

TRANSPORT FOR LONDON

BOARD

**SUBJECT: LONDON UNDERGROUND ASSET MAINTENANCE
PROGRAMME: UPDATE**

DATE: 10 DECEMBER 2009

1 PURPOSE AND DECISIONS REQUIRED

- 1.1 A paper setting out the issues that have been addressed by London Underground (LU) following the administration and transfer of Metronet was presented to the Board on 24 June 2009.
- 1.2 This paper reviews the position following the publication of the TfL Business Plan which properly includes, for the first time, LU's asset management plan for the former Metronet (BCV/SSL) networks. The plan contains a significant programme of efficiencies designed to reduce the cost across LU's maintenance activities, and to address, where required, the uneconomic and inefficient position inherited from Metronet.
- 1.3 It also seeks to challenge certain claims about comparative costs put into the public domain by Tube Lines. A full analysis of maintenance costs will be presented at a future meeting.
- 1.4 The Board is asked to note this paper.

2 INTRODUCTION

- 2.1 The 24 June Board paper set out the details of an estimated £2.5bn of costs that had been removed from the overall Metronet (BCV/SSL) cost base for the plan period following administration and transfer to LU. Since the position described then, TfL has continued to face considerable pressures arising from the wider economic downturn (particularly fares revenues), driving the need for further cost reductions. This has led to a further £1.1bn reduction in projected costs across the LU programme for BCV/ SSL, through capturing the effects of anticipated lower market prices, pushing harder for efficiencies and scope reductions in certain areas, specifically:
 - (a) Lower market prices (£380m) reflect a downward revision of construction price inflation.
 - (b) Further capital efficiencies as described in the TfL Business Plan, which include pooling contingencies and targeted reductions in estimated final costs for all capital spend, to be achieved through better procurement (including non-permanent labour), better use of access, and a general

challenge to look for better value for money (worth £360m across BCV/SSL). Maintenance efficiencies are even more significant and are described below.

- (c) Scope reductions as described in the TfL Business Plan; in the former Metronet programme these total £360m, and are most pronounced in Stations, with no new station refurbishments for the first three years of the plan and the adoption instead of a minimal asset stabilisation strategy.

2.2 The Business Plan pressures have provided further impetus to the efficiency programme.

3 OPERATING COSTS EFFICIENCIES

3.1 Following the exit from Administration, LU inherited two uneconomic and inefficient Infracos. Over the past 18 months, significant work has been undertaken in order to move them towards more economic and efficient operation.

- (a) While a number of contracts were renegotiated as part of the exit, there remain a number of key, large contracts which were so advanced that there was no opportunity to make savings through renegotiation. Some contracts (e.g. Victoria line upgrade fleet replacement) will run their course. In other areas, the opportunity for efficiencies comes at the point of re-tender. In such cases, the historic and current costs do not yet reflect more efficient costs in those areas; however, the forward plan reflects expectations of a more efficient arrangement. Moreover, an efficiency target saving of 2.5 per cent has been applied across the capital programme, to be achieved through improved ways of working rather than scope reduction.
- (b) As described in the June paper, there was also a significant number of organisational complexities that stemmed from both the history of Metronet's shareholders' influence, and the subsequent Administration regime. To address these issues and realise efficiencies, a full integration programme has been implemented. This started to take effect from July 2009 and will be completed this financial year once financial and other management systems are integrated.
- (c) A Maintenance Capability programme has been launched to drive efficiencies through reviewing engineering standards and maintenance regimes, ensuring consistent best practice between areas and reviewing costs, work volumes and resourcing. The asset management plan also includes investment in technology and assets to optimise maintenance practices and reduce the level of paper-based data recording.
- (d) A large number of contracts have been bundled together to reduce the overhead and complexity under the Total Package Services (TPS) contracting strategy. Efficiencies come through economies of scale and

reduced administrative burdens, as well as competition. These programmes will impact on each of the individual asset areas over the next few years, driving down the cost per unit of work, while enabling resource to be freed up to manage the additional pressures which result from the line upgrade implementation when, for example, dual systems need to be maintained for a period.

- 3.2 Intelligence from international benchmarking and other benchmarking through the PPP Arbiter, and LU's own work on developing the notional Infraco comparator to Tube Lines, have all provided inspiration for specific efficiency measures and target rates to be achieved in the plan.
- 3.3 Together, these committed efficiencies amount to £2.3bn (part of the £5bn savings programme described in this year's Business Plan). These result in significant reductions in both absolute and per unit maintenance costs for BCV/SSL.

4 RESPONSE TO TUBE LINES' COMPARISONS

- 4.1 LU, Tube Lines (TLL) and previously Metronet, participate in on-going joint benchmarking activity. The latest draft reports cover the period 2008/09 and, while not yet verified, have been selectively used in briefing by TLL.
- 4.2 Benchmarking data must be treated with a certain degree of care. Minor differences in classifications of operational and capital spend, for example, can produce quite different results. In addition, factors such as the relative size, age and nature of the asset base limit comparability.
- 4.3 Despite these limitations, benchmarking still reveals insights and is used to inform future plans. The important comparison between LU and TLL is not the historic analysis, especially for periods when Metronet was in existence or administration, but rather the comparison of the respective plans. That is, TLL's bid for RP2 and LU's plans for BCV/SSL (including the efficiency programmes that are committed in the Business Plan). Some specific examples are considered below.

Track Maintenance

- 4.4 Metronet's track maintenance costs were higher per track km since the start of the PPP, partly reflecting the poorer state of the track on the sub-surface network. Costs increased dramatically following the Emergency Direction issued by LU in Summer 2006 following poor performance and, in particular, the special measures required after Metronet's failure to prepare the track properly for the warmer summer temperatures. Conversely, TLL's costs benefit from the inclusion of the Jubilee Line Extension in their asset base, where track is relatively new, in good condition and is of a modern track-form design. As a consequence, costs per km on SSL have been significantly in excess of TLL, while BCV costs are marginally higher.

- 4.5 Efficiencies in the LU plan bring down the average unit rate over the Business Plan period. These include the introduction of automated track monitoring with telemetry from service trains providing frequent and accurate condition information, in contrast to the 8-week running of the existing Track Inspection Train. This will provide better information allowing more corrective and less reactive maintenance, as well as reducing the need for physical inspections. The Maintenance Capability and TPS programmes deliver further efficiencies particularly in staff deployment and utilisation.
- 4.6 Accordingly, while the TLL bid¹ projects a steady increase in the unit rate per track km over RP2, the LU plan shows a steady reduction such that the rate on BCV falls below TLL, while SSL comes into closer alignment despite its inherent differences. This trend is shown in Figure 1 below.

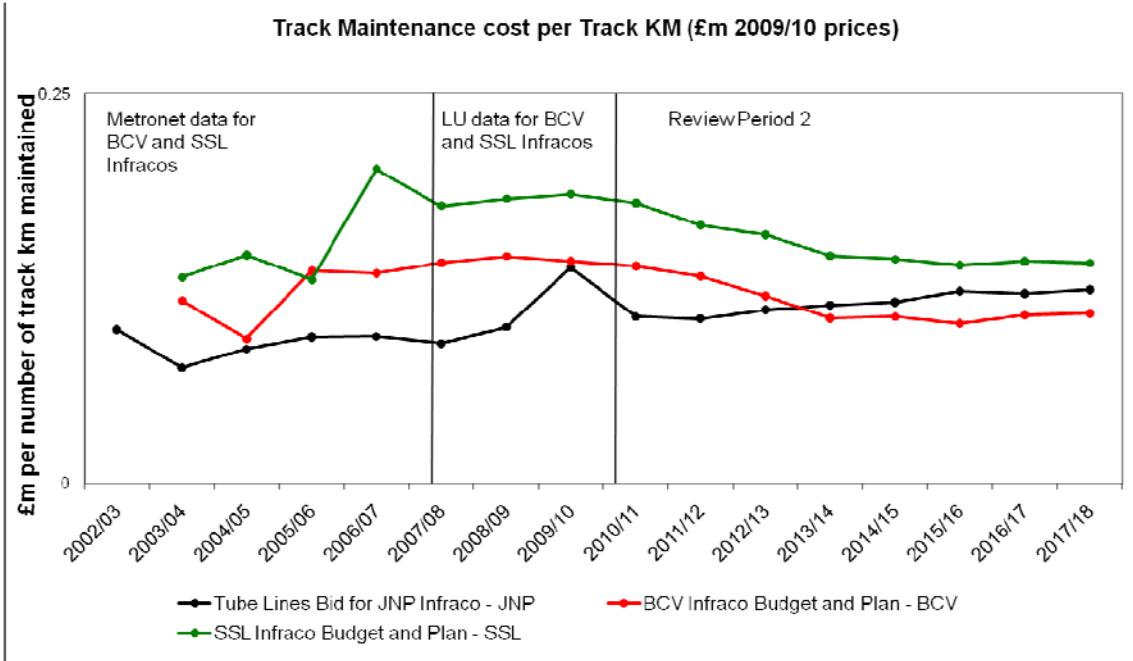


Figure 1 - A comparison of unit rates across the three Infracos in the first two review periods.

Fleet Maintenance

- 4.7 Fleet maintenance costs vary by age and type of fleet and the maintenance regime followed. At the start of the PPP, average costs per car were similar for BCV and TLL, with SSL significantly higher. Over the last few years BCV costs have increased, mainly due to issues related to the Central line trains, while SSL costs have fallen dramatically in the last two years. Some specific issues need to be considered in relation to the comparisons:
 - (a) The Northern line fleet is maintained for TLL by the manufacturer (Alstom) under a novated PFI contract. The costs seen therefore are the service charges for the contract, not the actual direct costs of maintenance. On the Piccadilly line, TLL has enjoyed the benefits of a unique service hours based fleet maintenance regime and an extensive refurbishment

¹ Throughout the document 'bid' refers to the costs submitted by Tube Lines to LU and the PPP Arbiter in response to LU's Restated Terms for RP2.

programme, both commenced before the PPP, together with TLL's own investment at the start of the contract.

- (b) BCV figures are affected by two factors. First, the Central line accounts for well over half the BCV fleet and dominates the figures. This fleet has proved more expensive to maintain and less reliable than planned since it was introduced. The design and consequent condition of the Central line fleet requires a more extensive programme of heavy maintenance than on other fleets. The need to perform this work alongside bogie replacement work mandated by the Chancery Lane derailment has led to peaks in the maintenance cost profile. In the recent Business Plan LU had to cancel the motor replacement project for the Central line fleet which results in increased maintenance costs in RP2 as trains are repeatedly lifted and motors are removed, re-built and re-fitted. The Bakerloo line is inherently more costly per train than other lines because it operates a small fleet from two depots with significant outstabling of trains, and as it faces aggressive wheelset wear rates from the tight curves on the line that require regular additional maintenance.
- (c) The legacy fleets on SSL and Victoria lines are being progressively replaced by the new homogenous S-Stock and 09 Stock respectively. Legacy fleet maintenance will give way to new maintenance arrangements over the life of the Plan, incorporated in the inherited Technical Spares Servicing and Support Agreements (TSSSA) with Bombardier that was entered into by Metronet. These agreements are considered costly relative to a competitively-bid maintenance contract. Development of a strategy to achieve best value from these contracts is underway.

- 4.8 As with track, the efficiency programme includes savings through both TPS and Maintenance Capability initiatives. LU is also moving towards a service hours based maintenance regime (rather than maintenance based on calendar days irrespective of actual use), starting with a trial of component replacement on the District line and discussions over the maintenance regime for the new Victoria line fleet.
- 4.9 The forward plan (Figure 2) shows unit rates for SSL at the present TLL level, and while BCV is above TLL, this is largely a consequence of the Central line fleet effect in the near term; longer term the effect of the relatively costly TSSSA agreements for the new Victoria line trains (and S-Stock also to a lesser extent) is evident, though these will be amended. While some of the TLL unit cost increase shown arises from increased usage of the fleet, BCV/SSL lines will also see higher usage in future years, but show an improvement in their unit rates (once TSSA is allowed for).

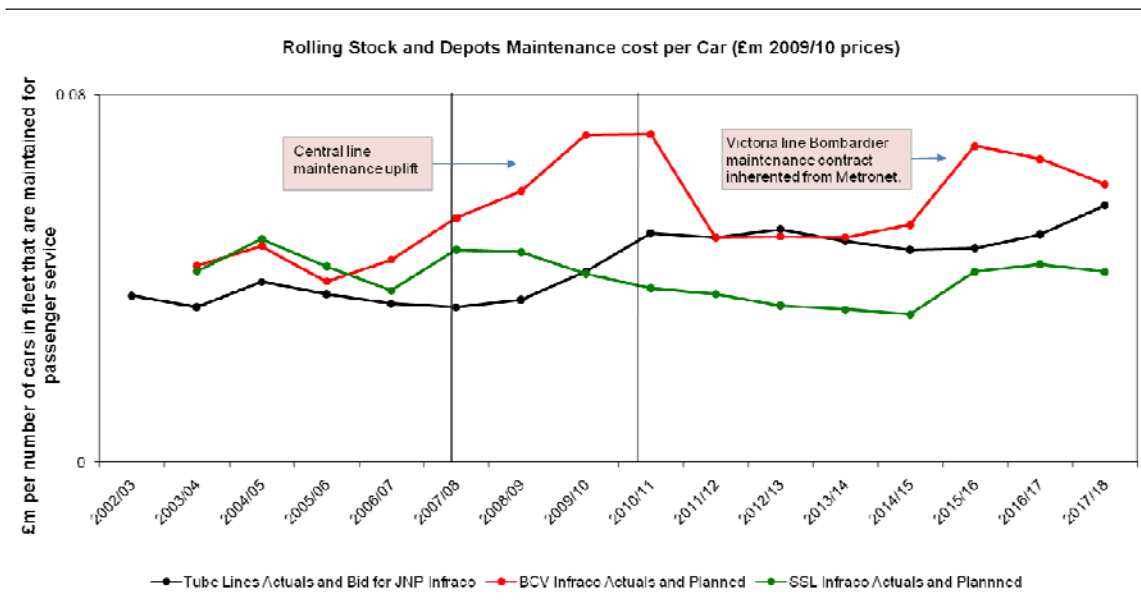


Figure 2 – Comparison of rolling stock costs per car maintained for passenger service.

Line Upgrade costs

- 4.10 TLL has quoted costs of £5.77m per km for the Jubilee line upgrade compared to £8.04m per km for the Victoria line upgrade. These figures are misleading and not directly comparable due to the different approaches on the upgrades and the treatment of risk. The figures are from a draft BSL paper for the PPP Arbitrator, and may be modified in the final draft.
- 4.11 Given the Jubilee and Northern upgrades do not include rolling stock procurement, the only real comparison that can be made is between signalling upgrade costs. Even then, each signalling upgrade has differences which limit comparability of costs and access requirements (e.g. different maturity of the chosen technology; requirements for traction power upgrades to enable new timetables; etc.) On a like for like basis (i.e. for the core signalling systems and adjusting for risk), the expected signalling upgrade costs for JNP are significantly higher than the costs for the Victoria line upgrade (VLU at £4.4m per route km). This is despite the fact that the Victoria line solution was procured uncompetitively via Metronet’s shareholder, Bombardier and involves more system development compared to the proven Thales system chosen for JNP. Currently, with no assured programme for completion of the Jubilee and Northern upgrades, specific unit costs are not calculable though they are expected to be well above the comparable figures for the Victoria line.
- 4.12 It should be noted that both figures are higher than the target level for the Sub-Surface signalling contract (currently out to tender) which is expected to be more representative of internationally benchmarked levels.
- 4.13 In assessing efficiency, access to the railway should also be taken into account given the disruption (and consequent economic impact) it has. Against this measure, the Jubilee line compares unfavourably with the Victoria line with significant further access required into 2010. For the SSL upgrade, LU is seeking to use access more efficiently, and is urging TLL to adopt a

similar philosophy for the Northern and Piccadilly line upgrades (rather than the greater access currently sought by TLL for RP2).

5 CONCLUSION

- 5.1 With the collapse of Metronet, LU inherited a legacy of poor programme management and system integration, ineffective cost control, a lack of forward planning and inefficient financial management. LU worked initially with the Administrator, and then post-transfer with the former Metronet staff who transferred to TfL, to develop and drive an improved programme within the TfL Business Plan affordability limits. Within the constraints of inherited contracts, significant levels of efficiency have been identified and incorporated into the Business Plan.
- 5.2 The result is that whereas the historic benchmarking shows Metronet unit costs in excess of TLL in many cases in the past, through the RP2 period from 2010, BCV/SSL unit rates are comparable with, or better than, the historic TLL rates. By contrast, the TLL bid for RP2 shows costs increasing in a number of areas and in excess of LU's own estimates of what a Notional JNP Infraco should achieve. TLL bid costs also include significant sums for central expenses.
- 5.3 London Underground is confident both that its estimates of a Notional JNP Infraco are realistic, and that a notional Infraco could deliver the works for these costs. The costs are significantly below those proposed by TLL for RP2. London Underground's confidence in its estimates is in part based on its continuing programme to drive out inefficiencies and poor practice in the former Metronet PPP operations.
- 5.4 The actions taken by LU during and since the Administration generated savings and avoided projected costs of £2.5bn, as described in the June paper, and now a further £1.1bn of savings have been identified in the former Metronet businesses. Much of this has been delivered already in the Metronet transfer and subsequent restructuring. Hence the 2010/11 Business Plan contains savings totalling £2.3bn relating to BCV/SSL. These efficiency targets are locked into LU budgets, and are monitored closely with a rigorous process governing change control.
- 5.5 To promote greater transparency LU is now producing a 4-weekly Performance Report with comprehensive performance and cost data. Board members are invited also to visit the LU BCV/SSL maintenance function to see first hand how some of the improvements described here are being delivered.

6 RECOMMENDATION

- 6.1 The Board is asked to NOTE this paper.

7 CONTACT

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