

8.6 QRA and Risk Allowance

tie's risk identification and management procedures as detailed in the FBC describe a process whereby risks associated with the project which have not been transferred to the private sector are logged in the project Risk Register. Where possible the cost of these risks is quantified by a QRA in terms of a range of possible outcomes, probability of occurrence and thereby the Risk Allowance which is included in the capital cost estimate for the project. The project Risk Register also details the "treatment plans" being followed to mitigate individual risks and thereby avoid all or part of the cost allowance.

As the Infraco and Tramco procurements have progressed tie has maintained and reviewed contractual Risk Allocation Matrices, which reflect the risks retained by the public sector arising from the contracts, and has exercised prudence in ensuring the Risk Register, QRA and therefore Risk allowance provide adequately for risks retained for the public sector including the major areas or risk assessed above.

The only material change in the Risk Allocation Matrices between Preferred Bidder stage and the position at Financial Close is in respect of the construction programme costs associated with any delay by SDS in delivery of remaining design submissions into the consents and approvals process beyond Financial Close.

The Project Control Budget at Financial Close totals £508m (Final Business Case £498m) including a risk allowance of £32m (Final Business Case £49m). This change primarily reflects the closure of procurement stage risks on Infraco and Tramco including all the risks associated with achieving price certainty and risk transfer to the private sector as has been effectively achieved in the Infraco contract as summarised above.

The risk allowance of £32m includes the following provisions for residual risks retained by the public sector during the construction phase of Infraco and Tramco.

- £8.8m in respect of specifically identified risks held by and to be managed by tie during the construction phase including adverse ground conditions, unidentified utilities and the interface with non-tram works and post close alignment of the Infraco proposals with the SDS design.
- £2m in respect of the risk that conditions attaching to the VE items taken into the Infraco price may not be removed
- £3.3m in respect of post Financial Close consents and approvals risks which provides for the cost or programme consequences of imperfections which may arise in elements of the consents and approval risk transfer as described above.
- £6.6m to provide for the cost of minor Infraco / Tramco programme slippage of up to 3 months (other than as a result of delays to MUDFA which is provided for elsewhere in the risk allowance).

tie has assessed these amounts as providing adequately for the residual risk retained by the public sector arising from the Infraco and Tramco works and the post Financial Close consents and approvals process. However the Risk Allowance does not provide for the costs of:

- Significant changes in scope from that defined in the Employers Requirements – whether such changes were to emerge from the consents and approvals process or otherwise
- Significant delays to the programme as a result of the consenting or approving authorities failing to adhere to the agreed programme (Infraco/SDS having met their own obligations) or any other tie/CEC initiated amendment to the construction programme which forms part of the Infraco contract.

All other things being equal any such changes falling into these categories would give rise to an increase in the cost estimate for Phase 1a of the project above of £508m.

8.7 Value Engineering Opportunities

As explained at 10.2 above, the Infraco price is stated after deducting VE opportunities with an aggregate value of £13.8m subject to satisfying certain conditions including the approvability certain items through the consents and approvals proves. A total of £4m have been provided against the possibility that such conditions will not be satisfied.

Value Engineering is a continuing process during construction and tie continue to seek to present value for money opportunities to save on construction and project management costs.

8.8 Alignment of QRA and Risk Allowance to DLA Letter and Risk Matrices

tie has considered the DLA Report and appended risk allocation matrices and considers that the Risk Allowance of £32m contained in the projected Control Budget at Financial Close and associated QRA adequately reflects the risks identified and the change in such risks retained by the public sector since approval of the FBC in December 2007.

The following references are to specific paragraphs/sections in the DLA letter:

5.1 Employers Requirements (ERs) – Alignment issues

There is a well understood and limited level of uncertainty with regard to the alignment of the ERs, the SDS design and the Infraco proposals (on which their price is based). The alignment work described at Section 2.3 above resulted in limited amendment to cost and risk contingencies.

5.2 Project Master Programme

The Project Master Programme which forms part of the Infraco contract is now agreed in all material respects. The QRA provides an amount of £6.6m (equivalent to 2-3 months complete delay in the programme) for general delay risk which has been assessed by tie management as adequate for the management of the programme but will not provide for any significant stakeholder initiated change beyond the point of Financial Close. The risk allowance accommodates tie's assessment of the anticipated immediate contractual variation which flows from the final integration of SDS design and construction programmes.

6.4 EAL – Option to shift tramway post 1/1/13

The capital cost of any shift in the Tramway at the airport beyond 1/1/13 would be at the expense of BAA and is not therefore a risk which should be provided for in the Phase 1a budget.

7.1 Consents – Delay on post-close consents

This is the one significant change in the risk profile retained by the public sector since December 2007. The exact nature of tie/CEC's continuing risks have been well rehearsed and are detailed in Appendix 1 as are the mitigating actions and processes tie has in place to manage these risks. A risk assessment in relation to the QRA is provided at section 8.4 above.

The total risk allowance provided in the QRA in respect of continuing Consents and Approvals Risk is £3.3m. This equates to the cost of some 3 months of BBS standing time and is considered adequate by tie management in the context of the number and criticality of consents still to be delivered, the liquidated damages available to BBS from SDS in the event the delay is caused by SDS, the responsibility of BBS to mitigate the costs of any delay and the close management of the process beyond Financial Close by tie. The risks summarised in the DLA Report are therefore accommodated in the risk and contingency allowance to an acceptable degree.

(9) Update on critical workstreams and readiness for construction

9.1 Design due diligence

The process and procedures laid out in the design management plan and design assurance process formal design reviews have been undertaken every week since September 2007 to inform and finalise the detailed design submissions. These submissions are then consolidated to form the necessary technical and prior approval packages for CEC to discharge their statutory obligations.

In parallel with the process since August 2007, BBS have had access to the detailed design submission across the range of asset for the Edinburgh Tram Network to enable Infraco's design due diligence to be undertaken. Appendix 1 sets out the status of the design process as at Financial close.

9.2 Run-time due diligence

The Infraco contractor has undertaken modelling based on the updated data provided by SDS and CAF to accept the "laws of physics" runtime as part of the finalised Employer's Requirements.

9.3 TTRO / TRO process

The process for gaining the TRO's for the project is documented in the TRO strategy produced in 2007. A major risk in this respect was removed when the Scottish Government amended the TRO Regulations to remove the need for a mandatory hearing for Tram TRO's. CEC can still elect to hold a hearing if they consider the level of objection to any particular TRO merits such action.

Completion of the TRO's is now driven entirely by design and modelling works being undertaken by SDS and JRC and managed closely by tie. The programme identifies the Orders being made in early 2010 which is in line with the overall construction programme.

9.4 MUDFA including interface with INFRACO programme

The Multi Utilities Diversion Framework Agreement [MUDFA] is currently being progressed to Programme Revision 06 as agreed in November 2007.

This programme has been utilised to integrate with the INFRACO programme and is identified as a constraint in a number of construction items. This has been reflected in the INFRACO Construction Programme with the agreement of BBS and other principal stakeholders as part of the sign up to overall construction methodology. Specific elements of diversions have been transferred to INFRACO where it is required by construction sequencing for the final utilities works.

It is expected that, despite detailed subdivision of works to facilitate BT cabling and commissioning, there will remain some overlapping of work sections as INFRACO commences. It is likely to be restricted to section 1C and 1B and can be managed with INFRACO, BT, AMIS and tie.

Overall progress on the utilities works has been good in terms of adherence to budget (with no contingency drawdown to date) and to programme. In addition, the public communications process has worked well although it is fully acknowledged that there is a long way to go.

9.5 Management team and Handover

The Tram Project Team to manage the construction phase of the project has now been designed and is substantially populated. Interim arrangements are in place for all key posts where a permanent appointment is awaited. Handover arrangements and detailed documentation of the final contract terms are underway and key procurement phase staff are contracted to remain until this handover is successfully completed.

The Infraco Director and team have commenced detailed works from February 2008 and are already managing and monitoring the Mobilisation Agreements with BBS and CAF. In addition, 3rd party facilitation arrangements have been commissioned to accelerate the forming of effective working relationships between BBS and tie.

9.6 Safety

Safety management systems are in place. The governance paper at Appendix 3 sets out the overall approach being taken by tie in collaboration with the contractors and stakeholders. Safety management will be under the specific oversight of a tie Board committee chaired by one of the tie non-executive directors who is an experienced industry professional.

9.7 Commercial Management

tie have appointed their post-contract award Commercial Director, who commenced work on 7 January 2008. He is currently progressing the remaining recruitment to ensure a competent, fully populated commercial team is in place to manage the INFRACO contract (including novated contracts for SDS & TRAMCO) immediately on Financial Close. Updated commercial processes and procedures have also been established.

9.8 Insurance

The project insurance arrangements have been in place for some time under the Owner Controlled Insurance Programme (OCIP) implemented with advice and direction from Heath Lambert. The programme has also been subject to evaluation by the Infraco consortium.

9.9 Risk Management

tie's risk identification and management procedures as detailed in the FBC describe a process whereby risks associated with the project which have not been transferred to the private sector are logged in the project Risk Register. Where possible the cost of these risks is quantified by a QRA in terms of a range of possible outcomes, probability of occurrence and thereby the Risk Allowance which is included in the capital cost estimate for the project.

The project Risk Register also details the "treatment plans" being followed to mitigate individual risks and thereby avoid all or part of the cost allowance. There is an agreed risk management procedure currently in operation to manage and treat risks which is owned by tie's risk manager and subject to detailed scrutiny each period with the individual project managers at the period Project Director's Review.

tie and CEC have also agreed an interface to the project where a filter and review is applied to any risks raised by CEC which may be considered relevant as a project risk and requiring a necessary treatment plan.

tie are focused on managing the delivery risks and associated treatment and mitigation plans to avoid or minimise any cost, quality or programme implications.

(10) Specific confirmations

On the basis of the content of this report, the DLA Report and supporting documentation, it is considered that :

- The Infraco Contract Suite is in terms acceptable for commitment ; and in particular
 - The Tramco Novation Agreement is in terms acceptable for commitment
 - The SDS Novation Agreement is in terms acceptable for commitment
- The CEC Financial Guarantee is in terms acceptable for commitment and is aligned in all material respects with the Infraco Contract Suite
- The tie Operating Agreement is in terms acceptable for commitment
- The TEL Operating Agreement is in terms acceptable for commitment

Background

Negotiations have taken place over a lengthy period of time with the objective of defining a process and set of contractual terms which will enable tie and CEC to manage the risks arising from the overlapping design and construction periods. This problem was not anticipated when the SDS contract was concluded in 2005. The recent discussions have taken place under the umbrella of the SDS Novation Agreement, but it is important to distinguish two groups of issues:

Cost certainty : The primary objective of the novation approach was to ensure that design work could commence long before commitment to the construction contract suite generating maximum construction price certainty and transferring design risk to the construction partner.

Outstanding design risk : SDS have resisted accepting liability to BBS for the timeliness of submission and approval of design packages after Financial Close. Their concern is that the risk is different from (and incremental to) the underlying risk arising from the quality of their work. A delay, they argue, could result in hefty exposure because of the linkage to construction programme delay. SDS did not anticipate this risk when committing to their contract - the expectation was that the majority of design scope and certainly all approvals would be complete prior to Financial Close.

The packages which have been delivered to BBS, with the requisite approvals, by Financial Close (“Approved Packages”) are subject to the Novation terms, which inter alia result in BBS accepting the design quality risk, with resort to SDS in the event of failure under the terms of the existing SDS agreement. The exposure to SDS could be potentially onerous, but was accepted when they entered into the existing contract and is not currently contentious.

This means that the primary objective above of cost certainty and risk transfer has been achieved relative to Approved Packages.

The problem relates to design packages which as at Financial Close are either :

- Submitted for Prior / Technical Approval but not yet approved (“Submitted Packages”) ; or
- Work in progress and not yet submitted (“Outstanding Packages”).

The rest of this paper provides an analysis of the residual risk to tie / CEC arising from these two groups of design packages. The paper does not address so-called “tie Consents” – TROs, TTROs and consents relating to statutory authority to implement the scheme - which have been accepted as out with the responsibility of SDS and BBS, except that BBS (and through them SDS) have an agreed contractual responsibility to assist in the process.

Risk overview

The risks which arise from the overlap of design and construction periods are summarised below :

- A. The Submitted packages are not of requisite standard, preventing CEC from providing consent timeously and creating delay to the construction programme.**
- B. The Submitted packages are of requisite standard, but CEC fail to provide consent timeously, creating delay to the construction programme.**
- C. SDS fail to provide the Outstanding packages on a timely basis relative to the agreed programme, preventing CEC from providing consent timeously and creating delay to the construction programme.**
- D. SDS fail to provide the Outstanding packages to the requisite standard, requiring rework and delay, preventing CEC from providing consent timeously and creating delay to the construction programme.**
- E. CEC provide consents and approvals timeously, but SDS then fails to provide IFC (“Issued For Construction”) drawings to BBS timeously creating delay to the construction programme.**
- F. SDS provide the Outstanding packages on time and to the requisite standard, but CEC fail to provide consent timeously, creating delay to the construction programme.**

It is not anticipated that the final Outstanding Packages will be delivered until Autumn 2008. The option of delaying Financial Close to eliminate the risk is therefore unattractive.

SDS has resisted accepting any liability in the event of any of these scenarios. Since the point of investing in a procurement of a design appointment in Autumn 2005 was to secure a completed approvals process with an advanced network design development, there was no allowance for the implications of a coincident design and construction process in the existing SDS agreement. Accordingly, tie / CEC’s leverage over SDS on the issue is limited.

BBS have similarly resisted accepting any liability for the consequences of delay arising from the Submitted or Outstanding packages. Their position was reserved (as was Tramlines’ position) at preferred bidder, pending due diligence on SDS, as they were aware of the issue at the Preferred Bidder stage, but again we have only limited sanction over them.

There has been no sustained attempt by BBS to sidestep the transfer of design quality risk once the Submitted and Outstanding packages are eventually signed over to them with consent. In fact they have now explicitly accepted the design quality risk as part of the Agreement made on Friday 7 March for Contract Price adjustment. Accordingly, the remaining risk is focussed on construction programme delay as a result of late delivery of design and hence IFC drawings impacting construction.

Resolving this issue has been made more difficult because of concern built up over a long period about the quality and timeliness of SDS’s work on the part of tie, CEC and BBS.

There is also a concern that performance against the agreed submission programme could be obfuscated with the intent (or at least result) that design packages fall outwith BBS / SDS responsibility because of claimed failure by CEC. This could happen in four ways:

1. Confusion about submission date if a package is returned by CEC for quality improvement
2. Swamping CEC with a high volume of design packages which cannot be processed within the 8-week period
3. BBS and SDS by some means acting in concert to subvert the process
4. Lack of clarity about the quality of submissions

In summary therefore, tie / CEC are exposed to risks relating to timeliness of submission and / or quality. The risk could be heightened by deliberate or inadvertent actions by BBS / SDS. The next section describes the primary means by which these risks can be contained, through an effective management process controlled by tie / CEC.

Development of the design submission and approval management process

Recent process improvements

The process of managing SDS has not been smooth. The performance of SDS has been consistently disappointing on a number of levels and it is fair to say that weaknesses have also existed in execution by tie and CEC.

More recently, building on the existing Tram and Roads Design Working Groups, a number of important initiatives have been implemented to improve all-round performance. These have together improved both the rate of design production and the quality of those designs.

(1) Co-location of staff

The co-location of tie, CEC and SDS staff in Citypoint shortened lines of communication and promoted a healthy working relationship that has led to quicker resolution of issues. This has been strengthened further by location of SDS approvals team in Citypoint.

(2) Improved contract management arrangements

tie has increased the number and calibre of resource devoted to managing the design contract, strengthening both its capability to deal with engineering issues and to manage the overall relationship including commercial management and issues resolution.

(3) Focus on resolution of outstanding design issues

By instituting the weekly critical issues meeting with attendance from tie, CEC and SDS aimed at clearing critical issues so that they did not hold up design production, tie brought together the relevant individuals, assigned clear responsibility for securing resolution and monitored progress. In recent weeks that has resolved almost all issues that are holding up SDS design and allowed a number of designs that were almost complete to take the critical final step to full completion and submission for approval. This has now evolved to weekly meetings chaired by the tie Executive Chairman to ensure rapid resolution as design progresses to and through the approval process.

(4) Closing out third party agreements

Many of the outstanding design issues involved reaching final agreement with third parties. Although steady progress had been made with many third parties a small number of third party negotiations were not moving to a satisfactory conclusion. tie devoted additional resources to closing out these issues and worked closely with CEC and SDS to ensure final agreements were reached.

Documentation of process and execution

The management process is captured in the Design Management Plan (“DMP”) This, along with the review procedure forms Schedule 14 of the Infraco Contract. In recent months, SDS has had much greater clarity over the reasonable expectations of the approvals bodies. All of SDS’s design packages are clearly defined. A programme has been agreed for the submission of each and the quality of information to be provided with the submissions has been defined. In this context, “quality” relates to an objective assessment of the fitness for purpose of the package, not a subjective assessment of the aesthetic character of the content. A well-defined process of informal consultation prior to submission with relevant CEC people is in effective operation. Once submitted, CEC have an agreed period of 8 weeks to deliver Prior and / or Technical Approval as necessary (“consent”) for each package.

Following novation of SDS to Infraco at Financial Close, tie will continue to use the DMP, working with CEC and InfraCo, to manage the design and consent process and maintain the improved performance in design production and approval. The DMP has been updated to incorporate the role of Infraco in managing SDS following novation but the key principles and initiatives remain in place. This process will be applied to complete the consent process for Submitted and Outstanding Packages as defined above.

Arrangements have been agreed with BBS, SDS and CEC to ensure that all key individuals and constituencies are working very closely together.

CEC’s involvement in the daily meeting ensures that there is timely and effective feedback from the approval body of progress with Submitted Packages. It also allows CEC to raise any issues that need to be resolved before a submission can be made.

Whilst some of the Outstanding Packages lie on the critical path for construction, many do not. This means that there is still some flexibility in the agreed approvals programme. Management of that flexibility lies with tie and CEC and BBS/SDS can only take advantage of the flexibility with tie’s consent.

There will be some changes to the design that SDS submits/has already submitted. Mainly these are necessary refinement of the detail of items where the detailed design will be completed by BBS and these have been allowed for within the programme. Where BBS is proposing an alternative design to that already submitted by SDS, BBS will be responsible for securing approval of that alternative design. In these cases BBS will draw on the experience of SDS to manage that consultation and approval programme.

Contractual underpinning

The contractual terms which capture these arrangements reflect:

- The contractual responsibility for managing SDS design and development work supporting Submitted and Outstanding Packages sits with BBS;
- BBS are contractually obliged to follow the regime under the Review Process and Design Management Plan, as are SDS;
- SDS agree to liquidated damages to be applied by Infraco regarding late or deficient submissions to CEC;
- Contractual clarity as to primary responsibility for categories of Consents

- Excusable delay in failure to obtain CEC Consent entails evidence of full compliance by SDS/BBS with agreed regime: timing, sequence, quality, notification;
- The absolute nature of SDS contractual responsibility to obtain all Consents has been adjusted to reduce tension surrounding interface with CEC;
- The risk of prolongation cost as a result of SDS failings in terms of causing delay (through not obtaining Consent) is to be taken by tie.
- the risk to programme (and generally) of SDS consented design containing a quality deficiency is ultimately taken by SDS and, in the first instance, by BBS. BBS have now explicitly accepted this as part of the Contract Price. tie will hold a collateral warranty from SDS.

Finally and critically, the overall programme for consents is not only embedded in the SDS Novation agreement to which SDS and BBS are parties, but the programme has been interfaced in detail with the construction programme.

In summary, there is confidence among the tie and CEC managers involved that the management process can be executed rigorously after Financial Close.

Focussed risk analysis

In addition to executing effective management control across all design packages, it is useful to identify those packages which carry the greatest risk. This facilitates prioritisation and mitigation action and also creates a clearer view of the residual risk arising from the overlapping design consent and construction programmes.

On 15th February 2008, CEC and tie jointly reviewed the status and risk profile of every Submitted and Outstanding Package relating to Phase 1a, allowing for anticipated progress to Financial Close. The review has been updated through the period to Financial Close, allowing a fresh assessment of risk at both point of Notification of Award and at Financial Close.

The best estimate of progress by end-April will be that 8 Prior Approvals and 7 Technical approvals will have been achieved, making a total of 15 Approved Packages.

The review of the Submitted and Outstanding Packages assessed for each design package seeking Prior and / or Technical Approval :

1. The risk arising from the criticality of the package relative to the construction programme ; and
2. The risk arising from the quality and complexity of the package, which could affect timely consent

A graduated risk measurement was applied to each package for each of the two risk criteria : those packages which were required for the earliest stages of the construction programme having a higher risk rating than those required for later stages ; and more complex or sensitive packages or those with known quality issues were given a higher risk rating than those of a simpler character. The two risk ratings were multiplied together to give a risk rating tabulation across the whole population of Submitted and Outstanding Packages. The tabulation was then stratified into Critical, High, Medium and Low categories based on the risk ratings.

The people who contributed to this process and who have confirmed they are comfortable that the results are properly presented were Susan Clark (tie Programme Director), Andy Conway (CEC Tram Coordinator), Damian Sharp (tie Design Project Manager i/c of the SDS design and approval process), Tom Hickman (tie Programme Manager) and Mark Hamill (tie Risk Manager).

87 individual packages were reviewed, of which 82 were assessed as medium or low risk. The remaining 5 packages in each category were :

<u>Submitted Packages</u>	<u>Critical</u>	<u>High</u>
Prior Approval	0	0
Technical Approval	0	0
<u>Outstanding Packages</u>	<u>Critical</u>	<u>High</u>
Prior Approval	1	2
Technical Approval	1	1

Appendix 1 lists these Critical and High risk packages with a brief summary of their risk profile and the mitigating factors which can be deployed to manage the risk

A report is available which provides a detailed breakdown of the entire population of 87 packages.

For each package, the issue is well understood and mitigation plans have been identified to ensure that the risk is being managed on an ongoing basis. Appendix 1 contains full details of these.

In overall terms, the limited number of Critical / High risk packages is no surprise given the short anticipated time to finalise the consent process relative to the overall construction programme and the extent of work done to date to meet the needs of the approval authority.

Third party approval risk

In addition to approvals by CEC a number of the Submitted and Outstanding Packages also require approval by third parties. The most frequent and significant third party approval body is Network Rail. There has been substantial informal consultation with Network Rail throughout the development of the design and Network Rail has expressed satisfaction with many of the designs in principle. Network Rail has agreed to review Submitted Packages for technical approval in parallel with the CEC consideration of those packages. This means that Network Rail will be in a position to confirm approval very soon after CEC approval is granted. This is a significant concession by Network Rail and reflects their confidence in the design following the consultation to date.

The other significant third party in this context is BAA. Within the EAL Licence, Schedule 3 allows EAL to review tram works data – primarily design & construction related method statements. There is a 30 day review period, and EAL could object to this data, but only on the basis of adverse impact on airport operations or safety. There is also a DRP set out in the licence if an agreed position on design change (both acting reasonably) cannot be resolved.

We are taking EAL through the design and the MUDFA works in a scheduled process of meetings (held 4 weekly, but also in the case of MUDFA, more regularly), there is nothing to suggest that the risk of designs not being accepted is low.

Forth Ports is another player, but the agreement scheduled to be signed with them, and the generally constructive working relationship on these issues, creates a good level of comfort.

No serious issues are anticipated with the other third parties, with whom the approval process is fairly commonplace. Overall, it is considered that the third party arrangements create no material risk to the construction programme.

Higher-level mitigations

In addition to the mitigation arising from control of the well-defined management and approval process and the limited number of Critical / High risk locations, there are a number of higher-level mitigations which are relevant to the overall evaluation.

SDS Liability

In relation to the Submitted and Approved Packages, one contractual feature of importance in assessing the overall risk is the reward / penalty mechanisms to be applied to keep the design process on track after Financial Close. These mechanisms relate to what can reasonably be defined as SDS's performance. SDS will however accept no liability arising from CEC delay (risks B and F above). The effect of these arrangements has been incorporated into the assessment of risk contingency described below.

A general legal protection exists whereby SDS is exposed to claims from BBS following novation for "culpable failure" which could supersede the cap.

Funding support

Any uncapped exposure will carry no financial protection to tie / CEC. However, should this result in increased project cost, assuming legitimately incurred, the terms of the grant funding from Transport Scotland mean that the cost will be substantially covered by grant, to the extent that there remains headroom beneath the aggregate funding of £545m. It must be borne in mind that this factor cushions risk to tie / CEC but not to the project as a whole.

Existing risk contingency

The project cost contains risk contingency amounting to £3.3m linked to the consent risks described in this paper.

Conclusion

The overlap of continuing design and approval processes with the construction programme has created a risk. Experience in the early years of managing the design and approval process was not happy, but recent initiatives have successfully developed a well-defined and effective management process, led and directed by tie / CEC. This management process will continue following Financial Close with minimum risk of interference.

A thorough risk-focussed review of the consents has been performed by competent people from tie and CEC. This has concluded that the residual risk is contained in a small number of design packages. These have been the subject of prioritisation to mitigate their risk profile.

The combination of controlling the management process and focus on the key elements of the residual risk, constitute an effective risk mitigation framework. There are other higher-level mitigations which provide further help, notably the funding arrangements and the existence of a risk contingency in the project budget.

It is the view of the tie and CEC project team that these factors can be relied upon to manage the exposure successfully.

Prior & Technical Approvals

APPENDIX 1

Critical Risks >21	Description	Risk	Issue	Mitigations
Technical Outstanding	A8 underpass	25	Underpass – sewer conflict	Technical solution now agreed and requires sewer to be diverted
Prior Outstanding	Haymarket	25	Prior approval for this batch has been problematic	Revised submission to be made on 30/04 and CEC will aim to approve as soon as possible
High Risks 11 - 20		Risk	Issue	Mitigations
Technical Outstanding	Section 6 Drainage	15	VE solution changes design	SDS are reducing the time taken to make final comments on board and complete IFC drawings
Prior Outstanding	Russell Road Bridge	20		CEC will provide prior approval in time for piling works to commence
Prior Outstanding	Murrayfield Stadium batch	15	Batch has been on hold pending decision on Roseburn Viaduct	Batch now taken off hold. CEC advised that revised Roseburn viaduct solution will be re-submitted.

Paper to : tie Board, Tram Project Board, TEL Board, CEC
 Subject : Project Governance after Financial Close
 Date : UPDATED 7th April 2008

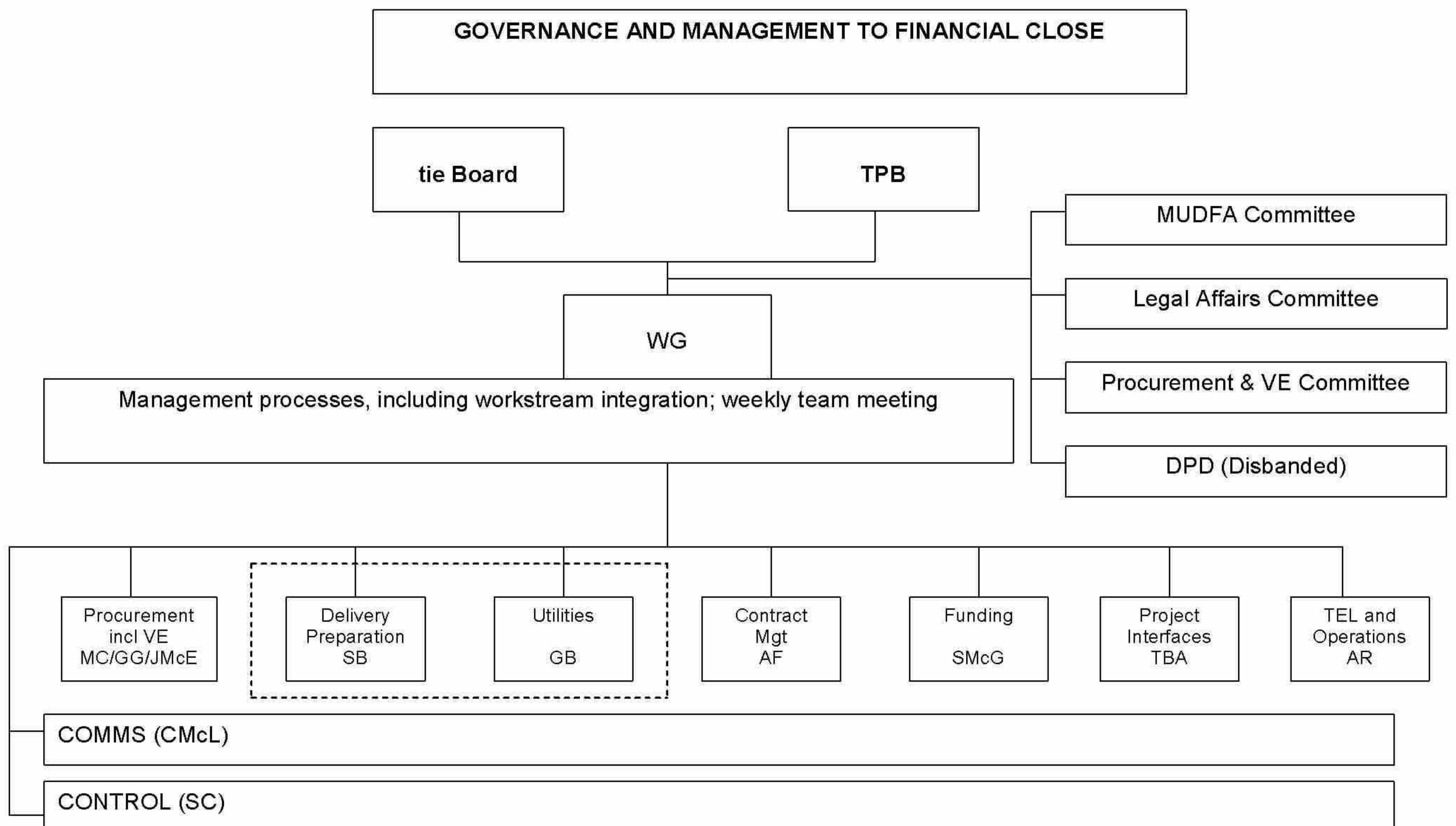
THIS PAPER SUMMARISES THE PROPOSED GOVERNANCE AND MANAGEMENT MODEL AS IT STANDS AT 7th APRIL 2008. THE AREAS WHICH HAVE NOW BEEN UPDATED INCLUDE FINALISATION OF OPERATING AGREEMENTS AND THE DELEGATED AUTHORITY WHICH FLOWS FROM THOSE AGREEMENTS. THIS PAPER IS THE FINAL FORM SUPPORTING FINANCIAL CLOSE

**Edinburgh’s integrated transport system
 Project governance for the construction period**

(1) Governance and management model in period to financial close

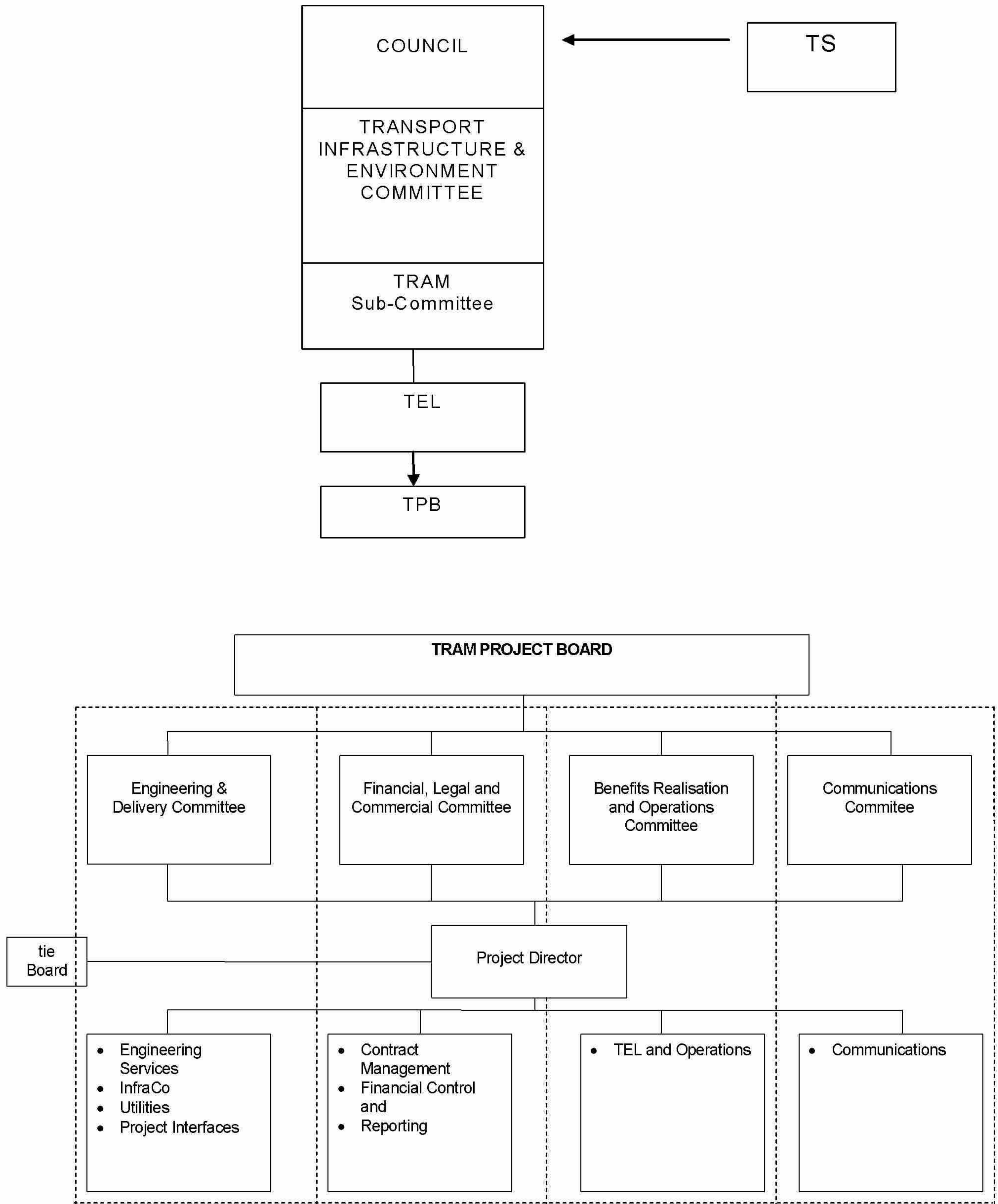
The recipients of this paper approved a governance and project management model for the period to Financial Close prior to the Council’s meeting on 25 October 2007. The purpose of this paper is to present the proposed model for the period from Financial Close to operational commencement, planned for Q2 2011. The proposed model is very similar to the outline presented in October but this paper is drafted to be independent of previous submissions.

The current model is set out in the following diagram, including the project workstream structure under the TPD.



(2) Governance and management model in construction period

The diagram below sets out the proposed governance model for the construction period .



The roles & responsibilities of the entities within the new governance and management model are summarised below.

Transport Scotland (TS)

TS exercise their oversight of the project through 4-weekly reporting in prescribed format and a 4-weekly meeting with the City of Edinburgh Council (CEC).

The principal contractual relationship between TS and CEC is the Grant Award Letter which sets out the terms on which TS will provide the balance of the £500m grant. This contains detailed reporting and certification requirements appropriate to the conduct and scale of the project..

CEC

CEC have established a "Tram sub-Committee" of the existing Transport, Infrastructure and Environment Committee. The sub-Committee is chaired by the Executive Member for Transport with a 6-8 weekly meeting cycle. The purpose of the sub-Committee is to review and oversee decisions with respect to the project. This will include addressing matters directly affecting the Council and providing assurance that matters which cross Council departmental boundaries are managed cohesively (for example, responsibilities for roads & traffic management and budgets).

CEC have prepared Operating Agreements between the Council and respectively tie Limited and Transport Edinburgh Limited (TEL) to codify the arrangements between the entities and the responsibilities of the two subsidiaries. The signing of the Operating Agreements creates the authority for tie and TEL to execute their responsibilities.

The Council Report approved on 20 December 2007 indicated that some issues will require to be referred to Council including the approval of the annual business plans for tie and TEL respectively and significant changes to Council obligations including material changes to scope and cost within the Tram Project, will also be reserved to Council. Full Council will also require to ratify settlement of any claims greater than £500k or £1million in a 12 month period. The precise definition of the delegated interface between the full Council and its committees is a matter for the Council.

The Operating Agreements also specify certain matters which require the approval of a Council Monitoring Officer. The Monitoring Officer will be the same individual with respect to both tie and TEL and will also be a member of the TPB, in order to ensure that the governance structure is clear and singular.

TEL

The TEL Board is focussed on its overall responsibility to deliver an integrated tram and bus network for Edinburgh, on behalf of CEC. The Board is responsible for compliance with its Operating Agreement and it will also address any matters outwith the direct arena of Integrated Bus and Tram systems and any statutory TEL considerations.

The TEL Board comprises an independent non-executive Chairman, independent non-executive directors, Elected Members and Executive management. There is appropriate common membership across the TEL, tie and LB Boards to ensure consistency of approach.

The following matters will be a matter for the TEL Board to determine :

All matters affecting the programme, cost and scope of the Project except the following which are matters reserved to the Council:

- (A) (i) any actual or reasonably expected delay to the Project programme of greater than 3 months; or (ii) any increased cost of over £10m; relative respectively to the programme leading to commencement of revenue service by 31 July 2011 and capital cost of £508m (Phase 1Aa) or £87m (Phase 1Bb) as set out in the Final Business Case or as subsequently approved by the Council prior to commitment by tie to the Infraco Contract ; or (iii) notwithstanding the terms of (i) and (ii) above, any projected or actual overspend of the available funding budget (being £545 million) at any time (whether on an annual or overall basis); or (iv) any substantial change to the design, scope or service pattern set out in the Final Business Case; and
- (B) the settlement of any single claim in excess of £500,000, or series of claims in any 12 month period which would exceed in aggregate £1,000,000;

TEL may delegate responsibility for all matters other than those specified at A and B above to the TPB and the TPB may in turn delegate responsibility for all other matters to tie, but only to the extent that such delegation is already within the remit of tie in the context of the tie Operating Agreement. TEL agrees that it shall retain ultimate responsibility for all matters it so delegates.

The Council's majority shareholding in Lothian Buses (LB) will be transferred to TEL and parallel changes to the composition of the Lothian Buses Board will be effected in due course.

Tram Project Board (TPB) and its sub-Committees

The TPB maintains its role as the pivotal oversight body in the governance structure. The TPB is established as a formal sub-Committee of the TEL Board with full delegated authority to execute the project in line with the proposed remit set out in Appendix 1. In summary, the TPB has full delegated authority to take the actions needed to deliver the project to the agreed standards of cost, programme and quality within the authority delegated to the TEL Board.

The suggested membership of the TPB is 7 people (Office of Government Commerce constituency definitions "highlighted"):

- Chair (David Mackay)
- Senior CEC Representatives - "Senior User Representatives" (Donald McGougan and Andrew Holmes)
- TEL CEO and Project "Senior Responsible Owner" (Neil Renilson)
- "Senior Supplier" representatives (tie Executive Chairman and TEL Operations Director) (Willie Gallagher and Bill Campbell)
- Executive Member for Transport (Phil Wheeler)

The Chair will continue to be the TEL Non-executive Chairman, rather than the Project SRO. Other parties, principally senior project management and advisers, will be called to attend as required, though it is anticipated that a common group of senior project directors will attend

The remit and delegated authority given by TEL to the TPB, and by the TPB to the SRO and Tram Project Director (TPD) are set out in Appendix 1. The TPD will formalise delegated authority downwards to senior members of the delivery team.

tie Limited

tie's role is to deliver the tram network fit for operational purpose, on time and budget. For the foreseeable future, tie will have only one major project, the tram. It will maintain roles with certain smaller projects and will require to comply with normal statutory responsibilities as a limited company, including formal compliance with its Operating Agreement.

The tie Board presently comprises a group of independent non-executive directors and Elected Members under the Executive Chairman. The Elected Members will be the same on each of the TEL and tie Boards to ensure consistency of view across delivery of the system and operations. The independent non-executive members will also provide experienced participation in the TPB's sub-committee deliberations, as explained below.

In overall terms, the composition of the tie Board will be maintained in its present form. The Board will maintain its Audit and Remuneration committees, membership of which are restricted to the NXDs. In addition, a new tie Board sub-Committee will be established to address Health & Safety, chaired by an experienced NXD.

In its role on the tram project, tie provides services to the TPB. The tie Operating Agreement provides tie with the legal authority to enter into all competent contracts to deliver the tram system. The tie Board will delegate authority to its Executive Chairman to execute its contractual responsibilities for the tram project. The Tram Project Director (a tie employee) is given delegated authority by the tie Executive Chairman to manage and deliver the project. The authority given to the TPD in his role as a tie employee is synchronised with the authority delegated to him by the TPB. This ensures that the TPD leads the project delivery under delegated authority from his employer (tie) and from the project client (TEL through the TPB) which is consistently defined.

Further changes to the composition of the TEL, tie and LB Boards will be effected as is deemed necessary over the period ahead. In particular, in the event that tie assumes responsibility for additional major projects in the future, the Board composition may need to be addressed. All such changes will require the formal approval of the Council.

In summary, the roles of the parties are :

CEC

- To be responsible for the creation of a financially viable integrated bus and tram system in line with the approved Business Case ;
- Compliance with the terms of the Grant Award Letter

TEL

- Under authority delegated by its parent CEC, to prepare for the operation of the integrated tram and bus network, including oversight of the delivery of the tram infrastructure executed through its sub-Committee, the TPB ;
- Compliance with the CEC / TEL Operating Agreement ;
- Statutory responsibilities including Board membership, statutory reporting, maintenance of books of account and statutory records ;
- Matters relating to TEL employees including Health & Safety

TPB

- Prepare for the operation of the integrated tram and bus network, including oversight of the delivery of the tram infrastructure, conducted directly or through scrutiny by sub-committees of the TPB of specific activities within the project

tie

- Management of the delivery of the tram infrastructure including management of the contracts written with third parties to achieve delivery of the tram network fit for operational purpose, on time and budget
- Compliance with the CEC / tie Operating Agreement ;
- Statutory responsibilities including Board membership, statutory reporting, maintenance of books of account and statutory records ;
- Matters relating to tie employees including Health & Safety

TS

- To provide grant funding in line with the terms of the Grant Award Letter

(3) Practical operation of the governance model

It is recognised that there is inevitable duplication between the scrutiny by the tie Board of its Executive activities and the oversight role performed by TEL and the TPB. However, this situation is normal, if tie's role of providing a service to its client, in this case TEL, is borne in mind.

It is suggested that the tie and TEL Boards will meet every second period on a period-about basis. The frequency of TEL Board meetings is expected to increase as operational commencement approaches. The TPB and its sub-committees will operate on a 4-weekly cycle, linked to the 4-weekly report to TS. The means by which the Project Director arranges day to day management of the project is not reflected in this paper but will also follow the 4-weekly cycle and will respond to the reporting requirements of the tie and TEL Boards.

The outstanding matters required to finalise the calendar following Financial Close are :

- Dates for proposed CEC Tram sub-committee meeting
- Dates for 4-weekly TS / CEC meetings

The current TPB sub-Committee structure will be dissolved and the new sub-Committee structure will comprise :

Engineering & Delivery Committee (E&D)

- Delivery under contracts - Infraco, Tramco, Utilities / MUDFA, design,
- Health & Safety, Quality & Environment
- Improvement initiatives – VE, Innovation, ICT
- Project interfaces & approvals – Land & Property, Traffic, third parties

Financial, Commercial & Legal Committee (FCL)

- Financial management – reporting, control, audit, risk management, insurance
- Contract management – reporting, compliance, interface with delivery, claims & variations

Benefits Realisation & Operations Committee (BRO)

- Operational & integration planning
- O&M contract planning
- Transdev
- Marketing

Communications Committee

- Comms management – utilities / MUDFA, Construction, Media, stakeholders

It is anticipated that the BRO and Communications committees will not meet for the early period of construction in the absence of any material issues arising which require separate scrutiny. The TPB will deal directly with any relevant matters under these headings for the foreseeable future.

In order to create close cohesiveness between the TPB / sub-Committee governance model and the project management structure, the sub-Committees will be directly interfaced with the Project workstreams and the individual directors responsible. Appendix 2 sets out the interfaces which effectively constitute the remits for these committees.

To further reinforce cohesion, the tie Executive Chairman will Chair each of the sub-Committees. The attendance of senior project and client officers, and the clear responsibilities allocated to individual Project Directors, will ensure that appropriate independence and challenge is achieved. As currently, the sub-Committees will have clear remits and will focus on detailed interrogation of key issues, leading to recommendations to the TPB which retains decision-making authority over all key areas.

(4) Health & Safety

A detailed analysis of the means by which H&S responsibilities are discharged is set out in Appendix 2. In summary, H&S is clearly of paramount importance both currently and in the construction phase of the Project. CDM 2007 will be a key focus and will be given appropriate prioritisation by all parties at all levels. The application of legal H&S responsibilities in the context of the governance and management of a large, complex project requires very careful analysis.

The detailed definition, allocation and communication of responsibilities will be executed as part of the readiness process in advance of construction commencement.

(5) Approvals requested from recipients of this document – tie Board, TPB, TEL Board and CEC in appropriate sessions

The following approvals have been completed :

1. Approval of the proposed governance model for the period from financial close to operational commencement.
2. Approval of the tie and TEL Operating Agreements and all related delegated authorities
3. Confirmation of the proposed members and participants in the governance bodies
4. Confirmation of the proposed meeting cycle
5. Approval of the proposed H&S regime.

GB
07.04.08

Appendix 1 to Governance Paper - Tram Project Board (“TPB”) Remit

TPB has delegated responsibility for the delivery of an integrated Edinburgh Tram and Bus Network on behalf of TEL and CEC, in particular :

1. To oversee the execution of all matters relevant to the delivery of an integrated Edinburgh Tram and Bus Network, with the following delegations :
 - a. Changes above the following thresholds
 - i. Delays to key milestones of > 1 month
 - ii. Increases in capital cost of > £1m
 - iii. Adversely affects annual operational surplus by >£100k
 - iv. is (or is likely to) materially affect economic viability, measured by BCR impact of > 0.1
 - b. Changes to project design which significantly and adversely affect prospective service quality, physical presentation or have material impact on other aspects of activity in the city
 - c. Delegate authority for execution of changes to TEL CEO (the Project SRO) with a cumulative impact as follows:
 - i. Delays to key milestones of up to 1 month
 - ii. Increases in capital cost of up to £1m
 - iii. Adversely affects annual operational surplus by <£100k pa
 - iv. is (or is likely to) materially affect economic viability, measured by BCR impact of <0.1

[Note: these are cumulative impacts since the last position approved by the TPB.]

The TEL CEO will delegate similar authority to the Tram Project Director.

These levels of authority apply to all matters affecting the programme, cost and scope of the Project except the following which are matters reserved to the Council:

- (A) (i) any actual or reasonably expected delay to the Project programme of greater than 3 months; or (ii) any increased cost of over £10m; relative respectively to the programme leading to commencement of revenue service by 31 July 2011 and capital cost of £508m (Phase 1Aa) or £87m (Phase 1Bb) as set out in the Final Business Case or as subsequently approved by the Council prior to commitment by tie to the Infraco contract ; or (iii) notwithstanding the terms of (i) and (ii) above, any projected or actual overspend of the available funding budget (being £545 million) at any time (whether on an annual or overall basis); or (iv) any substantial change to the design, scope or service pattern set out in the Final Business Case; and
- (B) the settlement of any single claim in excess of £500,000, or series of claims in any 12 month period which would exceed in aggregate £1,000,000;

All matters which fall to the determination of the TPB will be reported to the TEL Board on a comprehensive and timely basis.

Matters which do not fall within the TPB and TEL Board’s delegated authority levels described above will require determination by the Tram Sub-Committee of the Council.

2. To appoint the Senior Responsible Owner (SRO) and Tram Project Director (TPD) for the project and to receive reports from the SRO and TPD on project progress
3. To receive reports from sub-committees established to oversee specific areas, as approved by the TPB

4. To ensure project workstreams are executed according to robust programmes under the leadership of Project Director.
5. To approve the submission of funding requests and to recommend approval of funding terms to the TEL Board. TPB will also confirm to CEC compliance with all relevant aspects of the grant award letter.
6. To ensure proper reporting through the TPB Chairman to the TEL Board and to CEC (as appropriate) of decisions made.

Appendix 2 to Governance Paper

Interface between new governance bodies and project management structure in the construction period – people identified are included for discussion only at this stage.

TPB Governance body	Chair	Management responsibility	Director
Engineering & Delivery Committee	Gallagher	Engineering & Delivery - Infraco Tramco Utilities / MUDFA Engineering design Health & Safety planning & management	Bell
		Improvement - VE Quality & Environment ICT Innovation	McEwan
		Project Interfaces & Approvals - Land & Property Traffic management / regulatory Other CEC, third party	Sim
Financial, Commercial & Legal Committee	Gallagher	Financial management - Financial reporting Financial control, internal audit Risk management Insurance	McGarrity/ Thorne
		Contract management - Contractual reporting & compliance Claims & Variations management	Fitchie
Benefits Realisation & Operations Committee	Gallagher	Operational Planning - Integration & service planning O & M planning Transdev Commissioning Marketing	Richards
Communications Committee	Gallagher	Communications management - Utilities / MUDFA Construction Media Stakeholder	McLauchlan

Appendix 3 to Governance Paper Health & Safety background and proposed operational structure

General

H&S obligations are well-understood and entrenched in the project governance and management structure. The increased level of physical activity which may give rise to H&S risks once construction commences reinforces the need to ensure H&S responsibilities are clear and that the highest standards of H&S management are applied. These considerations must be addressed on a daily basis in all actions and at all levels by parties involved in Project.

In overall terms, the key H&S considerations for CEC, TEL, the TPB and tie are:

- the health & safety of their people - the corporate H&S Management Systems address this responsibility
- ensuring that CEC, TEL, the TPB and tie deliver against clearly stated H&S responsibilities in the framework of the project including working alongside third party H&S management systems
- monitoring and reporting regularly that these responsibilities are being properly discharged
- ensuring that all persons employed by CEC, TEL and tie are competent
- ensuring that contracts entered into address H&S issues adequately
- ensuring that H&S ramifications are considered when key investments and business decisions are made

These H&S considerations apply currently, throughout the period to Financial Close and throughout the period of construction and into operation of the tram system. The H&S responsibilities are currently defined clearly to meet the demands of the current project activity including the utility works now underway. These responsibilities will require to be revised to integrate with the revised governance structure described in this paper and to enable effective management of the full-scale construction activity which will follow Financial close. The narrative below provides a description of the responsibilities of the bodies involved in the project and has been drafted with the full involvement of DLA. A precise and legally supported H&S regime will be put forward for approval and then implemented in advance of financial close.

Relationship of revised governance model to H&S responsibilities

The TPB creates an "inclusive" decision making process which is important for the effective operation of the project. The TPB will be a formal sub-Committee of the TEL Board so that members of the TEL Board on the sub-Committee retain the formal responsibility for decisions taken at the TPB, with all other parties to TPB deliberations being participants or observers only. The TPB itself is not a shelter from health and safety liabilities or a clearing house for liabilities. Legally CEC, TEL and tie cannot delegate H&S responsibility to the TPB in the governance structure and thereby declare that they have discharged their health and safety liabilities and have no further duty regarding input into or consideration of health and safety issues.

The ultimate responsibilities for the TPB decisions flow up to the TEL Board and CEC, subject to the intended election under the Construction Design and Management Regulations 2007 ("CDM 2007") of tie as "Client" under those regulations. A Procurator Fiscal may consider that all parties (CEC, TEL and tie), together constitute the entity for the discharge of H&S obligations. As a result H&S implications must be considered by all these parties when making significant decisions affecting design and implementation through the construction phase of the Project. The HSC guidance *Director's Responsibilities for Health & Safety* must be followed by CEC, TEL, the TPB and tie. Appropriate leadership should be demonstrated in this area by the boards and senior management.

Where changes are submitted for TPB approval, or are requested by the TPB, tie/TEL/CEC (and the appointed CDM 2007 parties) will be legally responsible for identifying and managing any impact that these changes will have on safety. The TPB will be responsible for ensuring that they understand and have responsibility for any decisions made in this respect. It is intended that tie will be mainly responsible for implementing the decisions made throughout the construction period.

It is considered that TEL/CEC would remain the "client" in terms" of CDM 2007 as the TPB is not a separate legal entity although it will make decisions on behalf of TEL/CEC. tie is responsible as the elected second client under CDM 2007 and the client/employer (for general health & safety regulations) for the overall project safety management for the development and implementation of the Project. Such an election is, however, not a full delegation of all rights and responsibilities. tie and the TPB must ensure that its activities or its stakeholders or advisors do not undertake actions that encroach upon the role of the designer under CDM 2007, because this would mean that they would require to demonstrate competency in this role and fulfil added responsibilities.

The revised project governance structure described in this paper will distance Transport Scotland from the H&S responsibilities as their responsibilities are related to those of the principal funder of the project, in the absence of any material involvement in design or construction matters.

Health & Safety, Quality & Environment will form an element of one of the new TPB governance sub-Committees. H&S matters within tie will be the responsibility of the Engineering and Delivery Director. In addition to the E&D Director's leadership on this issue, a senior NXD will be the nominated chair of the H&SQE sub-committee of the tie Board to add a further H&S check in the operation of tie and the TPB.

A regular safety report is produced and presented to the tie Board and to the TPB each month. The TPB will ensure that safety is a core agenda item for each meeting and will ensure that the safety report tabled at each meeting is actioned where appropriate. Copies of these reports, or summary documents as appropriate, will be disseminated to TEL and CEC. This will ensure that H&S issues are considered at senior level on a regular and disciplined basis.

Legal backdrop

There may be occasions where a decision which is made by the TPB under its delegated authority from TEL is driven by one of the stakeholder directors to the exclusion of the other members of the board. In the event of an incident, this may result in the contractual relationships or duties between the stakeholders being considered. Notwithstanding that financial indemnities could be put in place to cover losses suffered, if a particular party declares that it will be held accountable for a decision impacting safety, it is important to highlight that it is not possible to ensure that fines imposed as a result of prosecution can be the subject of an enforceable indemnity. It is not possible to contract out of criminal liability nor is it possible to insure against a fine. Although it may be competent to include a clause in a contract, it is possible that such a clause would be construed by the courts as unenforceable and contrary to public policy. In this context, the representative of each stakeholder would need to look to their employer, with regard to personal accountability.

The creation of appropriate safety responsibility structures, safety management systems and culture will form a key defence to any prosecution assuming all procedures have been followed. Clearly there could also be a number of other parties involved in a safety incident, for example contractors, sub-contractors, agency staff, designers, CDM-Coordinators and third parties.

The Corporate Manslaughter and Corporate Homicide Act 2007 came into force on 6 April 2008. Corporate homicide will be committed where a death is caused by an unlawful or grossly negligent act of the senior management of an organisation. The management and organisation of activities by senior management must constitute a "substantial element" of the breach, in other words, partial delegation of the duty will not prevent liability attaching to senior management. Breach is punishable by a fine. Although directors do not face personal liability under the Act, the offence will make directors more vulnerable to disciplinary action and further crystallise their accountability for health and safety compliance to their stakeholders. It remains possible for directors and senior management to face personal liability if there is sufficient evidence to bring a prosecution under the existing common law or under the Health & Safety at Work etc Act 1974.

Edinburgh Tram Network

Contract Execution Suite

- the Infraco Contract (and Schedule Parts 1 to 44);
- the Tram Supply Agreement (and Schedules 1 to 23) and the Tram Supply Novation Agreement;
- the Tram Maintenance Agreement (and Schedules 1 to 24) and the Tram Maintenance Novation Agreement;
- the SDS Novation Agreement and its Annexes 1 to 7;
- the CEC Guarantee
- the tie-CEC Operating Agreement.

Source : DLA