

Metronet Long Term Structure

**Recommendations from the Joint Steering Committee to
the Mayor of London and Secretary of State for Transport**

December 2008

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Executive Summary

1. The Joint Steering Committee (JSC) on the long term structure for the former Metronet PPP contracts was established in late 2007, in the wake of the PPP Administration of the Metronet companies, to evaluate options and recommend a permanent structure to carry forward Metronet's programme for the maintenance, renewal and regeneration of London's Underground system.¹ In May 2008 the former Metronet companies were transferred to TfL where that work is now being managed for this interim period. This report sets out the JSC's recommendations for a permanent structure.
2. The JSC's objective was to identify a Permanent Structure which
 - a. provides a stable and safe operational framework for the Tube
 - b. delivers the modernisation, upgrade and maintenance of the Tube infrastructure
 - c. is affordable
 - d. delivers Value for Money for the public sector in accordance with relevant statutory duties of the Mayor and the Secretary of State and
 - e. does not compromise the continuing Tube Lines PPP contract.

The JSC believe the proposals set out below provide the framework to deliver against these objectives.

3. The Metronet programme included complete upgrades of the Victoria line by 2013, the Sub-Surface Lines (SSL) progressively to 2018, and the Bakerloo by 2020; infrastructure renewal works to improve performance and achieve a state of good repair across the network by 2025; and a programme to bring all stations up to a minimum standard.
4. The JSC undertook a structured criteria analysis using ten different criteria. However the key differentiating factors were risk and value for money, the extent of potential market interest, impacts on affordability (in terms of the differential between options), asset management and deliverability.
5. Based on this analysis the JSC concluded that a long term performance based approach (such as a PPP) would be an inappropriate solution at this time

¹ The JSC membership included representatives from Transport for London, London Underground, Department for Transport, Her Majesty's Treasury and Partnerships UK, as described more fully below.

given the difficulty in obtaining value for money for performance risk transfer on large inherited contracts, prevailing financial market conditions, and the impact of Metronet's collapse on potential market interest; but that a long term performance based approach would be viable for some elements of the work where there are no inherited contracts. In summary, the unique circumstances of Metronet require a unique solution.

6. The recommended option uses the most appropriate procurement strategy for each of the major work packages: Victoria line, sub-surface lines, Bakerloo and Central lines, and Stations.
7. The recommendation for the Victoria line is a direct procurement approach based on London Underground management of the inherited sub-contracts. Given the advanced state of the upgrade, 77% committed, this approach is the best value for money proposition at this time.
8. The largest and most complex upgrade is that started on the Sub-Surface lines.² The project is 61% committed, with an existing rolling stock contract, and a signalling contract due to be awarded by 2010. Given the timescale of the upgrade the JSC recommend a direct procurement approach for completion of the upgrade. As with the Victoria line, this offers value for money and market interest advantages over Long Term Performance Based contracts where inherited sub-contracts are involved. This recommendation would need to be reappraised should there be any change to the delivery schedule.
9. The JSC recommends that, to manage the risks of this upgrade, London Underground adopt a Delivery Partner framework in order to provide additional management resource and specialist skills, with the Delivery Partner incentivised to mitigate significant delivery risks.
10. The Bakerloo and Central line programmes are at an early stage.³ The analysis suggests that either a long term performance based contract or a direct procurement approach would be suitable for the main upgrade when it is contracted in 2013-14, but that a long term performance based contract would be inappropriate in the short term without a defined upgrade scope. The JSC therefore recommend that:
 - a. a direct procurement approach is followed while upgrade works are scoped

² The Metropolitan, Hammersmith & City, District and Circle lines together form the Sub-Surface lines (SSL).

³ This Bakerloo and Central package includes the Waterloo & City line which is operationally managed with the Central line and operates similar rolling stock. The Waterloo & City Line was upgraded in 2006.

- b. both long term performance based and direct procurement approaches are considered for the upgrade works as the scope is developed around 2011, reflecting lessons learned from the earlier upgrades
11. Given the recommendations above, renewals of track and civils assets should also be taken forward using a direct procurement approach with appropriate forms of contract.
 12. The recommendation for Stations (including lifts and escalators) is a direct procurement strategy involving design and build or construction management contracts based on a detailed client specification. This would offer a degree of risk transfer while retaining London Underground's budgetary control, allowing flexibility for investment decisions to be made in the context of the programme as a whole. Given stations were a particular area of cost escalation under the Metronet PPP, it will be important that the London Underground Client function has strong control over the scope of works, any variations, and ongoing expenditure.
 13. With the recommendations for capital works generally following a direct procurement approach, maintenance activities can be considered separately. At present maintenance activities are undertaken through a mix of contracted and internal services. The JSC would expect on-going review of maintenance procurement strategies by London Underground.
 14. The proposed arrangements continue to see substantial private sector involvement. This will draw on LUL experience and broader best practice contracting in similar industries in implementing robust contracting arrangements with the private sector, incentivising contractors to deliver best value for money for LUL. The vast majority of capital investment will be undertaken by private sector contractors, under the direct management of London Underground teams.
 15. To facilitate this direct management, it is recommended that London Underground adopt a clear distinction between Client and Delivery functions. For all projects and maintenance programmes, the Client function should own the budget, programme and scope. The Delivery functions executing the work should be clearly accountable to the Client for delivering against these requirements. While project managers would have discretion over the detailed execution of the project, any potential variation affecting the budget, programme or scope should not be authorised without full agreement of the Client. Accordingly it is critical that the Client function has the right capabilities, skills and support, and is appropriately accountable within London Underground and TfL.

16. London Underground intends to continue public reporting of performance and will maintain the PPP performance measures to provide a basis for performance assessment and comparison with Tube Lines. Moreover, London Underground undertakes that it and (to the extent practicable) its sub-contractors will make available to the statutory PPP Arbiter such level of information as he requests and requires to assess the performance of Tube Lines.⁴
17. The contracting approach described above has the potential to deliver best value for money for TfL, given the current market conditions, the need to expedite the upgrade programme and recognising the implications of inherited contracts. It should nonetheless be recognised that this means a substantial new role for London Underground which will be directly managing a significant amount of risk.
18. The combined value of the Metronet scope of works is estimated at around £15bn to 2018, including capital works, maintenance, risk and contingency. The Sub-Surface upgrade and supporting works account for around half of this. Independent analysis has estimated that outturn costs could increase by as much as half if the top ten risks were not mitigated properly.⁵
19. In response to these challenges, London Underground prepared a Delivery Strategy which was noted by the JSC.
20. The JSC recognises that effective governance; robust scrutiny, risk management and assurance regimes; and sufficient capability will all be necessary to ensure that London Underground is best placed to manage the recommended contracting structures economically and efficiently, particularly given the increased risks and the significant change in business for London Underground. The Delivery Strategy seeks to address these concerns.
21. These proposals are subject to London Underground preparing a 'Change Assurance Plan' covering the revised safety arrangements and agreeing this with the Office of Rail Regulation (ORR). Ultimately the European Commission will also need to be satisfied that none of the steps taken thus far (including the transfer of the infrastructure project out of Administration) have involved state aid, or that, if they have, such aid is compatible with EU rules.
22. As set out in the Memorandum of Understanding which accompanied TfL's 10-year funding settlement in October 2007, the Mayor and Secretary of State are invited jointly to consider this recommendation and agree the permanent structure.

⁴ The PPP Arbiter was consulted on whether the proposed structure enables him to carry out his responsibilities as PPP Arbiter in respect of the Tube Lines PPP contract.

⁵ Report to the JSC on Value for Money by Parsons Brinckerhoff (November 2008)

Background

The Collapse of Metronet, Administration and Exit from Administration

23. Two of the three London Underground PPP contracts were awarded to Metronet (a consortium of Atkins, Balfour Beatty, Bombardier, EDF and Thames Water) in April 2003.
24. Following extensive cost overruns, Metronet petitioned the PPP Arbiter for an Extraordinary Review of the PPP contracts in June 2007. The PPP Arbiter's interim determination, on 16 July 2007, provided for a small increase in the monthly payments to Metronet from the following January. This determination was considerably short of the £1 billion sought by Metronet for the BCV contract alone. Accordingly on 18 July 2007 the two Metronet Infracos (BCV and SSL) were placed into a unique form of PPP Administration under the GLA Act. Ernst & Young LLP were appointed administrators, and emergency funding was provided by TfL.⁶
25. The Administrators sought to sell on the Metronet contracts and appointed investment bank Rothschilds as advisors. TfL lodged its own expression of interest in August 2007, submitted a formal bid on 24 October of the same year and was confirmed as sole bidder on 6 November 2007.
26. Thereafter the details of the exit from Administration were developed with the key issues being: i) decisions about which of the existing sub-contracts should be carried forward in the asset transfer scheme; ii) settlement of Metronet's guaranteed debt; and iii) State Aid clearances.
27. In February 2008, the contractual 'Put Options' on the debt were exercised and £1.7bn was paid to Metronet's lenders by TfL.
28. The decisions on the sub-contracts were particularly complex given the status of certain projects (notably the upgrades of the Victoria and sub-surface lines) and the perceived role of the tied supply chain and inherited contracts in Metronet's financial failure. As the upgrade programmes were already underway, it was determined to be greater value for money to renegotiate the following contracts rather than re-tender them given the criticality of the works and potential to extract savings from a renegotiation at that time. The main contracts coming out of Administration are as follows; it should be recognised that these contracts materially impact the choice of long term structuring option:
 - a. Victoria line upgrade: contract with Bombardier for new rolling stock and signalling, with a sub-contract with Westinghouse for signalling component, with on-going maintenance of the new rolling stock and signals undertaken by Metronet supported by Technical Services and Spares Supply Agreements (TSSSA) with Bombardier.

⁶ The Extraordinary Review was suspended and ultimately dropped as Metronet no longer remained solvent.

- b. Sub-surface upgrade: contract with Bombardier for the build of new rolling stock,
- c. Track renewals: 15-month contract with Balfour Beatty from 1 January 2008 which can be further extended based on performance.

29. The parties concluded there were respectable arguments that there would be no state-aid involved in the transfer of the Metronet BCV and SSL companies out of administration and into two TfL Nominee companies. The transfer took place on 27 May 2008, with staff transferring on existing terms and conditions. Several changes to senior management were made in late 2007 in anticipation of the move to TfL.

The Joint Steering Committee and its remit

30. The ten year SR07 funding settlement agreed between TfL and Department for Transport (DfT) in October 2007 was accompanied by a Memorandum of Understanding (MoU) in relation to Metronet. The MoU made provision for the consequences of PPP Administration and, at high level, for the timing and process to identify and implement the preferred permanent structure, including:

- a. Joint agreement by the Mayor of London and the Secretary of State for Transport;
- b. The creation of a Joint Steering Committee (the JSC) who would be responsible for making a recommendation to the Mayor and the Secretary of State. The JSC has met on a monthly basis since November 2007, and comprises of: Tim O' Toole (LUL), Steve Allen (TfL), Lucy Chadwick and Kate Mingay (DfT), Gordon McKechnie (HMT) and James Stewart (Partnerships UK). The JSC is supported by a Working Group including representatives from TfL, LUL, DfT and HMT. Since May 2008 there has been representation at the JSC meetings from the Mayor's Office (Kulveer Ranger).
- c. The terms of reference for the evaluation which formed the basis for the options appraisal criteria were:

"The objective is to identify a Permanent Structure which

- *provides a stable and safe operational framework for the Tube*
- *delivers the modernisation, upgrade and maintenance of the Tube infrastructure;*
- *is affordable; and*
- *delivers Value for Money for the public sector in accordance with relevant statutory duties of the Mayor and the Secretary of State.*

It is currently envisaged that the Permanent Structure will continue to involve private sector participation and risk transfer. The consideration of the Permanent Structure will need to take into account factors such as delivery capacity, management of systems integration risks, ability to maximise benefit realisation, price efficiency through competition and incentivisation, whole life costing, benefits of external funder due diligence, etc. However, the Metronet experience provides a number of useful lessons and these should be reflected in the Permanent Structure to the extent reasonable. Any evaluation of alternative structures will be undertaken against a base case of the existing PPP structure which will act as a benchmark against which improvements will be evaluated.

The implementation of the Permanent Structure should be without prejudice to the JNP concession, which will remain as currently structured save for any consequential changes agreed between DfT and TfL and needed to implement the transfer to the London Underground Nominee companies or to the Permanent Structure”

31. Based on the MoU, the work was divided into three phases:

- a. Phase 1 – Information gathering, lessons learned and understanding the current context;
- b. Phase 2 – Long-list of options and high level evaluation; and
- c. Phase 3 – Detailed evaluation of a short-list of options and recommendation of preferred long-term structure.

The scope of work to be delivered under the permanent structure

32. The Metronet programme included complete upgrades of the Victoria line by 2013, the Sub-Surface Lines (SSL) progressively to 2018, and the Bakerloo by 2020; infrastructure renewal works to improve performance and achieve a state of good repair by 2025; and a programme to bring all stations up to a minimum standard.

33. The JSC sought to ensure that the recommendations on structure reflected the nature of the work envisaged under the PPP and TfL investment Programme. (The JSC did not consider it necessary to revisit the analysis conducted for the PPP on the appropriate scope of work.) The work programme that needs to be delivered under the new structure can be broken down in a number of different ways: by line, by type of asset, or by type of work:

- a. Line groupings:

- i. Sub-surface lines: comprising Metropolitan, District, Hammersmith & City and Circle lines, which have a high degree of operational inter-working and a common line upgrade solution (in progress)
 - ii. Victoria line: a self-contained line with the upgrade solution significantly advanced
 - iii. Bakerloo line: due for upgrade no later than 2020 in order to replace life-expired assets and comply with Rail Vehicle Accessibility Regulations
 - iv. Central and Waterloo & City lines: which share a common stock, and are not due for full line upgrades
- b. Asset groupings:
 - i. Rolling stock and depots
 - ii. Signalling, including control systems and related communications systems outside the Connect PFI contract
 - iii. Track
 - iv. Civil infrastructure, including bridges, tunnels, embankments and drainage
 - v. Lifts and Escalators (L&E)
 - vi. Stations premises and other buildings, including refurbishment of stations
 - vii. Stations sub-systems grouping covering the asset categories of electrical and mechanical assets, communications and fire systems
- c. Work groupings
 - i. Maintenance, including inspection and routine maintenance and light overhauls
 - ii. Renewals and upgrades, including the line upgrade projects and heavy overhaul activities

34. These units form the lowest level at which contracts could reasonably be established, but there will still be interfaces to be managed between the different asset-groupings particularly, such as between stations premises, L&E and stations sub-systems and between rolling stock and signalling.

Phase 1 – Lessons Learned and Current Context

35. Phase 1 of the JSC's work comprised of an information gathering exercise, with the research focusing upon

- a. the current London Underground context including the status of the investment programme, the current challenge of record customer demand, and TfL's project management and delivery capability
- b. potential contract structures and models found in other countries and industries⁷
- c. informal market sounding with leading construction and railway infrastructure organisations (undertaken by TfL)
- d. asset management principles as adopted in London Underground, Metronet, Tube Lines and other case studies⁸
- e. analysis of the failures of Metronet and lessons from the PPP generally⁹
- f. dispute resolution and regulatory structures¹⁰

36. The output of Phase 1 aided the development and definition of potential options and informed the evaluation process.

37. From Phase 1, the JSC identified a number of important differences between the current situation and that of 10 years ago when the PPP was originally conceived. These issues mean that a solution that may have been appropriate then is not necessarily suitable today. For example, in contrast to before the PPP:

- i. much of the Investment Programme is in the delivery phase with major contracts let for key elements of the line upgrade programmes and other works; including 77% and 61% funding committed on the Victoria and Sub-Surface Lines respectively;
- ii. TfL is now able to borrow, in the context of a long term funding settlement, to support its investment programme; and

⁷ Case study reports to the JSC by KPMG and the Working Group (February 2008).

⁸ Report to the JSC on Asset Management Principles by AMCL (February 2008).

⁹ Reports to the JSC by Partnerships UK and LUL/OPPPA (February 2008).

¹⁰ Presentation to the JSC by LUL/OPPPA (January 2008).

- iii. London Underground has five years' practical experience of the PPP contracts, as well as a record of delivering other major investment projects such as Wembley Park station.

Phase 2 – Long-list of Options and High Level Evaluation

38. Per the public statements of the then Mayor and Secretary of State, all potential options were initially considered.
39. The JSC identified approximately a dozen types of contracting structure, hereafter called the 'long-list' of options, which could be adopted with different levels of risk transfer depending on the allocation of responsibilities for design, project delivery, and maintenance. The long-list of options included PPPs, PFIs, traditional contracting, delivery partner arrangements and public sector infrastructure subsidiaries.
40. A set of evaluation criteria were defined in order to compare the feasibility of these options as potential permanent structures for the Metronet PPP agreements¹¹:
 - a. **Safety.** The new structure must ensure continued safe operation of the tube
 - b. **Interfaces.** The risks with regard to the technical and contractual interfaces and whether or not the structure assists in or impairs the management of these risks, with regard to performance levels and value for money
 - c. **Impact on London Underground** The impact on London Underground's ability to run a reliable service
 - d. **Impact on Tube Lines.** The structure should not prejudice the Tube Lines (TLL) PPP Contract's ability to work effectively
 - e. **Legal and Contractual** (including state aid rules). The ability to implement any structure within the constraints of: (i) primary legislation; (ii) pre-existing sub-contracts; and (iii) other major TfL/London Underground contracts (e.g. the Connect, Power and Prestige PFIs)
 - f. **Asset Management** and whole life asset management. The extent to which the body responsible for the work would be able to adopt a whole life approach to asset management and ensure that the

assets do not decline to the extent they adversely impact on service delivery

- g. **Affordability.** The cost profile of each option and the differential between the risk adjusted cost of the options, along with associated impacts on TfL's credit rating and financing and wider investment programme
- h. **Value for Money (VfM).** The cost of risk that would be expected to be priced into contractors' bids and the recommended contingency amounts to be held by London Underground for materialised risks
- i. **Deliverability.** The cost, time and risk associated with implementation, including consideration of the organisational capability and capacity required to operate the new structure
- j. **Market Interest.** The likelihood of sufficient bidders offering competitive prices

41. Analysis of the long-list of options against the above criteria concluded:

- a. Any option that did not allow for safe operation of the railway would need to be ruled out immediately, but none of the options failed this test.
- b. The JSC agreed to rule out the franchised operations and fully integrated (i.e. including with Tube Lines Limited (TLL)) public or private sector structures, citing the incompatibility of such options with the Tube Lines PPP contract and inherent operational risks created by an inconsistent operating structure.

42. The analysis further showed that most of the long-listed options were essentially variants on two broad themes. A number of options are more akin to a direct form of contracting; these include incentivised risk-share and structures involving contracting with a delivery partner. The other generic category is based around whole system outsourcing, such as the PPP, where responsibility for multiple assets is transferred to the contractor for a long period of time.

43. Using this conclusion, the JSC developed three broad options for detailed appraisal: a Reference Case based on the Metronet PPP, an alternative long term performance based contracting approach (based on whole system outsourcing), and a direct procurement approach.

Phase 3 – Shortlist options appraisal

44. The **Reference Case** is based on a relet of the Metronet PPP contracts to new bidders. The existing BCV/SSL line groupings would be retained and tendered separately. Contract changes in the Reference Case are minimal – they do not for example include the proposed Restated Terms developed for Tube Lines, but do incorporate key lessons from Metronet e.g. improved information rights for London Underground.
45. The **Long Term Performance Based Contract** approach is an alternative form of whole system outsourcing, based on the PPP concept but without the re-pricing mechanism of Periodic/Extraordinary Reviews and avoiding some of the expected difficulties of the Reference Case through an alternative packaging of assets. The most logical repackaging of works would see: a) stations work separated out from line based (rolling stock, track and signalling) work (essentially separating construction from railway engineering work to maximise potential competition), and b) separation of the line based contracts to take account of pre-existing contracts, i.e. the Victoria line and sub-surface lines come from a very different starting point from each other and from the other lines. The optimal repackaging would consist of four packages and hence four separate long term performance based contracts as follows:
- a. Victoria line: covering rolling stock, signalling, track and infrastructure (but not stations) and packaged separately because of the pre-existing contracts which would significantly reduce the amount of risk that could be transferred (at an affordable price) as part of any whole system outsourcing contract.
 - b. Sub-Surface Lines: covering rolling stock, signalling, track and infrastructure, but unlike the existing SSL PPP the stations component would be removed. As for the Victoria line, packaged separately because of pre-existing contracts.
 - c. Bakerloo, Central and Waterloo & City contract: covering rolling stock, signalling, track and infrastructure (but not stations), with the options of letting as a PPP now or later when the line upgrade requirements for these lines are more clearly defined and the investment is closer at hand. Where a PPP type contract is not let until later, maintenance and renewals up to that time would be completed under London Underground management.
 - d. Stations contract or contracts: covering all former Metronet lines and including maintenance and renewal of station sub-systems, lifts and escalators, plus station premises and refurbishments.
46. Under the **Direct Procurement** structure, a number of contracts with the private sector would be let for sensibly sized packages of renewal and

upgrade works, with the use of fixed or target cost contractual forms where appropriate. Programme management and systems integration would be the responsibility of London Underground but with the possibility of a delivery partner incentivised to mitigate risk for some aspects of the work. Maintenance activities would be partly contracted and partly managed internally (using resources adapted from Metronet's own direct labour organisation).

47. The JSC agreed that it need not be the case that a single contracting structure is applied to the entire portfolio. A further variant or **mixed contracting approach** would see different forms of contract applied to each of the four work packages described above, as most appropriate.
48. The options evaluation was undertaken both at the aggregate level and for each work package (using the same grouping as above), and hence each work package was tested against both a direct and long term performance based contracting structure. (The Reference Case, by definition, only applies at the BCV and SSL network level).
49. Five of the ten criteria (Safety, Interfaces, Impact on LUL, Impact on Tube Lines and Legal & Contractual) did not produce significant differentiation between the options. Although the performance of the options against the criteria varied, there were not thought to be any insuperable problems that would discount options, or any major positive attributions to raise one option above another. For example, safety issues were found to be equally manageable for any of the options under review.
50. By contrast the key discriminating factors are the financial analysis criteria (i.e. affordability, value for money and risk allocation), existing contracts and therefore market interest, asset management and the overall deliverability of the option. The key findings of the options evaluation in terms of these criteria are detailed below.
51. **Market Interest** assesses the likelihood that an option will be achievable, at the required price, on required terms and with the required capability, within the available market for both delivery and financing, i.e. there are likely to be a range of suitable bidders at an affordable price. Analysis based on this criteria indicated that:
 - a. Reference Case: Informal market sounding suggested that contractors were mainly interested in work that fit with their core business model, but may consider joint ventures where needed. There was a reluctance to take on performance risk from inherited contracts and respondents suggested it is likely that this would be reflected in risk premiums. In terms of financing, independent analysis indicated that, even under normal market conditions, there

- b. Long Term Performance Based Contracts: The analysis suggested that contractors would be more willing to undertake work under smaller modular contracts than the Reference Case (depending on the specific work involved). Financing would also be difficult under this option, but could be achievable under the right conditions. As with the reference case there was a reluctance to take on performance risk from inherited contracts and this would be reflected in risk premiums.
- c. Direct Procurement: Informal market sounding indicated that a direct approach to procurement would be more favourable to contractors and easier/cheaper to finance.¹³

52. **Value for Money (VfM)** involves the appropriate transfer of risk to the private sector considering the risk-adjusted cost. Parsons Brinckerhoff were engaged to carry out a VfM study using theoretical risk models and experienced commercial opinion at both an aggregate and work package level to assess the comparative risk-adjusted cost.¹⁴ The outcome of this work indicated that:

- a. Where projects are highly committed and major delivery contracts are already in place, the risk-adjusted costs are lower under direct procurement. This applies particularly for the Victoria line.
- b. Where projects have not started and there are no sub-contracts in place (e.g. Bakerloo upgrade), risk-adjusted costs are likely to be similar under either approach.
- c. In respect of stations specifically the analysis identified a significant risk arising from any arrangement where the client specification is unclear or divorced from the delivery responsibility.
- d. All of the conclusions of this work are based on the assumption that effective project control, contract and risk management is carried out by London Underground and contractors. If major risks such as contract variation or systems integration are not effectively mitigated, costs would increase significantly.

53. In terms of **Affordability**, the analysis indicates little differentiation between the options at an aggregate level. However, at a work package level the

¹² Report to the JSC by Lexicon Partners (May 2008).

¹³ Also must consider the risk balance; see Value for Money section.

¹⁴ Report to the JSC on Value for Money by Parsons Brinckerhoff (November 2008).

analysis indicated that it is potentially undesirable to fix station costs by entry into a long term performance based contract as this would limit London Underground's flexibility over its investment programme.

54. In terms of **Asset Management**, the analysis indicated that there were no material differences between the options apart from on the Bakerloo and Central line work package. The Bakerloo and Central line programmes are still at an early stage, with upgrade procurement not due until around 2013-4. Letting a long term performance based contract for a project that is yet to be fully defined is inappropriate, against best practice and would be extremely expensive given the level of risk the contractor would be taking on. Instead, the analysis suggested that a procurement strategy should be defined in parallel with the development of the Bakerloo and Central line programmes considering all possible procurement options and in the light of London Underground's experience in managing the Victoria and Sub Surface Line upgrades.

55. **Deliverability** covers the cost, time and risks associated with moving from the transitional structure – i.e. the TfL nominee companies – to a permanent structure, including financing and organisational capability. Analysis based on this criteria indicated that:

- a. The Reference Case is likely to be the most costly and time-consuming to deliver as it would be difficult to finance and the length of time and costs needed to negotiate and finalise a long term performance based contract (or contracts) would be substantial.
- b. Whilst easier under a long term performance based contract, due to the smaller packages, this option is still likely to be time-consuming, costly and difficult to finance.
- c. Assuming London Underground is able to develop the necessary capability to take on, and deliver on, this new work, it is likely to be quicker, possibly phased, and less costly to deliver the scope of work using a direct procurement approach.

Conclusions

56. The JSC concluded that the **Reference Case** is sub-optimal and probably undeliverable. Due to the failure of Metronet and the inherited sub-contracts, very limited market interest is anticipated. There would be both an unacceptably high cost for the private finance and a high level of underpinning required. The Reference Case would probably also take longest to procure. This would be costly, significantly affecting the delivery of the upgrades. The unique circumstances that apply to Metronet rule out a retendering of the original PPP contracts.

57. The JSC have also ruled out a **Long Term Performance Based Contract** structure for the entire range of Metronet works. Whilst an improvement on the Reference Case, long term performance based contracts for the entire scope of works would not offer value for money, particularly because of the risk transfer issues associated with inherited contracts on SSL and the Victoria Line. However, the JSC believe this option is viable for work packages where there are no inherited contracts e.g. the Bakerloo upgrade.
58. A **Direct Procurement** structure would attract greatest market interest and is most easily delivered. The value for money analysis generally favours direct procurement. The delivery of value for money is crucially dependent on London Underground's ability to manage the risks.
59. While overall the direct procurement approach comes out most strongly in the analysis, at the work package level there is a greater degree of flexibility, and the JSC have therefore made recommendations for each of the major work packages separately.
60. **The JSC recommend that the work packages on the Victoria line are undertaken using a direct procurement approach**, with the current subcontracts let for the Victoria line upgrade (the VLU) managed directly by London Underground. The key reasons for this recommendation are as follows:
- a. The risk analysis shows that it is better value for money, in terms of risk-adjusted costs to London Underground, to use a direct procurement rather than a long term performance based approach to deliver the VLU, which is well into delivery phase with 77% committed funds. The analysis illustrates that contractors would be reluctant to take on the performance risk associated with the VLU and its inherited subcontracts under a PPP, and would price accordingly.
 - b. The Market Interest analysis supports the view that there is little appetite in the market to take on the risk of the current VLU under a new PPP structure.
 - c. In terms of financing, whilst not entirely impossible, analysis suggests that it would be time-consuming, difficult and costly to raise the equity and debt for any new long term performance based contract.
 - d. The analysis also suggests that considering how far advanced the upgrade is, re-letting the work under a long term performance based contract would cause significant delay to the upgrade.

61. **The JSC recommend a direct procurement approach for completion of the Sub-Surface upgrade**, coupled with the further recommendation below that London Underground adopt a Delivery Partner framework. This recommendation would need to be reappraised should there be any change to the delivery schedule. The key reasons for these recommendations are as follows:

- a. For similar reasons to the Victoria line, the options appraisal shows that, assuming full risk mitigation by London Underground, it is better value for money in terms of risk-adjusted cost to use a direct procurement approach than a long term performance based structure.
- b. The rolling stock contract is already let, and the signalling contract will need to be awarded by 2010 if the upgrade is to remain on track for its target completion date as set out in the investment plan. A new long term performance contract would therefore not only be more costly than a direct approach because of large risk premiums for inherited contracts, it is also likely to add unacceptable delays to a vital programme of work delivering more than 43% of the total network capacity increase
- c. Once again, in terms of financing, whilst not entirely impossible, analysis suggests that it would be time-consuming, difficult and costly to raise the equity and debt for any new long term performance based approach on appropriate terms particularly in the current market.

62. The Sub-Surface Lines upgrade is the largest planned upgrade project on the London Underground network. Compared to the Victoria line, the SSL upgrade is 3 times larger by value. Also, given the nature of the railway, inherited systems and inter-running with other lines, Crossrail and the national network, it is considerably more complex than the Victoria line. It will require a peak in resources above current levels in London Underground and Metronet.

63. **The JSC recommends that, to manage the risks of this upgrade, London Underground adopts a Delivery Partner framework for the Sub-Surface upgrade** in order to provide the additional temporary resource required over the 10-year delivery phase, provide specialist skills such as project management and systems integration where needed, and mitigate significant delivery risks associated with the upgrade. The Delivery Partner should be incentivised accordingly.

64. **The JSC recommend that LUL continue to manage the current maintenance and renewals work on the Bakerloo, Central and Waterloo**

& City lines until the Bakerloo line upgrade has been fully scoped. This recommendation is made on the basis that:

- a. The Bakerloo and Central line programmes are at an early stage, with upgrade procurement not due until around 2013-4.
- b. The analysis suggests that for the upgrade programme, a long term performance based contract or direct procurement approach would be equally suitable.
- c. Letting a long term performance based contract now, on the basis of an ill-defined scope for the upgrade, would create a higher likelihood of costly variations in the future. Moreover, such an option is unlikely to generate optimal whole life asset management decision making.

65. The JSC further recommend that both long term performance based and direct procurement strategies are considered for the upgrade works on the Bakerloo and Central lines. The range of options would need to be evaluated in parallel with upgrade scope development in 2011 ahead of the major contracts being let in 2013-14, and take on board lessons learnt from the management of the Victoria Line and SSL upgrades. The JSC recommends that both long term performance based and direct procurement approaches are considered for the upgrade works as the scope is developed, reflecting lessons learned from the earlier upgrades

66. The approach recommended for the upgrades means that a direct procurement approach is the appropriate option for infrastructure (track and civils) renewals works. The type of contract should be appropriate to the nature of the works, e.g. target cost may be most suitable for repetitive volume driven work such as track renewals, while framework agreements may be more suitable for civils where investment projects tend to be bespoke.

67. Track and civil works should however, be considered in the scope of any potential long term performance based contract on the Bakerloo and Central lines.

68. The JSC recommend that the work packages for Stations, Lifts and Escalators are undertaken using direct procurement. The key reasons for this recommendation are as follows:

- a. In terms of financing, whilst not entirely impossible, analysis suggests that it would be time-consuming, difficult and costly to raise the equity and debt for any new long term performance based contract particularly in current market conditions.

- b. Metronet's stations programme is substantially behind the PPP contract targets. A direct procurement strategy involving design and build or construction management contracts based on a detailed client specification offers a degree of risk transfer while retaining London Underground budgetary control. This would allow flexibility for investment decisions to be made in the context of the programme as a whole. This view is also borne out of the Parsons Brinckerhoff value for money work. Given that stations were a particular area of cost escalation under the Metronet PPP, it will be important that the London Underground Client function has strong control over the scope of works, any variations, and ongoing expenditure.

69. With the recommendations for capital works generally following a direct procurement approach, maintenance activities can be considered separately. At present, certain maintenance activities are undertaken through internal management and resources. (These activities are typically safety critical, require a high level of domain knowledge, or difficult to specify and monitor, and include including track inspections, first line signalling maintenance, routine fleet maintenance). Other maintenance activities (including cleaning, premises fault rectification and vegetation management) are undertaken through contracted services. Irrespective of safety issues, a long term performance based contract for maintenance would offer very little if any benefit, as contractors would be unwilling to take on maintenance without also having control over other system assets which will affect maintenance requirements. The JSC would expect on-going review of maintenance procurement strategies by London Underground.

70. The JSC recommend that London Underground adopt a clear distinction between Client and Delivery functions. For all projects and maintenance programmes, the Client function should own the budget, programme and scope. The Delivery functions executing the work should be clearly accountable to the Client for delivering against these requirements. While project managers would have discretion over the detailed execution of the project, any potential variation affecting the budget, programme or scope should not be authorised without full agreement of the Client. Accordingly it is critical that the Client function has the right capabilities, skills and support, and is appropriately accountable within London Underground and TfL.

71. The JSC believe that these recommendations provide the framework to deliver against the objectives set out in paragraph 2 above. The structure has the potential to deliver best value for money for Transport for London, given the current market conditions, the need to expedite upgrade programme and recognising the implications of inherited contracts. The proposed arrangements continue to see substantial private sector involvement. The

vast majority of capital investment will be undertaken by private sector contractors, under the direct management of London Underground teams.

72. The recommendation is consistent with the continuing Tube Lines PPP Contract. London Underground intends to continue public reporting of performance and will maintain the PPP performance measures to provide a basis for performance assessment and comparison with Tube Lines. Moreover, **London Underground undertakes that it and (to the extent practicable) its sub-contractors will make available to the statutory PPP Arbiter such level of information as he requests and requires to assess the performance of Tube Lines.**¹⁵ London Underground intends to keep the BCV and SSL PPP contracts in place to support existing sub-contracts and various PPP common agreements.
73. It should be recognised that these recommendations will mean London Underground has significant additional challenges and opportunities. London Underground will be directly managing a significant amount of risk. The success of the structure will therefore be dependent on London Underground, through TfL, developing the appropriate capability, risk management processes, governance framework and assurance regimes.
74. The combined value of the Metronet scope of works is estimated at around £15bn to 2018, including capital works, maintenance, risk and contingency. The Sub-Surface upgrade and supporting works account for around half of this. Independent analysis has estimated that outturn costs could increase by as much as half if the top ten risks were not mitigated properly.¹⁶
75. In response to these challenges, London Underground has prepared a Delivery Strategy document which was noted by the JSC. The Delivery Strategy recommends the procurement strategy for each element of the work, and describes the organisation and governance arrangements. The JSC recognises that effective governance, robust scrutiny, risk management and assurance regimes, and sufficient capability will all be necessary to ensure that London Underground is best placed to manage the recommended contracting structures economically and efficiently, particularly given the increased risks and the significant change in business for London Underground. The Delivery Strategy seeks to address these concerns.

Next Steps

76. As set out in the Memorandum of Understanding which accompanied TfL's 10-year funding settlement in October 2007, the Mayor and Secretary of State

¹⁵ The PPP Arbiter was consulted on whether the proposed structure enables him to carry out his responsibilities as PPP Arbiter in respect of the Tube Lines PPP contract.

¹⁶ Report to the JSC on Value for Money by Parsons Brinckerhoff (November 2008)

are invited jointly to consider this recommendation and agree the permanent structure.

77. These proposals are subject to London Underground preparing a 'Change Assurance Plan' covering the revised safety arrangements and agreeing this with the Office of Rail Regulation (ORR). Ultimately the European Commission will also need to be satisfied that none of the steps taken thus far (including the transfer of the infrastructure project out of Administration) have involved state aid, or that, if they have, such aid is compatible with EU rules.