cyril sweett

DREES & SOMMER

memorandum

to:	Lorna Davis		
copy:	Damian Sharp; Fiona Spencer; John Ramsay		
from:	Nadia Savage		
ref:	**Trams DFBC**	**date:**	27 November 2006

Lorna

Please find enclosed our initial comments on the DFBC information received over the last few days in the following three areas and in the form requested:

1 Cost

2 Risk

3 Time

The receipt of Tie's DFBC documents represents a key event in the lifecycle of the Tram project. The ProgMs have not undertaken an in-depth review of cost, risk and time aspects of the Tie Business Case for Trams although in view of the magnitude of TS's investment in this project, there are areas where we suggest that a more thorough review should be undertaken - particularly as very little cost information on Trams has been made available by Tie to TS over the last 12 months (as far as the ProgMs are aware).

The comments the ProgMs have passed to TS are therefore initial observations from a preliminary examination of the DFBC documents. Although this can not be construed as being a comprehensive review, we can assist further by undertaking more detailed assurance examinations if instigated by TS.

Best regards

Nadia Savage

Edinburgh Tram Network

Draft Final Business Case – Review Tracking Sheet: COST

Section of DFBC under review: 9 - Financial Analysis - Capital cost estimates (Phase 1a / Phase 1a + 1b)

Reviewed by: ProgMs

Comments submitted by: N Savage

Date comments submitted on: 27.11.06

Overall Comments (please keep to bullet style format)

Preliminary observations are as follows (please refer also to ProgM covering note):

- Item 9.3: this applies only to Tramco and Infraco sections
- Items 9.4 to 9.6: details of these previous estimates were not made available therefore it is not possible for the ProgMs to use these as a base to judge the robustness of the recent November adjustments
- Item 9.8: changes to estimate line items may have been extensive even though the overall outcome is only 4% change
- Item 9.9: the wording of the statement concerning the origin of costs and rates could be misinterpreted as indicating a higher level of integrity than may actually be achieved
- Items 9.10, 9.11 and 9.12: in order for the ProgMs to comment on the adequacy of the risk provision, a line-item review of the latest risk register would be needed and this has not been done; (we have however made some general observations on Risk – please refer to the ProgM comments elsewhere on Risk).

  On a 'rule of thumb basis', a risk allowance equating to 12% for a rail-related project just entering detailed design may be viewed as being a little optimistic but this comment has to be qualified to the extent that it is possible there may be separate allowances for risk-type items in the base costs
- Item 9.12: does this mean no allowance for Optimism Bias is now included?
- Item 9.17: Tie were not able to jointly review the Cyril Sweett estimates with the ProgMs which makes it more difficult to achieve an understanding of what the thinking is behind the cost allowances – achieving a reasonable level of assurance depends in turn upon understanding scope, assumptions, context etc

  Some recent information is now available on the differences between the estimates undertaken on the Infraco package and these are being reviewed. However, it is currently less clear how the final allowances for the Mudfa package have been assessed
- Item 9.20: Bullet Point 1: whilst rates used for project management may originally have been competitively tendered, in the absence of market forces, have tie benchmarked the resource quantum required to ensure this is reasonable and represents value for money?
- Item 9.20: Bullet Point 2: no details available of how the contract sum has been arrived at or of the adjustments made for known changes so unable to comment on allowance

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- Item 9.20: Bullet Point 3: similar comment to preceding item
- Item 9.21: no information concerning what the 'remaining items' are; inflation rate of 5% may be slightly high in our view however, allowance for risk associated with forecasting future market prices appears reasonable
- Item 9.24: do TS envisage a retrospective assessment of the 'actual level of cost inflation in the construction industry' ?; if so, will this be used to assess the final level of grant? The mechanism for doing this would require definition (for e.g. 'cost' may be construed as being different from 'price'; also the practicalities of establishing actual levels are challenging) (refer also item 9.28)
- Item 9.25: suggests that the <u>funding</u> commitment is subject to a number of things including:
    - '…careful analysis of …. costs…' ; ProgMs unable to do this so far because of insufficient detail / time
    - '…receipt and negotiation of tender prices for Tramco and Infraco…'; is this correct?
- Item 9.26: is the reference to '…the robustness of the capital cost estimates...' to just the utilities costs or does it refer to all of the CAPEX elements?
- Item 9.27: on the basis of the figures included in the DFBC, a complete Phase 1 looks unaffordable on the basis of CAPEX spend
- Item 9.28: affordability appears dependant on a number of items listed; reference Bullet Point 1, has any risk provision been included to accommodate the impact of any additional costs arising through Detailed Design?; Bullet Point 3, is this statement correct that affordability depends upon where inflation ends up and whether TS apply price adjustment in such a way that the funding contribution is increased
- Item 9.29: what does the last sentence actually mean? (…' It is therefore appropriate to adopt an approach to construction commitment which manages overall affordability risk…'
- Item 9.31: it would be reassuring to learn how tie have allowed for this flexibility and believe they can avoid cost increases arising from a phased approach (what does 'appropriately concluded' mean in the context of this item?)
- Item 9.32: there may be a premium from the bidders from adopting a phased approach
- Item 9.44: tie appear very optimistic that the outurn costs will be within the funding available; TS have still to learn what the 'mechanism' proposals will be in the event overruns are experienced.
- Item 9.50: has TS examined Tie's OPEX cost allowances for suitability?
- Item 9.54: this request for a further £61m of funding prior to conclusion of Infraco and Tramco negotiations represents a big risk to TS insofar as if closure is not achieved, it could negate the value of TS's investment

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Key Recommendations (please keep to bullet style format)

- Clarification should be sought as to where in the DFBC there is a record of exactly what documents / versions have been used to compile costs (e.g. cost plans, risk registers, programmes etc – this is to ensure a baseline for future versions/changes)
- A more detailed breakdown of costs is required in a number of areas if TS wish to secure some assurance concerning the sufficiency of the total costs used in the DFBC together with clarification in a number of areas as to what has actually been included in each of the various cost items ** (e.g. Mudfa, Utilities, Opex, etc)

  ** *some further information received 23.11.06*
- If the apportionment between the Lines and Phases is an important consideration in the Business Case more information will be needed in order to review this
- Copies of the ITT document for Tramco would be helpful to understand the scope and basis for the tender price and contract in preparation for the time when details of how the cost allowances have been compiled are available
- Clarification should be sought as to whether an allowance for Optimism Bias has been included and if so, the level of provision that has been made
- Item 9.14: TS should clarify whether any risk allowance has been included in respect of scope/quantum growth for Mudfa
- Item 9.15: it is good that the utilities have provided estimates but a breakdown identifying the scope and build-up for this section of the costs should be provided in order for TS to achieve some assurance over whether the allowances are reasonable
- Item 9.17: TS should seek further clarification as to how the final allowances for the Mudfa package have been assessed
- Item 9.19: TS should seek further clarification as to whether allowances for risk have been added to the District Valuer's cost assessment as the scope and valuations may not be reliable at this stage
- Item 9.20: Bullet Point 1: TS should seek clarification as to how tie has assessed the resource quantum required for project management (for e.g. is there evidence of benchmarking?)
- Item 9.35: a summary of 'contractual payment mechanisms' would be helpful; it would also be useful to know how Tie have calculated the spend profile – particularly relating to spend in the next 1 to 2 years
- TS should check that the figure of £592m identified in section 9 is actually the figure used in the financial appraisal.

Have you included a marked up copy of DFBC section along with the above comments?

Yes ☐ No ☒ X

TRS00003141_0004

Edinburgh Tram Network

Draft Final Business Case – Review Tracking Sheet: RISK

Section of DFBC under review: 10 - Risk Management

Reviewed by: ProgMs

Comments submitted by: N Savage

Date comments submitted on: 27.11.06

Overall Comments (please keep to bullet style format)

- There is 'significant' risk exposure for the public sector during the Development Period. It is not clear how this will be funded.
- Tramco maintenance cost uncertainty does not appear to have been fully understood.
- The cost QRA shows that the biggest risk drivers are the cost of delay and a higher than expected inflation figure. It is not clear how these will be addressed.
- It is not clear how confident tie are that the tram network will be operating in time to realise the revenue expected – there has been no schedule QRA info provided.
- There are 17 very high probability/low impact risks in the risk register. The impact ranges for these risks is £1k to £5k. The adequacy of these impact ranges is not understood. Items with such high probability should be in the cost estimate rather than the risk register.
- The management of stakeholder expectations is key, there is only passing reference to this and no mention of a stakeholder strategy
- Some risks are described as 'shared' (e.g. soft FM), who will fund what proportion of these risks?
- Many risks are described as 'mitigated'. This does not give an indication of the extent to which they are mitigated, there could still be significant risk exposure
- The P50 and P90 cost risk confidence figures are expressed as percentage uplifts to the base cost. This is gives a false impression. Risk exposure is a discrete figure not a percentage of the base cost as is the case with Optimism Bias.
- P90 figure is expressed where we would expect the P80 figure. The P90 figure from the cost QRA is £5.3m more than the P80 figure.
- The cost QRA has been undertaken at the whole project level. It is not clear what confidence tie has of achieving each of the project elements within the cost estimate
- It is unclear how the cost of 'unknown' risk will be managed. How will the contingency be managed (as opposed to risk)?
- Although mentioned, it is not clear how the residual Optimism Bias cost uplift be addressed

Key Recommendations

- The public sector risk exposure, particularly during the 'Development Period' should be analysed and funding identified/agreed
- The cost of tram planned maintenance and defect rectification should be quantified to allow informed decision making on the transfer of this risk
- Actions to address the cost of delay and increased inflation should be identified.
- Evidence of tie's confidence in meeting the project key milestones should be provided
- The very high probability/low impact risks should be reassessed to ensure that they are appropriate. Where risks are assessed as having 95%, they should be transferred to the cost estimate where appropriate
- A Stakeholder Management Plan should provide evidence that appropriate actions are planned to address stakeholder expectations
- The cost QRA should be undertaken at the MUDFA, TRAMCO level to understand where the major areas of risk lie.
- Funding of the quantified 'shared' risks should be identified/agreed
- An indication of tie's confidence that the mitigation that they have put in place will be effective should be provided together with an indication of what the residual risk is.

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- The risk confidence levels should be expressed at the P50 and P80 levels as costs
- Details of how a fund for 'unknown' risk (contingency) will allocated should be provided.
- Details of where will the residual Optimism Bias cost uplift will be allocated should be provided

Have you included a marked up copy of DFBC section along with the above comments?

Yes [√] No [ ]

TRS00003141_0006

Edinburgh Tram Network

Draft Final Business Case – Review Tracking Sheet: TIME

Section of DFBC under review: 11. Programme

Reviewed by: ProgMs

Comments submitted by: N Savage

Date comments submitted on: 27.11.06

Overall Comments (please keep to bullet style format)

Tie initially submitted two pdf-files of their programme showing only summary bars and no critical activities, no linking and no float figures. Following request by the ProgMs, Tie submitted on the 22.11.2006, a soft copy in Primavera-format. Due to the limited time given for the review, a detailed and comprehensive assessment was not possible. However, the following key issues have been identified:

- In general, use of P3e is applicable. The developed WBS and project structure seems adequate as shown in the submitted schedules (section 11.2). After a preliminary review of the soft copy it is clear that Tie has produced a comprehensive and very detailed programme with more than 2,800 activities. It is assumed that this P3e programme contains all relevant activities and considers all project phases and sections required. This schedule also appears to have all the necessary links required. The ProgMs assess that the programme is not cost loaded yet, because only 4 activities have been assigned with small amounts of cost.

- Tie highlight in section 11.3 that "only little float exists within the programme", which can be acknowledged after a review of the schedule. It appears that the programme provided describes only a "Best Case" scenario with no real feasible mitigation of delay or additional time for any secondary works required. This means that if the approval of the DFBC cannot be achieved by the end of 2006, delays of the following project phases are unavoidable. In regard to other main activities of the design stage, any delay will affect the following activities in almost the same manner. This is a very critical programme issue and if the key early milestones cannot be achieved the delay will be extended to months.

- The programme with its dates and planned work flow for the SDS Design, INFRACO and MUDFA works is based on a large number of assumptions, as detailed in section 11.7. Additionally, Tie highlight in section 11.3 that "the programme is based on assumptions of 'right first time and on-time delivery'". Edinburgh Tram Network Project is a unique project in Scotland. Therefore the assumptions and preconditions appear optimistic.

- The milestones for the delivery of the TRAMCO contract appear realistic if the contract award can be achieved in October 2007, as indicated in the schedule. TS should clarify if this award milestone is realistic and if the required technical specifications are already substantially complete and comprehensive.

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- The programme shows that the entire Detailed Design for this project will be completed in October 2007. TS need to examine this to ensure this is realistic

- The procurement process for the INFRACO contract is running parallel to the design stage. The award of the INFRACO contract is scheduled for October 2007 and the commencement of the main construction works will be already in December 2007. As above, TS should consider whether this is realistic.

- The construction works of the first line (line 1a) will be completed in July 2010 (early finish date assumes no delays and right first time). The first rolling stock cars will arrive in December 2009. Further clarity should be sought by TS as to the activities with these tram units over the following 7 months plus any further delay months.

In summary, the ProgMs can say, that the overall durations for the construction works and procurement for Tram look reasonable. The durations for design, procurement, approvals and commissioning however look very compressed. The lack of float or mitigation opportunities and 'right first time' planning would appear optimistic.

Key Recommendations (please keep to bullet style format)

- Based on the detailed schedule the main key milestones should be separated and be reviewed by Tie.
- Tie should clarify the durations allowed for review, revisions and approval processes that have already been taken into consideration.
- Tie should clarify the responsibilities and feasibility in regard to their achieving their key assumptions.
- Tie should show and clarify the interdependences that exist in relation to the other Major Projects (e.g. EARL).
- The programme needs to be baselined in the first instance and then agreed with TS.
- The programme also needs to be cost and risk loaded at an appropriate level.
- The Summary Programme (as submitted as a section in the DFBC) needs to be submitted with progress indicated 4 weekly to TS.
- A detailed monitoring of the key milestones is essential.
- The milestones for decision-making regarding the Phase 1b scope of works (excluding 'Utilities' and 'Design Works') needs to be established.
- A schedule QRA requires to be undertaken and findings published as a matter of urgency.

Have you included a marked up copy of DFBC section along with the above comments?

Yes ☐ No ☒ X

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