

TRANSPORT FOR LONDON

BOARD

**SUBJECT: INDEPENDENT STRATEGIC REVIEW OF BUS SERVICES IN LONDON**

**DATE: 29 JULY 2009**

---

**1 PURPOSE**

- 1.1 The attached report was prepared in response to the Mayor's commitment to commission a review of London's bus service, as approved at the meeting in November 2008. It was noted at this meeting that this would be reported to the Surface Transport Panel.
- 1.2 This report was considered by the Surface Transport Panel at its meeting held on 3 July 2009 and by the Finance Committee at its meeting held on 15 July 2009. Members of the Panel and Committee welcomed the Report.

**2 BACKGROUND**

- 2.1 The report has been produced by KPMG who were contracted following a competitive tendering process.
- 2.2 The report comments on, and makes recommendations about, a number of areas of operation around bus contracting and network planning.

**3 SCOPE OF WORK**

- 3.1 The report considers three key areas:
  - (a) Bus contracting;
  - (b) Network development; and
  - (c) Value for money.
- 3.2 The findings are not summarised here as the report is self explanatory. As the report has just been delivered, TfL is in the early stages of reviewing which recommendations should be taken forward.

**4 RECOMMENDATION**

- 4.1 The Board is requested to NOTE the contents of this paper.

**5 CONTACT**

- 5.1 Contact: David Brown, Managing Director, Surface Transport  
Email: [DavidBrownMD@tfl.gov.uk](mailto:DavidBrownMD@tfl.gov.uk)  
Telephone: 020 3054 0178



*London Bus Services Limited*  
*Independent strategic review of the provision of bus services in London*  
*KPMG LLP*

**London Bus Services Limited**

Independent strategic review  
of the provision of bus  
services in London

**PRO-1639**  
**Call-Off 1**

KPMG LLP

Final Report – 16 July 2009

*This report contains 92 pages*

*Appendices contain 19 pages*

## Contents

<b>1</b>	<b>Executive summary</b>	<b>2</b>
1.1	Introduction	2
1.2	Bus contracting and the competitive environment	3
1.3	Savings opportunities in bus operating costs	4
1.4	The bus network	5
1.5	Stakeholder consultation	6
1.6	How does London compare to other cities?	6
<b>2</b>	<b>Scope and methodology of this report</b>	<b>8</b>
2.1	Scope	8
2.2	Methodology	10
<b>3</b>	<b>Context</b>	<b>12</b>
3.1	London's buses: background	12
3.2	The market for bus service contracts in London	13
3.3	The growth in subsidy	14
3.4	The outlook for subsidy (2008/09 to 2017/18)	23
3.5	Comparing London to other international cities	24
<b>4</b>	<b>The market and competition</b>	<b>28</b>
4.1	Competition in the market for bus service contracts	28
4.2	Operator financial performance	36
<b>5</b>	<b>London bus contracts</b>	<b>40</b>
5.1	The contractual model	40
5.2	Potential opportunities for cost savings	45
5.3	Incentive regimes	50
5.4	Indexation risk	54
<b>6</b>	<b>How contracts are awarded</b>	<b>57</b>
6.1	The tender process	57
6.2	Outcomes of the tender award process	58
<b>7</b>	<b>Network development</b>	<b>64</b>
7.1	The service planning process	64
7.2	Consultation and service planning	71
7.3	The appraisal framework	77
7.4	Oxford Street	83
7.5	Orbital services	85
7.6	Express Services	89
<b>8</b>	<b>Glossary</b>	<b>91</b>



*London Bus Services Limited*

*KPMG LLP  
Final Report – 16 July 2009*

<b>Appendix one – International policy context</b>	<b>93</b>
8.1 Policy and context benchmarking	93



## Important notice

**This Report has been prepared on the basis set out in our Contract, dated May 2009, with London Bus Services Limited ("the Client").**

**This Report is for the benefit only of the Client, and has been released to the Client on the basis that it shall not be copied, referred to or disclosed, in whole or in part, without our prior written consent.**

**Nothing in this report constitutes a valuation or legal advice. We have not verified the reliability or accuracy of any information obtained in the course of our work, other than in the limited circumstances set out in the Call-Off Contract.**

**This Report is not suitable to be relied on by any party wishing to acquire rights against KPMG LLP (other than the Client) for any purpose or in any context. Any party other than the Client that obtains access to this Report or a copy (under the Freedom of Information Act 2000 or otherwise) and chooses to rely on this Report (or any part of it) does so at its own risk. To the fullest extent permitted by law, KPMG LLP does not assume any responsibility and will not accept any liability in respect of this Report to any party other than the Client.**

# 1 Executive summary

## 1.1 Introduction

Following Mayor Johnson's announcement in November 2008 that he was commissioning a review of London's bus service, this report comments on, and makes recommendations in, a number of areas of the service's operation around bus contracting and network planning.

### *Context: bus subsidy*

The quality, scale and frequency of the service increased markedly in the period from 2001/02 to 2003/04. These increases have come at a financial cost: as the price of fares has been held back in real terms and relative to other modes of transport; the availability of travel concessions has increased. So too has the subsidy employed by TfL to run the bus network.

In the 1980s, the publicly-owned and operated bus service in London required a significant subsidy, and this was reduced year-on-year to a low point in the late 1990s. Subsidy has since increased substantially from some £41 million in 1999/00 to £653 million in 2007/08.

### *Financial pressures*

Looking forward, the level of support to operators is projected to be £766m in nominal terms by 2017/18 – but there are a number of identified financial pressures which could put strain on this projected level – such as the level of central government support to TfL and the impact from major policy decisions, for example, the cost of introducing the New Bus for London.

Against this backdrop, and taking account of current economic conditions, in addition to commenting on a number of TfL's processes for tendering route contracts and developing the London bus network, we have identified potential areas where savings might be made.

### *How can subsidy be reduced?*

The largest controllable levers to contain or reduce subsidy are the price of fares and the scale of the network, both its size and frequency of services.

A review of fares is outside the scope of this report – although we have commented on how London bus fares have fallen in real terms in recent years compared to other modes of transport.

Reducing the scale of the network is clearly possible – and TfL's network planning processes uses parameters that enable consistent, supportable decisions to be made to do so.

Beyond these two principal levers, we have identified a range of other areas where we believe financial savings might be made in both bus contracting and network planning.

## 1.2 Bus contracting and the competitive environment

At present, the bus routes are operated through a series of contractual arrangements with third party providers. Our analysis has suggested that, overall, the cost of individual route provision has fallen over the last two years and feedback from external stakeholders is that the contracting process works well.

However, there is a concern that the market has become more concentrated around some seven larger players, many of whom have a significant regional presence in parts of London. Further, the structure of the market is such that most depots are owned by operators – thereby raising the barrier to new market entrants. Currently the relative size of the players means that the most realistic market entry strategy is through acquiring an existing operator with established scale.

Whilst the evidence we have received indicates that the market does operate competitively – and indeed most routes tendered receive multiple bids – this progressive concentration of players with their economies of scale, coupled with the need for depots to be a participant in the market, inevitably raises concerns about whether the current structure will continue to be as competitive as it has been.

### *The depot structure*

We understand that a wholesale “in-sourcing” of depots to help stimulate the market is unlikely to be either attractive or feasible for TfL. However, we do recommend TfL consider acquiring or developing more depots, over time, as part of a blended strategy for stimulating new participants to enter the market and to ensure adequate depot capacity for a growing network.

### *Allocation of revenue risk*

We have considered whether a “net cost” model of contracting – whereby the operator earns the revenue from fares – is preferable to the current “gross cost” model where revenue is retained by TfL and the operator is only responsible for the cost of providing the service.

There are advantages and disadvantages to both models – but also risks and complexities with introducing a net cost model given both current policy and the operational changes which would be needed to make a net cost structure work effectively.

On balance, we believe that there is no compelling evidence, at this time, that a net cost model would deliver financial benefits under the current policy framework for London’s buses – and, indeed, operators may regard revenue risk as a reason to price an additional cost premium into their bids.

### *The “cost of quality”*

We have considered the “cost of quality” – the rationale for which routes are not always awarded to the lowest cost bidder. In absolute terms, the annual cost of not selecting the lowest cost bidder is some £30 million. However, this is not a realistic potential savings level as there are concerns over the deliverability of, and operational risks associated with, a number of bids which may lead to the non-selection of the lowest cost bid for a route. Management have indicated a saving of some £5-10 million per annum could be achieved if additional risk to the quality of operation was to be accepted.

In an increasingly financially constrained environment, we recommend that the framework and parameters for making these decisions are reviewed to ensure that the balance struck is consistent with TfL’s financial objectives.

### *Quality incentives*

Delivering for passengers, both in terms of operating performance and service quality, is a priority for stakeholders. For London’s buses to continue to improve, we recommend that the existing incentive regimes are retained – but to ensure efficiency, the business case for the recently introduced elements are reconfirmed after they have had time to bed-in. The information from the new iBus system could be used to better target the incentive regimes – in fact it is already planned to deliver savings in the collection of performance data.

## **1.3 Savings opportunities in bus operating costs**

Given the “outsourced” nature of bus provision, the level of TfL’s directly controllable spend on bus provision is limited once the contracts have been let. We have, however, identified four areas where we believe savings might be made for potentially the mutual benefit of both TfL and the operators:

First, we recommend exploring whether the specification for London’s high quality buses could be safely reduced – thereby limiting the capital spend operators need to price into their bids. The benefits of this would be received over time and would depend on choices regarding specification. However, if, for example, the requirement for comfort items such as upper deck cooling were removed then savings of some £3-5 million per annum could be made.

Second, we recommend exploring whether there is a better way of financing the fleet: at present, fleet financing is the responsibility of operators. Incorporating TfL’s covenant into the financing arrangements – perhaps through a leasing scheme – might reduce the overall cost of finance, particularly given current financing market conditions and increasing residual value risks. Subject to assumptions and the choice of model adopted, we estimate that annual savings of some £3-40 million might be achieved. The lower end of this range reflects funding only the six hundred vehicles in the New Bus for London fleet, the higher end is based on funding all new buses. The benefits of changes in this area will be received as new buses are purchased.



Third, we recommend a review of the arrangements for on-bus advertising. Currently, the operators manage the sale of advertising; there may be economies of scale if TfL were to let a central contract for all buses in London. There may also be benefit in considering the restrictions placed on certain types of advertisement. It is difficult to value the potential of these changes, particularly given the current downturn in the market for advertising, but we estimate they could generate additional revenue of up to £3 million per annum and more may be achievable if the market for advertising improves.

Fourth, if reducing overall market costs is a priority, we recommend exploring collaborative procurement models for certain running cost items to ensure that the benefit of TfL's scale and the standardisation of the market is brought to bear in getting the best price for these goods and services. The level of achievable savings and the timescales for delivery in this area is dependent on the scale and structure of its implementation.

## 1.4 The bus network

We have looked at the network development process used by TfL. The current approach is mature and well understood and we do not propose fundamental changes, but as with most processes continuous improvement is possible – some stakeholders fed back that they could see greater opportunities for innovation in this area.

Should financial considerations and the need to contain subsidy become heightened objectives for TfL, then it would be possible to achieve savings by reducing the scope of the network (network size and/or frequency of services) by de-selecting services which do not meet agreed financial or other criteria. TfL's bus network planning process would enable such de-selection to take place in a structured and supportable manner. For example, cost could be targeted over simplicity, frequency or reliability – but this is likely to reduce the quality of the service delivered to some passengers.

We have made recommendations that build upon the current processes to ensure that network design continues to be undertaken in an efficient manner and that it reflects current passenger priorities. We believe TfL should more explicitly target reduced journey times thus attracting new passengers and maximising total revenue. We have made recommendations regarding the detailed application of service planning parameters.

### 1.4.1 Network planning issues we also considered

We have been asked to consider the nature and role of three current network planning issues:

- The current volume of bus services on Oxford Street;
- The provision of orbital links; and
- The provision of express services.

Our scope of work has not permitted the completion of a full investigation of network design exercise. We have however set out some of the pertinent issues and our high level findings can be found in sections 7.4 to 7.6 of this report.

### *Affordability and value for money*

The availability of public funds will restrict the development of some of these schemes. TfL's current budget for bus service provision does not include further funding in the areas of express or orbital services. Therefore, any additional subsidy requirement would need to be met through either the provision of extra funding or a reallocation of TfL budgets from existing or planned uses.

## **1.5 Stakeholder consultation**

During the development of this report we met with representatives of the following stakeholder groups:

- Bus operators;
- London Boroughs;
- London Councils;
- London Assembly Members;
- Trade Unions;
- The Mayor's office;
- London business groups; and
- London TravelWatch

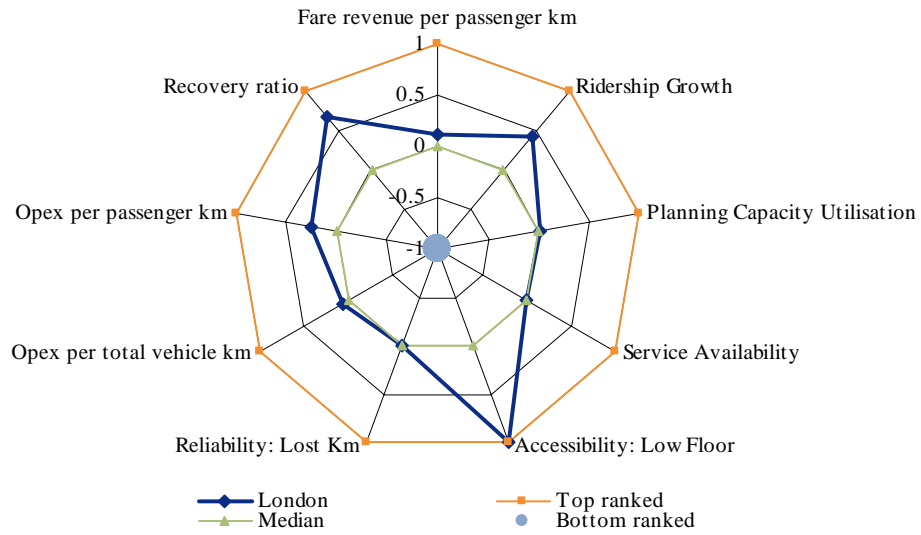
We have attended twenty one interviews with stakeholders, and obtained their views and priorities on a range of issues. Consideration of the issues raised by stakeholders has informed our conclusions throughout the report.

## **1.6 How does London compare to other cities?**

We have made comparisons with a selection of cities drawing on the KPMG international network of independent firms. The cities covered have market frameworks that differ to varying extents, but there are comparisons that can be drawn and lessons that can be applied to London. Cities that have implemented a gross cost tendering model have generally seen costs fall and several cities see encouraging competition as a key strategy to increase efficiency and reduce costs.

We have reviewed benchmarking work undertaken by a group at Imperial College London which compares London's bus provision against a number of other cities relative to a number of metrics. London's bus network performs at or better than average on all the metrics in the study. On cost efficiency measures, London is at least twenty percent ahead of the group average.

Figure 1 – Ranking London’s buses against the IBBG members



Source: Railway and Transport Strategy Centre at ICL / IBBG

## 2 Scope and methodology of this report

### 2.1 Scope

Following the Mayor’s request, London Bus Services Limited (“LBSL”), the subsidiary of TfL responsible for the bus service, commissioned KPMG, working with a specialist transport consultancy Steer Davies Gleave (“SDG”), to provide an independent strategic review of London’s bus network.

Our work has considered three key areas:

- **Bus contracting** – the regime under which the provision of bus services by third party operators is undertaken;
- **Network development** – the processes by which London’s bus network is designed and developed; and
- **Value for money** – exploring historic financial and operational trends for TfL over a ten year period and comparing a number of aspects of London’s bus service contracting model to that provided in a range of international cities.

There are a number of specific matters outside the scope of our work including *inter alia* fares policy; wholesale ownership change; and material network reductions. However, we have provided observations on aspects of these where relevant to illustrate key points in our work.

To improve the readability of this report it is not specifically structured to align to the above workstreams. We have set out below where each of the elements within our scope is addressed within this report.

**Figure 2 – Scope of our work and navigation of this report**

Scope	Report reference
<b>Report, recommendations, efficiencies and savings – The Service Provider will produce:</b>	
An independent report (“the Report”) that summarises their findings in each of these areas (below) which includes recommendations that may produce efficiencies and savings in the provision of bus services in London.	3 – 6
<b>Bus contracting (“Workstream one”) – The Service Provider will comment on and provide recommendations on the following areas:</b>	
The Transport for London (“TfL”) bus contract award process;	5
Key contract terms of TfL’s existing framework agreement for the provision of bus services;	4 and 5
The current market for bus contracts showing trends over the last seven years, so far as the information is available;	2 and 3
The allocation of risk and reward in the existing contract for the provision of bus services and the potential for changes to the allocation of risk and reward to deliver improvements in price without impacting on the level of services delivered to passengers;	4.3 and 4.4

Scope	Report reference
The current performance incentive regime in the existing contract for the provision of bus services and a review of the possible impacts of changes to the performance incentive regime;	4.3
A comparison of TfL's existing contract for the provision of bus services with the approaches of up to eight other world cities;	2.5
Good practice which may be applicable to London bus services taken from other public bodies that contract for the provision of services; and	4.2
Engagement with up to four suppliers of bus services and a record of their feedback about the current contract form and the tendering processes.	Throughout report
<b>Bus network development (“Workstream two”) – The Service Provider will comment on and provide recommendations on the following areas:</b>	
The alignment between TfL's current processes for development of the bus network and Mayoral strategic objectives, as provided by the Authority;	6.1 – 6.3
The current network development process and its ability to meet strategic challenges including the future budget;	6.1 – 6.3
The TfL Service Planning Guidelines, to be provided by the Authority;	6.1
The current cost benefit framework to assess how well it reflects TfL's corporate objectives and passenger priorities as defined by existing research that will be provided by the Authority; and	6.3
Good practice for efficiency in network planning.	6.1 – 6.6
<b>Value for Money (“Workstream three”) – The Service Provider will comment on and provide recommendations on the following areas:</b>	
International benchmarking analysis of TfL against the other cities in the International Bus Benchmarking Group, subject to the Authority providing access to the data; and	2.5
A trend analysis, of the previous ten years, to cover the cost, revenue and subsidy required to deliver the bus services in London, subject to the required data being provided by the Authority.	2.1 – 2.4
<b>Stakeholder Engagement – The Service Provider will assimilate the views of the following stakeholders on the TfL network development and bus tendering processes:</b>	
Officers of Local Authorities;	Throughout report
London Councils;	
Members of the London Assembly;	
Representatives of the Mayor's office;	
Bus operators;	
An organisation that represents London's employers;	
An organisation the represents London's transport user; and	
A senior representative of the Trade Unions.	

## 2.2 Methodology

### *Overview*

Our approach has been to produce findings which are evidence-based. We have sought to validate all our findings and recommendations by analysing underlying data, but due to data availability and comparability, full analysis has not always been possible. Where we have been unable to source sufficient evidence to support a definitive recommendation, we have suggested that further research is undertaken.

### *Sources of information*

We have used the following sources of information:

- Management and statutory financial accounts;
- Operating and management information, such as the contract management database, which stores information about bus service contracts;
- Statutory planning documents;
- “Travel in London – Report 1” and its predecessor “The London Travel Report”, and other statistical information produced by TfL, the Office for National Statistics (“ONS”), the Department for Transport (“DfT”) and other government bodies;
- DfT and TfL appraisal and service planning guidance documents;
- Successful and unsuccessful tender submissions for bus service contracts;
- Transport and bus industry groups’ publications and websites including that of the Confederation of Passenger Transport (“CPT”);
- Tender Evaluation Committee (“TEC”) papers, minutes and correspondence relating to tender awards and bus service changes;
- The Railway and Transport Strategy Centre at Imperial College London (“ICL”) including the International Bus Benchmarking Group (“IBBG”);
- Stakeholder interviews;
- Meetings with senior TfL management;
- Volumes one and two of the “Amended and Restated Framework Agreement” for bus service contracts in London;
- Contacts in the KPMG network of independent firms and SDG offices around the world; and
- Other relevant sources of publicly available evidence.

### *Confirmations with management*

Our analysis and initial findings have been discussed with TfL management during the development of this report and, where appropriate, their comments and views have been taken on-board.

### *Focus of work*

We have focused on key strategic elements only and have not performed an in-depth study of all of the issues. Our recommendations are based on a strategic review as opposed to a detailed feasibility study. Any decisions which are ultimately taken by TfL following consideration of those recommendations, are the sole responsibility of TfL.

### *Savings opportunities*

An initial financial assessment for each of the savings options highlighted in section 5.2 has been performed and where practicable the assumptions in each business case have been validated with TfL management.

### *Stakeholder feedback*

In conducting our work, we sought the views of a range of stakeholders. As part of our review we met with representatives of the following stakeholder groups:

- Bus operators;
- London Boroughs;
- London Councils;
- London Assembly Members;
- Trade Unions;
- The Mayor's office;
- London business groups; and
- London TravelWatch

We have attended twenty one interviews with stakeholders, and obtained their views and priorities on a range of issues. We have met these stakeholders once and the identity of the individuals or organisation that raised each issue has been anonymised in this report.

Where possible in this report, we have sought further evidence to validate the views of stakeholders. We have not made any recommendations based solely on stakeholder feedback, but have used the views of stakeholders to inform our work. We have included the views of stakeholders throughout this report.

## 3 Context

### 3.1 London's buses: background

Competitive tendering for the operation of bus services in London commenced in July 1985, when the first small batch of routes was offered to the market. Up to this point, virtually all services in the London area had been directly operated by London Transport's own operating subsidiary. The commencement of tendering reflected a desire to secure an economical operation and reduce the demand on public funds, and was also a response to poor operating standards at the time.

In preparation for privatisation, the main London Transport bus operating business was split into a series of wholly owned subsidiary companies; these were allowed to bid in competition with each other as well as against private operators for the routes that were offered for tender. The initial route tenders had been offered on a gross cost basis, with the Authority taking revenue risk. A tendered bus division was set up by London Transport to deliver this task.

#### *Privatisation*

The subsidiary operating companies were privatised in 1994 and early 1995, and were sold to either management teams or outside trade buyers. In nearly all cases ownership of the buses and depots passed with the businesses. In conjunction with the privatisation process, those route contracts that had not been competed were supported by a negotiated block grant, net of revenues. A new forward tendering programme for routes was published, covering the entire network. This broadly runs in five to seven year tendering cycles.

After privatisation of the bus companies, the tendered bus division was merged with other head office activities to become London Transport Buses. Following devolution of London government in 2000, this organisation formed the basis of LBSL, part of TfL.

TfL is a statutory corporation regulated under local government finance rules. It is governed by the Greater London Authority ("GLA") Act and consists of a number of subsidiary companies incorporated under the Companies Act 2006. One of them, LBSL, is responsible for planning and tendering the London bus network. Throughout this report, for simplicity, we have referred to LBSL as TfL except in specific circumstances where it is necessary to make a distinction between the two entities. In these cases we have referred to LBSL.

#### *Tendering for contracts*

Post-privatisation, a number of different approaches to the tendering process have been taken. These are summarised below:

- From July 1985 to May 1996 – Gross cost contracts;



- From June 1996 to July 1998 – Net cost contracts, where revenue risk was transferred to the operators to provide financial incentives for improved performance;
- From August 1998 to September 2000 – A short return to gross cost contracts in the run up to the introduction of a new approach; and
- From October 2000 to date – Quality Incentive Contracts (“QICs”).

#### *Quality Incentive Contracts – QICs*

In 2000, Quality Incentive Contracts (known as QICs 1) commenced replacing the gross cost and net cost contracts as routes were retendered. TfL retains revenue under these contracts, but they incorporate incentive provisions in the form of performance payment bonuses and deductions. The operators can exercise the option to extend contracts by two years in the event of achieving specified performance targets.

#### *QICs 2*

TfL is currently running a pilot scheme to extend the incentive principles of QICs. This initially focussed on driver performance and was extended in April 2009 to cover vehicle presentation. QICs 1 and QICs 2 are examined in more detail in section 5.3.

### **3.2 The market for bus service contracts in London**

The London bus market is now dominated by the following large groups:

- Arriva, through five subsidiary companies;
- Go-Ahead Group, through five subsidiary companies;
- Macquarie – trading as East London Bus Group, through two subsidiary companies;
- FirstGroup, through two subsidiary companies;
- ComfortDelGro – trading as Metroline, through one subsidiary company;
- Transdev, through two subsidiary companies; and
- NedRail; through two subsidiary companies.

There are also a limited number of smaller operators:

- NSL Services (formerly NCP Challenger);
- Quality Line (Epsom Buses);
- Hackney Community Transport (“HCT”); and
- Sullivan Buses (whose last current contract is due to expire towards the end of 2009).

TfL retains ownership of one operator:

- East Thames Buses – was established as an operator of last resort in 2000, following the failure of an independent operator. Some of the work concerned has subsequently

returned to the main tender programme and been allocated to other operators. Additional services have been assumed following two further instances of failure/withdrawal by independent businesses.

**Key finding:** *East Thames is small now in comparison to the large operating groups. Its role as operator of last resort if one of the large operators were unable to continue is questionable.*

We have included an analysis of both market competition and operator financial performance in our findings; these can be found in section 4.1 and 4.2, respectively.

#### *Entering the market*

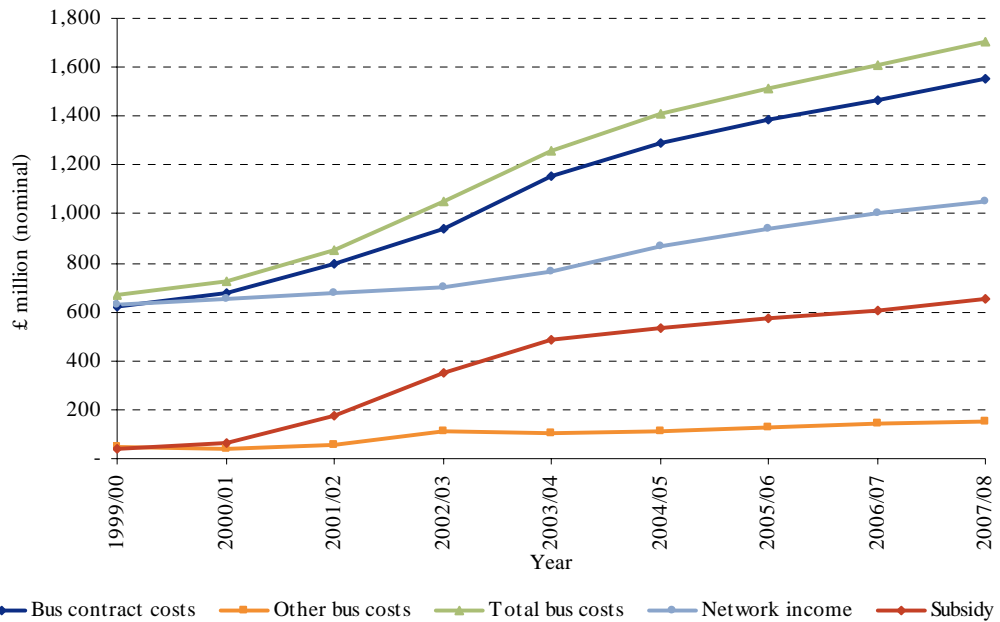
Historically, many new operators have entered the London market. However, it is becoming increasingly difficult for new entrants to break into the market, due to consolidation of the current owning groups and depot ownership. The last newly established entrant was NCP Challenger in 2005. Since then market entry has been exclusively through acquisition, such as Macquarie's acquisition of Stagecoach's London bus operations in 2006 and NedRail's purchase of National Express Group's London bus operations in May 2009.

### **3.3 The growth in subsidy**

In the mid 1980s the publicly owned bus service in London required a significant subsidy, and this reduced year-on-year to a low point in the 1990s.

Between 1999/00 and 2007/08 it has increased from a low of £41 million to £653 million. In the last ten years the fastest rises were between 2001/02 and 2003/4. The historic cost, revenue and subsidy profile is shown in the graph below.

**Figure 3 – Bus subsidy increases, 1999/00 – 2007/08**



Source: LBSL management accounts, KPMG and SDG analysis

An explanation of what each category comprises in the graph above and trends affecting each can be found in section 3.3.1.

*Overview of analysis*

High level analysis has been conducted to understand the nature and quantum of the drivers behind this increase in subsidy. This has been done by taking the base costs and revenues in 1999/00 and overlaying increases or decreases in costs and revenues as a result of changes in the key drivers.

This analysis is for illustrative purposes only. The numbers have been generated by using a mixture of actual data and reasonable assumptions. The results are sensitive to the assumptions made, however we believe that the relative scale of the impacts are broadly reasonable. The methodology and the assumptions used have been discussed and agreed with TfL management.

*Summary*

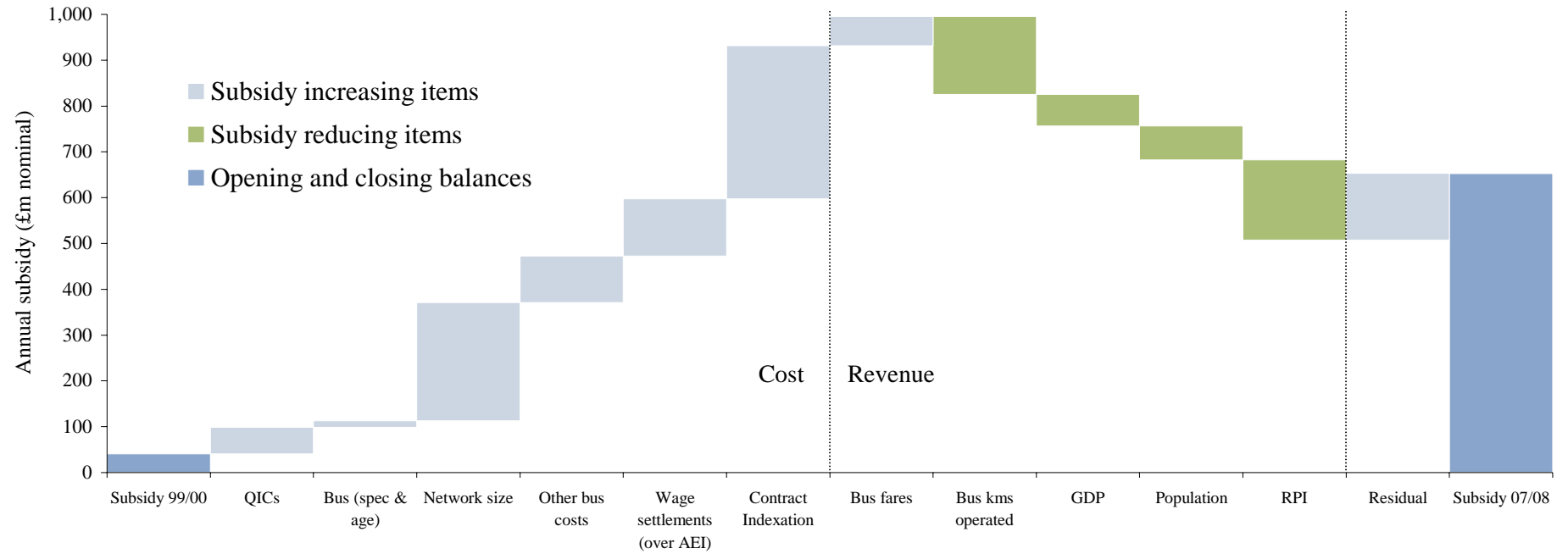
Essentially, subsidy has increased as a result of costs rising faster than revenue:

- Costs have risen due to increased unit prices for the relevant cost categories. The impact of this has been compounded by a growing network size; and
- In real terms, and compared to other modes of transport, fares have fallen over the period. However, passenger volumes have increased, partially mitigating the overall impact of this on revenue.

In general, London road traffic speeds have also reduced over the period. This has had a negative impact on bus costs as more resources are needed to deliver the same volume of network.

The waterfall diagram below illustrates the impact of an increase in a number of cost and revenue drivers on subsidy over time. We have commented on key drivers in more detail in sections 3.3.1. and 3.3.2.

Figure 4 – Illustrative subsidy drivers 1999/00 – 2007/08



Source: LBSL management accounts, KPMG and SDG analysis

### 3.3.1 Key drivers behind the cost increases between 1999/00 and 2007/08

The largest cost increases have been driven by rising input prices, such as wages, fuel prices and consumables. These are represented by the columns entitled “Wage settlements (over AEI)” and “Contract indexation” on the waterfall diagram.

#### *Wage settlements*

Staff costs make up approximately sixty five percent of the cost of operation of the bus network and wage rates are generally set by the market. As the bus network expanded, additional resources were needed to deliver the service and wages increased as resources became scarcer. In addition, in 2001 TfL pursued a Mayoral policy that ensured operational bus staff received a bonus. This equated to an additional £1,000 per annum, designed to increase attendance rates and in turn improve bus operating performance. This was consolidated into wage rates and was in addition to the annual increase negotiated between the bus companies and their employees. Views have been expressed that this policy may have led to continued upward pressure on wage settlements.

#### *Contract indexation*

The indexation adjustments shown in the waterfall diagram are the same as those employed in the Contract Price Adjustments (“CPA”) contained in the framework agreement for London bus services. Each year contracts are adjusted by a weighted average of changes to fuel, average earnings and retail prices. All of these elements have increased in nominal terms over the period.

#### *Other bus costs*

The “Other bus costs” column includes the net change in *inter alia*, the ticketing systems, central overheads, capital investment e.g. iBus, costs of infrastructure (such as bus stop, bus shelter and bus station maintenance costs) and net advertising and property income.

“Other bus costs” have been sourced direct from LBSL’s management accounts. They have been subject to a number of changes in accounting policy and practice over the period in question. We have not adjusted for these changes in this analysis, for example;

- Differences in recharges within the TfL group accounts;
- Amendments in the policy for radio recharges to operators; and
- Changes in organisational structure that have moved elements of headcount in and out of this cost line.

These elements have, in general, inflated the size of the change in this item. A fuller explanation of historic central overheads can be found in section 3.3.2.

#### *Network size*

The largest directly controllable increase in cost is driven by the increase in bus scheduled mileage operated. This is represented by the column entitled “Network size”. The

increase in network size has primarily been as a result of the policy of network expansion set out by the previous Mayor in his transport strategy which was intended to:

- Serve rising passenger demand caused by changes in land use, population, Gross Domestic Product (“GDP”) and fares;
- Improved accessibility for parts of London;
- Complement the introduction of congestion charging; and
- Provide relief to congested rail and London Underground services in advance of proposed capacity enhancements.

#### *Quality Incentive Contracts (QICs)*

The quality of services delivered to passengers, as measured by excess waiting time (“EWT”) and lost mileage, has significantly improved over the period. In part, this has been delivered by the introduction of QICs in 2000. The annual net cost of payments from TfL to the operators under QICs is shown in the column “QICs” and was £58 million in 2007/08. Views have been expressed to us that operators factor in QICs bonuses when pricing their bids and that this has acted to reduce the prices they would otherwise have bid to TfL.

#### *Buses (specification and age)*

The number of features included in the specification of buses has increased over the period and, as a result, so has the capital cost of new buses. Furthermore, the average age of the bus fleet has decreased over the time period, reflecting the forty percent expansion of the network, the move to one hundred percent low floor buses and the removal of the majority of Routemasters. These two elements, which impact the annual profit and loss charge for bus assets, are represented by the column entitled “Bus (spec and age)”. The average age of the buses in London is now increasing again.

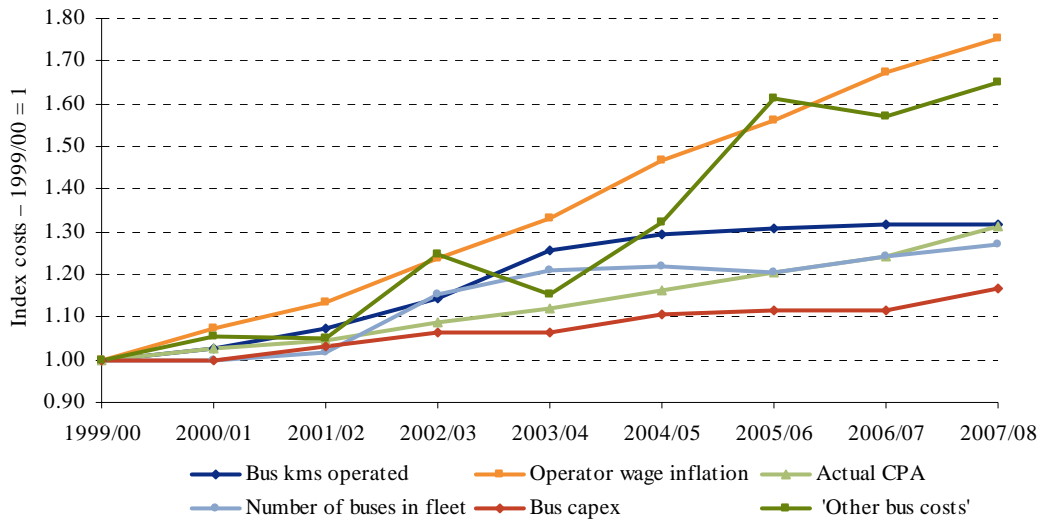
#### *Residual*

The column entitled “Residual” is a balancing item and contains cost elements that cannot be disaggregated in this simple illustrative analysis, such as performance focused investment and certain capital items.

### **3.3.2 Trends in cost drivers between 1999/00 and 2007/08**

The cumulative growth rates of the cost drivers discussed above are shown below. The cumulative growth rates have been presented as an index with 1999/00 representing 1.

**Figure 5 – Illustrative cost drivers 1999/00 – 2007/08**



Source: LBSL management account, KPMG and SDG analysis.

The rate of growth in the volume elements of the cost increase, for example bus kilometres operated and hence the number of buses in fleet, has reduced markedly in recent years, reflecting a slowdown in the growth of the network.

Inflation elements, such as “Operator wages inflation” and “Actual CPA”, have risen steadily throughout the period.

“Other bus costs” have increased over time by an average of eight percent, the second largest percentage increase in any of the cost drivers. This line includes TfL overheads and property costs, as well as the ticketing system and the iBus passenger information system. It is shown net of revenue such as advertising income and depot lease receipts. This is the most volatile line in the analysis showing both year-on-year growth and declines. The volatility is driven by capital costs, changes in accounting policy and movements in the headcount of certain functions between LBSL and the wider TfL group. A breakdown of the “Other bus cost” element is shown below:

**Figure 6 – Breakdown of “Other bus costs” in 2007/08**

	Other capital and operating costs	Staff Costs	Intergroup charges	Total
% of total costs	40%	31%	29%	100%
£ million	54.6	41.8	39.7	136.2

Source: LBSL statutory accounts. Note: Includes rounding. This analysis has not allocated £3.7 million of cost items that appear in the statutory accounting under the Other bus costs line as no breakdown was available.



The total headcount of LBSL is currently eight hundred and fifty one staff. This includes those staff who plan and manage the network, operational staff who run the central control centre, bus stations and the emergency response function, and also those who manage and develop infrastructure. The recharges to other parts of TfL are for items such as the Oyster ticketing system, and group shared services, such as marketing, property and IT. Some of the recharges will contain an element of TfL staff cost.

### 3.3.3 Key drivers behind revenue increases between 1999/00 and 2007/08

The largest increase in revenue relates to Retail Price Index (“RPI”) inflation adjustments to fares income, represented by the column entitled “RPI”. Other external factors, such as GDP and London population growth, have also increased revenue.

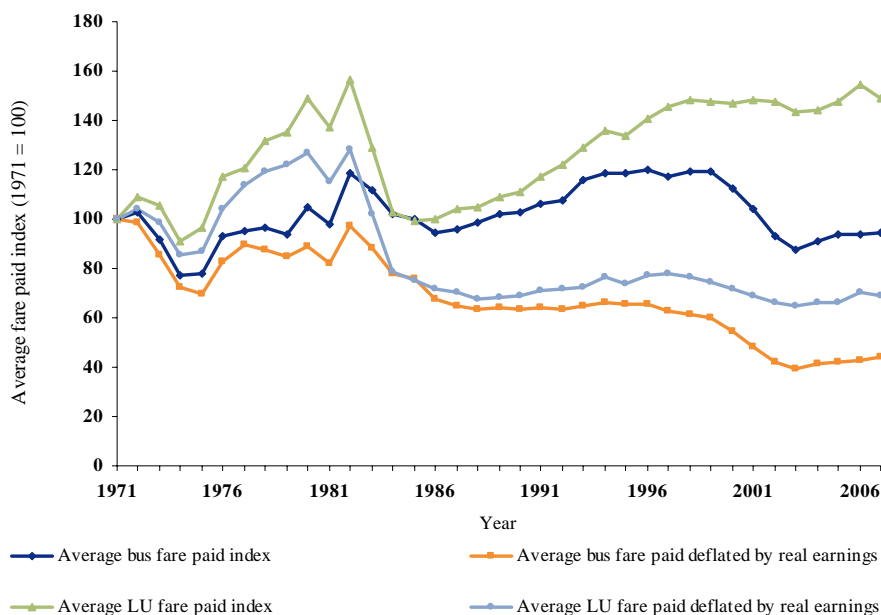
The largest endogenous (under control of management) increase in revenue has arisen from growth in the size of the network. This is represented in the column entitled “Bus kms operated”.

#### Historic fares analysis

London bus fares have fallen sixteen percent in real terms over the period. Falling fares levels have had two impacts: increased demand but reduced yield. The net subsidy impact of bus fares falling in real terms is a cost to TfL. This cost is represented in the column entitled “Bus fares”.

A comparison of the long-term trends in London bus and tube fares is shown in the chart below. The sharp decline in bus fares between 1999/00 and 2003/04 can be clearly seen, whereas tube fares remained relatively stable over this period.

**Figure 7 – Indexed fares paid 1971 – 2007**



Source: London Travel Report 2007/8

When deflated by real London earnings, the fall in bus fares is more marked. Using this measure, bus fares have fallen fifty six percent since 1971.

Management have informed us that if a policy of increasing fares by RPI+1% every year from 2001/02 to 2008/09 had been followed they forecast that bus network income would have been £244 million higher in 2008/09. Annual RPI+1% percent increases is the current stated policy for London Underground fares. However, as can be seen from the graph above the real average fare paid has not followed this trend: between 1999/00 and 2007/08 changes in London Underground fares have varied between a 4.4 percent rise and a 3.2 percent fall.

*Trends in passenger demand and revenue for bus services in London*

Revenue from the bus network has grown in absolute terms every year since 1999/00. During this period, passenger demand has grown considerably with a compound annual growth rate (“CAGR”) in passenger kilometres of almost seven percent. However, the compound annual growth in revenue has been less than the growth in passenger journeys. This is reflected in the real terms fares decrease discussed above. In this analysis a passenger journey is defined a each passenger journey stage, so if a passenger changes bus en-route it would count as two journeys.

**Figure 8 – Trends in demand and revenue**

Revenue Trends										
Year	1999/ 00	2000/ 01	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	CAGR
Traffic revenue at 2007/08 prices (£m)	789	798	810	822	877	964	1,014	1,044	1,053	3.7%
Passenger kilometres (m)	4,429	4,709	5,128	5,734	6,431	6,755	6,653	7,014	7,714	7.2%
Passenger journey stages (m)	1,296	1,354	1,430	1,536	1,702	1,793	1,816	1,880	2,176	6.7%
Real average fare per passenger kilometre at 2007/08 prices (pence)	17.8	16.8	15.5	13.9	13.0	13.6	14.0	14.0	14.1	-2.9%
Real average fare per passenger journey stage at 2007/08 prices (pence)	61	59	57	54	52	54	56	56	48	-2.8%

Source: TfL; London Travel Report 2007/08 and Travel in London – Report 1

The faster rate of growth in demand than revenue is in part also due to the further increase in the range and validity of concessionary tickets, which now offer free travel to children under sixteen (under eighteen for those in full time education) and people over sixty at any time of the day. Based on a sample of data provided by TfL concessionary travel now accounts for about thirty four percent of passenger journeys.

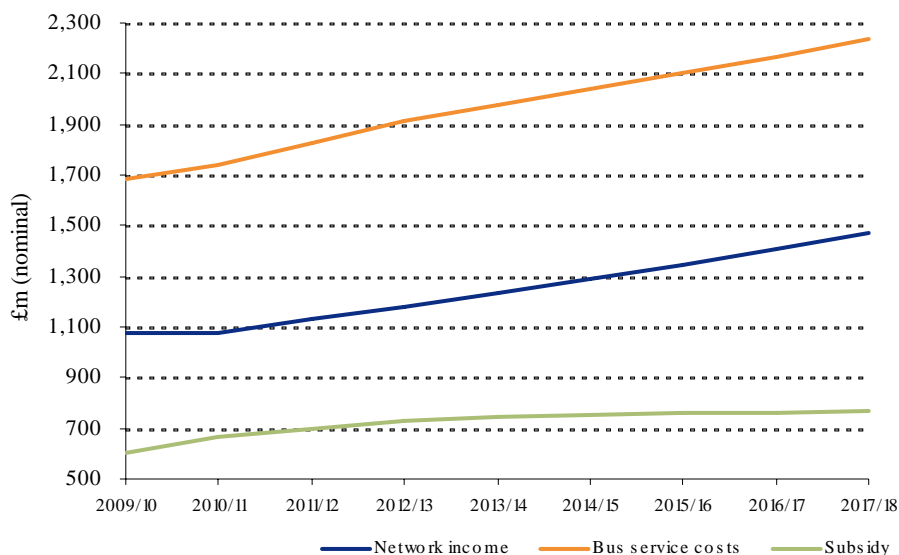
*Stakeholder views:* In general the stakeholders we spoke to thought that concessionary travel was a positive thing, but a number of them raised concerns regarding the amount

of concessionary travel for children. For example, that this discouraged children from using healthier alternatives such as walking, that on busy routes children could “crowd off” fare-paying adults and some cited anti-social behaviour by a minority of children as a problem.

### 3.4 The outlook for subsidy (2008/09 to 2017/18)

Our approach has been to focus on how the bus service could be delivered more efficiently. However, TfL is facing a number of significant financial challenges in the future. We have conducted a high level review of TfL’s current nine year budget for bus service contract costs, albeit at an early stage in its 2009 budgeting process. Overall, the subsidy for direct bus contract costs is forecast to be £766 million in 2017/18 in nominal terms.

**Figure 9 – TfL’s forecast for bus service costs**



Source: TfL management

This forecast is based on a number of policy assumptions such as:

- Limited annual growth in the size of the network;
- An annual fares increase of RPI+1%;
- The removal of articulated buses; and
- The introduction of hybrid buses.

**Stakeholder views:** Stakeholders generally supported the environmental ‘agenda’ and were generally positive on the idea of hybrids or equivalents, and they would support the introduction of further environment-led policies.

TfL face a number of significant risks which may increase future subsidy, including the level of government subsidy to TfL and the impacts from a number of changes in policy.

The introduction of the New Bus for London, for example, will result in incremental costs which are not currently included in the budget forecast above.

However, there are also a number of opportunities, some of which are discretionary and, if needed, could be used to adjust budgets in future years. These include items such as:

- Increasing fares, (a Mayoral decision);
- Reducing the coverage or volume of the network;
- Cancelling, deferring or re-scoping committed projects or infrastructure enhancement; and
- Reducing the network quality standard or the removal of one or more of the quality incentive regimes.

#### *Risks and opportunities register*

As part of their budgeting process, TfL holds a risks and opportunities register that identifies all known and quantifiable material risks and opportunities, ranking them according to their probability.

#### *Other bus costs*

The above budget only relates to the bus service contract costs. In addition to this, there are central overheads which were £139 million in 2007/08 statutory accounts. We note these costs represent 8.3 percent of the overall cost of the bus network. Many of the elements are subject to contract, such as the leases on buildings and the IT service contract, and so are fixed in the short to medium term. There are also depreciation charges on TfL's balance sheet capital items that appear in this line item.

The forecasts we have been provided with for this element of cost are at a high level of aggregation, reflecting the top-down nature of the forecasting undertaken by TfL in this area.

In this report our approach has been to focus on questions of market structure, contract design and process. If it is decided to implement substantial changes, a review of the appropriateness of TfL's current central structures to deliver any changes and support ongoing operations should be considered.

We understand that aspects of the TfL overhead budget are currently subject to an Organisational Cost Reduction Programme, which is being conducted across the TfL group of organisations.

### **3.5 Comparing London to other international cities**

As part of this review we have sought to compare London to a peer group of comparable international cities. Below is summarised the results of a benchmarking exercise and appended to this report are our findings from a review of the contracting models in place in other cities.

### 3.5.1 Background

The International Bus Benchmarking Group was founded in 2004. The objectives of the IBBG were to compare performance between similar bus operations and to share best practices within the IBBG. It now has eleven medium and large bus operating cities, or operators themselves, as members. The Railway and Transport Strategy Centre at Imperial College London is responsible for the project management, administration and data analysis for IBBG. The IBBG is funded by the members of the group who pay an equal membership fee every year.

To inform analysis of the Value for Money of London bus services, ICL were commissioned to produce a report on *The performance of London buses compared to other world cities*. This section summarises the key findings of the report. KPMG have not undertaken any verification or auditing of either the data provided to the IBBG or the analysis that they have undertaken.

#### 3.5.1.1 Membership

The eleven cities that participate in the Benchmarking Group are: London, Barcelona, Brussels, Dublin, Lisbon, Madrid, Montreal, New York, Paris, Sydney and Vancouver.

London has double the number of daily passenger boardings compared to the next nearest member of the IBBG. Demand has grown more, in absolute terms, in London in the period between 1999 and 2007 than in any other city in the IBBG.

#### 3.5.1.2 Funding sources

TfL ranks sixth out of the eleven Group members in terms of subsidy requirement (government support plus concessionary fares support). Fares revenue (excluding concessionary fares support) makes up a higher proportion of total funding in London than six of the other cities. No other city had a significantly higher proportion of its cost base covered by fares income than London. This is shown in the chart below, as per the operating practices of the IBBG, the other cities have been anonymised.

**Figure 10 – Funding sources**

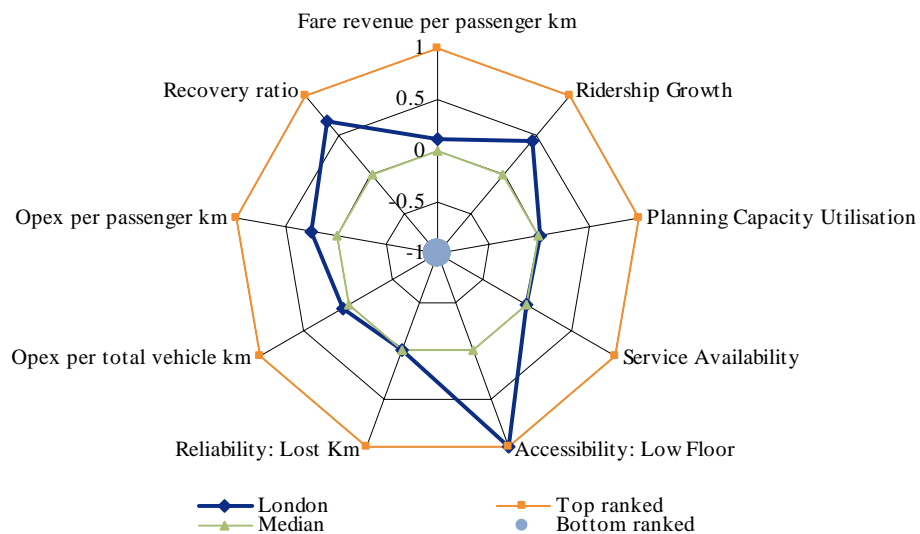


Source: Railway and Transport Strategy Centre at ICL / IBBG

**3.5.1.3 Summary of IBBG analysis**

The graph below benchmarks London against the IBBG members. It ranks the cities against nine Key Performance Indicators (“KPIs”). The lowest ranking city in the group is in the centre and the highest ranking at the outer edge of the graph. The graph shows that on every KPI measure presented London is at or above the median. It should be noted that being the highest ranked city for a number of the KPIs is not always the most desirable outcome. Targeting one KPI may impact performance in another KPI. It may not represent value for money to always seek to improve.

**Figure 11 – Ranking London’s buses against the IBBG members**



Source: Railway and Transport Strategy Centre at ICL / IBBG

The table below describes the same KPIs as the graph above but provides some additional commentary.

**Figure 12 – Ranking London’s buses against the IBBG members**

KPI	London’s ranking	Relevance to this study
Fare revenue per passenger km	5th out of 11	<ul style="list-style-type: none"> <li>Fare policy sits with the Mayor. London is currently around the median and at the mean of the group. This demonstrates that other cities have achieved higher yields than London.</li> </ul>
Ridership growth	2nd out of 11	<ul style="list-style-type: none"> <li>In absolute terms, ridership has grown fastest in London. In relative terms, London is second in the group. However, the network in London has also grown and fares yield has fallen over this period.</li> </ul>
Planning capacity utilisation	5th out of 11	<ul style="list-style-type: none"> <li>In part this reflects London’s more comprehensive off peak network. For London to move towards best in group, the number of passenger km per vehicle km needs to increase. Based on the demand forecasts and projected network growth in the business plan, the performance of this KPI should improve in the short to medium term.</li> </ul>
Service availability (cancellations)	6th out of 11	<ul style="list-style-type: none"> <li>In spite of recent improvement, London performs below the median on both these operating performance KPIs, so there may still be potential for improvement. It is, however, above the group mean for both. TfL forecast that the current level of service availability and reliability will be maintained in the short-term.</li> </ul>
Reliability (on time running)	5th out of 9	
Accessibility: Low Floor	Equal 1st out of 11	<ul style="list-style-type: none"> <li>London was the second city in the group to achieve full coverage; a third has since done so.</li> </ul>
Operating expenditure per total vehicle km	5th out of 11	<ul style="list-style-type: none"> <li>London is around the median but twenty four percent more efficient than the mean on this KPI. To improve performance in this KPI, London bus operators would need to reduce unit costs.</li> </ul>
Operating expenditure per passenger km	4th out of 11	<ul style="list-style-type: none"> <li>London is better than the median and twenty percent more efficient than the mean. To improve further, either passengers per bus must increase, unit costs reduce, or a combination of both.</li> </ul>
Recovery ratio	4th out of 11	<ul style="list-style-type: none"> <li>No other city in the study was significantly more efficient than London based on this KPI. To achieve best in group status, London would need to combine passenger revenue growth and cost reduction.</li> </ul>

Source: KPMG analysis of IBBG report

In conclusion, it is worth drawing out the following key findings.

**Key finding:** London performs better than average when compared to the IBBG members, particularly on measures of cost efficiency, implying that London’s buses are run in a more cost efficient manner than some of the other members of the group.

**Key finding:** The quality of London’s buses, measured by operating performance and reliability, is around the average of the group. London has the youngest average fleet age, and road traffic speeds are average.

**Key finding:** London’s fares are at the average of the group, demonstrating that other cities have achieved higher yields than London.

## 4 The market and competition

### 4.1 Competition in the market for bus service contracts

#### *Competition legislation*

**Important:** *This analysis reflects our understanding of the legislative position but does not represent legal advice.*

In order for a market to be competitive, it would normally be necessary for it to be evident that consumers have a choice of products, and no single supplier has market power over them. The Office of Fair Trading (“OFT”) indicates that it will consider a range of evidence relating to the structure and definition of the market; most notably financial performance and the conduct of any undertakings.

Quantification is less clear. The Competition Act is not specific regarding market share. The European Court has indicated that if a participant in a market has more than a fifty percent share, then it would presume that represented dominance, unless there was evidence to the contrary. The OFT has indicated that it is unlikely that an operator with less than a forty percent share of a market will be judged to be dominant, provided that it is not abusing its position. The 1973 Fair Trading Act sets twenty five percent as a threshold in certain circumstances.

**Key finding:** *We are not aware of any legislative competition issues presently facing any of the London operating subsidiaries. No one single operating group has more than twenty five percent of the overall market although there are leading players in each illustrative geographic segment. We understand that if any competition concerns arose from a change in ownership, TfL has the right to prohibit any such transaction.*

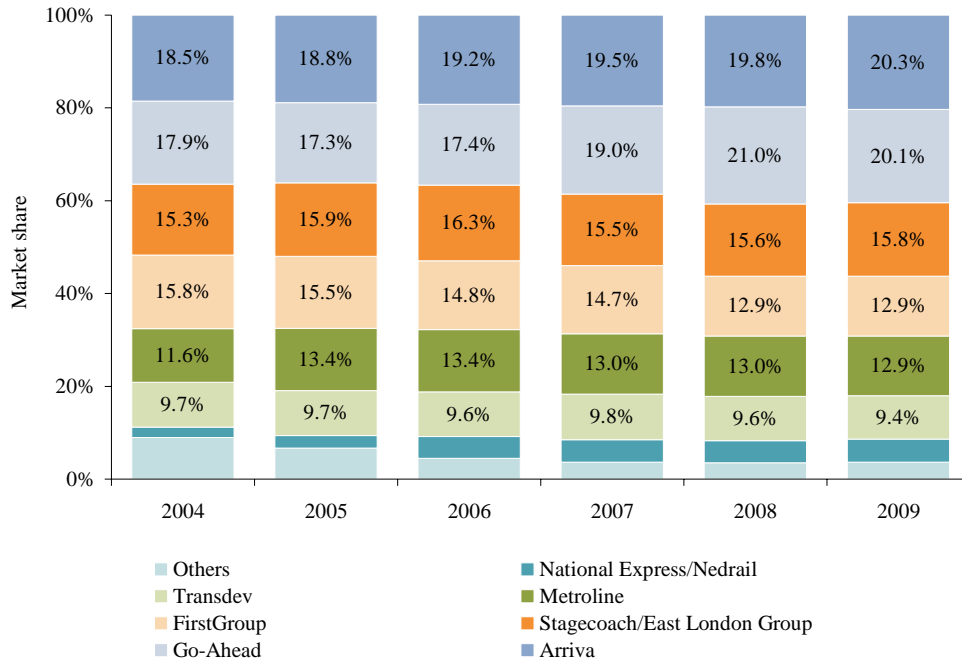
#### *Overall market share*

The number of operators has consolidated in recent years. In 2000, there were twenty operators and by the end of 2009, there will be ten based on current contract awards. The market shares of the major operators for the period 2004-2009 is set out below.

**Key finding:** *The risks facing TfL if one of the large operators were to fail financially would be significant. TfL management have informed us that their own staff, together with those of any failed company, would have the capability to take-over management of a failed operator in short order, but do not have a pre-determined contingency plan if this event was to occur.*



**Figure 13 – Market share by operator (owning group)**



Source: TfL, KPMG analysis. Note: Based on scheduled kilometres. As at 1 January, except for 2009 which was as at 1 March 2009. The market shares included in the table relate to substantive bus service contracts, not ancillary activities such as short term rail replacement work. "Others" includes East Thames Buses and independent operators.

**Key finding:** The market share of each of the large operators has varied by less than three percent in recent years. Due to the nature of the market, it can be difficult to grow market share quickly, other than through acquisition.

The graph illustrates that, despite progressive consolidation in the market, no single group has yet achieved a proportion of total scheduled kilometres that exceeds twenty five percent of the total market. The increase for one of the two largest players to expand their share of scheduled mileage from the current twenty percent to twenty five percent would be equivalent to NedRail’s current operation – about four hundred and eighty buses working some thirty contracts.

**Key finding:** The number of operators has consolidated since 2000. The market is now dominated by seven large owning groups. The quality of service provided by these operating groups is broadly comparable.

*Recent developments*

There are a number of factors which are behind some of the movements in market share:

- The strengthening of Go-Ahead's and Arriva's position, through acquisitions as well as tender wins;
- The acquisition of National Express Group's London operations by NedRail in 2009;
- A decline in FirstGroup's share, through withdrawal from South East London and tender losses; and
- A continuing decline in the market share held by smaller operators as their numbers have reduced.

*Entering the market*

Historically, many new operators have entered the London market. However, it is becoming increasingly difficult for new entrants to break into the market, due to consolidation of the current owning groups and depot ownership. The last newly established entrant was NCP Challenger in 2005. Since then market entry has been exclusively through acquisition, such as Macquarie's acquisition of Stagecoach's London bus operations in 2006 and NedRail's purchase of National Express Group's London bus operations in May 2009.

*Key finding: In London, competition is the key driver behind efficiency in the contracting model, in common with a number of other international cities.*

TfL are informative about market opportunities when approached by potential participants, and encourage any interested party to pre-qualify. Once the entity has prequalified, it is up to them, as with existing participants to win market share. However, TfL do not actively market to new entrants, in part because the market is mature and currently stable.

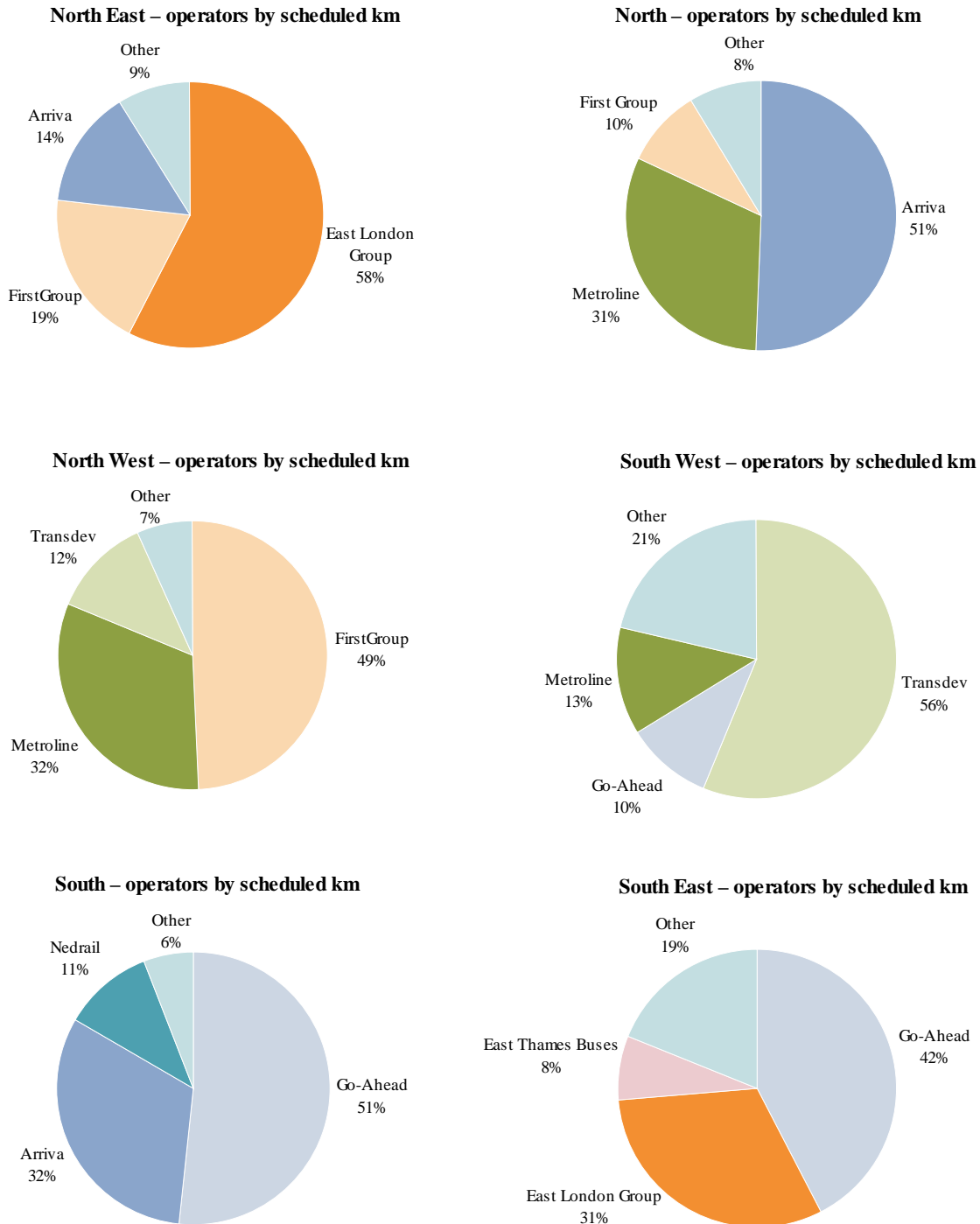
Furthermore, TfL have been accommodating to new entrants that have joined via acquisition. We are not aware of TfL using its contractual provisions to block any entrant's purchase of a London bus operating business.

*Market share by illustrative geographic segment*

We have sought to illustrate the relative strength of competitors in six geographic segments.

This competitive analysis by illustrative geographic segment is as follows:

**Figure 14 – Market share by illustrative geographic segment**



Source: TfL information, scheduled kilometres by operating subsidiaries as at 1 June 2009.

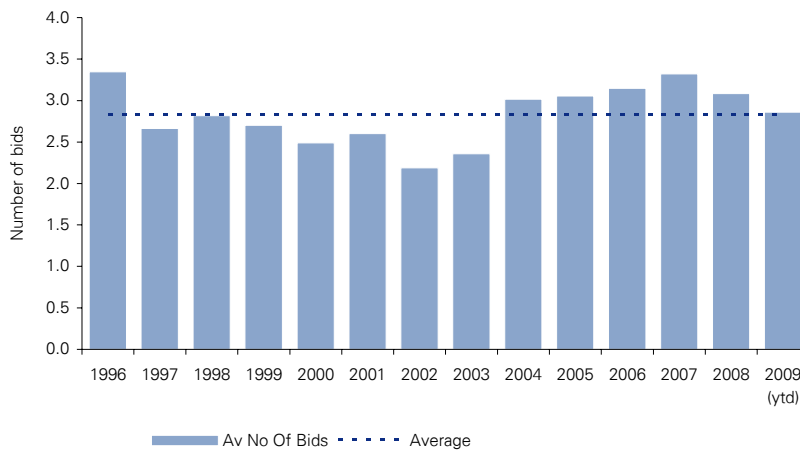
The pie charts illustrate that whilst there is no dominant operator in the London market as a whole, the situation in individual geographical segments is different. In each of the six

segments shown above, there is a leading operator who has more than a forty percent market share in that segment. In two thirds of the segments, there is an operating group with more than a fifty percent market share.

*Average number of bids per route*

The average number of bidders per route has remained relatively stable over the last fourteen years. This is shown in the chart below.

**Figure 15 – Average number of bids per route**



Source: TfL information. Note: Based on calendar year of award

**Key finding:** *The average number of bidders currently per tender is similar to previous years, despite the market consolidation which has occurred. Management have informed us that the quality of bids has also improved over the period. Furthermore, less than ten percent of tenders have received only one bidder during the past twelve months.*

The number of tenders that have attracted only a single bid during recent years has been below ten percent. Almost invariably, such bids will be from the incumbent, unless a new route is involved. The table below shows the number of single bid tenders, again broken down by year of award and sector.

**Figure 16 – Number of route tender bids which have attracted only one bidder**

Number of tenders which attracted only one bid						
Region	2004	2005	2006	2007	2008	2009
North East	1	1	-	-	-	-
North	7	4	1	2	3	1
North West	-	-	1	-	-	2
South West	1	-	1	-	-	1
South	3	4	2	-	2	-
South East	3	1	5	1	2	-
<b>Grand Total</b>	<b>15</b>	<b>10</b>	<b>10</b>	<b>3</b>	<b>7</b>	<b>4</b>
<b>Total bids</b>	<b>119</b>	<b>102</b>	<b>117</b>	<b>75</b>	<b>83</b>	<b>43</b>
<b>%</b>	<b>12.6%</b>	<b>9.8%</b>	<b>8.5%</b>	<b>4.0%</b>	<b>8.4%</b>	<b>9.3%</b>

Source: TfL information, KPMG analysis

#### 4.1.1 Depot ownership

##### Overview

The figure below sets out the total number of depots supporting the London bus network and the proportion owned or controlled by operators and TfL, respectively.

**Figure 17 – Number of depots which support the London bus network**

Depots in use to provide London contracted services at end 2008	88
Depots held freehold by operators	46
Depots owned or controlled by TfL	11

Source: TfL, KPMG research

**Key finding:** *The majority of depots are owned by the operators. TfL does, however, own or control eleven depots (out of a total of eighty eight).*

Management have informed us that in recent years the total depot capacity that serves London has increased significantly in order to accommodate the increase in the total fleet size. Also many of the existing depots are operating in excess of the design capacity and there are areas of London where this problem is more acute.

Depot ownership is a barrier to entry for new operators and this restriction has the potential to damage long term competition. Current non-participants have expressed views that they would be interested in entering the London market by growing organically, but that the current depot ownership structures limit those opportunities. The sunk cost and planning restrictions of opening a new depot makes entry financially challenging.

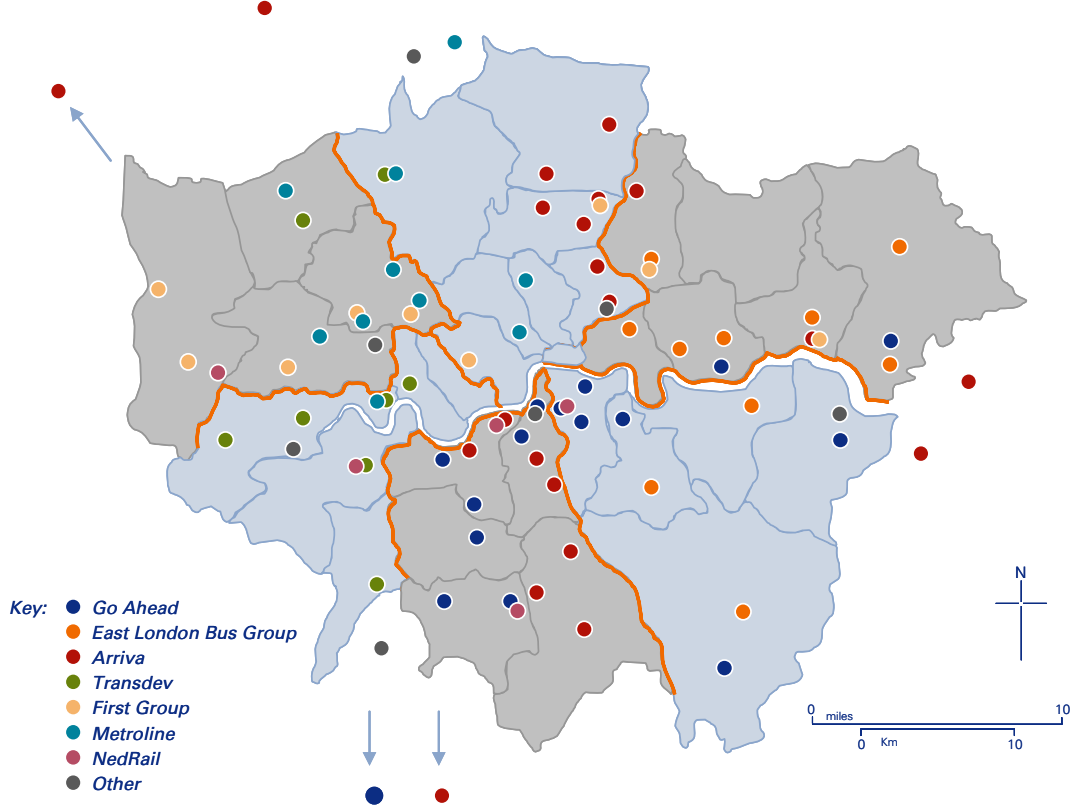
**Key finding:** *Potential new entrants expressed depot ownership as a significant barrier to entry into the London bus market.*

The tendering cycle may also limit the achievable pace of organic growth of a depot towards a stable and sustainable market share. Depot capital investment is a sunk cost. The ability of the operators to grow a depot quickly, and therefore spread its costs over a larger operational base is limited by the availability of up coming tenders.

**Key finding:** *The rate of potential organic growth is a key factor preventing new entrants from joining the market or indeed a specific segment. Acquisition appears to be the only realistic route into the market in order to maintain a suitable share.*

The map below plots the current depot sites, colour coded by group, in relation to the broad geographical segments we have used as a basis for our analysis.

**Figure 18 – Operator depot locations by market segmentation**



Source: KPMG analysis

*TfL involvement in depot development*

TfL has sought to become active in the identification and sourcing of suitable sites to enhance depot capacity. This policy has been followed in order to secure the provision of adequate, efficiently sited capacity, as much as to stimulate competition for tenders.

TfL’s policy, where it is able to assist directly in the provision of depot sites, is to charge a commercial rental which realistically reflects the use of the site for this purpose, and that does not provide any advantage or disadvantage to the operator who is taking occupation. When TfL is able to offer a site, all operators are given the opportunity to

express an interest. TfL will also assist operators by actively supporting applications for planning permission for the establishment of depot sites.

TfL has gradually acquired depots over recent years and currently owns or controls eleven depots. They continue to strategically look for further options to acquire depots.

**Key finding:** *Existing depot sites are generally well located. Finding suitably located new or alternative depot sites can be difficult but not impossible as both operators and TfL have managed to develop new depot sites recently.*

#### *Alternative approaches to depots ownership*

Given the current market structure and approach to operational assets ownership, TfL's ability to influence this barrier to entry is limited. Based on an approach used in the rail industry, TfL could purchase all depots within London and lease them back to operators for the duration of an operating contract to run a bundle of routes from that depot. We understand that this approach is not viable in the short term because of large transitional costs, the likely commercial strategy of the current depot owners and possible legislative restrictions. Also management have informed us there may be issues with placing depot assets on TfL's balance sheet.

#### **4.1.2 Recommendations on the competition in the market for bus service contracts**

Based on our work we make the following recommendations regarding competition for the bus service contracts.

**Recommendation 1:** TfL should conduct a periodic competition and market risk analysis. It should consider the current and emerging state of market competition and plan contingencies should any one operator leave the market as well as identifying ways to stimulate new competition, such as actively marketing to new entrants.

**Recommendation 2:** Based on findings from the market risk analysis, TfL should consider the current provision stated in the contract that aids transfer of a failing business. This could include the consideration of items such as bond requirements, third party rights over asset transfer, staff and liquidity covenants.

**Recommendation 3:** Closer financial monitoring of contract counterparties would enable earlier warning of financial challenges. TfL should consider strengthening the provisions that require incumbent operators to regularly submit financial information to them.

**Recommendation 4:** TfL should continue to work with the market to explore the development of new depot sites, especially if market dominance becomes a concern. TfL should consider depot ownership, taking fuller control where appropriate.

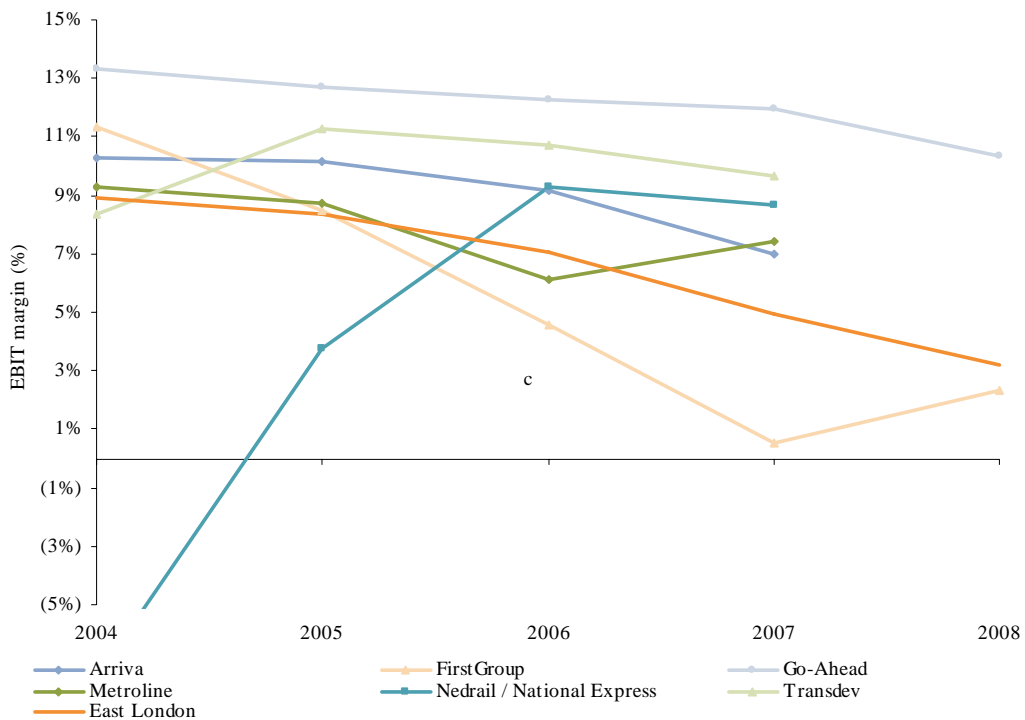
## 4.2 Operator financial performance

In the context of understanding whether the market is working effectively, we have sought to examine the level of return achieved by operators in London. We have also compared returns in London with those achieved elsewhere in the UK.

### *Earnings Before Interest and Tax (“EBIT”) margins*

As can be seen from the figure below, between 2004 and 2008, London operator groups have on average generated EBIT margins in the region of five to ten percent. The exceptions to this have been National Express who inherited a heavily loss-making Connex business and has taken time to turn around financial performance; FirstGroup whose profits fell significantly between 2005 and 2007; and East London, whose margins have been falling gradually over the period. A sample of non London operators has been included in our EBIT margin analysis. Comparing the EBIT margins of operators outside London to those in London, there were no substantive characteristics of either group. Margins for both groups appear to be within a similar range.

**Figure 19 – EBIT margin by operator – London**



Source: Company accounts, KPMG analysis



**Figure 20 – EBIT margin by operator – Non London**



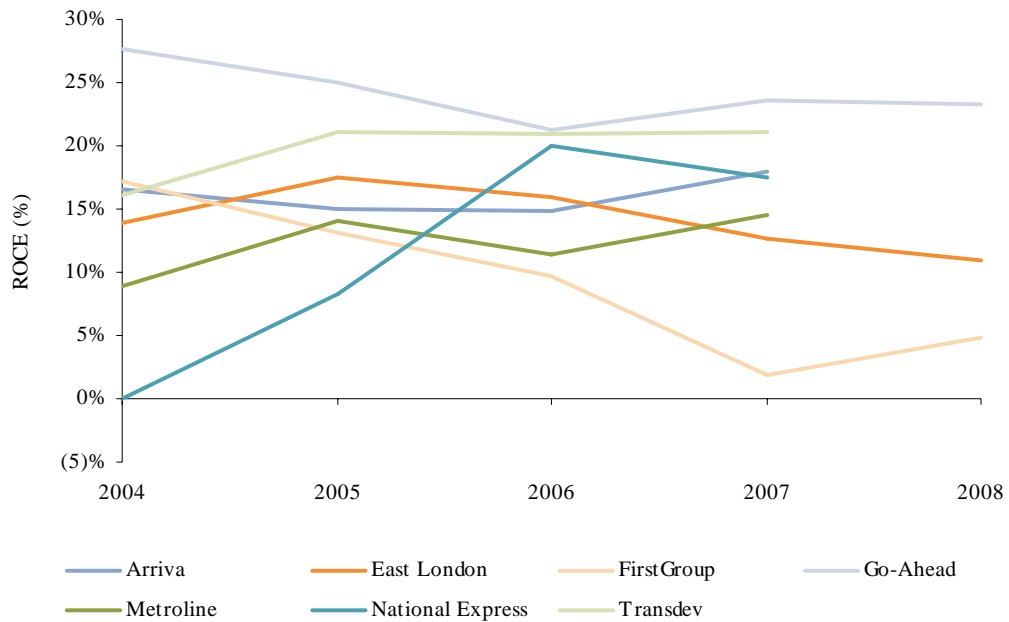
Source: Company accounts, KPMG analysis

*Returns On Capital Employed (“ROCE”) margins*

We have also sought to derive ROCE. ROCE measures the profitability of assets employed by measuring the ratio between operating profits and capital bases. We have calculated illustrative ROCEs for the relevant operating subsidiaries of the major operating groups. We have adjusted our ROCE calculations to take into account exceptional items affecting profits and a number of specific accounting issues when calculating capital employed including treatment of inter-company transactions and operating leases.

A sample of non-London operators has been included in our ROCE analysis to illustrate returns generated in other segments of the UK bus industry alongside returns in London. The following graphs summarise the adjusted ROCEs.

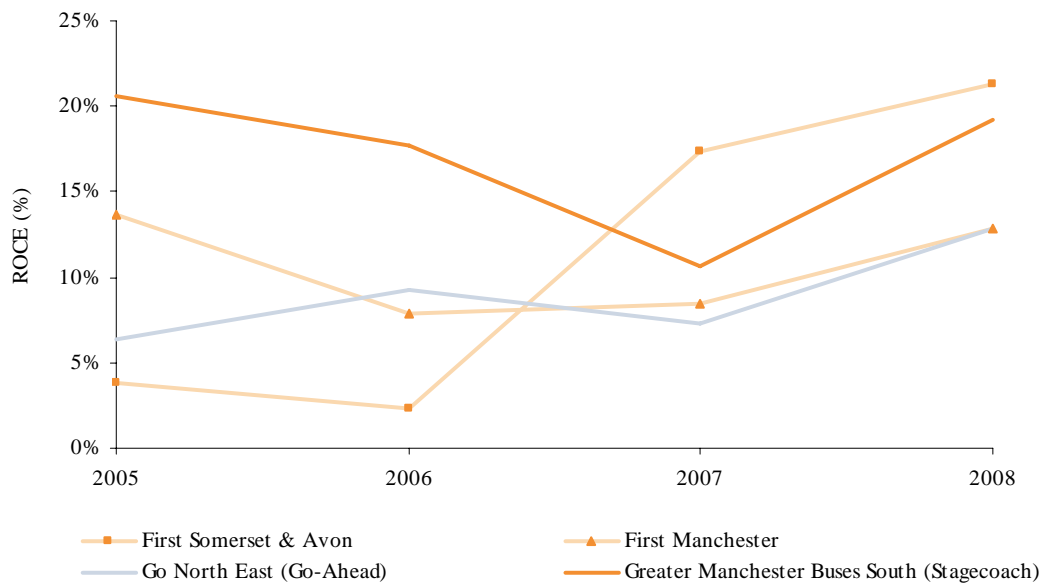
**Figure 21 – ROCE by operator – London**



Note: ROCE has been calculated using profit before interest and tax, divided by capital employed (equal to current assets plus fixed assets less current liabilities). Items have been adjusted for short term interest bearing debt, intercompany items, cash balances and operational leases) We have not presented an analysis of the publicly owned East Thames Buses as its funding structure does not justify this type of analysis.

Source: Company accounts, KPMG analysis

**Figure 22 – ROCE by operator – Non-London**



Source: Company accounts, KPMG analysis

We stress that these numbers are subject to assumptions and are purely illustrative. Certain of these assumptions, for example simple “consolidation” of companies within the same group, may result in inaccuracies. It should also be noted that any comparative analysis based on high level filed statutory accounts comes with inherent limitations, for example, any developments in the last twelve to eighteen months are not captured.

The graphs above show that the majority of London operators have historically generated ROCEs of between ten and twenty five percent. FirstGroup’s London bus subsidiaries’ performance has deteriorated over the period in review. We also note that in most cases, recent performance for those subsidiaries who have published accounts has deteriorated.

The non-London operators that we considered generally had a lower ROCE, but unlike London the trend shows an improvement between 2007 and 2008.

***Key finding:*** *Whilst a number of London operators appear to have generated historic returns on capital in line with the national market, recent performance for some appears to have deteriorated. We caution that this analysis is subject to a range of assumptions and limitations.*

We make no specific recommendations based on our analysis of operators’ financial performance. However, as mentioned in Recommendation 3, we do recommend that TfL should consider extending the operator financial information they collect and monitor.

## 5 London bus contracts

### 5.1 The contractual model

#### 5.1.1 Introduction

The operators contract to provide bus services to LBSL for an annual price over the life of the contract (typically five to seven years). The contracts are incentive based contracts with the operators not taking any revenue risk. We have considered in section 5.1.2 below whether there was any evidence to suggest that a “net cost” model might be more effective.

The key cost components of a contract are shown in the table below. The CPA is the index by which the annual price is adjusted every year.

**Figure 23 – Component operating costs**

Operating cost category	Contract Price Adjustment%
Driver wages and on costs	62 percent (linked to national AEI)
Other labour and staff costs	
Fuel	7 percent (linked to DERV average retail price – DBERR energy trends)
Insurance and claims	16 percent (Linked to RPI)
Maintenance materials	
Other operating costs	
Vehicle depreciation (and profit margin)	15 percent (fixed)
<b>Total</b>	<b>100 percent</b>

Source: TfL

The CPA and indexation risk are considered in section 5.4.

We have considered opportunities for reconfiguring the contracts to allow TfL to make ongoing savings, including:

- Whether the specification of buses could be reduced to save ongoing acquisition and funding costs (see section 5.2.1 below);
- Whether there is an option for TfL to fund or procure the bus fleet more cost effectively (see section 5.2.2 below); and
- Whether there are opportunities to achieve savings through the collaborative procurement of certain cost categories (see section 5.2.3 below).

*Incentives*

The contracts contain an incentive mechanism to stimulate improved performance. We have considered this in section 5.3.

**5.1.2 Revenue risk – net or gross cost contracts**

**5.1.2.1 Background**

As discussed in section 3.1, TfL currently adopts an incentive based contracting model, where revenue risk is held by TfL but where a performance regime (“QICs”) is in place to incentivise the operators on their punctuality (“QICs 1”) and on improving qualitative measures such as driver behaviours and the condition of the bus itself (“QICs 2”).

Between June 1996 and July 1998, London bus contracts were tendered net of revenue. It was felt at the time that net contracts were not working as effectively as anticipated, and the main reasons behind the decision to change to gross contracts was the poor performance of operators. The last net cost contract was phased out in 2002.

We were asked to consider whether there is a sound case for moving the contracting arrangements again to a “net cost” model – where the operators earn the revenue from the bus operation and therefore take on revenue risk.

Key characteristics of the gross cost model in the London context are set out below.

**Figure 24 – Gross contracts – key characteristics for London buses**

Gross Cost Contract
<p><b>Public Sector</b></p> <ul style="list-style-type: none"> <li>• Determines routes, specifies frequency</li> <li>• Determines and runs tender programme</li> <li>• Sets and monitors safety and quality standards</li> <li>• Provides and maintains infrastructure</li> <li>• Sets fares</li> <li>• Markets services, co-ordinates customer service contacts</li> <li>• Pays operator gross value of contract, net of performance payments in either direction</li> <li>• Retains the fare revenue</li> <li>• Provides revenue protection</li> <li>• Manages allocation of off-bus revenue which it retains</li> </ul>
<p><b>Private Sector</b></p> <ul style="list-style-type: none"> <li>• Develops and submits bids</li> <li>• Develops timetables, schedules and staff rotas</li> <li>• Recruits, trains, manages staff</li> <li>• Provides and maintains premises and vehicles</li> <li>• Manages and supervises day to day operation</li> <li>• Collection of cash revenue</li> </ul>

Source: KPMG Analysis.

To consider which of the two options is more favourable it is important to consider the drivers of demand and revenue. Based on the current policy and contractual framework, the control of the drivers of demand and revenue are set out in the table below. Exogenous drivers are those that are beyond the control of TfL, GLA and the operators, whereas endogenous drivers are controllable.

**Figure 25 – Control of demand and revenue drivers**

	Demand driver	Demand correlation	TfL or GLA		Operators	
			Lever	Control	Lever	Control
<b>Exogenous</b>	Population	+ve	✗	-	✗	-
	GDP/economic activity	+ve	✗	-	✗	-
<b>Endogenous</b>	Fares/ticketing	-ve	✓	Mayoral policy	✗	-
	Frequency	+ve	✓	Contract specification	✗	-
	Reliability	+ve	✓	QICs 1 / extensions	✓	Management action
	Marketing	+ve	✓	TfL Corporate	✗	-
	Revenue protection	-ve	✓	TfL teams	✗	-
	Capacity	+ve	✓	Contract specification	✗	-
	Vehicle specification	+ve	✓	TfL	✗	-
Service quality	+ve	✓	QICs 2	✓	Management action	

Source: KPMG Analysis

All of these demand drivers have a positive correlation with revenue.

**Key finding:** Under current policies, most of the levers to influence demand and revenue lie with TfL and the Mayor.

Placing the risk with the party best able to manage that risk should theoretically lead to the best financial outcome. To transfer demand or revenue risk to an operator under the current split of responsibilities (as set out above) may increase expected operator margins, and therefore increase subsidy, as the operators are unable to effectively manage the levers that control demand risk.

The table below sets out some of the potential considerations with a transfer of control of these levers to a private sector bus operator:

**Figure 26 – Considerations to be made before transferring the drivers of demand and revenue risk**

Demand drivers	Issues to consider before a move to a net cost contracting structure
Fares and ticketing	<ul style="list-style-type: none"> <li>Who will set prices?</li> <li>How will inter-availability of tickets with other TfL modes be assured?</li> <li>Will a complex fares structure be allowed if it maximises revenues?</li> </ul>
Service specification	<ul style="list-style-type: none"> <li>How and who will set the specification of non-commercial services?</li> <li>How will cross-modal integration be promoted?</li> <li>Who will conduct network planning?</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>Is a consistent reliability standard needed across the network?</li> <li>Are additional operational incentive regimes, such as QICs, needed?</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>Is a consistent brand needed across the network?</li> <li>Who will conduct marketing and market development?</li> </ul>
Revenue collection and protection	<ul style="list-style-type: none"> <li>Who is best placed to conduct revenue protection duties?</li> <li>Is a consistent revenue protection policy needed across the network?</li> </ul>
Vehicle specification	<ul style="list-style-type: none"> <li>What are the minimum standards of vehicle specification that are required?</li> <li>Who will set the standard?</li> </ul>
Service quality	<ul style="list-style-type: none"> <li>Is a consistent standard needed across the network?</li> <li>Who will assure that standards are achieved?</li> </ul>

Source: KPMG Analysis

### 5.1.2.2 Revenue allocation

One practical consideration under a net cost model would be the allocation of fare revenue to routes. For some ticket types, such as cash fares and Oyster “pay as you go”, this is relatively simple. For other fare types, such as season tickets and travelcards, this is more complex due to the multi-use and multi-modal nature of these tickets.

For the multi-use and multi-modal tickets, a system already exists to allocate revenue to routes based on survey data. This system contains a number of assumptions, some of which are only refreshed every five years or so. The current system may not therefore be robust enough to use if revenue risk is transferred to the operator of each individual route. It would not necessarily reward an operator on a route for increasing revenues, nor penalise them should revenue fall.

Similar problems are faced in the UK heavy rail industry where revenue must be allocated to each train operator. To overcome this problem the rail industry uses a complex computer model to allocate revenue to train operators. Such an approach may be possible for London bus but is likely to require significant research and ongoing funding.

*Stakeholders’ views: During our stakeholder engagement with operators, there was no desire expressed amongst any of them to take on additional revenue risk. Some other stakeholders were against the idea of a further risk transfer to the private sector.*

### 5.1.2.3 International comparisons

As part of our international comparison we have looked at a number of cities to see if we could find supporting evidence.

**Key finding:** *There was a mix of gross and net cost contracts adopted by the international cities we reviewed. In most examples where cities used a net cost model, control over specification and fares were, at least in part, transferred to the operators. There was no compelling evidence in support of either model.*

### 5.1.2.4 Conclusions

In summary, the table below compares the strengths and weaknesses of implementing the “net cost” option in London:

**Figure 27 – Strengths and weaknesses of “net cost” contracts**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Incentive on operators to increase demand which may grow revenue and reduce subsidy;</li> <li>• Direct financial linkage between operators and passengers may improve service quality, although this has not been the case previously in London;</li> <li>• Cost may be saved if the QICs incentive regime is removed; and</li> <li>• Short term risk is transferred away from TfL.</li> </ul>	<ul style="list-style-type: none"> <li>• Increases risk transferred to operators and may increase the expected margin and increase subsidy;</li> <li>• Transition costs;</li> <li>• Revenue allocation challenges;</li> <li>• Unpopular with some stakeholders;</li> <li>• Contract variations become more complex and costly due to the inter-relationships between routes;</li> <li>• Long term revenue risk remains with TfL;</li> <li>• Financial stability of operators may be impacted;</li> <li>• On-road competition may create sub-optimal incentives and behaviours; and</li> <li>• Incremental revenue growth may not cover the costs of service quality enhancement and may encourage operators to focus on cost cutting over customer service.</li> </ul>

Source: KPMG Analysis

Based on the above analysis we make the following recommendation.

**Recommendation 5:** There is no clear evidence for a wholesale transfer to a “net cost” model based on the current market structure, so no such change is recommended. At this time, we believe the cost and operational risks outweigh the potential benefit. If this option is progressed, we recommend further analysis to validate our initial findings and assess the supporting infrastructure, i.e. systems, before any decision is taken.



## 5.2 Potential opportunities for cost savings

### 5.2.1 Bus specification

An issue commonly raised by operators in relation to fleet policy in London centres around the mandatory vehicle specification incorporated in the contracts for London operations. This specification is in excess of the legal requirements associated with the issue of an Initial Certificate of Fitness for the vehicles; it also exceeds the specification that most operators, including the large groups, employ for vehicles they purchase for operations in the deregulated market outside London.

TfL have provided us with a detailed breakdown of these additional vehicle features, together with the costs involved and the rationale for the inclusion of each element.

**Figure 28 – London bus additional vehicle features**

Additional features	Cost (£)		Comments
	Double deck	Single deck	
Chassis features	2,050	2,050	• Various features that reduce noise, reduce the extent and impact of engine bay fires, improve visibility of buses and increase safety when manoeuvring.
Body features (safety)	2,600	2,050	• Various safety features benefiting drivers and passengers.
Passenger safety / operational	5,200	4,850	• Features to improve passenger safety and security and accessibility.
Passenger / driver comfort	7,550	2,800	• Features to improve passenger and driver comfort.
Accessibility features	1,500	1,500	• Powered wheelchair ramps.
<b>Total</b>	<b>18,900</b>	<b>13,350</b>	

Source: TfL

The London specification is a cause of concern to some operators. The points they have made include:

- The additional up-front cost to the operator, and the price implications for the contracts;
- The impact of the specification on potential later use of the vehicles. It has become an established practice among those operators with commercial networks outside London to cascade mid-life vehicles from London for provincial use where those vehicles are required to be replaced “early” in London. Operators believe that their capacity to cascade vehicles at a similar rate to that of the past is compromised by two factors :
  - A lot of the work that the vehicles may be destined for outside London will not support the use of vehicles of this level of cost;
  - Conversion work is expensive, particularly in relation to the removal of the centre door, to make the vehicles suitable for use elsewhere; and

- Operators reported that, in their view, some of the passenger comfort items on London vehicles are excessive and unnecessary.

As an illustrative example, if the passenger comfort items aimed at reducing upper deck temperature on hot days were removed we estimate an annual saving of £3-5million. Although it should be noted that it would take many years to realise the full financial benefits of reducing the cost of the specification as the full effect is not realised until the total fleet is renewed.

### 5.2.2 Bus ownership, financing and residual value management

#### *Introduction*

Buses are currently owned and funded either by operators or leasing companies. London buses are, as described above, usually at a higher specification than non-London buses. Accordingly, the annual charge over the life of the initial contract term can be relatively high.

We have considered whether it might be possible to make savings through alternative means of financing the bus fleet (using TfL's covenant).

*Stakeholder views: Our discussion with a sample of the operators highlighted a concern amongst a number of them over taking on the risk (in particular residual value risk) of new technology buses, namely the first phase of the Hybrids and the New Bus for London.*

Concerns were raised by operators that it would be an expensive option if they were to finance the new technology fleets, assuming of course that they could secure access to the financing/funding in the current market. Their preference was for the public sector to take on these specific vehicles and the risks associated with them.

The availability of credit to private sector entities has also reduced in the current capital markets and become more expensive.

*Key finding: The market cost of capital financing has increased for operators. The interest rate differential between TfL and the operators has also increased. At this time, based on a review of relevant recent bond issues, we estimate the interest rate differential between a large multi-national operator and TfL to be upwards of three percent.*

In discussions with TfL, it has become apparent that they would not be able to accommodate a significant number of buses on their balance sheet due to capital restrictions. Therefore, the options could include:

- Aligning contract length to asset life;
- Using a fleet leasing company, but providing access to the TfL covenant to reduce financing costs; or
- Offering operators a degree of protection against residual value risk by, for example, guaranteeing the continued use of new vehicles beyond the term of the first contract.

Clearly there are risks to TfL from these options, especially if they were to guarantee use beyond the life of a single London bus contract. This would reduce the flexibility of TfL to make some types of decisions. For example, the recent decision to remove articulated buses from London would have been more expensive if TfL had guaranteed their residual value.

Furthermore, TfL has stated that it would not want any operational responsibility for the assets unless absolutely necessary. The three different approaches to bus ownership or funding outlined above could each be structured to achieve this aim, and reducing the residual value risk sufficiently.

We have not identified any disbenefit to the passengers under a changed approach to bus financing and ownership.

Illustrative savings if TfL were to fund or provide access to their covenant for new buses, have been calculated, based on a current differential of three percent on the cost of capital between the public and private sectors. This equates to a range of savings of between £3-£40 million per annum (in nominal terms) depending on the size of the fleet financed. The lower end of this range reflects funding only the six hundred vehicles in the New Bus for London fleet, the higher end of the range is based on funding all new buses.

We do not propose a refinancing of the existing fleet. Due to the current dispersed nature of asset ownership the transaction costs are likely to be disproportionately high. Therefore any financial benefit of a different approach to bus financing, ownership or residual value will be realised over the contract cycle and as the fleet is replaced.

### 5.2.3 Collaborative procurement

There is currently a wide diversity across the operating groups in the London bus market in terms of their size and corresponding buying power. The total UK fleet size among the top seven London bus operating groups ranges from four hundred and eighty to eight thousand, eight hundred and eighty buses. Among the London operators, only FirstGroup and Arriva have an overall UK fleet similar to that of the total London bus network.

Currently, the owning groups procure directly with suppliers for all assets, consumables and labour. The prices and terms which they secure depend on the buying power of the group and the relationship and track record with the suppliers. For example, some large operating groups have developed a mature centralised procurement function making extensive use of national and, in some cases, global group contracts to leverage their buying power. Other operators have a more autonomous organisation structure and less mature procurement functions characterised by fewer group contracts and more local and *ad hoc* procurement.

*Key finding: There are currently no market-wide contracts for consumables let by TfL which take into account the full size and standardised nature of the London bus market. Operators currently procure all consumables individually. However, TfL do let some market-wide contracts for large-scale projects, such as Oyster and iBus.*

An alternative option which could be considered is one where TfL encourages a more collaborative approach to procurement that gains access to the scale economies of the London market. Some of the issues that would need to be considered include:

- Any procurement carried out by TfL on behalf of operators would be subject to The Official Journal of the European Union (“OJEU”) public procurement regulations. The establishment of an operator procurement forum organised by a public organisation may conflict with OJEU regulations and competition law (operator collaboration/cartels) and may meet opposition from suppliers;
- Operators’ current supplier contracts will have different termination dates and whereas some contracts may have been negotiated with a two to three month break clause, other operators may be tied to the contract for its duration. As a result, it is likely that any introduction of cross market procurement would have to be phased over a two to three year period; and
- It is unlikely that TfL would be able to require private operators to purchase products and services negotiated under a cross-market framework agreement, and it is likely that some of the large operators would have concerns about entering such an agreement.

For the above reasons, a cross-market procurement approach is likely to be best suited to cost categories that are characterised by a relatively local supply market or where the product specification is unique to the London market.

*Example of successful implementation of collaborative procurement in other public organisations*

For defence support contracts the Ministry of Defence (“MoD”) uses its buying power to negotiate favourable terms with the engineering service providers. The MoD stipulates in these contracts that these same terms must be made available to defence equipment manufacturers when they are bidding for MoD funded projects. As a result, this mechanism ensures that the MoD’s buying power is still leveraged even when they are not the direct purchaser of a good or service.

#### **5.2.4 Bringing advertising revenues in-house**

At present, operators appointed by LBSL retain the rights to on-bus advertising revenue and a proportion of this income is passed back to TfL via the tendering process by way of a fixed amount per bus per annum over the contract term. This allocation is identified in the tender submissions.

This situation contrasts with the control which TfL has over advertising at bus stops and the Underground, where it has been able to generate substantial revenues through competitive tendering for exclusive rights.

Most of the large operating groups have term contracts with one of the major advertising agencies such as CBS Outdoor and Titan Outdoor.

The current annual TfL advertising income from operator contracts is circa £14 million, representing an average of about £1,700 per bus per annum.

Consequently, there appears to be an opportunity for TfL to increase its advertising revenue by taking over bus advertising rights. The benefits would be generated from two factors:

- TfL would be able to retain the proportion of advertising income currently retained by operators, including any margin the operators currently take; and
- There are likely to be synergies with London Underground and, together with the attraction to potential advertisers of gaining access to the whole London transport market, this may enable TfL to negotiate more favourable rates than those currently negotiated by operators.

The key risks associated with this option are fluctuations in market demand and ownership issues would remain with TfL. With regards to the latter, it may be necessary for TfL to build in a clause in route contracts which allows it to put frames on all buses and which states that the operator is responsible for the maintenance of these frames.

#### ***5.2.4.1 Advertising regulations and restrictions***

TfL currently defines the areas of the bus which may be used for advertising. Limits are placed on the use of “fully wrapped” buses (restricted to twenty five buses), and to a lesser degree “mega-rears” (restricted to five hundred buses), which are normally the highest yielding forms of advertising. In recent years such adverts have been limited to specific cultural or approved campaigns.

TfL’s policy may limit the potential commercial value of bus advertising. However, large scale use of buses as mobile billboards can detract from the urban environment.

In the current depressed market for advertising the current allocation of “mega-rears” and “wraps” are not fully utilised and the impact of such advertising could be diluted if it became too widespread.

It is difficult to ascertain what the total market potential is, particularly given the current downturn, but a doubling of the “mega-rears” allowance to one thousand buses, if fully utilised, could generate additional revenue of up to £3 million per annum.

#### **5.2.5 Recommendations with potential opportunities for cost savings**

Based on our work we make the following recommendations with potential opportunities for cost savings.

**Recommendation 6:** TfL should reaffirm the business case for each of the additional items included in the vehicle specification, considering passenger benefit against additional cost.

**Recommendation 7:** TfL should consider alternative approaches to the funding of buses and the treatment of residual value risk. In the first instance this may focus on vehicles utilising new technology or that are designed to be used solely in London. If successful and cost effective the principles could be extended to all new bus purchases.

**Recommendation 8:** If whole industry cost reduction becomes a priority we would recommend that TfL conduct a feasibility study, including detailed consultation with the operators, to validate the benefits of a collaborative approach to procurement in some well defined cost categories.

**Recommendation 9:** TfL should reconsider the current restrictions on the volume of on-bus advertising. The benefit of any change in this area may not arise until the general environment for advertising revenues has improved. TfL should also consider the retention of on bus advertising revenues in new contracts.

## 5.3 Incentive regimes

### 5.3.1 Overview of current incentive regimes

QICs contracts were first introduced in 2001. They are fundamentally gross cost contracts, but at their heart are a series of incentive provisions, performance payment bonuses and deductions, and the possibility of a two year extension to each contract.

Contracts are initially tendered for a five year period. The specification of a contract, when awarded, incorporates a contract specific minimum performance standard (“MPS”). This takes into account the operating conditions and characteristics of the route, and performance levels achieved in the past. The MPS will normally remain fixed for the life of the contract unless circumstances significantly change.

Views have been expressed to us that operators factor in QICs bonuses when pricing their bids and that this acts to reduce the cost of the prices they bid to TfL.

**Key finding:** *Evidence suggests that QICs 1 has helped improve the quality of operator performance.*

The improvement in EWT (in minutes) that has occurred since the introduction of QICs is shown in the table below.

**Figure 29 – Improvements in excess waiting times**

Year	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Excess Waiting Time	1.8	1.7	1.8	1.8	2.0	2.1	2.2
Year	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Excess Waiting Time	2.0	1.8	1.4	1.1	1.1	1.1	1.1

Source: TfL – London Travel Report 2008

The following incentives are included in a QICs 1 contract:

- Operated mileage;
- Reliability performance payment; and
- Contract extension.

#### 5.3.1.1 *Operated mileage*

Operators are incentivised to deliver the scheduled mileage on each contract by a system whereby mileage not operated for reasons within the control of the operator is subject to a deduction from the contract payment at a mileage based rate. This will generally be mileage that has been lost for staffing or mechanical reasons. Some lost mileage is classified as “non-deductible”, notably that caused by severe traffic congestion.

#### 5.3.2 **Reliability performance payments**

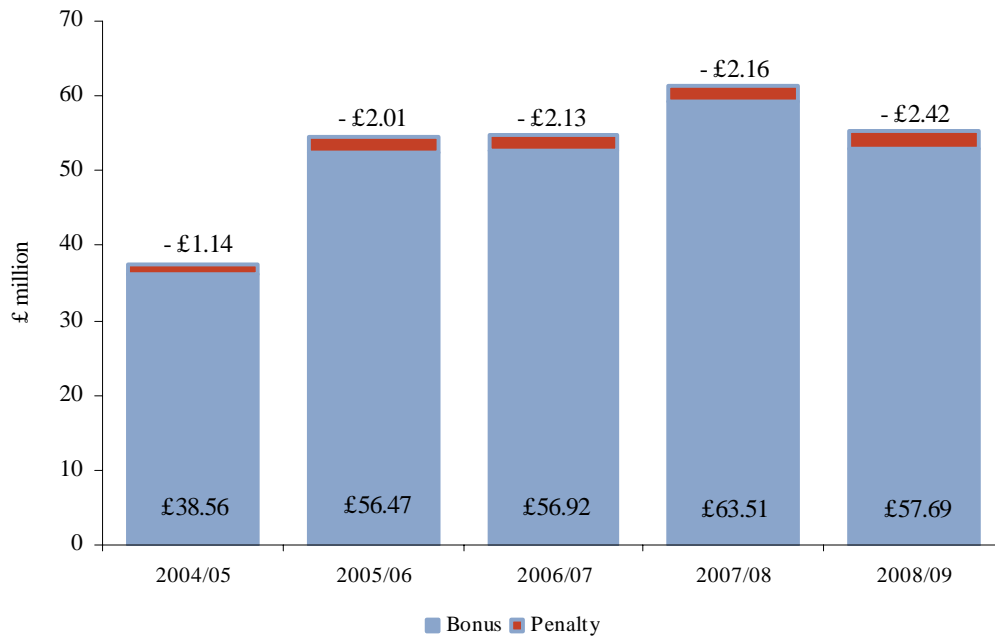
These are calculated by an annual comparison between the actual reliability of the route and the MPS. Services are categorised as either high frequency (at least five buses per hour for most of the week) or low frequency (four buses per hour or less for most of the week). Payments and deductions are based on graduated scales. Bonus payments are made at a rate of one and a half percent of the contract price for each step achieved above the standard and are capped at fifteen percent of contract price. Deductions are made at a rate of one percent of the contract price for every step achieved below the standard and are capped at ten percent of contract price.

**Key finding:** *iBus is now installed on all buses, and should provide more robust data to support QICs. The lower cost of data collection that iBus enables is already factored into future budgets.*

#### 5.3.3 **The cost of QICs 1 payments**

The figure below shows the development in QICs bonus / penalty payments over the last five years.

**Figure 30 – Bonus/penalty payments**



Source: TfL information

The above figure shows that QICs bonus and penalty payments have remained relatively stable over the last four years at a level between £55-£65 million and £2-£2.5 million respectively (up to 2006/07 the regime was still in roll-out). However, there has been a reduction in bonus payments during 2008/09 and management have informed us that this downward trend will continue as minimum performance standards are tightened and become increasingly hard for operators to exceed.

**Key finding:** *The budget indicates that QICs 1 payments to operators will fall in the future. It is also likely that the level of penalty payments will increase.*

The bonus payments made to operating groups range from less than one percent of total contract value to just over five percent of total contract value. When compared to the gross EBIT margin analysis in Section 4.2 the performance bonuses operators have received are sufficient to create a significant incentive.

**Key finding:** *Excess waiting times have fallen considerably. There is an argument of ‘diminishing returns’ in looking to significantly improve performance further, especially given the current level of performance and the impact customers will perceive from further improvements. TfL are currently forecasting no improvement beyond the current level.*

### 5.3.4 Contract extensions

The operator of a route is entitled to an automatic two year extension of the contract if performance has met or exceeded the extension threshold criterion set out in the tender. This threshold is higher than, but related to, the MPS.



The contract extension regime is currently based upon EWT and On Time Departure (“OTD”) scores, for which benchmarks have been set and operators are measured against. Customer Satisfaction Surveys (“CSS”) do not currently play a part in the extension process. Previously they did but this has been phased out in favour of QICs 2.

If the criterion for an extension is met, the extension is offered. The operator is free to accept or reject the offer of an extension. If the offer is accepted, the route is withdrawn from the tendering programme for two years. If the offer is declined, the route is put out to tender at the scheduled time in the programme.

Around seventy five percent of contracts have been offered extensions of which ninety five percent of operators accepted and five percent declined. These figures are for all routes, subject to extension review between January 2005 and March 2009, which were offered contract extensions. This implies that the operators considered the offer to be either financially or strategically attractive.

**Key finding:** *Historically, a high proportion of contracts have been offered extensions by TfL, with high subsequent take-up among operators. However, there is a view amongst the operators and TfL that this will change in future as performance thresholds tighten.*

**Key finding:** *Along with market share retention, QICs 1 receipts have been a key driver behind the operators’ decision to take the extension.*

### 5.3.5 QICs 2 pilot scheme

The first QICs scheme was introduced in 2001 and was based fundamentally on reliability of routes by operators. In an effort to keep operators incentivised to continue to deliver a high quality service, QICs 2 is being piloted.

It is important to note that reliability remains a key priority for passengers and the incumbent QICs 1 scheme is still the primary measure of performance and quality of bus services. However, due to general standards being raised, passengers’ expectations have also risen significantly and specific service factors have come under scrutiny.

**Stakeholder views:** *There were concerns raised regarding the quality of driver behaviour and performance.*

With effect from October 2008 (for approximately six months), a garage based pilot of a second generation of QICs contracts (QICs 2) was operated. An initial sum of £5 million for six months was allocated to fund the pilot period. The initial pilots incorporated an assessment of driving performance monitored through mystery traveller surveys. The pilot has been extended for a further six months from April 2009 and now incorporates assessment of vehicle condition and cleanliness, monitored through vehicle inspections undertaken at bus stands. The pilot QICs 2 schemes have been introduced through negotiation with the operators, across all garages.

Performance payments or deductions are applied against a network-wide standard. Operating companies that achieve a score that exceeds the standard are paid

proportionately based on how much better than the standard the garage scores and the relative size of the garage. The categories of quality tested in QICs 2 include:

- Driver performance – professionalism, passenger interaction, smoothness of ride, serving the stop; and
- Vehicle presentation – cleanliness, damage, defacing and wear to interior and exterior features.

There are two key assessments: mystery traveller surveys and static terminal surveys. The bonus and penalty payment system is now based on the weighted performance (by size) of each garage, the difference in performance from a benchmarked standard level and the resultant proportion of the bonus fund this represents.

*Key finding: A number of the international cities we looked at ran similar performance incentive schemes.*

#### 5.3.6 Recommendations on the incentive regime

Incentivisation is a key lever underpinning the current model. Therefore contracts should continue to contain provisions for an operator to earn an extension and rewards, and penalty payments should maintain management attention.

Based on our work we make the following recommendations regarding incentive regimes.

**Recommendation 10:** The QICs 1 incentive mechanism should be retained. However, if a net cost contracting model is considered, then the costs and benefits of QICs 1 and 2 could be incorporated into the overall evaluation of change.

**Recommendation 11:** In light of the comments above, the QICs 2 pilot should be continued. The business case for QICs 2 should be re-evaluated after it has become established to gauge its effectiveness and cost impacts.

**Recommendation 12:** The new iBus system is in its infancy. When it has become established, iBus data should be used to better target future incentive regimes. For example this could be designed on a time of day, day of week, basis. This may drive down excess waiting times in the most efficient way possible and will assist with the evolution of performance incentivisation.

## 5.4 Indexation risk

The CPA indexation adjustment is based on a weighted average of annual earnings, RPI, fuel indexation and an element which is fixed in nominal terms. The objective of the CPA is to reflect their cost drivers but not necessarily to provide the operators with full indexation protection.

Labour costs, for example, are indexed off a national average which includes bonuses. Currently, there is a disconnect between wage settlements in the London bus market and

the indexation protection the operators receive, which is based on a national Average Earnings Index (“AEI”) after bonuses. A number of the operators we spoke with raised this as a concern.

**Key finding:** *The contract indexation mechanism provides partial protection to the operators. Historically, input prices (wages and fuel) have exceeded this indexation protection.*

CPA weightings and indices are fixed in a compliant bid, but operators do have the option to submit variant bids. However, management were not aware of anyone who has used the variant option for this purpose. The discrepancy between the CPA indexation regime in the contract and real cost increases is not fully protecting the operators.

**Key finding:** *TfL prescribe indexation parameters to all bidders. There is no opportunity for bidders to reflect their view of indexation risk in a compliant bid. In bid evaluation TfL do not therefore have to differentiate between different bidders views of this risk.*

We understand that there will be a negative CPA adjustment for some contracts during the summer of 2009 which is related to low AEI, falling RPI and falling fuel prices. In part, the AEI has been skewed by a reduction in City bonuses caused by the recent financial situation and this index may continue to show higher volatility than the wage costs of bus operators.

**Stakeholder views:** *Operators expressed concern that the forecast for inflation in the summer of 2009 was negative. This would mean that the revenue they received for each route would most likely decline as a result of the CPA adjustment. Furthermore, they were concerned that City bonuses can disproportionately affect the AEI indexation they receive.*

#### **5.4.1 Recommendations on indexation risk**

Based on our work we make the following recommendations.

**Recommendation 13:** The indices used on the CPA for new contracts should be reconsidered; in particular a change from “AEI” to “AEI minus bonuses” may reduce the volatility of the CPA in the future.

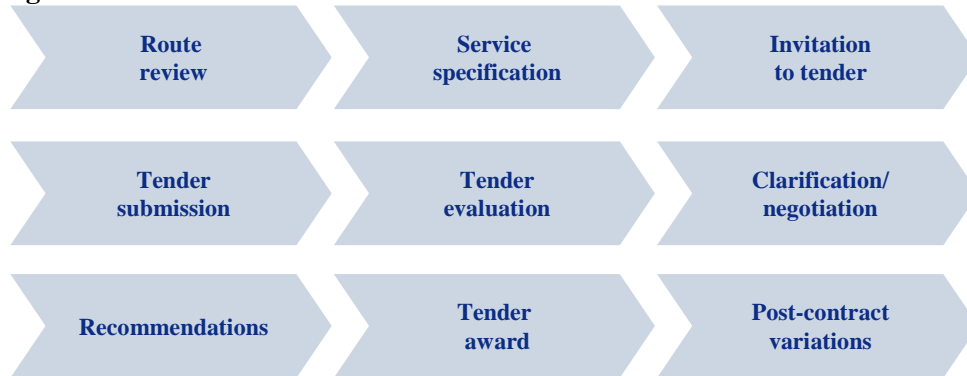
**Recommendation 14:** The current weightings in the CPA may not reflect the current costs of a particular operator. To determine if a change in this area is valued by the market, bidders could be asked to price an option that varies the CPA weightings, and indeed indices. If the market values this flexibility, TfL should consider relaxing the standard specification to allow bidders to propose their own CPA weightings (and indices) as part of their bid.

## 6 How contracts are awarded

### 6.1 The tender process

An overview of the current tender process is provided in the figure below.

**Figure 31 – Process overview**



Source: TfL information

The tender process for the award or renewal of a contract commences with a review of the route requirements. At this stage, issues relating to the network as a whole in addition to specific tranches due for re-tender are considered.

A draft specification is circulated following a performance meeting ahead of a route being due for tender. The specification and any associated changes are subject to approval by the Bus Service Meeting (“BSM”). A quarterly letter is sent to pre-qualified operators outlining which contracts are due to expire and which will be available for re-tender.

Immediately after a service specification is drafted, and prior to it being finalised and sent to operators, all pre-qualified operators will be contacted to request an Expression of Interest (“EOI”) from them. An Invitation to Tender (“ITT”) is only sent to those who submit an EOI.

TfL will evaluate bids based on the requirements for the route from a cost, quality and delivery perspective. Bidders submit an average contract price as part of their financial submission, in a template format prescribed by TfL. Within a particular tranche of routes, operators may offer combination bid discounts on multiple routes. As such, bids may be evaluated on a tranche-by-tranche basis if multiple joint bids have been submitted.

Once bids have been received and evaluated, TfL may have further queries which will need to be resolved by the operators. This could cover a range of matters from qualitative to quantitative queries which are tested or questioned.

A recommendation is put to the TEC, which operates at LBSL Board level. The TEC makes the final decisions on the award of contracts. The Committee is presented with a summary pack which highlights the key financial information and any other key factors taken into consideration.

Within two to three days of the TEC approving the recommended bidder, it is announced to the market.

Examples of post-contract variations include changes to start dates which, in the case of multiple routes and tranches, may be aligned to ensure consistency in performance and limited disruptions to public service. Other variations include CPA adjustments and changes to services as a result of disruption.

## 6.2 Outcomes of the tender award process

We have highlighted the strengths of the process and noted some areas that warrant further consideration.

**Key finding:** *The contracting process is mature and well understood. It is relatively simple and comparatively low cost to operate for both the operators and TfL.*

**Stakeholder views:** *Operators we spoke to were generally supportive of the current process.*

Given the large number of individual routes in the market (six hundred and twenty in total) and given the fact that contracts are let as single routes, the current tender process does cater for this volume and allows flexibility. TfL can, and have, market tested alternative approaches to the template contract.

**Key finding:** *TfL are not tied into a rigid structure, especially given the large volume and differing natures of the routes which make up the network. This flexibility can be, and has been, used to pilot new initiatives.*

Bidders submit an average contract price as part of their financial submission, in a template format prescribed by TfL. The financial information which TfL currently asks for from bidders is limited and at a high level. For example, the information does not provide TfL with the transparency to rigorously challenge the financial efficiency and continuous improvements of any of the bids over the life of the contract.

**Key finding:** *Bidder prices are submitted for one year only. Because of this it is difficult for bidders to demonstrate continuous improvements and efficiencies to TfL.*

The tender evaluation process considers quality and deliverability as well as price. It does this by using management judgement to assess a range of measures. For example, there are no prescribed deliverability thresholds which have to be met, or a price differential to consider when ultimately making the decision as to who becomes the winning bidder.

**Key finding:** *The current tender evaluation process relies heavily on management judgement and experience. The benefits of this approach need to be weighed against those of a more structured mechanism.*

### 6.2.1 Retention rates

The table below illustrates the volume of change between operators, in the form of the number of contracts that have changed hands following retendering since April 2007.

**Figure 32 – Incumbent success rates by region**

Region	No	Incumbent success rate		Total	
		%	Yes		%
North East	7	35.0%	13	65.0%	20
North	6	20.7%	23	79.3%	29
North West	4	12.1%	29	87.9%	33
South West	1	3.8%	25	96.2%	26
South	8	23.5%	26	76.5%	34
South East	11	37.9%	18	62.1%	29
<b>Total</b>	<b>37</b>	<b>21.6%</b>	<b>134</b>	<b>78.4%</b>	<b>171</b>

Source: TfL information, KPMG analysis. Note: Excludes nine new routes for which there is no incumbent information.

The table shows that just over one fifth of all contracts have changed hands during the last two years. However, there is a marked difference between geographical segments as illustrated by the fact that attrition rates range from four percent in the South West to thirty eight percent in the South East.

**Key finding:** *There is currently a high retention rate for incumbents at a rate between seventy eight and eighty two percent.*

This result adds stability to the market, ensures continuity for passengers and reduces the risks associated with the transition of route operation between depot locations. However, this may be symptomatic of depots being an effective barrier to entry.

From the data range we have looked at, the incumbent success rate does not seem to materially change whether there are two, three or four bidders.

In a sample of tenders looked at from January 2008, the incumbent success rate was eighty two percent, which indicates that there is an increasing trend over the two year period we looked at for incumbents to win their tenders back.

### 6.2.2 Award price

#### *Current prices*

We looked at a small sample of recent tenders and found that they were awarded at a cost which was the same or lower than the historic price paid to the previous contract operator. However, there are marked variations between bids due to bidder strategy for that particular route. For example, operators’ pricing decisions are often made in light of their

wider portfolios, depot capacity and adjacent routes in addition to the attractiveness of the particular route itself.

We looked at the changes in cost per Peak Vehicle Requirement (“PVR”) (the maximum number of buses required to operate a service at the peak time of the day) and cost per mile between the original contract cost and the awarded cost for a sample of eight routes (three tranches) tendered since October 2008. This showed that the both the cost per PVR and per mile operated had fallen from the original contract price to the new contract award price. We caution that this analysis was conducted on a small sample, and that the findings are subject to a considerable confidence interval.

**Key Finding:** *Based on a small sample of recent tender awards current prices do appear in general to be low in comparison to previous tender prices. However, as with all markets the price of bus tenders are subject to variation over time that reflects changing market sentiment. Therefore this recent trend for lower prices may not continue in the future.*

### 6.2.3 The cost of quality

#### Overview

In principle it is often better value to select a bid on factors such as quality rather than solely price. However, any decision to select a bid that is not the lowest cost will come under increasing scrutiny if TfL’s budget is tightened.

Historically, there has been a mix of small and large operators and as a result the quality amongst the market players has been disparate and varied. This was confirmed in discussions with operators who noticed this disparity when they acquired smaller entities into their groups.

Due to TfL’s objectives of increased quality to the passenger, a number of routes have been awarded to bidders who have not submitted the lowest cost bid. A review of a sample of one hundred and six tenders awarded since January 2008, showed that there are thirty eight such instances of this, and we have sought to examine this further in order to understand the rationale behind the decisions not to award tenders to the lowest cost bidders.

**Key finding:** *Winning bids are not always the lowest price bid.*

#### *Transferring substantial volumes of work, in light of good incumbent performance*

Eighteen contracts, worth seventeen percent of the total sample contract value, were awarded to the incumbent operator based on a combination of good historic performance and concerns about the lowest cost bidder’s ability to manage a substantial increase in workload that would have resulted in accepting all the lowest priced bids.

This equates to a total opportunity cost of circa £10 million per annum. Management have informed us that about twenty-five percent of this value could be realised as a saving if an increase in operational risk is acceptable and an increased number of lowest cost bids



were accepted. It is unclear whether a change in policy in this area would create significant passenger disruption or what the scale and duration of disruption would be.

*Operator capability*

In a further nine cases, worth eleven percent of the total sample contract value, bids were awarded at costs greater than the lowest cost bid on the grounds of concerns about the deliverability of the lowest cost bid. Factors such as new entrant growth rate and resourcing concerns were the main factors influencing the decision (e.g. quoted PVR lower than that TfL believes is required to operate the route to sufficient standards).

This equates to a further opportunity cost of an additional circa £16 million per annum. However, this could only be fully realised in one case if a small operator was awarded an additional five routes across two tranches. Hence, management have informed us that at most thirty-three percent of this value could be realised as a saving if an increase in operational risk is acceptable. It is unclear whether a change in policy in this area would create significant passenger disruption or what the scale and duration of disruption would be.

The table below sets out our estimates of the opportunity cost of decisions not to select the lowest cost bidder. The column entitled “Estimated realisable saving” is based on TfL management judgement of the achievable levels of savings that could be made in this area if additional risk to quality was accepted.

**Figure 33 – The cost of quality and reducing risk**

<b>Deliverability / Quality Decisions</b>	<b>Contract value %</b>	<b>Average difference %</b>	<b>Total contract value £ m</b>	<b>Opportunity cost £ m</b>	<b>Estimated reliable saving £ m</b>
Transferring substantial volumes of work (18)	16.9%	3.8%	1,597	10.2	2.6
Operator capability (9)	11.4%	8.6%	1,597	15.7	5.2
Deficiencies in lowest bid (11)	15.8%	12.2%	1,597	14.4	-
<b>Grand Total</b>	<b>27.1%</b>	<b>5.70%</b>	<b>1,597</b>	<b>30.1</b>	<b>7.8</b>

Source: TfL and KPMG analysis. Note: The number in brackets represents the number of lowest priced bids not accepted.

Management have informed us that for the routes under the headings ‘deficiencies in lowest bid’ the lowest bids were inadequate: they did not have sufficient buses or management in them to operate the services. There is therefore no realisable saving identified.

**Key finding:** Our sample analysis showed that in terms of the impact on the contract price only, the opportunity cost of quality paid in not awarding to the lowest cost bidder is in the region of £5 – £30 million per annum. However, management believe that the level of saving that would be genuinely achievable, in terms of increased risk or reduced quality, is likely to be at the lower end of the range.

An enhanced understanding of the cost of quality may enable savings also in this area although risks of disruption and lost revenue need to be taken into account.

The savings above are illustrative only and are in annual terms. Any savings as a result of a change in policy towards lower cost bids would be phased in with the tendering cycle.

**Key finding:** *When an incumbent is not successful and a route thus changes operator TfL monitors its transfer from one depot to another. However, due to low contract turnover there has not been the need to put in place more formal arrangements with the operator.*

If TfL decides to change their tender process to accept bids that contain more operational risk, there may be benefit in placing some of the current processes on a more formal footing. For example by using a Conditions Precedent agreement with the incoming operator to ensure contract mobilisation is run in a pre-agreed way. By codifying processes and relationships the participants in the process have a clearer understanding of their roles and responsibilities. It may also be possible to improve contingency planning by having a preselected approach if things do not go as planned.

#### 6.2.4 Public sector comparator model

TfL currently employs a comparator model to evaluate tender submissions against the cost levels they believe are required to operate specific routes to a satisfactory standard based on a notional bus company. The current model was developed almost ten years ago and whereas it is updated to reflect inflation, base assumptions underlying each profit and loss line have largely remained unchanged since the model was created. As a result, the benchmark outputs it produces are frequently different from operator bid submissions. The information incorporated into the Public Sector Comparator (“PSC”) is derived from a database of historic market data. These costs are then updated using economic indices. TfL have not tested the full range of this data directly against the market recently. In order to do this, TfL would probably need to request more granularity in the financial information they receive from bidders, or go direct to suppliers and seek quotes for input prices or use East Thames Buses as a source of information.

**Key finding:** *TfL uses a PSC model, derived from indexed historic costs, to benchmark against bidders’ submissions*

#### 6.2.5 International comparisons

There is a mixture of approaches from the international cities we looked at, from basing their decisions solely on price through to prescriptively weighting price, quality and deliverability. For example, the primary evaluation criterion in Santiago is price, whereas others, including Copenhagen, evaluate their bids prescriptively by weighting price, operational quality and fleet quality. Stockholm used to evaluate contracts purely on price but now include other factors such as service quality. It was not clear from this evidence which alternative model offered the best solution.

**Key finding:** *There was a wide diversity of contract award drivers offered across the international cities we examined.*

### 6.2.6 Tender Process Recommendations

Overall, the current process is effective. However, it is always important to build upon and continually improve processes. Based on our work and leading practice elsewhere we make the following recommendations:

**Recommendation 15:** If financial constraints require lowest cost but higher risk bids to be selected, it may be necessary to monitor the process of route migration between operators' depots using a more formalised process.

**Recommendation 16:** TfL should consider developing a detailed process to evaluate the cost of quality in bids, to analyse and justify decisions to select a bid other than the lowest cost bid and ensure a consistent approach to valuing risk and quality across the network and across time. This could include introducing a deliverability test, which excludes a bid that is under-resourced or contains risks that are unacceptable to TfL. Where possible, the tools for analysing the cost of quality should be built using parameters consistent with the current cost benefit framework.

**Recommendation 17:** TfL should consider improving the transparency of bid prices by asking bidders to submit a profit and loss statement for every year of the contract. Bidders could be asked to demonstrate their proposals for continuous improvement in their bids. If a decision is taken by TfL to require bidders to submit a profit and loss statement for every year of the contract then the suitability of the current comparator model should be reviewed.

**Recommendation 18:** TfL could improve their public sector comparator model by market testing the prices in the model periodically. This may also aid TfL's understanding of risk and deliverability.

## 7 Network development

### 7.1 The service planning process

#### 7.1.1 Overview

The objective of the service planning process is to develop a bus network to deliver, in conjunction with other modes of transport, the Mayor's transport policies<sup>1</sup>. The Service Planning Guidelines ("SPG") set out TfL's means of providing "best value to passengers from the resources which fares revenue and subsidy can purchase"<sup>2</sup>. The guidelines are based on passenger priorities as determined from market research and the actual characteristics of the usage of the bus network. Over recent years, there has been a requirement to plan for and provide additional capacity and quality. The Network Development Team seeks to provide the best quality network within budgetary constraints.

The SPG states that the bus network should be:

- Comprehensive;
- Frequent;
- Simple; and
- Reliable.

For each of these criteria there is a section within the SPG which provides further sub standards for the specification of bus services. All proposals for changes to bus services are subject to efficiency and value for money tests.

The guidelines include a mixture of specifically quantifiable standards as well as more general objectives to guide the development of the bus network. The guidelines are designed for use by TfL's Network Development Team who undertake the development of the bus network in accordance with the SPG. The Network Development Team seeks to meet each of the SPG's standards but in doing so makes trade-offs appropriate to the characteristics of the particular route or local network. The key components of the guidelines are set out in the table overleaf.

---

<sup>1</sup> Mayor's Transport Strategy and Statement of Intent.

<sup>2</sup> Transport for London, London Buses (2004) Guidelines for Planning Bus Services (paragraph 37).

**Figure 34 – Standards and objectives from the Service Planning Guidelines**

Section	SPG paragraph no.	Specific standards and objectives
<p><b>Comprehensive</b></p> <p>A comprehensive network should be provided, serving residential and employment centres, and ensuring that people have access to their local amenities such as shops, hospitals, schools and transport interchanges.</p>	10 & 11	<ul style="list-style-type: none"> <li>In residential areas, routes should be designed to run within five minutes walk of most homes, subject to the layout of the road network. This is about 400 metres at the average walking speed. The 400 metre guideline will be used alongside other indicators of accessibility to the network. These may for example be demographics, such as low car ownership, or physical, such as steep hills, parkland or severance due to main roads.</li> </ul>
	12	<ul style="list-style-type: none"> <li>In town centres, passengers should be taken as close as possible to places they want to get to – shopping centres, rail stations, etc. However, complicated or indirect service routings should be avoided.</li> </ul>
	13	<ul style="list-style-type: none"> <li>Wherever possible, each service will run from early morning to late at night. An increasing proportion of services will justify 24-hour coverage. Night time services will generally adopt the service number of a daytime (see <i>The Simple Network</i>) equivalent service to give greater geographical coverage, and to cover journeys which might be made on rail services in the daytime.</li> </ul>
	14	<ul style="list-style-type: none"> <li>Effective interchange is essential to achieving a comprehensive network, as there will not be a direct bus link for every journey. Interchange opportunities will be taken into account in service design.</li> </ul>
<p><b>Frequent</b></p> <p>The majority of passengers should be able to use the network on a “turn-up-and-go” basis. Services should be sufficiently frequent to allow people to normally board the first bus to arrive at their stop.</p>	16	<ul style="list-style-type: none"> <li>Research shows that if buses run reliably every 12 minutes (or better) then most passengers will treat the service as “turn-up-and-go”. Below this frequency, most will wish to consult a timetable before travelling. Therefore the structure of the network should permit as many routes as possible to run every 12 minutes or better.</li> </ul>
	17	<ul style="list-style-type: none"> <li>So that passengers can board the first bus to arrive, services will be planned on the basis that the average load per bus in the busiest hour does not exceed 70-80% of total capacity of the buses on that route. This allows for very busy journeys within the peak hour.</li> </ul>
	18	<ul style="list-style-type: none"> <li>There are some exceptionally busy stops (for example outside mainline rail terminals) where this will not be achievable. In these cases, service frequency will be planned so that passengers can expect to wait no more than ten minutes before boarding a bus.</li> </ul>
	19	<ul style="list-style-type: none"> <li>In general, service frequencies will not fall below hourly, including night services where applicable.</li> </ul>
	20	<ul style="list-style-type: none"> <li>The importance attached to a frequent network means that routes operating at a low frequency will be regularly reviewed to see whether higher frequencies are worthwhile. In particular, where double-deck buses run at low frequencies, it may be worthwhile to use single-deck buses running more often, provided there is enough overall capacity.</li> </ul>

Section	SPG paragraph no.	Specific standards and objectives
<p><b>Simple</b></p> <p>The service pattern on each route should be as simple as possible.</p>	23	<ul style="list-style-type: none"> <li>Services should generally run between the same terminals throughout the week, including evenings and Sundays.</li> </ul>
	24	<ul style="list-style-type: none"> <li>If a “turn-up-and-go frequency cannot be justified (see <i>The Frequent Network</i>) then “clockface” timetables should be provided – buses which depart stops at the same minutes past each hour, in a regular pattern.</li> </ul>
	25	<ul style="list-style-type: none"> <li>Where a number of services run together along sections of road, then wherever possible their timetables will be co-ordinated.</li> </ul>
	27	<ul style="list-style-type: none"> <li>If there is not 24-hours coverage then the last bus should run at the same time on all days of the week. First buses should run at the same time, Mondays to Saturdays, but a later start on Sundays may be acceptable.</li> </ul>
	27 & 28	<ul style="list-style-type: none"> <li>Last buses should depart major centres no earlier than midnight.</li> </ul>
	29	<ul style="list-style-type: none"> <li>At rail interchanges there will be connections with the first and last train wherever this is appropriate.</li> </ul>
<p><b>Reliability</b></p> <p>The network must be reliable. Service design should explicitly take this into account.</p>	32	<ul style="list-style-type: none"> <li>The time allocated to run along each route is based on an up-to-date knowledge of traffic conditions and passenger demand.</li> </ul>
	33 & 35	<ul style="list-style-type: none"> <li>The delays encountered by buses vary, from day-to-day and hour-to-hour. There therefore needs to be an allocation of “recovery” time at the terminals of each route, subject to the space being available. This will help absorb some of the effects of variable delays.</li> <li>Where longer routes are needed to meet particular patterns of demand, then additional recovery time at the terminals should be considered, provided the space is available.</li> </ul>
	34	<ul style="list-style-type: none"> <li>Buses on longer routes will pass through more areas with variable traffic congestion. Therefore buses running on the shorter routes may be better able to recover from disruption.</li> </ul>
	36	<ul style="list-style-type: none"> <li>When services are disrupted by road works special schedules or enhanced control arrangements should be considered.</li> </ul>

Source: TfL

### **7.1.2 A comparison of TfL's approach with other major cities**

Service planning guidelines from two cities (Sydney and New York), together with Greater Manchester's guidelines for their post Transport Innovation Fund bus network, have been analysed and compared with TfL's SPG. These guidelines have been developed for planning of bus services within urban areas although their application in detail varies by authority and regime.

**Figure 35 – Comparison of summary bus Service Planning Guidelines**

London	Sydney	New York	Manchester
<ul style="list-style-type: none"> <li>Bus routes within 5 minutes walk of most homes, subject to the layout of the road network. This is about 400m at average walking speed. This guideline will be used alongside other indicators of accessibility. These may be, for example, demographic, such as low car ownership, or physical, such as steep hills, parkland or severance due to main roads.</li> </ul>	<ul style="list-style-type: none"> <li>90% of households should be within 400 metres of bus routes during peak, inter-peak and daytimes and be within 800m of a bus route at other times.<sup>3</sup></li> <li>To achieve 100% compliance, circuitous and indirect bus routes would be required to provide fixed route services despite topographic constraints. Thus greater walking distances may be required in areas with low population densities.</li> </ul>	<ul style="list-style-type: none"> <li>The walking distance to a local bus stop in residential areas can be between ¼ mile and 2 miles depending on two factors: population density and transit dependency. The latter is defined by having a low number of cars per household.<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>95% of the population to live within a 5 minute walk of a service operating at least every 30 minutes during the day and at least every 60 minutes at other times.</li> <li>90% will live within 5 minutes of a service operating at least every 20 minutes during the day and at least every 30 minutes at other times.</li> <li>Where walk routes are particularly hilly, or there is a much larger than average elderly population, shorter walk times will be aimed for.</li> </ul>
<ul style="list-style-type: none"> <li>In town centres, passengers should be taken as close as possible to places they want to get to, without complicated or indirect routings.</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Routes should be as direct as possible. Diversion from the fastest or shortest route (between termini) to no more than 20% (in distance terms). Deviations in excess of 20% may be considered if the generators near a route are of sufficient size to warrant deviations.</li> </ul>	<ul style="list-style-type: none"> <li>No local bus route should be twenty percent longer than the most direct car route between the two termini.</li> <li>No express bus route should be twenty five percent longer.</li> </ul>	<ul style="list-style-type: none"> <li>The guiding principle is that the bus network should promote and support growth in overall public transport use by making door-to-door journeys quicker and more convenient by public transport than they are at present.</li> </ul>
<ul style="list-style-type: none"> <li>Average busiest peak hour load factor no greater than 70-80% of peak capacity to allow passengers to board first bus.</li> </ul>	<ul style="list-style-type: none"> <li>Peak period patronage to be in the range of 50% (25% at other times) seated capacity and 85% of the legal bus capacity (averaged by the number of trips operated during any 20 minute period) at maximum load point.</li> <li>Passengers not to stand for more than 30% of a timetabled service.</li> </ul>	<ul style="list-style-type: none"> <li>Maximum load factors for local bus services are 1.4 at the peak and 1.2 at other times. For express buses the maximum load factor is 1.0.</li> <li>Load factor is the ratio of riders on the bus to the number of seats at the maximum load point.</li> </ul>	<ul style="list-style-type: none"> <li>No standard specified.</li> </ul>

<sup>3</sup> This reflects the very dispersed nature of many parts of the greater Sydney conurbation.

<sup>4</sup> This reflects the general US attitude that, outside peak periods, public transport is most suitable for users who have no access to a private car.



London	Sydney	New York	Manchester
<ul style="list-style-type: none"> <li>The service pattern on each route should be as simple as possible.</li> </ul>	<ul style="list-style-type: none"> <li>No requirement for simplicity.</li> </ul>	<ul style="list-style-type: none"> <li>Bus routes should be simple and straightforward, with as few variations as possible. Both local and express bus routes should therefore have no more than three branches, preferably fewer.</li> <li>The number of turn-backs or short turns should be kept to a minimum along any single bus route.</li> </ul>	<ul style="list-style-type: none"> <li>The network will be simplified so that it is easier to understand where routes go to and from. Evening and Sunday services will follow the same routes as daytime services.</li> </ul>
<ul style="list-style-type: none"> <li>First buses consistent Monday to Saturday. Last buses consistent 7 days a week and after midnight from major centres. First/last buses should connect with first/last train where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>First bus to arrive at destination by 05:30 (Mon-Fri), 06:30 (Sat), 07:30 (Sun). Last bus to depart origin after 22:30 (Mon-Thu), 23:30 (Fri &amp; Sat), 21:30 (Sun).</li> </ul>	<p>Minimum Service Span as follows:</p> <ul style="list-style-type: none"> <li>Mon-Fri: 06:00 to 24:00;</li> <li>Sat: 07:00 to 24:00; and</li> <li>Sun: 08:00 to 24:00.</li> </ul>	<ul style="list-style-type: none"> <li>From Monday to Saturday, first buses on main radial corridors to the city centre and major towns will arrive no later than 06:00 and 06:30 respectively and last buses departing from the Regional Centre and major towns will leave no earlier than 23:30.</li> </ul>
<ul style="list-style-type: none"> <li>The majority of passengers should be able to use the network on a “turn-up-and-go” basis (at least 5 bph).</li> </ul>	<ul style="list-style-type: none"> <li>Each route shall have a frequency no worse than 3 bph (peaks), 2 bph (day) and 1 bph (evenings).</li> </ul>	<ul style="list-style-type: none"> <li>Frequencies to provide enough vehicles to accommodate the passenger volume. It is preferable to have bus routes operating at frequencies where all headways are divisible by the same unit (e.g. 30 and 60 minutes) to facilitate interchange.</li> </ul>	<ul style="list-style-type: none"> <li>On the main radial corridors into the city centre the minimum frequencies shall be 8 bph (daytime) and 3 bph (other times).</li> <li>On main radial corridors to local centres the minimum frequencies shall be 3 bph (daytime) and 2 bph (other times).</li> </ul>

Source: TfL, Greater Manchester Passenger Transport Executive, Sydney Buses, Metropolitan Transportation Authority

**Key finding:** *TfL's SPG are, when compared to a peer group, the most detailed. They are also comprehensive and fundamentally sound.*

The application of these guidelines by TfL has resulted in a network of services that has the following general characteristics:

- Where possible, 'normal' services operate seven days a week between the same termini, with a number running for twenty four hours each day;
- Sufficient numbers of buses are in service to ensure that at the majority of bus stops passengers can board the first bus to arrive on the service of their choice;
- In most cases the required peak capacity over the busiest sections of routes are provided by an even frequency of buses, managed over fifteen minute periods;
- In the majority of cases the required peak capacity is provided over the full length of route;
- A significant and growing number of services operate frequently enough to be considered 'turn up and go' i.e. provide a service of at least five buses per hour; and
- The bus route network is dense and has many overlapping sections to provide capacity in the most efficient way whilst accommodating direct trips.

### **7.1.3 Journey time and speed**

**Key finding:** *Minimising journey time is not an explicit objective within the current Service Planning Guidelines.*

The benefit of targeting reduced journey times is that it will be easier for passengers to get where they want to go quickly, thus attracting new passengers and maximising total revenue – in some circumstances a faster network may also cost less, as the resources required to deliver it can be utilised more efficiently.

Benefits from the inclusion of journey time as an explicit objective are two-fold: firstly a faster overall journey time for passengers will increase demand; and secondly lead to a reduction in operating costs due to more efficient use of resources.

At present, network planning and the development of bus priority proposals are undertaken by separate departments within TfL Surface Transport. The service planning function presently reports to the Performance Director and the bus priority function reports to the Director of Integrated Programmes. There is a need to ensure that the objectives for both functions in terms of journey time and the efficiency of the bus network are aligned so as to realise the benefits associated with any journey time improvement.

### **7.1.4 The simple network**

TfL seeks to keep the bus network as simple as possible to aid customer comprehension. This is reflected in the general characteristics of the network as described above and in particular the common service offer provided throughout each route.

TfL has confirmed that different solutions that tailor the level of bus service capacity to demand profiles such as routes operating to a split termini or a one off additional service to meet with a peak in demand are implemented. This is evidenced by acceptance of a scheme proposed by Arriva to split the termini on Route 38. This scheme was deemed to be a demand-led solution that would lead to lower costs of operation but at the expense of service simplicity.

*Stakeholder view: The planning guidelines were considered to be a sensible basis for planning the bus network, but because TfL have such clear guidelines, operators are often reluctant to propose solutions which may not fully accord with the guidelines.*

*Key findings: Service options and variants to reduce cost at the expense of network simplicity are offered by bidders and adopted by TfL, but not as a matter of course.*

#### 7.1.5 Recommendation on the services planning process

Based on our work we make the following recommendations on the service planning process:

**Recommendation 19:** TfL should include a criterion to reduce or minimise journey times within the SPG. This recommendation accords with the findings of TfL's market research which identifies journey time as a passenger priority. This could be the foundation of building stronger links between the bus priority and service planning functions and ensuring that potential efficiencies from Bus Priority are realised and translated into cost savings.

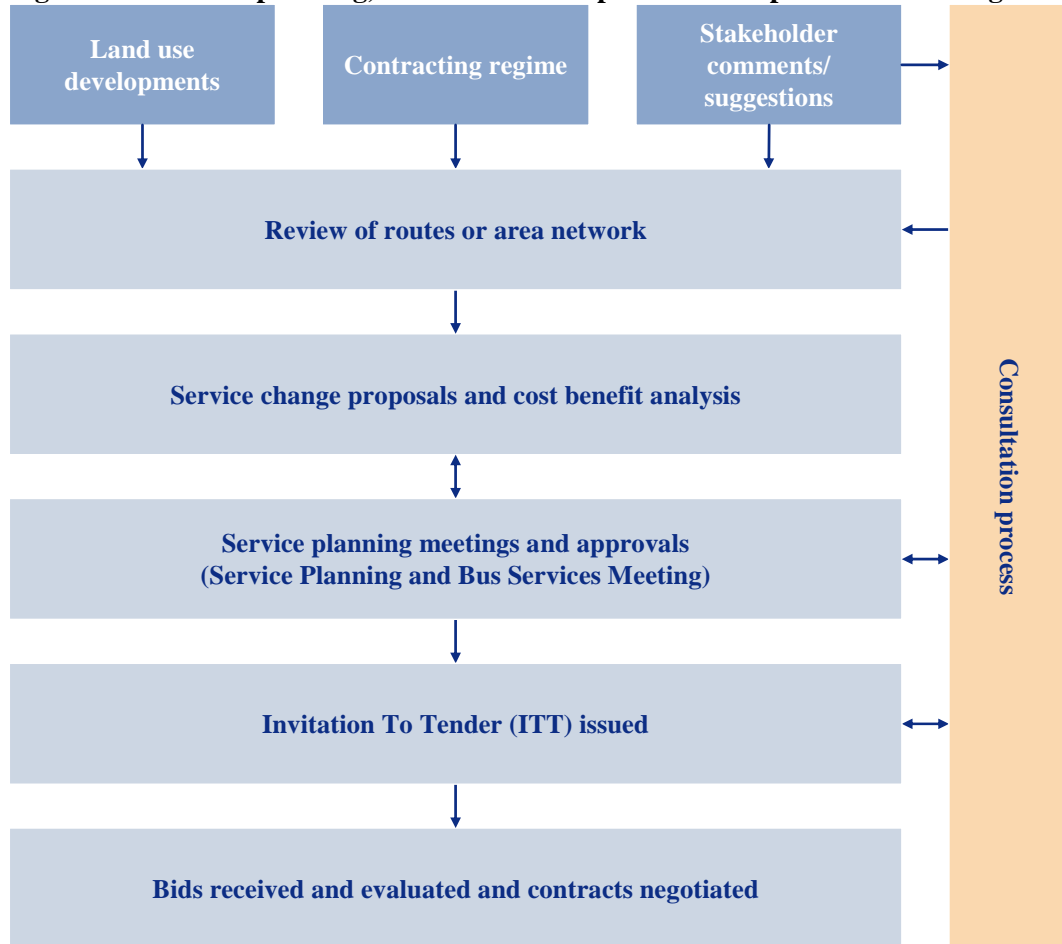
**Recommendation 20:** In the context of increased budgetary pressures, TfL could realign the trade-off between the provision of a simple and easily comprehensible network against the cost of service provision within its planning process. This could lead to a more complex network but at a lower level of subsidy. This approach would not require TfL's planning and appraisal tools to be amended and they could be employed to assess any change. Further encouragement to operators to bid variants would be beneficial and complementary to this recommendation. Recent investment in passenger information provision including iBus and also TfL's continued refinement of its information channels should also mitigate the impact of increased complexity.

## 7.2 Consultation and service planning

The way in which TfL plans the bus network, tenders contracts and consults stakeholders are inter-related and co-ordinated. In this section we consider consultee and stakeholder views on the effectiveness of TfL's consultation process.

Figure 36 shows the high level structure of the planning process, contracting regime and its connections with the consultation process.

**Figure 36 – Service planning, consultation and procurement-process and linkages**



Source: TfL

TfL’s approach to consultation incorporates, and exceeds, its statutory duty to consult on each service change and to take into account the findings of the consultation exercise within its decision making process. Tendering of routes is the primary factor which drives the programme for the assessment and review of routes, and the development of service change proposals for consultation, although the process does contain the flexibility to respond to the need to change service specification during the life of a contract.

As the majority of contracts operate for a period of five years, or extended to seven if performance criteria are met, approximately twenty percent of all routes are evaluated and in turn tendered each year and, where appropriate, service changes are developed, consulted upon and appraised.

TfL estimates that half of the network, in terms of the number of routes, is reviewed to some extent each year<sup>5</sup>. In addition to the routes considered as part of the tendering process there are other prompts that stimulate a review of bus services and consultation. Stimuli for consultation include:

- Neighbouring services are also assessed as part of the re-tendering process;
- Stakeholder aspirations and requests;
- Land use developments which potentially have an effect on the network; and
- Changes to the bus fleet or bus infrastructure.

**Key finding:** *TfL exceeds its statutory requirements to consult and has a well developed and implemented process to ensure that it meets with its statutory requirements.*

### 7.2.1 The stakeholder engagement process

During our stakeholder consultation we asked stakeholders and consultees for their views of TfL's consultation process. The following points were made by one or more stakeholders:

- The majority of consultees acknowledged improvements in their engagement with TfL and particularly LBSL;
- A number of consultees stated that the quality of the consultation materials has improved. The use of spider diagrams and annotated route maps were seen as a strength of the materials produced by TfL;
- The current summary publication of consultation responses and TfL's view of each is viewed by consultees as a helpful way of improving the transparency of the consultation process;
- There was a consensus among consultees that there are some examples of good stakeholder management. A number expressed a view that TfL and each of its divisions appear to be complex and that at times it is not clear the particular division of TfL that is the most appropriate point of contact for a given issue;
- Some consultees were unclear as to how their comments or suggestions were employed within option development. A smaller number felt that their local knowledge, experience and priorities did not carry sufficient weight with TfL's network planners. This view appeared to be exacerbated by the length of the planning process and the time between consultation stages; and
- A minority of stakeholders suggested that consultation could be more effective and efficient if it were led by those responsible for the planning and development of the network.

---

<sup>5</sup> *London Buses (2004) The case for investing in London's buses: Presenting the results of the London Buses' Strategic Review (page 5).*

### **7.2.2 Borough engagement**

Our consultation sought views from a sample of London Boroughs. Areas of agreement amongst those with whom we consulted include:

- A perception that their relationship with TfL was not as strong as it should or could be and that this had an impact on the degree to which they felt actively involved in the planning process;
- A view that the route-by-route approach to formal consultation restricts the ability for the Boroughs and their stakeholders to present their local priorities or broader vision for bus services;
- The quarterly liaison meetings with some Boroughs were welcomed. Our sample of Boroughs indicated that this aspect of TfL's consultation was seen as being particularly effective and provided a means of considering in a consistent fashion a broader range of issues than those associated with the route by route consultation, as well as helping stakeholders to see continuity and discuss issues relating to public transport as opposed to just bus services; and
- In addition to quarterly liaison meetings, TfL has delivered seminars on network development and consultation. At these, TfL typically provides a presentation, which focuses on the issues pertinent to that particular audience. Stakeholders who have attended believe that such sessions provide both an overview of TfL and its priorities as well as an opportunity for cross-stakeholder engagement.

### **7.2.3 Over-arching findings**

The following were identified by stakeholders/consultees as areas for potential improvement and are discussed and considered in subsequent paragraphs:

- Visibility;
- Timing and continuity; and
- Value of contributions.

#### **7.2.3.1 Visibility**

As noted above our discussions with stakeholders revealed a perception amongst some stakeholders and consultees that their views provided to TfL during consultation are not being used as well as they felt they could be. This view appears to be driven by a perceived lack of transparency and limited direct contact with those completing network planning rather than a lack of consultation.

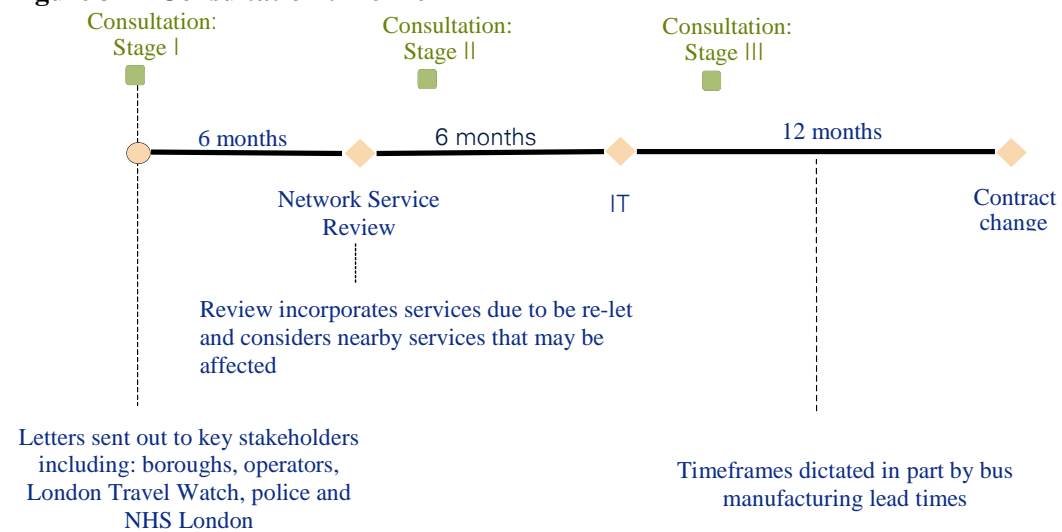
From our review of the network planning process we find that TfL does employ the findings of its consultation within its approach to network planning. Recent improvements in both consultation and information sharing (for example publishing TfL views on consultation responses on the TfL internet site) appear to be helping. Subject to the availability of resources and funds there appears to be further opportunity to improve stakeholder relations and develop their confidence in the consultation process.

As noted above not all stakeholders and consultees are clear on the allocation of responsibilities within TfL for the management of stakeholder and consultation responses. Whilst we have found no evidence of any failure in the use of the responses as a result of this structure there is a perception amongst stakeholders that transparency is compromised.

7.2.3.2 *Timing and continuity*

The timeline for the consultation process is shown in the figure below.

Figure 37 – Consultation timeline



Source: TfL

As figure 37 indicates, there is a break in formal consultation (for approximately six months) between TfL inviting initial comments and TfL presenting service proposals for comment and consideration. Whilst TfL completes ongoing dialogue alongside the staged consultation process, stakeholders perceive that the process is not as interactive as it could be at this early and influential stage of route design.

We note that the stakeholder engagement team has started to place public consultation materials and TfL response to the issues raised upon the TfL internet site.

7.2.3.3 *Value of contributions*

The separation of planning and consultation teams within TfL does lead, to some degree to stakeholder concern as indicated by our stakeholder engagement. Route-by-route consultation is required to collate and consider local views, however, it does not allow stakeholders to provide TfL with a clear view on which priorities they should be focussing on when considering service changes and local networks.

This could be achieved:

- Through the sub-regional planning process, now being launched; and
- Through any changes that may be needed in the light of new arrangements for Local Implementation Plans (“LIPs”).

The sub regional planning process seeks to:

- Identify issues in current transport proposals to meet the employment and population scenarios specified in the London Plan, TfL’s strategic objectives, LIPs as well as Borough/developer-led aspirations;
- Provide a framework from which local models can be developed to test individual development sites; hence, assess the impacts of existing and potential development scenarios;
- Examine and propose a range of solutions for the issues identified within the transport planning analytical framework; and
- Evaluate localised transport and development plans where required.

The sub regional planning process provides a clear approach for linking transport planning to sub-regional and local objectives. This approach provides an opportunity for TfL and in particular LBSL to set the planning of future bus networks firmly within the processes for the consideration of local and regional aspirations and priorities in a manner that is consistent with TfL Mayoral policies. This provides an opportunity for each of the planning functions within TfL to engage stakeholders outwith the formal consultation process. This engagement could focus on the development of local objectives and in turn pragmatic bus-based solutions at the sub regional level.

#### ***7.2.3.4 Recommendations to improve consultation processes***

Based on our work we make the following recommendations regarding the consultation process used by TfL:

**Recommendation 21:** TfL should maintain its individual relationships with Boroughs but seek and support a minimum commitment from each Borough for biennial bus and highway liaison meetings. This would provide a basic structure to ensure the collective and consistent involvement of TfL stakeholder engagement, network development teams, Borough officers and elected members. This would require the co-operation of the Boroughs and would build upon meetings already being implemented by TfL.

**Recommendation 22:** In general stakeholder understanding of the engagement process benefits from a simple strategy or charter to explain the approach to and timescales for statutory consultation. We recommend that TfL review and consider refreshing the means that it employs to explain the key responsibilities of each part of the TfL family in respect of consultation.



**Recommendation 23:** We do not support the suggestion that TfL move to a structure that requires those completing network design to lead consultation. Such a change will not make best use of existing or available resources. In addition the stakeholder engagement team has a multi-modal remit and so this suggestion would be impractical and potentially lead to a loss of value from the consultation process as cross modal issues would not be addressed.

**Recommendation 24:** TfL should develop a means of updating Boroughs and public on the progress of proposals and requests. The use of the internet for updating the general public and an extranet portal for the Boroughs is recommended.

**Recommendation 25:** TfL should continue its network development and consultation seminars to complement the process of route-by-route consultation. This could provide a means of closing the perceived gap between stakeholders/consultees and those responsible for network development. It could provide a forum for bringing together strategic policy and detailed proposals, particularly in terms of establishing local priorities. The benefit of this approach will be to provide to the stakeholder/consultee group greater transparency as to TfL's processes and for an explicit consideration of stakeholder priorities.

**Recommendation 26:** LBSL staff participate in TfL's sub-regional planning and strategic transport planning. TfL and LBSL should consider visibility of the way in which bus service issues in sub-regional and strategic transport planning are connected with detailed service planning.

## 7.3 The appraisal framework

### 7.3.1 Overview of the appraisal framework

TfL's network planning team carry out an appraisal of any proposed service change. As part of the appraisal, estimates of costs and passenger benefits are made within a spreadsheet-based tool. This assesses the marginal impact of a proposed scheme (against an existing base case) by comparing the monetised benefit to passengers arising from a change in the generalised costs of travel, against the change in operational costs (net of incremental revenues). This approach is a common component of transport planning exercises requiring economic evaluation.

The effects of any proposed changes are assessed across a relevant network of routes. Changes are then separated into their component parts, for example, a proposed variation to the contract specifications could involve a frequency change as well as a route adjustment and these changes would be appraised separately.

### **7.3.1.1 Coverage of the demand and benefit model**

The demand and benefit model forecasts the quantifiable passenger benefits arising from proposed bus service changes. Documentation provided by TfL indicates that the benefits calculated by the model include changes in:

- At-stop wait time;
- Where appropriate on-bus crowding;
- The impact of interchange and in-vehicle travel time; and
- Demand and in turn revenue.

This model does not explicitly consider:

- Environmental impacts arising from mode-transfer or the operation of any additional bus services;
- Impacts on congestion as a result of either a reduction in car traffic or an increase in bus services;
- The effect of bus-on-bus interactions on service reliability and speed; and
- Feedback effects, for example, improvements in reliability are expected to increase passenger numbers, however the contribution of this incremental patronage towards crowding or slower bus speeds is not taken into account.

Some of these factors are common inclusion within other appraisal frameworks including the DfT's Webtag. However we note that the impact of individual bus service changes with respect to these factors will, in isolation, not be significant to the results of the economic appraisal.

The external costs associated with greenhouse gas and other emissions could be included within TfL's appraisal framework on a "rule of thumb" basis so as to preserve its simplicity and effectiveness. This change is not likely to lead to a significant change in the number of proposals that achieve the required benefit to cost ratio and as such is not a key recommendation.

The appraisal methodology employed by TfL provides an annual estimate of passenger benefits, revenue and cost. These estimates are used to form the cost benefit calculation. Therefore it is an implicit assumption within this approach that any real inflation to the monetary value of each component of the appraisal is consistent. This approach is reasonable when considering individual service changes however for larger interventions it is our view that it is necessary to model the impact of real cost inflation by each component of the appraisal.

Where a delayed build up of additional demand and revenues is anticipated say for instance due to changes in land use TfL employs bespoke assumptions to account for this effect.

**Key finding:** TfL’s modelling and appraisal processes are robust and applied consistently.

**Key finding:** TfL’s modelling and appraisal processes can function equally well to assess network reductions and network enhancements.

**Key finding:** The current network development process should be able to meet the strategic challenges, including the specification of changes to the bus network so as to meet with future budgets including a reduction.

### 7.3.1.2 Key appraisal parameters

We have reviewed relevant aspects of TfL’s Business Case Development Manual (“BCDM”) (March 2007) and extracted the key appraisal parameters. These are set out below alongside our commentary on each parameter.

**Figure 38 –Key parameters**

Parameter	Value	Commentary
<b>Value of time</b>	£5.73 (2004 prices BCDM Table E1-a)	<ul style="list-style-type: none"> <li>The value of time set out in the BCDM is stated as being derived from the values contained in Webtag. We have taken the Webtag values of time by journey purpose and by applying data contained within the 2007 TfL Travel Trends report to calculate a comparable value of time of £4.99. This indicates that journey purposes splits are a key driver of value of time.</li> </ul>
<b>Value of time growth</b>	BCDM Section 3.2	<ul style="list-style-type: none"> <li>The values contained in the BCDM are consistent with those set out Webtag.</li> </ul>
<b>Journey time weightings</b>	Table E3d	
<b>In-vehicle</b>	1	<ul style="list-style-type: none"> <li>This assumption is robust and in line with accepted practice.</li> </ul>
<b>Waiting</b>	2.5	<ul style="list-style-type: none"> <li>Webtag and the underpinning research indicates that wait time is weighted by a factor of between 1.5 and 2.5. TfL across all modes applies a waiting time factor of 2.5 which is the highest end of the range.</li> </ul>
<b>Walking</b>	2	<ul style="list-style-type: none"> <li>Walking times are not considered explicitly within the model, but if required TfL has a means of doing so.</li> </ul>
<b>Incremental revenue build up</b>	100% of additional elasticity related revenue in year 1	<ul style="list-style-type: none"> <li>We have found little research evidence to support this assumption. However, it is worth noting that within a congested transport network, the application of a short revenue build-up period is not unreasonable.</li> </ul>
<b>Passenger elasticity</b>	0.29 (Table E2b)	<ul style="list-style-type: none"> <li>We have benchmarked the elasticity employed by TfL against our own research and also the research summarised in “The demand for Public Transport<sup>6</sup>”. There are a range of elasticities provided in this document and the short to medium term value of 0.29 falls within the range of relevant comparators.</li> </ul>

<sup>6</sup> TRL Report TRL 593.

Parameter	Value	Commentary
<b>Origin - Destination Data</b>	Bus origin and destination survey	<ul style="list-style-type: none"> <li>The TfL bus origin and destination survey provides both an indication of bus usage and the origins and destination of bus users. The data is collected on a rolling five-to-six year programme. The basis of the data-set appears sound but some stakeholders perceive the age of the data set to be a weaknesses. However it is considered a reasonable trade-off between against cost of collection. TFL have identified an opportunity to use Oyster data to in-fill information between surveys and in the longer-term to replace surveys altogether. However, as the cards are only registered upon boarding a bus it is not straightforward to collect trip destination. TFL have indicated that analytical approaches are being researched using ‘reverse trip matching’ algorithms to calculate destinations based on the location of the return trip.</li> </ul>

Source: TfL, DfT, Transport Research Laboratory and SDG

**Key finding:** *The current cost benefit framework, in the most part, does reflect passenger priorities. There is a limited scope for enhancement to the framework as in some cases parameters may not reflect the most recent research and guidance available.*

### 7.3.1.3 Forecasting operating costs for economic appraisal

TfL have supplied a comparison of forecast operating costs against actual costs from 2007/08 to date. From our review of this data, we have concluded that TfL’s approach to the forecasting of service costs is reasonable for use in economic appraisal as TfL’s estimate of costs aligns well and is on average within six percent of actual costs.

### 7.3.1.4 Use of the appraisal framework

We have met with TfL management and also reviewed the economic appraisals completed during 2007/08. Based upon this evidence, we believe that the economic appraisal framework is applied consistently. We would agree that the economic appraisal framework when applied to service changes needs to be both pragmatic and accurate. The need for pragmatism is driven by the number of proposed service change options that are evaluated each year. It is our view that the current appraisal process, noting its exclusion of some items and a requirement to update a number of parameters, provides an appropriate balance of pragmatism and accuracy.

**Key finding:** *The cost benefit criterion for an investment or service change to proceed is a benefit cost ratio (“BCR”) of 2:1. Our review of 2007/08 service initiatives indicates an overall benefit to cost ratio of 2.3:1.*

### 7.3.1.5 Updating parameters and the approach to modelling

Key appraisal considerations are the treatment of at-stop wait times, generalised costs and the value of time.

The weighting used by TfL for waiting times is the same irrespective of the scale of the proposal and the route. In practice, a small improvement in waiting times may not be perceived by passengers in the same way as a large improvement. Approximately sixteen

percent of all initiatives in 2007/08 involved increasing frequencies and many of these were proposals for high frequency services and to be applied during the peak.

The research underpinning generalised cost assumptions (particularly time weightings and interchange penalties) should be updated having been derived in 2003 and in the case of the interchange penalty prior to 2000. Increasing use of real-time information is likely to reduce the relative benefit of waiting time reductions. DfT is completing research into this area at present and this may yield information of value to TfL.

The interchange penalty is dependent on ticketing policy including the use of Oyster, the scale of the network and information provision. Given that dramatic changes have occurred in these areas in recent years, reconsideration of the interchange penalty is recommended.

#### **7.3.1.6 Value of time**

TfL uses a single value of time. This is a weighted average value of time and is set out in TfL's BCDM. However, this does constrain any differentiation between the quality of service provided to different market segments. An alternative approach would be to employ values of time weighted by the characteristics of each market segment. This approach would lead to higher estimates of benefit for those markets with higher values of time. For a given level of cost this approach would tend to lead to markets with a higher value of time attracting a greater share of available resources. Using data from Oyster and iBus, a differentiated approach may be possible and would enable resources to be targeted more effectively to locations and times where the need is greatest.

For example some marginal Sunday and evening services continue to be justified through the model because the value of time for passengers using these services is considered to be equivalent to passengers commuting to work in the peak. We understand that there are a range of social policy issues that emerge from introducing any distinction between different journey purposes.

A single behavioural value of time is employed within the calculation of additional revenue arising from service enhancements. It is implicit within this assumption that at all times of day and in all market segments a service change will generate the same percentage change in demand. A move to a more disaggregated value of time or using elasticities by market segment may improve the accuracy of this aspect of the evaluation process.

#### **7.3.1.7 Key Metrics**

The current service planning and appraisal tools employ the ratio of marginal economic benefit to marginal cost as a criterion within the decision-making process. This approach is consistent with the majority of transport investment appraisal frameworks and works effectively. It can be employed to allocate resource to both increase and decrease the costs and scope of the bus network.

The appraisal process has, when required, supported service level reductions which were found to be possible whilst minimising passenger disbenefits. In such cases the existence

and presentation of a business case is an important factor in explaining and justifying proposals to stakeholders.

In circumstances where there may be a need to reduce the cost of the network, an increase to the ‘pass-mark’ (the minimum acceptable benefit cost ratio) would influence decisions and the process in a number of ways:

- There would be a greater impediment to investment and service enhancement-reflecting scarcer resources available for proposals to improve services;
- There would be greater scope to reduce services; and
- Some economically marginal historic enhancements to the bus network may be removed.

TfL has indicated that alongside the ratio of benefit to net cost they consider financial performance within the network planning process. This is required to meet with budget constraints and also recognise the level of funds required from subsidy to support the provision of bus services. As it is possible for alternative proposals for changes to the bus network to have the same ratio of benefit to cost but require differing levels of financial support this approach is necessary.

Financial metrics such as the cost recovery ratio or the extent of subsidy support is part of most appraisal frameworks including the DfT’s Webtag and its predecessors. In New York the cost recovery ratio is used by the Metropolitan Transportation Authority to trigger bus service reviews.

It is possible to set at the network level, or for particular schemes, targets for levels of cost recovery. This provides a complementary test to the benefit to cost ratio within the network planning process. The application of this test will require some consideration of fares policy or the adoption of an assumption that fares policy will remain unchanged.

It is recognised that low cost recovery services cannot be uniquely targeted for review in light of a cost recovery target. For example, school routes will intrinsically perform poorly in terms of cost recovery as a high proportion of journeys are made on concessionary passes.

### ***7.3.1.8 Recommendations on the appraisal framework***

Based on our work we make the following recommendations regarding the appraisal framework.

**Recommendation 27:** TfL should further research and update the parameters and the modelling approach to ensure that contemporary passenger priorities are reflected.

**Recommendation 28:** TfL should consider the role of a cost recovery ratio target of the network within its strategic planning process. In developing any targets, TfL will need to account for future fares policy.

**Recommendation 29:** When TfL forecast incremental revenue using a value of time elasticity it should be weighted by journey purpose.

## 7.4 Oxford Street

During the course of our commission the number of buses using Oxford Street was identified as a strategic challenge. Our scope of works and the time available to us does not permit the completion of a full investigation or network design exercise to be completed. We have however reviewed, and below set out, the pertinent issues.

Oxford Street is both a major destination for bus travellers and one of only three east to west routes available to buses in the West End. Oxford Street is congested due to the intensity of its use by all forms of permitted traffic and pedestrians.

Current peak bus service frequencies are up to one hundred and eighty five buses per hour (“bph”) per direction and up to one hundred and fifty bph in the off peak. The highest frequencies are found between New Bond Street and Oxford Circus. There is evidence of bus on bus congestion and speeds are significantly reduced to between six and nine kilometres per hour. At any one time there are between forty and sixty buses on Oxford Street between New Bond Street and Marble Arch.

The number of buses using Oxford Street is the source of the following concerns amongst relevant stakeholders:

- The negative impact upon local air quality;
- The visual impact on the streetscape;
- The balance between space for vehicles and for pedestrians; and
- The safety and security of other road users.

However all stakeholders acknowledge that Oxford Street will need to accommodate a high frequency of bus services given in its role as a key artery supporting the volume of passengers travelling to Oxford Street for both employment and non work purposes.

There are however implications associated with a reduction in the frequency of services using Oxford Street. These would need to be considered, forecast and evaluated prior to implementing any changes to the bus network. There would be a loss of access for employees as well as visitors and some journeys would involve interchanges or more walking and in turn lead to disbenefits which should be evaluated using TfL’s appraisal tools. It is also possible that a reduction in bus frequency would lead to an improvement

in bus speed as congestion levels will fall. This impact should also be considered and captured within any appraisal.

#### 7.4.1 TfL's existing proposals

TfL is currently reducing bus flows along Oxford Street. There will be a ten percent reduction during 2009 and a further ten percent reduction during 2010. The reduction being delivered for 2009, for which some elements remain subject to consultation, is expected to comprise changes to routes 8, 23, 113, 176 and C2.

#### 7.4.2 Further service reductions

Should further reductions in bus frequencies be pursued the implications we note above should be evaluated. It should also be noted that any release of capacity as a result of bus service reductions will require careful management to ensure that the released capacity is not absorbed by vehicles returning to Oxford Street or by general growth in traffic. If any released capacity were to be absorbed any improvement in bus speed would be eroded and accordingly any improvement in stakeholder perception reduced. As such complementary traffic management and enforcement measure are likely to be required to secure any benefits associated with a reduction in Oxford Street bus frequencies.

**Key finding:** *The number of buses in Oxford Street at any one time is a function of the speed of the traffic as well as service frequency. Any action to reduce the number of buses would need to be accompanied by multi-modal plans to maintain any improvement in traffic speeds.*

Based on our work we make the following recommendations regarding bus services on Oxford Street.

**Recommendation 30:** Subject to the impacts of other projects within and surrounding Oxford Street, there will be an opportunity to assess the effect of the existing proposed service reductions on bus speeds and reliability and also upon users and stakeholders. We recommend that TfL completes a monitoring exercise to firstly assess the impact of the changes and secondly develop a body of evidence to be employed alongside existing appraisal and network planning tools to inform any future service changes.

**Recommendation 31:** If further revisions to the bus services using Oxford Street were to be required so as to address stakeholder perception such revisions should be considered in parallel to the development of solutions to maintain any improvement in traffic speeds by preventing an increase in the use of Oxford Street by other types of traffic.

**Recommendation 32:** TfL's current network planning and appraisal process could be employed to develop alternative bus service proposals for Oxford Street. However we would recommend that TfL include within any appraisal an estimate of any change in bus speeds and reliability arising from changes to the bus services.



## **7.5 Orbital services**

We have been asked to consider the nature and role of orbital bus services. Our scope of works and the time available to us does not permit the completion of a full investigation or network design exercise to be completed. We have however set out the pertinent issues.

We believe that there are two distinct types of orbital services and they require separate consideration. It is on this basis that we have completed a preliminary and high level review of orbital services. The two types of orbital bus services we have considered are:

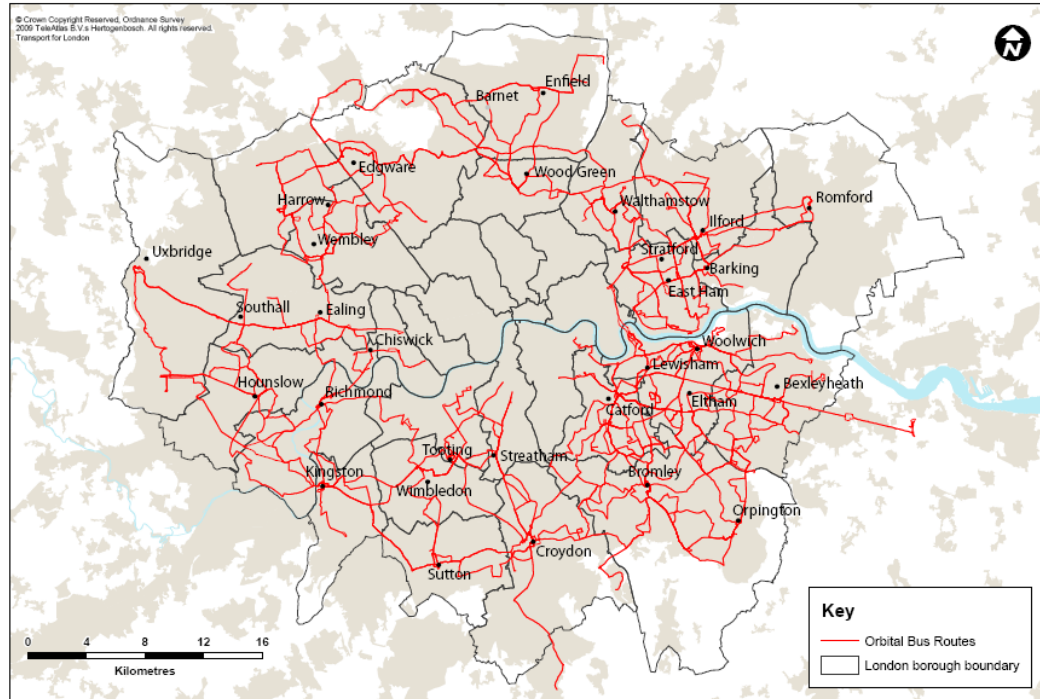
- Type 1: Conventional bus services linking regional centres with their economic hinterland; and
- Type 2: Express orbital services linking key origins and destinations such as Croydon to Heathrow in the case of X26 service.

### **7.5.1 Type 1: Conventional Services**

In order to illustrate the nature and extent of the current orbital bus network we have identified and plotted the bus services linking two or more of the centres that are designated as being either Metropolitan or Major Centres in the London Plan. We note that the London Plan defines Barnet as a district centre, however, as it is a major bus node we have included it within our analysis. If the analysis were to include further centres the network presented would be denser.

Whilst this analysis is of an illustrative nature it does indicate that there is, in general, a strong orbital network linking neighbouring centres. Our analysis is not intended to be exhaustive and as such it is probable that there will be a limited number of neighbouring centres that are not served by linking orbital services.

**Figure 39 – Orbital Services to key Centres**

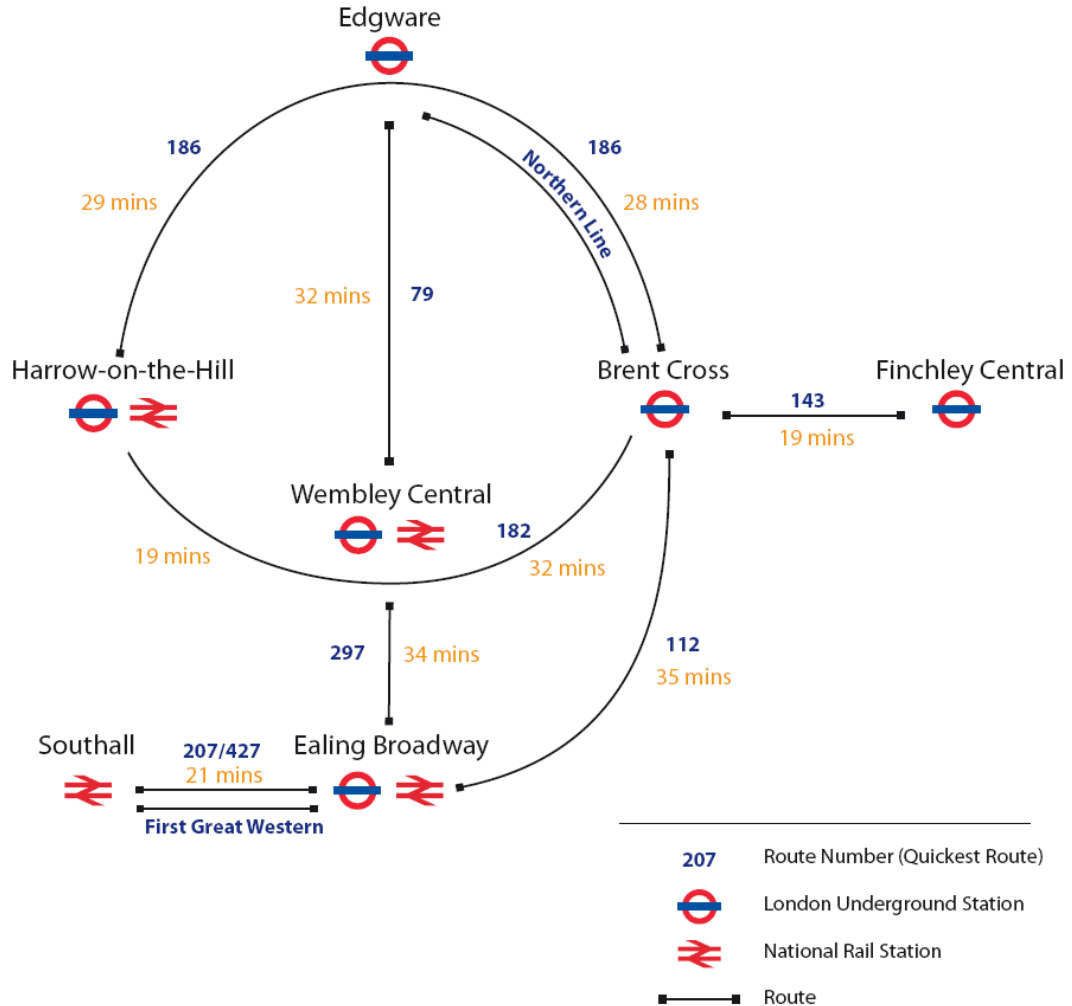


Source: GLA, TfL and SDG analysis

As TfL provides a consistent service offer throughout Greater London irrespective of whether the bus service provides a radial or orbital function these routes offer a level of service quality that is consistent with that provided by other bus services.

We have also considered a case study to examine in finer detail the nature of linkage between neighbouring centres. This example considers Wembley and neighbouring centres. To complete this analysis we have employed the TfL “spider maps” (but ignored radial and local routes) to plot a network of links between outer London urban centres in North West London (where there are few orbital rail or tube links) and used summary timetables to confirm the fastest routes. This confirms, in this instance, the strength of linkages between neighbouring centres.

Figure 40 – North West London



Source: TfL and SDG analysis

**Key Finding:** Outer London’s major centres do benefit from a dense bus network that provides direct journeys to and from each centre. As such current services provide an orbital network that is capable of supporting short distance trips to, from and in between neighbouring centres.

### 7.5.2 Type 2: Express Orbital Services

The concept of investment in better orbital transport systems is a development that has added importance given the wider Mayoral objectives as described in the recent Statement of Intent. This sets out an improvement in orbital links as being a key component of the Mayor’s policies. The rationale for an improvement in orbital linkage is a desire to support the economic vitality of London’s centres and also to encourage less reliance on the car in outer London. It is against this strategic objective of

accommodating orbital movements that improved orbital linkages should be considered. Moreover in developing improved orbital transport proposals bus must be considered alongside other modes and proposals developed in light of the findings of the necessary studies.

The London Sub-Regional Studies provides a means within which these ideas could be tested as the studies seek to develop appropriate transport solution in light of both policy and local needs. To achieve this successfully, the Sub-Regional Studies in their consideration of Orbital Express Services should:

- Ensure that some suitable express orbital bus schemes are identified and developed and subjected to comparative business case appraisals against other means of addressing the same challenges so that the cost envelope and the characteristics are well understood;
- Ensure that the development of express orbital services considers a product that aligns with the needs of each market in terms of speed and comfort so as to be competitive with car travel and potentially fares set outside of the existing fare-scales.

We would also note that in the London context, it is clear that the availability of public funds will restrict the development of schemes such as those which envisage new infrastructure in orbital applications. It therefore makes good sense to consider express bus services, not because against the priorities of the London bus network they would be considered priority areas for investment, but because compared with the alternatives they are quite likely to represent best value for money within budget constraints. However we would note that TfL's current budget for bus service provision does not allow for further investment in this area and any additional subsidy requirement would need to be met through either the provision of further funds or a reallocation of subsidy from existing or planned uses.

### 7.5.3 Recommendations orbital services

Based on our work we make the following recommendations on orbital services.

**Recommendation 33:** There is a dense network of services around each centre which provide good opportunities for orbital movement between adjacent centres. The number of direct bus links over longer distances is more limited and interchange is needed. The balance of provision reflects the balance of passenger trips, which are predominantly short. If this balance changes (for example as the result of intensification of suburban centres) then, as part of its' planning process, TfL should consider whether any opportunities exist for more provision of affordable and effective, longer-distance bus links. The potential for express orbital services should be considered by TfL at a strategic, multi-modal level (in line with the aspirations of the Mayor's Statement of Intent).

## 7.6 Express Services

In the context of seeking cost-reducing measures, we have considered the potential benefits of, and requirement for, express bus services. We believe that there are, in addition to the orbital concept considered in the previous section two types of express services which could be offered:

- Peak hour only services which provide additional capacity but omit some bus stops en-route; and
- Semi-fast all day services which use, on average, one bus stop in three or four along the route.

The rationale for considering both of these types of service would be in the instances where the characteristics of the route and the market served could lead to means of providing passenger capacity (particularly at peak times) with a lower overall cost of provision than would be the case with reliance on a standard stopping pattern.

TfL already considers express services and extending stop intervals within its approach to network planning and a small number of express services exist today. There is potential to explore this concept further. However such approaches are only likely to prove to offer best value for money in the following but limited circumstances:

- Routes having demand concentrations over longer point to point distances so as to enable effective planning of limited stop services;
- Sufficient road space to ensure that express services are not caught behind ‘normal’ services at stops and therefore offer a journey time improvement; and
- Sufficient road space or route options to mean that express services can avoid some of the traffic congestion experienced by bus services (significant stretches of bus priority and/or segregation would be advantageous but not essential).

### 7.6.1 Benefits and disbenefits

There are a number of sources of benefits and disbenefits that can be attributable to express or limited stop service and could be appraised by TfL’s appraisal framework. These are set out below:

- Increased passenger benefits for a proportion of passengers due to faster journeys (as making stops has a significant impact on journey times);
- Mode shift by appealing better to the car or rail markets, particularly where these are congested;
- Potentially reduced costs arising from scheduling efficiencies and in some circumstance a lower PVR ; and

These benefits would be off-set (according to the specific route) by:

- Passenger disbenefits to those passengers who experience a reduction in service frequency as they are unable to board the express service to reach their destination;

- A reduction in the simplicity of the bus network; and
- Potential for lower levels of service reliability.

**Recommendation 34:** The opportunity for significantly reducing cost through express operations appears limited. Where opportunities exist, TfL should consider them as part of its planning process.

## 8 Glossary

The following table gives definitions for the abbreviations and acronyms used within this document.

**Figure 41 – Abbreviations**

Abbreviation	Definitions
AEI	Annual Earnings Index
BCDM	Business Case Development Manual
BCR	Benefit Cost Ratio
bph	Buses per hour
BSM	Bus Service Meeting
CAGR	Compound Annual Growth Rate
CPA	Contract Price Adjustment
CPT	Confederation of Passenger Transport
CSS	Customer Satisfaction Survey
DBERR	Department for Business, Enterprise & Regulatory Reform
DfT	Department for Transport
EBIT	Earnings before Interest and Tax
EOI	Expression of Interest
EWT	Excess Waiting Time
GLA	Greater London Authority
GDP	Gross Domestic Product
HCT	Hackney Community Transport
IBBG	International Bus Benchmarking Group
ICL	Imperial College London
ITT	Invitation to Tender
KPI	Key Performance Indicator
LBSL	London Bus Services Limited
LIPs	Local Implementation Plans
LRT	London Regional Transport
MoD	Ministry of Defence
MPS	Minimum Performance Standards
MTS	Mayor's Transport Strategy

Abbreviation	Definitions
NBC	National Bus Company
OJEU	Official Journal of the European Union
OFT	Office of Fair Trading
ONS	Office for National Statistics
OTD	On Time Departure
PSC	Public Sector Comparator
PVR	Peak Vehicle Requirement
QICs	Quality Incentive Contracts
ROCE	Return on Capital Employed
RPI	Retail Price Index
SDG	Steer Davies Gleave
SPG	Service Planning Guidelines
TEC	Tender Evaluation Committee
TfL	Transport for London



## **Appendix one – International policy context**

### **8.1 Policy and context benchmarking**

#### **8.1.1 Introduction**

This section describes the bus operating model in a number of cities around the world. The cities covered are:

- Copenhagen, Denmark;
- Stockholm, Sweden;
- Berlin, Germany;
- Melbourne, Australia;
- Seoul, South Korea;
- Singapore, Singapore; and
- Santiago, Chile.

For each city, the key market characteristics, the background and history of the operating model, the nature of asset ownership, the level of competition, the tendering process, the risk and rewards of the model, and the key lessons learned are outlined.

The cities were selected according to scale of operations, comparability with London, variety of delivery models and interesting local market developments and initiatives.

The information is drawn from the international KPMG network, the international SDG network, desktop research and industry experience.

##### **8.1.1.1 Key findings**

The cities covered have market frameworks that differ to varying extents to each other and London, but there are comparisons that can be drawn and lessons that can be applied to the London bus market.

Key observations from the international review include:

##### *Market framework*

- Cities which have implemented a gross cost tendering model have generally seen costs fall;
- There has been a general trend towards increased involvement of private sector bus operators in markets. This is the case irrespective of whether gross cost, net cost or concession contracts are adopted; and

- Encouraging competition is seen as a key strategy to increase efficiency and reduce costs. A number of authorities recognise the need for them to take action in order to increase the level of competition in their markets.

#### *Contract award / specification / monitoring*

There are three main types of contract used: net and gross cost contracts, and concessions. A concession contract is where the operator is paid an annual fee for running the service (literally providing manpower and technical expertise), but all other aspects of the operation such as ticketing and information systems, vehicles, advertising, revenue protection and marketing are provided by the commissioning authority. An example of a concession contract is the operation of the London Overground rail service by London Overground Rail Operations Ltd on behalf of TfL.

- Price is not always the most important criterion when evaluating bids. Other criteria can include fleet quality and prior operational performance;
- Customer satisfaction surveys are increasingly used to monitor and evaluate operator performance;
- Requiring bids to be priced according to a key cost driver (eg operated kilometres) can result in an effective and value for money method to vary contracts during their term; and
- The choice of contract cost inflation index is important and problems can result from the adoption of an index that does not accurately reflect the cost faced by operators in that particular market.

#### *Network planning*

- There is often a strong level of co-operation between the Authority and operators in those cities that use the gross-cost tendered model;
- In order to better integrate the bus network with other modes of transport, a number of Authorities have felt it necessary for them to undertake network reviews and implement reforms based on their findings; and
- The knowledge of operators can be used to improve network planning, service provision and release efficiencies.

In the following, the bus operating model in each of the cities covered is discussed in more detail.

### **8.1.2 Copenhagen, Denmark**

#### **8.1.2.1 Key market characteristics**

Copenhagen's bus market is a mature and regulated market. Movia is the authority responsible for the provision of public transport services. Movia has held this responsibility in Copenhagen and the surrounding counties since 1 January 2007. Private sector companies operate the services on a competitive gross cost contract basis.

**8.1.2.2 Background and history**

Copenhagen Transport, the former Authority, was formed by a merger between twelve mainly publicly owned transport companies in the 1970s. From 1980, approximately eighty percent of operations were carried out by Copenhagen Transport, and the rest by private operators on a contractual basis.

In the context of declining patronage and rising fares in the late 1980s, a model with increased private-sector participation was introduced. This model came into operation in 1990. Copenhagen Transport continued to manage the planning and fares of the bus system, but tendered forty five percent of operations to private companies. This was a successful process – costs decreased and bus patronage increased, which in turn encouraged further tendering and a target to have all bus operations tendered to the private sector by 2002. By 1999 all bus services were provided by the private sector through this process of competitive tendering and the sale of the remaining public sector operations.

The letting authority changed its name from HUR to Movia in 2007 as part of municipal reforms which gave Movia greater authorities and powers.

Service costs are met through a combination of government funding and passenger fare revenue.

**8.1.2.3 Asset ownership**

The buses and depots are owned by operators.

**8.1.2.4 Competition**

Copenhagen has a consolidated market with two operators, Arriva (fifty three percent market share) and City Trafik, (sixteen percent market share) controlling sixty nine percent of the market by operating hours per year. The ten smallest operators currently control twenty percent of the market. The table below shows current market share and the relative market share in April 2010 taking into account contracts that have recently been re-tendered.

**Figure 42 – Competition in Copenhagen**

<b>Operator</b>	<b>Market Share April 2009</b>
ARRIVA Danmark A/S	53%
City-Trafik A/S	16%
Netbus A/S	6%
DitoBus A/S	5%
10 others	20%
<b>Total</b>	<b>100%</b>

*Source: Movia website*

When private companies entered the market for the first time in 1990 there were fifteen of them. Some operators have expressed concerns that an incumbent route operator may have access to strategic assets, such as depots. However, depot access is not considered to be a significant barrier to entry. Land for depots is readily available in the suburbs of Copenhagen, which is a short distance from the city centre, and Movia can be willing to let out depot facilities in central Copenhagen as part of a contract.

#### **8.1.2.5 *Tendering***

Movia tend to group routes, allowing bidders to bid for a single route, or a package. For example a route package can include nine routes where the bidder can bid for individual routes, part of the package, or the entire package. This is designed to allow smaller companies access to the market.

Bids are evaluated against three criteria;

- Price (forty five percent);
- Operational quality, including customer satisfaction scores and reliability/punctuality on services the firm currently operate (thirty five percent) ; and
- Fleet quality (twenty percent).

Bids are submitted on a price-per-hour of operation basis. This can be adjusted over the life of the contract if certain contract characteristics change.

There has been increased co-operation between the Authority and operators in the tendering process. In the earlier years of the tendering process, contracts were prescriptive with the focus on specification compliance by the operators. Now operators can suggest service alterations to the contract specification, when they think this can lead to increased efficiencies and a better service or coverage. These alterations are thought to be given appropriate consideration by Movia.

#### **8.1.2.6 *Risk and reward***

The gross cost contracts are typically six years in length. If performance is at a sufficient level the contract may be extended at Movia's discretion for up to six years.

The KPIs which are used to evaluate performance are:

- Driver service and behaviour;
- Driver's driving style;
- Compliance with scheduled timetable;
- Temperature;
- Interior cleanliness;
- Interior maintenance;
- Exterior cleanliness and maintenance;

- Noise limitations; and
- Vehicle hours operated against schedule.

These are all measured by customer surveys with the exception of vehicle hours operated against schedule, which is recorded by the operators.

An incentive scheme based on the above KPIs is in place; it can be worth five percent of the total contract sum to the operator. Penalties can be steeper.

There is a collective bargaining system in place, as there is for many manual-skilled jobs in Denmark, to determine drivers' wages. Salaries are agreed centrally through collective bargaining between the trade unions (the most notable of which are 3F and HK/Handel) and employer confederations (who negotiate under the HTS umbrella).

These bodies cover the whole of the transport sector in Denmark; as such they sign a joint agreement on common subjects, then agree settlements between the relevant members for their individual sub-sectors. In the road transport sector, after pay is decided centrally, no further negotiations can take place at a company or any other level until the end of the settlement period – such a process covers approximately fifteen percent of the Danish workforce today. The current pay deal is in place from 2007-2010.

#### **8.1.2.7 Lessons**

The letting authority has adopted a number of policies in order to help smaller operators gain access to the market. For example, the authority groups routes into packages that can either be bid for as a whole package or on a route-by-route basis which is more attractive to smaller operators who lack the operational capability to bid for all the routes in one area. Also, the letting authority recognises that depot access can be a barrier to entry so where possible it seeks to include access to depots within the contract.

Pricing on a per hour of operation basis can mean route modifications are less complex during the life of a contract.

The approach to performance evaluation is similar to that of London in that there is an increased use of customer satisfaction surveys. This is similar to QICs 2.

The letting Authority values operational quality and fleet quality more than price; price accounts for only forty five percent of the bid evaluation.

Over time the letting Authority has learnt to value the expertise and knowledge of operators. This knowledge is used to improve network planning and service provision, and release efficiencies.

### **8.1.3 Stockholm, Sweden**

#### **8.1.3.1 Key market characteristics**

Stockholm's market is mature and regulated. Stockholm Transport (SL) is the authority responsible for the provision of public transport services. Private sector companies

operate the buses and bid to operate the services at a district level on a competitive gross-cost contract basis.

#### **8.1.3.2 Background and history**

Prior to 1989, public and private sector operators were given the right to operate public transport services through concessions that were granted without competition.

Following central government legislation in the late 1980s, all Swedish transport authorities could choose the organisational and market framework that they felt was the most appropriate. In 1991 Stockholm restructured into separate operating and management divisions. The authority (SL) gave operators two years to prepare for competition. During this time operator costs fell. The tendering process began in 1993. Part of the network was operated by SL until the late 1990s, at which point all services had been tendered.

During the 1990s total operating costs were reduced – indeed, a key reason behind the move to a tendered system was to improve the level of cost recovery. The level of cost recovery has increased from approximately thirty six percent in 1990 to approximately forty eight percent in 2003.

SL has sold its majority shareholding in a number of the transport companies in order to remove competition concerns.

Operating costs are covered by passenger fare revenue and Stockholm County Council general taxation.

#### **8.1.3.3 Asset ownership**

The buses are owned by the operators; the depots are owned by SL.

#### **8.1.3.4 Competition**

The largest operators by market share are Busslink (owned by Keolis) and Swebus (owned by Concordia).

Concerns over the level of competition in Stockholm have been expressed by some, who cite the large route lots as acting as a significant potential barrier to entry. SL has considered varying the district size, offering financing for bus purchases or preventing the combination of districts in tendering to increase competition in the future. They are also trying to attract new entrants to the market from elsewhere in Sweden and abroad.

#### **8.1.3.5 Tendering**

Tendering criteria include price per bus kilometre and the quality of the firm's internal production processes as defined by a variable designed by the Swedish Institute of Quality Management.

Routes are typically tendered by district to try to optimise resources within an area.

SL is responsible for route scheduling and fares policy.

#### **8.1.3.6 Risk and reward**

The gross cost contracts vary in length, but are typically five years, with either party having the discretion to extend for up to five additional years if certain quality targets are met.

The amount received by the operators from the Authorities as part of their contract changes annually, based on a price index consisting of wage rate, fuel rate, and an input factor/workshop index.

SL monitors the service in a number of ways – through operator self-reporting, service monitoring and unannounced audits. After a series of monitoring audits are completed, a review with the operator is carried out. If the previously defined service and quality levels are not met, an action plan is put in place. If this is not successfully implemented, it can lead to the Authority withholding payment and in extremes contract cancellation.

There is an incentive scheme in place. The exact level of the incentive will vary with the contract, but they can be financially positive or negative. There are incentives for increased patronage and service quality measured by customer perception, and penalties for reduced service operation and below-standard service quality.

An operator is monitored, measured and incentivised on the following:

- Operation of all scheduled services;
- Punctuality;
- Vehicle cleanliness and condition;
- Staff behaviour and driving quality;
- Information to the customer; and
- Safety and security of the customer.

Employee pay is agreed on a collective basis. There is little variation in pay between employers.

#### **8.1.3.7 Lessons**

Route cost recovery can be targeted as a way of bringing down total costs.

As a result of the cost pressures on operators during the 1990s tendering process, driver wages were seen as too low. To rectify this there are now provisions in place in the contracts to ensure that workers' salaries are not lowered during the course of the contract. The collective bargaining process also contributes to drivers receiving a fair wage.

The Authority is actively seeking to encourage new entrants into the market, but access to capital is a barrier to entry. To combat this barrier, the Authority is considering ways in which it can help operators gain access to capital. Alongside this, the authority is in dialogue with potential new entrants from Sweden and abroad.

#### **8.1.4 Berlin, Germany**

##### **8.1.4.1 *Key market characteristics***

In Germany, the Federal States have a legal responsibility to provide adequate bus services to the public. It is for the individual states to determine the level of service that satisfies this responsibility.

In Berlin, the Senate (the government of the State of Berlin) is the public transport Authority. It sets out the framework for the structure and financing of local transport, and defines the networks, frequencies, quality standards and fare levels.

BVG is the transport operator of many public transport systems in Berlin, including most bus services and is one hundred percent owned by the State of Berlin. A very small number of routes are operated by other operators and this has only happened recently.

##### **8.1.4.2 *Background and history***

Soon after Berlin became divided after World War II, the two separate halves of the city followed different transport policies. West Berlin concentrated on expanding the metro and bus networks, scrapping its tram network. East Berlin extended its tram network. Following the fall of the Berlin wall in 1989, there was the need to re-integrate the two very different public transport systems in East and West Berlin, as well as creating improved transport links between the two parts of the city. Buses play a key role in connecting people to the major rail and metro stations in the West and providing local community transport all over Berlin.

The bus network, its basic frequencies and quality standards are set by the State Government in the Local Transport Plan, which normally covers a five year period.

Public funding for the BVG is regulated in the ‘Co-operate Contract’ – a contract between SenStadt (the administration for urban development within the Federal government) and BVG, specifying which transport services BVG has to deliver and the level of funding it receives to subsidise its operations. The current plan expires this year and the next plan, for the period 2010 to 2014, is currently being developed.

In the absence of significant competitive pressures on costs, financial efficiency is delivered through the level of funding. As a result there is still a push for financial discipline; for example, the number of BVG employees has fallen by over sixty percent since unification. However, BVG still has to operate with significant ‘legacy’ costs as a result of the historic position of the state in Germany, which is still seen in some parts as a provider of jobs. Additionally, the strong labour laws which limit BVG’s ability to reduce staff costs or reduce its workforce.



Towards the end of the 1990s revenue started to plateau and in 2002 revenues across the whole of BVG's transport operations suffered a decline. A series of measures were then undertaken to reverse this trend, and new services and fare structures were introduced.

The measures introduced in the period 2004-06 were developed out of a study that demonstrated customers would use public transport more if improvements in journey time were made. Services were added, removed or altered using analyses of competition from cars, how congested different transport routes were, and an investigation of how better to integrate different modes of public transport.

#### **8.1.4.3 *Asset ownership***

Buses are owned by BVG. The small number of buses operated by other parties are privately owned.

#### **8.1.4.4 *Competition***

There is very little competition in the bus market in Berlin as BVG operates the vast majority of routes. They have grandfathering rights over routes and have an agreement to run services in Berlin until 2017. The only form of competition in Berlin is a small number of routes run by other operators. These are typically new routes such as the airport-train station link operated by the bus subsidiary of DeutscheBahn. There is currently no large scale competition for other routes as BVG have recently renewed its ten year operating licence. They have some degree of ownership over routes through the existence of grandfathering rights.

#### **8.1.4.5 *Tendering***

There is no tendering model, in the sense of a public sector procurement tendering process, similar to that in other bus markets reviewed. This is a result of the position of power that BVG holds as the incumbent operator for the vast majority of the network. It is known that BVG subcontract services to private sector operators, though the process they use is not known.

#### **8.1.4.6 *Risk and reward***

BVG is a state owned company, so does not face the same risk and reward framework as a private sector operator would typically face. BVG is incentivised to meet performance standards and can be financially penalised for not meeting pre-agreed targets.

#### **8.1.4.7 *Lessons***

The success of the reforms introduced in 2004-2006 demonstrate the importance of understanding the needs of passengers and subsequently aligning the bus service to meet those needs.

Like Transport for London, Berlin regularly creates five-year transport plans which help to set out transport services and priorities within a long-term context.

It can be challenging to reduce the staff costs of a bus operator when there is an historically high cost base. This is particularly true when there are strong labour laws that protect employees and there is a public acceptance that the state has a role to play in providing employment for citizens and in the provision of public services such as transport.

### **8.1.5 Melbourne, Australia**

#### **8.1.5.1 Key market characteristics**

The Victoria State Government's transport department is the transport Authority for Melbourne. It sets fares and is responsible for network design. Private bus companies operate the services primarily on a gross cost contract basis, with franchise arrangements in place for a small number of routes.

#### **8.1.5.2 Background and history**

Melbourne has one of the world's largest tram networks, so bus is a less important mode for large parts of the city. However, it plays a strategically important role in the suburbs and in those areas that lack a tram connection.

Most of the routes in Melbourne were established by, and have been provided by, the private-sector for over thirty years. A few routes have been operated by the government's Public Transport Corporation. There has been competitive route tendering since 1993. However, for a large number of routes this is effectively not the case as the operators have a certain degree of historic ownership rights over the contract. Tendering is focused on how much the incumbent will operate the route for, rather than whom the operator will be.

During the decade after tendering was introduced, there were a number of issues centred on the quality of the bus service, particularly the time that routes cease operation and the frequency of services in the daytime. There was also a desire among bus companies for a clearly defined strategic direction. Further, the Authorities wanted to increase the share of modal public transport, and so reduce congestion and increase patronage, as well as improve safety.

In this context the State Government published two policy papers, *Meeting Our Transport Challenges* in 2006 and *The Victorian Transport Plan* in 2008, which were designed to address these issues.

These papers were written by the state government (working closely with Bus Association Victoria (BAV) on the bus proposals) for the Victoria region to aid the development of the transport plan going forward. These papers outlined a ten-year investment programme in the bus network, with the majority of the investment being in the implementation of a smart-card ticketing system and a greater subsidy to improve local bus services.

The level of co-operation between the Authority and operators in the State is considered as being strong. Areas where the Authority and the operators have worked together include:

- The collaboration to produce Meeting Our Transport Challenges and the Victorian Transport Plan;
- Joint working to identify areas for bus service improvement and increased patronage, which has led to a consensus on how to develop the network;
- Improvement and refinement of tendered contract details through a long-term negotiation process; and
- Agreement over principal service goals.

Due to the large number of operators in the market, BAV acts on behalf of the industry for a large number of negotiations and discussions with the Authority.

#### **8.1.5.3 Asset ownership**

Bus companies typically own both the buses and depots with some operators leasing depots. The capital and operational costs of the buses are agreed by the Authority and the operator at the beginning of the contract period. The Authority specifies when the operator must introduce new buses to the routes and this is reflected in the payments. The operator retains any upside from procuring buses at a price that is less than that agreed in the contract. The buses are depreciated over the life of the contract and the Authority has no rights of ownership or novation at the end of the contract. As a result the operators often benefit significantly from residual value upside at the end of the contract.

The Authority has sought to reform this system in order to gain greater Value for Money, but so far they have been unable to implement the reforms necessary to improve the framework.

#### **8.1.5.4 Competition**

Despite a degree of consolidation in the market in recent years, it is still considerably fragmented with over twenty operators active in the market. It is widely perceived that there is a lack of competition on a large number of routes due to the ‘ownership rights’. Some operators have claims over certain routes as a result of historically operating them, as well as the close relationship that has developed between the commissioning authority and the operators.

#### **8.1.5.5 Tendering**

Tendered services are let on a gross cost contract basis; other routes are let on a concession basis. The vast majority of routes are re-tendered in one procurement process at the same time.

The government has specified a minimum service level for all routes in the tendering phase, however there is some flexibility around how the operator wishes to operate its required vehicle kilometres.

In order to improve the efficiency of operators, the Authority has undertaken a benchmarking exercise to give them a stronger position in the contract negotiation process.

#### **8.1.5.6 Risk and reward**

The tendered contracts are gross cost; a degree of cost risk is offset by the fact that there is cost indexation in the contracts. The operator still retains a degree of indexation risk as was evidenced in 2006/07 when the operator wage settlement was higher than the average weekly adult ordinary time earnings (AWE) measure which is used as the cost inflator.

As part of the increased funding announced in *Meeting Our Transport Challenges*, the bus operators accepted a series of measures that altered their risk profile:

- Companies accepted that they will not object legally if certain routes are put out to tender;
- A more transparent costing process for gross contracts and a more detailed cost breakdown to demonstrate relative and ongoing efficiencies when setting contract rates;
- Increased service reviews; and
- Increased incentivisation in some contracts.

The Authority did attempt to introduce a stronger revenue incentive regime into the contracts, but this was resisted by the operators.

The KPIs and any associated incentive payments are based on:

- A degree of bus patronage growth;
- Operational performance (including service provision and punctuality);
- Qualitative performance from customer feedback (this measure may not be related to incentivisation payments); and
- Metlink-related performance. Metlink is the provider of transport service information in Melbourne. Factors here may include the speed at which an operator passes service changes to Metlink and whether such information is accurate. This measure may not be related to incentivisation payments.

If the operator meets the targets, the contract may also be extended.

#### *Lessons*

The Authority has recognised the need to increase efficiency across all operators. To gain assurance that operators are continually striving for further efficiency gains, the authority now requires more detailed costing information in bids that demonstrate efficiency savings. The authority has also used this information as part of a benchmarking process. The benchmarking information is used as part of the tender evaluation process to inform the authority and assist them in securing the best value for money.

An increased degree of co-operation between the authority and operators has resulted in improved network planning and a collaborative approach to future network development that has the support of the authority and of the operators.

The close working between operators and the Authority has led to accusations of regulatory capture. This regulatory capture has inhibited the Victorian state government's ability to reform certain aspects of the market framework and may have increased the price the government has paid for bus services.

As is the case in London, the choice of indexation is important. If the index does not reflect the local bus specific market then this causes cost pressures for the operators.

### **8.1.6 Seoul, South Korea**

#### **8.1.6.1 Key market characteristics**

The Seoul Metropolitan Government is the transport authority, and determines fares and route structures. Private bus companies operate the services on concessions and tendered contracts.

#### **8.1.6.2 Background and history**

Historically bus usage in Seoul grew until the 1980s, but has since fallen as a result of the increased use of cars, the growth of the metro system and the longer journey times that result from increased congestion.

During the 1990s the number of private firms reduced due to government-encouraged consolidation and lower bus demand – there were fifty eight companies in 2002 (down from eighty nine in 1996). By 2002, the level of cost recovery was eighty five percent, with the funding shortfall made up through government subsidy.

Prior to 2004, each bus operator had a monopoly on a specific route and services were uncoordinated, with the result that many routes overlapped. The bus system was operated by private firms with Seoul Metropolitan Government only determining the fares. Fare revenue was not redistributed centrally.

In 2004 a series of reforms were implemented in an attempt to reverse the trend of declining passenger numbers and increased cost. The reforms were also designed to improve the efficiency of the operation of the bus services, improve facilities and make the bus network more suited to the needs of the city.

A more centralised system was introduced with revenue collected centrally and allocated to each bus operator according to vehicle kilometres. If revenue does not cover cost, Seoul Metropolitan Government provides a subsidy, which is negotiated annually. A number of new routes were also introduced which have since been put out to tender.

Seoul Metropolitan Government undertook an accelerated bus lane and bus rapid transit development programme, and implemented a new bus management system. GPS

equipment on buses facilitates monitoring of speed, adjustment of the number of buses on a route, and passenger information systems at bus stops.

This has been complemented by improved integration of buses, metro and rail networks, a more unified fare structure and the introduction of smartcard technology.

The result has been an improvement in journey times in the bus rapid transit areas, an increase in passenger numbers (reversing a long-term downward trend) and a reduction in bus-related injuries. However, costs and the level of government subsidy have increased substantially; the subsidy was approximately three times as high as the previous year after the reforms as prior to the reforms. Key drivers behind the increase in costs have been the increased number of services and increased salaries for drivers.

#### **8.1.6.3 Asset ownership**

Depots and buses are owned by private operators.

#### **8.1.6.4 Competition**

The number of private bus firms has been steadily falling, partly as a result of government policies that encourage consolidation in order to create greater operating synergies.

#### **8.1.6.5 Tendering**

Some of the new routes set up since the 2004 reform have been tendered; however the routes that were in operation prior to 2004 (which is most of them) are typically still being run as concessions.

#### **8.1.6.6 Risk and reward**

Companies are reimbursed based on vehicle-kilometres and do not face revenue risk.

#### **8.1.6.7 Lessons**

Like London, Seoul has invested in the introduction of bus monitoring technology with the aim of improving the real time information provided to passengers and improving the efficiency of the bus operations. There is potential for TfL to explore whether they are using the information provided by these systems to its maximum benefit, for example in relation to reducing Excess Waiting Time.

Again, similar to London, an investment programme in the quality of service provided an increase in passenger numbers, but has been accompanied by increases in the amount of subsidy required.

### **8.1.7 Singapore, Singapore**

#### **8.1.7.1 Key market characteristics**

Currently, SBST and SMRT Corporation operate monopolies in two respective areas of Singapore. This process is overseen by the Public Transport Council (PTC). The

operators bear both cost and income risk and there is no subsidy in place. The Land Transport Authority (LTA) have started to plan bus networks centrally this year.

#### **8.1.7.2 Background and history**

In the 1970s, the ten bus companies were merged into three and then subsequently one. This was managed by the government in an attempt to create a better service with more centralised organisation. This company became known as SBST, which is still the largest operator in Singapore today. In 1983, in order to provide a level of competition and improve service, a competitor, Trans-Island Bus Services (now called SMRT), began operating bus services. Both companies operated monopolies in separate areas of Singapore.

A 2008 LTA publication – *Land Transport Masterplan* – was commissioned to consider options to overcome some criticisms of the area-monopoly model. Such criticisms included the lack of co-ordination between the two services and a lack of direct government influence over enhancements to the current system through the service standards.

#### **8.1.7.3 Asset ownership**

The bus companies own their own buses and depots.

#### **8.1.7.4 Competition**

Currently, Singapore is divided geographically between the two operators. Their performance is benchmarked against each other. As it currently stands the market framework does not allow the entry of a new operator, but a more competitive tendering system is intended to start from 2010 onwards. The *Land Transport Masterplan* stated that the licence period should be shortened from thirty years and the market be gradually opened up to increased competition. This is designed to encourage greater efficiency and service improvements.

#### **8.1.7.5 Tendering**

There is effectively no tender process in place currently – both companies who operate services in Singapore were started with government approval. Tendering may start from 2010 as the market is opened up to increased competition.

#### **8.1.7.6 Risk and reward**

The operators have net cost monopolies within their respective areas and as such hold both the cost and revenue risk. There are no government subsidies.

The operators have a level of autonomy over routes and schedules as these are not specifically detailed in the service standards contracts. Whilst operators bear cost and revenue risk, the freedom the operators have in their areas means they are able to plan services in a profit maximising way.

Revenue covers operating costs and the financing of capital assets. The Land Transport Authority has, however, been funding the development of a system-wide rapid transit system. The *Land Transport Masterplan* does not wish to change the no subsidy principal, as the current system ensures tight financial discipline; however the authority is considering a fare surcharge that can be used to fund non-commercial transport initiatives.

#### **8.1.7.7 Lessons**

The significant differences in the market framework between Singapore and London mean that the lessons that can be learnt from Singapore are limited. However, there are some observations that can be made.

Singapore views a more competitive market as a positive development and is following policies which will facilitate increased competition in the marketplace.

Singapore appears to benefit from a stated policy of no subsidy which focuses operators' strategies on revenue generation and cost minimisation. The authority believes that this approach will broadly result in the development of a network which effectively meets the needs of the residents of the city and the government's strategic transport and wider objectives. Recently the authority has recognised that this approach may not fully meet its wider policy objectives and as a result is considering a fare surcharge to fund transport operations which are not commercially viable.

#### **8.1.8 Santiago, Chile**

##### **8.1.8.1 Key market characteristics**

The *General Co-ordination of Santiago Transport* is responsible for the *Transantiago* scheme; a package of reforms to public transport in Santiago which has affected buses in particular. Prior to this, several central government and locally appointed bodies were responsible for different aspects of public transport management. Private operators operate the bus services, with most services tendered in a series of packages on a gross cost basis with a degree of shared revenue risk. The central AFT collects and manages revenue.

##### **8.1.8.2 Background and history**

Public-sector bus operators have not historically played a large role in the operation of buses in Santiago. Those public-sector companies which operated buses were sold off in the 1970s. In 1980, rights of entry into Santiago, routes and bus frequencies were deregulated, and fares were deregulated in 1983.

In 1991, a new government decided to re-regulate aspects of the service, and put out to tender those services that went into Central Santiago. The evaluation criteria were vehicle quality and the fare charged. In total, seventy seven percent of bus services were competitively tendered concessions at that time. Often these routes were won then sub-contracted to a number of smaller firms with the result that most routes were operated by small companies that had four buses or less.



The tendering changes did lead to fewer, newer buses and more profitable operations but by 2000 it was thought that more could be done to improve the system. As such a scheme called *Transantiago* was designed to address a series of issues. These were:

- The rise in car journeys, and the associated decline in public transport modal share and traffic congestion;
- Low customer satisfaction;
- Safety issues;
- The level of pollution;
- The cost of tickets for the poorest citizens; and
- The concentration and overlapping of routes.

The key reforms implemented in the scheme included:

- Improved traffic management systems (including bus lanes and car toll roads);
- The change to a gross-contract tendered system;
- Incentives to improve bus vehicle standards; and
- Co-ordinated transport infrastructure and planning policies.

The reforms started to take effect in 2005.

#### **8.1.8.3 *Asset ownership***

The bus operators own the buses and depots.

#### **8.1.8.4 *Competition***

Operators were incentivised through the contracting process to merge in order to encourage the rationalisation of a market in which there were thousands of small operators prior to the reforms.

#### **8.1.8.5 *Tendering***

There is currently a gross cost system in place that has a degree of revenue risk sharing. Following *Transantiago*'s route restructuring, there are five major 'trunk' contracts incorporating the busiest routes and ten 'area' contracts which act as feeder routes to the trunk routes. Within the area contract bidding process the operators have a significant degree of influence over route design.

The main criterion for evaluating bids is the 'payment rate per passenger carried' quoted by bidders. Prior to bidding, the authorities state a maximum and minimum rate per passenger. If two bidders' prices are the same, then a number of factors are evaluated to determine the contract winner. These include contribution to the technical operation reserve, wages and training given to employees.

Firms were incentivised to reduce emissions by the promise of longer contracts. There is effectively a pollution limit in each contract; those companies with the least polluting buses can earn longer contracts. The authority has considered using money generated on the international carbon markets from reduced emissions to finance travel for elderly passengers and those on lower incomes.

Operators of feeder routes are typically awarded five year licences. Trunk route licences are longer and may be up to thirteen years in length with a further six years dependant on performance

#### **8.1.8.6 Risk and reward**

The system is broadly a gross cost system. However, there is a degree of shared revenue risk as operators are incentivised to increase patronage. The AFT have a fixed fare structure across the system. The operators are compensated by the AFT on the bid-for fare per carried passenger. Thus the operators take passenger volume risk.

There are several risk sharing mechanisms included in the contracts:

- Operators incur up to ten percent of revenue loss or gain compared to their target revenue. If gains or losses are greater than ten percent, the fare income received will be changed accordingly.
- Firms can extend the concession period if passenger demand is lower than target volume so that the expected target rate of return can be met.
- There is a 'buffer fund' that can be used in the event that steep fare adjustments are required because of major differences in target and outturn revenue. This reserve is funded from initial capital contributions from the bus firms and accumulated surpluses.

Since the system started, there have been financial pressures. The measures outlined above have not proved sufficient; there is public opinion that the operating and forecasting models are not working properly, as well as changes to the system since it began operating, have meant that revenue has not been sufficient to cover costs. The government has provided a subsidy to the AFT who have passed this on to the operators.

#### **8.1.8.7 Lessons**

Santiago has moved from a system of deregulation, to one of concessions, to gross cost contracts with some revenue risk. As such, the market is now being guided more by the state with services being operated by the private sector.

The innovative use of pollution trading which Santiago may use in the future could be a positive way to encourage firms to use more environmentally-friendly buses rather than adopting a regulatory approach.

Santiago has had to subsidise its bus system even though there are a series of measures in place to transfer risk to the operators. Revenue has not been sufficient to cover costs. This demonstrates that any risk sharing mechanism must be effectively developed, that



*London Bus Services Limited*

*KPMG LLP  
Final Report – 16 July 2009*

realistic forecasting is vital in understanding how much risk is being transferred and that ultimately the authority retains the final risk.