National Audit Office

DEPARTMENT FOR TRANSPORT

The failure of Metronet

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 512 Session 2008-2009 | 5 June 2009

The National Audit Office scrutinises public spending on behalf of Parliament. The Comptroller and Auditor General, is an Officer of the House of Commons. He is the head of the National Audit Office which employs some 850 staff. He and the National Audit Office are totally independent of Government.
He certifies the accounts of all Government departments and a wide range of other public sector bodies; and he has statutory authority to report to Parliament on the economy, efficiency and effectiveness with which departments and other bodies have used their resources. Our work leads to savings and other efficiency gains worth many millions of pounds: at least £9 for every £1 spent running the Office.

DEPARTMENT FOR TRANSPORT
The failure of Metronet

LONDON: The Stationery Office
£14.35

Ordered by the
House of Commons
to be printed on 4 June 2009

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 512 Session 2008-2009 | 5 June 2009

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

Tim Burr
Comptroller and Auditor General
National Audit Office

28 May 2009

The National Audit Office study team consisted of:

James Bolton, Peter Gratzke, Joseph Holden, Colin Ratcliffe, Jon Riley and Richard Wade, under the direction of Patricia Leahy

This report can be found on the National Audit Office web site at www.nao.org.uk

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Email: enquiries@nao.gsi.gov.uk

© National Audit Office 2009

CONTENTS

Photographs courtesy of © Transport for London

SUMMARY

1 In July 2007, Metronet BCV and Metronet SSL, two companies set up to modernise London Underground's infrastructure, went into administration when they became unable to meet their spending obligations. Their failure resulted in London Underground Limited (London Underground) having to buy 95 per cent of Metronet's outstanding debt obligations from its private sector lenders in February 2008 rather than repaying this debt over the 30 years of the contract. The Department for Transport (DfT) made £1.7 billion of grant available to help London Underground do so.

2 The Government provided funding for the modernisation work on the basis that it would be carried out through Public Private Partnership (PPP) contracts. It accepted that stable funding was needed to remedy decades of underinvestment, but was concerned about London Underground's track record in delivering major enhancement and maintenance projects to time and budget. The Government, therefore, decided that London Underground should focus on operating passenger services, and that the private sector should be used to deliver maintenance and major infrastructure improvements.

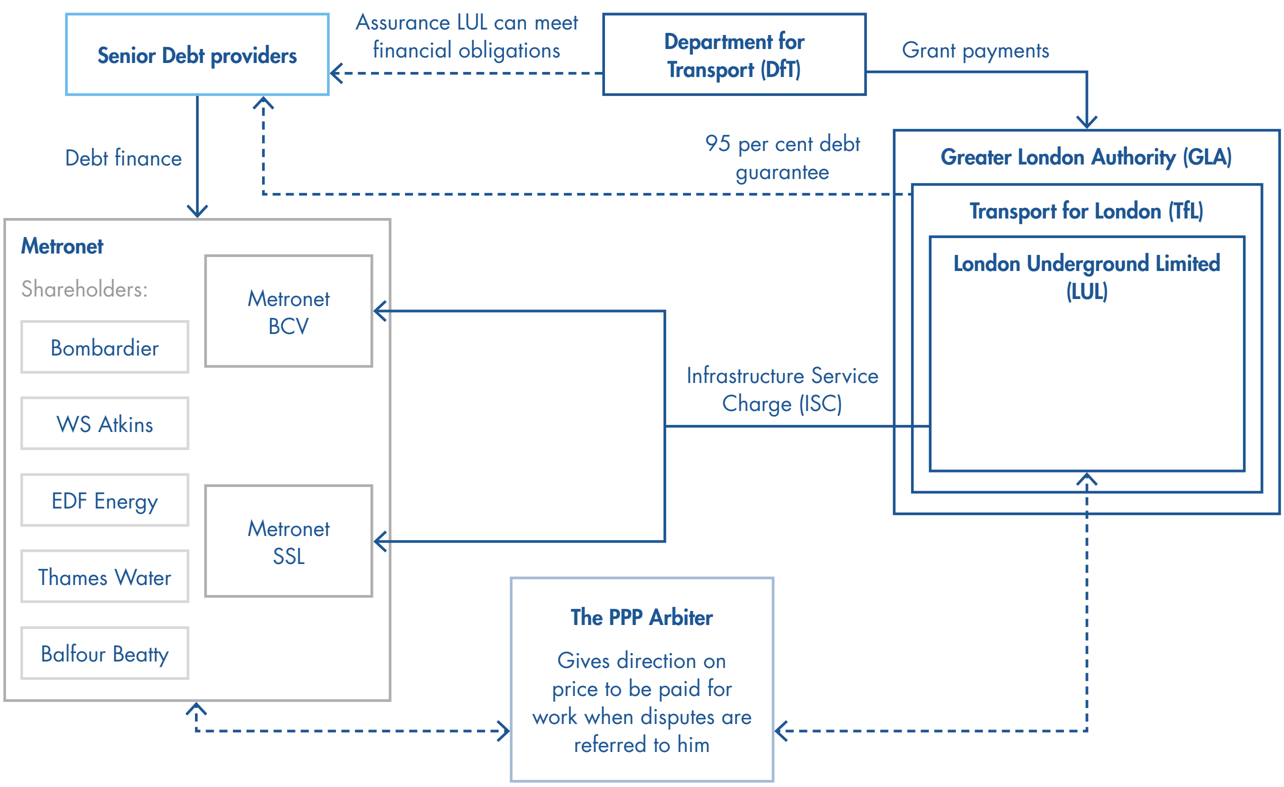
3 Metronet BCV and Metronet SSL were responsible for two-thirds of the modernisation work under their PPP contracts – Metronet BCV for the Bakerloo, Central, Victoria and Waterloo & City lines, and Metronet SSL for the District, Circle, Hammersmith and City, Metropolitan and East London lines. Both companies, collectively referred to in this report as Metronet, were ultimately owned by a consortium of Balfour Beatty plc, Bombardier Inc., WS Atkins plc, EDF SA (formerly Seeboard Group plc) and Thames Water plc **(Figure 1)**. The other PPP contract was awarded to a company called Tube Lines.

4 The cost of work under Metronet's contracts was expected to be at least £6.9 billion over the first 7½ years of the contract in 2002 prices (£8.7 billion in cash terms). As the condition of some of London Underground's assets was unknown, Metronet could be paid for unforeseen extra work that was necessary. The PPP Arbiter was given the role of deciding, if asked, how far the public sector should be liable for extra costs which had been incurred economically and efficiently.

5 DfT, the Treasury and London Regional Transport (which owned London Underground until July 2003 when it was transferred to Transport for London (TfL)) had responsibility for the strategy and design of the PPP arrangements. London Underground negotiated and managed the contracts. DfT retained a crucial role after the PPP contracts were put in place. It gave assurances to Metronet's lenders that it would not stand by and do nothing should London Underground be unable to meet its financial obligations and provided an annual grant of around £1 billion for the modernisation.

6 In May 2008, after ten months in administration, Metronet BCV and SSL's assets and liabilities were transferred to two new wholly-owned subsidiaries of TfL. DfT and TfL saw this as an interim solution and set up a Joint Steering Committee which made recommendations to the Secretary of State and the Mayor of London on a long term solution in late December 2008. The Secretary of State and the Mayor are now preparing to take a joint decision.

1 Roles of key players



Source: National Audit Office

NOTE

Simplified representation of stakeholder relationships.

7 The NAO has published three previous reports on the London Underground PPP arrangements: a report in 2000 on the financial analysis undertaken before the award of the contracts; and two reports in 2004 on the prices paid and the potential to deliver improvements for passengers. Key conclusions from our 2004 reports were that: there was only limited assurance that the price paid was reasonable, because of the complexity of the arrangements, and uncertainty over the eventual price; and the arrangements offered an improved prospect of delivering upgrades to the network compared to the pre-1997 investment regime.

8 This report focuses on DfT's risk management. It examines:

i the establishment and record of the Metronet businesses, highlighting key factors that contributed to their failure;

ii DfT's approach to risk management; and

iii the direct costs and consequences to the taxpayer of Metronet going into administration and progress towards a permanent solution.

This Report does not consider the merits or flaws of the PPP structure, focusing instead on how DfT, and the parties it relied upon, sought to manage the Metronet structure as it stood.

Key findings

Causes of failure

9 The main cause of Metronet's failure was its poor corporate governance and leadership. Many decisions had to be agreed unanimously by five shareholders, which all acted as Metronet's suppliers and had different motivations depending on their roles. The executive management changed frequently and was unable to manage the work of its shareholder-dominated supply chain effectively. These suppliers had power over some of the scope of work, expected to be paid for extra work undertaken and had better access to cost information than the management. The poor quality of information available to management, particularly on the unit costs of the station and track programmes, meant that Metronet was unable to monitor costs and could not obtain adequate evidence to support claims to have performed work economically and efficiently.

DfT's risk

10 DfT's exposure to risk as a result of the PPP contracts resulted in it having to pay £1.7 billion of grant to London Underground. DfT had ultimate responsibility for protecting the interests of the taxpayer and was exposed to policy and financial risk. It considered that it might have to increase grant levels to meet the cost of extra spending under the PPP contracts. It would have had to do so where the Arbiter decided that the extra spending had been incurred economically and efficiently and where the cost could not be borne by London Underground or TfL. Although it did not guarantee Metronet's borrowing formally, the Secretary of State had given assurance to Metronet's lenders. Eventually DfT had to make grant payments of £1.7 billion to help TfL purchase Metronet's debt obligations, a sum that would otherwise have been repaid over the 30 year life time of the contracts.

11 DfT had few formal levers to manage risks to the taxpayer. Under the Greater London Authority Act 1999, strategic and investment responsibility for London Underground was devolved to TfL and the Mayor of London. The Secretary of State could only direct the Mayor to make changes to transport strategy where it would be inconsistent with national policy and have an adverse effect outside London. DfT was not a party to the contracts and had no direct influence over performance. While the payment of grants to cover infrastructure modernisation costs was potentially an important lever, the payments could only be made as part of a block grant to TfL, without conditions, reducing the direct leverage it gave. The PPP contracts were developed in the knowledge that devolution would limit formal levers. DfT therefore relied upon the monitoring of public and private sector parties and obtaining cooperation through influence, assisted by its role as the funder of grant.

Risk management

12 DfT was obliged to rely on other parties. DfT had to respect the devolution of powers to London Underground, TfL and the Mayor of London, which made it difficult to adopt a risk management strategy commensurate with the risks DfT faced. All parties were hampered by a lack of good quality information. DfT relied mainly on public sector monitoring by London Underground, TfL and the Arbiter, and private sector monitoring of the contracts by Metronet's shareholders and lenders. DfT expected these parties, in their respective roles, to identify and then mitigate the risks:

i DfT relied on London Underground and TfL to manage performance and financial risk on its behalf. London Underground focused on holding Metronet to account for delivery, which entailed cost increases in some areas. London Underground did not have sufficiently detailed information to take a 'partnering approach' with confidence and did not have the full array of contractual levers to drive improved performance when necessary. Metronet did not provide good quality performance and cost information in the way London Underground envisaged and London Underground did not have a breakdown of Metronet's high level budget on station refurbishment work. It was, therefore, difficult for London Underground to understand how its rigorous interpretation of the contract scope was tending to increase the costs of the stations work.

ii DfT relied on the Arbiter to warn of potential cost overruns which might fall to the public sector. The Arbiter has no specific statutory duty to protect the public interest, although part of his statutory duty is to promote economy and efficiency. Furthermore, it is not part of the Arbiter's statutory function to help DfT monitor the PPP contracts' performance. DfT were, nevertheless, informed of developments by the Arbiter through informal briefings and presentations.

iii At the outset, DfT expected Metronet's shareholders and lenders to identify and resolve performance problems but they failed to do so. Although Metronet's shareholders and lenders had financial investment and reputations to protect, they did not act as expected. In the case of the shareholders, the governance structures adopted, and their differing priorities and positions as beneficiaries of supply contracts, meant that they did not tackle problems effectively. Only five per cent of the lenders' investment was at risk. The controls they put in place over access to loans did not require evidence that Metronet was delivering as expected under the contract.

13 When the extent of Metronet's problems emerged in early 2006, DfT's response reflected the limited number of levers it had to influence the progress and the outcome of the PPP contracts. By February 2006, Metronet projected £1.2 billion of extra spending over the first 7½ year period. The reliability of this projection was uncertain. But it suggested an increased possibility of DfT having to increase grant levels to help TfL and London Underground meet obligations under the PPP arrangements. DfT responded by increasing its liaison with London Underground and TfL, but decided against becoming involved in disputes between the contracting parties. Instead it relied on London Underground, as contracting party to: develop a better understanding of Metronet's estimated overspending; and encourage Metronet to proceed to an Extraordinary Review by the Arbiter to determine whether the extra spending was liable to be met by the public sector. In February 2007, following a statement by the Mayor of London, Metronet accepted that it would have to ask for an Extraordinary Review. Metronet had spent a further £1.1 billion on capital works and maintenance since the potential scale of its problems emerged 12 months earlier. On the basis of the Arbiter's work we estimate that approximately 90 per cent of this £1.1 billion was spent economically and efficiently, with the remaining 10 per cent being wasted.

Taxpayer loss

14 We estimate that the overall direct loss to the taxpayer arising from Metronet's administration is between £170 million and £410 million, in 2007 prices. DfT paid £1.7 billion of the £1.747 billion cost of repaying 95 per cent of Metronet's debt obligations through grant funding to TfL. This £1.7 billion payment was an unanticipated upfront cost to the taxpayer. It is not all a loss, however, because the public sector has received the benefit of Metronet's capital investment, despite some of the capital spending being inefficient. Our estimate of the loss to the taxpayer is based on the difference between the public sector costs incurred and the value of the work done. The detailed calculations behind our estimate are set out in Part 3 of this report.

Developments during administration

15 Metronet's performance was managed effectively during administration. London Underground and the PPP Administrator decided to slow Metronet's track renewal and replacement programme. They did so because Metronet was able to hit its track condition performance target with a slower rate of replacement than had previously been planned. They also decided to slow the stations refurbishment programme to gain control of costs. Metronet's operational performance remained mixed. For example, the number of delays related to track faults fell for the Bakerloo and Victoria lines, but increased for the Central and District lines because of the Central Line derailment in July 2007 and a strike by the National Union of Rail, Maritime and Transport Workers (RMT) in September 2007.

16 The Joint Steering Committee, set up to make recommendations on a long term solution, made recommendations to the Secretary of State and the Mayor of London in late December 2008. Work towards a permanent solution has not, however, proceeded as quickly as originally anticipated. A range of options, which all involve London Underground retaining responsibility for operations, have been considered including:

i direct procurement with TfL taking full responsibility for operations, maintenance and major capital works, as happened before the PPP structure was introduced;

ii direct procurement by a separate company owned 50 per cent by TfL and 50 per cent by an equity investor. The company would have responsibility for the programme management and delivery of major capital works, with London Underground responsible for operations, maintenance, strategy and the delivery of minor capital works;

iii long-term performance based contracts, let by London Underground for the modernisation of categories of assets or other specific pieces of work wherever practicable and value for money, with remaining work being delivered via traditional procurement; and

iv whole system outsourcing for the lines and assets previously maintained by Metronet to the private sector, giving the private sector major responsibility and discretion over parts of the infrastructure. TfL could potentially take a stake of up to 50 per cent in these businesses.

Conclusion on value for money

17 DfT's role in securing value for money was: (i) to protect the taxpayer from potential financial liabilities; and (ii) to ensure that those responsible for the delivery of the improvements, which it was funding, were operating effectively. Metronet's poor corporate governance and tied supply chain created financial and delivery problems. DfT had few formal levers to influence outcomes as it was constrained by devolved oversight arrangements and was not itself a party to the contracts. Instead, it relied on other parties whose ability to identify risks was hampered by the poor quality of information available from Metronet. The fact that these other parties did not mitigate the risks effectively exposed DfT to major residual risks which it had few levers to manage. As a result, the taxpayer was not effectively protected.

18 The taxpayer has borne some of the direct costs of Metronet's failure, including the unexpected upfront payment of £1.7 billion. We estimate there has been a direct loss to the taxpayer of between £170 million and £410 million. This is a direct loss of between four and ten per cent of the costs which the PPP Arbiter judged to have been incurred efficiently and economically by Metronet. Metronet's shareholders have also lost their equity investment. In terms of delivery of improvements, passengers have had to endure late delivery of scheduled work and the cancellation of promised upgrades to stations.

19 Underlying all these issues has been a more fundamental problem. The public sector bodies involved in the oversight, monitoring and management of the Metronet PPP contracts did not all share a common agenda. Our recommendations are aimed at securing a greater alignment of interest between these various public sector bodies.

Recommendations

This report focuses on the failure of Metronet and the ability of the various public sector bodies to manage risk within the PPP framework. It concludes that at the heart of Metronet's fate lie problems of internal governance. It also highlights the key limitations facing DfT and London Underground in managing risk. The recommendations focus on improvements in governance, co-ordination, and assurance on costs as DfT and its partners seek a lasting solution to the problems of the Metronet PPP contracts. Recommendations B, C and E would require the agreement of the Mayor. These recommendations could usefully also be applied to the management of the Tube Lines contract, although Recommendation E would require Tube Lines' consent.

Tied supply chain

A The five shareholders in Metronet, each with different interests, chose to structure the business as a joint venture in which many decisions needed to be agreed unanimously. The shareholders were also suppliers in a tied supply chain, and they adopted governance and management structures which gave power to the suppliers rather than the management of the business. Metronet's management was unable to extract key information or incentivise suppliers to perform their roles in line with its own interests.

DfT designed the PPP contracts in accordance with the HM Treasury guidance that existed at the time. HM Treasury's *Standardisation of PFI Contracts* now provides guidance to Departments on how to achieve commercially balanced contracts, which avoid the conflicts of interest that can occur when suppliers have too much influence over what is to be delivered, and how to achieve value for money. In line with the guidance, future PPP contracts should be awarded to bodies which have clear leadership, a credible corporate governance structure and an approach to securing suppliers which can be demonstrated to be value for money. Departments also need to ensure:

i contracts with the supply chain are structured to enable those managing delivery to access the information they need;

ii incentives in the contracts and sub-contracts within the supply chain are aligned with and reflect the interests of the public sector partner; and

iii there is a public sector option to withhold payment unless the private sector is able to produce reliable and timely records to back up claims.

Risk management

B The modernisation programme was the responsibility of the Mayor of London, TfL and London Underground. DfT was not a party to the PPP contracts, and therefore had no direct visibility of performance. DfT thus relied to a great degree on due diligence and monitoring work carried out by Metronet's shareholders and lenders to protect their respective investments, and on London Underground as the contract manager to ensure performance and delivery.

To understand and manage the risks to which it is exposed, DfT should:

i collect and analyse a range of financial and performance data held by parties to the contract or available independently;

ii request regular risk reports from London Underground and TfL as the contracted clients; and

iii review the devolved body's understanding of the key risks to the project to allow DfT to identify and investigate any issues relevant to the management of its own risk.

Alignment of interest and governance

A feature of our findings has been the lack of a common agenda between the various public sector bodies involved, and between public and private sector. The interests of these bodies need to be better aligned. We make two specific recommendations:

C DfT was exposed to risk but lacked direct ways of gaining assurance over the management of this risk.

In the permanent solution for Metronet's business, DfT should work with the Mayor of London and TfL to ensure that there are effective controls to contain costs within agreed limits and to maximise the value for money of the grant funding it provides. Effective independent scrutiny and evaluation of London Underground's management of major infrastructure projects, on behalf of both TfL and DfT, could provide greater assurance on value for money.

D London Underground had limited ability to manage the contract in a way that prevented costs from escalating. It sought to undertake rigorous cost analysis as far as possible, but could have drawn more on the Arbiter as a source of information and cost assurance.

As the party responsible for managing performance under the contracts, London Underground should have sufficiently detailed information available to it to confirm that work is affordable, within the limits of the grant, and that the taxpayer is receiving value for money. But under the contracts, London Underground needed to ask the Arbiter formally when it needed more detailed cost and performance information. The Arbiter should, within the statutory framework, work with London Underground to provide assurance on whether the work performed is affordable and value for money. This assurance could be achieved by the type of high-level benchmarking exercises undertaken by the Arbiter to compare the performance of PPP suppliers with other companies carrying out similar activities. This top-down assurance should then be supplemented by more detailed analysis of individual components of cost where this would enable better management of the contract by London Underground.

The role of the Arbiter

E Early provision of information about the likely extent of economic and efficient additional spending by Metronet would have helped the public sector manage the risks better, although this alone would not have been sufficient to ensure value for money. The PPP Arbiter was the external party with greatest access to Metronet's performance data and could therefore have been invited to give early warning on the cost implications of its delivery problems. London Underground, as contract manager, did not have access to the same level of information.

To enable the Arbiter to highlight issues affecting the taxpayer's interests and continue to monitor Tube Lines effectively, any permanent solution should allow effective comparison to be made with Tube Lines and give the Arbiter oversight over the comparator.

Any new oversight arrangements should be clear about roles and responsibilities and should:

i allow DfT, which has the greatest financial risk but is not a party to the contracts, to request investigations where appropriate;

ii require an annual review, including an audit of financial models produced, to improve the transparency of information about delays or cost overruns and make DfT aware of any risk to the taxpayer; and

iii allow an Extraordinary Review or other investigation where it is possible that the public sector may have to provide extra finance, even where it has not been requested by other parties.

It is desirable that new measures adopted to protect the public interest should also apply to the Tube Lines contracts, which would improve DfT's ability to understand and manage risk. Any new arrangements would, however, require the agreement of Tube Lines and London Underground under the remaining PPP contract.

Whole life costing

F The Joint Steering Committee has considered a range of options for the line upgrades, rolling stock, station maintenance and renewals work that were expected to be undertaken by Metronet. While the permanent solution is under consideration by the Secretary of State and the Mayor of London, TfL is determining Metronet's budgets annually.

A permanent solution should be based on a whole life costing of infrastructure renewal and avoid a return to short-term budgeting based on annual grants from DfT. The long-term funding agreement between DfT and TfL provides the necessary framework. TfL seeks to adopt the principles of a whole life approach to asset management in its business plan. A TfL business plan published in November 2008 for the period to 2018 is under consideration and needs to be taken to a conclusion if infrastructure renewal is to reflect strategic priorities rather than 'patch and mend'.

PART ONE

The failure of Metronet

1.1 This part of the report sets out our Report's scope and a history of the PPP deal from its inception to the present. A detailed chronology is set out at Appendix 4.

NAO Report Scope

1.2 The NAO has produced three previous reports on the PPP contracts.[1] Our December 2000 report *The Financial Analysis for the London Underground Public Private Partnerships* followed the Transport Select Committee's enquiry into the PPP contracts'. Our Report scrutinised the financial analysis behind the proposed contracts before they were signed. We found there were many factors that were difficult to quantify but would have an impact on outcomes, including the effectiveness of the performance mechanisms, the willingness of the parties to cooperate to alleviate strategic and contractual risks, and effective risk analysis and management. The Government accepted these conclusions and agreed to factor them into its decision making.

1.3 In June 2004, the NAO produced two further reports. The first, *London Underground PPP: Were they good deals?*, concluded that there was only limited assurance that the price paid for the work under the PPP contracts was reasonable, because of the complexity of the PPP arrangements and uncertainty over the eventual price. This situation resulted from the scale of the work required, the decision to have outcome-based contracts, and limited knowledge of the condition of less accessible infrastructure. The second report, *London Underground: Are the Public Private Partnerships likely to work successfully?,* found that the PPP arrangements offered an improved prospect of delivering upgrades to the network compared to the previous investment regime.

1.4 This study focuses on DfT's risk management of the Metronet PPP contracts. It examines:

- **i** the history of the PPP, highlighting key factors that contributed to Metronet's failure;
- **ii** DfT's approach to risk management; and
- **iii** the direct costs and consequences to the taxpayer of Metronet going into administration and progress to a permanent solution.

Setting up the contracts

1.5 The Government announced in March 1998 that it would restructure London Underground's business to create:

- a publicly owned operating company (London Underground Limited) with responsibility for running trains and stations and setting fares; and
- three new companies, owned and operated by the private sector, which would be responsible for maintaining and improving infrastructure such as stations, trains, track and signalling under PPP contracts with London Underground.

1.6 The Government believed that stable funding was needed to remedy decades of underinvestment, but was concerned about London Underground's track record in delivering major projects and maintenance to time and budget. There had been substantial cost overruns of over 30 per cent on the Jubilee line extension and the Central line upgrades. Neither project was completed on time or delivered the expected improvements in journey times. The Government therefore sought to transfer risk for delivering the network upgrade to the private sector, with contracts that specified the time, cost and required performance.

1 National Audit Office, The Financial Analysis for the London Underground Public Private Partnerships, HC 54 Session 2000-2001, 15 December 2000; and London Underground PPP: Were they good deals? HC 645 Session 2003-2004, 17 June 2004; and London Underground: Are the Public Private Partnerships likely to work successfully? HC 644 Session 2003-2004, 17 June 2004.

1.7 The Government provided funding for the modernisation on the basis that the work would be carried out through PPP contracts. It decided that London Underground should focus on operating passenger services and the private sector should be used to deliver maintenance and major improvements to the infrastructure. DfT, the Treasury and London Regional Transport (LRT) were responsible for the strategy and the design of the contracts. LRT, which then owned London Underground, was controlled by the Secretary of State for Transport. The contracts were for 30 years, with provision for London Underground to re-specify its requirements at 7½ year intervals. There was no provision for voluntary termination of the contract on a no fault basis, as is usually allowed under PFI contracts.

1.8 The procurement competition began in June 1998 when London Underground sought bids for three different groups of lines:

- Jubilee, Northern and Piccadilly lines (JNP);
- Bakerloo, Central, Victoria and Waterloo & City lines (BCV); and
- Sub-surface lines (SSL) comprising the District, Circle, Hammersmith & City and Metropolitan lines, and until its closure the East London line.

1.9 A consortium called Tube Lines won the contract for the JNP lines. The contract was finalised in December 2002. A consortium called Metronet won the two contracts for the BCV and SSL lines and two companies, Metronet BCV and Metronet SSL, were created to carry out the work **(Figure 2)**. Metronet's contracts became operational in April 2003. In 2002 prices, work under these contracts was expected to cost at least £16.9 billion over 30 years, £6.9 billion over the 7½ years to September 2010 (£8.7 billion in cash terms). In July 2003, London Underground was transferred to Transport for London (TfL), a body created by the Greater London Authority Act 1999, which was given responsibility for most aspects of London's transport system.

1.10 Metronet was jointly owned by five shareholders: Balfour Beatty plc, Bombardier Inc., WS Atkins plc, EDF SA (formerly Seeboard Group plc) and Thames Water plc. Metronet guaranteed subcontracts for capital works to its shareholders. This arrangement, known as a tied supply chain **(Figure 3 on page 14)**, aimed to guarantee the availability of resources at a firm price. Tube Lines followed a different 'shopping around' approach based on procuring goods and services through open competition.

1.11 In return for the maintenance, investment and upgrade of the Underground's infrastructure, Tube Lines and Metronet received a four-weekly payment from London Underground called an infrastructure service charge (ISC). These payments varied depending on performance against four key metrics:

- 'availability' measured the reliability of the tube network under Metronet's control;
- 'capability' measured the capacity of the tube network under Metronet's control;
- 'ambience' measured the customer experience of the trains, platforms and station facilities under Metronet's control (as assessed by 'mystery shoppers'); and
- 'service points' measured delivery against a number of varied contractual obligations such as the speed with which service faults were rectified.

1.12 DfT provided grant funding of some £1 billion per annum to TfL, to finance payments by London Underground to Metronet and Tube Lines. This sum was divided broadly into some £600 million for Metronet and £400 million for Tube Lines[2].

1.13 Metronet BCV and SSL each had access to £1,325 million of private debt finance alongside £175 million of equity and shareholder loans. TfL was guarantor of 95 per cent of Metronet's borrowing should an act of default occur and DfT had given assurances to Metronet's lenders that the Secretary of State would not stand by should London Underground be unable to meet its financial obligations.

1.14 Metronet's capital works programme (in cash terms) included:

- £1.2 billion to refurbish, enhance and modernise 150 tube stations to a contractually agreed specification by 2012;
- £620 million to refurbish assets such as bridges, tunnels and embankments to meet asset condition benchmarks by 2010;
- £460 million of track upgrade work to be carried out generally by 2010; and
- £2.8 billion of signalling upgrades and rolling stock including the design and manufacture of over 1,700 railway cars by 2018.

2 Source: London Underground Limited, *London Underground and the PPP: the third year 2005/06*, July 2006.

1.15 As the condition of some of the assets transferred to Metronet was unknown, the contracts allowed for £360 million of contingency to cover extra costs.

1.16 During the first 7½ years of the contract, Metronet BCV and SSL both had to absorb the first £50 million of extra costs each (the materiality threshold), with all further economic and efficient costs being met by the public sector. The Tube Lines' PPP contract operates differently. Tube Lines has to absorb the first £200 million of extra costs before the public sector becomes liable for further economic and efficient costs in the first 7½ years of the contract, reducing to £50 million for subsequent periods.

1.17 The Greater London Authority Act 1999 created an independent PPP Arbiter, who could decide, when asked by parties to the contracts, how much Metronet and Tube Lines could be paid for necessary extra work he deemed economic and efficient. This could involve undertaking detailed investigations, and the Arbiter was therefore given

2 Comparison of the Metronet and Tube Lines PPP contracts

	Metronet (BCV and SSL together)	Tube Lines
Lines responsible for	BCV – Bakerloo, Central, Victoria and Waterloo & City. SSL – District, Circle, Hammersmith & City, Metropolitan and until its closure the East London line.	Jubilee, Northern and Piccadilly.
Assets under management	■ Over 690km of track; ■ 150 stations; ■ 350 trains; and ■ associated infrastructure.	■ Over 370km of track; ■ 100 stations; ■ 250 trains; and ■ associated infrastructure.
Supply chain and management of the PPP	Main suppliers were five equal shareholders with different interests. Unclear project management arrangements.	All major contracts competitively tendered. Project management controlled by Bechtel.
Expected expenditure in cash terms during the first 7½ year period of the contract	■ £ 8.7 billion	■ £4.8 billion
Funding[1]	■ £2,650 million debt (88%) ■ £350 million equity (12%)	■ £1,800 million debt (85%) ■ £315 million equity (15%)
Funded contingency	■ £360 million, with nothing for unallocated risks.	■ £135 million and a further £76 million for unallocated risks.
Risk for additional expenditure	For each 7½ year period of each contract, the first £50 million of economic and efficient extra spending, by either BCV or SSL, had to be funded by Metronet itself. Once economic and efficient extra spending exceeded £50 million for either BCV or SSL, Metronet was able to ask the Arbiter for an increase in payments. Subject to annual check by the Arbiter if requested (except first year).	For the first 7½ year period of the contact, the first £200 million of economic and efficient extra spending had to be funded by Tube Lines. For the following three 7½ year periods, this was reduced to the first £50 million. Once economic and efficient extra spending exceeded the threshold, Tube Lines was able to ask the Arbiter for an increase in payments.

Source: National Audit Office

NOTE

1 Tube Lines' debt increased to £1,972 million (including £273 million of standby and safety change facilities) and equity reduced to £180 million (including £45 million on a contingent basis) after refinancing in May 2004.

the discretion to consult widely and to obtain any relevant information he needed. He could make his determination at either the Periodic Review at the end of every 7½ year period of the contract or between periodic reviews in the following ways:

i Annual reporting – In the case of the Metronet companies, the Arbiter was expected to report every year from 2004-05 onwards on whether they had performed their activities in an overall efficient and economic manner and in accordance with good industry practice. As part of this process, Metronet had the opportunity to ask the Arbiter for specific direction on the extent to which any extra spending that it had incurred was economic and efficient and therefore liable to be reimbursed by the public sector.

ii Extraordinary Review – Metronet could request an Extraordinary Review, which would involve the Arbiter determining whether the timing and level of payments to Metronet were appropriate. The Arbiter would do so by deciding what level of costs would be incurred by an economic and efficient company performing the same obligations as Metronet, and comparing this cost estimate to costs actually incurred or forecast to be incurred by Metronet. London Underground also had the ability to call for an Extraordinary Review where there was a substantial shortfall in Metronet's performance. A review requested by London Underground would have, however, been restricted to restating the terms of the contract to address shortfalls in Metronet's performance, or removing contract terms in order to reduce the cost of the work. It would not have extended to determining whether Metronet's extra spending was economic and efficient.

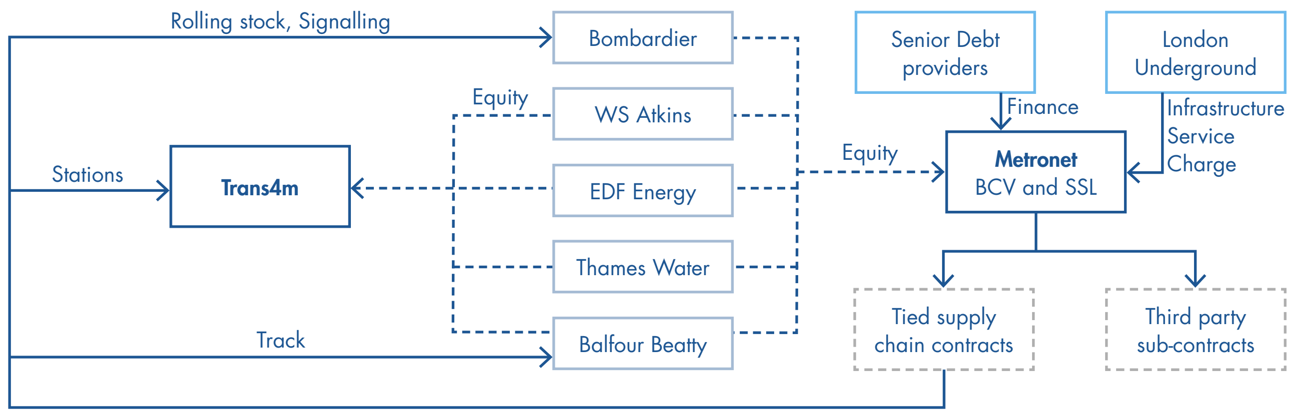
iii In addition, London Underground and Metronet could also ask the PPP Arbiter for guidance on any matter, and the PPP Arbiter also had further powers under the Greater London Authority Act 1999 to do anything he considered necessary in connection with giving direction or guidance.

Operational performance of the deal

1.18 From April 2003, when the two Metronet contracts entered into force, Metronet achieved the main contractual benchmarks of operational performance: availability, capability and ambience. The 'availability' benchmark was set five per cent lower than previous performance, however, to facilitate the introduction of a structure with incentives to improve performance. Benchmark levels for 'capability' and 'ambience' were above previous performance. Metronet did not, however, meet higher targets it had set itself as part of its business strategy.

1.19 Metronet had problems in delivering its capital works programme to time and within the costs bid. These problems were partly due to Metronet's governance structures and tied supply chain arrangements, which meant suppliers had power over some of the scope of work and expected to be paid for it under their supply contracts. Suppliers also failed to give Metronet's management complete and timely information about costs against delivery.

3 Metronet's tied supply chain



Source: National Audit Office

NOTE

Simplified representation of stakeholder relationships.

1.20 In particular, Metronet delivered its station refurbishment programme late and over budget. By March 2005 Metronet had not completed any of the eight stations due. Only 11 out of 35 stations were accepted as delivered by March 2006 and 28 out of 64 by March 2007. London Underground took steps to revise station programme procedures to improve progress. Metronet's five shareholders were initially unable to agree, however, on decisive action to resolve delivery and cost problems (see Appendix 5).

1.21 Metronet responded by investing more heavily on stations work from 2006 onwards. To this end, it agreed to borrow an extra £322 million between October 2006 and March 2007, engaging external contractors to deliver stations. Lenders agreed, and increased their scrutiny, although it meant Metronet would exceed the upper spending limit in its loan agreements.

1.22 Ambiguities in scope, poor programme management and delays led to significant increases in the cost per station. A number of early station refurbishments cost over three times the original bid. In July 2007 a regression analysis, on behalf of London Underground, quoted Metronet's own figures which projected that for a sample of 31 stations due for completion up to April 2008, Metronet's work would cost on average 2.2 times the budget.

1.23 Metronet also delivered its track investment programme late and over budget. By March 2006, Metronet had delivered only 44km of track renewals compared to 69km planned at bid. Since Metronet was spending money at the same rate anticipated in the bid, the unit costs for delivering track renewal increased significantly. The Arbiter found in 2006 that the subcontract for track had insufficient flexibility to adapt easily to changes, insufficient resources to deliver required volumes of work and poor delivery of maintenance and renewals[3]. He also challenged the high level of fixed cost in the track contract.

1.24 London Underground issued Corrective Action Notices to Metronet BCV and SSL for poor performance on track in 2004 and 2005, respectively. In 2006-07 Metronet increased its spending on track by 60 per cent (£59 million) improving the completion of track renewal compared to target from 81 per cent in 2005-06 to 93 per cent in 2006-07.

Rising costs

1.25 In March 2005 Metronet's lenders and London Underground permitted Metronet to waive the 2005 Arbiter's Annual Report on Metronet's performance, despite evidence that Metronet was underperforming. London Underground was concerned that the outcome of the Annual Report was uncertain and might have concluded, on the basis of defective information, that some of Metronet's extra costs were economic and efficient, resulting in extra costs for the public sector. Instead, London Underground and Metronet agreed to review information on Metronet's performance, and agreed that the Arbiter should carry out a confidential practice run later in the year.

1.26 London Underground was not satisfied with the quality or timeliness of information that was emerging from Metronet. In preparing for the practice run, the Arbiter indicated that he would consider using his statutory powers to require Metronet to disclose detailed cost information if it were not otherwise forthcoming. Metronet did provide data in response to requests from London Underground and the Arbiter. It later became apparent, however, that the quality of this data was not sufficient to allow London Underground to understand the projections adequately and to manage the contract effectively.

1.27 When the practice run got under way, the information provided by Metronet projected net extra costs across its work programme. In October 2005, Metronet informed the Arbiter and London Underground that it had identified £566 million of extra costs in the first 7½ years of the contract which it had not anticipated in its bid. These costs were offset by £416 million of identified savings and costs of additional work separately paid for by London Underground, as well as the use of £89 million of contingency.[4] After such offsets, both Metronet BCV and SSL projected extra spending of £27 million and £35 million respectively, compared to the £50 million materiality threshold above which they could claim additional economic and efficient costs from the public sector (paragraph 1.16).

1.28 Within five months, Metronet's projected extra spending increased dramatically. In February 2006, Metronet updated its financial models for the first time for the expected higher cost of future work. As a result, its projected extra spending for the first 7½ years increased to £1.2 billion although, again, the reliability of this figure was uncertain.

3 Arbiter Metronet Annual Report November 2006.
4 National Audit Office analysis of London Underground and Metronet data.

1.29 In February 2006, Metronet approached London Underground to discuss how to fund the extra spending. Metronet had meetings with London Underground throughout 2006 without providing reliable information that would support any agreement. DfT chose to monitor developments by increasing its liaison with London Underground and TfL. But it chose not to be drawn into disputes between contracting parties, on the grounds that its involvement would lead to confusion and undermine London Underground's position. In May 2006, the Permanent Secretary of DfT refused an invitation from Metronet's Chief Executive Officer to discuss its work programme and progress "until there was clear evidence of improvement". He recommended instead that Metronet should focus its attention on discussions with London Underground and TfL. DfT looked to the Arbiter's 2006 Annual Report, due to be published in November 2006, to provide clarity on Metronet's overall performance, and the scale and nature of any projected cost increases.

1.30 In November 2006, the Arbiter's Annual Report was published, highlighting track and stations work as being areas of particularly poor performance. The Report projected extra spending of up to £750 million for Metronet SSL and BCV over the first 7½ years, but noted that there was substantial uncertainty over the figures. The Arbiter found that overall some of Metronet's costs had not been economically and efficiently incurred. He was not, however, in a position to provide clarity on the level of economic and efficient extra spending that would have to be met by the public sector, because Metronet had not asked him for direction on the issue. The Report also concluded, given the scale of the projected additional costs, that Metronet had grounds to trigger an Extraordinary Review for both its BCV and SSL companies.

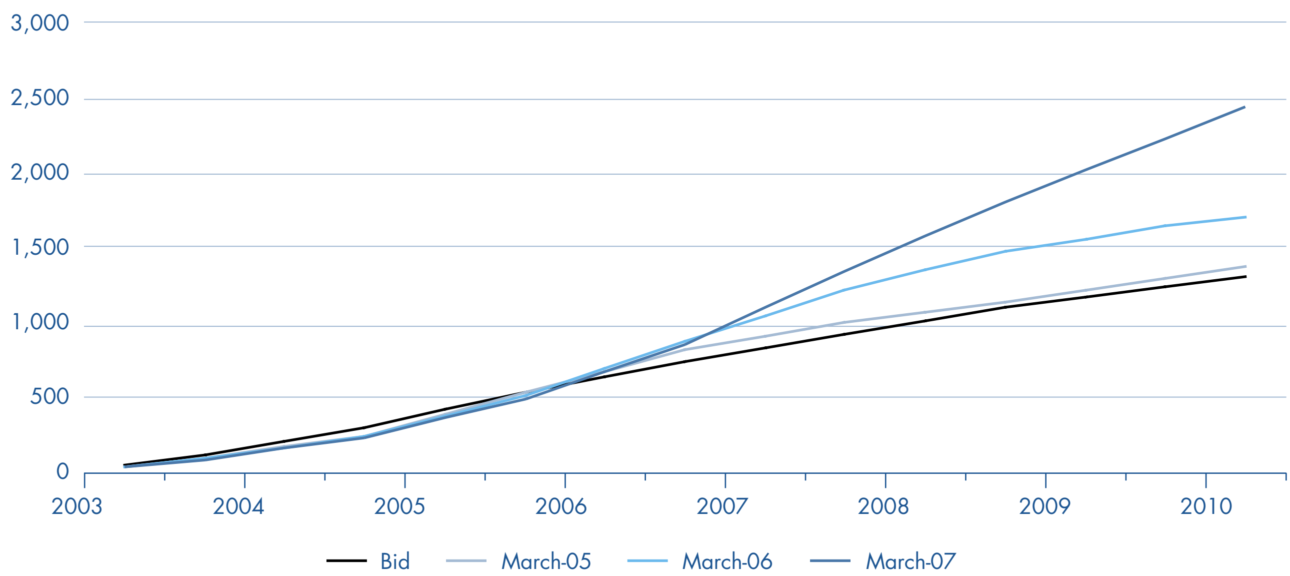
Entry into administration

1.31 In February 2007, the Mayor of London, who was also the Chair of TfL, stated publicly that London Underground saw no basis for a settlement with Metronet to fund extra spending and called for Metronet to ask the Arbiter for an Extraordinary Review.

1.32 By March 2007, the projected extra spending was £1.8 billion. **Figure 4** shows how projections increased over time on the stations programme, which was the largest component of extra costs. The projected spending on stations went up from £1.3 billion at bid by: £100 million by March 2005; £400 million by March 2006; and £1,100 million by March 2007.

1.33 On 28 June 2007, Metronet formally asked the Arbiter to carry out an Extraordinary Review of Metronet BCV, five months after the Mayor's statement. The Chairman of Metronet at that time told the NAO that the delay was caused by difficulty in obtaining information from Metronet's suppliers. On 29 June 2007, TfL wrote to Metronet expressing concern about increasing costs and saying that new debt might not be covered by the guarantee arrangements.

4 Metronet's cumulative stations spending projections up to September 2010 (£m)



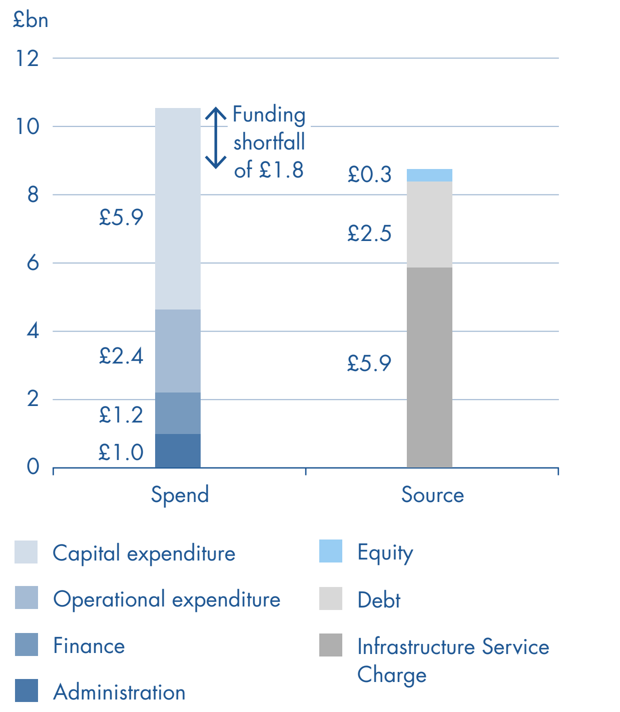
Source: National Audit Office analysis of Metronet data

1.34 Metronet sought additional payments from London Underground of some £1 billion for its BCV business and said it expected to seek a similar sum for the SSL business. **Figure 5** is based on Metronet's original plans for the first 7½ year period and shows that £8.7 billion in funding was available (£6.9 billion in 2002 prices), but Metronet was expecting to spend £10.5 billion on capital, operations, finance and administration. This amounted to a funding gap of £1.8 billion. Metronet also asked for an interim increase in payments of £551 million from London Underground over the following 12 months.

1.35 On 3 July 2007, Metronet and London Underground concluded negotiations that had started in April 2006 for a revised stations programme. There were two key elements to the settlement:

- **i** Metronet agreed to amend its reference to the Arbiter to reduce its claim for additional spending on the first 13 stations by £45 million, from £108 million to £63 million.
- **ii** Metronet agreed to accept liability for 90.5 per cent of the total delay to the completion of the 13 stations and for forecast delays to a further 27 stations, which included delays associated with planning, designing and building works.

5 Metronet's projected funding shortfall as at July 2007



Source: National Audit Office analysis of Metronet data

NOTE

The first period runs from April 2003 to October 2010 (7½ years).

1.36 Pending a final decision on the Extraordinary Review, on 16 July 2007 the Arbiter provisionally concluded that, based on his judgement of economic and efficient activity, he could agree an interim increase in payments to Metronet BCV of £121 million for the year 2007-08. This was some £430 million less than requested. Soon after, Metronet concluded that it would run out of money and asked the Mayor to petition for the appointment of a PPP Administrator. Metronet BCV and SSL entered administration on 18 July 2007. TfL provided a loan to enable Metronet to continue operations during administration.

Developments during administration

1.37 Under the terms of its guarantee, London Underground was obliged to purchase Metronet's outstanding debt obligations six months after it went into administration. In February 2008, in line with the DfT's assurance to Metronet's lenders, it provided TfL with a grant of £1.7 billion to enable London Underground to purchase Metronet's loans. DfT also agreed to make available an additional £630 million as grant over four years until 2010-11 to replace the debt that Metronet had expected to borrow over that period. As London Underground no longer has to pay for interest on Metronet's borrowing, DfT decided to reduce transport grants that relate to Metronet by 4.76 per cent from 2008-09 to 2017-18.

1.38 During administration, London Underground and the PPP Administrator took the decision to slow Metronet's capital investment programme. Seventeen station refurbishments were due to be completed between October 2007 and March 2008, of which seven were already expected to be over six months late. A further four were deferred or cancelled. The deferrals and cancellations aimed to prioritise resources on fewer projects and get costs under control. Track renewal and replacement was also slowed because Metronet was able to hit its track condition performance target with a slower rate of replacement than planned at that time. Metronet BCV completed 5,000 metres of renewal and replacement in the 11 months to 1 March 2008 compared with more than 12,000 metres in 2006-07.

1.39 Metronet's operational performance continued to be mixed during administration. Metronet's 'availability' score fell in 2007-08 compared with 2006-07 partly due to the Central Line derailment at Mile End station in July 2007 and the impact of an RMT strike in September 2007. While the number of delays related to track faults increased for the Central and District lines, it fell for the Bakerloo and Victoria lines. On 'ambience', Metronet BCV average performance fell slightly in 2007-08 compared to the year before, and was stable for Metronet SSL, although both remained better than the contractual performance benchmark.

1.40 After TfL took ownership of Metronet, London Underground's engineering division and Metronet built on London Underground's revised programme of procedures to speed up the completion of stations. The parties are now, for instance, reaching agreement on the scope of a station before detailed designs are produced.

1.41 Metronet and London Underground have agreed to reduce the number of stations to modernise. Twelve modernisations have been cancelled and a further 47 postponed into the second 7½ year period of the contract **(Figure 6)**. These arrangements will be re-considered when decisions are taken on the permanent solution for the Metronet lines.

6 Metronet stations programme (2003-2012)

	Metronet SSL	Metronet BCV	Total stations
Delivered (as declared)	19	20	39
Remaining programme	28	24	52
Cancelled	7	5	12
Deferred until second 7½ year period of contract	30	17	47
Total	84	66	150

Source: Metronet and London Underground as at July 2007

NOTE

By 18 July, London Underground had accepted delivery of 33 stations out of 39 declared as complete by Metronet.

PART TWO

Oversight and scrutiny of the contracts

2.1 This part of the report examines DfT's oversight of the PPP contracts. It considers:

- DfT's risk management strategy;
- the way that DfT relied on the oversight roles that other public sector bodies performed;
- the way that DfT relied upon private sector mechanisms that were expected to incentivise successful performance; and
- DfT's risk management after Metronet's problems began to emerge.

DfT's risk management strategy

2.2 DfT had ultimate responsibility for ensuring that the interests of the taxpayer were protected, but DfT had few formal levers to manage the risks to the taxpayer that arose. DfT was not party to the PPP contracts and had no direct influence over performance. While the payment of grants to cover PPP costs was potentially an important lever, the payments could only be made as part of a block grant to TfL, without conditions, reducing the direct leverage it gave. It was therefore difficult for DfT to manage the risks to the taxpayer arising out of the PPP contracts. DfT had to obtain cooperation through influence, assisted by its role as funder of the grant.

2.3 In keeping with the original design of the PPP contracts, DfT's risk management strategy placed reliance on:

i monitoring by London Underground and TfL, who had undertaken to take all possible steps to avoid deviation from the funding plans in a letter to DfT;

ii the Arbiter's role as set out in the PPP contracts and the Greater London Authority Act 1999; and

iii monitoring of Metronet by its shareholders and lenders, which DfT anticipated they would carry out to protect their respective investments.

2.4 DfT's risk management strategy was determined by the Greater London Authority Act 1999 which devolved oversight powers to London Underground, TfL and the Mayor of London. The Secretary of State could only direct the Mayor to make changes to transport strategy where it would be inconsistent with national policy and have an adverse effect outside London.

2.5 A number of factors meant that DfT was exposed to significant policy and financial risk:

i Although DfT was not the formal guarantor of Metronet's borrowing, the Secretary of State had given assurance to Metronet's lenders which later resulted in DfT making grant payments of £1.7 billion to help London Underground purchase Metronet's debt obligations. This sum would otherwise have been repaid over the 30 year life time of the PPP contracts.

ii In agreeing long term funding guidelines for TfL, DfT considered that it might have to increase grant levels to meet the cost of extra spending under the PPP contracts. This increase could occur where the Arbiter decided the extra spending had been incurred economically and efficiently and it could not be borne by London Underground or TfL or covered by reducing the scope of the work programme.

iii DfT had to rely on TfL and London Underground to manage the contracts, despite TfL having opposed the PPP contracts when they were being negotiated.

iv The PPP contracts were novel and complex.

Public sector management and scrutiny

2.6 DfT placed reliance on the scrutiny of the PPP performed by two key public sector parties: London Underground, which was responsible for managing the contracts under the scrutiny of TfL, and the Arbiter who was created to resolve disputes between the two parties on the pricing and financing of the contracts and to give guidance on any aspect of the PP agreement.

London Underground's management of the contracts

2.7 Once the PPP contracts were signed, DfT was reliant on London Underground, as a party to the contracts, to manage them. For this arrangement to operate as planned, London Underground had to work in partnership with Metronet and Tube Lines. There are four key factors that are important to an effective partnership: the interests of the two parties should be aligned; the parties should act in a spirit of cooperation; parties should have a clear understanding of their roles and responsibilities under the contract; and be satisfied with the remuneration arrangements.

Alignment of interests

2.8 Ambiguities in the contract made disagreements on scope inevitable. On the stations programme, there was no clear definition of a 'Modernisation', 'Refurbishment' or 'Enhanced Refurbishment'. The specification for modernisation work, for instance, was only 600 words long and left considerable room for interpretation, leading to frequent, time consuming disagreements between Metronet and London Underground. Metronet and London Underground's different interpretations of London Underground standards also led to a number of disputes. The enhanced refurbishment of Stockwell Station by Tube Lines illustrates the type of issues that arose (Appendix 5).

2.9 London Underground did take steps to address these problems, working with Metronet and Tube Lines to agree guidance in 2004 on assurance processes for agreeing scope and completing stations. Metronet failed to take steps to implement these agreed processes.

Cooperative working

2.10 Metronet made cooperative working difficult by failing to provide London Underground with good quality performance and cost information in the way envisaged under the contract. London Underground responded by taking a number of steps to improve cooperative working:

- in 2004, it held meetings with Metronet to improve procedures for agreeing the scope of station work;
- in 2006, it requested that PricewaterhouseCoopers undertake a forensic audit of Metronet to obtain better quality information; and
- in 2007, its staff co-located with Metronet's project teams for the stations programme and the Victoria Line upgrade.

2.11 Parts of London Underground could have, however, cooperated more fully with Metronet. While London Underground has emphasised that the Chief Programmes Officer generally operated as the single point of contact, on occasions London Underground performed like a collection of autonomously operated businesses, with inconsistent approaches. To get agreement on the scope of stations work, Metronet and Tube Lines needed approval from a number of different directorates within London Underground **(Figure 7)**.

2.12 London Underground focused on holding Metronet to account for delivery. The actions of some of its staff, however, led to additional costs in some areas, particularly the stations programme. London Underground's requests for changes during the design and, less frequently, the construction phase of the work sometimes required arrangements over station access plans, suppliers, materials and design to be changed, contributing to delays and additional costs. An example of this type of problem is Tube Lines' construction work on Northfields station (Appendix 5).

Remuneration arrangements

2.13 London Underground did not have a breakdown of Metronet's high level budget for the stations programme, which made it difficult for London Underground to understand how additional work beyond the contract as bid was affecting the overall affordability of the programme. In the case of the Bow Road station modernisation, London Underground required the replacement of some elements of the station, which were considered by Metronet to be "fit for purpose and not expected to require significant maintenance before the next scheduled station refurbishment" (Appendix 5).

Role of the PPP Arbiter

2.14 The Arbiter's statutory function is to give direction to Metronet, Tube Lines and London Underground, when certain disputes arise between them, in an independent, timely and certain way. He has the power to make London Underground increase payments to Metronet or Tube Lines for extra work he deems economic and efficient.

2.15 The Arbiter has no specific statutory duty to protect the public interest, although part of his statutory duty is to promote economy and efficiency. Furthermore, it is not part of the Arbiter's statutory function to help DfT monitor the PPP's performance. DfT was, nevertheless, informed of developments by the Arbiter through informal briefing and presentations. The Arbiter's ability to produce reliable figures was, however, adversely affected by the decision to waive his 2005 Annual Report of Metronet's performance and to delay going to an Extraordinary Review.

2.16 If the Arbiter had, as expected, been asked to undertake his 2005 review it would have publicly highlighted issues with Metronet's performance and could have led to a better understanding of Metronet's problems and greater efforts to reduce the eventual costs to the taxpayer. At that stage, London Underground decided to focus Metronet's attention on improving its delivery and information, rather than engage in what it considered might become a backward-looking exercise.

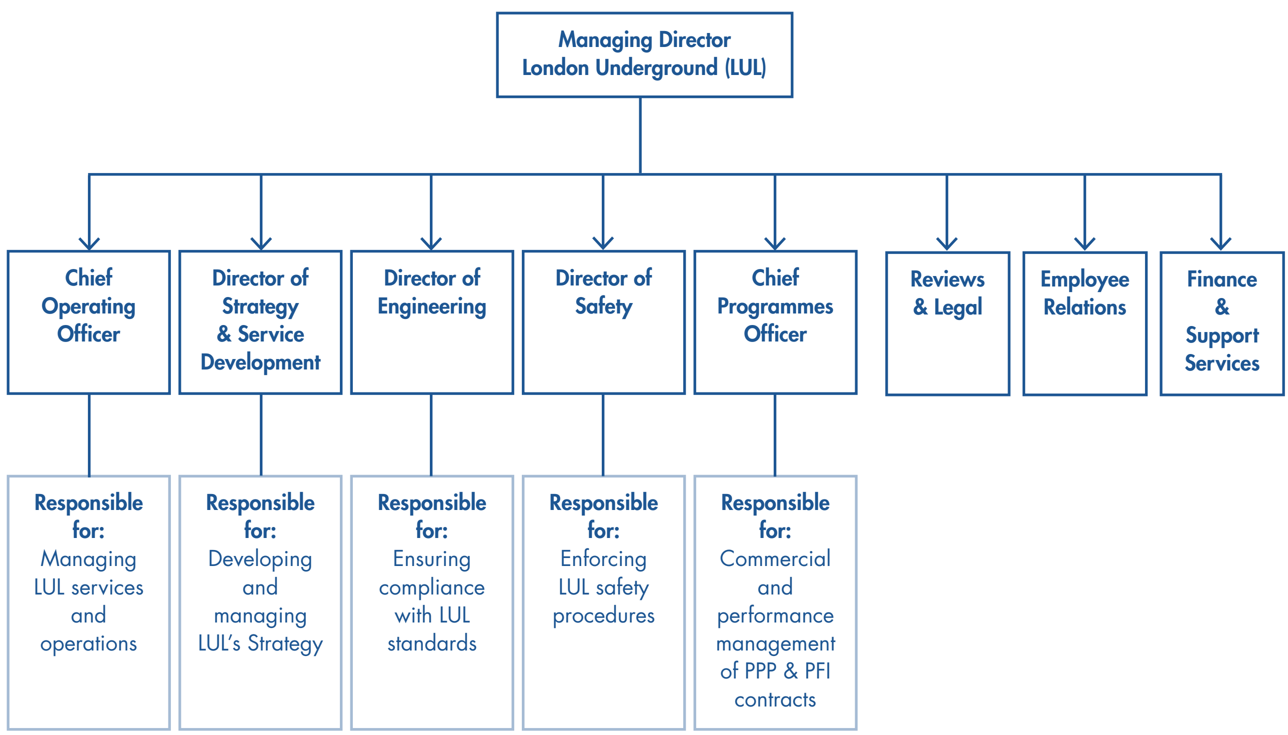
2.17 A request from Metronet for an Extraordinary Review would have allowed the Arbiter to determine whether its extra spending was liable to be met by the public sector. By February 2006, Metronet had informed London Underground that its projected extra spending would be £1.2 billion. Metronet delayed asking for an Extraordinary Review, however, in the hope of reaching a settlement with London Underground. In February 2007 the London Mayor said he saw no basis for a settlement and told Metronet to go to Extraordinary Review. Even then, Metronet delayed going to the Arbiter until 28 June 2007, because it could not extract the relevant information from its supply chain.

2.18 London Underground and Metronet also had the option of asking the Arbiter for guidance on whether the extra spending was economic and efficient and therefore had to be met by the public sector. A request for guidance could have allowed the Arbiter to require Metronet to produce substantially the same information required for an Extraordinary Review to a specific timetable, allowing him to come to preliminary conclusions earlier than he was eventually able to in June 2007. The resulting information would have been made available publicly.

Private Sector scrutiny

2.19 DfT placed reliance on the internal scrutiny of the contracts performed by three key private sector parties: Metronet's shareholders, its Board and its Lenders. None of these performed their roles as DfT had anticipated.

7 Structure of London Underground Limited



Source: London Underground Limited

Metronet's shareholders

2.20 The equity investment of Metronet shareholders should have ensured that Metronet would monitor risk closely to protect the shareholders' investment as well as their reputations. While Metronet's shareholders had £350 million of equity at risk they were also beneficiaries of contracts under the tied supply chain. This conflict reduced their incentive to tackle problems when they emerged.

2.21 As suppliers, the shareholders would have had to make significant margins just to break even before entry into administration. Our analysis shows that in order to recover their equity investment, shareholders would have had to make gross margins on their contracts ranging between 15 per cent and 82 per cent to break even **(Figure 8)**.

Metronet's Board

2.22 All parties, including DfT, expected Metronet's shareholders to put in place corporate governance arrangements to ensure that the business ran effectively and to protect the shareholders' reputations. As beneficiaries of the tied supply chain, however, Metronet's shareholders lacked sufficient incentive to put in place a strong independent board structure that would protect Metronet's own interests. The following key flaws made it more difficult to tackle the poor performance of the tied supply chain and carry out effective programme management.

- **i** The Holding Board which set policy and direction for both Metronet BCV and SSL contained representatives of all shareholders but no independent Chairman or other non executive directors until 9 January 2007.
- **ii** There was a lack of continuity in senior management positions. Metronet had three chief executives in four years.
- **iii** The Partnership Director, appointed by TfL to protect the public interest, foster good corporate governance and promote constructive working between London Underground and Metronet, was not invited to attend Metronet's Holding Board until 2006 and only then as an observer. Before this, she attended meetings of the two boards below the Holding Board.

Metronet's lenders

2.23 One of the key benefits of the PPP contracts was expected to be scrutiny by the lenders. Metronet's lenders did not, however, protect their investment as anticipated. They did not have sufficiently strong incentive to do so because only five per cent of their investment was at risk. The remaining 95 per cent of the debt obligations was guaranteed by TfL. As a result, only £31 million out of the £627 million bank loans made to Metronet up to July 2007 was at risk. The £1,086 million of bonds were also 95 per cent guaranteed and bondholders had full insurance protection. Furthermore, profits on bank fees and other earnings would have offset the loss banks incurred. Banks made a margin of £11 million through interest charged and would have earned profits from the £19.4 million charged for loan set-up fees **(Figure 9)**.

8 Gross margins on sales required by shareholders to break even on work done to March 2007 and recover their equity investment in Metronet

	%
Balfour Beatty	15
Elecricite de France	55
RWE AG (Thames Water)	82
WS Atkins	33
Bombardier	27

Source: National Audit Office analysis. See Appendix 3 for further details.

9 Income to bank lenders from Metronet debt

Facility and Principal[1]	Fees[2]	Margin made[3]	5 per cent lost
Bank facilities £627 million	£19.4 million	£11 million	–£31.3 million

Source: National Audit Office analysis

NOTES

1 Principal figures from the PPP Administrator put option calculations.

2 Fees are estimates made on the basis of information available and include arranging fee and commitment fee. Fees will have included provision for costs banks incurred.

3. Estimated margin made on debt is over LIBOR, the rate banks would have received from lending to other major banks. It is a proportion of the interest received on debt drawdown up to March 2007. Debt drawdown schedules are taken from Metronet BCV Finance and Metronet SSL Finance financial statements 2004-2007.

2.24 The lenders did not monitor Metronet's performance as DfT expected:

i They monitored the rate of spending, but did not compare it closely to delivery and were therefore slow to identify the extent of cost overruns.

ii They permitted Metronet to waive the 2005 Arbiter's Annual Report. It is likely that the report would have publicly highlighted issues with Metronet's performance (see paragraph 2.15).

Lenders did, however, reduce termination costs because after allowing Metronet some time to cure shortcomings, they halted access to loans with approximately £1 billion remaining to be drawn.

DfT's risk management after Metronet's problems began to emerge

2.25 DfT expected these parties, in their respective roles, to identify and then mitigate risks (paragraph 2.3). Although DfT managed to monitor the PPPs' performance through the Arbiter (paragraphs 2.14 to 2.18), neither Metronet's shareholders (paragraphs 2.20 to 2.21), Board (paragraph 2.22), lenders (paragraphs 2.23 and 2.24) nor London Underground (paragraphs 2.6 to 2.13) performed their roles as DfT anticipated.

2.26 By February 2006, Metronet projected £1.2 billion of extra spending over the first 7½ year period, a level where it was possible that the taxpayer might become liable (see paragraph 1.28). DfT believed, on the basis of discussions with the Arbiter, that these figures should be treated with caution and that extensive further work was required before reliance could be placed on them. DfT chose to monitor developments more closely by increasing its liaison with London Underground and TfL. It chose not to be drawn into disputes between competing parties because it believed that its involvement would lead to confusion and undermine London Underground's position.

2.27 The Arbiter's 2006 Annual Report projected extra spending of up to £750 million for Metronet SSL and BCV over the first 7½ years, but noted that there was substantial uncertainty over the figures. He found that some of Metronet's costs were not economically and efficiently incurred, but could not provide clarity on the level of economic and efficient extra spending without being asked by Metronet for direction on the issue. The Arbiter found that Metronet did have grounds to trigger an Extraordinary Review, and DfT agreed that London Underground should encourage Metronet to proceed to one.

2.28 In February 2007, the Mayor of London publicly asked Metronet to go to Extraordinary Review. At that point, Metronet had spent an additional £860 million in capital expenditure and £300 million in operational expenditure since the extent of its problems emerged 12 months earlier. We estimate that approximately 90 per cent of this £1.1 billion was spent economically and efficiently, with the remaining 10 per cent being wasted. This estimate is based on the Arbiter's work and assumes that Metronet SSL would have achieved a similar level of efficiency to Metronet BCV.

2.29 DfT's risk management was constrained because it was not signatory to the contracts. It was not responsible for resolving contractual disputes nor for requesting an Extraordinary Review from the Arbiter. DfT was, however, responsible for protecting the taxpayer's interests. The taxpayer was the ultimate source of funding for London Underground's payments under the PPP contracts and faced potentially significant liabilities should the PPP contracts fail. The failure of the parties relied upon by DfT to identify and then mitigate risks effectively, left DfT with a residual risk which it had few levers to manage. As a result the taxpayer was not effectively protected.

PART THREE

Cost and consequences of failure and work towards a permanent solution

3.1 This part of the report examines the direct loss to the taxpayer and other consequences from Metronet going into PPP administration, and the progress that has been made towards a permanent solution. It sets out:

- our estimate of the direct losses to the taxpayer as a consequence of Metronet going into administration;
- developments since Metronet entered administration; and
- the way that DfT has worked towards a permanent solution.

Taxpayer's loss

3.2 Our estimate of the direct loss to the taxpayer is based on the difference between the public sector costs incurred and the value of the work carried out by Metronet. It ranges from £170 million to £410 million. To produce this range, we had to make several extensive assumptions to bridge gaps in the data. Appendix 2 sets out our calculations and our assumptions in more detail. This estimated loss is equivalent to between four per cent and ten per cent of the cost of performing the same work economically and efficiently (see paragraph 3.10 and Figure 11).

3.3 We estimate the total costs incurred by the public sector as between £5,040 million and £5,100 million (see paragraph 3.9(i)). The majority of this is accounted for by the payment to Metronet of £3,060 million infrastructure service charges and payment to Metronet's lenders of £1,750 million in February 2008 as a result of a guarantee by London Underground (see paragraphs 24-29, Appendix 2). Other costs included the costs of Metronet's administration and a proportion of the cost of procuring the PPP contracts. The cost of financing was originally expected to be repaid over the 30 year life of the contract. Although unexpected, the payment is not the same as the net loss because of the benefit of the work carried out by Metronet.

3.4 We estimate the value of the work carried out by Metronet on the basis of the costs that an economic and efficient business would have incurred. Metronet spent £5,020 million in total – £1,260 million on operating and maintenance, £590 million on business administration, £330 million on servicing its debt, and £2,840 million on its capital works programme. Some of this spending was not, however, economic and efficient and the cost of some of these inefficiencies was borne by the taxpayer.

3.5 The Arbiter found that Metronet BCV had been inefficient in the execution of its operation, maintenance and business administration activities. Using the Arbiter's assessments of Metronet BCV's levels of inefficiency and applying these levels to Metronet SSL, we estimated that Metronet's inefficiencies in operating and maintenance activities cost the taxpayer between £30 million to £40 million. Similarly, we estimated that the taxpayer lost between £50 million and £100 million from inefficiencies in Metronet's business administration activities.

3.6 The taxpayer also bore losses associated with the capital works and the related debt financing that we estimate to be within the range £0 to £120 million. Overall inefficiency on capital works, as calculated by the Arbiter, was higher. The loss to the taxpayer shown in **Figure 10** is lower than it would have been because Metronet's shareholders and lenders also absorbed losses.

3.7 We have reduced the estimated loss to take into account £90 million for debt related payments which were incurred prior to Metronet's failure. We have also taken into account some benefits deriving from the availability of private finance, which we estimate at some £60 million (paragraphs 26 and 27, Appendix 2).

10 Metronet: Estimated range of direct loss to the taxpayer (2007 prices)

Source of losses	Low estimate of loss (£m)	High estimate of loss (£m)
Losses from inefficiencies in operations and maintenance expenditure	(30)	(40)
Losses from inefficiencies in Metronet's business administration activities	(50)	(100)
Losses from inefficiencies in Metronet's capital works, and the cost of terminating the associated debt financing, net of allowable financing costs	0	(120)
Costs of administration[1]	(40)	(40)
Lost value in London Underground's investment establishing the Metronet PPP contracts[2]	(50)	(110)
Total loss[3]	(170)	(410)

Source: National Audit Office analysis. See Appendix 2 for further detail.

NOTES

1 The cost of administration includes £33 million paid to the administrators and £7 million of London Underground internal costs.

2 This is based on Metronet accounting for two-thirds of the costs incurred by London Underground during the procurement of the three PPP contracts and expected benefits over 4.3 years instead of the intended 30 years.

3 Our estimate of the total private sector shareholder and lender loss (excluding any profit gained as suppliers) in nominal terms is £452 million (paragraph 39, Appendix 2).

3.8 London Underground also incurred other costs and losses associated with Metronet's failure:

i £40 million for the costs of administration; and

ii up to £110 million of the costs of setting up the Metronet PPP contracts.

3.9 An alternative way of presenting our calculation is to deduct the estimated costs that an efficient and equivalent infrastructure company should have incurred from costs incurred by London Underground.

i **Costs incurred by London Underground and TfL** – Our estimate of total costs was between £5,040 million and £5,100 million. This estimate comprised: £3,060 million of paid infrastructure service charges; £1,750 million of repaid debt; £180 million of other costs incurred by London Underground, including administration costs and its procurement costs. Also included in the total are up to £110 million of anticipated benefits of the PPP contracts which were not received.

ii **The estimated costs that an economic and efficient infrastructure company should have incurred** – From the same data, we estimated that the aggregate cost that an economic and efficient infrastructure company should have incurred was between £4,070 million and £4,250 million **(Figure 11)**.

iii **The estimated costs of setting up a debt funded business.** We then added the costs of setting up a debt funded infrastructure company: £110 million in respect of bid costs; £90 million for establishing debt service facilities; and debt servicing costs, including accrued interest at the time of administration of £420 million.

3.10 Total estimated costs incurred by the public sector were between £5,040 million and £5,100 million and estimated costs of an efficient debt funded infrastructure company between £4,690 million and £4,870 million. The estimated loss to the taxpayer, therefore, ranges between £170 million and £410 million. This is a loss to the taxpayer of between four per cent and ten per cent of the cost that an economic and efficient infrastructure company would have incurred in the execution of its capital investment, operating and business administration functions (Figure 11).

11 Estimated costs of an economic and efficient infrastructure company

	£m	£m
Operations & Maintenance	1,220	1,230
Capital works	2,360	2,480
Business administration	490	540
Total	4,070	4,250

Source: National Audit Office analysis

Administration

3.11 Metronet BCV and SSL entered administration on 18 July 2007. On 27 May 2008, the assets, liabilities and employees of both Metronet companies were transferred to two new subsidiaries of TfL. The PPP Administrator, Ernst & Young, ran the business with Metronet's existing management while trying to find a buyer and changed the majority of the senior management team in October 2007. Ernst & Young was paid £33 million in administration fees by TfL, which DfT provided through its transport grant to TfL. TfL also incurred significant internal costs.

3.12 There were no private sector bidders for Metronet. TfL was the only prospective buyer, and so the Administrator allowed London Underground and TfL significant influence over the major decisions taken, including the renegotiation of contracts. During the period two important decisions were made.

- **i** In April 2008, the London Mayor and TfL agreed to align Metronet's employees' pension and travel subsidies with those of TfL. Metronet employees were allowed to join TfL's final salary pension scheme, after transfer. Metronet estimates the alignment of pension schemes will cost an extra £4.1 million per year, and free tube travel between £0.4 million and £3 million per year depending on take-up by staff. DfT was not consulted on this decision as TfL considered that its consent was not required.
- **ii** The Administrator, in consultation with London Underground, decided to renegotiate some of the supply chain contracts in a process that had begun in January 2007. London Underground believes that it achieved efficiency savings from the renegotiated contracts as well as greater flexibility in determining engineering solutions.

3.13 When Metronet entered into PPP Administration it had only completed 33 of the 64 station projects originally agreed due under the PPP contracts **(Figures 12 and 13)**. During administration, Metronet agreed with London Underground to reduce significantly the number of stations in its station refurbishment and modernisation programme. Twelve planned modernisations were cancelled, and a further 45 postponed into the second 7½ year period (see Figure 6 on page 18).

Work towards a permanent solution

3.14 As part of the Government's 2007 Comprehensive Spending Review settlement the Government and TfL agreed to establish a Joint Steering Committee to evaluate the options for the permanent structure and make a recommendation to the Mayor and Secretary of State. The Joint Steering Committee consisted of TfL, London Underground, DfT, the Treasury and Partnerships UK. Its remit, which was set out in a Memorandum of Understanding between TfL and DfT, was to identify a permanent structure which:

- provides a stable and safe operational framework for the Underground;
- delivers affordable modernisation, upgrade and maintenance; and
- delivers value for money for the public sector in accordance with relevant statutory duties of the Mayor and the Secretary of State.

3.15 The Joint Steering Committee aimed to identify a number of options for the permanent solution that reflected a range of risk transfer from the public sector to the private sector as well as a range of ownership structures. The following options have been considered. Under all of them, London Underground would retain responsibility for operations.

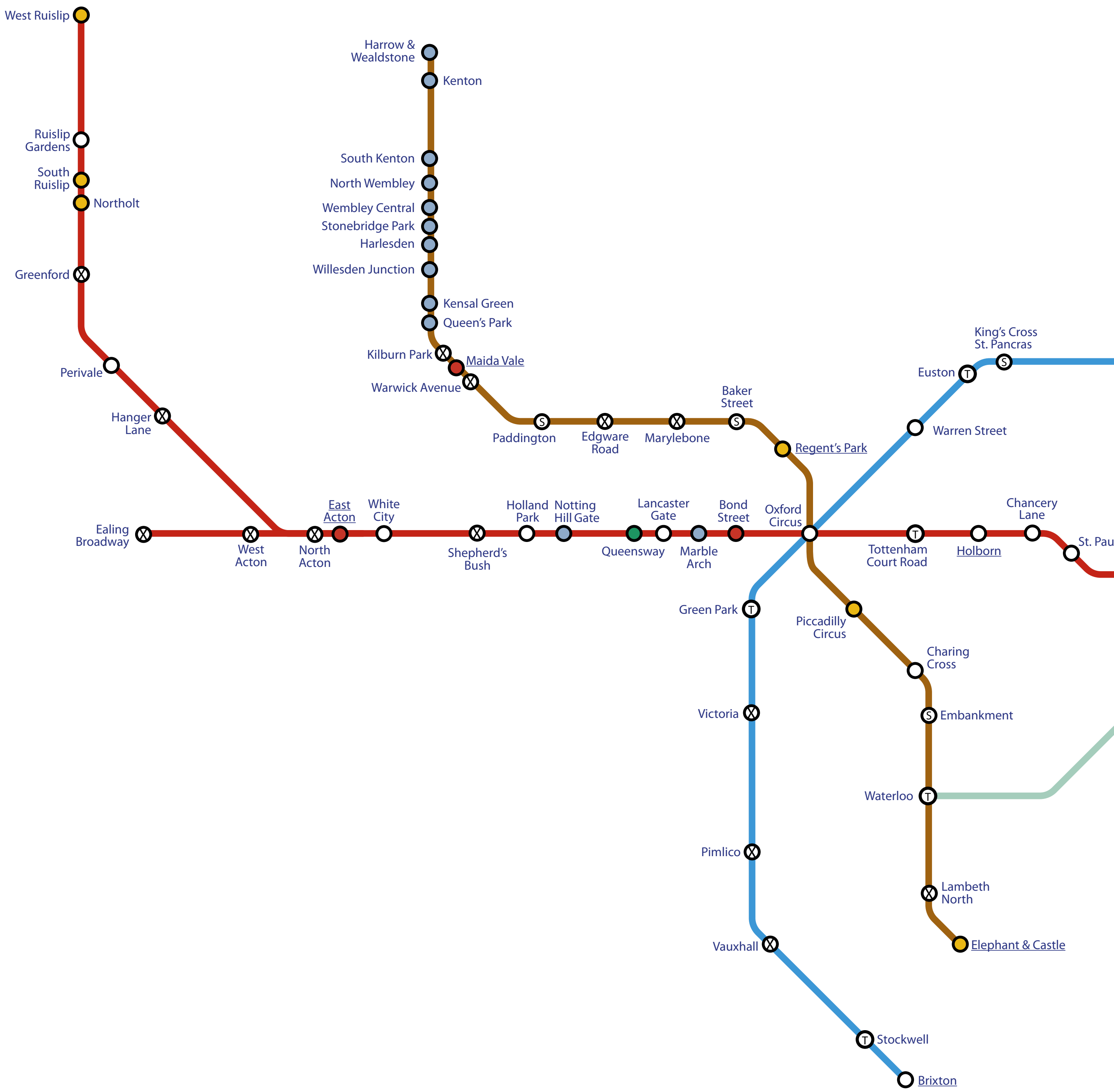
- **Option 1 Traditional procurement with public sector ownership** – TfL and London Underground would procure a whole programme of works in line with their ten year funding settlement. This option could entail: London Underground taking full responsibility for operations, maintenance and all capital works; a separate 'delivery company' being formed by TfL to take responsibility for maintenance, strategy and major capital works while London Underground would retain responsibility for maintenance, strategy and minor capital works; or a publicly owned company that would take responsibility for maintenance and capital works.

- **Option 2 Traditional procurement with co-ownership of the delivery company** – The new 'delivery company' would take responsibility for the programme management and delivery of major capital works. It would be owned 50 per cent by TfL and 50 per cent by an equity investor. London Underground would retain responsibility for operations, maintenance, strategy and the delivery of minor capital works.
- **Option 3 Long term performance based contracts** – London Underground would let PFI contracts for the modernisation of asset groups or other specific pieces of work wherever practicable or value for money. The remaining works would be delivered via conventional procurement.
- **Option 4 Whole System Outsourcing for the Metronet lines** – Works would be carried out by a privately owned business. There is a possibility under this option that, if appropriate, TfL could co-invest into this business, taking up to a 50 per cent equity stake.

3.16 In selecting the best long term option, the Joint Steering Committee considered the need for comparability between different bodies to determine the economic and efficient level of spending; the need for clear and effective governance of public and private sector parties to the contracts; and the need for due diligence and transparency, so that DfT can monitor any residual risks.

3.17 Work towards a permanent solution has proceeded slowly so far, for three reasons: firstly, Metronet did not come out of administration until 27 May 2008, later than originally anticipated; secondly, there was an election and a change of Mayor of London in May 2008; and thirdly, there have been difficulties in gathering the full set of evidence needed to assess the preferred option's success. The Joint Steering Committee has completed its report and made its recommendations to the Secretary of State for Transport and the Mayor of London. The Mayor and the Secretary of State are now preparing to make a joint decision on the long term arrangements for the Metronet contracts.

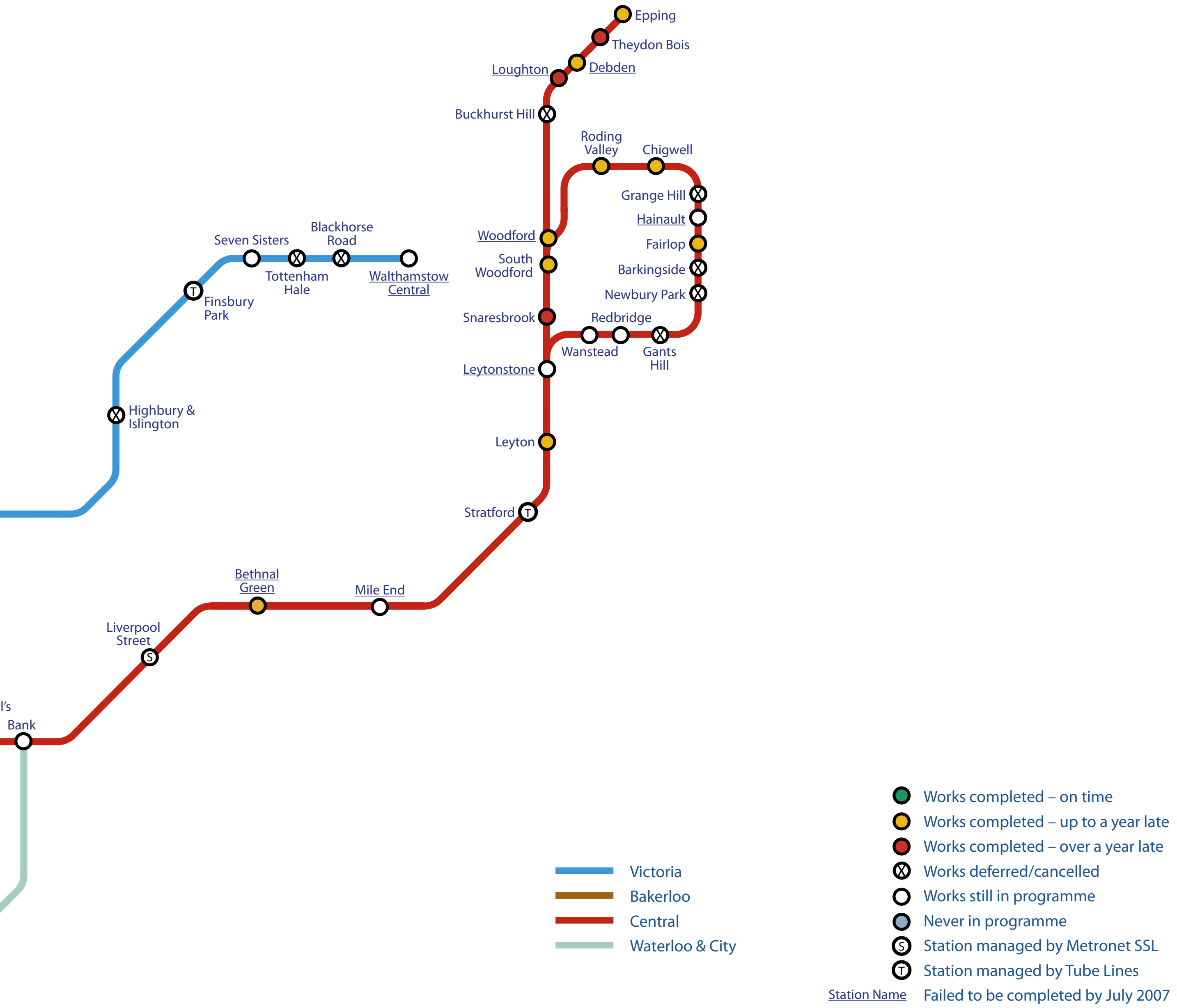
12 Delays on Metronet BCV station modernisation and refurbishment programme



Source: London Underground and National Audit Office analysis

NOTE

Delay shown refers to original contract dates and the position at Metronet's entry into PPP Administration (July 2007).

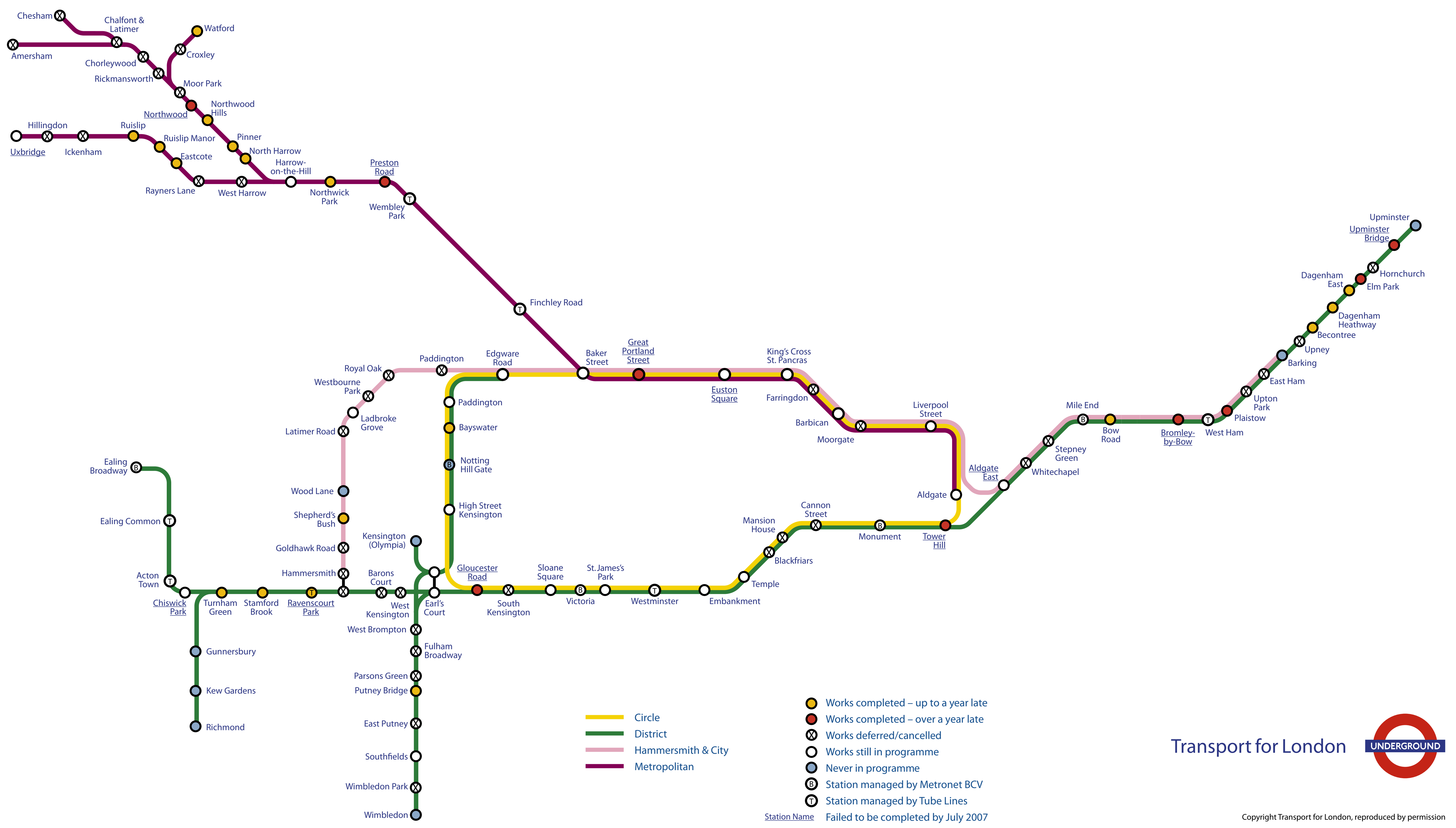


Transport for London UNDERGROUND

Copyright Transport for London, reproduced by permission

Figure 13 overleaf

13 Showing delays on Metronet SSL station modernisation and refurbishment programme



Copyright Transport for London, reproduced by permission

Source: London Underground and National Audit Office analysis

NOTE

Delay shown refers to original contract dates and the position at Metronet's entry into PPP Administration (July 2007).

APPENDIX ONE

Study methodology

This section outlines the research methods used in the course of our examination.

Study scope

In 2004, the National Audit Office published two reports on London Underground – *London Underground: Are the Public Private Partnerships likely to work successfully?* (HC 644 2003-2004) and *London Underground PPP: Were they good deals?* (HC 645 2003-2004) which examined the new 30-year PPP contracts between London Underground and Metronet, and London Underground and Tube Lines.

Metronet, which was awarded two out of the three PPP contracts beginning in April 2003, went into administration in July 2007.

The objective of this report is to assess the background and aftermath of this failure. In particular, examining whether DfT could have done more to avoid the failure of Metronet and how it has managed the consequences. It examines:

- the history of the PPP, highlighting key factors that contributed to Metronet's failure;
- DfT's approach to risk management; and
- the costs and other consequences of Metronet's failure.

Methodology

Document review

The study team examined literature assessing different areas of Metronet's performance. Documents reviewed included:

- Freshfields Bruckhaus Deringer and Ernst & Young, *Report for the Office of the PPP Arbiter, Contract Management Study – Phase One, October 2005*
- Deloitte Report commissioned by Metronet for Extraordinary Review, 2007
- Halcrow Report for the PPP Arbiter, *Guidance for Extraordinary Review*, 2007
- PPP Arbiter, *Annual Metronet Report 2006*, November 2006
- PPP Arbiter, *Reference for Directions from Metronet Rail BCV Ltd, Interim level of ISC pending a direction on ISC at Extraordinary Review, Draft Directions*, July 2007
- PPP Arbiter, *Reference for Directions from Metronet Rail BCV Ltd, Directions on Form and Structure of Extraordinary Review and Net Adverse Effects and Infrastructure Service Charge at Extraordinary Review, Initial thoughts*, September 2007
- London Underground Limited, *Managing Director's Performance Reports* 2003-04 to 2007-08
- Transport for London, *London Underground and the PPP* reports, 2003-04 to 2007-08
- Metronet BCV and SSL *Annual Asset Management Plans* (AAMPs) 2003-04 to 2007-08
- Hornagold and Hills, *BCV Stations Cost Phasing Report, PPP Contract Works Performance Review*, prepared for London Underground Limited, June 2007
- Hornagold and Hills, *PPP Contract Works Performance Review*, Station Case studies, Epping, Loughton, Plaistow, April 2007

- EC Harris, *Metronet Station Base Lining, Validation Report*, December 2006, produced as independent review for Metronet Rail
- PricewaterhouseCoopers, London Underground Limited, *Project Perm, Summary of Findings and Emerging Conclusions*, July 2006
- PricewaterhouseCoopers, *Regression Analysis for Station costing*, October 2007, for London Underground based on Turner & Townsend Cost Projections
- Department for Transport and London Underground official and other high level meetings, 2004-2008
- Metronet BCV and SSL board minutes, 2003-2008
- Working Group, *Metronet Long-Term Structure Options*, prepared for Joint Steering Committee, 2008

Financial analysis

The study team has estimated the direct loss to the taxpayer as a result of Metronet going into administration, and provided an indication of the return on investment of Metronet's lenders and equity holders (See Appendix 2 and Appendix 3, respectively). This analysis used the following sources of data:

- Metronet BCV and SSL, and related companies annual reports and accounts 2004 to 2006
- Trans4m annual reports and accounts 2004 to 2007
- Shareholder annual reports and accounts 2004 to 2008
- Metronet BCV and SSL *Annual Asset Management Plans* 2004-05 to 2007-08
- NAE 60 c – Metronet BCV and SSL financial model from 2002
- FM68 – Metronet BCV and SSL financial models from 2007

Interviews

We used semi-structured interviews with representatives of the following key stakeholders:

- Department for Transport
- London Underground
- Transport for London
- The Office of the PPP Arbiter
- Some current and former Metronet directors, shareholder representatives and employees
- Tube Lines
- A range of Metronet's lenders, including a Monoline Insurer and the European Investment Bank

Case studies

We used four case studies from the station modernisation and refurbishment programme to look at the way that London Underground and Metronet worked together.

Documentation for the Metronet case studies included station case study reports by the project management consultancy Hornagold and Hills, as well as a large amount of correspondence between London Underground and Metronet and key documentation from the station design process. We also held semi-structured interviews with London Underground, Metronet and ex-Metronet staff. Two case examples for Tube Lines were undertaken via interviews with the Tube Lines stations team and documentation they provided.

Expert panel

We convened a panel of experts to provide advice during the course of the review. Our expert panel members were:

Kingsley Manning

- Chief Executive and founder of Newchurch Ltd in 1986
- Visiting Professor at the Management School, Imperial College, London and Special Advisor to the House of Commons Select Committee on Healthcare, the Transport Select Committee and the National Audit Office

Professor Tony Ridley CBE FREng FICE FCIT

- An Emeritus Professor of Transport Engineering with London's Imperial College in the United Kingdom, and Director of the University of London Centre for Transport Studies
- Formerly Chairman and Chief Executive of London Underground Limited, first Managing Director of the Hong Kong Mass Transit Railway Corporation and the first Director General of the Tyne and Wear Passenger Transport Executive

Dr Harry Bush CB

- CAA Group Director, Economic Regulation

Michael Allen

- Senior Technical Manager, Audit Policy and Practice, Audit Commission

George Steel

- Founder and Managing Director of INDECO, a management consultancy specialising in project and contract management

APPENDIX TWO

Loss to the taxpayer

1 In the four years and four months between the start of the Metronet PPP contracts and Metronet's entry into administration, Metronet received approximately £3,060 million (2007 prices) from London Underground's payments of Infrastructure Service Charges. During Metronet's administration, London Underground paid £1,747 million to settle its guarantee to Metronet's senior lenders. In exchange, London Underground, and therefore the taxpayer, received services relating to the day-to-day operation of the Underground and Metronet's investment in capital works.

2 Metronet was inefficient in the way that it conducted some of its operational and capital investment activities. The cost of some of these inefficiencies was borne by the taxpayer. In this appendix, we have calculated indicative ranges for these inefficiencies (which are losses to the taxpayer), the value of efficiently executed capital works net of London Underground's settlement of Metronet's debt obligations and other direct losses associated with Metronet's entry into administration. Our calculation comprises six distinct parts:

a Losses associated with Metronet's inefficient and/or uneconomic execution of its operational and maintenance activities.

b Losses associated with Metronet's inefficient and/or uneconomic execution of its business overhead activities.

c The loss associated with the greater rate with which Metronet used available debt relative to the expected delivery of completed works.

d The value of Metronet's capital works after netting off the taxpayer's payments for these works through London Underground's payment of Metronet's Infrastructure Service Charges.

e The payment made to settle Metronet's debt obligations.

f Other losses borne by the taxpayer comprising the costs of the administration and the unfulfilled value in the transaction costs that the public sector incurred establishing Metronet BCV and SSL.

3 In producing our estimate of the taxpayer's loss, we have had to make several major assumptions. The most notable include:

- Metronet's expenditure during the last six months of its operations matched the projections in its last financial model;
- The inefficiency rates of Metronet BCV's activities when compared to the PPP Arbiter's model of an efficient company for the BCV contract applied also to Metronet SSL (the PPP Arbiter had not conducted a similar exercise for the SSL contract); and
- Metronet used revenues from London Underground's payments of Infrastructure Service Charges to fund its operational activities, business overhead activities and financing obligations, before using any remainder to fund capital works.

The assumptions are explained in greater detail below.

4 In our estimate of the taxpayer's loss, we have intentionally avoided reopening the debate about whether the PPP arrangements were better value for money than public sector alternatives. We have simply accepted the existence of the PPPs and assumed that the Metronet model was one of an infinite number of PPP arrangements. The losses to the taxpayer that crystallised following Metronet's entry into PPP administration, and associated extra costs that the taxpayer has had to bear, are those that we consider would not have existed had Metronet been able to continue trading.

5 We also decided not to compare future costs between the best alternative future arrangements and the costs that would have been incurred had Metronet performed its obligations economically and efficiently. There are two fundamental reasons why we made this decision:

- Firstly, there has been no decision about what is the best alternative for the future of Metronet's business; and
- Secondly, the model of a hypothetical Metronet that is efficient and economic cannot be used as a basis for a realistic comparison of future costs. Modelling the comparator based on the Metronet that existed would conclude with it entering administration. Therefore, the comparator would have to be the next best future alternative, but this too has yet to be determined.

Efficiency and economy

6 Crucial to our analysis was some means of assessing the economy and efficiency with which Metronet conducted its activities. Under the PPP arrangements, the Arbiter had independent but limited rights to decide upon the economy and efficiency of Metronet's activities. We therefore sourced information from work done by him following Metronet's request, in 2007, for an Extraordinary Review of the performance of Metronet BCV.

7 Although the Arbiter did not complete his work, because London Underground and Metronet's administrators agreed to withdraw the Extraordinary Review reference, he had collected considerable information about Metronet's performance. Before the reference was withdrawn, the Arbiter had already received a report from Halcrow Group Ltd comparing Metronet BCV's capital and operational expenditure against that of a hypothetical economic and efficient company. He had also produced a report documenting findings from his separate investigations into the efficiency of Metronet's expenditure on business overhead activities. Both reports assessed the costs that the hypothetical company would have incurred had it, rather than Metronet BCV, executed the work that had to be done during the first 7½ years of the PPP contract, i.e. April 2003 to September 2010, the first review period. During the assessments, the Arbiter used information obtained from Metronet, Tube Lines and London Underground, including:

- Metronet BCV's reports of actual expenditure;
- Metronet's model of the costs that an efficient and economic company would have incurred;
- London Underground's model of the costs that an efficient and economic company would have incurred; and
- Cost data from Tube Lines' execution of its obligations.

8 To address uncertainty associated with the exercises, the Arbiter produced, for each category of expenditure, upper and lower bounds for the costs that an efficient and economic company would have incurred. When the operational and capital expenditure categories were aggregated together, the estimated range for economic and efficient expenditure was higher than that estimated by London Underground and lower than that estimated by Metronet **(Figure 14)**.

9 The Arbiter did not conduct a similar exercise to determine the efficiency and economy of Metronet SSL's performance. On the basis of similarities between Metronet BCV and Metronet SSL and the fact that both companies were in difficulty, we have assumed in this analysis of the taxpayer's loss that Metronet SSL's inefficiency rates were identical to those of Metronet BCV.[5]

14 Estimates of the operational and capital expenditure that an economic and efficient company would have incurred over the first 7½ years of the Metronet BCV contract

	£m
London Underground's estimate	2,900
The Arbiter's lower estimate	3,400
The Arbiter's upper estimate	3,500
Metronet's estimate	3,900

Source: National Audit Office analysis

NOTE
The figures in the table are summations of cash for the first three years of the contract and 2006 prices for the projected costs for the following 4½ years.

5 We note that there were major differences between Metronet BCV and Metronet SSL both in terms of their work programmes and the infrastructure that they had to upgrade and maintain. Consequently, there were likely to be differences in efficiencies between the two companies for each category of capital expenditure. However, we did not have sufficient information to quantify the distinctions and, therefore, based our assumption of identical levels of inefficiencies on the assumption that Metronet SSL's overall inefficiency was the same as that for Metronet BCV.

Range of the taxpayer's loss associated with Metronet's execution of its operations and maintenance activities

10 Despite the fungible nature of funds available to Metronet to meet its obligations, we assumed that Metronet cascaded the revenue it received from London Underground's payment of the Infrastructure Service Charges. First call on the revenue was meeting the costs, in full, of Metronet's operational and maintenance activities. The next portion of revenue covered costs associated with Metronet's overhead activities, with the exception of paying bid costs. A third portion of the received revenue covered Metronet's financing obligations, with the exception of one off debt arrangement fees at the start of the project. We assumed that Metronet invested any residual revenue in its capital works programme.

11 Starting, therefore, with Metronet's execution of its operational and maintenance activities, we obtained, from the cash flow in Metronet's most up to date financial model, expenditure for four cost lines (Rolling Stock, Signals, Stations and Track[6]) for each six-month period from financial award to 31 March 2007. For the remaining 109-day period, through to Metronet's entry into administration, the entries in the model were projections for the full six-month period. We have assumed that the actual rate of expenditure for the foreshortened period was equal to that suggested in the model.

12 From the Arbiter's report on capital and operational expenditure, we extracted, for each period, the upper and lower cost estimates for each of the four cost lines. For the last 109-day period, we apportioned the Arbiter's estimates on a pro-rata basis.

13 By subtracting the Arbiter's estimates from Metronet's figures, we obtained upper and lower values to a range for Metronet's inefficiency in each period. To bring all the annual estimates of inefficiency to a constant price basis, we inflated them to July 2007 prices using the Office of National Statistics' retail prices index, CHMK. The sum of the inflation adjusted annual values of inefficiency amounted to between £32 million and £41 million (2007 prices) **(Figure 15)**. We classed this sum as a taxpayer's loss on the basis that we had assumed that Metronet had used revenue from London Underground to fund its operational and maintenance activities, irrespective of efficiency.

Range of the taxpayer's loss associated with Metronet's execution of its business overhead activities

14 We approached our assessment of the taxpayer's loss associated with Metronet's execution of its business overhead activities in a manner similar to that used to calculate the loss associated with Metronet's operation and maintenance activities. The principal differences were:

- We assumed that Metronet's payment of its bid costs, an item in its overheads, was made using debt rather than revenue. We therefore deducted this item from this part of our calculation.
- We drew information about the performance of an efficient and economic company from the report produced by the Arbiter specifically on the subject of Metronet's business overhead activities.

15 We calculated that the taxpayer's loss from Metronet's inefficient execution of its business overhead activities was between £47 million and £100 million (2007 prices) **(Figure 16)**.

The loss associated with the greater rate with which Metronet used available debt relative to the expected delivery of completed works

16 In the first year of the contracts, the two Metronet PPPs each obtained £615 million of debt that was placed on interest bearing deposit. No further debt was drawn down until the period April to September 2006 in the case of Metronet BCV and the period October 2006 to March 2007 in the case of Metronet SSL.

6 Metronet's financial model includes additional operational and maintenance activity for work on civil engineering structures, for example, tunnels, bridges and embankments. The Arbiter included these works as part of Metronet's capital investment and we decided to adopt the Arbiter's position rather than disaggregate the Arbiter's assessment of the cost that an efficient company would have incurred investing in civil engineering infrastructure into capital expenditure and operational expenditure.

15 The taxpayer's loss associated with inefficiencies in Metronet's operations and maintenance activities ranged between £30 million and £40 million

Metronet BCV	Metronet's actual expenditure to July 2007 (£m)	The Arbiter's estimate of the upper range of costs that an efficient company would have incurred (£m)	Estimate of the taxpayer's loss (£m)	The Arbiter's estimate of the lower range of costs that an efficient company would have incurred (£m)	Estimate of the taxpayer's loss (£m)
Fleet Operational Expenditure	222	220	2	220	2
Signals' Operational Expenditure	73	68	5	68	5
Stations' Operational Expenditure	172	169	3	167	5
Track Operational Expenditure	108	101	7	99	9
Metronet SSL					
Fleet Operational Expenditure	198	197	1	197	1
Signals' Operational Expenditure	94	90	4	90	4
Stations' Operational Expenditure	196	193	3	191	5
Track Operational Expenditure	192	186	6	182	10
Totals			**32**		**41**

Source: National Audit Office analysis

NOTES

1 All expenditure figures were inflated to 2007 prices using the Office of National Statistics retail prices index, CHMK.

2 All expenditure figures have been rounded to the nearest £1 million, and as a consequence some of the totals correct for rounding errors.

16 The taxpayer's loss associated with inefficiencies in Metronet's business overhead activities ranged between £50 million and £100 million

Metronet BCV	Metronet's actual expenditure to July 2007 (£m)	The Arbiter's estimate of the upper range of costs that an efficient company would have incurred (£m)	Estimate of the taxpayer's loss (£m)	The Arbiter's estimate of the lower range of costs that an efficient company would have incurred (£m)	Estimate of the taxpayer's loss (£m)
Business Administration Activities	325	297	28	267	58
Metronet SSL					
Business Administration Activities	266	247	19	224	42
Totals			**47**		**100**

Source: National Audit Office analysis

NOTE

1 All expenditure figures were inflated to 2007 prices using the Office of National Statistics retail prices index, CHMK.

17 In the intervening periods between the first and second draw-downs of debt, Metronet's debt servicing costs were fixed and were not influenced by Metronet's inefficiencies. Metronet's rate of use of debt relative to a fixed schedule of work was, however, greater than it should have been because some of the work being funded was inefficiently executed capital works. As a consequence, Metronet did not earn as much interest on its deposited funds as it would have done had it been efficient.

18 Available information does not identify the extent to which Metronet brought forward and/or increased the second tranches of drawn down debt. While the taxpayer may have incurred a loss associated with servicing part of the debt used to fund Metronet's inefficiencies, the loss is likely to have been relatively low and probably less than £10 million. Given the uncertainty over the scale of this issue, we decided not to include an allowance in our calculation.

Value to the taxpayer of Metronet's capital works net of revenue used to fund these works

19 We have assumed that in each period Metronet funded its capital expenditure from a combination of equity contributions, drawn down debt, working capital injections, interest on bank deposits and a proportion of its revenue from London Underground's payments of Infrastructure Service Charges. During Metronet's administration, the public sector honoured its guarantee to Metronet's debt providers, paying 95 per cent of Metronet's debt obligations. The public sector then took full control and ownership of Metronet's assets.

20 In preparing our estimate of the loss borne by the taxpayer, we needed to calculate a value for Metronet's capital works and net off revenue from payments of the Infrastructure Service Charges that was available to Metronet to fund part of its capital investment programme. For each of the five identified capital works expenditure categories (Rolling Stock, Signals, Stations, Track and Civils), we obtained, from the Arbiter's report into capital and operational expenditure, upper and lower estimates of the costs that an efficient company would have incurred. In the case of the foreshortened, 109-day last period, the Arbiter's estimates covered a full six-month period. We, therefore, apportioned the Arbiter's estimates on a pro-rata basis.

21 From these estimates of the costs of efficient execution of the works, we deducted, on a period-by-period basis, the revenue left over after meeting Metronet's actual operating expenditure, business overhead costs and debt financing costs. By assigning this portion of the revenue to investment in efficient capital works, its use did not incur any loss to the taxpayer. After making the deductions, we inflated the differences to July 2007 prices using the Office of National Statistics' retail prices index, CHMK.

22 We included depreciation to account for wear and tear, diminishing the value of the capital works (funded by non-revenue sources) for the time between when the works were put into operation and the date of Metronet's administration. With the exception of investments in station upgrades, we applied straight line depreciation over 30 years, starting one year after expenditure on the relevant capital works. We treated all capital works on stations as being in the course of construction and therefore did not subject this expenditure to depreciation.

23 In recognition of the fact that the rail passenger had had the benefit of Metronet's capital investment from new, we assigned a value to this benefit equal to the amount of depreciation. After allowing for this depreciation neutralising benefit, we were left with estimated upper and lower bounds for the cost of efficiently executed works funded from non-revenue sources, i.e. paid for by cash from Metronet and its lenders. We considered the transfer of these non-revenue funded works to the public sector was in exchange for London Underground honouring the guarantee to repay 95 per cent of Metronet's debt obligations. We have estimated that the value of these works was between £1,470 million and £1,590 million **(Figure 17)**.

17 Efficient range of capital expenditure paid for from non-revenue sources of funding ranged between £1,470 million and £1,590 million

Metronet BCV	Estimate of the lower range of cost that an efficient company should have incurred (2007 prices) (£m)	Estimate of the upper range of cost that an efficient company should have incurred (2007 prices) (£m)
Fleet Capital Expenditure	253	247
Signals' Capital Expenditure	220	198
Stations' Capital Expenditure[4]	347	456
Track Capital Expenditure	239	228
Civils Capital Expenditure	111	109
Total cost of efficient capital expenditure (2007 prices, £m)	1,169	1,238
Capital expenditure funded from revenue sources	(334)	(334)
Total cost of efficient capital expenditure after deducting expenditure funded from revenue sources (2007 prices, £m)	835	904
Metronet SSL		
Fleet Capital Expenditure	258	252
Signals' Capital Expenditure	295	267
Stations' Capital Expenditure[4]	247	338
Track Capital Expenditure	105	100
Civils Capital Expenditure	284	280
Total cost of efficient capital expenditure (2007 prices, £m)	1,189	1,237
Capital expenditure funded the revenue sources	(550)	(550)
Total cost of efficient capital expenditure after deducting expenditure funded from revenue sources (2007 prices, £m)	639	688
Overall total value of Metronet's capital expenditure funded from non-revenue sources and transferred to London Underground in exchange for paying off 95 per cent of Metronet's debt obligations (2007 prices, £ million)	1,474	1,592

Source: National Audit Office analysis

NOTES

1 Estimates for Metronet BCV are based on work commissioned by the Arbiter. To calculate the range for Metronet SSL, we have assumed the same efficiency levels.

2 Depreciation was offset by a benefit to passengers of using Metronet's capital works from new.

3 All expenditure figures have been rounded to the nearest £1 million and as a consequence some of the totals corrected for rounding errors.

4 The two columns represent alternative strategies for delivering an economic and efficient cost over the time period. On stations related expenditure, the right hand column represents a faster mobilisation with more evenly spread earlier spending compared to the left hand column which defers some station spending to a later date alongside slightly higher spending in other areas.

The payment made to settle Metronet's debt obligations

24 When Metronet entered administration, the public sector effectively received Metronet's investment in the Tube but had to pay off 95 per cent of Metronet's outstanding debt obligations. These obligations included not only outstanding principal, but also accrued interest, indexation of index-linked bonds and costs associated with termination of financing agreements that the lenders had incurred **(Figure 18)**. The accrued interest and the indexation of the index-linked bonds were incurred in the normal course of Metronet's business and were, in our opinion, neither losses nor amounts that should be used to offset the value of the transferred capital works. We, therefore, did not include these amounts in our calculations of the taxpayer's loss.

25 Offsetting the value of the non-revenue funded capital works transferred to the taxpayer are, therefore, the repaid portion of the debt principal and 95 per cent of the costs of terminating Metronet's financing agreements. Taking the repayment of the principal first, we have assumed that Metronet used its debt to reimburse its bid costs, to pay one-off debt arrangement fees and to fund its capital expenditure programme **(Figure 19)**.

26 The debt used to reimburse bid costs and pay one-off debt arrangement fees, delivered benefits in terms of secured private sector investment and risk taking over four years and four months. In the case of reimbursed bid costs, we have assumed that in 2003, when the contracts were let, the amount reimbursed equalled the present value of the future benefits over the 30-year duration of the contracts, discounted at Government's discount rate of 3.5 per cent. We assumed that the annual value of the benefits, over the life of the contract, was constant in real terms and calculated that it was approximately £6 million (2003 prices). Converting the benefits received between 2003 and 2007 to July 2007 prices and summing them together gives a total of £30 million. On the basis that the taxpayer effectively paid £111 million to settle 95 per cent of the debt used to fund repayment of Metronet's bid costs, and after netting off for the benefits, we calculated the taxpayer's associated loss was £81 million.

18 Metronet's debt obligations and a breakdown of London Underground's settlement

Debt category	Amount (2007 £m)
Debt including principal, accrued interest, indexation of index-linked bonds and breakage costs	2,018
Credit balances in Metronet's accounts	(179)
Metronet's outstanding debt obligations	1,839
London Underground's settlement of Metronet's debt obligations (at 95 per cent of outstanding obligations) comprising:	1,747
Accrued interest	37
Indexation of index-linked bonds	53
Costs of terminating financing agreements	253
Principal	1,404

Source: National Audit Office analysis

19 Metronet's debt principal and an assumed breakdown of its uses

	Metronet's debt obligations	
	Full Amount (£m)	Settlement (95%) (£m)
Drawn down debt	1,657	
Credit balances in Metronet's accounts	(179)	
Expended debt	1,478	1,404
Comprising:		
Reimbursement of bid costs	117	111
One-off debt arrangement fees	99	94
Funding capital works	1,262	1,199

Source: National Audit Office analysis

27 We applied a similar logic to Metronet's one-off payments for debt arrangement fees, but discounted the benefits over the average loan life of the debt, which we assumed to be 20 years, rather than the contract duration. We therefore estimated that the value received between 2003 and 2007 was £32 million. On the basis that the taxpayer effectively paid £94 million to settle 95 per cent of the debt used to fund Metronet's one-off debt arrangement fees, and after netting off for benefits, we calculated the taxpayer's associated loss was £62 million.

28 We have treated the reimbursement of 95 per cent of costs attributed to the breakage of Metronet's financing arrangements ("breakage costs") as a £253 million loss to the taxpayer. Therefore, the amount of London Underground's settlement of Metronet's debt obligations that contributes to the taxpayer's loss net of benefits is £1,595 million (£1,199 million + £81 million + £62 million + £253 million).

29 DfT believes that some of the £253 million of breakage costs incurred may be offset by improvements in conditions for long term borrowing that lower the cost of funds to the public sector.

Other costs and losses borne by the taxpayer

30 The final component of our estimate of the taxpayer's loss comprises:

- The costs of Metronet's administration – £40 million; and
- The value of London Underground's investment in establishing the Metronet PPP contracts, which was lost when Metronet entered administration.

31 We have calculated the latter loss in a manner similar to our calculations of the benefits associated with the reimbursement of Metronet's bid costs and the payment of one-off debt arrangement fees. In our report, *London Underground PPP: Were they good deals?* (HC 645, Session 2003-2004), we identified that London Underground had spent approximately £170 million (1999 prices) establishing the three companies and the related PPP contracts. This investment is equivalent to £188 million in 2003 prices when inflated using the Office for National Statistics' Retail Prices' Index CHMK.

32 We assumed that two-thirds of this investment was attributed to establishing the two Metronet companies (£126 million). We assumed also that the 2003 present value of the derived benefits equalled the cost of the investment.

33 We produced a worst case estimate for the loss of value of this investment and a best case. The former was based on the premise that London Underground will abandon the PPP structure for the Metronet works. The best case is based on the premise that London Underground will retain the PPP structure. In the best case, we have assumed that, with the exception of the work conducted by London Underground's PPP procurement advisers Freshfields and PricewaterhouseCoopers, London Underground's investment in the PPP project prior to the selection of preferred bidders has not been lost (£68 million in 2003 prices). Therefore, the investment in the Metronet companies that is subject to loss is £58 million.

34 We have assumed that the value of the benefits associated with London Underground's investment in the Metronet companies was constant in real terms. In the best case, London Underground continues to receive the benefits associated with setting up the companies, so we were interested in how the value of the benefits associated only with the procurement of Metronet offsets the £58 million loss in the investment. We calculated that the annual value of these benefits was approximately £3 million (2003 prices), which over the 4.3 years of Metronet's operation equates to just over £13 million (2003 prices). Therefore in the best case, the net loss of value in the investment is approximately £45 million (2003 prices), or £50 million (2007 prices).

35 Using a similar approach to calculate the net loss associated with the worst case, we found that the annual value of the benefits relating to the lost investment was nearly £7 million (2003 prices). We calculated that the net loss in the worst case was approximately £100 million (2003 prices) or nearly £110 million (2007 prices).

36 The range for the taxpayer's loss associated with the issues that we have classed as "other losses" is between £90 million and £150 million.

Total loss borne by the taxpayer

37 In summary and after rounding our figures, our estimated range for the loss to the taxpayer stemming from the events that led to Metronet's administration and associated other direct costs comprises the amounts set out in Figure 20 below.

20 Total loss to the taxpayer

	Best case (£m)	Worst case (£m)
The loss associated with Metronet's inefficiencies in conducting its operational and maintenance activities	(30)	(40)
The loss associated with Metronet's inefficiencies in conducting its business overhead activities	(50)	(100)
The loss associated with the greater rate with which Metronet used available debt relative to the expected delivery of completed works	–	–
The value of Metronet's capital works after netting off the taxpayer's payments for these works through London Underground's payment of Metronet's Infrastructure Service Charges	1,590	1,470
The payment made to settle Metronet's debt obligations net of calculated benefits	(1,600)	(1,600)
Other losses borne by the taxpayer	(90)	(150)
Total[1]	**(170)**	**(410)**

Source: National Audit Office analysis

NOTE

1 Rounding has resulted in the totals differing slightly from the sum of the documented values of the constituents.

38 The public sector paid approximately £4,810 million (2007 prices) for Metronet related services and investments for the 4.3-year period of Metronet's operations (approximately £3,060 million in Infrastructure Service Charges and £1,750 million settling Metronet's debt obligations). In exchange the taxpayer received day to day services and Metronet's investment in infrastructure. Additional costs from Metronet's administration and a proportion of the costs that London Underground incurred procuring the Metronet PPP contracts increase the total costs incurred to the range £5,040 million to £5,100 million. We estimate, overall, that the taxpayer incurred a loss between £170 million and £410 million (2007 prices).

39 In comparison, and before adjustment for any profits made as suppliers, the private sector's lost investment in 2007 prices was £452 million (five per cent of Metronet's debt obligations [£92 million] and £360 million equity in Metronet).

APPENDIX THREE

Cost to shareholders

1 Metronet's shareholders' equity investment should have ensured that they would monitor risk closely to protect their investment as well as their reputations. Metronet's shareholders did not, however, have a significant amount of equity at risk in comparison to the size of the PPP contracts. This section calculates their loss from the failure of Metronet in July 2007 and compares this to the value of invoiced work they had received from Metronet to that point. This is used to estimate the gross margin shareholders would have had to have made from their invoiced work in order to break even.

2 The shareholders all invested £30 million equity and a further £40 million in Metronet's subordinated debt, and lost these amounts when Metronet went into administration. The four shareholders who formed Trans4m, the company they set up to carry out stations and civil engineering contracts, made further losses from contractual penalty payments. The amounts shown in **Figure 21** are estimates because the finalised Trans4m accounts were not available at the time of publication.

3 Under the tied supply chain, shareholders sold goods and services to Metronet worth a value of almost £2 billion up to March 2007 **(See Figure 22 overleaf)**. The profit margins the five shareholders made on these sales are unknown. **Figure 23 overleaf** therefore shows an estimate of the gross margin the five shareholders would have had to make in order to break even. In order to break even by July 2007, given the losses they faced, we estimate that the shareholders would have had to make gross margins ranging between 15 per cent and 82 per cent up until administration (see Figure 23).

21 Shareholder losses experienced by July 2007 (in 2007 prices)

	Equity loss (£m)	Debt loss (£m)	Trans4m or other contractual penalty or liability (£m)	Total loss (£m)
Balfour Beatty plc	32	40	31	102
Elecricite de France	32	40	18	89
RWE AG (Thames Water)	32	40	12	83
WS Atkins plc	32	40	25	97
Bombardier	32	40	95	167
Totals	**160**	**200**	**180**	**540**

Source: National Audit Office analysis

NOTES

1 Trans4m contractual penalty shares taken as Balfour Beatty – 48 per cent; EDF – 21 per cent; RWE – 10 per cent; WS Atkins – 21 per cent (WS Atkins percentage applied before an additional £7 million payment according to WS Atkins records). Bombardier settled a contractual liability with a third party for £95 million.

2 Figures rounded to the nearest £1 million.

22 Value of invoices from each shareholder and its affiliated companies up to March 2007 (in 2007 prices)

	Metronet BCV (£m)	Metronet SSL (£m)	Trans4m (£m)	Total (£m)
Balfour Beatty plc	192	164	316	675
Elecricite de France (EDF)	9	7	146	162
RWE AG (Thames Water)	3	6	92	101
WS Atkins plc	16	7	266	291
Bombardier	232	378	N/A	610

Source: National Audit Office analysis

NOTES

1 All information up to 2006 from statutory accounts supplemented by information for 2007 from Metronet (BCV) and Bombardier (SSL) invoice records.

2 All figures exclude VAT.

3 All figures rounded to the nearest £1 million and as a consequence some of the totals correct for rounding errors.

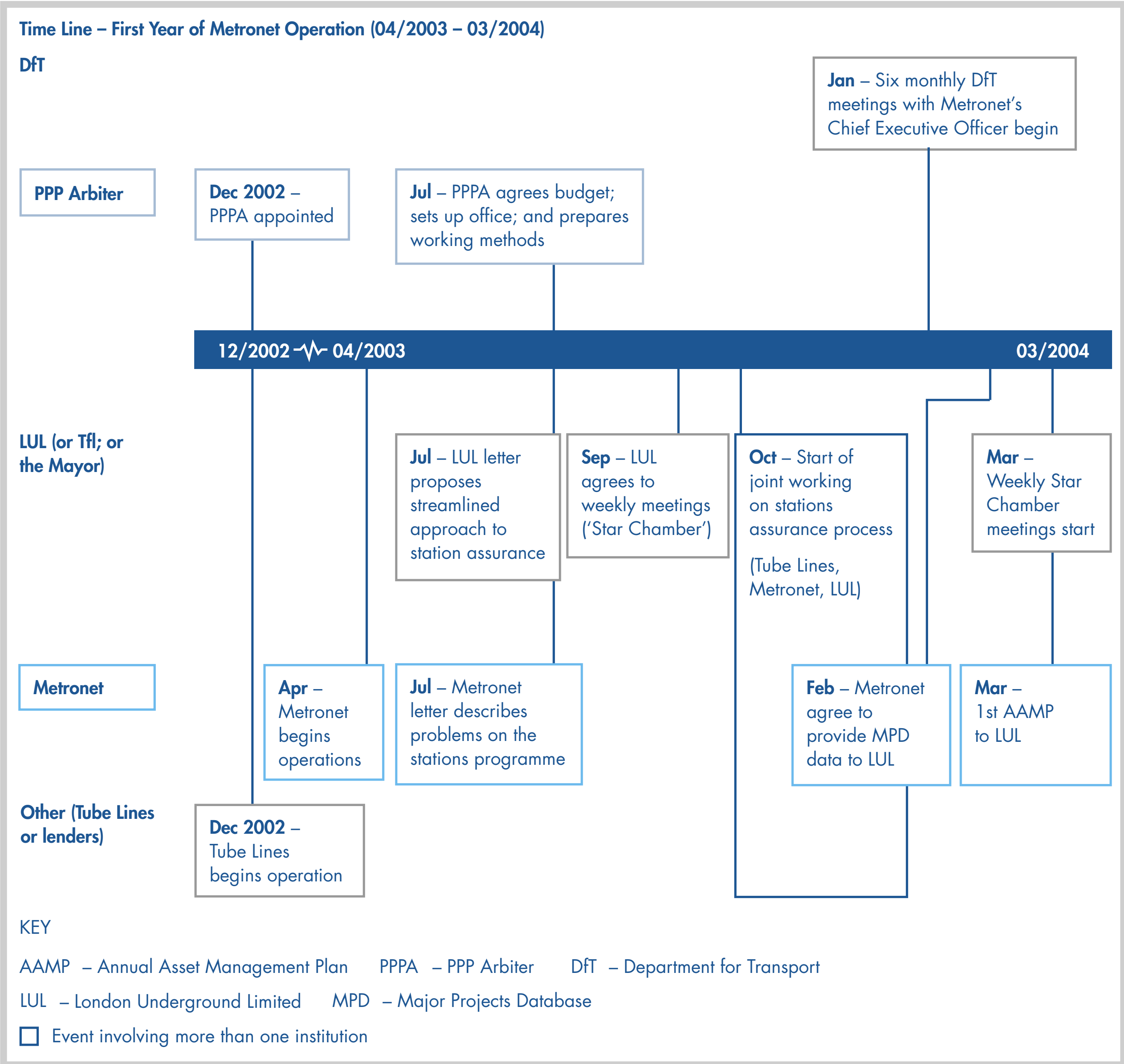
23 Gross margins on sales required by shareholders to break even on work done to March 2007 and recover their equity investment in Metronet

	%
Balfour Beatty plc	15
Elecricite de France (EDF)	55
RWE AG (Thames Water)	82
WS Atkins PLC	33
Bombardier	27

Source: National Audit Office analysis

APPENDIX FOUR

Time Line



Time Line – Second Year of Metronet Operation (04/2004 – 03/2005)

04/2004 — 03/2005

DfT

Apr – LUL tells DfT detailed planning is needed to avoid problems identified from past LUL projects (Jubilee and Central lines)

Sep – LUL advises DfT that Metronet likely to miss Dec 2004 MPD completion target and stations work is delayed

23 Feb – Departmental briefing notes that all PPPs are "slightly behind on stations"… and it is "not clear that Metronet can catch up"

PPP Arbiter

Jun – The PPPA practice run for the first annual review does not take place

LUL (or Tfl; or the Mayor)

May/Jun – LUL does not accept Tube Lines or Metronet's first AAMPS

Initial draft of the AD Little report

Jul/Aug – Stations Projects Process brochure published with Tube Lines, Metronet and LUL logos

Sep/Oct – AD Little Phase 2 Report on risk based Technical Assurance

8 Feb – *FT* reports that the Mayor will declare PPPs unworkable if not back on schedule by year end

21 Feb – LUL write to Metronet stating that stations project process is not working

Apr – LUL hosts assurance communications event and commissions AD Little technical assurance review

Metronet

July – Data for MPD still running late

Sep/Oct – LUL approve 2004-05 AAMP with request for improved cost data

Mar – Metronet completes none of eight stations due, fails to implement AD Little report, and continues to deliver MPD data late

Other (Tube Lines or lenders)

Jun – Tube Lines AAMP to LUL

Tube Lines claim stations work requires 50 signatures (DfT also told)

Mar – Tube Lines has completed seven out of eight stations. They benefit from Arthur D Little report on sign-off procedures, but are late to supply MPD data

KEY

AAMP – Annual Asset Management Plan
DfT – Department for Transport
ER – Extraordinary Review
LUL – London Underground Limited
MPD – Major Projects Database
S&P – Standard & Poors

☐ Event involving more than one institution

Time Line – Third Year of Metronet Operation (04/2005 – 03/2006)

Apr – Arbiter tells DfT about waiver of his review because Metronet information systems are not ready (4 May tells DfT that lenders have agreed)

2 Aug – DfT brief shows: Metronet believes it can deliver 24 out of 35 stations by March 2006. Also notes that "a major problem has been agreement with LUL over scoping and lengthy procedures required to approve and progress the works"

Dec – Brief for LUL meeting records "no appetite from PPP companies to reopen negotiations". No reference to S&P's lowering Metronet's credit rating

Apr – The practice run replaces annual review

May – PPPA Business Plan aims to perform work that will give early warning to an ER

Oct/Nov – Metronet submissions to the PPPA privately show overspending running into tens of millions

04/2005 — **03/2006**

Apr – LUL agrees to approach Metronet's Lenders to postpone the Arbiter's first formal annual review until 2006

Jul – LUL makes public the view that Metronet cannot catch up the delay on its stations programme

Oct/Nov – LUL issues engineering regulatory notices on station assurance to Metronet, BCV and SSL

Mar – LUL commissions PwC to undertake an audit of Metronet

Apr – Metronet approaches lenders to postpone 2005 annual review. John Weight, CEO, resigns

May – New CEO Andrew Lezala appointed with Keith Clarke (WS Atkins) as Chair.

Metronet's information systems are not ready for the PPPA's first annual review

Aug – Metronet admits to LUL that station project performance has fallen below acceptable levels

Feb – Metronet tells LUL it projects £1.2bn overspend across both PPPs

Mar – Only 11 out of 35 stations delivered

Oct/Nov – Metronet Lenders consider a critical report from their Technical Adviser

Dec – S&P lowers the Metronet debt credit rating from BBB+ to BBB (outlook negative)

Time Line – Fourth Year of Metronet Operation (04/2006 – 03/2007)

DfT

May – DfT told that TfL believes bid cost assumptions were "alarmingly below reality". Treasury informs TfL that DfT would handle funding questions but no additional funds should be provided

Sep – DfT and Arbiter seek legal advice on exposure from a potential ER. DfT is advised that "spending deemed necessary to deliver agreed first period output/outcomes was eligible expenditure under an ER, regardless of whether or not that cost had been included in the bid or not."

7 Dec – DfT notes part of extra costs will be economic and efficient and "could fall to DfT as we have effectively underwritten to pay any unexpected costs."

PPP Arbiter

Jun – PPPA receives submissions from Metronet and LUL for his 2006 Annual Review

Nov – Metronet seeks Guidance on good industry practice

Dec – Metronet Annual Report 2006 forecasts cost overruns of £750m – Metronet found to be uneconomic and inefficient

04/2006 — **03/2007**

LUL (of TfL; the Mayor)

Jun – LUL issues a CAN requiring Metronet to complete a series of already delayed projects by new dates

PwC publish their forensic audit report (Project Perm)

Jul – LUL publishes information management case study finding that Metronet information continues to be insufficient

Dec – LUL calls for Metronet's shareholders to raise their game

Feb – London Mayor urges Metronet to call for an ER

Metronet

May – Metronet requests 2006 Annual Review by the PPP Arbiter

Jun – Metronet argues that the CAN was invalid under the terms of its contract, and starts adjudication proceedings against LUL, which Metronet later won

Jul – Metronet initiates organisation change to implement AD Little approach

Nov – Call for an independent Chair

Keith Clarke steps down

23 Feb – Metronet awards six 3rd party contracts worth £150m in total

Other (Tube Lines or lenders)

Oct 2006 to Mar 2007 – Metronet lenders continue to permit loan drawings of £322m

KEY

CAN – Corrective Action Notice

DfT – Department for Transport

ER – Extraordinary Review

LUL – London Underground Limited

☐ Event involving more than one institution

Time Line – Fifth Year of Metronet Operation (04/2007 – 03/2008) and asset transfer in May 2008

Oct – DfT supports interim funding and agrees to provide £1.7bn towards meeting LUL's payment obligations to the lenders

Nov – DfT sets up a Steering Committee to decide on a permanent solution for the Tube modernisation

2 Feb – DfT obtains EU State Aid clearance for rescue loans

29 Jun – Application for an ER (BCV only)

Jul – Arbiter Draft Direction awards £121m interim sum for Metronet BCV

Oct – Arbiter "Initial Thoughts" suggest BCV award between £140m to £470m (SSL extra costs £1.1bn with £230m – £600m allowable)

Nov – Publication of Draft Directions due on 12/11/2007 but process halted

04/2007

03/2008

May – S&P downgrades Metronet credit rating to BBB-

29 Jun – LUL letter states that LUL will not guarantee new debt

Jun – Metronet projects extra spend of £992m on BCV alone and claim £551m interim sum

Jun – Metronet lenders refuse further loan drawdown

Jul – TfL provides interim funding, with no budget to cover the ER application

3 Jul – Metronet agrees financial consequences for stations delay

18 Jul – Metronet BCV and SSL enter administration

3 Jul – S&P again downgrades Metronet credit rating from BBB- to BB+ (non investment grade)

Oct – TfL announces formal bid to take control of Metronet

31 Oct – Administrator withdraws ER application

23 Nov – S&P again downgrades Metronet credit rating from BB+ to CCC

5 Feb – Put Option means LUL have to meet payment obligations of £1.747bn

May – Metronet BCV and SSL assets transfer to new TfL subsidiaries

APPENDIX FIVE

Station case studies

1 The increased costs of station works contributed the largest part of Metronet's overspend. By March 2007, Metronet was projecting that the station programme would cost £1.1 billion more than it had originally bid. Metronet was supposed to deliver 132 station modernisations, refurbishments and enhanced refurbishments by end March 2010. This included eight stations by end March 2005, none of which were delivered on time, and 35 stations by end March 2006 only 11 of which were delivered on time. To understand the evolution and causes of delay and extra costs, we have reviewed the work that was carried out on several stations, identifying factors that appear to have led to additional spending. These include Tube Lines stations as the comparator to Metronet. The stations looked at are set out in **Figure 24**.

A. Contract

2 The PPP Contract included some clear and well understood obligations. The major contract management responsibilities that the parties needed to assume were explicitly stated, and deliverables under the contract were clearly established.

3 Ambiguity in parts of the Contract, however, led to disagreements between the contractual parties. Appendices 14 and 15 of Schedule 2.1 of the PPP Contract detailed the nature and extent of the works to be carried out – these differed for a station refurbishment, enhanced refurbishment and modernisation. However, ambiguous specifications, including phrases such as "replace/renew", meant that there was room for differing interpretations of what, for example, a refurbishment would entail. As a result, for works relating to the March 2005 and March 2006 station deliveries, scope had to be agreed for each station on an individual basis.

24 Station case studies

Station Project	Company	Due	Initial Target Cost[1]	Update Position[2]
Bow Road Station Modernisation	Metronet SSL	March 2005	£3.6 million	£11.2 million
Shepherds Bush Station Refurbishment	Metronet SSL	March 2006	£2 million	£4 million
Northfields Station Enhanced Refurbishment	Tube Lines	January 2005	N/A	N/A
Stockwell Station Enhanced Refurbishment	Tube Lines	January 2006	N/A	N/A
West Ruislip Station Refurbishment	Metronet BCV	March 2005	£1.7 million	£4 million
Epping Station Modernisation	Metronet BCV	March 2006	£2.9 million	£5.9 million

Source: London Underground Limited

NOTES

1 Initial target cost data taken from PricewaterhouseCoopers *Regression Analysis for Station Costing* October 2007.

2 Updated costs are based on Metronet's 2006-07 Annual Asset Management Plan and total £25.1 million. London Underground only recognises £16.7 million as additional spending that a competent company would have incurred.

4 The minimal specification also led to diverging expectations between London Underground and the companies. While Metronet and Tube Lines tended to favour a less costly interpretation of the Contract, London Underground would often apply a more extensive interpretation. As a result, every station we examined was subject to extended scope disagreements, which in some cases was a key factor in delaying the progress of works.

Stockwell Station Enhanced Refurbishment – Tube Lines

5 In the case of the Stockwell Station Enhanced Refurbishment, London Underground and Tube Lines disagreed on 26 areas where Tube Lines originally agreed to carry out work, but later decided against doing so. For example:

- Tube Lines thought it sufficient to replace or patch repair 10 per cent of the wall tiling, while London Underground requested that Tube Lines perform a full tile replacement.
- Tube Lines planned to put new lamps in the existing station lighting, while London Underground requested full lighting replacement.
- Tube Lines proposed to patch repair damaged floor tiles, while London Underground expected replacement of damaged tiles.

6 We found that these types of disputes occurred repeatedly during work on the early stations, delaying progress. London Underground engaged both Metronet and Tube Lines in an attempt to address these problems. In July 2005 the parties agreed a set of principles to help resolve scoping problems. This resolved many problems on Tube Lines' stations work, but was not successful in solving disputes on Metronet stations.

Compliance with Standards: Interpretation of Clause 9 of the PPP Contract

7 Under their respective PPP Contracts, Metronet and Tube Lines were obliged to comply with all of London Underground's 'Category 1' Standards. Clause 9.5 of the Service Contract detailed that for "any works of refurbishment, renewal or replacement to any Asset, [Companies] shall carry out such works in accordance with [London Underground] standards and, following any such works, the Asset shall, to the extent of such works, comply with [London Underground] standards".

8 In practice, Metronet and Tube Lines' interpretations of Standard E 1008 Category 1, differed from London Underground's, particularly when London Underground revised the wording of the standard after the PPP commercial agreements were substantially agreed in May 2002. While Metronet and Tube Lines agreed that standards must be followed in performing all their work, London Underground required they make all existing non-compliant items, that fell within the scope of their work, comply with the standard.

9 The compliance of assets with the standards was assessed in 'non-compliance reports'. Metronet's failure to produce non-compliance reports early enough to satisfy London Underground led to a significant amount of delay in the design phase of station projects. On several occasions, Metronet failed to comply with good industry practice by submitting non-compliance reports at the same time as producing detailed designs. As a result, London Underground would not sign off key documentation, and regularly made retrospective demands for various non-compliant assets to be included in the scope of stations works. This led to duplication of design work and the disruption of construction work, although London Underground told us that on occasion it allowed stations to go ahead without assets achieving compliance.

10 In a letter sent to London Underground in June 2004, Metronet explained that it had not prepared its original bid on the basis of London Underground's interpretation of the revised Standard E 1008 and that this would have significant cost implications across its SSL station programme. Metronet estimated that it would cost an extra £26 million to assess all station assets for compliance with London Underground standards.

West Ruislip Station Refurbishment – Metronet BCV

11 On the West Ruislip refurbishment, Metronet carried out detailed design work prior to the completion of its survey work. This led to a number of problems. Metronet installed rubber flooring in the ticket hall that later had to be replaced. There was also disagreement over the extent to which station assets had to be compliant with the standards. Metronet planned to comply with standards for all new lighting installed. London Underground, however, required Metronet to make compliant all of the stations lighting, even elements which Metronet considered fit for purpose and had not planned to work on. London Underground requested this even though West Ruislip was a refurbishment and not a full station modernisation.

B. London Underground's Project Management

London Underground's structure

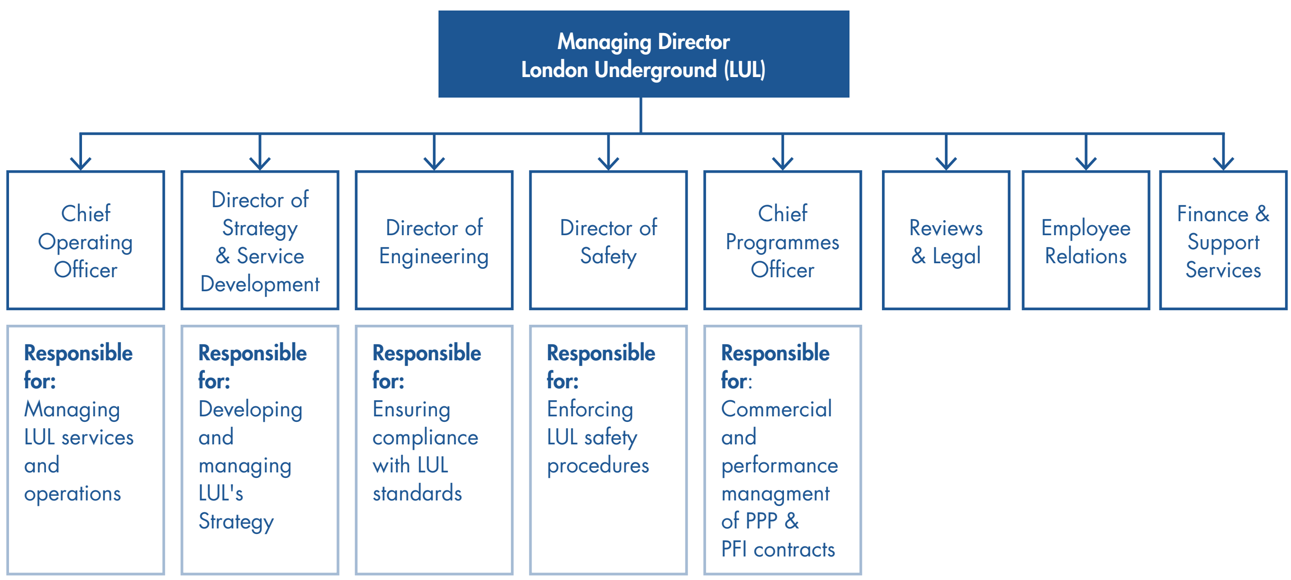
12 London Underground had a senior owner for the PPP contract, the Chief Programmes Officer (CPO), as well as a Project Director for Metronet BCV, SSL and Tube Lines. Both Tube Lines and Metronet found that London Underground's horizontal organisation, with several overlapping authorities, led to a number of different approvals being required on the scope of stations' work. While London Underground's CPO was in principle responsible for scope issues, Metronet and Tube Lines found that other London Underground representatives also became involved in the process of station scope development. Metronet and Tube Lines explained that, once scope had been agreed with CPO, discussions on scope continued with the Engineering Directorate (ED), which was responsible for ensuring compliance with London Underground standards. Metronet and Tube Lines also had to reach agreement with Strategy & Service Development (S&SD) and Station Operators before getting site access **(see Figure 25)**.

13 The high number of London Underground contact points meant that Metronet and Tube Lines struggled to get the scope of their work agreed. In total, Tube Lines identified 90 individuals within London Underground who held authority in the scope approval process – although Tube Lines and London Underground worked together and gradually reduced this number to 18 after work on the first set of stations was completed.

14 A letter from Metronet to London Underground in February 2004 showed that Metronet was keen to tackle this problem. It explained that the "process for agreeing scope is not well established and there appears to be no common understanding by all London Underground parties regarding which submission document should be provided for scope agreement. This problem is accentuated by the apparent uncertainty in London Underground as to who has responsibility for agreeing scope."

15 London Underground responded by developing and publishing a Project Stations Process in October 2004 jointly with Metronet and Tube Lines. Tube Lines successfully allowed sufficient extra time in its work timetables to tackle these difficulties. Metronet also allowed extra time, but failed to deliver within the extended period.

25 Structure of London Underground Limited



Source: London Underground Limited

16 London Underground has disputed that the structure of its organisation increased the burdens on companies at the planning and scoping stage. It contends that any project with the complexity of the PPP contract station works would involve a number of contact points. It says London Underground engineers needed to have direct contact with engineers from the companies involved in addition to the formal contractual relations between Metronet contract managers and CPO.

Shepherds Bush Station Enhanced Refurbishment – Metronet SSL

17 Metronet submitted its proposed scope to CPO before completing the non-compliance report. As a result, ED and S&SD added a significant number of items to the scope two months after the CPO had agreed the incomplete scope Metronet had submitted. This additional scope included overlooked items such as:

- a vision panel for the ticket issuing windows;
- a digital clock for the ticket office;
- additional Help Points and induction loops for existing Help Points;
- induction loops for the ticket office windows;
- arm rests for seat rows;
- the relocation of telephones;
- additional barriers and repainting of existing barriers; and
- the renewal of the TfL signage scheme.

Late revisions to stations requirements

18 London Underground was constrained by the lack of coherent information provided by Metronet on individual projects. Both ex-Metronet employees and Tube Lines told us that London Underground's inflexible interpretation of the PPP contract's requirements did not give sufficient consideration to cost or delivery of the work. They also told us that late requests by London Underground led to late revision of station access plans and late changes to arrangements over suppliers, materials and design.

19 London Underground has, however, provided us with examples where it made pragmatic commercial decisions to aid Metronet in the completion of its works. These include changes to reduce the scope London Underground considered necessary to speed up the delivery of Metronet's work.

Northfields Station Enhanced Refurbishment – Tube Lines

20 On Northfields station, London Underground changed its requirements late in the construction phase. In October 2004, three months before completion of the work, London Underground requested the revision of plans for station operations room windows and doors. Tube Lines estimates these changes added 35 to 50 days to the construction time, because a new manufacturer had to be contracted to provide the revision. London Underground also suggested that ATMs be installed in the station. According to Tube Lines, this request caused "turmoil with respect to the ongoing construction works", because of necessary revisions of design and construction plans. Both revisions were made in accordance with the PPP contract and Tube Lines still managed to deliver on time.

Understanding affordability

21 Both ex-Metronet employees and Tube Lines told us that London Underground did not make considerations for "principles of affordability" in its requirements, in particular with regards to scope demands. In July 2004 Metronet wrote to London Underground to say that it disagreed with London Underground's "apparent expectation of minimal or no retention of assets", even where Metronet believed replacement or renewal was unnecessary.

Bow Road Station Modernisation – Metronet SSL

22 During the Bow Road station modernisation London Underground agreed that a number of large existing assets should not be replaced. However, a number of other assets which were considered by Metronet to be "fit for purpose and not expected to require significant maintenance before the next scheduled station refurbishment" were replaced. These assets included all electrical equipment and all mechanical assets, regardless of their condition.

23 London Underground did not generally accept responsibility for additional costs arising from increases in scope compared to the original bid. London Underground complained that Metronet failed to generate evidence of increased costs. It refused to accept Tube Lines' proposal to include an appendix in each work package plan for each station that would have tracked the cost implications of London Underground requested scope additions.

C. Metronet and Tube Lines' Project Management

24 Metronet and Tube Lines chose different approaches to addressing problems with scope agreements, standards issues and London Underground's project management.

25 In general terms, Metronet chose a more accommodating approach because it expected that its shareholder-dominated supply chain would be paid to do the extra work requested. Furthermore, Metronet's supply chain did not appear to have sufficient incentive to improve cost control, despite the existence of a contractual incentive mechanism. In contrast, Tube Lines took a strong stand to enforce its interpretation of the contract. It also managed to improve the efficiency of its supply chain over time.

Tube Lines' understanding of the Contract

26 From the outset, Tube Lines followed a consistent and commercially forceful approach, successfully keeping scope increases to a minimum. Where London Underground insisted, Tube Lines claimed "delay events" attributable to London Underground. Tube Lines consistently tracked the aggregate cost increases associated with increases in scope and notified London Underground in letters submitted concurrently with Work Project Plans. Metronet failed to extract information on cost increases from its supply chain.

Project Management approach

27 Metronet and Tube Lines took different approaches to project management. They also encountered substantial problems over scope and compliance with London Underground standards. Tube Lines was, however, quick to establish the potential impact of the problems and responded by completely halting most of its stations work within six months of the beginning of the contract, to negotiate a consistent and comprehensive framework with London Underground, which would include all stations. When Metronet encountered the same problems it, by contrast, continued to work and negotiate with London Underground on a station by station basis.

28 Tube Lines reduced the complexity of its own organisation by cutting out contractors and project managing the stations work itself. This simplified the processes for assurance, and those for getting station access and closures. Metronet, in contrast, had an additional level of management in Trans4m, formed from four of Metronet's five shareholders, a structure that created more interfaces with London Underground. Evidence suggests Tube Lines' approach made better use of stations closures. It appears Metronet was not able to use its scarce construction hours effectively, due to poor planning and difficulties in the coordination of contractors.

29 Tube Lines also managed to streamline the assurance and compliance process considerably by cutting out duplicate procedures. Where the original compliance process required Tube Lines to submit detailed non-compliance reports and a project assurance plan for each station, Tube Lines convinced London Underground to classify the majority of station works as "low risk works" (for instance, tiling, painting and cleaning), which Tube Lines was subsequently permitted to perform without explicit London Underground consent. Tube Lines was therefore able to move towards an approach where the majority of assurance was carried out internally.

30 Additionally, following a Tube Lines initiative, London Underground agreed to standardise the compliance and assurance process for repetitive work, thereby reducing the lengthy practice of duplicating each non-compliance report and project assurance plan. Tube Lines would, for example, no longer issue a project assurance plan for each station, but rather a project assurance plan for a set of similar stations. Metronet was not able to achieve any of these standardisation gains.

31 Tube Lines adopted a strategic approach to its relationship with London Underground, identifying key London Underground partners who understood Tube Lines' commercial pressures and were able to advocate that London Underground move towards Tube Lines position. At the same time, Tube Lines used the "Star Chamber", a forum for all London Underground representatives, to discuss the scope of each station effectively. Through strategic partnering with London Underground and use of the Star Chambers forums, Tube Lines reduced the number of contact points needed from 90 to 18. Although Metronet also participated in the Star Chamber meetings, Metronet's participation made little impact on its approach and it reduced its involvement over time.

Epping Station Modernisation – Metronet BCV, due March 2006

32 The progress of works was delayed on several occasions, because Metronet's project managers were unaware of documentation required for station access. Prior to planned station works, Metronet routinely approached London Underground informally with queries over documentation. With regards to one specific document, Metronet admitted to being completely unaware of its existence. On another occasion, the London Underground's CPO was not able to answer Metronet's request for assurance, claiming London Underground could not comment because of outstanding documents. There was also confusion between Metronet and its subcontractors on the type of equipment that needed to be used to carry out brick repairs. The Metronet Asset Engineer issued a Prohibition Regulatory Notice to its suppliers due to the unsatisfactory quality of finish.

33 London Underground and Metronet developed a station programme process to be rolled out from May 2006. This planned to cover all aspects of Metronet and London Underground's activities, including interactions around scoping.

The July 2007 agreement to amend Metronet's stations delivery programme

34 Metronet and London Underground started to negotiate a revised stations programme in April 2006 but were unable to reach agreement on 'Heads of Terms' until January 2007. The negotiation concluded on 3 July 2007 and led to a commercial settlement under which Metronet agreed to £45 million of reduction in costs/revenues for delay and timetable prolongation, in return for a revised programme for future deliveries. There were two key elements to the settlement:

i Metronet agreed to amend its reference to the Arbiter to reduce its claim for additional spending on the first 13 stations by £45 million, from £108 million to £63 million. £10 million of the £63 million claim was for economic and efficient additional spending on three BCV stations and £53 million on ten SSL stations.

ii Metronet agreed to accept liability for 90.5 per cent of the total delay to the completion of the 13 stations, which included delays associated with planning, designing and building works. In the case of a further 27 stations, in exchange for a revised completions schedule which extended the time it had to complete the stations, it accepted liability for 90.5 per cent of the delays as forecast at the date of the settlement. This meant that there would be no payment deductions for delay on those 27 stations provided the revised completion schedule was met.

35 This settlement did not affect Metronet's rights to a review by the PPP Arbiter of the costs for additional stations work that had been required by London Underground, and that Metronet believed it had supplied economically and efficiently.

APPENDIX SIX

Tied supply chains

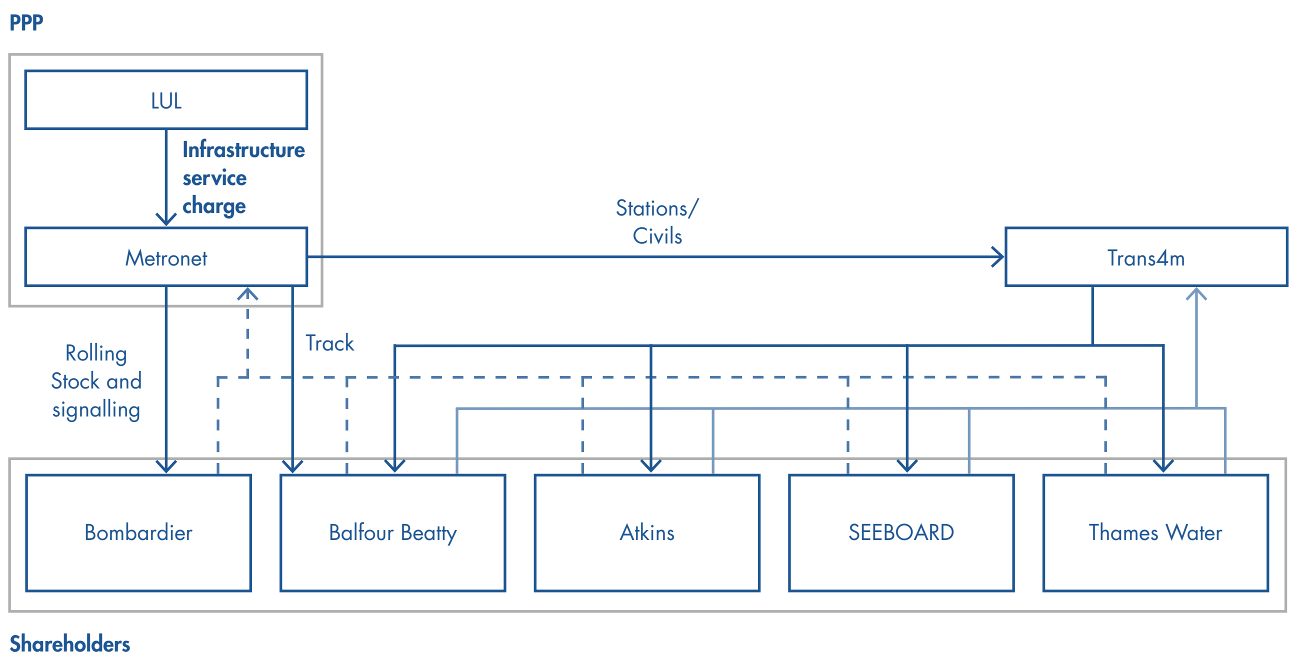
Metronet operated as a tied supply chain **(Figure 26)**. This means that its shareholders were also its main suppliers, receiving approximately 60 per cent of the volume of capital spending contracts.

As the figure shows, Metronet's capital delivery obligations were split into different areas. Bombardier had the rolling stock and signalling work, Balfour Beatty had track, and Trans4m, a consortium between four of the shareholders (excluding Bombardier), was given the stations and civils work.

The overspending and under-delivery problems that Metronet faced were heavily concentrated on three of its four main capital spending areas, with much greater problems on the Balfour Beatty and Trans4m work than on the Bombardier work. The key difference between these areas was in the contract specifications. Bombardier's contract was output-based and was specified in terms of an improvement of Journey Time Capability and an increase in capacity. This meant that Bombardier had to achieve clear milestones before receiving payment of a firm price subject to agreed indexation.

Trans4m's contract for stations, on the other hand, was input-based and Trans4m's payment was simply based on the actual costs of works undertaken. Furthermore, as detailed in Appendix 5, the contractual scope for stations work was vague and open to interpretation.

26 Metronet tied supply chain structure



Source: National Audit Office

LCR Case example

In February 1996, DfT awarded a contract to London & Continental Railways Limited (LCR) to build the Channel Tunnel Rail Link (the Link), a high speed railway between St Pancras Station in London and the Channel Tunnel. It was also awarded responsibility for running the British arm of the Eurostar international train service (Eurostar UK). The project was split into two sections as a result of negotiations between LCR and DfT for public sector funding. Union Railways (South) Ltd and Union Railways (North) Ltd are the subsidiaries of LCR acting as clients for Section One and Section Two of the project, respectively.

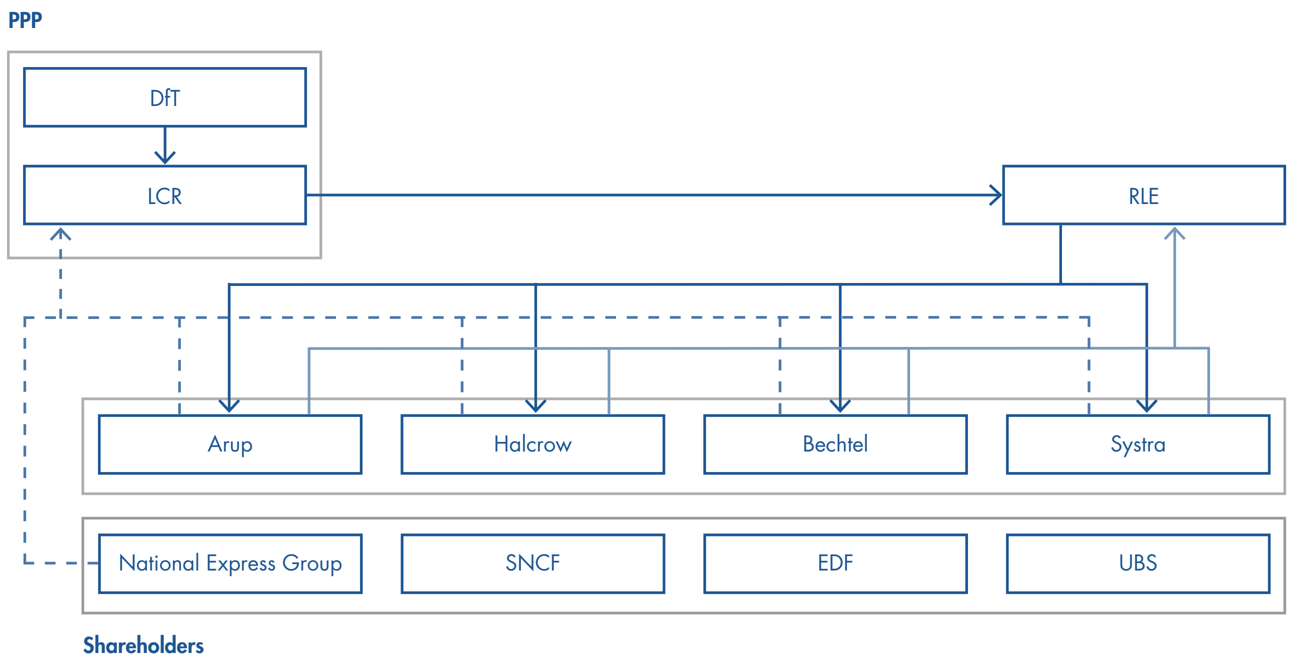
RLE is employed by Union Railways (South) Ltd and Union Railways (North) Ltd for the engineering, procurement of construction contracts and construction management of Section One and Section Two of the project, respectively. RLE is paid its actual costs plus profit and a bonus (or penalty) paid against target out-turn cost for the design and construction.

LCR's supply chain therefore had a similar structure to Metronet and its Trans4m subcontracts **(Figure 27)**. RLE, responsible for project management, is held by four of LCR's shareholders, and sub-contracts exclusively to those four companies. But contrary to the Trans4m case, this supply chain has delivered successfully. There are two key differences with the Metronet case: additional shareholders and close partnership working.

Beyond the shareholders that formed RLE to establish the tied supply chain, LCR had additional shareholders, which may have brought added discipline to RLE's delivery. In Metronet's case, all its shareholders were part of the tied supply chain.

The conduct of project delivery seems to have been one of genuine partnership between all parties. For instance, Ernst & Young identified "close interaction between RLE's and its contractors' project management teams including the use of shared offices. Around 800 staff of RLE and its contractors were co-located in offices in central London." Ernst & Young further observed "a policy of total openness" between RLE's staff and that of the contractor. Offices, databases and cost information were shared. RLE even had access to the contractor's bank account for the Project as well as the contractor's statistics on productivity, plant, number and quality of employees.[7]

27 London & Continental Railways Limited tied supply chain structure



Source: National Audit Office

7 Freshfields Bruckhaus Deringer and Ernst & Young, *Report for the Office of the PPP Arbiter, Contract Management Study – Phase One, October 2005.*

Printed in the UK for the Stationery Office Limited
on behalf of the Controller of Her Majesty's Stationery Office
6140961 06/09 7333

Design and Production by
NAO Marketing & Communications Team
DP Ref: 008752

This report has been printed on Consort Royal Silk and is produced from a combination of ECF (Elemental Chlorine Free) and TCF (Totally Chlorine Free) wood pulp that is fully recyclable and sourced from carefully managed and renewed commercial forests. The range is manufactured within a mill which is registered under the BS EN ISO 9001 accreditation, which provides the highest standard of quality assurance.

FSC
Mixed Sources
Product group from well-managed forests and other controlled sources
Cert no. TT-COC-002251
www.fsc.org
© 1996 Forest Stewardship Council

CHLORINE FREE
ECF

CHLORINE FREE
TCF

The failure of Metronet

A report by the Comptroller and Auditor General

Published by TSO (The Stationery Office) and available from:

Online
www.tsoshop.co.uk

Mail, Telephone, Fax & E-mail
TSO
PO Box 29, Norwich, NR3 1GN
Telephone orders/General enquiries: 0870 600 5522
Order through the Parliamentary Hotline
Lo-Call 0845 7 023474
Fax orders: 0870 600 5533
E-mail: customer.services@tso.co.uk
Textphone: 0870 240 3701

The Parliamentary Bookshop
12 Bridge Street, Parliament Square,
London SW1A 2JX
Telephone orders/General enquiries 020 7219 3890
Fax orders: 020 7219 3866
Email: bookshop@parliament.uk
Internet: http//www.bookshop.parliament.uk

TSO@Blackwell and other Accredited Agents

Customers can also order publications from:

TSO Ireland
16 Arthur Street, Belfast BT1 4GD
028 9023 8451 Fax 028 9023 5401

£14.35

ISBN 978-0-10-295496-8

9 780102 954968

The Stationery Office