East London Transit

Summary Report

Transport *for* London

This report has been produced by
TfL Integration

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Foreword

In 1997, following a series of strategic studies into the potential for intermediate modes in different parts of outer London, London Transport (LT) commenced a detailed joint assessment, under the title "East London Transit" of their potential in two of the most promising areas identified in the previous studies - Barking and Romford. In July 2000, LT's planning functions were incorporated into Transport *for* London (T*f*L).

A major factor in deciding to carry out a detailed feasibility study for East London Transit has been the commitment shown by the affected local authorities – Barking & Dagenham, Havering, Newham and Redbridge – to assist in the development of the project and in particular their willingness to consider the principle of road space re-allocation in favour of public transport. This support, as well as that of other bodies including the East Thames Side, Barking Roding Valley and Thames Gateway London Partnerships, is acknowledged by T*f*L. The ongoing support of these bodies will be crucial if the proposals are to proceed.

A major objective of this study has been to identify in much greater detail than was previously possible, the traffic management measures that would be required to allow East London Transit to have a high level of priority over other traffic and which would be sufficient to shift modal choice substantially towards public transport, particularly from the private car.

It is T*f*L's view, supported by the studies undertaken, that the securing of this priority will be critical in determining the success of East London Transit. Although T*f*L recognise that the traffic management measures required to secure this priority are likely to generate considerable debate within the affected area, T*f*L believe that the impacts of these measures on other traffic would not be severe and could be managed in a way that would enhance the overall environmental quality of the area. In addition, T*f*L believe that in general the traffic impacts arising from Transit would likely to be small in comparison to those that will arise from the additional traffic generated by the various regeneration projects already under way or planned in the Thames Gateway area.

T*f*L believe that the results of this study show that there is a good case for investment in a high priority surface intermediate mode network in East London, but this does require acceptance of some adverse impacts on general traffic. Such a network could make a major contribution towards regeneration in the Thames Gateway area by providing an attractive alternative form of transport to the car. It also potentially links up with the Greenwich Waterfront Transit proposals south of the River Thames via the proposed Thames Gateway Bridge if it proceeds. The potential of Transit can only be realised if local authorities wish to support the proposals, and T*f*L now invite them to respond to this challenge with vision.

Contents

Executive summary

One way of significantly improving the quality, safety, accessibility and efficiency of public transport is through intermediate mode schemes. Transport *for* London, working together with the local authorities, have recently completed comprehensive feasibility and evaluation studies of the potential for four intermediate mode schemes in London.

This report sets out the results of the studies for the proposals in east London, which have been developed in partnership with the London Boroughs of Barking & Dagenham, Havering, Newham and Redbridge. Known as East London Transit, the studies have established and evaluated options for a 53 km bus-based scheme, serving regeneration areas, town centres and residential areas throughout a large part of east London. There is also the option of linking up with intermediate mode proposals south of the River Thames via the proposed Thames Gateway Bridge. The key results of these studies are:

Transport and Economic

- Forecast annual ridership would be between 33 and 39 million per annum.
- Between 2.7 and 3.4 million fewer car trips per annum would occur due to the combined effect of better public transport and proposed traffic management measures.
- Public transport users would experience a net reduction in travel times of between 2.9 and 4.5 million passenger hours per annum, and there would be an increase in transport use of between 27 and 35 million passenger kilometres – due to mode shift from car users and new generated public transport trips.
- The public transport priority measures would result in private car users experiencing a net increase in travel times of approximately 1.7 million vehicle hours per annum.
- Capital costs could be up to £270 million for the full alignment with trolleybus technology. Other bus based options could reduce this cost, but there would also be a reduction in benefits.
- The benefit-cost ratios for the full alignment are 1.4:1 for diesel bus and 1.6:1 for trolleybus. In the absence of the highway effects the ratios would increase to 2.9:1 for diesel bus and 2.8:1 for trolleybus.

Environmental

- Overall the scheme would provide a moderate level of environmental benefit. In net terms 1000 properties would benefit from reductions in noise, local and global emissions from the introduction of transit. The scheme would reduce CO_2 and SO_X emissions by 11,685 and 7 tonnes per year respectively. Overall, energy consumption would reduce by 158,000 GJ per year.
- Some carriageway realignments would be required, but no property acquisition or demolition should be necessary. 3,400 properties along the alignment would be affected during the construction work.

Safety

- Overall there would be a slight improvement in safety, equivalent to a 0.8 reduction in fatalities per annum. This is due to the modal transfer from private to public transport and the corresponding reduction in the number of car journeys in the area.

Accessibility

- Improved public transport services would bring between 240,000 and 590,000 extra people within 30 minutes of local centres.
- Overall, community severance would be reduced through the diversion of traffic away from streets with significant pedestrian flows on to roads with little or no pedestrian traffic.
- New stopping restrictions affecting approximately 2,200 properties would be required to provide priority for Transit. Access for servicing would be maintained to all commercial properties.

Integration

- Transit would be an important component in assisting the Boroughs regeneration aspirations by linking the development sites and areas of deprivation into existing residential, commercial and transport nodes in East London.
- Up to 38,000 people living in areas with below average deprivation scores would benefit from increased public transport accessibility from Transit.
- Improved public transport services would bring around 300,000 extra people within 30 minutes travel time of key development sites in the area.

Conclusions

East London Transit would provide significant benefits in assisting regeneration, improving public transport accessibility and improving the environment. The main factor in determining these benefits is the introduction of traffic priority measures as these ensure that public transport services can operate without delays due to traffic congestion and parked vehicles. However it is also vital that public transport services are adapted and improved to take full advantage of these measures. The studies show that alternative bus technologies including diesel and trolleybuses would be suitable means of providing this. It is also vital that other conventional bus services in the corridor are rationalised to take advantage of the segregation and priority measures, where appropriate, but to avoid wasteful duplication of capacity.

Way Forward

T*f*L and the local authorities have decided to proceed to the next phase on the development of East London Transit – preliminary public consultation. The purpose of the consultation is to establish what level of support exists for Transit from the public as well as potential private sector partners. It will be used to inform the formal decision to be taken by the Mayor, TfL and the Boroughs as to whether and when the East London Transit should be developed, and if so what routes and technology should be taken forward.

1 Introduction

In 1997, LT commenced in partnership with the local authorities of Barking & Dagenham, Havering, Newham and Redbridge a detailed assessment of the potential for an intermediate mode network in east London centred around the town centres of Barking and Romford.

This assessment followed on from a number of previous studies that had reduced a list of nearly fifty potential corridors and areas suitable for intermediate modes in outer London down to the most promising four, including Barking and Romford. A major factor influencing the decision to carry out a detailed evaluation of the Barking and Romford intermediate mode networks was the support offered by the relevant local authorities, in particular their willingness to consider the re-allocation of highway capacity in favour of the mode in the affected corridors.

This aim of this detailed evaluation stage – known as the Project Definition stage – has been to produce detailed designs and assessment of the costs and benefits of providing an intermediate mode network in Barking and Romford, in order to help LT's successor T*f*L, the local authorities and other stakeholders to decide whether or not this project should proceed to the next stage of development. A further aim has been to define in more detail the types of traffic management measures that would be required to provide the intermediate mode with a significant level of priority over private road vehicles and to help the local authorities understand the impacts of introducing these measures.

The Project Definition stage of the Barking and Romford intermediate mode project (known as East London Transit) has now been completed and its main conclusions are summarised in this report. Following this introduction, the remainder of this report is divided into eight sections:

- An introduction to intermediate modes
- A summary of the work carried out to date on intermediate modes in London
- A description of the objectives of the East London Transit project
- A description of the current East London Transit project
- A description of the project evaluation process
- A summary of the main results of the evaluation process
- Conclusions and recommendations
- A discussion on the proposed way forward for the project

2 What are intermediate modes?

London's public transport network is largely made up of heavy rail systems (Underground and Railtrack), bus services and taxis. However, throughout the world, a number of alternative transport modes, known as intermediate modes, are being introduced in a variety of situations, in a bid to improve the image and performance of public transport and to attract private vehicle users on to public transport. Intermediate public transport modes are those with costs and capacities lying between heavy rail and bus. They include light rail systems, tramways, busways (with and without vehicle guidance), trolleybuses and unconventional bus technologies such as dual mode electric/diesel vehicles (duobuses).

Within London, the Docklands Light Railway (DLR – a fully segregated automatic light railway) and Croydon Tramlink (light rail with street running) are examples of intermediate modes. Outside London, new light rail systems have been constructed in Manchester, Sheffield and Birmingham, while guided buses run in Leeds and Ipswich. Recently, the Manchester light rail system (Metrolink) was extended and construction of a new light rail system serving Nottingham has commenced. Following the successful introduction of sections of guided busways in Leeds, plans are now being developed to extend this system to other parts of the city.

Although intermediate modes have a wide range of characteristics, there are no hard and fast rules in assessing which is the most appropriate in any given situation and as a result, in every case, individual site characteristics, local policy objectives and priorities need to be taken into account in selecting the preferred type. For example, with levels of emissions, diesel vehicles produce particulates at point of use, while electric vehicles are emission-free at the point of operation. However many electric vehicles impose visual intrusion by requiring overhead electrification equipment in the streets while the construction-related impacts of some fixed track systems are very high.

Light rail – Croydon Tramlink

Guided light transit – Paris

Guided bus – Rotterdam

3 Background to intermediate mode studies

There is now widespread support for the improvement of public transport in London and the provision of an attractive alternative to the car, within the context of improved accessibility and sustainable economic development.

Within this policy context, the importance of the bus, both in terms of the number of passengers carried and its inherent flexibility in meeting a wide range of transport roles, has been firmly acknowledged in recent key policy documents. The development of the Priority (Red) Route network, on trunk and main roads, and the London Bus Priority Network (LBPN), on main and secondary roads, has formed the basis of a London-wide strategy to protect buses from the worst effects of congestion.

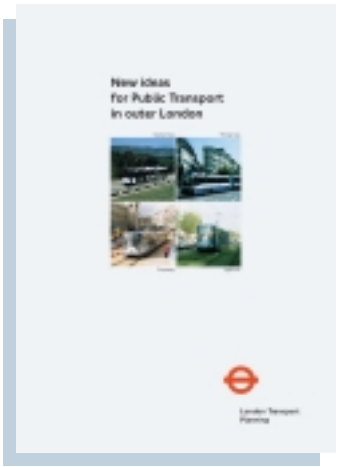
Whilst the Priority (Red) Routes and LBPN programmes are already delivering significant benefits to passengers, these programmes have been limited by the degree to which it has been deemed acceptable to restrain other road users. Local authorities however, are now required to prepare statements on how they will reduce traffic and improve air quality in their areas and are now developing measures to achieve this.

These measures will allow road space to be re-allocated in favour of public transport and permit the introduction of more radical forms of priority. Although this approach is often portrayed as being an attempt to 'punish' car drivers, in reality it reflects the fact that the level of priority given to surface public transport primarily determines its performance and therefore its attractiveness as an alternative to the private car. As a result, although road space re-allocation may cause some delays to car users, it should also lead to an overall improvement in both the efficiency of the transport network and the environment.

Tram only street – Strasbourg

Bus priority – Shepherd's Bush, London

New ideas for Public Transport in outer London

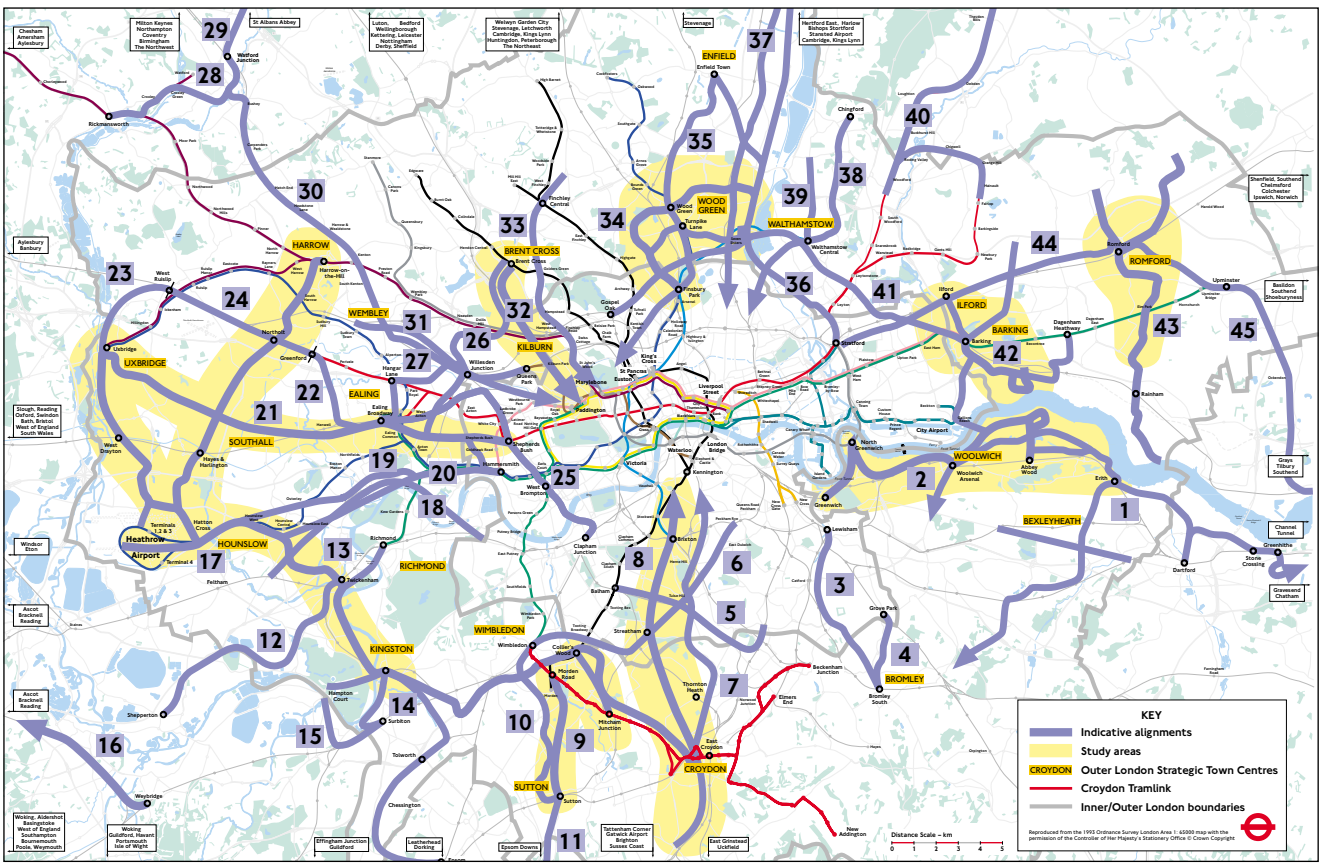


In 1994, faced with a growing willingness from both national and local politicians to consider in principle the issue of road space re-allocation, along with the successful implementation of the Docklands Light Railway (DLR) and the development of the Croydon Tramlink project, LT commenced a strategic review of possible areas and transport corridors in outer London that might benefit from the introduction of intermediate modes. Outer London is currently the area of London of greatest challenge to public transport – residential densities are low, car ownership and use are high and growing, trip patterns are diverse and the public transport market share is the lowest in London.

Through consultation with the outer London Boroughs and analysis of present-day demand on the bus and rail networks, around 60 ideas were generated which were then grouped into 45 areas for review. These 45 areas were then assessed for their potential for intermediate modes, using a largely qualitative method and comparative framework, against indicators agreed with the local authorities.

In June 1995, LT published the report *New ideas for Public Transport in outer London* which identified the nine most promising areas for intermediate modes in outer London and recommended that these should be assessed in further detail.

Intermediate Modes in London: initial corridors for review



New ideas for Public Transport in outer London – Development of Case Studies

The nine case studies identified in the 1995 report were developed to a greater level of detail by LT in 1996. For each of the areas, outline engineering design and cost estimation work was carried out and demand forecasts and preliminary environmental impact assessments produced. As in the previous study, the various schemes were assessed on a consistent basis against agreed objectives, which were developed in consultation with the relevant local authorities and from current policy objectives.

The results of the studies into the nine case studies were published by LT in September 1996 in *New ideas for Public Transport in outer London – Development of Case Studies*. This study concluded that overall there appeared to be a strong case for investment in intermediate modes in a number of these study areas:

Study area	Conclusion
Thamesmead/ Greenwich	High potential for segregation in development areas, consider bus-based system
A23 corridor	Consider track-based system, but major roadspace re-allocation problems. Consider Underground extension.
Edgware Road	Consider track-based system, but roadspace re-allocation problems
Wood Green	Consider bus-based system
Barking	High potential for segregation in development areas, consider bus-based system
Tramlink extensions	Consider track-based extensions to Purley Way and Sutton
Heathrow Orbital	Consider bus-based system
Uxbridge Road	Consider track-based system
Romford	Consider bus-based system

Following the publication of *New ideas for Public Transport in outer London – Development of Case Studies*, LT carried out a consultation exercise with the affected local authorities to gauge their reaction to the report and decide how to proceed further.

LT realised that it would be impossible to proceed further with all these schemes at the same time and that their success depended upon local authorities agreeing to consider seriously the issue of road space re-allocation from private to public transport. As a result, it was stipulated that schemes would only proceed further if local authorities would give this commitment towards roadspace re-allocation as well as contributing to the financial cost of further planning work on the projects.

At the end of this consultation process, four of the study areas were identified for further development work – Barking, Romford, Uxbridge Road and Thamesmead/Greenwich. This further development stage, the 'Project Definition' stage commenced in late 1997 under the joint control of LT and the relevant local authorities. The aim of this stage in the project was to identify the detailed traffic management issues required to secure the priority for the intermediate mode and to produce a detailed assessment of the likely costs and benefits of constructing the intermediate mode.

"Efforts should concentrate on exploring a new service using high quality, low emission vehicles which could penetrate the pedestrian areas, possibly with guidance. Outside the town centres, a package of on-street priorities could be developed for joint use with conventional bus services."

Source: Conclusions on Barking and Romford intermediate mode schemes, New Ideas for Public Transport in outer London - Development of Case Studies, LT, 1996.

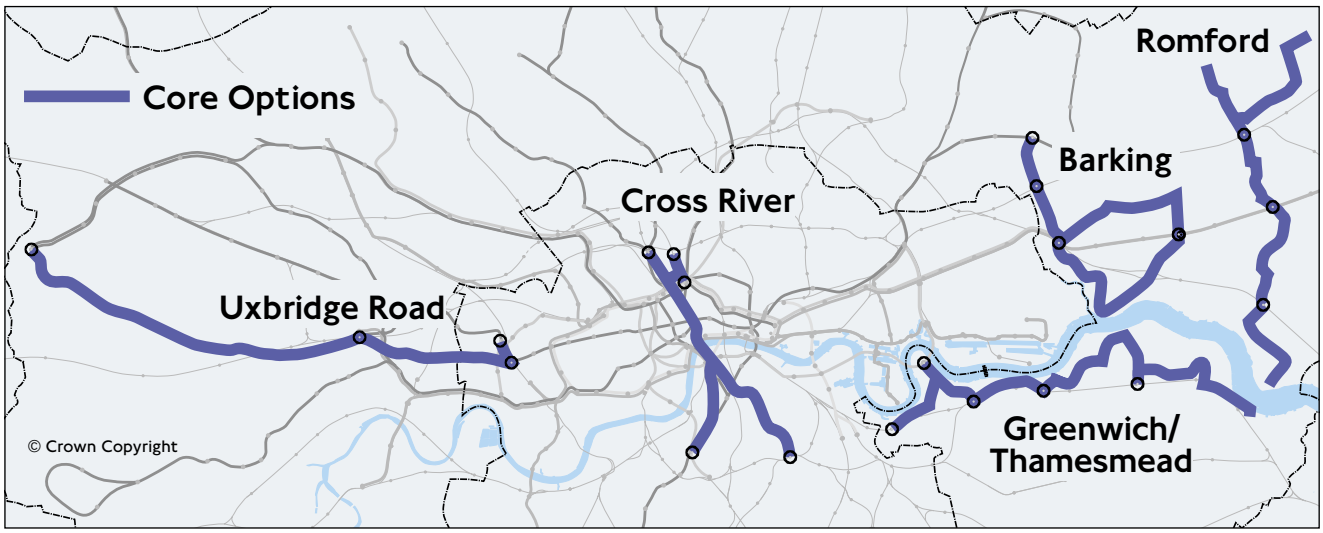
Along with these four outer London projects, TfL has also developed the central London Cross River Transit project. This intermediate mode project would run between Waterloo and Euston, with two extensions on the southern end to Peckham and Stockwell and two extensions at the northern end to Camden Town and King's Cross. This project has been developed to the same level of detail as the four outer London studies and is the subject of its own report.

In early 2001, all five intermediate mode projects were included within the Mayor's Draft Transport Strategy for London. This document expressed support for the principle of these projects as well as recognising that their implementation would require further detailed planning and consultation.

London Bus Initiative

Apart from the intermediate mode studies discussed here, other projects are underway to enhance the attractiveness of bus travel in different parts of London. The most significant of these projects is the London Bus Initiative (LBI) which aims to improve the quality of bus travel on 27 strategically important bus routes, collectively called BusPlus routes. Under this project, each of these routes will have a combination of measures applied which as well as bus priority measures will include the introduction of low floor vehicles and improvements to the accessibility of bus stops. A number of these BusPlus routes serve corridors such as the Edgware Road and between Harrow and Heathrow Airport which were examined as part of the earlier strategic intermediate mode corridor studies and identified as having significant potential.

Intermediate Modes in London: schemes identified for Project Definition stage in 1997



4 Objectives and route derivation

At each stage of the study of the potential for intermediate modes in outer London, an objective-led evaluation framework was used to test the performance of the different possible schemes against the planning and transport objectives for the area.

In the case of the area served by East London Transit, the objectives were developed in consultation with the London Boroughs of Barking & Dagenham, Newham, Redbridge and Havering and from current policy documents such as Unitary Development Plans (UDPs). Although they are interrelated, these objectives can be broadly divided into planning and transport related areas.

Planning objectives

- To improve general public transport accessibility in the local area
- To improve the environment
- To support the economic activity of local centres
- To encourage sustainable development and aid regeneration.

Transport objectives

- To improve safety and transport quality in the local area
- To improve the transport efficiency of the area
- To provide a cost effective and worthwhile strategy
- To provide improved links to and through regeneration areas
- To improve public transport accessibility to key strategic locations in the area
- To improve journey times and reliability of public transport in the area.
- To attract car users to public transport

Romford town centre

Valentines Park

Gallions Reach

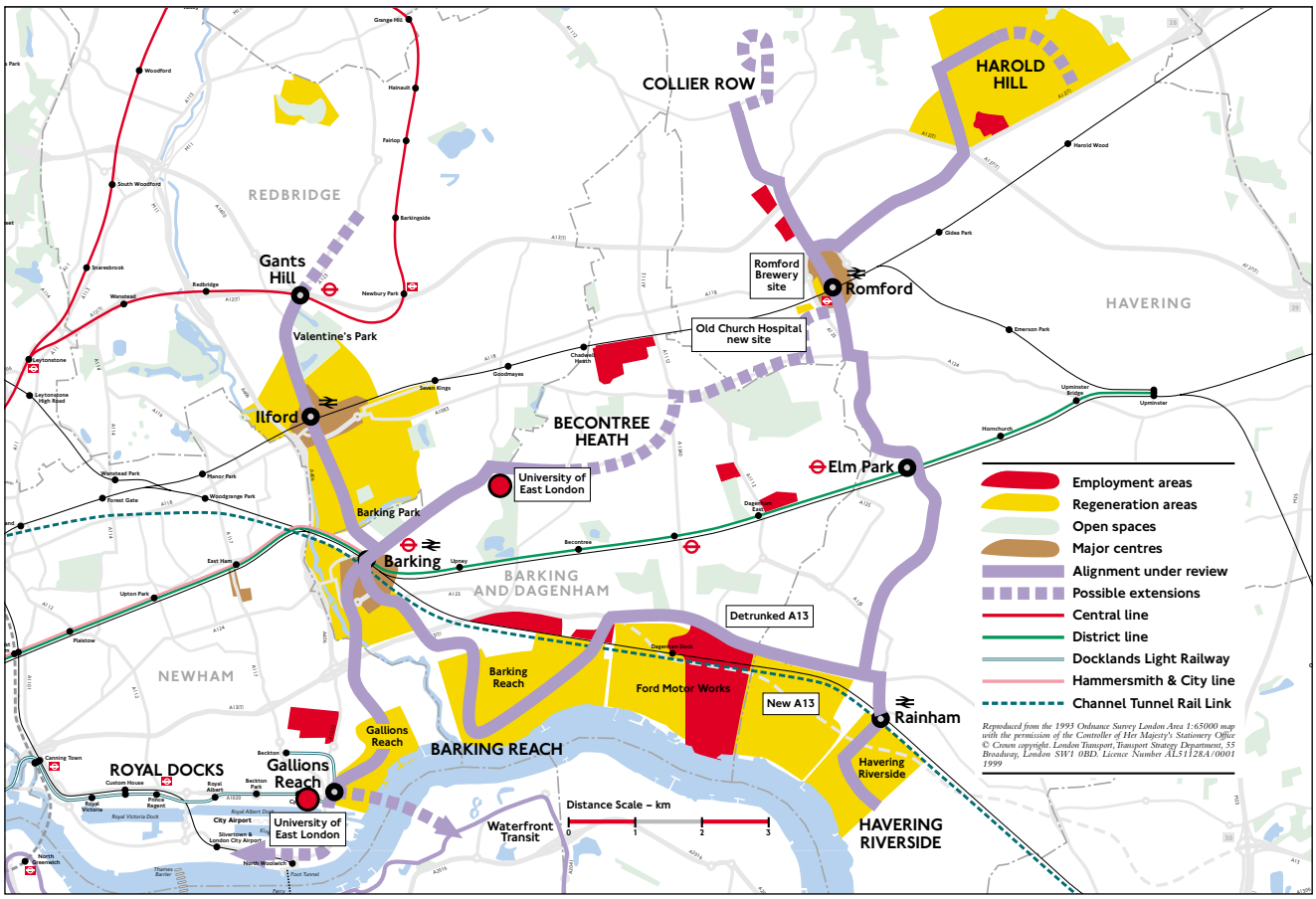
In order to determine the alignment to be evaluated, local centres were identified using the London Planning Advisory Committee's (LPAC) definition of Strategic Town Centres with additional inputs from the relevant local authorities, who also identified development sites, transport nodes and other centres such as hospitals and universities.

Key centres and development sites identified in the Barking and Romford area are shown in the map below.

Within their UDPs, each local authority sets out its policies and proposals for the development and use of land, including those relating to transport and traffic management.

The UDPs of the local authorities emphasise the desire to promote and improve public transport as a catalyst in regenerating derelict areas. The local authorities believe that large employment-generating developments should be adequately integrated with the public transport and are supportive of existing town centres.

Key centres and development sites identified in the Barking and Romford area



"The great new challenge in east London is the Thames Gateway area. Development of the Gateway raises the inter-related question of how its economy will develop and what new transport infrastructure will be needed to support it."

Source: Planning London's Transport, LT, 1995

Consultation with the local authorities showed that of all the stated objectives of the project, the major priority for Transit was to tie in the emerging development sites along the River Thames into the existing communities in East London. Transit would provide improved accessibility from the rest of East London to those development sites envisaged as being major employment centres such as Havering Riverside while at the same time providing an attractive connection from emerging residential sites such as Barking Reach (4,500 new homes) into the existing commercial and transport nodes in the area. This objective has also meant that the objectives of Transit have gained support from the Thames Gateway, the Barking Roding Valley and East Thames Side Partnerships, who are working to secure the regeneration of many areas on the Transit alignment.

The Transit alignment studied in the Project Definition stage of the project is slightly different from the core alignments for the Barking and Romford schemes shown in the earlier 1996 report. In particular a link from Barking town centre to the east end of the Royal Docks and running through the Gallions Reach development area was added to reflect the results of a separate study carried out by LT in 1996 which suggested that this may be a route with potential for intermediate modes. In addition, a new link between the two previously separate Barking and Romford projects was added using the A13 corridor in the south of the study area, and serving a number of development sites along it.

During the Project Definition stage of the project, further refinement of the core alignment route was carried out. In particular it was realised that truncating the route at certain locations such as Gants Hill and the University of East London (UEL) Longbridge Road campus would cause major problems by severing passenger demand for through links. As a result, the Transit alignment was extended to more logical bus terminal points and in the case of the Longbridge Road it was decided to extend Transit right through to Romford.

In addition, early Project Definition work demonstrated the low levels of passenger demand on the Transit spur to Dagenham Heathway, along with difficult traffic management measures required to provide the necessary level of Transit priority. As a result, no further work was carried out on this stretch of the alignment and it is not included within the evaluation of the project.

University of East London Royal Docks campus

5 The proposal

The aim of the Project Definition stage was to define the Transit system in greater detail than done previously. In *Tf*L's view this involved identifying an alignment and then developing the traffic management measures necessary for achieving high levels of priority for the Transit. This allowed the benefits of the traffic priority measures to passengers to be calculated as well as identifying the effects of these measures on private vehicle traffic.

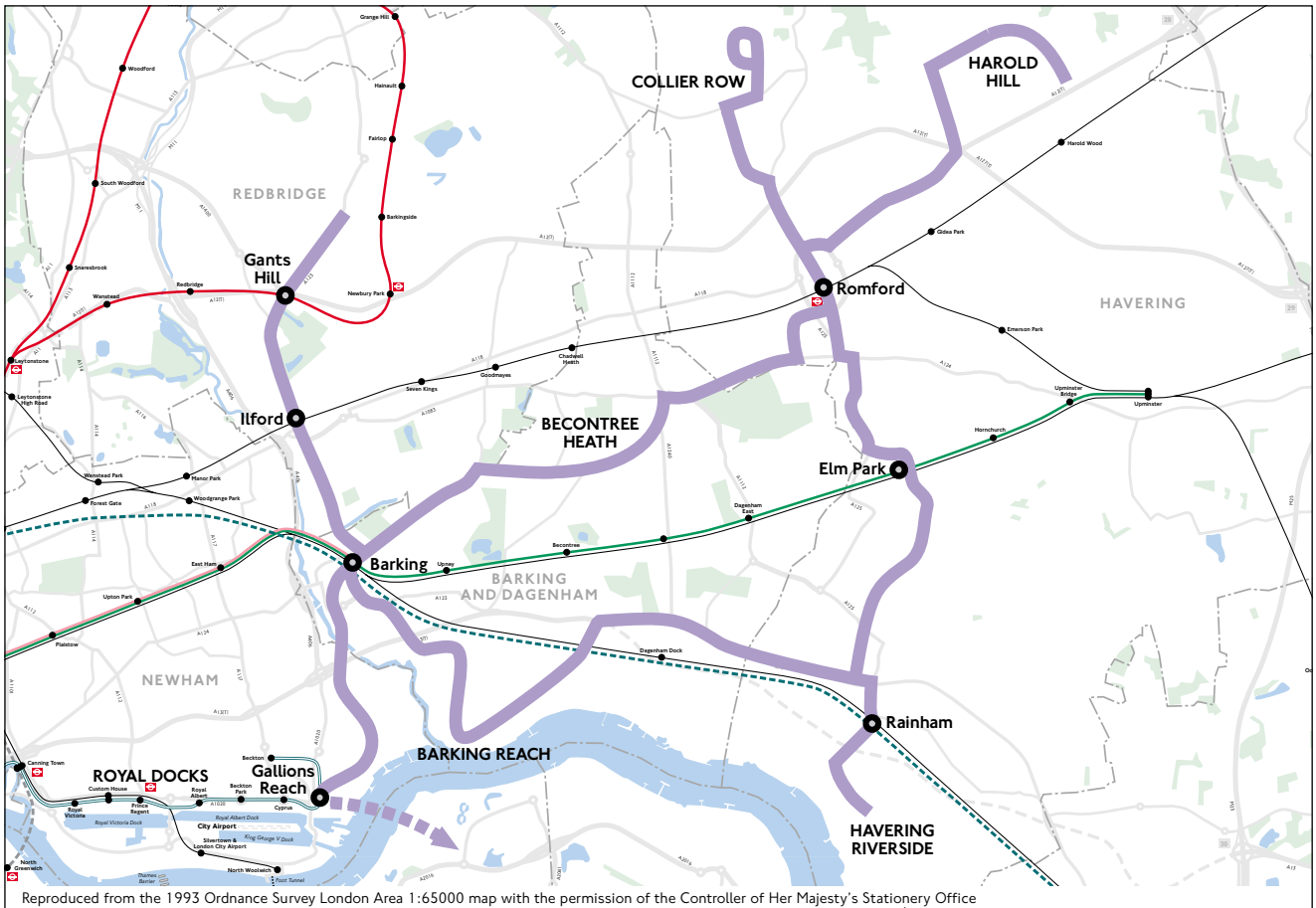
Description of route

The alignments used in this evaluation of East London Transit have been developed from those studied in the two previous studies carried out by LT.

In the Barking area, the core alignment would continue to serve Gants Hill, Ilford and Barking town centres and stations, as well as the Barking Reach housing development area and the UEL campus on Longbridge Road. Within Barking town centre, the alignment is assumed to run through the pedestrianised shopping area, while within the Barking Reach development area, a segregated right of way has been assumed.

In the Romford area, the core alignment would again serve the major residential areas of Collier Row and Harold Hill, Romford town centre, Elm Park and Havering Riverside development area. The alignment

The proposed alignment



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would use North Street and South Street to serve the pedestrianised town centre and station in Romford.

Since the previous studies new alignments have been added to the Barking network, including an extension of the alignment northwards from Gants Hill to the important residential areas around Barkingside and southwards through the Gallions Reach development area to the western end of the Royal Docks. As in the Barking Reach development area, a segregated right-of-way has been assumed for Transit through this area.

Two new alignments have also been added to link up the previously separate Barking and Romford networks into a coherent single network. One of these links would use the existing A1306 corridor, which serves a number of major regeneration sites, while the other would extend the Barking network from the UEL campus on Longbridge Road to Romford along the heavily used bus corridor through Becontree Heath.

Modes considered in this study

The 1996 case studies of the Barking and Romford areas concluded that forecast levels of demand within the potential intermediate mode corridors were likely to justify investment in bus-based rather than fixed track-based (tram or light rail) systems. As a result, no further assessment of a fixed track intermediate mode system was undertaken as part of this study and instead, it was assumed that the maximum investment scenario for the combined Barking and Romford system was an electronically guided trolleybus network.

Service patterns and integration of transit

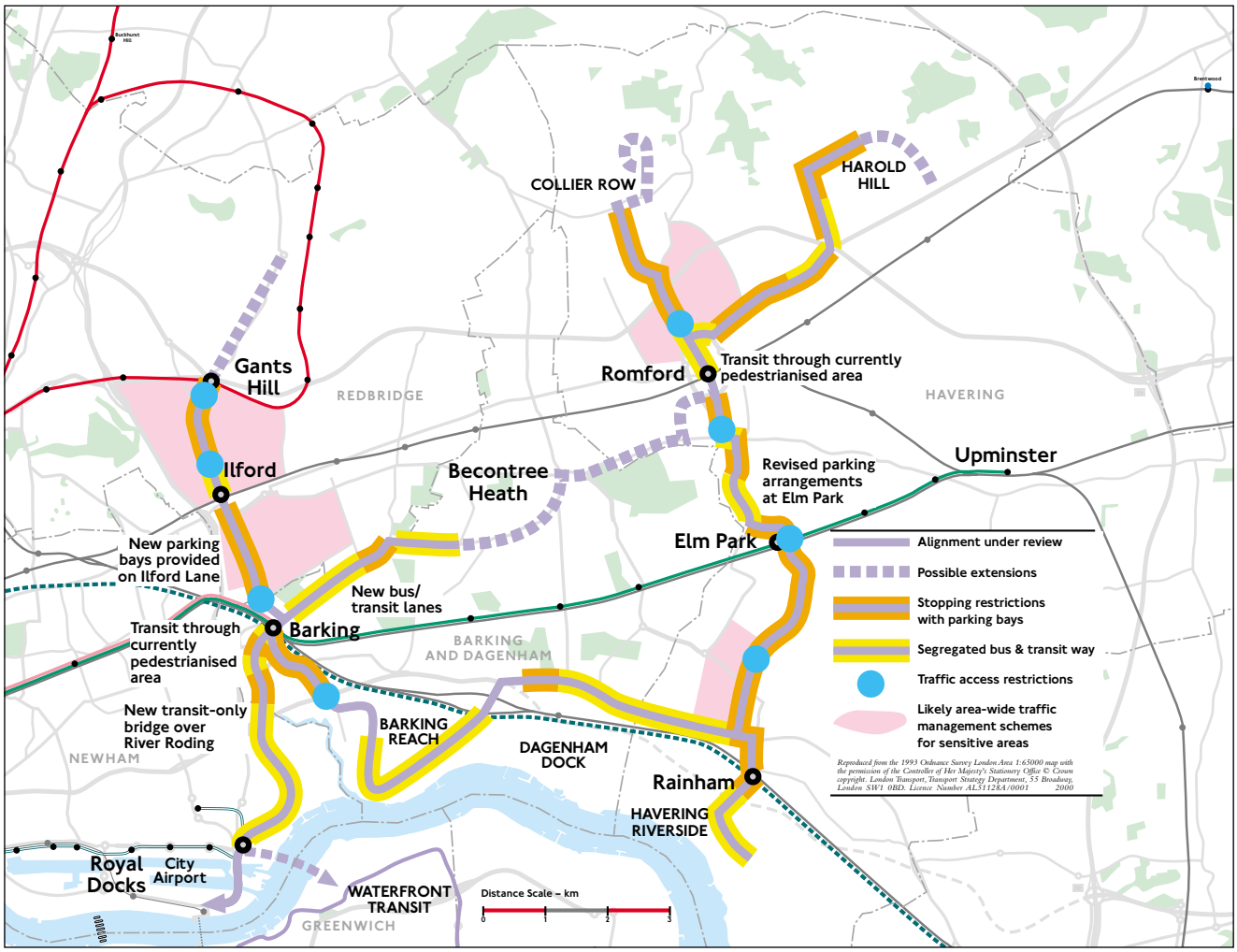
The alignment which has been studied for East London Transit, which is shown in the map on page 12, represents the areas where the introduction of priority measures for Transit have been investigated. Although the actual services – both for Transit and conventional bus services – which would run on this alignment have not yet been defined in detail, it has been necessary to make some assumptions on these services in order to produce demand forecasts for the project, as described in Section 6 of this report. However, these assumptions are not 'proposed services' and the ultimate pattern of these is likely to be very different.

The analysis carried out on service patterns has shown that Transit services should only be introduced as part of an integrated transport network that takes into account the role of other forms of public transport, particularly conventional bus services, in meeting the travel demands of local residents. T*f*L believes that there are no reasons why Transit and conventional bus services cannot co-exist, where passenger demand and good service planning warrants it. As a result, a number of conventional bus services stand to benefit from many of the traffic priority measures proposed for Transit.

In order to derive the optimum pattern of both Transit and conventional bus services in the study area, T*f*L recognises that further work and consultation is required. In planning these Transit services and any accompanying changes to the conventional bus network, T*f*L will use the same criteria that are currently employed to plan the bus network, namely that any network should be **comprehensive**, **frequent**, **simple**, **reliable** and **integrated.**

Interchange between Transit and the National Rail Network (NRN) services would be provided at Ilford, Barking, Romford and Rainham, while interchange with London Underground services would be possible at Gants Hill, Barking and Elm Park. In addition, interchange would be possible between Transit and DLR services at Gallions Reach. It is proposed that at each of these locations, high quality interchange facilities would be provided for all modes, including pedestrians, cyclists and taxis. The exact nature of these facilities would be defined during the detailed design stage of the project.

Summary of traffic management measures



Illustrative traffic management measures

Traffic access restrictions

- Yellow denotes sections of road open to Transit, buses and cycles only;
- where necessary, car access permitted for residents living along the yellow section of road.

Parking bays

- Wide pavements and verges are used to provide parking bays (blue) that keep vehicles clear of the carriageway;
- careful planning is required to minimise the loss of green verges and mature trees.

Traffic management requirements

Key

- Transit stop
- Bus stop
- Transit/bus lane
- Stopping restrictions
- Parking bays
- New kerb line

Bus/Transit lane with residents' parking bays

- Dedicated lane provided for Transit and buses only;
- where required, parking bays are provided for local residents;
- bus stops in bays.

Note: Detailed planning of fully-integrated stopping would be designed and consulted on at a later stage.

With the exception of those parts of the alignment that run through the Barking Reach and Gallions Reach development areas, the majority of the proposed Transit route would run along existing streets. In the majority of these streets insufficient space is available to provide a segregated route for the Transit and as a result, traffic management measures would be required to ensure that it achieved priority over other traffic and parked vehicles. None of these measures would require the demolition of any properties along the alignment.

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It is T*f*L's view that the level of priority given to the Transit would be the major factor determining the performance and therefore success of the project. Providing high priority for the Transit (and conventional bus services) would protect these services from the effects of road congestion and lead to reduced journey times as well as improved reliability.

"In the past there has been some concern that a different approach to traffic management could cause excessive congestion on other parts of the network. Research suggests that this concern can be exaggerated and has stressed that schemes should be judged against a broad range of objectives."

Source: Section 3.103, A New Deal for Transport: Better for Everyone, DETR, 1998

In a large number of locations, the traffic management measures would consist of imposing stopping restrictions on other vehicles to ensure an unimpeded journey for the Transit. At a number of these locations where stopping restrictions are proposed, T*f*L has identified sites for alternative parking bays and loading facilities.

Over the proposed alignment as a whole, because there is very little potential for physical segregation, a strategy has been proposed by T*f*L to remove as much of the through-traffic from the proposed alignment as possible and therefore free up the road capacity for use by public transport and local private vehicle traffic. This approach is in accordance with the local authorities' agreement to consider the principle of road space re-allocation given at the commencement of the Project Definition stage. In addition, all the proposed measures have been discussed in detail with representatives of the local authorities throughout the Project Definition stage and many of their views have already been incorporated into the proposals.

As a result, restrictions for through traffic are proposed for short sections of a number of major roads along the alignment, including Cranbrook Road south of Gants Hill Underground station, Ilford Lane on the border of the London Boroughs of Redbridge/Barking & Dagenham, Elm Park Broadway railway bridge and Romford North Street at Como Street. T*f*L believe that adequate alternative routes exist for any displaced through-traffic, although detailed work would be required to identify schemes which would mitigate as far as possible the effects on residential streets of any undesirable "rat-runs". Apart from benefiting Transit services, T*f*L believe that these measures would improve the performance of conventional bus services as well as improving conditions for pedestrians and cyclists along the Transit alignment.

Busway – Trans Val de Marne, Paris

Network-wide, Transit would receive signal priority over other traffic at major traffic junctions. This priority would need to be sensibly balanced with consideration of the needs of bus services that cross the Transit alignment at major junctions.

Transit Way Assumptions

As part of the Transit proposals, improvements would be made to the surfaces of the Transit lanes to provide a high standard of ride quality for vehicles using the lanes. In addition, the Transit lanes would be clearly demarcated by colour to demonstrate to private vehicle traffic that they were designated for use by Transit and bus services.

Allowance has also been made within the cost estimates of Transit for the removal of a large proportion of the utilities from below the Transit alignment. In this study it has not been possible to precisely estimate the amount of utility removal that would be required, so these cost estimates should be viewed as being illustrative only. It is believed that the permanent removal of utilities from the Transit alignment would reduce the number of disruptions to Transit services from road works as well as maintain the quality of the road surface and therefore ride quality of Transit.

The traffic management proposals for Transit assume that Transit services are allowed to operate through the currently pedestrianised sections of Barking and Romford town centres. To allow this, Transit vehicles may require some form of control to limit their speed as well as define a consistent 'swept path' through these areas. In this study, it has been assumed that Transit vehicles would be equipped with a form of electronic guidance, which at a minimum would be operable within these pedestrianised town centre areas. However, as part of this study, the option has also been investigated of extending guidance over the entire Transit network.

It should be noted that electronic guidance is a new technology and remains unproven in a passenger operating environment. As a result, considerable research into its development is still taking place.

Stops

It is envisaged that Transit stops would be designed to a high specification. Apart from allowing level boarding on to Transit vehicles by the provision of raised platforms, stops would include high quality shelters, ticket machines, CCTV surveillance and real time passenger information, similar to Countdown. Transit stops would be shared by Transit and bus vehicles where total bus frequencies are less then eight buses per hour. In locations where buses have a total frequency greater than eight per hour, the provision of separate lay-bys for buses has been assumed. Detailed planning of fully-integrated stopping arrangements would be designed and consulted on at a later stage.

6 The evaluation process

Outline of evaluation process

"We are developing a new approach to the appraisal of different solutions to transport problems. This is designed to draw together the large amount of information collected as part of the appraisal of transport problem and alternative solutions. This information is set against the five criteria which we have adopted for the review of trunk roads ie integration, safety, economy, environment and accessibility."

Source: Section 4.195, A New Deal for Transport: Better for Everyone, DETR, 1998

The evaluation method selected for Transit is the Multi-Criteria Assessment Framework (MCAF) that was developed by LT. Although the concept of multi-criteria assessment is not new, it is becoming more accepted as a more-embracing evaluation technique than the more conventional cost-benefit analysis approach.

The use of multi-criteria assessment has been given added impetus by the Government's 1998 White Paper on Transport which emphasises the five strategic objectives of Government transport policy – **environment**, **safety**, **economic**, **accessibility** and **integration**. These objectives are more wide-ranging than those that would be captured by more conventional evaluation methods. On the basis of these strategic policy objectives, the Government has devised a new approach to appraisal that summarises the achievement of schemes against these objectives. This allows a comparison to be made by decision-makers between schemes on a range of appropriate indicators that include, but do not give undue prominence to, monetary ones. Initially devised for highway schemes, the New Approach to Appraisal has now been adapted to multi-mode situations, as documented in the Department of Environment, Transport and Regions' (DETR) Guidelines on Multi-Modal Modelling Studies.

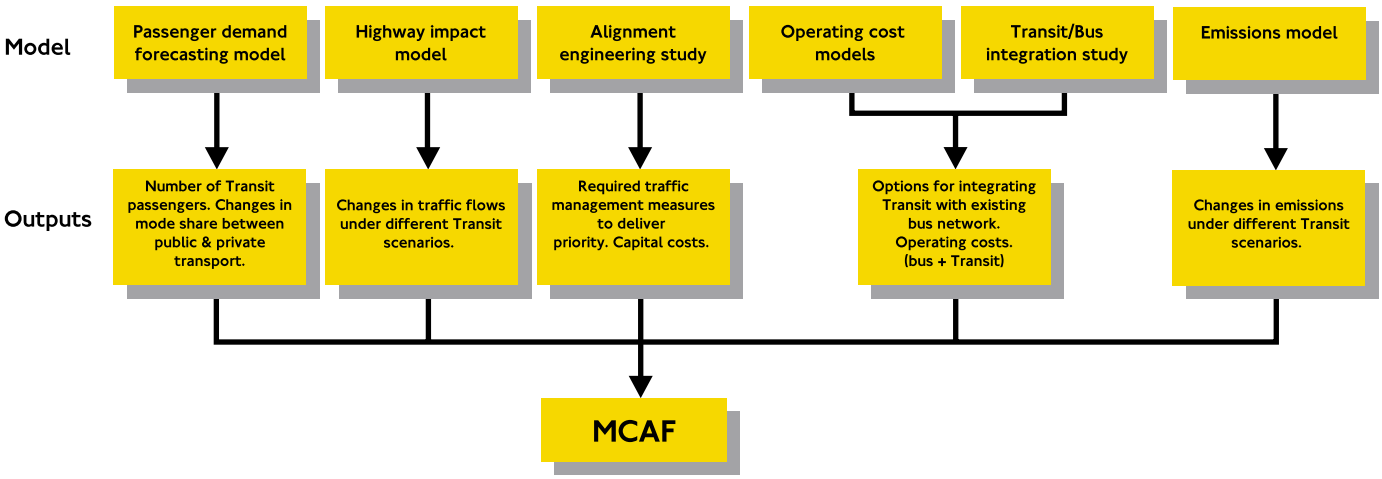
MCAF was developed to be as consistent as possible with the Government's new approach, although a number of 'bespoke' aspects were introduced for its use in intermediate modes. The main appraisal criteria for the MCAF, along with selected indicators, are shown in the table top right.

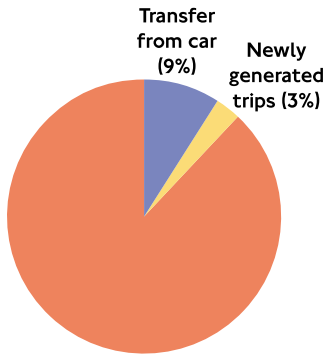
MCAF criteria and indicators

Criteria	Sub-criteria	Indicators
1 Environmental impact	Natural environment	Noise, local air pollution, global emissions, energy and fuel consumption, land-take, townscape, ecology
2 Safety and security	Accidents and personal security	Public and private transport accidents, personal security
3 Economic	Costs, time savings and revenue	Capital and operating costs, public and private use, public and private journey times, revenue, cost-benefit analysis
	Transport capacity	Capacity of corridor, crowding, frequency
4 Accessibility	Public transport accessibility	Pedestrian access to public transport, access to local centres
	Accessibility to other modes	Community severance, pedestrian space, parking and servicing access
5 Integration	Integration with other modes	Interface with other modes
	Accessibility impacts on regeneration and social inclusion	Access to development sites, access to deprived areas, access to employment
	Other local policy/plans Regional economic impact	Local policies, tourism National/EU objectives

MCAF application within overall scope of project

A number of individual studies were carried out to produce the data necessary for the MCAF evaluation. The figure below illustrates the main outputs of each of these studies, while details of each of these areas of work are outlined in more detail later in this section.





Origin modes of Transit passengers (trolleybus)

Passenger demand forecasting model

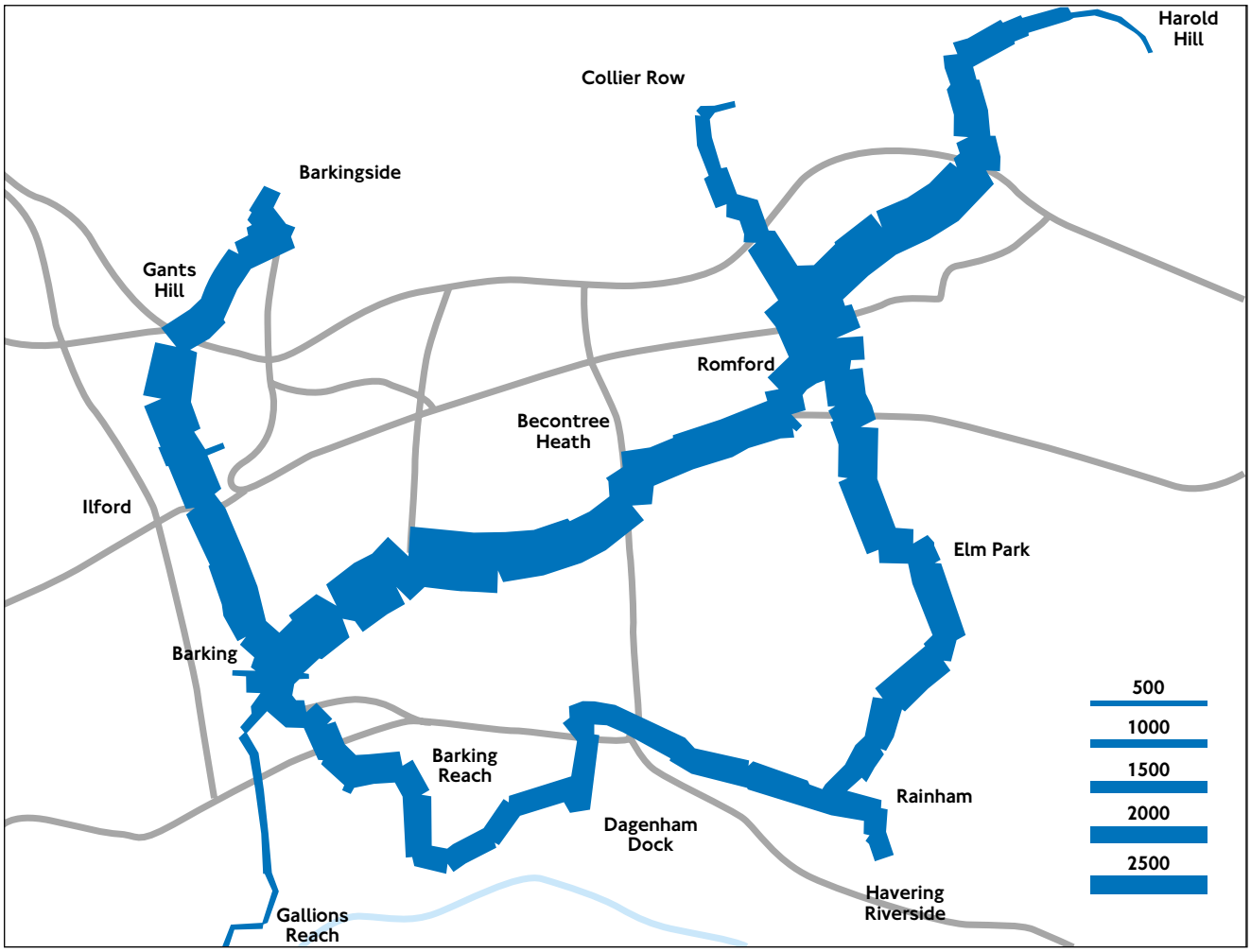
Construction of a forecasting model was commissioned to predict the likely demand for Transit services in East London. This model was built to predict demand for a future year where approximately 50% of the new developments forecast for the study area – in particular, Gallions Reach, Barking Reach, Dagenham Dock and Havering Riverside - were assumed to have been constructed and occupied.

All tests predict healthy levels of demand for Transit, both in the peak and off-peak periods of the day, with the strongest demand corridors being from Harold Hill into Romford, from Romford south towards Havering Riverside and from Becontree into Barking. Annual ridership is forecast to be between 33 and 39 million. Although the majority of passengers on Transit would be existing public transport users there are also forecast to be additional public transport trips created, largely due to car drivers switching to public transport.

One exception to the generally healthy levels of demand is the link between Barking and Gallions Reach where flows are forecast to be very low. It is T*f*L's view that demand on this link might be increased by extending the alignment beyond Gallions Reach further into Royal Docks or using the proposed Thames Gateway Bridge river crossing to link up with Greenwich Waterfront Transit. However, this would be conditional on the two schemes using compatible modes and technologies.

Because it is recognised that the regeneration of development sites is likely to play an important role in supporting the viability of the project, an additional sensitivity test was carried out that assumed present day (1999) levels of demand on the network. This test showed that although 20% of network demand is development-related, the 'developed' sections of the network retain healthy demand at present day demand levels. This demonstrates that the provision of very high priority is justified at present day levels of demand.

Passenger demand: forecast future morning peak period flows (two-way flows on links).



Highway impact model

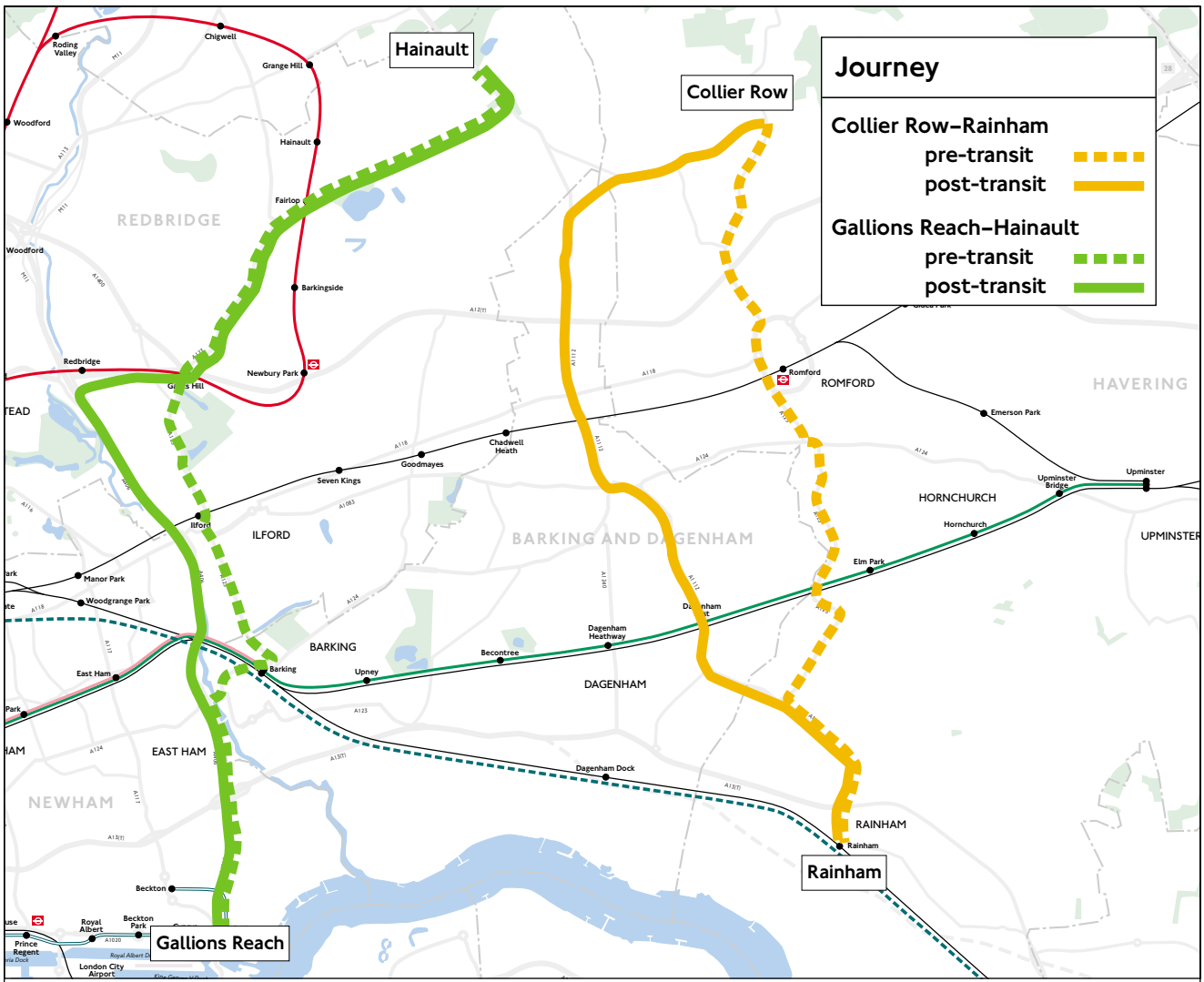
A SATURN traffic model was used to assess the likely traffic impacts of Transit over a wide area of east London, particularly the redistribution and journey time effects of restricting private vehicle access to certain sections of the Transit alignment. Traffic forecasts were developed on the basis of the same level and distribution of new developments as the passenger demand forecasting model. It was assumed in this analysis that, by the time Transit was operational, a number of highway improvements would have been made in the area including the A13 improvements and the construction of a north-south fly-over at the A13/A406 junction.

The results of the analysis show that the overall impacts of the Transit proposals are relatively small and that the majority of private vehicle journeys would be unaffected by the proposals. In the worst-case scenario – where no car drivers switch to using Transit, or travel at other times or to different destinations – overall private vehicle travel times would increase by less than 3% within the East London Transit study area.

Nevertheless, the traffic priority measures introduced for Transit would lead to changes in the routes that private vehicle drivers use to make their journeys. Using the SATURN model it is possible to show the routes that drivers making specific journeys would take with and without Transit in place. The results of this analysis for two sample journeys in the study area are shown on page 23. These results show that the effect of Transit would be to move private vehicle flows off the alignment and onto parallel corridors. This would result in increased traffic flows on a number of major roads in East London.

However, there are likely to be some impacts from the proposals that would require management through the introduction of additional traffic measures. For example, Transit would increase traffic flows around Romford town centre, Becontree and Redbridge although SATURN test analysis suggests that some of these increased flows could be reduced by adjusting signal timings at crucial junctions. In other sensitive residential areas, traffic management measures would be required to mitigate as far as possible the effects of "rat-running" by through-vehicle traffic. The main areas along the alignment which would be likely to require these measures include the residential streets off Cranbrook Road and Ilford Lane, between Romford town centre and the A12 and in South Hornchurch, as shown on page 14. In addition, should further studies show that displaced car traffic adversely affects other bus services measures would need to be introduced to protect them from this.

Changes in routes for selected highway journeys with Transit



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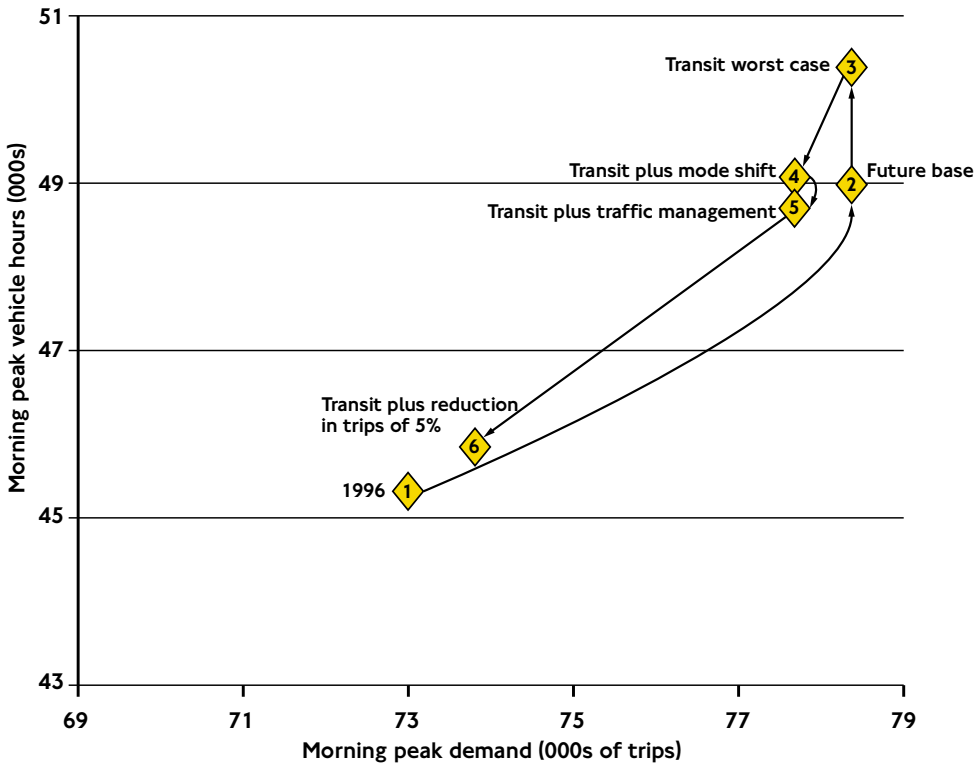
The overall impact of the Transit proposals on the local road network are illustrated in the table shown below which plots the number of private vehicle journeys that are forecast to commence in the Transit study area against the total length of time it would take to complete these journeys assuming a number of different scenarios for future traffic growth and Transit impacts.

This analysis shows that the impacts of Transit on overall levels of traffic in the area would be modest compared to the impact of underlying private vehicle demand in the study area, much of which will be generated by the new development areas along the Thames. As a result, radical plans to provide improved public transport to these areas such as Transit are likely to reduce private vehicle mode share and therefore minimise overall traffic impacts.

Impact of traffic growth and Transit on private vehicle trips in East London.

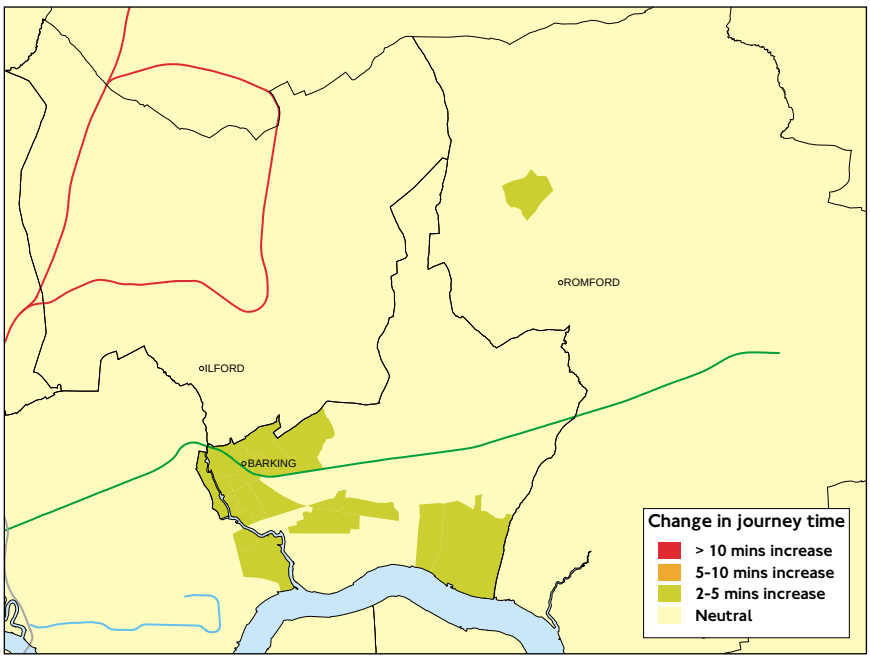


Notes

- From 1 to 2 Growth in traffic in the study area between 1996 and the time Transit is implemented (Future Base) increases the number of private vehicle trips by 7% and total travel time by 8%. This effect assumes no Transit.
- From 2 to 3 The introduction of Transit and its traffic management measures leads to an increase in journey times for private vehicle users of 3%, assuming a worst-case scenario where no car drivers switch to using Transit.
- From 3 to 4 Taking into account predicted levels of mode shift from private vehicles to Transit and other public transport services, results in a 1% reduction in private vehicle trips originating in the area and a fall in the total travel time back to Future Base levels.
- From 4 to 5 Further traffic management measures such as improved signal timings reduce total private vehicle travel times with the Transit, below the Future Base levels.
- From 5 to 6 With Transit and assuming a general traffic reduction target of 5% in trips, total travel time in the study area is reduced by 7.5% compared to Future Base levels.

The plot shown below summarises the overall effect of the Transit proposals on levels of highway accessibility within the study area. This plot demonstrates that over the majority of the study area, the average journey time by car would change very little before and after Transit, with any larger increases being restricted to around Barking town centre and in an area to the north of Romford town centre. However, even in these locations, the increases in average journey time would be no more than five minutes.

Highway accessibility changes (based on existing trip patterns)



Alignment engineering study

TfL carried out a detailed review of the Transit alignment and in consultation with the local authorities derived the proposed traffic priority measures reported in Section 5 of this report.

In addition to deriving these measures, this study was used to estimate the capital cost of constructing Transit, including the cost of erecting overhead electrification equipment, constructing stops and segregated sections of the alignments, diverting utilities from beneath the alignment and providing a high quality road surface for Transit. Estimates were also made of the cost of introducing area-wide traffic management measures that would be required to mitigate as far as possible the effects of "rat-running" occurring through residential areas surrounding the Transit alignment.

Transit/conventional bus integration study

Operating costs can represent a significant proportion of the total costs when assessing transport projects. In the case of Transit, the forecast operating costs are highly dependent upon what assumptions are made about restructuring the existing bus network in the area following the introduction of Transit. This study investigated a number of options for integrating bus and Transit services, with one aim being to simplify the bus and Transit network. However, the assumptions made at this stage do not constitute definite proposals and further analysis is required using the criteria set out at the bottom of page 13 prior to this being consulted on.

A wide range of scheme options were considered as part of the demand forecasting, highway impacts and cost estimation work. These options included using different types of vehicles for Transit as well as making greater use of shared highways in the development areas rather than providing segregated alignments:

Options considered during evaluation

90 capacity diesel bus

120 capacity trolleybus

Vehicle type

Two vehicle types were considered for Transit:

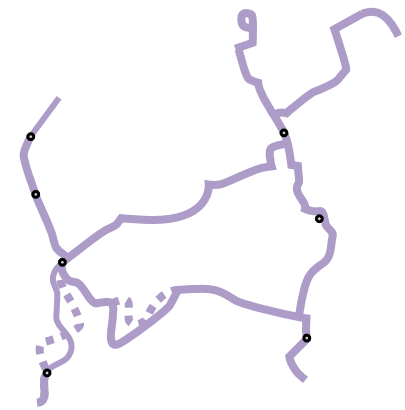
- **Trolleybus:** 18 metre long, 120 capacity, articulated, electrically-powered bus
- **Diesel bus:** 10.3 metre long, 90 capacity, double decker, Euro-3 compliant diesel-powered bus (an alternative would be a diesel powered articulated vehicle).

Other vehicle options considered by T*f*L were the use of gas buses and duo buses (that operate in either diesel or electric mode). However, in T*f*L's view the very high cost of these vehicles and their associated infrastructure makes these options prohibitive and it is recommended that they are not pursued further. Nonetheless a range of options in terms of vehicle design and mode of power are possible between the two options evaluated. This detail would be further considered if the scheme proceeds.

Alignment

In the evaluation two alignment options were considered:

- **Priority alignment with segregation in Regeneration Areas**
  Transit services operate over the entire East London Transit network with segregated alignments provided within the Regeneration Areas by the Thames. This alignment is identical to the one shown on page 12 of this study.
- **Priority alignment without segregation in Regeneration Areas**
  Transit services operate over the entire East London Transit network but use shared highways within the Regeneration Areas by the Thames



Alignments with segregation in regeneration areas

Alternative alignments within regeneration areas using existing highways.

to reduce construction costs. This alignment is again identical to the one shown on page 12 of this study, with the exception of the deletion of the segregated alignments through the development areas.

Vehicle guidance

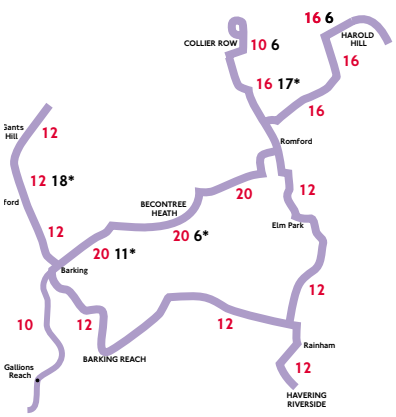
The impact of having limited or widespread electronic guidance on the alignment was assessed. Because the benefits of providing guidance are not proven or quantifiable, the impacts of providing different levels of guidance were reflected only by the different costs of the guidance options.

Options assessed by the MCAF

In the course of the study it was not possible to assess every combination of vehicle type, alignment and guidance in detail, so a certain number of conclusions have had to be deduced. However, three different Transit options, each using different combinations of vehicle type, alignment, service patterns and guidance characteristics, were assessed in detail using the MCAF methodology:

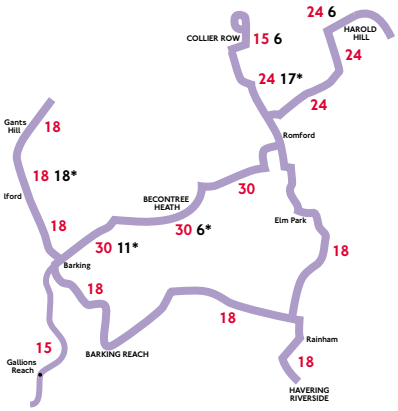
- **Trolleybus option** – introduce new trolleybus services in conjunction with traffic priority measures for public transport. Recast and integrate bus and trolley networks. Operate trolleybus services with guidance, over the entire Transit network, including the segregated alignments within the Regeneration Areas.
- **Extended high priority bus option** – introduce new Euro-3 compliant diesel bus services in conjunction with traffic priority measures for public transport. Recast and integrate bus network. This option is the same as the trolleybus option, but increases frequencies on the routes that the higher capacity trolleybuses operate on by 50% in order to provide a similar capacity. The Euro-3 compliant buses operate over the entire Transit network, including the segregated alignments within the Regeneration Areas, although guidance is only provided in the town centre areas of Barking and Romford.
- **Existing high priority bus option** – introduce new Euro-3 compliant diesel buses in conjunction with traffic priority measures for public transport. Under this option the new buses take over a number of existing routes, at the existing frequencies, and there is minimal alteration to the existing network. The new buses are however re-routed via the town centres of Barking and Romford under guidance. Buses operate over the entire Transit network but use shared highways within the Regeneration Areas by the Thames.

These options were selected to represent high, medium and low investment scenarios for East London Transit, respectively.



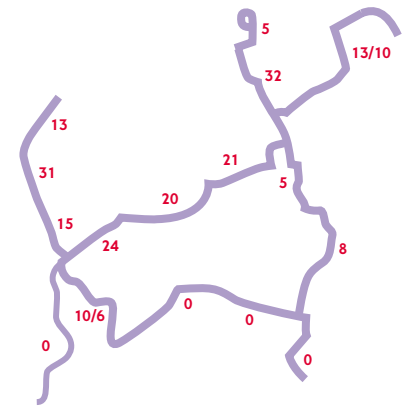
Peak and Interpeak Frequencies
1 Trolleybus
1 Buses

*Bus routes on these sections could be re-routed via alternative routes



Peak and Interpeak Frequencies
1 Extended high priority bus
1 Buses

*Bus routes on these sections could be re-routed via alternative routes



Peak and Interpeak Frequencies
1 Existing high priority bus

Note: Frequencies in the above diagrams are subject to change, further work and consultation

7 Results of evaluation

As outlined in the previous section, a number of individual studies were carried out to establish the effects of Transit in terms of passenger demand, impact on other highway users, capital cost and the demand for and cost of operating conventional bus services in the area. Elements of each of these studies were then used to carry out the overall multi-criteria assessment for the project. This section presents the results of this multi-criteria assessment, with these results presented under the different criteria and sub-criteria used by T*f*L.

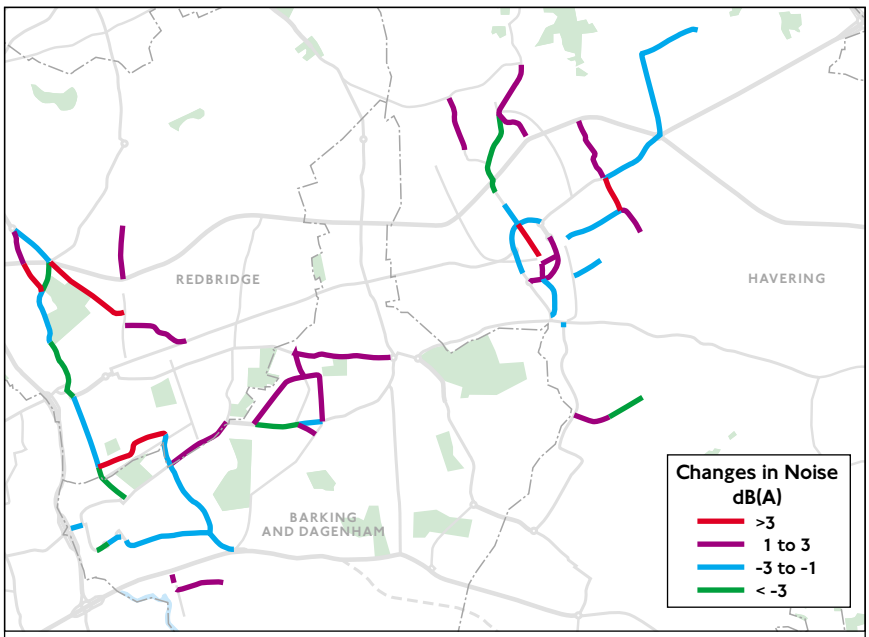
Environmental

Noise impact

Traffic is one of the principal sources of urban noise. The results of the assessment show that more residential properties would benefit from the implementation of Transit than disbenefit. Overall, the studies showed that around 300 residential properties would experience major noise degradation (>3dB(A)) due to Transit whereas around 1200 properties experience major improvements. This is because the proposed traffic management measures generally diverts traffic from residential streets to roads with fewer residential properties, such as the A406 North Circular.

As a result of the methodology used, it has been assumed that all the Transit options produce the same level of noise impacts. The implication for the application of the MCAF is that the noise impacts for the trolleybus option have been assumed to be the same as for the two diesel bus options, even though the former are known to be quieter.

Summary of noise impacts



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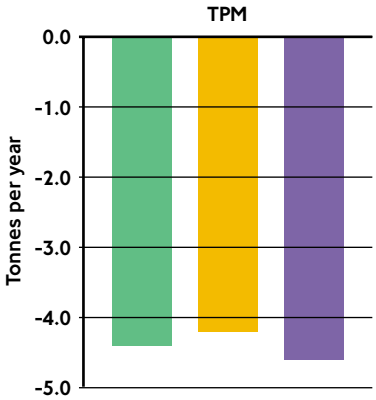
Local air pollution

Changes in local emissions

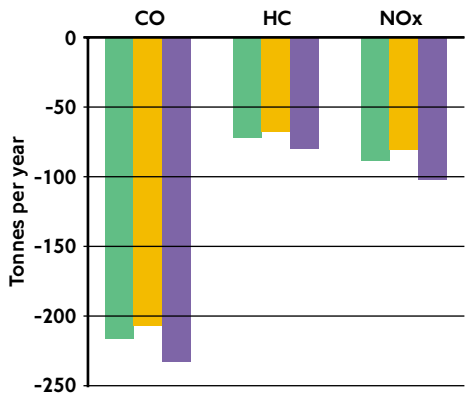


Transport is a major producer of air pollutants. The main local pollutants included in the MCAF are carbon monoxide (CO), hydrocarbons (HC), nitrous oxides (NOx) and total particulate matter (TPM). Using T*f*L's Emissions Model, changes in emission levels have been calculated for the three options considered. Changes in emission levels have been calculated for both the point-of-use (exhaust pipe) and production (power station) stages of the fuel cycle, although the majority of emissions are produced at the first of these stages.

Transit would provide reductions in the amount of all local pollutant emissions. This is mainly due to the fact that Transit would reduce private traffic flows.

Global emissions

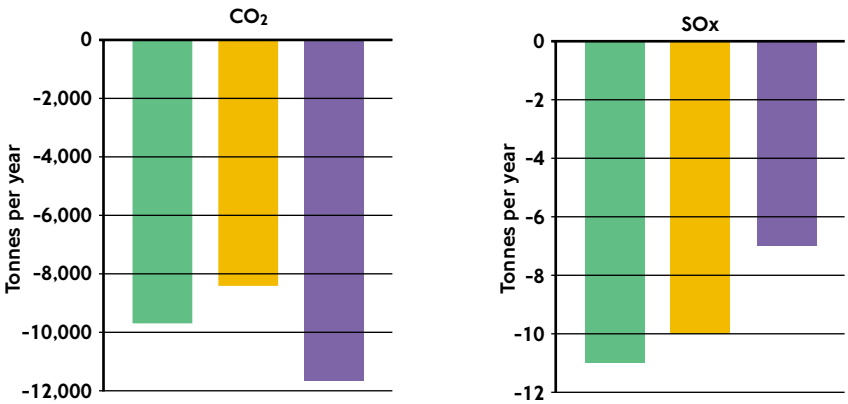
Changes in local emissions



Two important greenhouse pollutants are produced by road transport – carbon dioxide (CO_2) and sulphur oxides (SO_X). Using T*f*L's Emissions Model, changes in global emissions have been calculated for the three options considered. Changes in global emissions have been calculated for both the point-of-use and production stages of the fuel cycle.

The figures below indicate that implementation of Transit would provide considerable benefits in terms of reductions in the amount of global air emissions levels, due mainly to a reduction in the use of private vehicles in the study area.

Changes in global emissions



Key

Existing high priority bus

Extended high priority bus

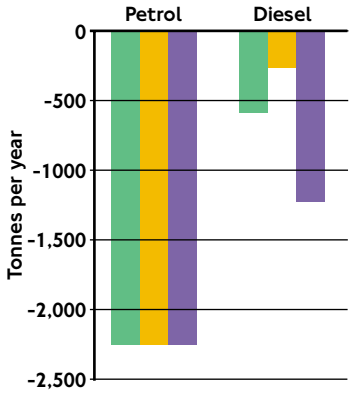
Trolley bus

Energy and fuel consumption

Transport is a major and increasing user of energy, consuming about a third of all energy in the UK. The assessment of energy and fuel consumption examines the changes in transport-related energy and fuel consumption for each Transit option, both at the point-of-use and production stages.

The results show that the introduction of Transit would present considerable savings in terms of energy and fuel consumption. The saving in diesel consumption with the extended high priority bus network is low compared to the existing high priority bus option as the former of these options assumes higher levels of service frequency and therefore requires more diesel buses to be operated in the study area.

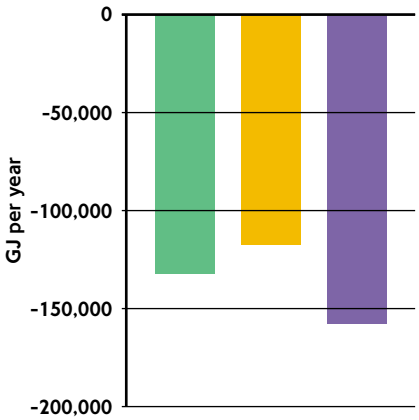
Changes in fuel consumption



Key

Existing high priority bus
Extended high priority bus
Trolley bus

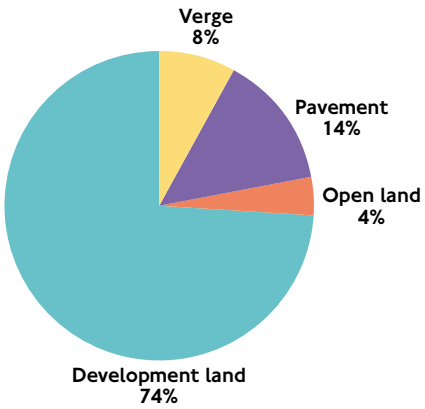
Changes in energy consumption



Land-take

Implementation of Transit would require the taking of land but no property acquisition or demolition. Away from the development areas, most of the land required would be for new parking bays and for the construction of new traffic management measures. Construction of these facilities would require the taking of land that is currently used as either pavements or highway verges, although care has been taken to ensure that this space is only taken in locations where adequate pedestrian space would remain. Overall, within the existing built-up area, Transit would require an estimated land-take of approximately 26,500m², although this would be offset by 2,000m² of land being 'given' back from traffic purposes in two locations in Romford. Electrically powered Transit options would also require a small amount of additional land to accommodate power supply substations.

Land-take – existing use of land taken (other than highway land)



Total land take shown does not include the 'negative' land take – open space created by the Transit proposals

The amount of land needed for the construction of new segregated alignments for the extended high priority and trolleybus options in the development areas is not included in the pie chart shown opposite, as this land is already vacant and will be redeveloped irrespective of Transit. In total, these segregated alignments would require an additional 80,000m² of land.

Construction

The construction of Transit would introduce impacts that may be significant for properties located along its alignment. The strength of these impacts will depend upon the nature of the construction work and its duration.

The major construction work associated with Transit would be the construction of segregated alignments through the development areas. It is assumed that this construction would take place at the same time as wider regeneration works were occurring in the affected areas and therefore the marginal impact of Transit would be small.

Over the rest of the Transit alignment most of the remaining construction work is associated with introducing the necessary traffic management measures. These measures, none of which involve major construction works, would affect approximately 3,400 properties of commercial and residential land uses along the alignment.

In addition, if trolleybuses were to be operated on Transit, there would be the additional impact of erecting the overhead electrification equipment and constructing the related substations. These works would increase the number of properties affected by construction to nearly 8,800.

Croydon Tramlink: overhead electrification in residential area

Townscape

The main townscape consideration when introducing new transport schemes is to improve and protect buildings and areas, which, by their visual, architectural or historical association, contribute to the local character.

Negative townscape impacts would be created in the pedestrianised areas due to the visual intrusion of Transit vehicles, while positive impacts would be produced in the development areas where Transit contributes to the regeneration of derelict land.

The assessment shows that Transit options that do not use electrical propulsion perform best in terms of Townscape with an overall 'Neutral' impact. For those electrically powered options there would be the additional negative visual impact of the overhead electrification equipment and substations along the alignment.

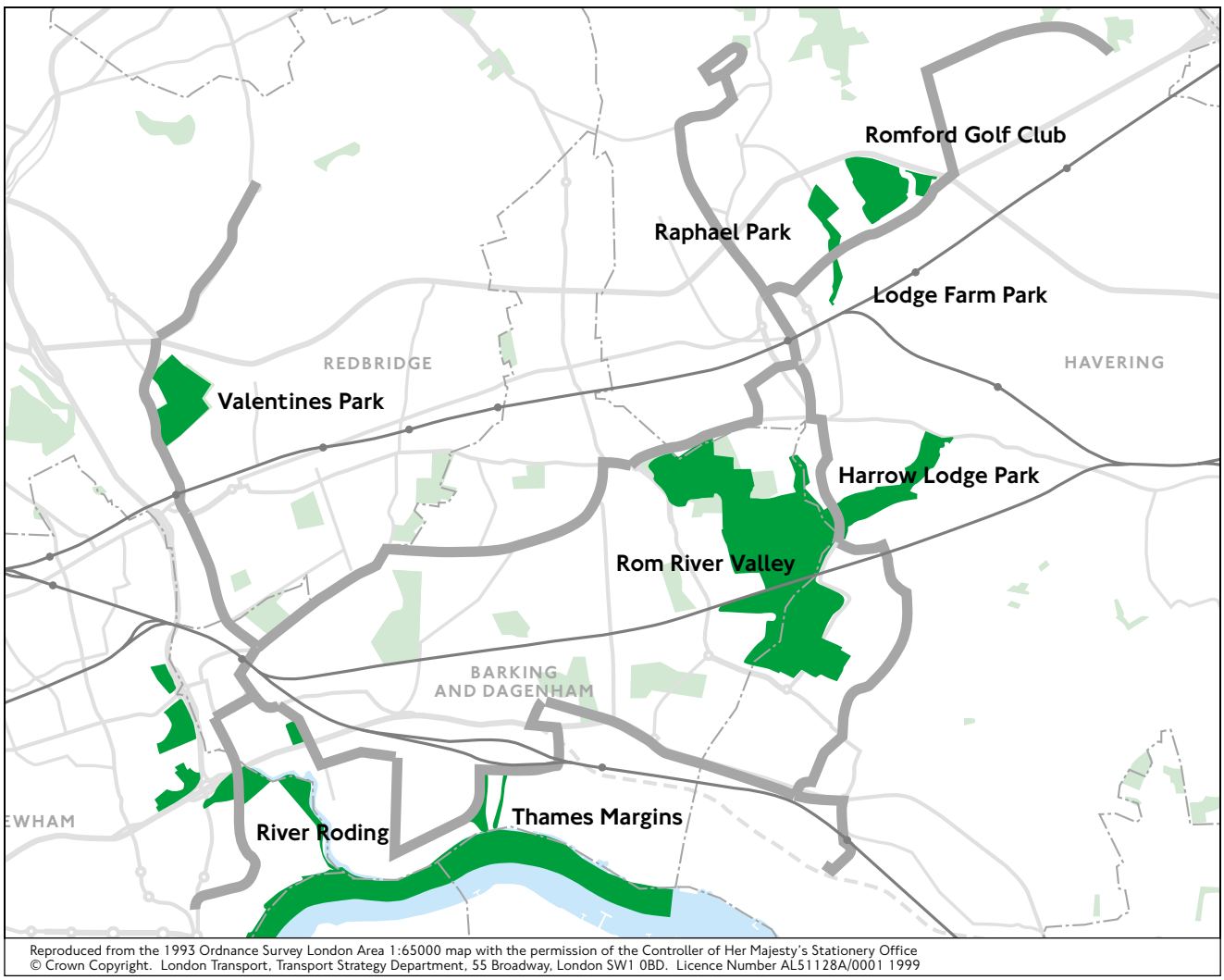
Ecology

Ecology is concerned with the conservation of wildlife species and their habitats.

The ecological impacts of Transit would arise from the construction of new segregated alignments through the development areas, where the majority of local wildlife habitats are located. Therefore, in options where new segregated alignments are assumed there would be adverse ecological impacts. Alignment options without segregated alignment sections in theory would have lower ecological impacts, although this is dependent on the land not used remaining in its current state. Given the development plans for these areas, this is unlikely to happen.

Overall, Transit options with segregated alignments through the development areas would have a 'Slightly Adverse' impact on the ecology of the area, while those without would have a 'Neutral' impact.

Ecological areas



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Safety and security

Tram stop on Croydon Tramlink

Accidents

The contribution of Transit to reducing accidents has been calculated on the basis of "equivalent fatalities". This is a standard measure whereby 10 major and 100 slight injuries are each deemed to equal one fatality. Changes in levels of fatalities for both private and public transport have been calculated.

The results of the evaluation show that the mode transfer from private to public transport and the corresponding reduction in the number of car journeys in the area arising from Transit would result in an overall reduction in the number of road accidents. Based on data used in the assessment of highway improvements, it is estimated that the monetary values associated with these accident savings are between £350,000-£700,000 per year.

Lack of data has meant that it has not been possible to estimate the impact of Transit on the number of accidents involving both cyclists and pedestrians. The impact of Transit on pedestrians is dealt with under "community severance" (page 40), while for cyclists it is recognised that their needs must be fully taken into account in the detailed design of the project, should it proceed to the implementation stage.

Personal security

It is proposed that CCTV would be installed at all Transit stops and it is assumed that all Transit passengers switching from current bus services, cars, or newly generated would benefit in terms of increased security. Transit passengers switching from rail modes would not benefit any further, as security measures are already provided for them. Dependant upon the Transit option, it is estimated that between 32 and 36 million passengers per year would benefit from improved security with the implementation of CCTV. They would also benefit potentially from improved waiting environments, lighting and help points.

Economic

Capital costs

TfL has derived the initial capital costs for the three Transit options evaluated by the MCAF. The initial capital costs are defined as the costs incurred during the implementation of the project, although these do not represent land, utility, civils, stops, signalling traffic management, design and contingency costs associated with the possible extensions shown on the map on page 10. Initial capital costs have also been derived for the Base "Do-minimum" situation which represents the capital costs that will be incurred in maintaining and developing the existing bus network in the area.

Initial capital cost breakdown (£ million)

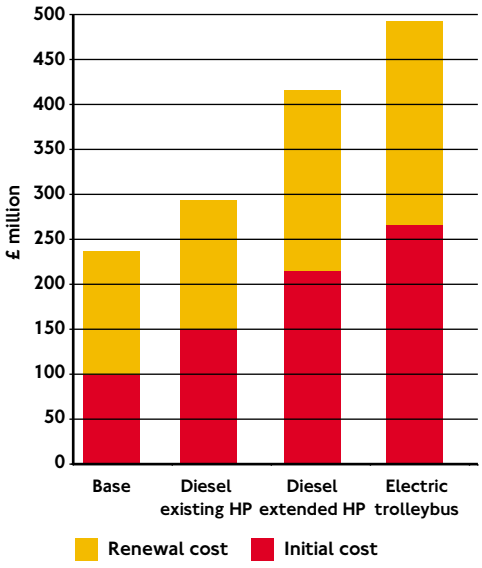
	Base	Diesel existing HP	Diesel extended HP	Electric trolleybus
Land & utilities	0	28.3	38.2	38.2
Civils & tracks	0	7.9	20.5	28.8
Stops	0	7.6	7.4	7.4
Power supply	0	0	0	20.8
Communications	0	4	5.8	6.5
Vehicles	49.6	46.3	59.1	77.1
Depot	35.3	33.1	45	38.4
Traffic signalling	0	4	8.8	8.8
Road reconstruction	0	0.1	0.5	0.5
Traffic management	0	2.5	4	4
Design & management	6	7.3	11.6	17
Contingency	9.1	8.7	14.1	18.9
Total	100	149.8	215	266.4

HP = High Priority
Price base = 1998

Further renewal and replacement costs would also be incurred during the life of the project, including the cost of refurbishing and replacing bus and Transit vehicles. These costs have also been estimated and together with the initial capital costs have been input into the benefit-cost analysis.

The cost-benefit analysis has been carried out on the basis of the incremental cost of each of the Transit options; for example, the initial capital cost of the diesel existing high priority scheme relative to the base is £49.8 million.

Scheme options: initial capital and renewal costs



Renewal costs are shown as undiscounted values

Price base = 1998

The main reasons for the different costs of these options are:

- The extended high priority and trolleybus options include provision for segregated alignments in the development areas. As part of the segregated route to Gallions Reach, a new lifting bridge would be required over the River Roding. This structure is estimated to cost £7 million.
- The extended high priority and trolleybus options assume a greater degree of utilities removal from underneath the alignment.
- The trolleybus option assumes the installation of electronic guidance over the entire alignment and not just in the pedestrianised town centres of Barking and Romford. The higher cost of this option also reflects the need to erect overhead electrification along the route as well as the construction of substations. The capital cost of trolleybuses is also higher than for diesel or gas buses.

Within the capital cost estimates, an allowance has made for the construction of a new depot facility to stable and maintain the Transit vehicles. The size and therefore cost of this facility has been calculated on the basis of the number of Transit vehicles required to operate the level of service assumed in this study. To date, no site has been identified for this facility and it is possible that were a bus company already owning depot facilities in the area to operate Transit, a new depot may not actually be required.

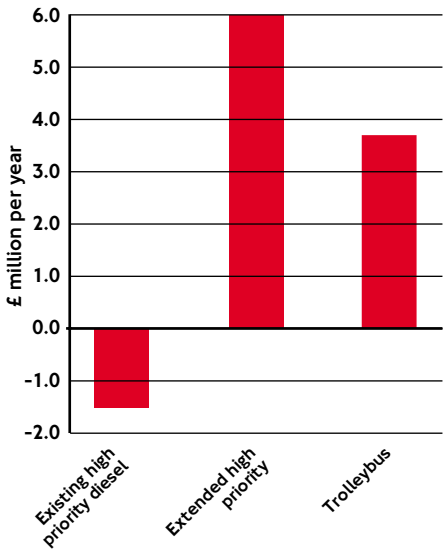
Operating costs

Operating cost changes are net changes that reflect overall changes in costs to both Transit and other bus services in the study area

The existing high priority bus option assumes that the existing bus network in the study area would remain largely unaltered with the main difference from the present-day being the diversion of a number of routes through the pedestrianised areas of Barking and Romford town centres. These diversions, which serve as short cuts, would reduce the total number of bus kilometres travelled in the area. However the improved efficiency achieved by the traffic priority measures are the main reason for the fall in total bus operating costs.

The extended high priority and trolleybus options assume that the existing bus network would be radically restructured to accommodate Transit. The assumptions made about this re-structuring, which are only indicative, would result in an overall increase in bus kilometres travelled in the area and therefore an increase in bus operating costs. It would be expected that these operating costs would reduce as networks are optimised at a later date.

Changes in annual operating costs

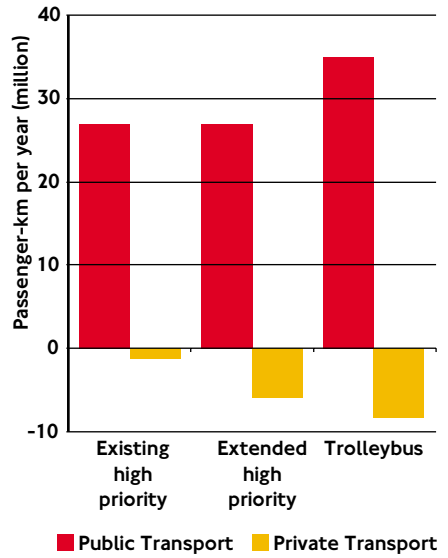


Transport use

Transport use is measured in terms of passenger-kilometres travelled on both public and private transport. As such it is a very useful measure of the effectiveness of policies to encourage a shift from private to public transport.

The results indicate that Transit would result in increases in public transport use of between 27 and 35 million passenger kilometres per year. Private transport use would reduce by between 1.2 and 8.3 million passenger kilometres. These figures indicate that the transport use impacts of Transit are largely concentrated on public transport rather than private transport, and that the overall effect is an increase in transport use for all the options tested. In sustainability terms, this represents a disbenefit of the project.

Changes in transport use



Journey time changes

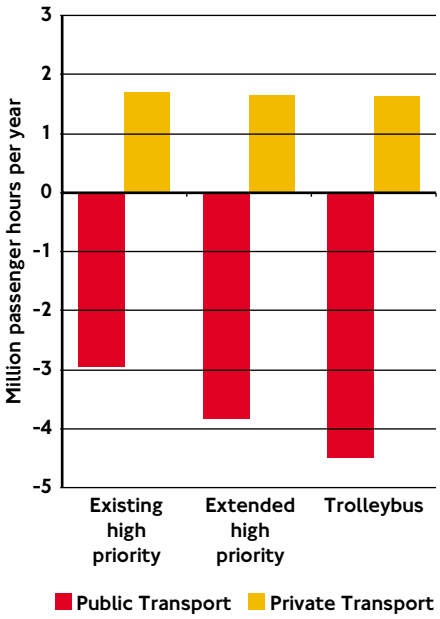
Journey time is an important element in the analysis of new transport schemes. From the supply side, the objective of most transport schemes is to improve accessibility and reduce journey times while from the demand side, the main journey attributes from the traveller's point of view are cost and time.

Despite the fact that the total number of public transport trips would increase with the implementation of Transit due to modal shift from private transport, the total travel time spent on public transport would decrease with Transit by between 2.9 and 4.5 million passenger hours per year. This is primarily the result of the reduced journey times that Transit would achieve as a result of the introduction of the traffic priority measures. The plot shown below demonstrates the size of the public transport journey time savings that would be achieved along the Transit alignment and show that the journey time savings would be largest in the development areas along the River Thames, which currently have low levels of accessibility. The equivalent plot showing changes in highway accessibility is on page 25.

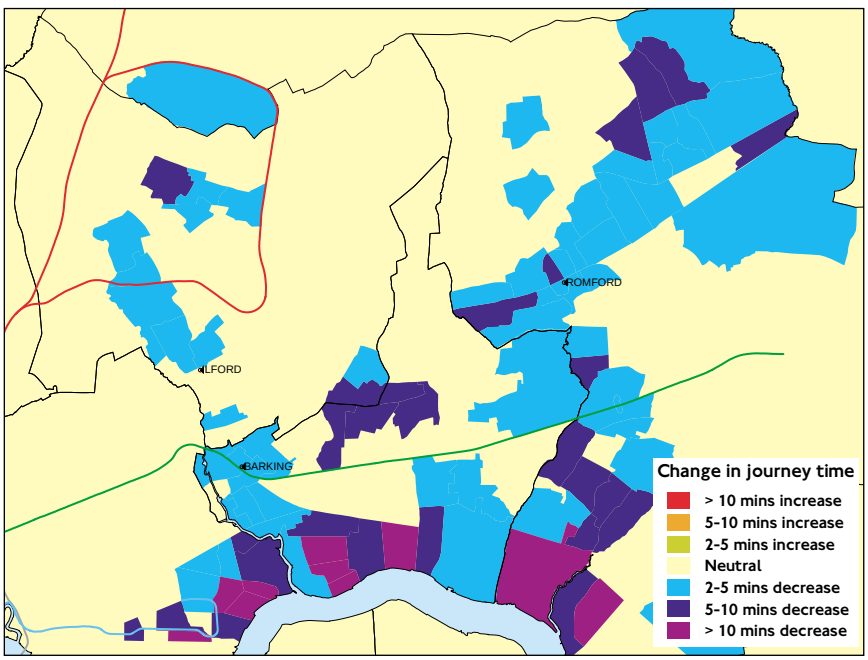
Conversely, the introduction of these traffic priority measures would increase private transport travel times by between 1.6 and 1.7 million passenger hours per year with Transit.

Overall, however, Transit is forecast to achieve a net reduction in travel.

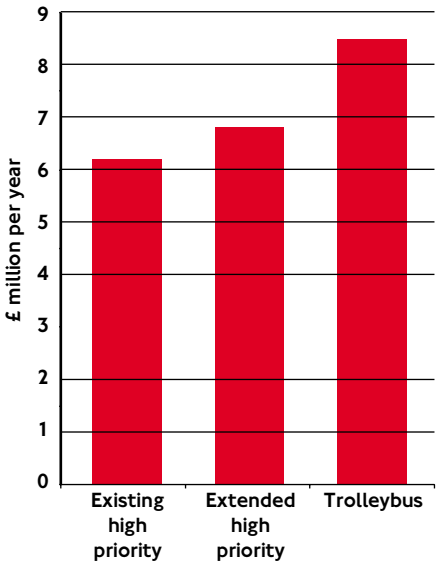
Changes in journey times



Public transport accessibility changes (based on existing trip patterns).



Changes in revenue



Revenue

The Transit options would result in net increases in revenue to public transport of between £6.2 and £8.5 million/year. These increases are mostly the result of additional passengers attracted to Transit due to modal shift from private transport. The figures shown here are net figures that include offsetting reductions in revenue on other modes, particularly bus services.

Benefit-cost analysis

The benefit-cost analysis shows positive benefit-cost ratios for the extended high priority (1.4:1) and trolleybus (1.6:1) options indicating that although these options do not produce enough revenue to cover their capital and operating costs, they provide overall levels of benefits to passengers that outweigh the costs in the long run.

The benefits to public transport users are greater in the extended high-priority and trolleybus schemes than the existing high priority bus option because although the public transport services benefit from the priority there have not been changes in routings and frequencies to make better use of the released roadspace. This applies particularly in terms of serving the developments areas in the Royal Docks, Barking Reach and Havering Riverside. However it should be noted that there is an increase in revenue for this option which covers the capital and operating costs of the scheme and makes the scheme financially positive to the public transport network.

The benefit-cost ratios stated above are depressed by the large disbenefit reflecting the time-penalties imposed on private vehicle users as a result of the traffic priority measures introduced for Transit. In the absence of this disbenefit, the benefit-cost ratios for the various Transit options would increase significantly.

Benefit-cost ratio	Extended high priority bus	Trolleybus
Including impacts on other vehicles	1.4:1	1.6:1
Excluding impacts on other vehicles	2.9:1	2.8:1

It is important to note that the benefit-cost ratios for the high priority bus options (both existing and extended) are not directly comparable to those for standard bus priority schemes. This is because the highway measures assumed here give much greater priority to public transport, and substantial costs such as utility removal have been assumed to produce a high-quality network. In practice to date, conventional bus priority has been achieved without such significant traffic priority measures or high costs.

Crowding

The level of crowding is an important aspect of the quality of service provided by a transport system. Consideration is taken of the number of people standing and crowding is an indication of the comfort level of travel. The methodology for assessing the effects of crowding on public transport services is based on the estimation of the proportion of passengers who experience crowded conditions.

The results indicate that the extended high priority and trolleybus options would reduce crowding by 1,100,000 hours and 995,000 hours respectively on the bus/Transit network, as the additional demand is more than offset by capacity increases. Conversely, the existing high priority bus option would increase the number of hours passengers spend in crowded conditions by 635,000 hours/year. This is because additional passengers are attracted to the bus network without any significant additional capacity being provided.

The extended high priority and trolleybus options would also result in some reductions in crowding on the National Rail and Underground networks. This is primarily the result of rail passengers from the Ilford area using Transit to board less crowded rail services at Barking.

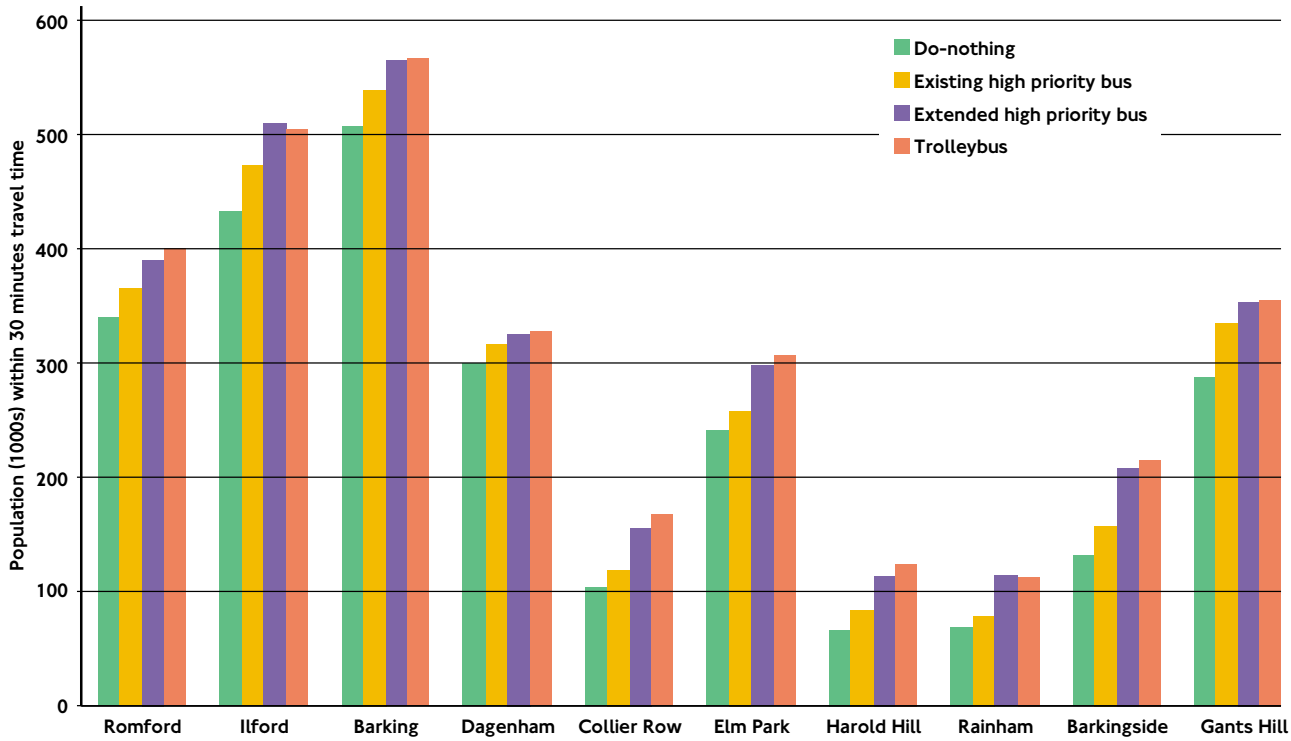
Accessibility

Access to local centres

All the Transit options result in increases in the Greater London population within 30 minutes travel time of the major local centres in the study area. This is a result of the higher running speeds achieved for both Transit and other bus services through the introduction of the traffic management measures.

The greatest increases in accessibility occur to the smaller local centres where current accessibility is lowest, such as Collier Row, Harold Hill and Rainham.

Access to local centres – population catchment served



Note: Population catchments outside Greater London area are not included

Community severance

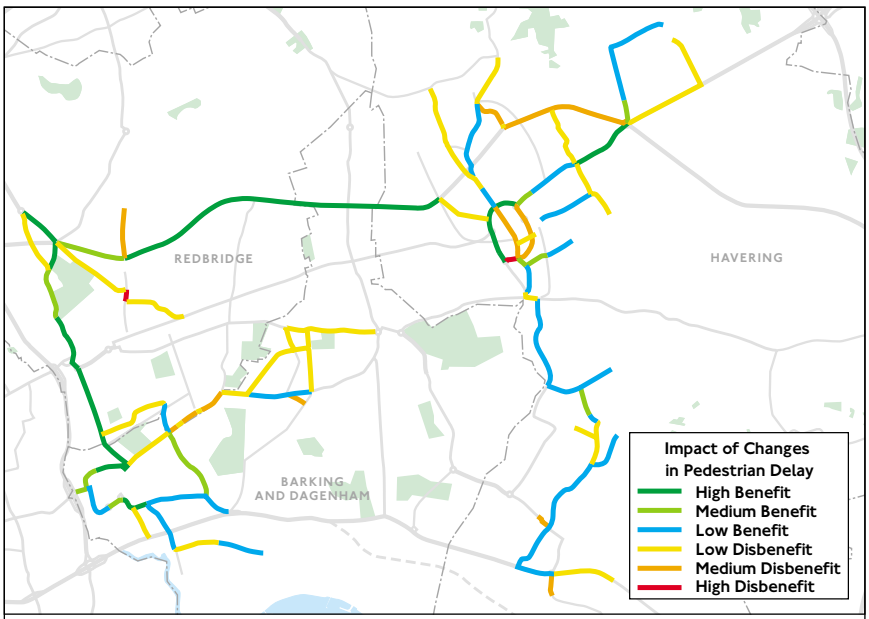
Community severance is measured in terms of pedestrian delay. Pedestrian delay when crossing a road is mostly the result of the waiting time for a suitable gap in the traffic or for a signal phase, which allows pedestrians to cross over safely.

The assessment shows that for all the Transit options, more roads (55%) would experience a reduction in severance than an increase (45%).

This is due to a combination of reduced levels of traffic and the redistribution of vehicle flows over the road network in the study area.

Transit would reduce severance as the proposed traffic priority measures have the overall effect of diverting traffic away from streets with significant pedestrian flows (such as Ilford Lane) on to roads with little or no pedestrian traffic (such as the A406 North Circular). In addition, Transit has been planned with the needs of pedestrians in mind; as a result, many new pedestrian crossing facilities are proposed at Transit stops. This would further reduce the degree of severance from that described in the above analysis.

Impacts on Community Severance



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Pedestrian space

There are only two areas on the Transit alignment where changes in pedestrian space would be significant – namely the pedestrianised areas of Barking and Romford town centres where Transit is proposed to operate.

The assessment shows that the impact of the loss of pedestrian space is 'Neutral' on pedestrians in both these locations. This is because surveys have shown that the pedestrianised area of Barking town centre has adequate spare capacity to accommodate Transit without increasing pedestrian density, while in Romford town centre, the majority of the space for Transit would be taken from existing landscaping features, such as the large planters in South Street rather than existing pedestrian space.

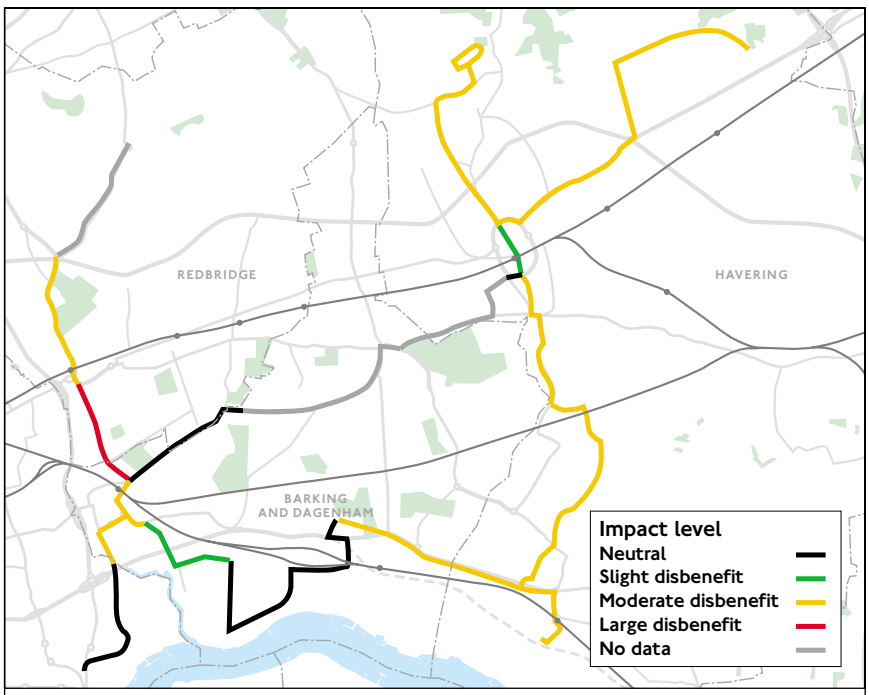
Parking and servicing areas

The assessment has shown that Transit would impose an overall moderate disbenefit in terms of parking and servicing. This is the result of the severity of the new stopping restrictions along the alignment, required for the Transit to have priority. The methodology for assessing the parking and servicing impacts of Transit has been designed to include extra weightings for restrictions close to commercial properties along the alignment, where the level of resistance to such proposals is likely to be strongest.

This is evident in the large disbenefit impact that would occur on Ilford Lane as a result of the restrictions that would be applied on this section of the alignment.

Despite these disbenefits, the needs of legitimate parking and servicing functions have been taken into account in the planning of the Transit. On Ilford Lane, for example, new parking and loading bays would be provided along the length of the road.

Parking and servicing impacts



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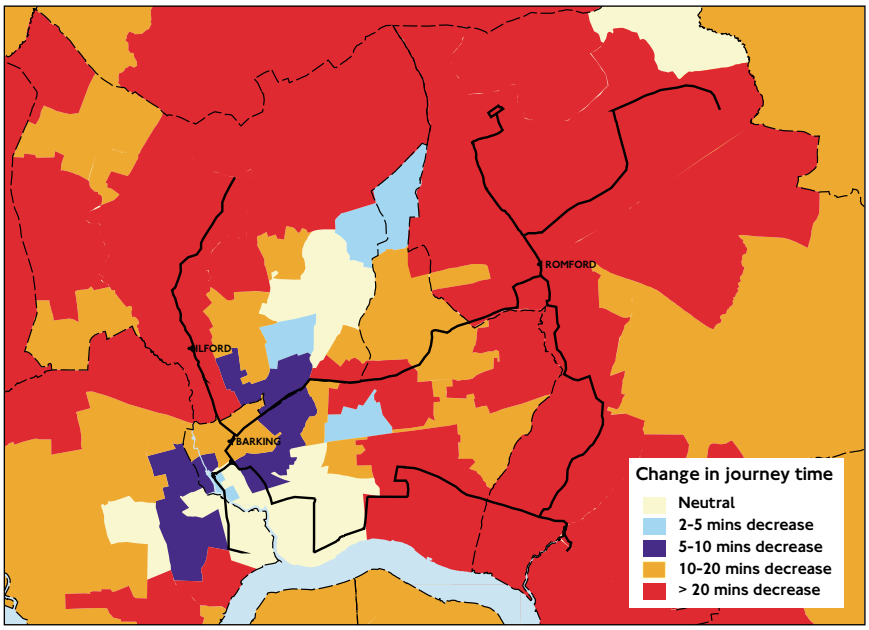
Integration of policy

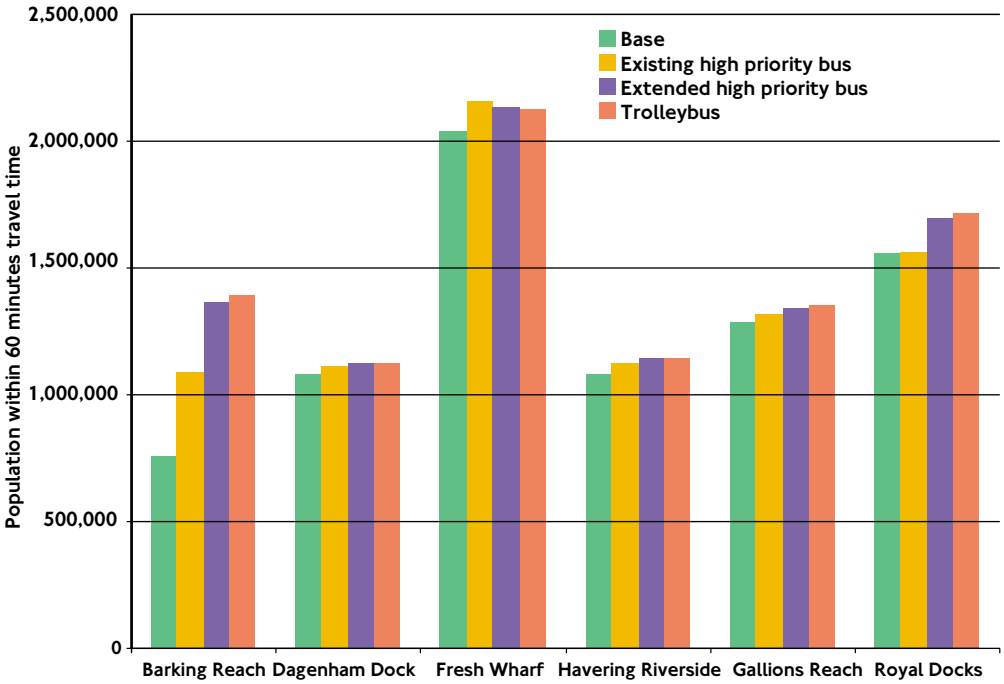
Access to development areas

A major objective of Transit is to improve public transport accessibility to the new development areas located mostly along the southern part of the alignment.

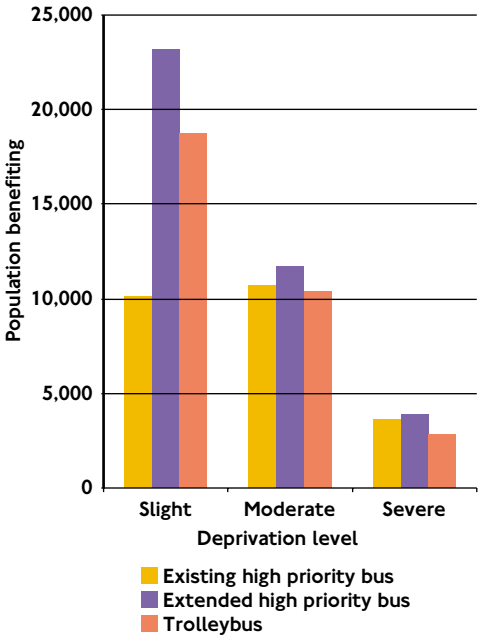
Trolleybus option – change in accessibility to Barking Reach



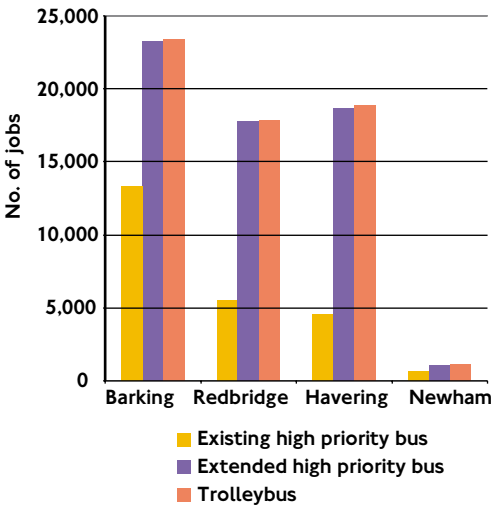
Population within 60 minutes of development sites



Change in access to deprived areas



Changes in available jobs within 60 minute catchment area



Note: Only employment within Greater London area is shown

The assessment has shown that Transit would provide major improvements in accessibility to all these sites. Transit options which include segregated alignments through the development sites would give the greatest improvements in accessibility as these alignments are more direct and running speeds are higher than on the shared highway.

Access from deprived areas

An objective of Transit is to improve access to and from deprived areas, integrated with policies to reduce unemployment, enhance social cohesion and increase social inclusion.

The analysis was based upon calculating the number of people within the deprived population experiencing changes in travel time to reach the nearest local centre as a result of Transit. Deprivation levels use the Index of Local Conditions produced by the Government and for this analysis covers the population living in deprived wards in the boroughs of Barking & Dagenham, Redbridge and Havering only. It is estimated that the "deprived" population within these three boroughs is just under 100,000 people.

Based upon a "deprived" population size of 100,000, the analysis shows that there would be travel time savings for about 25% of this population with the existing high priority bus option, rising respectively to 33% and 40% for the trolleybus and extended high priority bus options. With the existing high priority bus option, the maximum travel time saving would be five minutes, rising to ten minutes for the other two options. For any of the options, only a very small number of people living in deprived areas would have their journey times to the nearest local centre increased.

The extended high priority bus option offers the highest benefits in terms of travel time savings to the deprived population, because of the high service frequencies provided.

Access to employment

Improved accessibility to employment constitutes an important element of current social policy. It implies therefore that it is beneficial to reduce travel times between areas that can supply labour and areas that require a significant labour force.

For the MCAF application, a methodology was developed that relates the occupational split of residents by ward to the available jobs in all other wards within a 60 minute catchment area. In effect, this method matches jobs to residents based on their skills. The changes in the total number of suitable jobs available to residents of each borough are shown to the left.

The assessment shows that although all the Transit options would improve access to employment, the extended high priority and trolleybus options would provide the greatest increases in the number of jobs available.

Integration with other local policies and plans

Local authorities are committed to following local policy objectives that relate to improvements in various areas of competence. Shown below are the main local policy objectives for the local authorities and regeneration partnerships within the Transit study area, along with a qualitative assessment of the extent to which the different Transit options contribute towards achieving them. In particular, Transit would be an important component in securing regeneration of many areas along its alignment by tying the development sites into existing communities in East London.

Objective	Existing high priority bus	Extended high priority bus	Trolleybus
To encourage sustainable development and aid regeneration	✓✓	✓✓	✓✓✓
To improve public transport accessibility	✓✓	✓✓	✓✓
To encourage economic activity of local centres	✓	✓	✓
To provide a cost-effective strategy	✓	✓	✓
To improve the environment	✓	-	✓✓✓
To improve transport efficiency in the corridor	✓	✓✓	✓✓✓
To improve safety in the local area	-	-	✓

- denotes neutral impact

A qualitative assessment has suggested that Transit would meet most of the local policy objectives, with a number of the objectives being more strongly met by different Transit options.

In relation to regeneration and land use, each of the local authorities set out their policies and proposals in their Unitary Development Plans (UDPs). It is concluded that Transit meets most of the objectives set out in the UDPs.

Being a local project, it could not realistically be expected that Transit would provide a significant contribution to national policy objectives. Nevertheless, it is concluded that the project has a role to play in the national context by supporting regeneration and opening up job opportunities.

8 Conclusions

Overall conclusions

Analysis of the sources of the benefits of Transit show that the majority of these are derived from the traffic priority measures. These measures lead to large reductions in public transport journey times for passengers on both Transit and other bus services, both to established and developing areas. In addition Transit would encourage private vehicle traffic in the study area to make greater use of motorways and principal roads rather than lower order roads, including those which are primarily residential in nature.

Therefore for the benefits of the project to be achieved, a significant degree of road space re-allocation in favour of public transport is required in the affected corridors. Although further consultation and detailed design may alter the exact nature of these proposed traffic priority measures, it is TfL's view that any dilution in the radical nature of these will severely reduce the project's benefits, regardless of the mode selected. It is thus TfL's view that the actual type of Transit vehicle selected is less important than the securing of the necessary traffic priority measures.

A summary of the results are set out below.

Performance against objectives				MCAF ASSESSMENT												
				Environment			Safety	Economic			Accessability			Integration		
	Two-way alignment length (km)	Annual boardings (millions)	Max. One-way flow (1000's per hour)	Noise	Emissions	Land take	Change in equivalent fatalities	Initial capital cost (£m)	Benefit: cost ratio	Benefit:Cost ratio (highway impact = 0)	Accessibility to local centres	Severence	Parking and servicing	Access to development areas	Accessability to deprived areas
Existing bus, high priority	50	32.9	2.2	●	●	●	●	150	●	●	●	●	●	●	●
Extended Network, high priority	80	37.7	3.4	●	●	●	●	215	●	●	●	●	●	●	●
Trolleybus	80	39.3	3.7	●	●	●	●	266	●	●	●	●	●	●	●

Performance indicator: Benefits ● High ● Moderate ● Slight Disbenefits ● High ● Moderate ● Slight

The following overall conclusions have been established by TfL:

Transit would provide significant benefits

The results of the multi-criteria assessment show that the majority of the objectives set for Transit would be met. Significant benefits would be realised in terms of improving accessibility to and from regeneration areas and local centres as well as improving the environment.

In addition, the introduction of traffic access restrictions and wider traffic management measures would reduce the amount of through-traffic using the local road network and benefit local residents and businesses by improving the urban environment and providing greater safety to vulnerable road users such as pedestrians and cyclists.

Each of the different technologies under consideration for Transit has specific advantages. Trolleybuses perform better than diesel buses in

Traffic access restriction – bus gate

relation to environmental impacts, although they are less flexible to changes in service patterns as they can only operate under wires.

In addition, there are higher initial capital costs for trolleybuses, although long-term vehicle costs are similar to diesel buses as they have a longer life span.

Transit would offer an attractive alternative to the private car

By improving the quality of public transport, particularly by reducing journey times through the introduction of traffic priority measures, Transit would provide an attractive alternative for people who currently use cars or would otherwise consider using private cars in the area in the future.

T*f*L recognises that the traffic priority measures required for Transit would increase journey times for some private transport users on some roads and could take time to be accepted. However many of those car users affected by the traffic priority measures would also benefit from the improved public transport service offered in the area while some remaining car users would benefit from lower levels of highway traffic.

Parking and servicing provision on Red Route

Traffic calming in residential street

Parking restrictions – the evidence from Priority (Red) Routes

In locations where measures have been introduced to tackle road congestion, particularly through the control of parking, concerns have been raised by traders that such measures are likely to damage their businesses. This has been a major issue for the introduction of Red Routes in London and is likely also to be a concern if Transit is implemented.

A series of independent studies however, commissioned by the former Traffic Director for London, have shown that these fears are unfounded:

- in shopping centres where Red Routes have been introduced, more shopkeepers report buoyant or stable business than in previous years;
- the majority of shoppers (56%) arrive at Red Route centres by foot and 20% by car, unchanged from previous years and suggesting that fears about losing passing trade are unfounded;
- very few shoppers at Red Route centres (4%) cite parking as a problem;
- in a recent survey, 33% of traders interviewed said that they believed that Red Routes have a positive impact on their business, up from 13% in 1996.

The impact of Transit on traffic flows in the area needs to be seen in the context of forecast trends in the growth of car use in the study area. In particular, the large number of regeneration sites in East London will

generate a large number of new car trips and from work undertaken as part of this study, it is estimated that the impact of these new trips will be ten times greater than even the most pessimistic forecasts of what Transit would do. It would be essential to manage the impact of this large number of new car trips on the local road network and Transit should be seen as a way of achieving this.

In addition, alternative routes exist for any traffic displaced by Transit and in terms of journey time-savings, the benefits to public transport users of the traffic priority measures would exceed the costs to private users. However, further detailed work would be required to mitigate the effects of any private vehicle traffic diverting along unsuitable routes ("rat-running").

Establishing the highway impact of Transit – the example of Fanshawe Avenue

As part of the planning of Transit, an Origin-Destination survey of existing vehicle users on Fanshawe Avenue, Barking was commissioned. This site was selected because it is part of the same link as Ilford Lane which is proposed for closure at a point close to the location of the survey. The purpose of this survey was to establish how many different types of journeys were made on this route and what alternative routes existed for private vehicle users.

Analysis of the trip patterns of 1,500 private vehicle trips at this location showed:

- only 25% of trips are local trips which have to use Ilford Lane/Fanshawe Avenue;
- 28% of trips could alternatively use other local routes such as the A406 or South Park Drive;
- 47% of trips are longer distance trips. Three quarters of these, representing 36% of the total trips, could use the A406.

Overall, the analysis confirms that a large proportion of traffic using Ilford Lane has alternative routes. This is particularly true of the non-local trips which are more suited to the parallel A406. The removal of this through traffic would have the potential for providing a major improvement to the environment of Ilford Lane.

Transit would be cost effective

Using conventional benefit-cost analysis, the benefits of Transit outweigh the costs – even where a monetary cost is included for the increased journey times experienced by some private transport users as a result of Transit. However, if traffic reduction is itself regarded as an objective,

the journey time cost of Transit on private vehicle users should not form part of the project evaluation; the effect of the removal of this cost is to substantially increase the benefit-cost ratio for the project.

Conclusions on alignment

It is T*f*L's view that virtually the whole of the alignment considered in this study has the potential to support a Transit service. Although Transit must meet a wide range of objectives to be justified, including providing accessibility improvements to development areas and other key centres, sufficient passenger demand is obviously essential if a cost effective system is to be provided. This study has shown that the highest demand for Transit is forecast to be between Harold Hill and Romford town centre and along the Longbridge Road into Barking town centre.

The main conclusions on the alignment are outlined below:

- Demand along some sections of Transit is partly dependent upon public transport-friendly developments and alignment aspirations being realised. Alignments should therefore be safeguarded through development areas, although the eventual realisation of Transit will require the development of land uses in these areas that generate high levels of public transport usage. Included in this category are existing planned links to Gallions Reach, Barking Reach, Havering Riverside as well as a potential new Transit link through the Ford's/Dagenham Dock regeneration area.
- Based on conventional benefit-cost analysis, the Barking town centre to Gallions Reach link does not exhibit sufficient demand to justify the high cost. However, the link does offer significant regeneration and accessibility benefits that justify studying this link further. Possibilities include extending the alignment beyond Gallions Reach in to the Royal Docks or using the proposed Thames Gateway Bridge river crossing if it proceeds to join with Greenwich Waterfront Transit.
- The proposed restrictions to through-traffic outside Ilford station on the Cranbrook Road would significantly improve the pedestrian environment. However, the case to extend the alignment to Gants Hill appears weak unless Transit services continue further north – possibly to Barkingside or beyond. Detailed engineering work will be required to establish any necessary traffic management measures for this additional alignment.
- The Harold Hill and Collier Row links improve access to Romford town centre. However, the link from Harold Hill performs significantly better in demand terms and would link up the largest population centre in Greater London without a rail station.

- Extending the link from the Longbridge Road campus of the University of East London east to Romford attracts high levels of demand and provides significant benefits in integrating with other bus and rail services. Detailed engineering work will be required to establish any necessary traffic management measures for this alignment.
- Using the detrunked section of the A13 for Transit services is attractive and segregation from other traffic would be possible. However, patronage would be dependent on the development of the Havering Riverside and Barking Reach development areas. In addition, it is possible that a more southern alignment through the Dagenham Dock regeneration area might offer greater benefits, particularly if Transit is then linked up with bus services to and from Dagenham Heathway.

Conclusions on technology

Since this assessment shows that the majority of the benefits of Transit would result from the traffic priority measures introduced, it is TfL's view that either diesel or trolleybus vehicles would be suitable for use on the project. Therefore, the preferred mode will only be selected once the views of both the public and the private sector have been fully understood through consultation.

Risk Analysis

An initial assessment was undertaken to identify and assess the possible risks to the scheme. The results of this exercise are set out below.

Risk		Level	Explanation
Recommendations	Modal recommendations	Low	The feasibility and evaluation studies have established that the choice of technology is secondary to the priority measures in determining benefits and meeting objectives.
	Traffic management and priority measures	High	The delivery of the traffic management, necessary parking and priority measures is high risk because they are the most critical component in determining the scheme benefits and little scope exists for reducing the measures as the economic justification for the significant investment required reduces sharply. To reduce this risk all commercial loading and servicing has been maintained and parking bays have been provided where space is available. Assessments of the impacts of these measures have shown that the overall impacts are relatively small.
External factors	The economy, impact of other policies, and development and regeneration assumptions	High on routes south of the A13,low elsewhere	There is a risk that the development aspirations are not achieved – or are exceeded, or that they are of a much lower or higher density than assumed. A result could be that the mode taken forward has too much or insufficient capacity on these routes. There is also a lack of understanding about the inter-relationship between regeneration and public transport which makes this difficult to forecast.

Risk		Level	Explanation
			Consequently, bus based improvements such as LBI and borough initiatives should be progressed in the short term with the longer term goal being the implementation of Transit. Also, potential demand levels should be monitored to ensure that adequate capacity could be provided via the Transit mode taken forward, or whether a higher capacity mode (e.g. tram) would be necessary.
	Change of political control	Low	There is political risk in that a change in local authority control could result in opposition to the measures being proposed. However, this is considered to be low as formal local authority support has been sought throughout the process.
Public transport service planning	Service planning and interchange	Medium/High	Further work is required once the technology has been agreed, and at other stages during scheme assumptions development to optimise the service planning and interchange assumptions. There is a medium to high risk because the financial benefits are very sensitive to service planning assumptions, as are existing public transport users to proposed changes to bus services.
	Other public transport initiatives	Medium/High	An integrated approach to addressing the wider package of initiatives such as the London Bus Initiative and ticketing initiatives need to be taken forward in order that proposals that bring benefits in the short term are not delayed, and help "pave the way" for Transit. These could increase or decrease the benefits or costs of Transit.
	Revenue forecasts	Low	The majority of Transit demand would come from existing public transport users, and thus there is a relatively low risk to net revenues.
Technical specifications of Transit	Electronic guidance	High	This is a new technology and remains unproven in a passenger operating environment meaning that it is an area of huge uncertainty in terms of its costs and benefits and its implications on gaining access to pedestrianised areas.
	Utility removal	Medium	Utility removal for diesel bus options has assumed a much higher level and cost than is implemented in conventional bus priority and this has a major effect on the overall conclusions on these options.
	Vehicle renewal	Low	The period of life assumptions may over estimate the number of times a bus or trolleybus is renewed over the thirty year life period, but has little impact on the business case when discounting and the period of the scheme are taken into account.
	Depot costs	Low	Depot costs are an initial outlay and have been calculated to take into account the variances between modes as well as incrementally based on the number of additional vehicles required.
	Capacity assumptions	Low	Planning standards for the various technologies have been used to determine frequencies and it has been ensured that all the demand fits within the supply.

9 Way forward

Based upon the results of the work summarised in this report, T*f*L and the local authorities have decided to proceed to the next phase in the development of East London Transit – preliminary public consultation. The purpose of the consultation is to establish what level of support exists for Transit from the public as well as potential private sector partners who might build, fund and operate the system. Consultation will be used to help inform the formal decision to be taken by the Boroughs, T*f*L and the Mayor as to whether to proceed with the development and implementation of the scheme and the priority to be placed on it relative to other projects.

Preliminary public consultation

This study has shown that the overall benefits of Transit would significantly outweigh any adverse impacts. However, it is intended that preliminary public consultation is carried out to seek views on the principles of the proposals. In particular, consultation will seek to explain the proposals and establish:

- Whether there is support for the principle of road space re-allocation in favour of Transit and vulnerable road users through the use of traffic management measures;
- Whether there is support for the proposed Transit alignment (including extensions);
- The perceived advantages and disadvantages of the different vehicle-types under consideration for Transit – Euro III diesel buses and articulated trolleybuses – which could be guided on all or part of the alignment.

It should be noted that much of the detailed planning work for Transit remains to be carried out, including the design of the area-wide traffic management measures and the planning of the service patterns for Transit, including any accompanying changes to existing bus services. These issues will be addressed at a later date if it is clear that there is sufficient support to progress the project further.

Seeking expressions of interest from the private sector

The work completed to date has demonstrated that Transit is a cost-effective proposal. At the same time as preliminary public consultation, T*f*L will be seeking the views of potential funders and/or operators in the private sector of the transport industry on Transit. This will enable the Mayor and local authorities to decide whether to proceed, on the options available and to identify a preferred approach to progress any proposals through to implementation. Private sector involvement in similar projects in London, including Croydon Tramlink and the DLR extension to Lewisham has proved successful and reduced the funds required from the public sector by between 40-70%.

The Transport and Works Act procedure

The Transport and Works Act 1992 (TWA) provides a method for promoters of new transport systems, including new railways, tramways, trolley vehicle systems and other guided transport systems, to gain powers to carry out works including construction, compulsory purchase and temporary acquisition. The legislation is designed to provide a planning procedure for these systems similar that used for the construction of new road schemes and including, where appropriate, a Public Inquiry.

The main stages of the procedure can be summarised as follows:

- **Pre-application consultation –** there is an expectation that wide publicity will be given to the proposals and to this end public meetings and exhibitions will be held at suitable locations. In addition, there is an obligation to consult a wide range of interested parties including affected property owners and statutory undertakers such as Utility companies.
- **Deposit of Application –** documents must be deposited describing the works and powers sought, as well as plans and an Environmental Statement. These documents must be made available for inspection at suitable locations such as town halls and libraries.
- **Objection period –** Objections may be made against an Application for a TWA Order by anyone and must be sent to the Secretary of State within six weeks of the date of the Application for the Order. Objections may be considered in correspondence, by means of a local hearing or through a Public Inquiry.
- **Negotiating period –** Negotiation between the promoter and objectors may result in some objections being removed. The length of the negotiation period will reflect the volume and complexity of the objections received.
- **Public Inquiry –** Where a Public Inquiry is held it will be presided over by an Inspector. The general principles of the inquiry are very similar to those for a road scheme and objectors may be heard in person and need not be professionally represented.
- **Determination of the Application –** Following the receipt of the Inspector's report the Secretary of State will determine the Application. The Secretary of State may grant or refuse the Works Order in totality and may require the promoter to alter the proposals before granting the Order.

Timescales for the TWA Order process are difficult to predict and depend crucially upon the complexity of the proposals and the number of objections received. As examples however, the TWA Order process to construct the Metrolink Light Rail extension to Ashton took 21 months from the deposit of the Application to receiving Ministerial consent, while the Merseyside Rapid Transit Proposals, which did not receive Ministerial consent, took 13 months from deposit to the time of receiving a Ministerial decision.

At this stage, TfL will be seeking the views of private sector companies with respect to:

- The types of vehicle that may be suitable for Transit
- Packaging of system (builder/operator)
- Concession arrangements
- Timing and involvement in the process
- Risk taking
- Funding options

Decision to proceed

The information from public consultation and the private sector, together with the results from existing and further studies, will be used by the local authorities and the Mayor to decide whether they wish to proceed with the development and implementation of the scheme and its priority in the Mayor's programmes. If it is decided to proceed, two options are available for seeking powers to implement the scheme. Firstly, for any scheme not involving electric power or guidance, conventional planning and highway powers could be sought. Alternatively, Transport and Works Act powers could be pursued. The latter would ensure that all the necessary highway powers are obtained and safeguarded. It would also help overcome the biggest risk to the scheme – namely the local authorities ability to deliver all the priority measures necessary for the scheme.

Seeking powers through the Transport and Works Act Order process would require carrying out further detailed design work and additional consultation along with a Public Inquiry if any objections to the schemes were received. This process would probably take two to three years, depending on the extent and nature of the scheme. This process and timescale also applies to the other intermediate mode proposals currently under consideration by TfL.

Deciding to work in partnership

Although it will be for the Mayor to decide which intermediate mode schemes, if any, should be progressed, local support will be essential for any scheme to be developed beyond this stage. If the local authorities or the Mayor are unable to support the proposals no scheme will proceed. Therefore, the local authorities are invited to demonstrate their commitment to these proposals for Transit and introduce policies and practical measures that will assist in the development of the project.

In addition, should there be agreement to proceed to the stage where construction powers are sought for East London Transit, local authorities would need to enter a formal partnership with TfL and the private sector prior to carrying out any preparatory work for any Transport and Works Act Order. TfL would also be encouraging each local authority to take a clear and unambiguous cross-party political decision to support and promote the project. This would reduce the risk of construction being

disrupted by any political changes resulting from elections during the implementation phase of the project. These approaches were adopted successfully on Croydon Tramlink and were designed to encourage local ownership and ensure that real benefits were delivered to local residents and businesses. In T*f*L's opinion, local authority involvement in new transport projects is vital for their success and without such formal agreements for East London Transit it will not be possible to proceed with the project.

In the interim, T*f*L will be vigorously pursuing bus priority, vehicle and service improvements in a way compatible with ultimate construction of Transit. Local authority support for such improvements and others to improve bus travel in the area will be a visible indicator of commitment.

It is T*f*L 's hope that local authorities will respond with vision to the opportunities, as well as challenges, that are offered by East London Transit.