

Edinburgh Tram Project Peer Review

Date of issue to tie Project Director: 2 July 2008

Review dates: 1-2 July 2008

Peer Review Team Leader: Malcolm Hutchinson

Peer Review Team Members:

Mike Heath

Andrew Sloan

Willie Gillan

Peter Strachan

Background

The aims of the project:

The objective of the tram network is to help to create the transport infrastructure necessary to promote and support a growing local economy and create a healthy, safe and sustainable environment.

Substantial road traffic growth across the Edinburgh area combined with forecast population and employment increases will lead to significant growth in road congestion. Sustainable growth can only take place with a step change in public transport. Road space must be created by modal shift away from cars, to enable economic growth to take place without aggravating congestion. A tram system will enable new development and continued growth of existing development in a sustainable way. Without it, growing traffic congestion and lack of access to development sites will curb future growth and threaten the economic prosperity of the city as the capital.

The driving force for the project:

The tram project is being promoted by City of Edinburgh Council (“CEC”) with the support of the Scottish Government. Capital funding is being provided by CEC and Scottish Government through Transport Scotland (“TS”).

Current position regarding Review Programme:

The review team undertook a readiness review in September and October 2007 and a separate Risk Review for CEC 10th and 11th October 2007.

Recommendations from these reviews have been implemented.

Purposes and conduct of the Peer Review

The Project Director has commissioned a series of Independent Peer Reviews to provide assurance in advance of the critical milestones in the Projects Delivery Phase.

The planned review programme is detailed in Table 1 below:

	Date	Purpose
1	July 2008	Readiness for management of delivery
2	November 2008	Ground risk management, HSQE & 1b status, Gogar, scope change review, management framework & structure associated with acceptance testing and commissioning
3	April 2009	Readiness for depot commissioning and driver training
4	April 2010	TEL readiness for service, commissioning & testing, handover arrangements
5	September 2010	TEL readiness for service

Table 1

Readiness for management of delivery

The first Peer Review focused on the overall readiness of the Project team to manage delivery.

The full terms of reference are in Appendix A.

Conduct of the Peer Review

The Review was carried out on 1st and 2nd July 2008 at tie offices in Edinburgh. The team members are listed on the front cover.

The people interviewed are listed in Appendix B.

A list of the documents studied is available from PA to Project Director.

The review team would like to thank the tie team for their support and openness which contributed to the review team's understanding of the Project and the outcome of this review.

Conclusion

The Review Team finds that:

- Infrastructure negotiations with the preferred bidder (BBS) were completed on the 14 May 2008 and the Tramco and Design Contract were novated at the same time.
- The MUDFA Works have continued and are some 60% complete.
- Final Business Case was approved by CEC on 7 December 2007.
- The Infraco Contract is a bespoke document tailored specifically for this project.
- The Project Team has been strengthened in commercial and technical terms by the appointment of the Project, Commercial and Engineering Directors.
- The Project has produced a number of control procedures in readiness for delivery.
- The Project has produced an accurate and honest lessons learned report on the MUDFA Works.
- The Programme has been delayed due to the lengthy contract negotiations.
- The Project cost has increased from £498million to £512million.
- The Project faces a challenging period over the next three months given the need to properly mobilise Infraco's Construction Supply Chain.
- There is merit in considering a city-wide approach to real time traffic monitoring and incident control.

Findings and recommendations

1. Project Organisation and Management Procedures

Traffic Management Plan

We reviewed Traffic Management Plan (TMP) MUDFA Works document reference version 15.08.08 and received a presentation from Brian McCall.

The document appears thorough and has worked effectively as a process during the MUDFA Works. It was explained that the document would need to be updated to prepare for the impending Infraco works. Our comments are made in the context of using the document for Infraco.

- **Timeliness of Documentation**

The introduction on paragraph 3.1 states the intention “to review the plan at a frequency not exceeding six months”. The last issue was 15.08.07.

Recommendation 1: That the Traffic Management Plan is reviewed quarterly.

- **Modelling of Traffic Flows**

This activity appears to have been successful and bodes well for the Infraco Works.

- **Dependency on Design**

It was noted that some TMP activities had become “just in time” as a consequence of the delivery of elements of design by SDS. Although the responsibility for delivery of design and TMP activities for the Infraco phase will rest entirely with BBS in the future, **tie** will need to satisfy itself that the TMP process is operating in accordance with the process already trialled for MUDFA.

- **Quality of Works**

It was noted that the quality of the physical works “on street” required daily checking to ensure that they delivered a consistently reliable outcome. Clearly this role will need to be continued during the Infraco phase and **tie** will need to satisfy itself that BBS has adequate process and resource to do this and “self monitors” performance in this area.

The Stakeholder and Communications Management Plan (SCMP)

We reviewed document version 1.0 issued 24.09.07 and received a presentation by Mike Connelly. Our comments in response to both the document and the presentation.

- **Timelines**

As with the TMP document this document refers to 6 monthly reviews against the full plan. We understand a review has recently taken place. The SCMP needs to be revised to take into account the results of the latest review.

- **Content**

The content of the document appears appropriate although there would be merit in a separate section detailing the proposals to engage local and national politicians in the SCMP.

- **Business Support**

We note that around £1million has been spent on support to small businesses during the MUDFA Works and £300k is spent on consulting with the local CBI and large businesses. This appears to have been well received both the amount and the speed of dealing with claims. We understand that a total budget of £2million is available for Business Support throughout the construction phase.

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This commitment may prove to be a double edged sword as the underlying principle that “that’s all the money there is” which is being used to ward off claims will be challenged during construction.

A precedent has been set in terms of an amount, readiness to claims and speedy resolution of claims. The next steps will require careful management.

Recommendation 2: That an assessment of whether the investment in Business Support to date is considered value for money is complete before further expenditure is incurred.

Recommendation 3: That a review of the balance of effort of the Stakeholder Management Team is undertaken to ensure it is targeted across the whole range of stakeholders.

Future Issues

- We have concerns that insufficient stakeholder management time is being spent with stakeholders who could jeopardise elements of the project e.g. Forth Ports, SRU, Network Rail etc. In addition, we consider that insufficient time and effort is being spent on persuading the people of Edinburgh to use the tram once open. The Stakeholder Manager should develop a strategy to ascertain how tie can attract users; for example running a zero fare period.
- Property Owners
It would be prudent for the SCMP to contemplate how it will deal with potential claimants for land compensation as their views on the tram will inevitably be affected by their attitude to compensation. Whilst this will largely be a property matter it will require to be fitted into the SCMP.
- Incident Management
There is a cross over between Stakeholder and Communications Management and Incident Management. Our views on the SCMP aspects of Incident Management are included in that section.

Incident Management Plan

Incident Management Procedure dated 01.10.07 was reviewed and Tom Condie made a presentation on the subject. Our comments are below:

The Incident Management procedure appears to be appropriate for dealing with relatively low level incidents – and evidence suggests that it has worked well thus far. However the procedure should be reviewed and strengthened to take account of the next phase of InfraCo work. Whilst a desktop exercise has been undertaken, tie’s (and its contractors’) preparedness would benefit from a “live” incident scenario to test the handling of a serious, high profile event. tie, together with TEL, should also start to formulate the incident management plan for the commencement of trial running operations as this will represent a step change in the requirement.

Recommendation 4:

tie;

- Reviews and updates the Incident Management procedure against the InfraCo workstreams
- Implements a competency management process for staff required to undertake specific roles under the incident management procedure
- Runs a “live” incident scenario exercise, identify the lessons learned and skills gaps and revise the Incident Management procedure
- Considers multiple, simultaneous incidents and ensure the plan and staff deployment is able to cope

Competition sensitive

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- **Make available an “incident vehicle”, appropriately equipped and able to be deployed to site as a “command post” in the event of a major incident.**
 - **Reviews the media handling capability for a major incident as test through the “live” scenario.**

MUDFA Lessons Learned

We received a presentation from Graeme Barclay.

We believe that the exercise of the MUDFA Works in advance of Infraco is of major benefit to the project and the lesson learned document is honest and open. While the MUDFA Contract has developed into a reasonably successful operation with many of the lessons learned being taken forward into the Infraco Contract. The fact that the completion date remains uncertain (Works 60% complete) will have an increasing impact on the Infraco Works. **Recommendation 5: That prioritising the remaining MUDFA works packages in order to minimise the impact on the Infraco programme should be undertaken as soon as possible.**

It is noted that generally the remeasurement of the MUDFA Works is in line with the original cost estimates with the exception of the recent draw down of the contingency sum in the amount of £1.4m (10%)

Contract Issues

The contract parties are as follows.

- **tie** Ltd has contracted to Bilfinger Berger, Siemens, and CAF as separately but through a single contract. Bilfinger Berger, Siemens and CAF are not a JV but three separate entities who have joint and several liabilities under the contract and are to work as a “consortium” (BBSC) for delivery.
- **tie** had a design contract with Parsons Brinkerhoff (with subcontractor Halcrow) (SDS) for the detailed design of the project. SDS has been novated to BBS for the contract delivery.
- BBS intend to subcontract work packages to Barr, Farrans and RJ McLeods for civil engineering works but no sub contracts have been awarded. A fourth package was to be awarded to Grahams but this is reported to be in jeopardy.
- SDS design was not complete at the point of novation to BBS, the schedule of outstanding works is captured in the BBS Contract. It is unclear to the review team where risk lies for design development. BBS and tie in interview considered risk lay with the other party.
- We consider that the bespoke nature of the contract introduces additional risks arising from the inevitable areas of uncertainty associated with the interpretation of this unique form of contract.

Change and Contract Management

We reviewed a document Change Management Procedure (CMP) shown as reviewed 06.04.08 and received a presentation by David Carnegie. We also received

Competition sensitive

a presentation on Contract Management by Dennis Murray. We believe these issues are materially linked and have considered them together.

- **CMP Document**

This document is written very much from the perspective that stakeholders or the Infraco requires a change. Implicitly the changes will be well thought out and agreed in scope and intention i.e., those changes agreed prior to contract award. In this context the procedure is thorough and represents good practice.

- **Change and Contract Management**

We have not reviewed the revised infrastructure contract in detail. However, having listened to the presentation on Contract Management we believe there are a number of issues that need tie to determine how it will manage the Contract and whether it intends to apply the CMP and in what circumstances. These are:

- Any outcome from the IFC drawings if they vary from the frozen baseline design (design development)
- Changes on site at “no cost or delay” which will need incorporating in the “as built” drawings and final approved design.
- Changes relating to contract payments either against milestones or payment amounts.
- Changes that are generated in accordance with the Infraco Contract change procedures.
- Changes in responsibility e.g. MUDFA.
- Changes arising from unforeseen physical events/ conditions.
- Programme related events including extension of time and relief events.

Site Monitoring and Certification

Following the signing of the Infraco Contract, the Contractor is gearing up to mobilise on site. In speaking to both tie’s Contract Management Team and representatives of the Contractor, it became clear that there is a difference of opinion on the precise manner in which the site monitoring and design certification procedures are to be operated during construction.

tie, tie’s representative and Contract Manager need to be absolutely clear about their committed obligations under the terms of the contract and the consequential impacts their actions may have.

Recommendation 6: That tie and Infraco establish, document and agree their respective roles for site monitoring and certification.

Programme

The Review Team has not reviewed the Project Programme in details. However it is clear that the project programme is currently three months behind schedule. We consider that there are significant risks that the programme will be delayed further. Evidence of this is the fact that no apparent progress has been made since contract award.

Significant programme risks include inter alia;

- Design development by SDS post contract award is delayed.
- CEC Approvals are not completed in line with the programme.
- MUDFA Contract not complete by time main contract works start

BBSC has submitted a contract programme which shows no progress. Both the tie and BBS staff are capable and experienced on the same software package. The Contract provides for the provision of a monthly programme update to tie.

Project Team

The review team recognises that the tie management for the Edinburgh Trams has been significantly strengthened over the period since the last review. In particular, we note and welcome the appointment of Directors with strong engineering and commercial skills.

The Tram Project Director demonstrates a sound understanding of the managerial, commercial and technical requirements for successful project delivery. It is considered important that the Project Director has a strong engineering background.

There is a strong working relationship with the very capable Deputy Project Director who importantly has been closely involved with the project for several years. The importance of this continuity of involvement should not be understated.

The appointment of an experienced Engineering Services Director is welcomed. This is a key role within the project to ensure that the client's technical requirements and contractor's deliverables are reconciled.

The Commercial Director for the project demonstrated a clear understanding of the project constraints and the importance of systems in managing the milestone payment system. A strong direction and control of the project change process will be required to ensure a complete understanding of the emerging costs as the construction progresses.

The Construction Director for the MUDFA contract has delivered a reported 60% of this enabling works contract. The experience in operating the bespoke form of contract, dealing with traffic management issues and general construction activities along the tram route is considered to be invaluable to the main construction contract. The review team consider that tie consider how this MUDFA experience be captured by InfraCo.

It is noted that the key position of Construction Director for InfraCo has not yet been filled and urge that this be rectified as soon as practicable and before significant construction work starts on the project.

It is recognised elsewhere in this report that, the bespoke form of contract introduces project risk. **Recommendation 7: That tie management should consider whether it has sufficient legal skills to fully understand and execute the contract on a daily basis.**

Key to the success of the project is the working relationship between tie and BBSC. All parties have come through an extended and bruising period of negotiation. **Recommendation 8: That tie should proactively lead the development of partnering relationship approach with it's suppliers and agree roles and responsibilities especially where there are opportunities for team integration.**

Traffic Monitoring

Our review of the Incident Management and Traffic Management procedures recognise the impact of traffic delays on the reputational risk of the Tram and people's goodwill towards it. We have already commented that the MUDFA experience has evidenced that need for daily monitoring of Traffic Management arrangements.

We also expect that implementing the recommended incident scenario will demonstrate the need for a cross discipline approach to transport related incidents in the city. We envisage that TEL/ Lothian Buses would have considerable expertise in this area and hope that this facility could be delivered at marginal cost using existing communications and CCTV.

Recommendation 9: That the review of real time traffic monitoring and incident management initially for public transport is conducted in the next three months.

APPENDIX A**Terms of Reference for Readiness Review No1****Edinburgh Tram Readiness Review Programme**

The Project Director has stated that he would like to commission a series of Independent Peer Reviews to provide assurance in advance of the critical milestones in the Projects Delivery Phase.

The planned review programme is detailed in Table 1 below:

	Date	Purpose
1	April 2008	Readiness for management of delivery
2	October 2008	Ground risk management, HSQE & 1b status, Gogar, scope change review, management framework & structure associated with acceptance testing and commissioning
3	April 2009	Readiness for depot commissioning and driver training
4	April 2010	TEL readiness for service, commissioning & testing, handover arrangements
5	September 2010	TEL readiness for service

Table 1

In total these reviews cover the areas of a Gateway 4 review, i.e. the period between the Investment Decision (Gate 3) and Readiness for Service (Gate 4).

Readiness for management of delivery

The first Peer Review will focus on the overall readiness of the Project team to manage the delivery of the project.

It will review:

- The implementation of the recommendations of the gate 3 review.
- The 'Readiness for the next phase' as specified in Section 5 of the Gate 3 Best Practice review document. Annex A.
- The Business case and stakeholder issues as listed in Section 1 of Gate 4 Best Practice review document. Annex B.
- The team will specifically review the following:
 - Team structure and population
 - Contract management procedures
 - Change management procedures
 - Site supervision policy
 - Incident management
 - Stakeholder management procedures, traffic management procedures and lessons from MUDFA

Competition sensitive

The following Documents will be available prior to the Review:

- Organisation Chart
- Contract Management Procedure
- Change Management Procedure
- Site Supervision Policy
- Incident Management Procedure
- Stakeholder Management Procedure
- Traffic Management Procedure
- MUDFA Lessons Learned

The Project team will produce a programme of Key members of the Project team and Stakeholders available for short (30 minute) Interviews on the first morning of the review

The Review will report its finding in a short report for the Project Director.

ANNEX A

Gateway 3 Best Practice

5. Readiness for the next phase

- 5.1 Is the working relationship likely to succeed?
- 5.2 Are all the resources and internal funds in place?
- 5.3 Are the suppliers project, risk and management plans adequate and realistic?
- 5.4 Does the client side plan reflect the supplier's plan?
- 5.5 Are the long-term contract administration plan and benefit measurement process complete?
- 5.6
- 5.7 Are the service management plan, administration plan and service level arrangements complete?
- 5.8 Is the management process for service change complete?
- 5.9 Is there an acceptance strategy or commissioning strategy as applicable?

ANNEX B

Gateway 4 Best Practice

1. Business case and stakeholders

- 1.1 Is the project still required?
- 1.2 Does the project meet the business need?
- 1.3 Is the business case still valid?
- 1.4 Are there any changes between award of contract and completing of transition/testing that affect plans for business change?
- 1.5 Is the organisation ready for business change?
- 1.6
- 1.7 Are there resources available, where required, the appropriate skills and experience?

APPENDIX B

Interviewees

NAME to be completed	ROLE
Steven Bell	Project Director (tie)
Duncan Fraser	Tram Coordination (CEC)
Susan Clark	Programme Director (tie)
Scott McFadzen	Bilfinger Berger Siemens (BBS)
Colin Brady	Bilfinger Berger Siemens (BBS)
Tom Hickman	Programme Manager (tie)
Brian McCall	Traffic Management (tie)
Mike Connelly	Stakeholder Manager (tie)
Dennis Murray	Commercial Director (tie)
David Carnegie	Change Control Manager
Graeme Barclay	MUDFA Construction Director (tie)
Mark Hamill	Risk Manager (tie)
Tom Condie	HSQE Manager (tie)

APPENDIX C**Summary of recommendations**

No.	Recommendation
1.	That the Traffic Management Plan is reviewed quarterly.
2.	That an assessment of whether the investment in Business Support to date is considered value for money is complete before further expenditure is incurred.
3.	That a review of the balance of effort of the Stakeholder Management Team is undertaken to ensure it is targeted across the whole range of stakeholders.
4.	<p>tie</p> <ul style="list-style-type: none"> • Reviews and updates the Incident Management procedure against the InfraCo workstreams • Implements a competency management process for staff required to undertake specific roles under the incident management procedure • Runs a “live” incident scenario exercise, identify the lessons learned and skills gaps and revise the Incident Management procedure • Considers multiple, simultaneous incidents and ensure the plan and staff deployment is able to cope • Make available an “incident vehicle”, appropriately equipped and able to be deployed to site as a “command post” in the event of a major incident. • Reviews the media handling capability for a major incident as test through the “live” scenario.
5.	That prioritising the remaining MUDFA works packages in order to minimise the impact on the Infraco programme should be undertaken as soon as possible.
6.	That tie and Infraco establish, document and agree their respective roles for site monitoring and certification.
7.	That tie management should consider whether it has sufficient legal skills to fully understand and execute the contract on a daily basis.
8.	That tie should proactively lead the development of partnering relationship approach with it's suppliers and agree roles and responsibilities especially where there are opportunities for team integration.
9.	That the review of real time traffic monitoring and incident management initially for public transport is conducted in the next three months.