RESTRICTED – COMMERCIAL

TRANSPORT
SCOTLAND

FOR DECISION **IDM(06)15**

INVESTMENT DECISION MAKING BOARD

EDINBURGH TRAM NETWORK

Purpose

1. To seek the Board's views on the Edinburgh Tram Draft Final Business Case (DFBC). This paper, together with any further views from the IDM, would form the basis of advice to Ministers on the tram network and whether to commit £60-70m to cover utilities diversions and further development until Autumn 2007.

Priority

2. **Urgent**. Due to late receipt of the Draft Final Business case and supporting material and the tight programme, scheduled for commencement in March 2007, agreement is sought in time to enable a Cabinet paper to begin the pre-digest process before Christmas.

Locus of the IDM

3. Although the request for funding is £60-70m, and this would normally be within the delegated authority of the IDM, a decision in this matter needs to be taken by Ministers because:

(a) In its decision to index link the £375m contribution for the tram, Cabinet decided that any commitment to significant construction activity required further Cabinet consideration; and
(b) The momentum that would follow a decision to commence utilities diversion work would make it very difficult to resist letting of the main construction contract and thus a positive decision is likely to lead to spend in the region of £350m.

Decisions/Actions required of the Board

4. The Board is invited to agree that:

- Transport Scotland should put a positive recommendation for phase 1a of the tram (Leith – Airport via Princes Street) to Ministers;

- Ministers should be advised not to support phase 1b (Haymarket – Granton) until additional developer contributions are confirmed and the cost efficient delivery of phase 1a is being demonstrated;
- Transport Scotland should recommend that any funding award is subject to the conditions in Annex A as well as standard grant conditions.

5. The Board is invited to consider:

- tie's evidence that line 1a would cost £500m and is therefore affordable within available funding with a benefit cost ratio (BCR) of 1.10 and that 17% (2011) rising to 20% (2031) of patronage is not simply displaced from bus. tie and City of Edinburgh Council will therefore argue that they have met the conditions set by Ministers and the last IDM consideration of the tram scheme;
- Phase 1a plus 1b would cost £592m and will not be affordable within available funding unless significant additional savings are achieved. However, phase 1a plus 1b performs significantly better in BCR terms (1.63);
- Concerns over the assumptions made by tie in the business case for the tram and that the business case is highly sensitive to these assumptions (Annex B);
- The levels of risk remaining with the project and the extent to which risk – particularly around capital cost – will have been mitigated by February 2007 through the receipt of initial bids for the main infrastructure contract (Annex C);
- That the DFBC is predicated on the Edinburgh Tram Project being covered by the national concessionary travel scheme. As concessionary travellers make up roughly a quarter of all passengers, failure to include the trams in the national scheme would threaten TEL's financial viability and would lead to both a subsidy requirement for the tram and reduced efficiencies in bus operation;
- The inclusion of tram in the concessionary fares scheme would fall to be negotiated as part of the renewal of the scheme and a large amount of the funding required is already being paid to Lothian Bus for existing concessionary travel. There would be additional pressure on the national concessionary fares scheme from the generated travel and from renewed arguments that Glasgow Underground should be included.

6. The Board is invited to note

- The Edinburgh Tram network is a Partnership Agreement commitment;
- Ministers are committed to a capped contribution of £375m in 2003 prices towards phase 1a (as confirmed in Tavish Scott's statement to Parliament of 16 March 2006);
- The DFBC argues that the tram supports the 3 strategic outcomes of the National Transport Strategy in terms of;
  - Improved Journey Times and Connections;
  - Reduce emissions; and
  - Improve quality, accessibility and affordability.

Key information the Board will need to support its decisions/action

7. The Board needs to know:

- The DFBC contains a proposed Financial Agreement between Transport Scotland and City of Edinburgh Council on the basis of 91% and 9% capital costs (respectively) up to the Scottish Ministers' funding cap of £375m in 2003 prices – approval of the DFBC by Cabinet and CEC would confirm this arrangement for phase 1a;
- CEC, through TEL, will assume ownership of the system post-commissioning, bearing total responsibility for all operating costs and retaining all revenue.

Financial Implications

8. Our current best estimate is that the outturn value of Ministers' contribution of £375m in 2003 prices would be £480m (with a range £450 - £500m). CEC has committed a further £45m in outturn prices (as a combination of cash and land). This provides available funding of up to £545m depending on actual inflation.

9. By March 2007 grant totalling £52m will have been paid or be due to CEC from the £375m. In the event of scheme cancellation around £10-12m may be recoverable following sale of land and property acquired for the tram scheme, leaving sunk costs of £40m.

10. Commitment to Multi Utilities Diversion Framework Agreement (MUDFA) diversions would increase the cancellation and sunk costs of the tram scheme to about £100m. The momentum that would follow a decision to commence utilities diversion work would make it very difficult to resist letting of the main construction and tram vehicle contracts and thus a positive decision is likely to lead to spend of a further £350m.

11. The IDM may wish to note that I will be issuing a grant offer letter this week for the additional land purchase agreed at the November meeting.

Presentation

12. The advice to Cabinet will need to include a full presentation and handling strategy.

Advice and Conclusions

13. It is recommended that the Board accept the Draft Final Business Case has established a sound and reasonable case to proceed with the Edinburgh Tram Project and the Group approves the issue of a Cabinet paper seeking formal Ministerial approval

DAMIAN SHARP
Head of Major Projects, Rail Delivery Directorate
December 2006

EDINBURGH TRAM PROJECT
IDM CHECKLIST

Summary views of other teams:	**Content**	**Not content**	**Further clarification required**
Strategy: does it fit with the overall strategic transport aims? *(Janet Egdell)*			
Comment: No comments received but the DFBC shows benefits delivered in line with the 3 key elements of the National Transport strategy			
Finance: is it affordable, have all costs been taken into account? *(Mark Pettit / Claire Dunbar-Jubb / Janet Egdell)*			
Comment: No comments received but the estimated tram costs have been subject to close scrutiny by all over the course of the last 2 years and have been independently scrutinised by TS Programme managers			
Technical: is it operationally feasible, and have all considerations been factored in? *(Ian Mylroi)*	**Yes**		
Comment: Functional specification finalised			
Economic: does it provide value for money and is the business case complete? *(Andy Park)*	**Yes**		
Comment: There is a clear statement that the BCR for 1a is 1:1 and for 1b 1:6 or 3:5 if scheduled consecutively. Andy Park has some concern over technical aspects			
STAG: has the STAG process been effectively followed, and all five objectives adequately covered? *(Andy Park)*	**Yes**		
Comment: Yes although the modelling process was new and Andy Park has concerns over some technical aspects			
Procurement: is the procurement process appropriate?	**Yes**		
Comment: There have always been some doubts about the procurement strategy deployed by tie. However the MUDFA contract is under way; there are 4 sound bids for the Tramco and while there are now only 2 bidders remaining in the Infraco competition, the indications are that they are both keen			
Concessionary Fares:	**Yes**		
Comment: It is important that Ministers recognise the pressures that going ahead with the tram scheme will place on negotiations for the next round of concessionary fares and the paper reflects those pressures.			

ANNEX A

ADDITIONAL CONDITIONS ON FUNDING RELEASE

Purpose of additional conditions

1. When considering the proposals for the Edinburgh Tram scheme Ministers need to consider 2 separate questions:

(a) is this a scheme that the Scottish Executive should continue to support?
(b) what conditions and controls would be needed to give the best chance of success if Ministers do continue to support the scheme.

2. This annex covers proposed actions to be required of CEC, tie and/or TEL to address the second question.

Action before February 2007

3. Before a paper can be presented to Cabinet the following activities need to be completed:

- submission to, and review by Transport Scotland, of the due diligence report on the tram modelling;
- receipt and analysis of initial infrastructure tender bids;
- confirmation of revised cost estimates in light of tram vehicle and infrastructure bids including cost range associated with remaining risk and uncertainty.

Other action before financial close

4. Before financial close in Autumn 2007 we need to specify any other activities we regard as critical to success. These would include:

- Completion of the Final Business Case (FBC)
- Completion of robust pre-construction design by tie's Systems Design Services consultant
- Submission of final draft Traffic Regulation Orders and timely progress with these
- Strengthening of tie's management information and project control systems including independent audit of these controls
- Completion of land assembly
- Carry out OGC Gateway Review 3 and have agreed action plan for any recommendations

Completion of the FBC

5. The FBC needs to be completed in the light of final bid prices for all contracts. Transport Scotland also has a variety of comments on the detail of material that has already been submitted. We need to provide a comprehensive set of comments making it clear where specific changes to the document are required by end January 2007. We would expect to see a revision to reflect those comments by end March 2007 and a fully-compliant and robust FBC before contracts are signed.

Completion of the pre-construction designs

6. tie's System Design Services (SDS) consultant has not yet produced designs of adequate quality and is running some weeks behinds schedule. Action has been taken at the highest level to improve performance but we must monitor the success of this closely and require weekly updates. Robust pre-construction designs must be completed before for each piece of construction before physical works start.

Submission of draft Traffic Regulation Orders (TROs)

7. The necessary TROs have not yet been obtained and it would be very risky to begin construction without obtaining relevant TROs. City of Edinburgh Council must devote sufficient resources to progress these as fast as possible through the statutory process. The Scottish Executive may need to support this with a change to the rules governing inquiries. This is under discussion with colleagues in Transport Group.

Strengthening of tie's management information and project control systems

8. Since the May 2006 readiness review tie has strengthened its team very significantly and has made some progress in improved systems. However, it is essential that significant improvements in systems are made before any physical works start. For TS to have confidence in the systems they will need to be subject to independent and transparent audit.

Completion of land assembly

9. tie are currently undertaking land assembly for the scheme to reduce risk to the main contracts. This must be completed as soon as possible to realise the benefits of reduced risk premiums from Infraco contractors.

OGC Gateway 3

10. In line with all other major projects the Tram is subject to OGC Gateway Review and it would be normal to undertake a Gateway 3 and agree any necessary action plan before contracts are awarded.

Rail Delivery Directorate
December 2006

ANNEX B

BUSINESS CASE ANALYSIS

Summary

11. tie has undertaken a full appraisal of the tram scheme in line with the letter of the STAG guidance but in doing so has made a number of assumptions that are open to question and the results of the appraisal are highly sensitive to those appraisals.

12. tie has carried out an assessment of the scheme against 3 tests of scheme viability:

- **economic viability** – a standard assessment of the quantifiable benefits and costs of the scheme plus environment, safety, integration and accessibility impacts;
- **financial viability** – whether the scheme integrates with bus services and whether the combined bus and tram services can operate without subsidy;
- **affordability** – whether the initial capital costs are likely to be affordable within the available funding.

Economic viability

(All costs discounted to 2002)	Phase 1a	Phase 1a + 1b
Costs (£m)	340	436
Benefits (£m)	373	709
NPV (£m)	+33	+273
BCR	1.10	1.63

Financial viability

13. The analysis shows that the combined tram and bus network is expected to be profitable from the 2nd year of tram operation.

Affordability

14. Our current best estimate is that the outturn value of Ministers' contribution of £375m in 2003 prices would be £480m (with a range £450 - £500m). CEC has committed a further £45m in outturn prices (as a combination of cash and land). This provides available funding of up to £545m depending on actual inflation. tie estimates the cost of Phase 1a at £500m (giving some headroom on costs) and Phase 1a + 1b at £592m (and therefore not affordable without substantial savings or additional funding).

Concerns about tie's analysis

15. The assumptions made by tie are key to the positive economic appraisal they have produced. The appraisal is very sensitive to those assumptions and some of those assumptions are difficult to defend.

ANNEX B

Value of time

16. A large proportion of the benefits of the scheme arise from the use of a weighting on tram in-vehicle time. Whilst the way in which this has been applied is unusual, it is a reasonably standard practice. What this means however, is that a large proportion of the benefits are derived from the fact that "people prefer a tram to a bus". This degree of preference was calculated from a survey that discounted the views of those who expressed a preference against trams at the time.

17. 32% of concessionary bus users, 16% of car users and 7% of non-concessionary bus users expressed a negative preference towards trams and were excluded. If the survey results are restored, based on non-concessionary bus users only, the BCR falls well below 1 for Phase 1a and close to one for Phase 1a + 1b. If the weighting is removed altogether then the case for both options falls below 1.

Bus alternatives

~~17.~~18. Comparison of the reference case which, at tie's insistence, contained bus priority measures not now in place or committed, with a formal do-minimum that represents the current situation shows that such a bus priority scheme generates levels of benefit (not due to mode environment) ~~similar~~ significantly higher~~to~~ than the tram but at much lower cost. It is possible that such measures could be funded out of the increased revenue that would be raised.

~~18.~~19. The question therefore arises of whether a bus alternative could be implemented. There are 2 principal barriers to this: road capacity and securing approval for bus priority measures. tie argues that the capacity of key streets such as Princes Street and Leith Walk would not allow continuing increases in bus vehicle numbers to accommodate the projected demand. The acceptability of a tram scheme has been demonstrated through the ultimately successful Private Bills process and, although there are still statutory approvals to be sought including Traffic Regulation Orders, the issues that arise have already been debated before Parliament. Ministers have previously accepted these arguments and ruled out bus alternatives in supporting the tram bills.

Level of modal shift from car

~~19.~~20. There is concern that the model used may overstate the level of modal shift from car. ~~We have not yet had the validation report for the model (it is due on 14 December) and until we have examined that report we cannot have confidence in the level of modal shift predicted.~~

21. Standard values of time were used for car-users despite the survey, detailed above, calculating a lower value. The use of the survey value instead would tend to reduce the amount of modal shift.

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22. The independent Model Construction and Application – Due Diligence Report, authored by Scott Wilson has been recently received. Although it does not consider the point above regarding the discarding of SP data for car use, it identifies 13 shortcomings in the model. The report states that "the impact of the issues indicated on the business case is difficult to quantify without detailed investigation, however the view is that each aspect in isolation is likely to be minor". Analysts are currently examining the report in further detail.

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Construction impacts

~~20.~~23. No account is taken of the construction impacts of the scheme. This is not in line with treatment of heavy rail schemes where compensation payable to train operators is included within the capital cost as a proxy for disruption. There is evidence from elsewhere that careful management and information provision during construction of similar schemes can mitigate the impacts significantly (or in some circumstances be beneficial) but tie have provided no detail of any plans to date.

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Other appraisal criteria

~~21.~~24. The executive summary of the DFBC presents notable positive benefits against each of Economic Regeneration, Environment, Safety and Reliability, Accessibility and Social Inclusion and Transport and Land Use Integration. The more negative impacts are included within the detail of the appraisal.

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Economic Regeneration

~~22.~~25. The appraisal highlights the role of the tram in supporting economic development at Granton Waterfront, Leith Waterfront and West Edinburgh. The appraisal attributes 590 FTE jobs to Phase 1a and a further 340 to Phase 1b. The additional demand caused by this development is taken into account within the patronage modelling.

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Environment

~~23.~~26. The STAG work does not show significant environmental benefits in terms of either local or global air quality. Under Phase 1a, the impact of Edinburgh Tram is broadly neutral in terms of local air quality and under Phase 1a + 1b there is some improvement. Both Phase 1a and 1a+1b increase CO_2 emissions. Taking into account the electricity generation for the tram scheme, CO_2 emissions from transport increase in the region of 2-3% for the two phasing options. There are disbenefits in terms of cultural heritage, landscape and historical buildings.

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Safety and Reliability

~~24.~~27. The scheme has accident disbenefits due to the nature of road-light rail interface~~s~~ within the same space. There are improvements in reliability in the off-road sections of tram operation and through the traffic signal priority assumed for

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the tram. The personal security of travellers is predicted to improve through the availability of increased CCTV and the deployment of inspectors on the vehicles.

Integration

~~25.~~28. The tram integrates well with the proposed land-use developments at Granton and some new journeys can be made effectively. Against this must be set that some existing journeys will in future involve forced interchange from bus to tram.

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Accessibility and Social Inclusion

~~26.~~29. The tram connects areas of relative social deprivation (Granton, Leith, Saughton, Broomhouse) with areas of job growth (new developments in Granton and continuing growth in West and Central Edinburgh). However, many of these areas are already linked by bus services. Additionally, the accessibility data produced by tie includes the tram quality benefits (as detailed above in terms of In Vehicle Time weighting) as part of, what is known as, generalised journey time. No information is currently available as to actual rather than perceived (due to tram quality) accessibility benefits.

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Rail Delivery Directorate
December 2006

RISKS AND MITIGATION ISSUES

ISSUE	RISK	LEVEL & MITIGATION
Economic Assessment	Economic Assessment has been carried out in line with the guidance but case is very sensitive to assumptions made. Risk that assumptions are not borne out in reality.	**Medium** Needs to be reviewed in light of receipt of Due Diligence Report on modelling due on 14 December.
Capex Costs	Capex costs have been benchmarked against other schemes and independently validated. However it is a reasonable expectation that the weakness of only 2 infrastructure bidders may see a rise in costs during the negotiation period - the longer the process, the more likely this risk may be realised.	**High** Further design work would mitigate some of the risk together with a robust negotiating strategy with Infraco bidders. However, mitigation potential is limited by weak market for tram schemes.
Programme	There are concerns about the quality and robustness of the current programme and its lack of allowance for error.	**High** With no "float" in the programme slippage in overall delivery is likely. The opportunities for mitigation are limited but tie/CEC need to be challenged to act effectively and reduce the number of tasks on the critical path wherever possible.
Design	The design contractors (SDS) are currently performing poorly and behind programme. There is the add on continuing risk to both the procurement strategy in terms of novation but more importantly to the programme	**Medium** Currently of concern given the continuing failure to deliver on time and on quality. Mitigation by tie with contractors USA headquarters is underway to ensure that a culture of realism and production. Weekly updates to TS will allow visibility of whether problem is being resolved and situation can be reassessed at end January 2007.

ISSUE	RISK	LEVEL & MITIGATION
Design	Design of interchanges at Foot of Leith Walk, St Andrew Square, Crewe Toll (1B) not developed and therefore effectiveness not demonstrated.	**Medium** The design has of the "forced interchange" at the Foot of Leith Walk must be of very high quality to ensure that this does not become a barrier to patronage. Ongoing consideration with tie/CEC and others to evaluate quality of design.
Additional Costs for Phase 1b	Powers to build both Tramlines One and Two were established by the respective Acts in May and April 2006 (respectively). Ministers are committed only to Phase 1a via the March 2006 statement to Parliament. The DFBC and BCR demonstrate that the best case is for construction of both Phases 1a and 1b and the promoter is currently seeking early agreement to funding of 1b.	**Medium** TS does not yet have firm bid costs for the tram infrastructure. TS will have an improved, but not final view of infrastructure costs in January 2007. It would be premature to commit before confidence levels have improved, or even to send a signal which might take pressure off the bid price. The case for 1b is attractive but without firm construction cost prices and a positive incentivisation on promoter and contractor to deliver on costs and developer contributions, any agreement is premature. It is also important that we don't undersell the achievement of an affordable line 1a scheme with a positive business case. This is the essential building block that will allow further additions to the network at marginal cost.

ISSUE	RISK	LEVEL & MITIGATION
Concessionary fares	The DFBC assumes that the Edinburgh Tram Project will be covered by the national concessionary travel scheme. As concessionary travellers make up roughly a quarter of all passengers, failure to include the trams in the national scheme could threaten TEL's financial viability	**Medium** A substantial portion of the concessionary fares support is included in the current settlement and is paid to Lothian Buses. However, the generated travel will put pressure on the concessionary fares budget and will fuel demands for the inclusion of the Glasgow Underground within the scheme.
Financial Agreement with CEC	Formal agreement not yet signed. It covers the quantum of investment by both parties, risks and responsibility for cancellation costs	**Medium** Agreement is being recommended by officials to Ministers and CEC elected members. However, agreement relies on sufficient headroom for cost increase. If headroom is exhausted risk lies with CEC but they would seek to reopen this issue. Binding agreement needed before financial close.
Functional Specification	This remains yet another outstanding key document. In its absence there is no defined or baseline scope against which change control process may be validated and agreed	**Low** Final agreement anticipated before end December
Traffic Regulation Orders (TROs)	The necessary TRO powers were not included in the private Bills and consequently remain a potential source of risk / delay to the programme and subsequent operational performance of the tram network.	**High** A programme of mitigation has been drawn up but requires closer communication and cooperation between promoter, its lawyers and Transport Scotland. Relies on willingness of CEC to take tough traffic management decisions and change in procedure through revised statutory instrument covering rules for hearings.

ISSUE	RISK	LEVEL & MITIGATION
Contingency, Optimism Bias & Headroom	**Tie** have allocated an Optimism Bias uplift of 12% for Route 1a (£58m/£464m according to most recent figures provided – Section 9.12 of DFBC). Relies heavily on success of tie's risk mitigation strategy. Other schemes with a different strategy have allowed circa 20% at this stage and this has been borne out where schemes have gone forward to construction.	**Medium** Phase 1a, at £500m, seems to be affordable within the current overall £545m funding envelope, with 9% headroom above the 12% optimism bias figure. tie's Monte Carlo statistical analysis indicates that there is a greater than 90% chance that Phase 1a would be affordable within a funding envelope of £545m