

P.289

Shorter, Lee (Temp)

From: Ruane, Nick
Sent: 08 January 2007 16:34
To: Ware, Julian
Subject: FW: Trams - advice to the Minister
Attachments: Trams - MR to TS.doc

From: Lorna.Davis@transportscotland.gsi.gov.uk [mailto:Lorna.Davis@transportscotland.gsi.gov.uk]
Sent: 19 December 2006 11:41
To: Ruane, Nick
Subject: FW: Trams - advice to the Minister

Nick

For information and appropriate dissemination to the guys.

Many thanks,
Lorna

-----Original Message-----

From: Sharp DP (Damian)
Sent: 19 December 2006 08:03
To: Reeve W (Bill); Duffy F (Frances)
Cc: Park A (Andy); Spence M (Matthew); Spencer FM (Fiona); Ramsay J (John); Davis L (Lorna); PS/Transport Scotland
Subject: Trams - advice to the Minister

Bill
Frances

I attach a draft note for Malcolm to send to Tavish. The note is currently worded to cover a draft Cabinet paper but I think we need to consider whether we put the note up with a draft or put up the note, meet Tavish and then put forward a draft Cabinet paper.

Aspects of the note require further discussion with Andy Park and I have highlighted these. Andy has done a great job analysing the huge volume of material and responding quickly – he and I just need to make sure I understand some of his comments since I may have to explain them!

There is no draft Cabinet Paper this morning for 3 reasons:

- (1) late submission of material by me
- (2) reduced output from me due to my bad back
- (3) I tried to start it but really struggled with the tone of the paper – essentially I need to second guess Tavish

The latest possible date for entering pre-digest is 29 January but that would require our paper to be non-controversial. I believe we need to enter pre-digest relatively early to ensure discussions with the Finance Minister in particular can be resolved in good time.

Damian

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From: Dr Malcolm Reed
Chief Executive, Transport Scotland
20 December 2006

Minister for Transport

EDINBURGH TRAMS: DRAFT FINAL BUSINESS CASE AND START OF UTILITY DIVERSIONS

Purpose

1. To provide advice on the draft Final Business Case and to provide a draft paper for Cabinet consideration.

Priority

2. **Urgent.** To allow construction start before the end of this financial year, Cabinet would need to consider the tram scheme in mid February. Discussion with key Ministerial colleagues early in the New Year would be needed to meet this timescale.

Background

3. Cabinet last considered the tram scheme in January 2006 when it agreed to the phased delivery of the scheme and to commit £375m in 2003 prices (indexed according to the standard Transport Scotland indexation model) to the delivery of the first phase from Leith to Edinburgh Airport via Princes Street. You confirmed this commitment in your statement to the Parliament of 16 March 2006.

4. Cabinet also agreed that before significant capital sums could be committed to the tram scheme further Cabinet consideration would be required. That consideration would take place on completion of the draft Final Business Case (DFBC) and receipt of initial infrastructure bids. We have now received the DFBC and present our analysis in Annex A.

5. The headline findings of the business case and our analysis are:

- tie's evidence is 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);
- the assumptions made by tie in the business case for the tram are key to the positive BCR and the case for the tram is now marginal and very sensitive to assumptions;
- there are significant levels of risk remaining with the project although to some extent that risk – particularly around capital cost – will have been mitigated by February 2007 through the receipt of initial bids for the main infrastructure contract;

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- 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. Further advice and analysis is contained in the following annexes:

Annex A	analysis of draft Final Business Case
Annex B	key risks – analysis, commentary and mitigation
Annex C	recommended conditions on any funding award

[DN: should we say something about impact on EARL in particular (due to damage to tie) and to the portfolio as a whole in cancelling a project after it has gone to procurement?]

Recommendation

7. I cautiously recommend that Ministers should approve the draft Final Business Case for the Edinburgh Tram.

8. In doing so I would invite Ministers to note that the business case is marginal and any decision would need to take account the costs, risks, benefits and opportunities associated with the business case.

9. If Ministers go ahead with support for the tram scheme then I recommend that Transport Scotland should set the conditions on the funding award that are set out in Annex C.

10. I attach a draft Cabinet Paper (Annex D) to allow you to start consultation with Cabinet colleagues ahead of a Cabinet discussion in mid February.

DR MALCOLM REED

Chief Executive, Transport Scotland

Ext [REDACTED]

20 December 2006

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Copy List:
PS/Perm Sec
PS/ETLLD
Bill Reeve, Director of Rail Delivery
Frances Duffy, Director of Strategy & Investment
David Patel, Transport Group
Damian Sharp, Head of Major Projects
Matthew Spence, Transport Scotland
John Ramsay, Transport Scotland
Lorna Davis, Transport Scotland
Press Transport Scotland
Sam Ghibaldan
Adrian Colwell

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ANNEX A

EDINBURGH TRAMS: DRAFT FINAL BUSINESS CASE AND START OF UTILITY DIVERSIONS

ANALYSIS OF DRAFT FINAL BUSINESS CASE

Summary

1. 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.
2. 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

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

Affordability

4. 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).

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Concerns about tie's analysis

5. 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.

Value of time

6. 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.

7. 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.

[DN: need further comment from Andy Park on the legitimacy of the discounting – either the results quoted in 7 are appropriate and we should not go ahead or some form of discounting is legitimate and reasonable and we should say so.]

Bus alternatives

8. 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) significantly higher 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.

[DN: need further discussion with Andy Park on wording "significantly higher than" – can't see how tram can have a positive BCR compared with reference case if the reference case has significantly higher benefits and lower costs. Is this to do with the phrase "not due to mode environment" which needs clarification for the non-technical reader?]

9. 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

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10. There is concern that the model used may overstate the level of modal shift from car. 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.

11. The independent Model Construction and Application – Due Diligence Report, produced by Scott Wilson has been received recently. 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.

[DN: further discussion with Andy Park required as this only highlights the negative comments from the Scott Wilson report which also identifies a number of areas where the model underestimates impacts that are positive for the tram and concludes that the various shortcomings tend to cancel each other out. Commentary is also needed on whether 13 shortcomings is a fundamental problem or relatively normal. How many shortcomings are there in TMfS?]

Construction impacts

12. 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 they have provided no detail of any plans to date.

Other appraisal criteria

13. 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.

Economic Regeneration

14. 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.

Environment

15. 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 CO₂ emissions. Taking into account the electricity generation for the tram scheme, CO₂

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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.

[DN: need to say briefly why CO₂ emissions increase]

Safety and Reliability

16. The scheme has accident disbenefits due to the nature of road-light rail interface 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 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

17. 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.

Accessibility and Social Inclusion

18. 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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Transport Scotland – Transport Economics, Analysis and Research

[DN: check what TEAR stands for]

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ANNEX B

EDINBURGH TRAMS: DRAFT FINAL BUSINESS CASE AND START OF UTILITY DIVERSIONS

KEY RISKS – ANALYSIS, COMMENTARY AND MITIGATION

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 Infracore 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.	<p>Medium</p> <p>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.</p>
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.	<p>Medium</p> <p>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.</p> <p>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.</p> <p>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.</p>

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	<p>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.</p>	<p>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.</p> <p>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</p>

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ANNEX C

EDINBURGH TRAMS: DRAFT FINAL BUSINESS CASE AND START OF UTILITY DIVERSIONS

RECOMMENDED CONDITIONS ON ANY FUNDING AWARD

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. These issues were considered by the Transport Scotland Investment Decision Making (IDM) Board on 13 December 2006 and the IDM concluded that the following actions were required.

Action before February 2007

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

- ◆ receipt and first-pass 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.

4. We should specify that the process of revising the cost estimates in light of tram vehicle and infrastructure bids must be transparent to Transport Scotland and its advisers to ensure that we can advise clearly on the confidence in the cost estimates.

Other action before financial close

5. 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

6. 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

7. tie's System Design Services (SDS) consultant has not yet produced designs of adequate quality and is running some weeks behind 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)

8. 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

9. 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

10. 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 tram infrastructure contractors.

OGC Gateway 3

11. 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.

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December 2006

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ANNEX D