases, however, something external to the system may have to happen before someone uses the new system. Examples of this range from the car going in for service to changing jobs or moving house. We do not fully understand the speed with which these processes work but a number of light rail scheme operators have overestimated the build up of patronage to its forecast level.

9.23 This is particularly serious as it hits the early years of the operation of the project when many operators are financially stretched if they have paid for the concession to run it. This is one important respect in which a franchise for a new system differs from taking over the operation of an existing system – whether that is a bus route, a rail franchise or a light rail system.

How can promoters help deliver patronage and revenue?

9.24 In this short paper I have argued:

- Patronage comes from many sources;
 - Patronage is influenced by the performance of the system relative to other forms of transport;
 - Patronage is also influenced heavily by a number of external factors, many of which the transport authority promoting the scheme cannot control;
 - Our understanding of the relationships involved in estimating patronage varies but on the whole we can make good estimates of the main sources of patronage;
-
- Understanding the finer detail of the fares structure is essential when estimating revenue from patronage;
 - The build up of patronage is complex.

9.25 This raises a number of issues for a promoter of a scheme that wants to help deliver the patronage and revenue that is needed. These arise at every stage in its development from planning to operation. In roughly that order they are:

- Robust patronage estimates will be as important for getting powers under the Transport and Works Act as they are for getting government funding. A standard line of objectors' argument is "no one will use it – the patronage estimates have been wildly overstated."
- All potential sources of patronage need to be estimated from the outset - adding some in later seems like a "prayer in aid."
- It is essential that the scheme is planned and operated to have a significant advantage to passengers over existing modes. If possible, this should extend to all aspects of the journey. In particular it is essential that the system gets the traffic priority that it needs to achieve the end to end journey times on which the patronage estimates were based.
- Promoting authorities need to practise joined up policy making.

They can influence patronage by decisions on traffic management and priority and on land use planning. These policies need to be used to support the system and not work against it.

- Time and resources spent on pro-actively, sympathetically and positively managing the relationship between the public and the construction process are essential. Contractors are not all very good at this as their focus is getting the job done. Problems caused during construction can adversely affect public attitudes towards the scheme and the level of patronage when it is built.
- It is important to accept that patronage numbers are estimates that lie somewhere within a range. Too often forecasters concentrate on the mid-point of a range in order to produce a single number. This is misleading and more emphasis needs to be placed on producing a robust range of estimates.
- It is equally important to recognise the potential impact of external factors on patronage and to ensure that those that are within the control of the promoter are influenced in a way that is positive for patronage on the scheme.
- Do not under-estimate the importance of fares structures and fares policy for the revenue estimates. In London, where the Mayor controls fares, it is important to understand the implications of changes to policy for revenue on the system.
- Promote and publicise the scheme and consider ways of tempting people to "try it out" rather than waiting for them to be forced to. People need to be shown the advantages of it first hand – but before you get there they need to know what it is, where it will run, how often, how early in the morning and late at night, how much the fares are etc.
- Try to ensure some stability in service patterns. In Manchester, once the full system had opened there have been very few changes to the timetable. In contrast, Sheffield and Croydon had frequent changes to timetables and service

patterns in their initial operating phases – which may confuse new users to the system.

- Finally, manage expectations of patronage build up. It is tempting to quote the long-term patronage level in promoting the scheme – "it will carry so many million passengers a year." My experience is that this quickly becomes the patronage level that is expected in the first year. When this is not achieved, the system starts getting branded as a "failure".

Photo courtesy of Robert Bain.

10. Obtaining the finance

Robert Bain, Standard & Poors

Assessing the Credit Quality of Tram Schemes

- 10.1 A resurgence of policy interest has seen the introduction of modern-style, street-running trams, also described as light rail, metro, or rapid transit, to many cities worldwide. These projects have increasingly been funded under some form of public-private partnership scheme. A history of patronage and revenue forecast unreliability, however, supports the view that tram schemes exposing lenders entirely or significantly to unmitigated market risk will continue to struggle to attain investment-grade credit ratings.
- 10.2 Ongoing international monitoring of the sector by Standard & Poor's indicates that the credit assessment of tram projects can be challenging whether or not they incorporate market risk. In terms of transparency, tram projects would benefit significantly from in-depth, technically proficient, and independent credit scrutiny.
- 10.3 If these public-private risk-sharing arrangements are to be successful, not only for trams but also for transportation services in general, Standard & Poor's believes that their credit quality would benefit from a profound shift in attitudes. This shift would, in particular, diminish an environment in which optimism and exaggeration are often excused, if not positively encouraged. The view that, without optimism, such projects would never get off the ground merely promulgates an unhealthy uncertainty-denial that can cloud open and rigorous risk assessment.
- 10.4 Estimates suggest that there are currently more than 450 tramway systems operating worldwide, with many more at various stages of planning, design, and development. Transport 2010, the U.K. government's 10-year transport plan, for example, refers to "Up to 25 new light rail or tram lines in major cities" across the U.K. The widely publicised underperformance of some systems in terms of low patronage, and consequently reduced fare-box revenue, however, has recently highlighted the danger of project structures specifically designed to pass demand

risk wholesale to the private sector. Bondholders and lenders should be wary of such schemes.

Tram Troubles in the U.K.

10.5 Any recent review of the U.K.'s privately financed light rail sector is likely to prompt creditor unease. In London, Tramtrack Croydon Ltd., the concessionaire for Croydon Tramlink,

recorded an increase in pretax losses of 34%, to slightly less than £10 million, and last year stated that limited funds could prevent it from continued trading. The company, which has about £100 million of debt, was looking to financial restructuring with enhanced grantor participation. Tellingly, when Amey, the consortium leader, recently sold a large portfolio of its private finance initiative projects to John Laing PLC, Tramlink was specifically excluded from the deal because of its risk profile. Patronage is reported to be down on projections incorporated in Tramtrack's business plan.

10.6 In Manchester, Altram, the special-purpose vehicle running the city's Metrolink tram, filed accounts showing spiraling losses and interest charges running at about £8 million despite declaring an operating profit of less than £2 million. Overoptimistic passenger projections were blamed and, subsequently, the consortium returned the concession to the grantor, the Greater Manchester Passenger Transport Executive.

10.7 In the West Midlands, the Midland Metro tram, which is also operated by Altram, and links Birmingham with the Black Country, reported losses of about £16 million since opening in 1999. As with the Manchester scheme, overoptimistic forecasts were identified as the primary reason for the revenue shortfall. Passenger levels were reported at about one-third of those projected for the opening year.

10.8 These examples continue a trend that began with earlier projects for reintroducing trams to U.K. cities. The South Yorkshire Supertram in Sheffield, which opened in 1995, experienced considerable difficulty in its early years, with revenues only reaching around 30% of forecasts. System performance subsequently improved, but the system still operates well below capacity.

10.9 Some research suggests that even when tram forecasts are correct, they can be right for the wrong reasons. Early forecasts for one of the Manchester lines, for example, a tramway using existing railway track, predicted that all former train passengers would transfer to the tram. Only one-half of the total number did so. The forecasts were "met", and therefore the inaccuracy of the forecast largely masked, through unanticipated transfers from private cars and a boom in leisure travel.

Forecasts: What Goes Wrong?

10.10 The challenge of predicting the demand for new tram systems is not trivial, particularly given the long forecast horizons involved and the fact that, for most cities, trams are a new travel option with characteristics different from existing and/or potentially competing services such as private cars or bus services.

10.11 The restricted ability to learn through observing actual consumer behavior, choice and decision-making in situ leads many forecasters to use survey techniques that

rely on interviewees' responses to hypothetical future-year travel choice sets in order to gauge likely demand. Proponents of these methods acknowledge the sensitivity of these responses, and therefore any resulting forecasts, to survey design. Poor and/or inappropriate survey design will lead to unreliable forecasts.

10.12 Even well-designed transport surveys have encountered problems. A survey may be conducted at one point in time, resulting in one set of forecast parameters, only for that same survey for the same project to be repeated at a later stage and result in quite different parameter values and forecasts. Timing is clearly important, with more credibility given to research conducted at a stage when interviewees can correctly conceptualize and respond to the travel alternatives presented to them.

10.13 Sample size can be another critical issue that affects forecasts and forecast reliability in a number of ways. Most transport models divide the study area into sectors or zones. The definition of these zones may be inappropriate, however, particularly if they are inherited from

earlier incarnations of a model constructed for an entirely different purpose. Sample data at the zone level is subsequently "factored up" to represent population data, and so changes to those factors, especially if the individual samples are very small, such as the percentage of people from particular areas who would use a tram system, can have a significant impact on estimates.

10.14 The examples given above serve to highlight a few of the many sources of unreliability that can creep into patronage forecasts.

Other Potential Contributors to Over-optimism

10.15 A review of tram performance suggests additional reasons why schemes can fail to meet forecasts:

- Overestimation of the tram's competitive advantage in terms of journey time, reliability, frequency of service, fare level, and service quality over other forms of transport. This is particularly important for short-distance trips, where the simple convenience of a bus can be underestimated. The majority of urban trips are over short distances;
- Overestimation of the tram's inherent attractiveness as a "superior" commodity, and therefore its ability, all things being equal, to attract passengers from competing public transport services and, importantly, from private cars;
- Underestimation of competitors' responses. This can be a particular issue in deregulated markets where, for example, bus services can be modified at very short notice. A number of trams have suffered from unanticipated and/or aggressive bus competition. Even in regulated environments, promises to restrict competition, again mainly from buses, have not always been honored. In some situations, buses have actually had their competitive position strengthened by policymakers' actions. Croydon Tramlink's underperformance has been blamed, in part, on a decision to freeze local bus fares;
- Anticipated demographic changes that were incorrect or did not

materialise;

- Anticipated land use changes that were incorrect or did not take place;
- Provision of a service along a marginal travel corridor. The mere presence of a right of way or a disused rail line does not necessarily imply the existence of unmet demand for transport services;
- Incorrect assessment of the yield (revenue per passenger). A fare type mix different from that anticipated can lead to reduced revenues even if the number of passengers has been correctly forecast;
- An inadequate or incorrect representation of the base-year travel environment in the transport model; and
- A mismatch between what is represented in a future-year transport model and what is actually implemented. The processes of modeling and implementation may be years apart, and many things may have changed in the interim.

Beyond the U.K.

10.16 The unreliability of tram system projections is not only a U.K. phenomenon. A retrospective

examination of light rail forecasts in the U.S. conducted in the late 1990s demonstrated that, on average, patronage was less than one-half of that projected. In the sample, only one scheme, that of St Louis, exceeded its forecasts. The underperformance of such systems as

the Sydney and Brisbane airport links in Australia, which report passenger numbers below those projected, has also recently been observed.

10.17 There are, even so, many tram and light rail systems around the world that perform in line with or beyond expectations. London's Docklands Light Railway is currently acquiring more rolling stock to meet demand and early indications from the new tramway in Bilbao suggest that passenger projections will be exceeded. Most recently, in the U.S., systems in Denver, Dallas, and Salt Lake City are reported to be struggling to cope with demand. This is clearly good news for scheme promoters, but it also underscores the difficulties of reliably forecasting usage.

The Future for Trams in the U.K.

10.18 As mentioned above, tram proposals are actively being pursued around the world. In the U.K. alone, public consultation continues for the West London tram scheme to run through Ealing, and power to the overhead wires on Line One of the Nottingham Express Transit tram has been switched on for testing purposes, although recent reports suggest a two-month delay to the project. Furthermore, the Manchester Metrolink tram is being expanded with three new lines. In Scotland, Strathclyde Passenger Transport Executive is exploring options following a City Council recommendation for trams to be deployed along the Clyde Corridor in Glasgow, and the viability of two lines to the north and west of Edinburgh is being assessed. Planners there are considering the removal of bus lanes to encourage tram usage. The opening of Edinburgh's first line is

scheduled for 2009.

10.19 Elsewhere, tram proposals are being actively carried forward, including plans in Cardiff, Bristol, Portsmouth, Blackpool, and the Cross River, Greenwich Waterfront Transit, and East London Transit schemes in London.

11. Accommodating transit systems in existing road networks

John Henkel, West Yorkshire Passenger Transport Executive

The Leeds Plan

- 11.1 In Leeds we have a robust 20year vision for public transport with a plan that supports economic development and highlights safety, social inclusion and regeneration. Our targets seem unambitious, but they were set in the context of a longterm decline; we were losing 2.53% in passengers per annum. There seems now to be a reversal of these trends and further targets are to constrain growth in traffic and to maintain safety.

Partnerships

- 11.2 Partnerships are important once a plan for putting in a bus or tram scheme has been outlined. We must work with bus operators and highway authorities, who are responsible for infrastructure maintenance, because tension and conflict can arise over how the highway space is managed and this must be negotiated.

Highway Planning

- 11.3 Highways are used by private cars, taxis and commercial vehicles. However, we also look to have bus lanes and guideways, and so junctions become an important consideration. We also have additional requirements to consider cyclists, the location of bus stops and pedestrians, who are often forgotten.

Bus Guideways

- 11.4 Guideways must be used strategically in areas of high congestion to segregate buses from the main traffic flow. If we can find a way of fitting a bus into a space and moving it to the front of the queue to the junction, which tends to be where bottlenecks form, then we can make the bus the priority. We can then make journey times more attractive, reliable and consistent. To achieve this, buses are taken out of the main flow of traffic and given automatic steering within the guideway. Once the

bus is taken out of the rest of the traffic stream, signals must be used to give buses priority at junctions. As guided buses are identical to mainstream buses, apart from the guidance system, they can be easily changed and adapted over time. Guiderails are added to buses at a cost of approximately £2,000,000 per vehicle. An advantage to these buses is level boarding because the floor of the bus may be put at the same height as the waiting area. Guided space is often put down the centre of a road to avoid

conflicts with side roads and if this is done, space for passengers at bus stops must be planned and a level pedestrian crossing allowed for.

Photo courtesy of Robert Bain

Finances

- 11.5 We have three schemes in West Yorkshire with infrastructure costs ranging from £512 million. Each scheme had a business plan that accounted for revenue forecasts, demand and potential bus transfers. Capital was put into the infrastructure rather than vehicles because there was a business case for the private sector as well as the public sector.

The Leeds Experience

- 11.6 On three corridors with high passenger volume, we are looking at the benefits of tram schemes, but in the north and east of Leeds we have largely opted for guided buses. The first corridor targeted an area of high car dependency and increased the level of service frequency. In one area we used the central reserve of an existing carriageway, where the signal arrangement was important to move the bus into junctions before other traffic.

The Bradford Experience

- 11.7 The Bradford corridor is a three-lane carriageway linking the city with the M62 and there were many issues around severance between communities and difficulties in crossing the road. We have since put in shelters, some of which have heated seats and wind powered generators.

Communication

- 11.8 As this is a new concept for many people, communication and marketing are very important. The idea of using highway space in a different way is potentially quite challenging, so we kept people informed throughout the planning and construction process. We found that, having built one, we could bring people to see the concept in operation and build support.

Monitoring

11.9 Patronage has increased in line with or above expectations, partly because of service changes but also because of the impact of guideways. Some of the increase in usage came before the scheme was finished and we feel that people responded to the permanence of the guideways. Our plans for future developments look to using traffic signals in a more proactive way. We have a large project to provide passengers with realtime service information, we are also looking into extending some of the guideways and are considering the potential for rapid transit across the whole of West Yorkshire.

Conclusions

11.10 Reallocating road space is challenging because of the number of demands on it. However, once buses are brought to the front of traffic queues, a significant impact on the quality of service will follow. As guideways are virtually impossible to abuse, consistency in travel times can be achieved. Attention to design detail is important as passengers must be able to reach the buses safely and there are also design challenges in keeping the guideways free of litter and snow.

12. Building a local consensus

Don Nutt, Steer Davies Gleave

Introduction and Background

- 12.1 John Biggs, the chair of the Transport Committee when it published its Getting the Public on Board report in April 2003, pointed to "a growing mistrust in TfL's consultation process, stemming from a seeming reluctance for dialogue and a certain high handedness in TfL's dealing with other stakeholders and the public". In that these comments related to difficulties with the West London and Cross River Tram schemes and projects in other service areas, it was surmised that this could perhaps be "more of a generic, structural problem for Transport for London".
- 12.2 As the title of this paper implies, there is a point of view that, if major schemes such as these are to be implemented successfully, there is a need to ensure a broader conviction that they are important to the future of the area concerned and a desirable adjunct to daily lives. The implied question is whether or not we can improve on the current consultation approach on such transport schemes to bring about more consensus. In this context, TfL's acceptance of some shortcomings and work to improve the quality of their consultation, and in particular the Consultation Toolkit, should be noted.

Scheme Delivery in London

- 12.3 Without going into the detail of precisely what has or has not been done to consult on specific schemes, what can be said about the principles of consultation on such transport schemes in London and the context of today's ambitions? What chances are there, really, of consensus in these things? What can we say about the way forward? Are there ways by which to improve our act?
- 12.4 All three of the different mode alternatives, depend upon street operation and to one degree or another some segregated running. We know that this outcome is only to be achieved today by a dramatic change in allocation of road space over current arrangements. By definition, this will be the case on our busy road network, that is, unless the intent is to implement in some "new" or regenerated landscape.
- 12.5 This context, for me, indicates the requirement for an inclusive consultative

approach if the objective is for more consensus on the way forward. Assuming that the scheme derives from work in which the need for it is clearly established, there is a need for public involvement at all stages of its development and implementation from then on.

- 12.6 Firstly there is the need always to communicate the entirety of the picture, explaining the way in which a particular scheme relates to the higher order objectives and the vision for the future of the area through which it passes.
- 12.7 There is also a need for those making the decisions to implement, to be leaders in the community and also to lead the popular debate. To do this, clearly, the local politicians need support. Firstly they should know that the need for the scheme has been clearly established and that it is the best one of the alternatives available. Also, at all stages of the process, they need to know what is in the public mind; in my experience this is the means by which they are convinced themselves as to the good sense in proceeding and therefore remain positive and supportive. They also need the security of knowledge that the community has been informed, consulted and involved in the process according to the statutory requirements and to best practice.
- 12.8 Why is it important to engage in or to encourage the popular debate? In my view, this is necessary simply because at the outset this is but the first step in the process of implementing a major public transport scheme and a transformed public realm along its length. Not only are there several stages in the process, at which it is possible for there to be process breakdown, frustration and costly delay, including a disruptive implementation period, but also the ultimate objective is for lots of people to make use of scheme from the start of operation. So, not only is this a necessary consultation at the start of that process, but it is also an opportunity to begin to draw attention to the likelihood of the new service and its benefits for local people.
- 12.9 Once the need for the scheme has been proven each of the different stages of the planning and delivery process brings its own issues:
- early in the process, at a pre-feasibility stage, what matters is the need to tell people about the idea and to see what they think;
 - then, in proving a scheme to be the best of the alternatives on offer, there is a need for clarity and honesty in the supporting consultation materials and transparency and openness in the assessment work, with appropriate feedback;
 - later, after it has been decided to implement a particular scheme, there is the need to advise of the detail, to listen to people's comments and criticisms and to adapt the scheme appropriately, if necessary, in response; and
 - during implementation, there is a continuing need to respond sensitively to issues arising.

Of course at each of these stages it is of utmost importance that the authority is seen to be listening carefully and willing to adapt the scheme where appropriate.

- 12.10 TfL acted in 2002 to ensure a more consistent approach to consultation across the

organisation and for all purposes. The Consultation Toolkit, a multi-media response to this difficult problem, sets out TfL's new policy on consultation, its responsibilities as set internally and defined by statute, and the way in which staff are expected to select, design and carry out different types of consultation exercises. The toolkit supports the new consultation policy and explains the many different potential facets of different approaches through case studies, illustrating both difficulties and good practice examples from recent experience.

12.11 An important objective of the toolkit is to assist TfL staff in the difficult process of finding the most appropriate way forward in any given circumstance. In that it is possible always simply to do more consultation work on any scheme, the essence of the problem facing TfL is the need to find the most appropriate approach in each case, and for that to be both cost effective and efficiently carried out. The positive feedback received from staff on the toolkit suggests that it is helping in this regard.

New trends in consultation and community involvement

12.12 It is interesting to look at what is happening today to consultation techniques. In doing so it is clear that the future ambition for this sort of intervention is growing substantially!

12.13 The modernising local government agenda has at its heart the need for councils continuously to involve local interests. In its guidance¹ in 1998, the Department praised the progress local government had made in engaging more in public participation but urged that more should be done. It was argued in the report that the challenge is "to develop a strategy which ensures that participation becomes a mainstream feature of the activities of the authority and not a bolt-on extra".

12.14 An earlier paper² cited in the same guidance note explained that: "The government has a clear vision of successfully modernised local government. It will be characterised by councils which once again engage directly with their local communities. Such councils will actively promote public consultation".

12.15 Community strategies³ are a foundation stone of modernised local government and rely on more holistic thinking in local government affairs. There is a presumption that the process of developing the community strategy and implementing it is an inclusive one.

12.16 In the new land-use and development planning regime the local development framework⁴ (LDF) is to take over from the development plan later in 2004 and the process is also to be more inclusive. "The new system is founded on the principle of continuous community involvement"⁵ says the draft guidance consultation document, which, it explains, means that "the people and communities who will be affected by an authority's planning framework should be directly involved in the preparation of the local development documents which will form that framework".

12.17 The process of producing the documents has a feedback loop in the form of an annual monitoring report, and a requirement for publication of a Statement of Community Involvement that is to cover, amongst other things, "how people and the community will be engaged in decisions for major development which affect

the authority's area".

12.18 The LDF is seen to be the spatial expression of those elements of the community strategy that relate to land-use and development. Advice currently being developed for planners looks for local authorities to create integrated and combined approaches to community involvement or, at the least, linked programmes of consultation.

12.19 Planners are also being encouraged to improve on current methods of consultation and to adopt "more creative approaches to consultation using opinion polls, omnibus surveys, citizens' panels, business groups, youth parliaments, and Planning for Real exercises. Electronic methods of public involvement should also be fully utilised." In the same report it is noted that different exercises require different consultation techniques and so good practice requirements include the following:

- an integrated consultation strategy and timetabled programme for wider community involvement;
- linked community strategy and local development framework consultation exercises; and
- use of a whole range of consultation and communication tools, and involvement of stakeholders in other organisations, to engage different sectors of the community.

12.20 Guidance on local transport planning in 2000, for places outside of London, made clear that a more inclusive process was envisaged. Similarly in the case of major projects (greater than £5m) the process became more onerous: councils having first to ensure that alternative schemes were also examined in the early stages of the development process, and lesser ones discounted, before approval of the selected scheme would be considered and possibly grant aided by the DfT.

12.21 So, trends in consultation are to seek to engage more people, engender more of a popular debate and through this to effect progressive change effectively. Of course some of these relatively recent initiatives, and others yet to come, may take some time to become established. That said, in my experience, councils are already much more active in these areas than they were even a few years ago, and techniques that were relatively foreign to local government are becoming fairly widespread in their application today.

12.22 It is interesting to note that local authorities wishing to involve people in an ongoing conversation about their future development plans and wider social aspirations could do worse than starting with transport issues. It is clear from our work that the local transport debate has the capability to spark and maintain genuine interest on the part of local groups and individuals and can be a medium for the encouragement of more of a response.

Back to transport scheme development

12.23 Were the tram, trolley bus or guided bus scheme selected to be taken forward using the Transport and Works Act, there is advice on how authorities should address the issue of consultation⁶. The guidance on procedures explains that while "statutory requirements relating to consultation have been kept to a

necessary minimum this does not mean that wide and thorough consultation in advance of an application is not necessary". Scheme promoters are advised to note that "the carrying out of adequate and timely pre-application consultation is an essential part of the whole authorisation process and it will usually follow that the larger and more contentious a scheme is, the more extensive the pre-application consultation should be." The same guidance advises an open and constructive dialogue with those likely to be affected, and stresses the importance of engaging properly with statutory authorities and the people affected.

12.24 In their report on Developing Urban Transport Strategies,⁷ the Institute of Highways and Transportation reported that public involvement processes were developing rapidly and argued for a process involving the selective application of information, consultation and participation approaches. To illustrate the arguments associated with a hierarchical approach to public involvement, they employed a so-called "cone of involvement" with fewer people included as the process passes from information, through consultation to participation.

12.25 The distinctions made, drew attention to the following characteristics:

- **information** provision extending to the widest possible target audience possibly through a scatter gun approach;
- **consultation** with a more targeted constituency, aimed at particular groups (businesses, local residents, visitors etc) in a structured process of information provision and feedback; and
- **participation**, said to work best by involving far fewer people than is potentially the case with consultation or information procedures.

12.26 It is clear that new techniques are employed today to a greater extent in each of these levels of the hierarchy compared to many of the more traditional ones mentioned in the IHT's report.

12.27 For instance, in the area of information provision, our ability now cheaply to produce high quality graphics, paper and electronic outputs, has transformed the ability to explain scheme proposals. Travel awareness raising was then just in its infancy as an intervention and there was a view that this was an information precursor to the engagement of target groups in the ongoing consultation dialogue. Today, travel awareness raising is used more readily as an adjunct designed to inform the popular debate.

12.28 Similarly, in consultation work, it has become normal rather than rare practice to employ:

- focus/discussion groups and other market research techniques, such as attitudinal and "mystery shopper" research, alongside the more traditional means of consultation. Not only do these help to build the evidence related to perceptions about problems and possible solutions but also to stimulate the popular debate and to educate.
- opinion or social research as a useful adjunct to consultation work, offering

the all important understanding of what is in the public mind to the politician, assuming that it has been conducted in a statistically sound manner.

- citizens' panels that offer sounding boards using omnibus type surveys, and youth equivalents to find out about the perceptions of younger age groups. Other means to include groups traditionally left out of consultation exercises are also used extensively.

12.29 In public participation, there has been even more change. It was defined by the IHT in 1996 as two way processes in which the public and the professionals learn from each other and to require an ongoing dialogue. Typical of the initiatives to be employed since then has been the introduction of a transport forum, meeting regularly and made up of the representatives of local transport interests, with which the local authority engages on the issues of relevance to a particular locality. Alternatively authorities have established other single issue fora to tackle specific issues relating to the local strategy. These initiatives bring together the disparate interests that inhabit the transport scene and direct their interest constructively.

12.30 Today, my impression is that much more participative work is under way. Naturally, in that the techniques require relatively high resources, their use tends to be controlled and selective in nature. Techniques include the following:

- Planning for Real type exercises;
- visioning conferences and other such engagement work;
- citizens' juries to tackle intractable issues, perhaps with arbitration to rationalise the way forward;
- other ongoing involvement means such as an area / neighbourhood forum or a shared-interest forum or single issue panel;
- community development techniques offer even newer ways to take the issues to the public and to involve them in the debate to find the best way forward. The

involvement of schools and children, younger age groups, ethnic groups, minority groups and other sections of the community traditionally not adequately engaged is an important feature of this sort of activity.

Involving people

12.31 My personal view is that today's local transport debate, especially in the cities, demands more involvement and participation for schemes successfully to be implemented. My reasoning is simple. We have a very different set of decisions to be made now as compared with even a decade ago. Whereas once the problem was seen to be how best to accommodate more demand for movement in a corridor, now we are much more able to manage demand and we have more means of doing so and, in consequence, the decision making and associated processes just got much harder! Now the problem is how much demand for movement, and by which and how many modes, do we choose to accommodate in any corridor, and how, at the same time, can we improve the general ambience

and environmental condition in the adjoining localities? For me, this implies more, active public involvement, and a more educated popular debate.

12.32 If it is accepted that more rather than less local community involvement in this process is a desirable objective then there is a potential synergy, I think, with some of the new policy interventions that are starting to be used today to encourage or enable travel behaviour change. I wonder if they can be exploited in the attempt to involve local people on an ongoing basis.

12.33 In recent years, a significant start has been made to the encouragement of travel behaviour change through the promotion of travel plans at workplaces and major trip attractors such as hospitals, universities and colleges, and at schools, where safer routes to school initiatives have also been introduced. Through their promotion of such initiatives, local authorities have begun to intervene on traffic issues in ways that confront employers and staff, students and pupils and their parents, with the reality of the local traffic problems, their own part in creating those difficulties, and ways by which they can, through their own individual or group action, begin to reduce local problems through changing their travel behaviour.

12.34 Similarly there is a realisation that these sorts of interventions are of value in raising travel awareness and influencing the popular debate about these issues. There is no doubt that if their attention can be attracted, people are engaged by techniques that stimulate them to think about and address local difficulties with transport and related issues.

12.35 Werner Brog described some of a set of interventions aimed at individuals, that TfL and the DfT are just beginning to explore, at the Assembly's Alternatives to Congestion Charging Seminar in January 2002. Individualised marketing, personalised journey planning, and community based techniques all appear not only to offer the potential for bringing about significant travel behaviour change but also, perhaps, some interest in connection with the need to engage, involve and influence the local community.

12.36 Steer Davies Gleave's stepchange project on behalf of the Scottish Executive, and with the involvement of several local authorities, is designed to pilot and develop a Scottish approach to secure travel behaviour change in Scotland, and engages people through community programmes and school and workplace travel plans. At its heart is the offer to willing participants of the opportunity to engage in a one to one "conversation" about their own perceptions on transport issues, before giving access to a range of different measures designed to help them make travel changes, particularly to reduce car use.

12.37 The work involves a team of people, some employed directly from the local community, who engage with the community concerned and take forward a series of interventions. There is an important public relations component to the project in which the objective is to promote the activity to the wider audience in an area. First signs are that this novel approach, the only example of its type that we are aware of, is proving its worth. Local businesses, service organisations and other interest groups are engaged in the project, and local initiatives for change given full expression.

12.38 Our work here and in Australia using such techniques indicates not only the potential to bring about progressive travel behaviour change, but also that it clearly does engage, involve and stimulate ongoing capacity building initiatives within the communities involved. A better prevailing understanding of the nature of local transport problems, and of possible means of resolution, is also an outcome of the work.

Effective Participative Consultation

12.39 The difficult problem for those charged with carrying out such consultation work is to decide the approach needed, how much of the work to do and how it can be done most cost-effectively. I hope this paper offers some insights as to key issues of relevance. From the above it is apparent that councils are being encouraged to see the prevailing norm in public consultation as including participation or "continuous community involvement". Local transport affairs are likely to feature in any of these strands of work. It makes sense, therefore, to ensure the links between these different consultation activities are noted on all sides, and for the different authorities carrying out such work to do so in a co-ordinated way. There is a need for joined up working if efficiency is a concern, and for the messages projected through the work to be consistent.

12.40 In particular, once it has been decided to implement a major bus or tram scheme, it is important for all involved to recognise that the objective of the consultation is to implement the scheme successfully. The process requires the detail of the scheme to be explained to people, for the authorities to be able to demonstrate that they have listened and, where appropriate, that suitable action to adapt the scheme has taken place. It is important to recognise that the purpose of the consultation at this stage, once it has been decided to proceed, is to see the scheme through successfully to implementation and not to reopen the whole debate about its validity. Hence, where objectors do seek to overturn the scheme at this stage, the need for those engaged on the consultation exercise is simply to be able to demonstrate they have followed good practice.

12.41 The following are principles are those that I have developed for my own use, in light of my own experience in such work. There is also a checklist of characteristics I have found to be useful in designing the consultation process for a scheme.

12.42 The principles, or pre-requisites, for me, are as follows:

- It is important to communicate the local transport problems, the potential solutions to them and the value of these towards achievement of the higher order objectives for the area, at all stages of the process.

- The consultation should always support the political process. A media monitor / news management approach is helpful, to be clear as to the messages put across and how they have been received. Opinion research, conducted to offer a statistically robust view of the public mind is very helpful.
- The consultation approach should engage and enthuse wherever possible.

12.43 The checklist I would argue should be as follows:

- The scheme should make a clear contribution to achievement of the "vision" and higher order objectives for the areas through which it passes. That is to say, its objectives must relate to those higher order aims.
- The consultation strategy must reflect the different stages of the planning and delivery process. Different facets of consultation are required at each stage, in particular a feasibility stage, and assessment or scheme comparison stage, and at an implementation stage. Each should be designed with a clear stated objective in mind.
- A communications and public relations strategy should be developed at an early stage. This should allow for the need to inform the key decision makers and the political process, as well as communicate the scheme to the wider public, business and other interests.
- There must be clarity as to who the scheme stakeholders are, and the ways in which they are to be consulted / involved.
- Ensure the process will stand up to scrutiny when others assess its comprehensiveness for the purposes of proving its adequacy.

12.44 In my mind, demonstration that there has been some ongoing activity involving the local community in relation to the local transport problems and the scheme itself helps to meet this final point of the list.

13. How best to make progress in London?

David Quarmby, Strategic Rail Authority and TfL Board

Introduction

- 13.1 I am the one speaker today who arrived with a blank sheet of paper! My task is to summarise the day's proceedings and offer an opinion - informed, I hope - of the way forward. In doing this, I am not necessarily representing the views of Transport for London (where I am a Board Member).
- 13.2 Today we have had an immensely interesting and diverse set of presentations, and I commend the Transport Committee and Martin Richards, their adviser, for bringing together such a breadth of experience and understanding of these issues.
- 13.3 We need to remind ourselves that London differs from the rest of the country in how its public transport is organised; and this is the lens through which we see other city's experiences. London has two main differences:
- First, we have the Mayor supported by a single organisation with the powers to determine transport strategy for the city, for securing the operation of all public transport modes (except national rail, where the Mayor has powers of direction); and the operation and management of the strategic road network;
 - Second, buses are not deregulated in London; we have a planned bus network, with the opportunity to integrate services, providing integrated ticketing, marketing, publicity and information and interchanges with other modes.

Outside London, where buses are deregulated, and responsibility for transport and traffic is generally fragmented, it is difficult to plan and deliver integrated transport. I am full of admiration for what has been achieved in many areas in cooperation with operators.

- 13.4 But I sometimes wonder if one driver of fixed rail investment outside London - eg trams - is the local authority, or the PTE, to get some certainty about the public

transport network, and provides a part of the system they can control. The corollary is that we have no excuse in London for not getting an effective, integrated transport system, making good investment decisions within available resources.

Solutions - looking for problems?

- 13.5 So to the topic of 'tram, trolley or guided bus?' and in relation to conventional bus services. There has been debate this afternoon about the 'image' issue - the extent to which fixed route or rail investment can build confidence for economic development. But much of the debate has the sense to me of solutions looking for the right problem. I freely confess to a prejudice of my own - I prefer to take a problem-led approach to this topic, where you analyse and understand the real transport and economic need, and then you design the solutions to fit; rather than a solution-led approach of arguing the relative merits of different types of transport system.
- 13.6 In this approach, I want to bring to bear three particular contributions from this afternoon's presentations:
- From Don Nutt, who not only showed us how the whole process of consultation and consensus-building has moved on, but how travel planning, individualised marketing and 'travel blending' - generating data and insights from the communities themselves - can and should really influence the design of solutions and schemes;
 - From Robert Bain, whose perspectives on factors which influence financeability, including markets' views on risk, should also guide us towards designing do-able solutions which use realistic estimates of timescale, cost, and revenue;
 - And from Peter Hendy, whose comprehensive presentation reminds us that different transport systems have very different timescales of delivery, and have very different capital costs, from up to £20m per km for trams, to as little as £1m-£2m per km for full bus priorities.
- 13.7 And finally we are reminded that with constrained budgets, it's about the best way to spend a given sum of money addressing a transport problem, not necessarily pursuing the "best" solution.
- 13.8 Let me return to the contention that "fixed route investment" gives a firmer and more confident basis for economic development and regeneration. Most people believe it is worth something. John Cartledge may have put his finger on it when he spoke of the 'certainty of continuing provision'. When you are standing at a tram stop looking at the rails, you say to yourself 'they cannot have invested in all this and not actually plan to run it for the future?' The truth is you may not need a steel wheel on steel rail to achieve that; John Henkel suggested that a similar confidence could be created by investment in segregated busway.
- 13.9 But the question remains: are the levels of patronage intrinsically higher with a fixed route system (tram or segregated bus) than you can achieve with a conventional bus-type operation offering the same frequency and reliability of operation as a tram? Carmen Hass-Klau argued that they are; and there was some consensus in the speaker panel that perhaps up to 10% of patronage could be attributed to this point.
- 13.10 Some would question whether you can, in fact, achieve the same frequency and reliability on conventional bus operation as with a fixed route system, and that fixed route investment and segregated or priority rights of way are necessary to

deliver the enhanced levels of i) predictability and length of waiting time; and ii) predictability and length of journey time. And this is what is driving up to 10% higher patronage.

13.11 But even if this is so, we are inevitably led to the question - particularly relevant when you have a fixed budget - is there an 80/20 rule at work here? That is, can you achieve (say) 80% of the benefit, or performance improvement, for (say) 20% of the cost? I have a suspicion that bus-based solutions, particularly in a bus-friendly road environment of the kind we have increasingly achieved in London over the past few years, may well be like this.

13.12 But let me not fall into the trap, which I accuse others of falling into - of trying to compare solutions unrelated to the specific transport problems we are addressing. Let us now ask where this analysis leaves TfL.

Where does this leave TfL?

13.13 Let us just take stock of the bus network we have right now in London. First, there has been a step change in the quality and reliability of bus service since the creation of the GLA and TfL, as a consequence of the Mayor's policy. It is common conversation among Londoners that the service is better, and this has been reflected in significantly higher patronage.

13.14 This has been aided by the introduction of a consistently high quality of modern vehicle, with low floors and convenient layout, which has changed the image of the bus in London; and the introduction on key routes of articulated vehicles with off-bus payment has helped with this.

13.15 All this, however, is at a significant financial cost, the longer term implications of which are currently being addressed in the government spending review.

13.16 The network of services is dense, ubiquitous and multidirectional, it has evolved and been continuously adjusted to meet local and middle distance travel needs across all parts of London. In spite of the advantages this offers, it has the unfortunate consequence that the network is very difficult to 'read' or grasp: in this it is quite unlike the Underground, the DLR or even Croydon's Tramlink. Even irregular users and non-users have a mental map of the Underground, and many have a general sense of where the DLR and the Croydon tram go. But who, apart from the regular users, knows where the 53, the 82 or the 27 buses go?

13.17 One of the reasons for enthusiasm for fixed route investment is that this can be presented to give visibility and readability. Yet there is no reason in principle why a 'strategic' bus route - one which by its design and routing serves middle and longer distance travel demand where flows are potentially more intense - cannot be given the same visibility and readability.

Travelling around and across suburban London - a strategic network?

13.18 Which brings us back to my starting point - what transport problems are we trying to solve? It is now widely recognised that London's traffic and transport problems are growing faster and more unmanageably in suburban and outer London than in the centre. While congestion charging in central London has been both effective and widely accepted because of the availability of good public transport alternatives for travel to and within Central London, no similar solution will work

for the major town centres of suburban London.

13.19 And yet it is the journeys across inner, middle and outer London which a) vastly outnumber the journeys to and from the centre; b) are largely made by car for commuting, business, shopping and so on; c) where public transport - with a few key exceptions - cannot offer an acceptable alternative where the choice exists. This is where frustration is building, where expectations are rising about finding solutions, and where the economy of London is most at risk from businesses leaving the capital; because of the impossibility of traffic congestion and travel movement. But the density of demand is too low for conventional rail solutions.

13.20 I believe there is an opportunity to conceive of a strategic cross-suburban network, visible and readable on a London-wide basis, linking the major centres and providing high quality service into and out of these centres. The approach should not, however, be just drawing lines on a map of London; the process is to:

- explore major corridors of movement into, out of and between the major suburban centres, and levels of demand
- identify strategic links into, out of and between major suburban centres,
- evaluate these links for volume and intensity of demand, identifying different types of transport system which could meet those, from express bus on non-segregated routes right through to a full tram solution
- evaluate feasibility and timescale with capital costs, patronage revenue and operations costs, and value for money, link by link; then evaluate affordability of a progressive plan offering in time a network, within currently foreseen limits of affordability;
- whether a fixed route investment or a bus solution, plan to present and promote the system to the public and to passengers to be as visible and readable as a fixed route transport system.

13.21 In practice, different transport solutions will tend to pop up as prima facie the preferred mode at different levels of demand and in different practical circumstances of route availability, width of roads and corridors, topography etc. It is no accident that the preferred solution now being taken forward for the Uxbridge Road is a tram, and for Greenwich waterfront is a high quality bus scheme based on part segregation/part bus priority. In many cases it is likely that 80/20 solutions can be found; ie that in many cases a high frequency express bus in a 'high bus priority' operation will emerge as the best value solution. In conditions of constrained affordability that may even be an alternative solution for the Uxbridge Road on further examination.

In conclusion

13.22 So it is horses for courses - no one system is universally right. But what we need to do - whichever system solution is adopted - is to ensure the chosen schemes are optimised. Whether a segregated bus, tram or express bus along existing roads is chosen, design a holistic and integrated scheme, incorporating common standards about the design and configuration of stops, with facilities and real time information, about promotion and information, and about integration with other modes (eg rail at stations). The aim is a sense that you join the system when you

arrive at the stop.

13.23 We know that Peter Hendy is planning to apply such standards to the whole of the bus network, which is to be applauded; what I would also be striving for here is a sense of a visible, readable strategic network, offering high quality and relatively high speed for middle distance journeys across suburban London where there is no rail or Underground route.

13.24 Finally, in taking this forward, we should again recall what Don Nutt told us about major advances in practice and philosophy of consultation and involvement of communities in progressing transport schemes. I am not personally close to the West London Tram scheme and the process, but I will personally comment that - for a scheme which is supposed to benefit the area it serves - if the level of unhappiness not only about the scheme but about the process too is as high as I hear it to be, then the chances are the process could have been a lot better, for a start. Whether the scheme itself continues to be the right solution designed the right way and with the right level of priority, in today's constrained budget situation, is an issue on which the Board of TfL has yet to take a view.

13.25 So in conclusion - take a problem-led, not a solution-led, approach, by:

- understanding and analysing the transport need and demand, before
- moving to the choice and design of transport systems which meet that demand with the best combination of value for money and affordability
- then using up to date consultation and involvement processes to help design the scheme at micro level, to ensure that it meets and matches local needs as closely as possible.

Annex A: Biographies of speakers

Peter Hendy

Peter Hendy joined Transport for London (TfL) in January 2001. He is currently the Managing Director of Surface Transport which embraces London Buses (and East Thames Buses, the public sector operator); Street Management which includes responsibility for operating and improving conditions for all road users on the Transport for London Road Network; Croydon Tramlink; the Public Carriage Office, which regulates taxis and private hire vehicles; Dial-a-Ride; Victoria Coach Station; passenger services serving TfL piers on the River Thames; and TfL's corporate interest in Transport Policing and Enforcement. Prior to joining TfL, Peter was previously Deputy Director – UK Bus for FirstGroup plc. In this role he was responsible for FirstGroup bus operations in London and southern England, bus development and policy issues and light rail, including the operation of Croydon Tramlink.

Carmen Hass-Klau

Professor in Civil Engineering: Transport and Public Transport Systems in Europe at the University of Wuppertal, Germany and Proprietor of Environmental and Transport Planning a research organisation based in Brighton, specialising in the field of public

transport, pedestrianisation, the environment, cycling and traffic calming. She completed an Engineering Degree in Urban and Regional Planning at the University of Berlin and an Msc in Urban and Regional Planning Studies and a PhD in Geography from the University of Reading. Most of her research and publications have covered international transport issues. She has been an adviser to the British and German governments and served on the Swedish Transport Research Board. She is currently a Project Visiting Fellow to the Warren Centre, University of Sydney, Australia.

Bill Tyson

Bill Tyson is an economist and has worked as a University Lecturer, independent consultant and since 1990 in a senior role in transport planning in the Greater Manchester Passenger Transport Executive (GMPTE). He made the patronage estimates and carried out the economic appraisal of the Metrolink system in Manchester – and got the forecasts wrong – it has been far more successful than anyone expected. He has been involved in the appraisals of subsequent phases of Metrolink and many other public transport investments. He led GMPTE's witnesses, successfully to date, in no less than seven Public Inquiries into Metrolink and other transport investments in Greater Manchester where he has had to present and defend the policy underlying the schemes and their impacts and benefits. He was awarded the OBE for services to transport in 1994 and was one of the Deputy Prime Minister's external advisers on the 1998 Transport White Paper.

Robert Bain

Robert Bain is an Associate with the Infrastructure Finance Ratings division of Standard & Poor's in London. As part of the Transportation Team he covers the toll road, urban rail and heavy rail sectors. For 15 years Robert was a travel demand forecaster for a leading international transportation consultancy. Robert is currently completing a part-time PhD at Leeds University's Institute for Transport Studies. His research field is the credit assessment modeling of transportation projects.

John Henkel

John Henkel has worked at Metro (West Yorkshire Passenger Transport Executive) since 1995 and was appointed as Director of Passenger Services in June 2001. He has wide-ranging responsibilities, including strategic planning, procurement of bus and rail services, the development of new services and facilities and the provision of passenger information.

Don Nutt

Don worked in local government before joining Steer Davies Gleave in 1988. Consultation and public relations work feature in his scheme/strategy implementation work. His focus today is on travel behaviour change. He thinks there is potentially a synergy here with an involvement approach. He led work in the 1990s to explain the potential role of the bus in Brighton and Hove and promote a new transport and environment strategy; then work to design and implement the major bus priority projects

there, featuring segregated bus ways in a priority corridor across the town centres. He is currently working to develop a model travel behaviour change approach in Scotland on behalf of the Scottish Executive, in the Stepchange project, and on a travel plan development project for 19 Hospital Trusts in central London on behalf of TfL.

David Quarmby

David Quarmby is currently Deputy Chairman of the Strategic Rail Authority and a Board Member of Transport for London. He was Chairman of the British Tourist Authority 1996-2003; and for the previous 12 years had been a Main Board Director of Sainsbury's (Joint Managing Director from 1988). His long term career interest has been in transport - as a Board Member of London Transport 1975-1984 (Managing Director Buses from 1978), and from 1970 Director of Research and then Chief Planning Officer in LT. From 1966 to 1970 he was an Economic Adviser at the Ministry of Transport, and prior to that a lecturer at Leeds University, where he worked on modal choice models for his PhD. His recent return to transport started as non-executive director of the DfT's Management Board in the mid 90's, and then as Chairman of the Docklands Light Railway 1999-2001.

Annex B: Orders and translations

For further information on this report or to order a bound copy, please contact:

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If you, or someone you know, needs a copy of this report in large print or Braille, or a copy of the summary and main findings in another language, then please call 020 7983 4100. You can also view a copy of the Report on the GLA website: <http://www.london.gov.uk/approot/assembly/reports/index.jsp>.

Annex C: Principles of London Assembly scrutiny

The powers of the London Assembly include power to investigate and report on decisions and actions of the Mayor, or on matters relating to the principal purposes of the Greater London Authority, and on any other matters which the Assembly considers to be of importance to Londoners. In the conduct of scrutiny and investigation the Assembly abides by a number of principles.

Scrutinies:

aim to recommend action to achieve improvements;

are conducted with objectivity and independence;

examine all aspects of the Mayor's strategies;

consult widely, having regard to issues of timeliness and cost;

are conducted in a constructive and positive manner; and

are conducted with an awareness of the need to spend taxpayers money wisely and well.

More information about the scrutiny work of the London Assembly, including published reports, details of committee meetings and contact information, can be found on the GLA website at <http://www.london.gov.uk/assembly/scrutiny/index.jsp>

Annex D: List of Transport Committee publications

The Transport Committee has also produced the following scrutiny reports, which can be downloaded free at: <http://www.london.gov.uk/assembly/reports/transport.jsp>

Congestion Charging: A First Review February 2004

Congestion Charging - Westward Expansion? December 2003

Access Improved Progress on parking in Central London for people with mobility problems, November 2003

Building bridges? A London Assembly response to the Thames Gateway Bridge consultation, August 2003

Flying into the future - The Transport Committee's response to the Government's consultation on air transport in the south-east, July 2003

Transport in Paris - A delegation's visit to Paris, July 2003

An Accident Waiting to Happen? - A Transport Committee investigation into the Chancery Lane derailment, June 2003

Getting the Public On Board - A Transport Scrutiny Update, April 2003

Mind the Gap - between what Londoners want and what Londoners get - Report of the Future Tube Priorities Investigative Committee, January 2003

Congestion Charging: the public concerns behind the politics, December 2002

Access Denied? - parking in Central London for people with mobility problems, July 2002

Alternatives to Congestion Charging, April 2002

Transport for All of London, March 2002

All Change? - Report of the Transport Operations Scrutiny Committee's Informative Review of Mainline Rail Services in London, February 2002

Safer Routes Home, July 2001

Improving London's Bus Services, June 2001

Scrutiny of the Mayor's draft Transport Strategy, April 2001

Scrutiny of the Mayor's Congestion Charge Proposals, November 2000