·EDINBVRGH·
THE CITY OF EDINBURGH COUNCIL

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Edinburgh Tram Draft Final Business Case

The City of Edinburgh Council

21 December 2006

1 Purpose of report

1.1 To seek approval for the draft final business case for the Edinburgh Tram Network.

2 Summary

2.1 This report starts by setting out the critical role trams have to play in supporting the growth of Edinburgh while protecting and enhancing its unique environment. It then summarises progress in the procurement of the project during 2006 and the preparation of the Draft Final Business Case.

2.2 Capital cost and the affordability of the Tram project are set out and the revenue implications of Tram explained.

2.3 The most important risks arising from the Tram project and appropriate mitigation measures are presented before the next steps in the procurement and implementation of Tram are detailed.

2.4 The Report concludes with a clear positive perspective on the Tram's catalytic role in Edinburgh's future and recommends proceeding with the project.

3 Main Report

Why Tram?

3.1 The Edinburgh City region is at the centre of the Scottish economy and is arguably the most important national attractor of population, investment and development. Despite the fact that Edinburgh is still only home to less than 9% of the Scottish population, the city generates nearly 15% of the country's GDP. Edinburgh's GDP is currently (along with Glasgow's), growing at 4% per annum. This rate of growth is twice the Scottish average and output growth in the city is projected to be higher than any other UK city (except Cardiff) between 2004-2010. In 2004/5 Edinburgh had the largest net civilian in migration in Scotland, nearly double the level of any other local authority area. This is expected to continue with Edinburgh maintaining its role as the primary component of the "Fresh Talent Initiative" and the principal element of Scottish population growth.

3.2 The Edinburgh Tram will deliver the quality transport system that an expanding and prosperous Edinburgh needs. It provides an opportunity to cope with increasing demand for movement, and an even better alternative to the private car for key movements than the local bus network. Tram is also important for symbolic reasons**. Tram is a tangible and powerful symbol of a modern, dynamic economy that will help to reinforce the city's international image as a business location.**

3.3 The city is continuously changing under a variety of pressures. Change involves growth. Growth means more houses, more jobs and more movement. Edinburgh's forecast growth over the next ten years will see big increases in local employment and housing. Nearly 35,000 new jobs are expected within the city by 2015, and by the same year nearly 24,000 new houses will be needed. All this is planned to be achieved with minimal impact on the green belt. Huge new developments are in the pipeline, especially on the city's waterfront in Leith Docks and Granton. Edinburgh Waterfront is the largest brownfield development in Scotland, equivalent to a major new town in scale, with the two major development sites able to accommodate up to 29,000 new homes in the longer term. The City Centre and West Edinburgh, the second and fourth largest concentrations of employment in Scotland are both forecast to see significant increases in jobs. West Edinburgh, identified by the Scottish Executive as a national growth point, is forecast to grow particularly strongly, guided by the West Edinburgh Planning Framework. **The Edinburgh Tram provides the means to link all these areas effectively**

3.4 Trams can move large numbers of people within a city quickly, comfortably, and with minimal pollution. Trams are smoother, quieter and more accessible vehicles. These are the reasons why trams are absolutely fundamental to the growth plans outlined above. Without Tram, access to the major Waterfront developments will simply not be good enough. The Leith Docks proposals would have to be scaled down and the development prospects at Granton would be damaged. Buses alone, though currently providing very effective local public transport, cannot provide the speed, quality or capacity to support development on the scale envisaged. As an example the latest modelling work carried out for **tie** predicts an increase of some 5,000 passengers southbound on Leith Walk between 2011 and 2031 in the two hour morning peak period. Catering for the increase in public transport demand would be particularly challenging and could lead to bus congestion in the city centre. Transport modelling carried out for the West Edinburgh planning framework suggests that **Trams are key to controlling growth in traffic and congestion in the area**.

3.5 According to the 'Competitive Scottish Cities' research undertaken on behalf of the Scottish Executive in 2005, connectivity is one of the single biggest determinants of city competitiveness in the 21st century. The Key Sectors work for the Council has also repeatedly identified dealing with transport issues as a top priority for the city's business community. Access to a skilled workforce and ease of movement are real priorities for the main city business sectors and essential for ensuring the continued growth and prosperity of the city's economy. **Trams, along with improved external rail connections, provide a crucial part of the transport package to achieve these aims.** This is clearly demonstrated by experience elsewhere - perhaps most notably in Dublin where the recently completed tram system is already being extended and further extensions - funded by business to improve their connectivity - are planned.

3.6 Tram provides a new and attractive choice for motorists for key movements. Experience elsewhere shows the potential for trams to draw patronage from the private car, especially from new development areas where travel habits can be formed at the start. Trams' ability to attract car drivers out of their cars (modal

shift) is a valuable factor in enabling the growth of the City, and in achieving environmental and health benefits. Modal shift is a key objective of the Local Transport Strategy. Modelling predicts that up to 1 in 5 tram trips will be made by passengers new to public transport.

Business Compensation Package

3.7 The business benefits of trams has been well illustrated in Dublin and Nottingham -- especially in terms of improved access to city centres. There will however be disruptions during the Tram construction period that may adversely affect businesses along the route of the Tram. Small businesses are particularly at risk. In order to minimise the impact on the City's economy a package of measures has been developed in discussion with, among others, the Edinburgh Chamber of Commerce. The package comprises

- **Rateable value reduction for retail properties fronting the tramline.** The Assessor has agreed a standard reduction of 20% to be applied to average situations such as may occur on Leith Walk, Princes Street and West Maitland Street. Greater reductions may be applied in the most severe cases of disturbance which will be determined on an individual basis. Reductions may however also be set at a lower level where properties are affected to a lesser degree, e.g. where they are set back from the construction works such as the southern part of Elm Row.
- **Small Business Top Up Support Scheme** In addition, funding has been set aside within costs of the scheme to provide extra support to small businesses. The details of the scheme are still to be finalised, but it has been agreed that the scheme will be simplistic, non-bureaucratic, transparent and swift when paying out
- **Construction Management** Contractors will have to follow the Code of Construction Practice (requirement written into the Tram Acts)
- **Liaison and Publicity** A communications strategy is being developed to ensure that businesses are fully informed of the programme of works and to reassure the public that Edinburgh is still "Open for Business"

Progress with the business support schemes will be the subject of further reports to the Council.

3.8 The tram will of course be just a part of the city's public transport network, with buses continuing to play a dominant role on most routes. It is envisaged that bus services will continue to develop to meet the changing needs of the city. Tram will be integrated with bus, both in terms of through ticketing and easy interchanges. Equally important will be connections with the rail network. Easy interchange from rail to tram will help expand the number of Edinburgh employers who can draw on staff commuting by rail – crucial to further development of the city's economy.

3.9 The current tram proposals potentially form the core of a more extensive network within the City and beyond. The 2015 Edinburgh and Lothians Structure Plan development strategy is built around a wider network, incorporating phases 2 and 3 of the current proposal, 'Line 3' to the Edinburgh Royal Infirmary and Newcraighall, and extensions to Livingston, Dalkeith, Musselburgh and Queensferry. The draft SEStran Regional Transport Strategy endorses this wider network, and, along with this Council, calls for any new Forth Crossing to be capable of carrying trams.

Key Players

3.10 There are four key players responsible for the delivery of an integrated transport system for Edinburgh:- The Council; Transport Scotland; Transport Edinburgh Ltd (TEL); and **tie** Ltd. Transport Scotland is the agency responsible for the delivery of the Scottish Executive's transport investment programme and is the

principal funder of Edinburgh's tram project. The Council is the promoter of the Tram project and has been responsible for its inception through the Local Transport Strategy, and the promotion of Parliamentary Bills enabling its construction. Following Royal Assent the Council is now the "authorised undertaker" for Edinburgh Tram Lines 1 and 2 under their respective Acts. If the Council enters into any agreeements in its capacity as authorised undertaker the Council must notify Scottish Ministers accordingly. Relevant agreements in this regard at the present time include agreements with TEL (Operating Agreement and on maintenance demarcation which is in preparation) and with the District Valuer in connection with land acquisition. The Council is the sole or major shareholder in three limited companies all of whom play a vital role in Tram namely TEL, Lothian Buses and **tie**.

3.11 The relationships between the key Tram players were set out in a report to Council in June 2005. In that report their respective roles in setting up contracts for the construction of the Tram infrastructure, the procurement of Tram vehicles and the ongoing operation and maintenance of the tram and bus network were described.

3.12 TEL is the central focus for Tram delivery and was specifically set up by the Council to establish an integrated bus and tram system for Edinburgh. Councillors and Council officials, Lothian Buses executives and one **tie** executive sit on the Board of TEL. The Board of TEL, also has seats for representatives of the private sector.

3.13 Lothian Buses will carry on its present role after commissioning of Tram and it will become a component company of TEL. The day to day operation of Tram will be the responsibility of Transdev who were appointed following competitive tender in 2004 and have played a vital role in the development and specification of the Tram.

3.14 **tie**'s crucial role has been centred on project managing the development of the Tram, preparing the case for the Parliamentary process, and procuring the Tram system.

3.15 The four key players have overseen progress through a substantial volume of work to reach this major milestone for Tram in the presentation of the Draft Final Business Case to Council.

3.16 More details in the respective roles of the key players is given in Section 6 of the DBFC.

Progress During 2006

3.17 This year has seen considerable progress and significant developments on the Edinburgh Tram Network. During 2006 several reports on the Edinburgh Tram Network and Transport Edinburgh Limited were submitted to Council. The principal reports were:-

a *26 January Edinburgh Tram*:This report provided an update on Tram and made recommendations for its funding and phasing.
b *26 January Transport Edinburgh Limited (TEL):* This report recommended the appointment of a private sector non-executive director as Chair of TEL and updated the Council on the membership of the TEL Board.
c *26 March Transport Edinburgh Limited (TEL):* This report notified the Council of a further change to the TEL Board
d *1 June Edinburgh Tram Project: Delegated Powers.* This report sought delegated powers to determine "Prior Approval" submissions relating to Tram

e *21 September: Edinburgh Tram - Appointment of Contractor for the Multi-Utilities Diversion Framework Agreement (MUDFA)*: This reported on the assessment of the tenders for the Multi-Utilities Diversion Framework Agreement (MUDFA) and sought approval for **tie** to award this contract under which advance works to divert underground utilities can be authorised. (A companion report provided background papers.)

f *26 October Edinburgh Tram Land Acquisition*: This report advised the Council of the process for issuing notices when acquiring land for Tram using compulsory purchase powers.

3.18 Following Parliamentary approval the Edinburgh Tram Acts received Royal Assent in spring 2006. This is was a major milestone for the Tram project and the Council has been accordingly granted powers to acquire the land required for the construction, operation and maintenance of the trams. Royal Assent followed extensive and thorough efforts of **tie** and its advisors and Council staff in preparing the proposals and evidence supporting the private Bills for Tram.

3.19 In late November the relevant statutory advertisements relating to land acquisition were placed in the Scotsman newspaper. Also the Council Solicitor signed approximately 2600 General Vesting Declaration Notices, on behalf of the Council, as authorised undertaker (all in accordance with the terms of the report to Council on 26 October).

3.20 The level of work on Tram has continued, indeed intensified during the year and considerable progress has now been made on the project which has now reached an advanced stage of design and procurement.

Procurement

3.21 Tender documents have now been issued for all major Tram contracts. Given the size and complexity of these contracts and their very specialised nature tie have opted to procure these contracts as negotiated tenders. The procedures adopted follow EU procurement regulations and are aimed to ensure best value can be in the negotiations over price and contract terms and conditions. The MUDFA contract followed these procedures. As noted above the contract for the utilities diversions was awarded in October. Tenders for the contract for the supply and maintenance of the tram vehicles (Tramco) were issued in July 2006 and returned in October. These tenders are currently being evaluated by **tie**. These contract documents have been issued by **tie** and contracts to be awarded thereafter will be awarded by **tie** who will be a party to the contract.

3.22 Tender documents (strictly speaking these were invitations to negotiate) for the main infrastructure works (Infraco) were issued in October and are due for return in January 2007. This will lead to an extended negotiation period up to final award (by **tie**) of the Infraco/Tramco contracts in October 2007.

3.23 A start to MUDFA works and appointment of a preferred bidder for Tramco are anticipated in April 2007. Selection of the preferred bidder for Infraco is programmed for mid May 2007. The programme of works will be co-ordinated to minimise the impact on the city street network especially on the operation of bus services.

Forecasting Tram Patronage

3.24 Following their appointment in September 2005 Steer Davies Gleave and Colin Buchanan and Partners acting as the Joint Revenue Committee have carried out the concentrated development of entirely new forecasts of passenger demand and revenue for Tram and to critically re-assess earlier work. Their

new demand model encompassed the whole TEL network (including Tram) and travel on the highway and rail network in Edinburgh and surrounding areas.

3.25 Output from the JRC model has formed essential input to the TEL Business Plan and to the design of Tram infrastructure and the associated highway and traffic management measures needed to accommodate Tram.

3.26 The JRC model has also been input to a review of the project justification required by Transport Scotland. The results of that review are included in the STAG2 Report and conform to the guidance provided by Transport Scotland (Scottish Transport Appraisal Guidance). The STAG2 report is provided as a background paper to this report to Council.

The Draft Business Case

3.27 The Draft Final Business Case (DFBC) presents a strong case in favour of Trams. It concludes that the proposed scheme is economically viable, financially viable, and potentially affordable on the basis of phased implementation. The Business Case provides the financial, economic and social policy justification and sets out the benefits to Edinburgh and to Scotland as a whole over the medium and long term. The Business Case has evolved with close consultation, co-operation and assistance from Transport Scotland, the principal funder of the Tram.

3.28 The economic viability of Tram has been assessed through updating the STAG appraisals originally prepared in support of the submissions to Parliament in support of the Private Bills. Within the STAG report the performance of Tram is assessed under the headings of economic regeneration; environment; safety and reliability; accessibility and social inclusion; transport and land use integration; patronage and mode shift; and in transport economic efficiency. According to formal cost-benefit analysis required by the Scottish Transport Appraisal Guidance, expected benefits are shown to exceed costs (in net present value terms). Tram will sustain a benefit to cost ratio of 1.63 for the whole of Phase 1 (Airport to Leith Waterfront plus Roseburn to Granton) and 1.10 for Phase 1a (excludes Roseburn section).

3.29 The financial viability and affordability of the project are discussed below in the sections on financial implications and risk.

3.30 The executive summary of the Draft Final Business Case is included as Appendix 1 to this report. The full DFBC and the TEL Business Plan (the operational plan) are included as separate appendices.

4 Financial Implications

4.1 Following from the commitment, given in the Report to Council of 11 December 2003, to undertake a rigorous evaluation of the final business case this section of this Report examines the financial issues arising from the Tram. Particular attention is paid to the risks associated with the project arising from the uncertainties in estimated costs, funding and future revenues.

Capital Costs

4.2 In January of this year cost estimates were reported to the Council. As part of the DFBC process, all costs have been reviewed and have been revised to take account of detailed but preliminary designs submitted by SDS (the consultants Parsons Brinkerhof responsible for final design of the Tram infrastructure) in July 2006. The current estimates are derived from detailed quantities abstracted from the preliminary designs. In summary the total cost of Phase 1 is estimated at £592m (£512m for Phase1a only) --- some 4% above the previous cost estimates and due mainly to revisions in the programme. Changes in costs are detailed below:

	January 2006 Estimate £m	November 2006 Estimate £m
Leith to Airport plus Roseburn to Granton (Phase 1)	569	592
Leith to Airport (Phase 1a)	484	500
Roseburn to Granton (Phase 1b) (incremental)	85	92

These costs are based on either rates and prices from bids received, or known rates or market rates applied to quantities derived from the Preliminary Design. The estimating process is the most thorough and up to date that could be prepared at this time. It should be noted that tenders for the infrastructure works will not be received until January 2007 and even then will only be initial prices subject to negotiation.

4.3 However cost estimates for the infrastructure works have been compared with detailed pricing information obtained from another tram project in the UK and have been reconciled with cost estimates independently prepared by consultants Cyrill Sweet on behalf of Transport Scotland. Costs for the utility diversions and Tram Vehicles are based on tender returns.

4.4 Land compensation estimates have been provided by the District Valuer. Additional costs have been estimated by **tie** for their own project management, design and legal costs. Internal costs to the Council, including legal costs, land assembly and the promotion of Traffic Regulation Orders are also included in the cost estimates.

4.5 The costs quoted represent estimated out-turn sums and contain an allowance for construction industry inflation of 5% per annum, where applicable. The 12% project risk allowances also includes 1% for inflation risk. As stated above the estimates have been prepared from a variety of sources. The DFBC indicates the confidence attached to the components of the estimates. Overall there is high confidence for some 31% of total project costs and a medium confidence attached to 67% of total project costs. Tram vehicle costs and utility diversions contract rates are fixed, but it is likely that other costs may include inflation. It should be stressed that Transport Scotland will not provide funding for utility diversions until the outcome of the infrastructure tender negotiation is known.

4.6 The profile of costs projected by **tie** is shown in the following table.

Estimated capital expenditure	**Phase 1**
Cumulative expenditure to March 2007	£58m
April 2007 to end September 2007 - award of Tramco and Infraco	£61m
Cumulative up to award of Tramco and Infraco	**£119m**
October 2007 to March 2008	£47m
Year to March 2009	£204m
Year to March 2010	£154m
Year to March 2011	£65m
Year to March 2012	£3m
Total capital expenditure	**£592m**

4.7 The risks associated with the capital cost estimates are discussed below.

Funding and Affordability

4.8 The available funding for the project is estimated to be £545m, as reported to Council on 26 January 2006. This comprises grant funding from Transport Scotland of around £500m (depending on the exact indexation calculation) and a committed funding of £45m from the City of Edinburgh Council.

4.9 The Transport Scotland grant was based on a ministerial announcement of £375m, indexed to take account of inflation up until tram completion. Indexation calculations are still to be finalised, but it is expected that the grant award will be around £500m. Note that commitment to any start of works will be dependant on formal grant offers being received from Transport Scotland made under a covering agreement being drafted at present.

4.10 Officers in City Development and Finance have reviewed the various element making up the £45m Council contribution, although further work on generating Capital Receipts and revaluing the land contributed by developers is required. A breakdown of the estimated contribution is included in the table below:

	January 2006 Estimate £m	November 2006 Estimate £m
Council Cash	2.5	2.5
Council Land	6.5	6.2
Developers Contributions – Cash	10.2	24.4
Developers Contributions – Land	7.9	2.2
Capital Receipts (Development Gains)	5	2.8
Capital Receipts	12.9	6.9
Total	**45**	**45**

4.11 The total project cost of £592m (inclusive of a risk contingency) is therefore some £47m or 9% above the estimated funding of £545m. However Phase 1a, at £512m, falls well within the probable funding envelope.

4.12 In response to these affordability issues the DFBC recommends a phased approach with a target opening for Phase 1a of December 2010 and Phase 1b following one year later in December 2011. This approach is designed to achieve better cost certainty on the cost of Network so that Phase 1b construction will only commence when it can be demonstrated that costs can be met from available funding. However, the phased approach requires advanced design and utilities work of approximately £9m to be carried out on 1b prior to construction commencing.

4.13 In addition, the Council and Transport Scotland could jointly provide additional funding to help bridge the gap over a three to four year period. Council funding sources under consideration include City Growth (Round 3), the Capital Investment Programme and asset sales. The source and amount of any additional funding will depend on infrastructure prices and the level of any additional grant awarded by Transport Scotland. Discussion have been started with Transport Scotland on the basis of an increased contribution of £10m from the Council combined with possible support from Transport Scotland to reach an aggregate funding level of £595m.

The Roseburn to Granton Section (Phase 1b)

4.14 A succession of studies have recognised the value of improved transport links between north Edinburgh and the city centre, west Edinburgh and the airport. The important role of a tram network in these improvements formed a cornerstone in the plans for a rapid transit network first mooted in the Council's Local Transport Strategy. Tram connections to north Edinburgh featured prominently in the Waterfront Edinburgh Ltd Study of 2001 and in the Edinburgh LRT Masterplan Feasibility Study published in 2003.

4.15 These studies recognised that economic development and regeneration in Granton and neighbouring areas of the city would be accelerated as a result of investment in a new tram system with direct connections to central Edinburgh. Direct connections to the city centre would afford a significant improvement in accessibility to those areas where existing bus services are somewhat circuitous. The superior comfort and image of a modern tram system combined with its high speed and carrying capacity represented an attractive boost to the residents of north Edinburgh and a real incentive for inward investment in the area.

4.16 During 2005 important funding and affordability issues were identified and a variety of possible configurations of the tram network were considered. The limit of grant on offer from the Scottish Executive and the revised capital cost estimates of the time led to the conclusion that a phased approach to procurement was required.

4.17 The core element from Leith Waterfront to Edinburgh airport (Phase 1a) was thought to give a good balance of costs and benefits and a high probability of being financially viable. Phase 1b would connect from Roseburn to Granton . A review of the transport economic appraisal is given in the DBFC and shows that the costs of adding Phase 1b to the core Phase 1a would be more than offset by the user benefits realised by bringing Phase 1b into operation. The benefit to cost ration would increase from 1.10 for phase 1a to 1.6 for the whole of Phase 1. However the financial analysis also reported in the DBFC shows that while introducing the Roseburn to Granton section increases tram revenue by £2m this is offset by an equal loss in bus passenger revenue.

4.18 At the same time the circular configuration of the Roseburn to Granton section of tram does not lend itself to savings in the essentially radial nature of the bus services in the area. As a result operating savings cannot be realised from the bus network and of course there are additional tram operating costs and total operating costs increase – without a significant revenue increase in the short-term. The Roseburn to Granton section therefore brings a clear social cost benefit but a potential deterioration in the projected finances of TEL.

4.19 Tram is nonetheless a real catalyst for development in north Edinburgh and indeed the JRC model shows that by 2031, 70% of trips in the Roseburn section of Tram come from new development. Not providing Tram is considered to hamper development but clearly early implementation of Tram brings financial risks. A cautious and phased development is therefore appropriate. Such an approach will reduce the planning, development and affordability risks but give enough encouragement to developers to assure their early commitment to north Edinburgh.

Interim Funding

4.20 **tie** have also clarified the need for interim funding. **tie**'s present annual Business Plan has Council authority for expenditure until 31 March 2007. It is estimated that additional funding of £61m will be required up to the award of the Infraco and Tramco contracts in October, subject to formal approval of the annual business plan for **tie** ltd.

Revenue Implications

4.21 The financial viability of the integrated tram and bus network is dealt with in the TEL Business Plan. While noting that TEL aims to achieve broader social and economic benefits, TEL will also be a viable and profitable business. The Draft Final Business Case forecasts that future tram revenues will exceed operational cost by the second year of operation and grow steadily through later years, resulting in significant supluses. However, it is likely that the Council will not receive its current level of annual dividend (£2m) in the first three years of tram operation, as this may be needed within TEL. Careful dividend planning will be required to ensure that increased dividends can be paid in earlier or later periods to compensate for any loss of income to the Council.

4.22 Income projections are based on current bus fares and passenger numbers, increased to reflect passenger growth and fares inflation based on Lothian Buses experience over the past decade. Passenger growth has been estimated by the JRC modelling processes, and also prudently includes a 3 year 'ramp up' period, to allow time for predicted passengers to switch to trams. Even with that "ramp up" period the projections prepared by JRC show a steady growth in both

bus and tram passenger numbers over future years. Experience from Nottingham and Dublin suggests that three years may be a conservative assumption.

4.23 Future operating costs, including infrastructure maintenance will be borne by TEL and has been incorporated in their business plan. Bus costs have been derived from current costs incurred by Lothian Buses. Tram costs are based on figures provided by Transdev, the future tram operator. Both sets of costs have been adjusted for planned changes to service patterns and inflation, including above RPI increases for both fuel and salary costs. The costs of maintaining the infrastructure of tram (tram tracks, overhead line equipment etc) will be borne by TEL, but of course the tram operates for much of its length on public highway presently maintained by the Council. An agreement is therefore necessary between TEL and the Council for the demarcation of maintenance and liabilities associated with shared infrastructure (and is currently in preparation).

4.24 The integrated service plan for the TEL operations includes 6 trams per hour running from the Airport and Granton through the centre of Edinburgh to Leith Waterfront. This gives a service of 12 trams per hour in each direction on Princes Street and Leith Walk. Avoiding unnecessary duplication of services TEL would plan to significantly reduce bus services on Leith Walk and on the present Airlink service. Limited reductions are planned to bus services operating between St Andrew Square and Haymarket together with some reductions on the Broomhouse to Saughton Mains corridor.

4.25 These service changes will require passengers to change between bus and tram for some journeys previously made on a single bus service. TEL are seeking to make this interchange as attractive as possible through the design of the interchange stops. The introduction of an integrated suite of transferable tickets for both bus and tram (including a single flat fare) combined with high quality facilities will make interchange second nature. The integrated service plan seeks to minimise the number of required interchanges.

Risk Management

4.26 The complexity and size of the Tram project have long been recognised and consequently required a comprehensive and thorough approach to risk management. The risk management strategy has been mindful of recent reports by the National Audit Office and Audit Scotland and has been developed to achieve value for money from the Tram.

4.27 The risks fall into the following broad categories

a Project Risks (risks affecting the timeous completion of the project within time and budget and to the desired quality)
b Operational Risks (risks affecting the long-term viability of TEL)

Project Risks

4.28 The most significant risks affecting the timeous completion of the project within budget are identified in the DFBC as those arising from the advance utility diversion works (MUDFA); changes to project scope or specification; and obtaining consents and approvals. In particular it is noted that delays from MUDFA in handing over sites to the infrastructure contractor could lead to significant additional costs.

4.29 The project's approach to the identification, allocation and mitigation of these and other risks is set out in some detail in Section 10 of the DBFC. Included in that section is an explanation of the derivation of the specified risk contingency to be applied to the estimated out-turn project costs. It is worth noting however

that , on the recommendation of **tie** that the Council is taking a long lease of land rather than outright compulsory purchase on two sites, one owned by Network Rail the other by BAA. There is a small risk that these landowners may seek to impose conditions on the operation of Tram at some future date.

4.30 There are risks associated with capital costs and with funding. The procurement strategy aims to minimise risk to works costs by placing risks with those best suited to manage those risks. However, it is emphasised that all cost estimates are subject to change. The risk contingency is designed to cover additional unforeseen costs, but it is recognised that there is an element of residual risk of costs exceeding current estimates. It should also be notified that the risk contingency does not cover major changes to scope. For example, there may be additional works required to the wider road network to minimise inconvenience to other road users. . An allowance has been made for these costs but the eventual costs are dependent on the final detailed design of the Tram system.

4.31 As explained above a phased approach is being proposed for the construction of Tram. This is a powerful tool to minimise the risk of cost overrun as it ensures that appropriate pressure is maintained on contractors and on developers contributions up to the point of contractual commitment. In addition, it gives the Council additional control over costs as the ability to restrict construction to the Airport to Leith line is retained until such time as there is sufficient funding headroom to construct the Granton / Roseburn section.

4.32 To maintain control over the capital cost of the project the following actions will be required:-

a Enabling works, including utility diversions, should be authorised to proceed on a timetable that will not disrupt the main infrastructure programme
b Negotiations with bidders should continue with a focus on achieving a high proportion of fixed cost in the final contracted capital cost (so far as the public sector is concerned)

In parallel with these steps negotiations with property developers should continue across the tram network, with the aim of achieving an equitable contribution to tram costs from those developers where the tram contributes to the value of the development or provides the most appropriate solution to the transport challenges presented by the development.

4.33 There is a risk associated with all funding provided in advance of financial close and final business case approval in Autumn 07, as it is potentially abortive expenditure. However, the DFBC presents a strong case for trams, and this expenditure is necessary to meet the programme outlined within it.

4.34 It should also be recognised that any decision by the Council or Scottish Ministers to cancel the trams is not free from costs, as costs including compensation to contractors and redundancies at **tie,** could be between £8 and £10m (dependant on the timing of cancellation) . Transport Scotland has also indicated that should the Council cancel the tram for other than purely commercial reasons, the Council would be liable for the full cost of that decision. Conversely, should Scottish Ministers cancel the project, it is assumed that they would pay for the project termination costs.

4.35 The £545m of approved funding also is not completely free of risk. In particular contributions to Tram from developers are of course subject to development activity. However Agreements under Section 75 of the Town and Country Planning (Scotland) Act total some £5.4m to date, with a number of further major contributions in the pipeline.

4.36 Funding from Transport Scotland also carries some risk with the agreement on issues such as cost sharing, indexing and payment schedules still to be finalised.

Operational Risks

4.37 Future risks arising from the forecasting process have been examined by the JRC. Their Revenue and Risk Report is included as an appendix to this Report. After recapping on the central or reference case forecasts and the assumptions in these forecasts the Revenue and Risk Report tests the sensitivity of Tram to alternative planning and growth assumptions. The JRC also tested assumptions on the attractiveness of Tram to potential users and on the possible impact of bus competition. The analysis of the JRC illustrates the sensitivity of Tram to development assumptions. The interdependence of Tram and development – especially in north Edinburgh should be noted.

4.38 A detailed statistical analysis has also been carried out that allows the assessment of the impact of a variety of relevant factors within assumed ranges. The analysis notes the sensitivity of the DBFC financial projections. It also re-emphasises the fundamental relationship between the Tram and the continued growth of the City and associated movement demand, and consequently the sensitivity of Tram revenues to planning and economic growth.

4.39 In mitigation, it should be noted that Lothian Buses' extensive knowledge of the local transport market has been used to inform and validate the modelling process. Passenger growth assumptions are in line with growth Lothian Buses has experienced in recent years.

4.40 While Council policy can influence planning and economic development there are decisions in the power of the Council and TEL which have a bearing on the outcome for Tram. In this regard the JRC examine the impact of partial completion of Phase 1, the effect of the Edinburgh Airport Rail Link (EARL) and of various detailed operational factors such as the quality of interchange, tram run-times, and bus service integration plans.

4.41 The JRC concludes that the most significant risk to Tram arises from the planning growth assumptions (this applies especially to Phase 1b) but that TEL could manage its operations and reduce costs in response.

4.42 It also should be noted that current modelling assumes that the Edinburgh Tram Project will be covered by the Scottish Executive's Transport Scotland's national concessionary travel scheme. It is a fundamental assumption that TEL bus and tram will both participate in the national concessionary ticketing scheme. The relevant agreement has not yet been finalised although Transport Scotland have given support for this assumption in the preparation of the TEL Business Plan. 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.

4.43 Of all the risks discussed above the greatest risks clearly stem from the uncertainty associated with planning growth. This is nowhere more important than on the Roseburn to Granton section (Phase 1b). Here the development of tram acts to mitigate planning growth risk. Tram will provide the catalyst for development at Granton. It will provide confidence and assurance to developers and accelerate the pace and quality of development. An early decision supporting the commitment to Phase 1b will clearly minimise the planning risk, encourage development and enhance the medium and long term viability of Tram.

Next Steps

4.44 Moving to this next critical phase will require strengthening staff resources in both **tie** and the Council. Provision has been made for this strengthening within the overall project cost estimates.

4.45 The project is now at a sensitive commercial stage in assessing capital costs with the principal tenders awaited or under evaluation. This is a complex process. To achieve best value for the public sector requires a diligent and professional negotiation during the period to contractual commitment. In these circumstances it is considered both prudent and appropriate to seek Council approval to proceed with the procurement on the basis of estimated costs as presented in the DBFC.

4.46 Tramco tenders have now been received and are presently under evaluation. Selection of a preferred Tramco bidder is scheduled for April 2007. Final negotiations would take place in June and July of 2007 leading to contract award in October 2007.

4.47 Infraco would also be awarded in October 2007 after selection of the preferred bidder in May and final negotiations with that bidder in July 2007. The final contract awards would be subject to Council approval during September. The extended negotiation period, and the need to maintain a strong negotiating position of necessity require the initial tender prices and tender evaluation to be held in commercial confidence within **tie**.

4.48 The table below (taken from the Draft Final Business Case) summarises the principal milestone events in the final stages of the procurement and construction of the Edinburgh Tram Network. Some adjustment to these date may be required in due course to fit with the Council meeting schedule.

Milestones	Date
Approval of Draft Final Business Case by CEC	21 Dec 06
Approval of Draft Final Business Case by Transport Minister – approval and funding for utility diversions	15 Feb 06
TRO process commences	13 March 07
Tramco - complete initial evaluation/negotiation	19 Mar 07
MUDFA - completion of pre-construction period of MUDFA contract	02 Apr 07
MUDFA – commencement of utility diversions	Apr 07
Infraco – return of stage 2 bids	05 April 07
Tramco - confirmation by **tie** of Preferred Bidder	16 Apr 07
Infraco - completion of evaluation/negotiation of bid	10 May 07
Infraco – confirmation by **tie** of Preferred Bidder.	10 May 07
Tramco/Infraco - facilitation of novation negotiation complete	07 Jun 07
Tramco/Infraco – final negotiation and appointment	19 Jul 07
Infraco - negotiation of Phase 1b complete.	13 Sep 07
Approval of Final Business Case by CEC and Transport Scotland – approval and funding for Infraco / Tramco	27 Sep 07
Tramco/Infraco - award following CEC/TS approval & cooling off period.	11 Oct 07
Construction commences on Phase 1a	07 Dec 07
TRO process complete	17 July 08
Construction commences on Phase 1b	29 Jun 09
Construction complete Phase 1a	08 July 10
Operations commence Phase 1a	Dec 10
Construction complete Phase 1b	11 July 11
Operations commence Phase 1b	Dec 11

4.49 The table above is based on the assumption of a staged implementation of Phase 1 with Phase 1a starting in December 2007 and Phase 1b commencing in June 2009.

4.50 Commencing the MUDFA contract works in Spring 2007 should also provide an early commitment and impetus to the project and increase the competitiveness of the infraco bids.

5 Conclusions

5.1 The Edinburgh Tram Network will provide an essential catalyst for the continuing growth of the Edinburgh economy, facilitate the planned major expansions in the north and west of City and form the basis for future developments. The development and procurement of the project under the auspices of **tie** and TEL has allowed the formulation of a practical, integrated and viable bus and tram transport network which will serve the North, West and Centre of the city for many years to come.

5.2 The Edinburgh Tram Network will be successful in reducing the demand for car travel and will promote the environmental, safety and social objectives of the Local Transport Strategy.

5.3 Given the scale and complexity of the project there are inevitably risks associated with the project. Risk management has been a central task in the preparation of the project and appropriate mitigation measures have been designed to ensure value for money from the project.

5.4 The Draft Final Business Case and its substantive supporting documents illustrate the significant effort made by the staff of **tie,** their many advisors, TEL, and the officials of the City Council who have been involved in the many stages of the conception development and procurement of the Tram project.

5.5 The DFBC shows that, within current funding, Phase 1a is clearly affordable and Phase 1b is potentially affordable and that a positive business case has been established for all (or part) of the network. TEL has been demonstrated to be a viable and profitable business, combining tram and bus operations in an integrated manner.

6 Recommendations

6.1 To approve the Draft Final Business Case.

6.2 To note that the Council gave, in January 2006, approval , in principle, to a Council contribution of £45m toward funding Tram; subject to a satisfactory final business case.

6.3 To approve the continuation of contract negotiation for Infraco and Tramco, subject to there being no significant adverse changes to the figures upon which the business case is based.

6.4 To note that final Council approval for the award of the Infraco and Tramco contracts will be sought in September 2007.

6.5 To note that the contractual right is maintained to defer the construction or restrict the construction of components of (of the Roseburn/ Granton corridor line or to restrict construction to the Airport to Leith line) the Tram in the event that capital costs do not lie within a comfortable funding headroom.

6.6 To note the schedule of milestones presented at Section 4.43 above.

6.7 To approve progress towards the commencement of utility diversions in April 2007 subject to the tender evaluations for Tramco and Infraco confirming the affordability of an appropriately phased Tram network.

6.8 To instruct the Directors of City Development and Finance to apply for grant support for the commencement of advance utility diversions under MUDFA.

6.9 To note that the Directors of City Development and Finance will continue discussions with the Scottish Executive with regard to extending the national concessionary travel scheme to include Edinburgh Tram.

6.10 To instruct the Directors of City Development and Finance to continue discussions with Transport Scotland in respect of additional funding for Phase 1b, should such funding be required.

6.11 To note that agreement with Transport Scotland is required before approval to commence MUDFA works can be issued.

6.12 To approve the budget for interim funding of £61m up to final closure of the Infraco and Tramco contracts in October 2007, pending receipt of a full **tie** business plan for 2007/8 and note that approval of Transport Scotland is also required for this sum.

[redacted]

Donald McGougan
Director of Finance
13th December 2006.

[redacted]

Andrew Holmes
Director of City Development
13.12.06.

Appendices	Edinburgh Tram Network Final Business Case Executive Summary *Under Separate Cover* Edinburgh Tram Network Final Business Case TEL Business Plan
Contact/tel	Max Thomson Lex Harrison Rebecca Andrew [redacted]
Wards affected	All
Background Papers	Edinburgh Tram Network STAG2 Appraisal Edinburgh Tram Network Revenue and Risk Report

1. EXECUTIVE SUMMARY

Background

1.1 Substantial road traffic growth across the Edinburgh area combined with forecast population and employment increases will lead to significant growth in road congestion and demand for transport solutions. To support the local economy, City of Edinburgh Council (CEC) has identified trams as the preferred way to provide the backbone for a comprehensive, higher quality public transport network to support the local economy and to help to create sustainable development. The Edinburgh Tram Network ("the tram") has been central to transport policy and planning and the wider economic development aspirations of the City for more than six years. The scheme has had in-principle funding support from the Scottish Executive (now represented by Transport Scotland) since 2003.

1.2 Early 2006 saw the tram scheme reaching an important milestone as it received Parliamentary approval. Both the Edinburgh Tram (Line One) Act and Edinburgh Tram (Line Two) Act came into force following Royal Assent in May and April 2006 respectively.

1.3 Concurrent with the Parliamentary process, a careful review of cost estimates was carried out which concluded that although Line 1 only or Line 2 only had a high degree of deliverability within the constraint of available funding, a complete network of Lines 1 and 2 was unlikely to be affordable in one phase of construction and that a phased approach to procurement and delivery would be implemented.

1.4 After consideration of a range of options it was concluded that the core of the network from Leith Waterfront to Edinburgh Airport (Phase 1a), via Haymarket and Princes Street, would give a good balance of costs and benefits, would present a high probability of being financially viable when integrated with Lothian Buses services and that the first phase of the tram development should include the section from Roseburn to Granton Square (Phase 1b) serving the development area in Granton.

1.5 The assumed Phase 1 (Phase 1a plus Phase 1b) carries the support of Transport Edinburgh Limited (TEL), which is charged by CEC with the delivery and management of an integrated tram and Lothian Bus network and of Transdev, the future operator of the tram.

1.6 This Draft Final Business Case has been prepared to support the implementation of Phase 1 of the tram, comprising Phase 1a and Phase 1b, and examines the three core tests of the viability of the scheme:

- **Economic viability** – The quantified economic benefits and costs of Phase 1 of the tram as well as the wider benefits relating to urban regeneration ; environment ; safety ; transport and land use policy integration ; and accessibility and social inclusion.

- **Financial viability** – The way in which Phase 1 of tram will be integrated with buses under the umbrella of TEL in a manner which preserves and

enhances the public transport service in the City and does so in a profitable manner. This is embodied in the TEL Business Plan.

- **Affordability** – The prospective deliverability of Phase 1 of the tram within the constraints of available funding.

Sections 2-5 of this document set out the scope, development process and the justification of the proposed scheme. A summary of these aspects is set out below.

Economic viability

1.7 The economic benefits and costs of Phase 1 of the tram have been assessed in accordance with Scottish Transport Appraisal Guidance (STAG) by Steer Davis Gleave, building upon the previous work submitted to Parliament in 2004 but updated where appropriate to reflect more recent and extensive transport modelling again led by Steer Davis Gleave. The following are the highlights from the assessment:

Economic regeneration

1.8 The tram is integral to the regeneration of the brownfield areas in the North of Edinburgh at Granton Waterfront (served by Phase 1b) and Leith Docks (served by Phase 1a). Some 25,800 new residential units (7,800 at Granton) and nearly 350,000 sq.m. of new office, retail and other commercial development (244,000 sq.m. at Granton) is projected to be built in North Edinburgh progressively between now and 2020, reflecting the growth in Edinburgh's economy and population Without Phase 1 of the tram it is unlikely this large scale redevelopment would go ahead on the desired scale and timetable.

1.9 Significant new development is also envisaged in West Edinburgh with some 250,000 sq.m. of new office space (mostly at Edinburgh Park) and over 200,000 sq.m. of other commercial space again predicted to be progressively built between now and 2020. Phase 1 of the tram will facilitate and encourage this new development and, crucially, provide improved public transport between the new housing in Granton and Leith and the new job opportunities in the West of the City.

1.10 The forecasts reflect that by 2015 more than 5,000 residential units and 114,000 sq. m. of employment related development will be not be built in the absence of Phase 1 of the tram. Granton will account for most of the additional residential units and over 50,000 sq.m. of the additional employment related development. Beyond 2015, the predicted level of new development in the absence of tram recovers but ultimately it is predicted that 2,800 residential units (mostly at Granton) and 34,000 sq.m. of new commercial development will not be built without Phase 1 of the tram.

1.11 In employment terms it is anticipated that more than 930 full-time permanent jobs in the City will be generated or brought forward by the development impact of Phase 1 of the tram of which 590 can be attributed to Phase 1a. These jobs do not displace jobs elsewhere in Scotland. It should also be noted that a substantial proportion of the

capital investment will be spent in Scotland, encompassing utility works, land purchase, civil engineering works and professional services.

1.12 The positive relationship between high quality transport capability – and specifically light rail – and enhanced economic development is a well-known phenomenon. There is also now little debate about the reverse scenario, the retarding impact on development of poor transport connections. The Edinburgh tram scheme is based on the need for improved transport connections to vital development areas and is a critical driver of future economic growth in Edinburgh and Scotland as a whole.

Environment

1.13 Phase1 of the tram will make a positive contribution towards objectives of reducing emissions and improving air quality in the City Centre and in the transport corridor to the west of the City and the airport. Vehicles within the City account for up to 88% of emissions of nitrogen oxides and trams will provide a large number of journeys through the City Centre so improving mobility and accessibility but without adding to current levels of pollution. Trams are also a relatively quiet mode of road transport providing a higher quality environment for those living, working and travelling in the area. The tram's contribution to mode shift from private car to public transport (see below) will further progress towards objectives set in the Air Quality (Scotland) Amendment Regulations 2002 and to national objectives to reduce emissions of greenhouse gases.

1.14 The construction and operation of Phase 1 of the tram will address potential impacts on the World Heritage Status of Edinburgh by applying design and mitigation standards set out in the Tram Design Manual approved by CEC planners. Details of mitigation measures to retain, protect and enhance or replace existing plantings and wildlife habitats on the Phase 1 corridor, including badger setts, are prescribed in the Landscape and Habitat Management Plan approved during the Parliamentary process.

1.15 To the fullest extent reasonably deliverable, disruption during construction will be minimised. Clear and open communications will ensure that the effects of construction are anticipated and the construction planning will ensure that work is restricted to the shortest time period consistent with safe working practice. Schemes to provide financial assistance to local businesses affected by construction are under active development.

Safety and reliability

1.16 Personal security will improve, reflecting tram design elements (CCTV and help points at all stops and vehicles) and designed access arrangements aimed at enhancing security. The planned use of inspectors on vehicles will also assist this objective.

1.17 Trams will improve the overall reliability of public transport as they generally benefit from greater segregation from general traffic and priority at junctions and present an opportunity to significantly reduce the variability of dwell time at stops compared to a bus only public transport service. A significantly increased number of bus vehicles would be required on the main Phase 1a corridor on Princes Street and Leith Walk to cope with forecast increased demand in the absence of trams. Despite continuing

implementation of a wide range of bus priority measures, buses remain vulnerable to the effects of increasing congestion across the City.

Accessibility and social inclusion

1.18 Areas of Granton and Pilton to the North (on Phase 1b) and a zone around Leith Walk, as well as around Saughton and Balgreen in the West (on Phase 1a) are areas where socio economic status is considerably less affluent than surrounding areas and where employment, income levels and car ownership tend to be comparatively low. Opportunities for people living in these areas will be improved by direct connection via tram to the City Centre and other employment areas, including the new development in Granton, Leith and the West of the City at Edinburgh Park and the Airport.

1.19 Trams and tramstops will be fully accessible by people with mobility impairments, those travelling with small children and the elderly. These travellers will benefit from the design specification, ride-quality and reliable accessibility of trams. Where the distance between tram stops presents a challenge to accessibility, the service integration patterns with buses have been designed to maximise the continuing and improving accessibility of Lothian Buses for these groups.

Transport and land use integration

1.20 The tram will be particularly vital in responding to the expected growth in travel demand arising from the new development in the North of Edinburgh at Granton and Leith. Phase 1 of the tram will help ensure this new development can be delivered without exacerbating city wide congestion by ensuring that land use and transport policies are integrated. Any displacement of new development to greenfield and greenbelt sites would have planning implications and could result in a settlement pattern that would be more difficult to serve by public transport.

1.21 Carefully considered bus-tram service integration plans and ticketing arrangements will enhance the opportunity to make journeys on the public transport network. Effective interchange facilities will be provided at the foot of Leith Walk, St Andrews Bus Station, Ocean Terminal, Gyle Shopping Centre and Crewe Toll. The tram route will integrate with Ingliston Park & Ride, already operating successfully and planned for expansion, and with other park and ride sites are under active consideration. Phase 1 of the tram also provides an opportunity to significantly improve integration with other transport modes at Haymarket, Waverley and Edinburgh Park railway stations and Edinburgh Airport. These interlinking services, along with the proposed frequency of the service, means tram will afford easier access to employment, retail and leisure locations.

Patronage and transport mode shift

1.22 Extensive work has been undertaken to build new demand forecasting models to predict use of the tram and the impact upon use of other transport: bus, rail and car. The modelling deployed to support the Edinburgh tram scheme is recognised by the professionals involved as among the most sophisticated ever prepared in support of a large-scale transport scheme.

1.23 Annual demand for Phase 1 is predicted to be 13m tram passengers in 2011 (11m for Phase 1a only). This reaches 20m once the system is fully established after 3 years from opening and rises further to 32m in 2031 (24m for Phase 1a only). This growth is predicated on a forecast of substantial growth in the total travel market, as well as the additional predicted commercial and housing development as a result of the scheme. Between 2005 and 2031, demand for journeys by public transport is forecast to increase by 61% (1.8% p.a.). The tram will meet a large proportion of this increased demand which could otherwise be met only by cars or buses on increasingly congested roads.

1.24 Mode shift from car is a key objective of the Local and Regional Transport Strategies and is fundamental to achieving the environmental, sustainability, health and traffic aspirations of the tram. Phase 1 of the tram is forecast to generate 3m additional public transport trips in 2011 increasing to over 6m additional trips in 2031, mostly in areas directly served by the tram where the change from car to public transport use will be up to 10%.

1.25 In 2011, about 17% of tram patronage will be new to public transport rising to 20% in 2031 with the balance being predominantly those who would otherwise travel by bus and other modes of public transport. Congestion is characterised by the disproportionate effect that marginal increases in car use have on the total system. It is therefore very important to maintain downward pressure on additional road use and the proportion of tram patronage new to the public transport market is therefore significant. It is also in keeping with that achieved on successful tram schemes elsewhere in the UK such as Croydon Tramlink and Nottingham.

Benefits and costs to Government

1.26 The benefits and costs of Phase 1 of tram calculated in accordance with STAG requirements are summarised in the table below. The appraisal assumes that the Edinburgh Airport Rail Link (EARL) is developed as planned reflecting wider transport planning in Scotland.

£m Present Value, 2002 prices	**Phase 1**	**Phase 1a**	**Incremental Phase 1b**
Value of scheme benefits	709	373	336
Value of scheme costs	436	340	96
Net benefits	**273**	**33**	**240**
Benefit Cost Ratio to Government	**1.63**	**1.10**	**3.50**

1.27 The results demonstrate the positive impact delivered by the tram project. Phase 1 and Phase 1a deliver positive benefits and their benefit: cost ratios exceed the accepted minimum of 1.0. At 1.63 and 1.10 respectively, in the context of large-scale transport schemes, these ratios are regarded as representing good value for money.

1.28 The strong incremental benefit of completing the network with the Roseburn to Granton tram line is a striking factor. There is a close relationship between this

assessment and the scope and timing of new development at Granton, which carries both risk and opportunity. The financial implications of this are summarised below.

Interaction with EARL

1.29 Tram and EARL can serve different market demands, tram serving the local price sensitive and time insensitive market and EARL the national, relatively price insensitive and time sensitive market. There may be scope to generate interchange trips at the airport between rail and tram, increasing demand for both and providing inter-urban links via rail with local access on the tram. Attracting patronage to such interchange journeys will depend on effective fares policy and ticketing systems. TEL sees the inclusion of multi modal through ticketing as a key element of adding to the flexibility and usability of the public transport systems.

1.30 Sensitivity testing shows that in the absence of EARL, tram would gain market share, particularly in respect of those travelling between the Airport and the City Centre, with additional tram patronage forecast to be 0.5m in 2011 and 1.6m in 2031. In the absence of EARL the Benefit Cost Ratio for Phase 1 of the tram would be increased from 1.63 to 2.31 (from 1.10 to 1.58 for Phase 1a only) reflecting significant increased decongestion benefits to other road users (including cars) as a result of the tram in the absence of EARL.

Financial viability (the TEL Business Plan)

Background to TEL

1.31 TEL was established by CEC to build on the success of the current Lothian Bus (LB) services through the delivery and management of an integrated tram and bus business. CEC requires TEL to achieve profitable operations, to meet its investment obligations and to continue payment of dividends at the level currently received by CEC from Lothian Buses.

1.32 However TEL, like LB, will also target the delivery of a 'social dividend' by maintaining lower fares and a more comprehensive level of service provision than would normally be the case for a private sector transport operator. TEL's objectives are also aligned to the delivery of the wider economic benefits of the tram. The measure of success for TEL will be the overall performance in commercial, social, customer and financial terms of the integrated bus and tram network. The summary presented here focuses on the drivers of the forecast financial results of TEL.

Section 8 provides a detailed analysis of the financial viability as it is presented in TEL's full Business Plan, a copy of which is included at Appendix I.

Financial forecast highlights

1.33 The table below provides a summary of the financial highlights from the forecast of TEL's profitability operating with bus and tram.

Tram in service	Pre-tram		Ph1a Only	Phase 1a plus 1b				
Tram service pattern (see below for explanation)	n/a	n/a	6/12	6/12	6/12	8/16	8/16	8/16
Year	2006	2010	2011	2011	2012	2016	2021	2031
Patronage (Pax m)								
Bus	108	117	112	110	112	121	128	142
Tram	-	-	11	13	16	23	26	32
Total TEL Patronage	108	117	123	123	128	144	154	174
Revenues and costs (£m)								
TEL Revenues	88	109	119	119	128	168	216	357
TEL operating costs			120	121	127	157	195	312
Pre-tax operating profit/(loss)			(1)	(2)	1	11	21	45
Tram lifecycle costs			-	-	-	1	2	2
Notional taxation			-	-	-	3	6	13
Dividend payment			-	-	-	3	3	5
Net TEL cash surplus/(deficit)			(1)	(2)	1	4	10	25

NB All £ figures inflated

1.34 Figures for 2011 are presented on two bases; that Phase 1 of tram will be operating in its entirety in 2011 and separately that Phase 1a of the tram will operate in 2011 with Phase 1b coming into service in 2012. The forecast has been developed using the patronage and revenue forecasts for both tram and bus developed using the transport model described above and validated by TEL, tie and Transdev. The forecast reflects that TEL is prospectively a very viable and profitable business.

1.35 The forecasted patronage and revenues for tram in 2011 to 2014 have been conservatively reduced to take account of a ramp-up period as new services take time to be fully adopted by users. The forecast reflects that TEL's operational cash flow profile will be positive once the tram and bus patronage has stabilised after the first year of the ramp-up period in 2012.

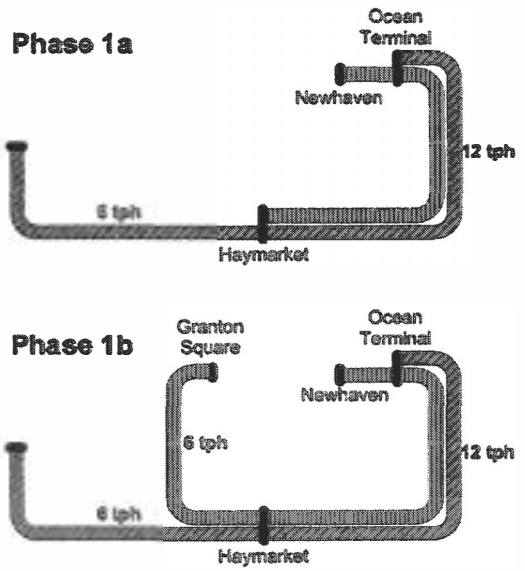
1.36 It is assumed that the policy of maintaining the current level of LB dividend to CEC will be applied prudently and that the annual dividend might be reduced or foregone for short periods in response to lower profits or short term demands on TEL's cash-flows. In such circumstances, the dividends for future periods would be adjusted upwards to ensure the shareholders receive the target dividend on a cumulative basis.

1.37 The operating cost projections provide adequately for the purchase of new buses to renew and/or expand the existing bus fleet. 'Tram lifecycle costs' is the expenditure on the tram infrastructure and vehicles necessary to ensure the tram assets reach the end of their useful lives. Provision is made in the forecast for such expenditure required to achieve the life expectancy of the system over the first 30 years of operation and to ensure the system performs effectively throughout, including the half-life refurbishment of tram vehicles after approximately 15 years. The TEL Business Plan does not specifically provide for the major replacement expenditure which will be required after 30 years.

1.38 Taxation is provided at the currently prevailing rate on forecast net profits. TEL will engage in the examination of tax mitigation opportunities in the same way as other commercial entities.

Integrated service patterns

1.39 Using the geographical analysis of where forecast demand is likely to originate / terminate, TEL has developed a service integration plan reflecting planned tram services and bus services beyond the introduction of tram. The service patterns for tram must provide sufficient and reliable capacity to meet the demand and ensure overcrowding does not dissuade passengers from using public transport. The planned service patterns for opening of Phase 1 of the tram are depicted below for Phase 1a only and for a complete Phase 1.



tph = trams per hour

1.40 The forecast of demand indicates that after the initial five years of growth, the '6/12' trams per hour service depicted above will require to be increased to provide sufficient capacity to serve demand on the Leith to Haymarket section and the TEL Business Plan assumes that from 2016, the service will be increased to an '8/16' trams per hour pattern. A further increase in services is likely to be required after the year 2027 to provide sufficient capacity to serve demand on the Haymarket to Edinburgh Park section of the tram network.

1.41 Amendments to bus service patterns are envisaged where the tram runs parallel or close to an existing bus route to prevent unnecessary overlap of services, the principle being that bus service reductions are only applied where the tram offers an acceptable alternative mode of travel. This approach will allow TEL to match the most effective

mode of transport to levels of demand while the travelling public will continue to benefit from high quality public transport provision. Feeder buses will be provided linking Crewe Toll with the Western General Hospital and existing services to the area would be maintained.

1.42 TEL's service integration plan aims to offer as near seamless a journey through the network as possible. The inconvenience of interchange is minimised by eliminating it where possible The service integration plan seeks to achieve optimal alignment of service frequencies at interchanges thus making interchanging as simple as possible and minimising the risk of loss of patronage. Key bus and tram interchange locations addressed by the service integration plan are the Foot of Leith Walk, St Andrew Square and Crewe Toll.

3rd party responses

1.43 Good relations with 3rd party operators are considered essential, not least due to the opportunities which enhanced integration with those operators may offer and the benefits of being part of the wider provision of public transport within Scotland. Dialogue is underway to develop appropriate service plans with these operators including common and through ticketing arrangements.

Fares and ticketing strategy

1.44 The TEL fare structure will be a single, fully integrated, flat fare for bus and tram regardless of the distance travelled. The only exceptions will be – as now - journeys to and from the Airport and night services. It is a fundamental assumption that TEL bus and tram will both participate in the national concessionary ticketing scheme. The relevant agreement has not yet been finalised although Transport Scotland have given support for this assumption in the preparation of the TEL Business Plan. Under the terms of the scheme, operators receive payment of 73.6% of the price of an adult single for each journey by concessionary travel holders and this currently applies to c20% of Lothian Buses patronage. This level of recompense is assumed to continue.

1.45 The assumption is that the average fares yield for TEL will be increased at the rate of the Retail Price Index (RPI) +1% growth per annum. This is in line with historical increases in fares by LB, meets political and stakeholder expectations and supports TEL's aim to provide transport services at an affordable price.

1.46 Tram tickets are to be purchased off-board and ticket machines will be provided at all trams stops and a number of bus stops. The only tickets to be sold on-tram are to be adult and child single tickets which will be priced at a premium above the price from ticket vending machines. TEL will continue and enhance LB's current strategy to encourage wider use of pre-paid and/or multi-journey types of tickets by offering discounts to the standard fare.

Revenue protection

1.47 Fare evasion and fraud on the existing LB bus network has been limited. Trams, with multi-door boarding, require active processes in place to limit the opportunity for fare evasion and fraud in general as well as the particular need to enforce the premium

Airport fare. TEL's revenue protection regime for trams is a combination of placing inspectors on each tram and providing ticket machines at all tram stops, with a significant price incentive to buy a ticket off-tram. The presence of inspectors has also been shown to promote a sense of security for passengers and be an effective deterrent to anti-social behaviour.

Other income opportunities

1.48 TEL with its combined bus / tram network offers attractive opportunities to generate additional revenues from advertising, small scale commercial development and marketing and tourism driven revenues. The TEL Business Plan includes a prudent assessment of the income which might be earned from these additional sources based primarily upon the existing experience of LB.

Operating costs

1.49 TEL's bus operating cost projections are based on the current experience of LB for buses. Tram operating costs are based upon the planned service patterns and required number of tram vehicles, validated by Transdev and subjected to a thorough review and benchmarking process. Effective control over all aspects of operating costs is essential for TEL to achieve its profit objectives. However, the public's perception of the quality of services translates directly to patronage and revenue generation, therefore TEL must balance opportunities for cost savings against the impact this may have on the quality of services provided.

1.50 Maintenance of the tram vehicles and infrastructure is being procured separately to cover maintenance services, including lifecycle maintenance, with a significant proportion of the maintenance fees based on a punctuality and availability monitoring regime and high presentational standards. Key Performance Indicators (KPIs) will be adopted with which the success of TEL in realising the benefits expected from the integrated bus and tram business can be measured. These KPIs have or will be incorporated into the relevant contracts and operating agreements with service providers to TEL including the operator of the trams, Transdev, and the maintenance providers for the tram system.

New development and economic growth risk to patronage and revenue forecasts

1.51 Phase 1 of the tram will encourage and facilitate the new development planned in North and West Edinburgh and stimulate economic growth in the City. However the forecast future TEL patronage and revenues, both for bus and tram, is in turn highly sensitive to the level and timing of new development and the underlying level of economic growth. Sensitivity tests indicate that with assumed new development at Granton reduced by 75% and new development delayed by 5 years in other areas, overall TEL revenue would be reduced by 3% in 2011 (13% in 2031)

1.52 Although not at first sight dramatic, these reductions are significant to forecast levels of profitability and cash flow. In the event of slower than expected development or a general economic downturn, TEL would plan and implement services to match the reduced demand. On the Phase 1a corridor, where there is already a high level of demand, the opportunities to implement revised integrated service patterns for buses

and tram, with commensurate savings in operating costs, would significantly mitigate the risk of failure to meet annual operating profit targets. In 2011, approximately 30% of forecast demand between Leith and Haymarket and 50% of demand between Haymarket and the airport will be directly dependent on new development.

1.53 On Phase 1b the opportunities to mitigate the impact of lower demand are lower than on Phase 1a since a greater proportion of the patronage will be carried by the tram. Opportunities will however exist to reduce the planned level of tram services to mitigate the negative impact. Although forecast patronage on Phase 1b in 2011 amounts to c30% of total tram passengers, nearly 70% of that demand will be directly dependent on the new development at Granton waterfront. In context however this represents a relatively small proportion of TEL's total revenue.

1.54 A key issue arises in the early period of operations, when the development at Granton is building up. This is the period when overall network profitability is most challenging because of the ramp-up period described above. Careful evaluation of the inherent risk is necessary to avoid unacceptable early period losses and the means to do so are addressed in the context of affordability.

Affordability

1.55 The summaries above demonstrate that Phase 1 of the tram (and Phase 1a on it own) can deliver significant economic benefits in return for the proposed investment. Phase 1b will make a very positive contribution to the economic case. TEL can operate as a financially viable integrated bus and tram business with Phase 1 of the tram. Here we consider the affordability of Phase 1 of the tram in the context of visible funding, the risks being borne by CEC and Transport Scotland as the principle funders and the rationale for keeping decision making flexible with respect to Phase 1b. Section 9 contains the detailed analysis.

Cost estimates

1.56 In November 2006, tie and its advisors completed a detailed review of the cost estimate for the project to reflect the agreed scope of Phase 1 and a programme for delivery of Phase 1 into service by Mid 2011. The updated estimate for Phase 1 is:

Phase 1 in total	**£592m**
Phase 1a only	**£500m**
Phase 1b incremental cost	**£92m**

1.57 Based on the estimating methodology used, the level of certainty and confidence associated with the updated estimate is considered to be relatively high. Nearly 98% of the costs have been estimated based on rates and prices from firm bids received, known rates applied to quantities or based on market rates applied to quantities derived from Preliminary Design. The level of confidence is reinforced by benchmarking against other tram schemes and the relatively high allowance for risk included in the estimate as explained below.

1.58 The updated estimates comprise base costs and an allowance for risk and uncertainty. A rigorous Quantitative Risk Assessment has been applied to identified Project Risks to derive a risk allowance to deliver a very high level of confidence (statistically at a

90% confidence level meaning that there is a 90% chance that costs will come in below the risk-adjusted level). The level of risk allowance so calculated and included in the updated estimate represents 12% of the underlying base cost estimates. This prudent allowance for cost uncertainty reflects the evolution of design and the increasing level of certainty and confidence in the costs of Phase 1 as procurement has progressed through 2006.

1.59 **tie** will continue to analyse, quantify and mitigate risks during the period through to final negotiation and award of the tram vehicles (Tramco) and infrastructure (Infraco) contracts and during construction with the objective of reducing or eliminating the impact of individual quantified risks and thereby the element of the allowance for risk which crystallises into actual costs.

1.60 The principal elements of the base cost estimates are:

- **Utility Diversions** - The Multi Utility Diversion Framework Agreement (MUDFA) was awarded in October 2006 and rates, prices and allowances in the contract have been reflected in the updated estimate
- **Tram vehicles** - Tenders were received for Tramco in October 2006 and the updated estimate reflects an appraisal of the prices received
- **Infrastructure** – Tenders were issued for Infraco in October 2006 and pricing information is due to be returned in early 2007. Quantified estimates for the infrastructure works prepared by the System Design Services consultant and based on design were reviewed and reconciled with independent estimates prepared by Cyril Sweett. The cost estimates have been benchmarked against other comparable tram schemes.
- **Land compensation costs** - Estimates have been provided by the District Valuer and it is intended to commit to certain of the acquisitions required for Phase 1a using a General Vesting Declaration procedure by March 2007.
- **Internal costs** – Comprises mainly SDS design costs as contracted plus the costs of project management team and overhead, legal costs related to procurement and support of approval processes and the support of the operator, Transdev, all of which have been estimated using a detailed resourcing plan and known or market rates.

1.61 The Tramco contract cost and MUDFA contract rates are fixed price at outturn price levels. The base estimate costs for remaining items were estimated at current (2nd Quarter 2006) price levels and have been inflated over the duration of the works at an annualised rate of 5% with a further 1% allowed for in the calculation of risk allowances given the uncertainty of forecasting future market price levels. This allowance is consistent with the forecasts assessed by the RICS Building Costs Information Services (BCIS) and indices prescribed by Transport Scotland.

1.62 In summary, the cost estimate reflects substantial external validation and contains a sensible level of risk contingency.

Measuring affordability

1.63 In January 2006, CEC made an in-principle commitment to make a contribution of £45m towards the capital cost of Phase 1 and in early February 2006, Scottish

Ministers announced an increase, in line with indexation, of the grant of £375m originally offered in March 2003 up to approximately £500m. The final level of the grant will depend upon the actual level of cost inflation in the industry and the programme over which Phase 1 of the tram project is built.

1.64 The benchmark total funding package is therefore £545m. The updated cost estimates above reflect that Phase 1a, at a cost of £500m, is affordable within this level of funding with a 9% headroom over and above the 12% risk allowance provided for in the cost estimate. However a complete Phase 1, at a cost of £592m, is £47m or 9% in excess of the benchmark.

1.65 In considering the affordability equation, there are a number of variables which may change the final picture:

- The receipt and final negotiation of Infraco tender prices. The progression of Detailed Design would serve to further mitigate the pricing of risks by Infraco bidders and to reflect further examination of value engineering opportunities.
- The effectiveness of **tie** and other stakeholders in mitigating the risks which have been quantified in the cost estimates at 12% of base costs.
- The application of Transport Scotland's indexation proposals to the final contracted capital costs.
- Examination and execution of opportunities to secure contributions from property developers over and above the levels of contribution which were assessed by CEC as necessary for the delivery of their existing £45m contribution.
- Updated assessment of the pace and scope of development at the Granton Waterfront.
- Final determination by CEC and Transport Scotland of the level of funding which can be made available by each party for Phase 1 of the tram in the context of the economic and public transport benefits assessed in this Draft Final Business Case.

1.66 In order to maintain momentum on the project and to realise the benefits forecast for the project, it is critical that construction commences as soon as possible in 2007 with early commitment to mobilisation of the MUDFA contractor and to the procurement of long lead items. It is therefore appropriate to adopt an approach to construction commitment which manages overall affordability risk.

Phased 1a then 1b approach

1.67 One solution to these issues would be to adopt a phased approach to the implementation of Phase 1 such that construction of Phase 1a proceeds with a target opening date of end December 2010 and construction of Phase 1b would commence in mid 2009 with a target opening date for Phase 1b for December 2011.

1.68 The principal advantages of adopting the phased approach would be:

- Phase 1 is maintained as the preferred first phase of the tram as supported by the tests of economic viability and financial viability. The economic benefits

to be derived from Phase 1 are diluted by the adoption of the phased approach but Phase 1a is economically viable in its own right.

- If approved, elements of the construction of Phase 1a as the 'spine' of Phase 1 can commence immediately as it is currently comfortably within the affordability envelope, currently assumed to be £545m.
- Phase 1a could be delivered into operation earlier – potentially by the end of December 2010 – and with greater certainty.
- Detailed design activities could in the short term be more focussed on the challenges of Phase 1a and thereby on the project risks associated with that section.
- It reflects a prudent, risk-controlled approach to managing the financial impact on TEL if the scale of development assumed for Granton in particular does not materialise in the timescales currently envisaged. In addition this approach would provide TEL with an increased focus on the integration of Phase 1a with the bus services in advance of integrating Phase 1b.
- Decisions regarding the timing of commitment to Phase 1b can be made with the benefit of greater clarity with respect to the variables which still exist as explained above. In addition, there would be significant construction progress on Phase 1a providing greater capital cost certainty for that phase and therefore the whole of Phase 1

1.69 A review of the updated cost estimates by tie indicates that, if contracts can be appropriately concluded, adopting the phased approach to implementing Phase 1a and then Phase 1b would not materially increase the overall cost estimate for Phase 1 compared to simultaneous construction assuming that construction of Phase 1b does not commence significantly later than Mid 2009 as reflected in the programme.

1.70 The tender documents for the Tramco and Infraco contracts have been structured such that separate prices can be derived for the delivery of Phase 1a and Phase 1b subject to clarification and negotiation with the bidders. This would provide CEC with priced and contractually committed options to proceed with Phase 1b when approval is given.

1.71 However, any decision to adopt a phased approach must be taken in light of the disadvantages such an approach might bring. The redevelopment at Granton which is facilitated by Phase 1b is very likely to be delayed as a result of a later introduction of the improved transport infrastructure which is required to encourage and serve the new development. The wider economic benefits which can be delivered by Phase 1b as detailed above would be realised later even if they are not materially reduced in total.

1.72 It should also be noted that a substantial proportion of the capital investment will be spent in Scotland, encompassing utility works, land purchase, civil engineering works and professional services.

Application of available funding

1.73 Payment for capital costs will be made by tie in accordance with principles of the contractual payment mechanisms for each contract. A detailed table showing the

profile of planned expenditure is included in Section 9. Funding from Transport Scotland and CEC is for capital expenditure only. All operating and lifecycle costs in relation to the tram will be borne by TEL. This means that CEC in its capacity as sole shareholder of TEL is explicitly bearing the risks in relation to revenues, operating costs and the long term maintenance of the tram insofar as these risks are not wholly or partly passed to the private sector as part of tie's Procurement Strategy.

1.74 CEC must balance its desire to support the project with its fiduciary responsibility and limited resources. CEC's contribution, therefore, comprises only such amounts as could reasonably be expected to be funded from future tram related development income and receipts, rather than from general funds or from Council Tax. The anticipated sources of such receipts include land contributions by CEC, anticipated development gains accruing to the Council on Council owned sites, Section 75 planning agreements already negotiated and anticipated future agreements, third party developments around the tram route and anticipated capital receipts from tram related Council owned sites.

1.75 It is recognised that the sources of CEC funding may be received after key milestone payments are required, which could cause CEC to suffer cash flow difficulties and, in the event any element of the contribution were borrowed, additional interest payments. In these circumstances, Transport Scotland will consider whether there is scope to relax the strict proportion in the early years, without reducing the binding commitment on CEC to make its overall agreed contribution. Transport Scotland and CEC have agreed to work together to regularly review and revise (as necessary) the contribution schedule, as required by the Grant process.

1.76 Certain other aspects of the funding structure remain to be agreed between CEC and SE in the period up the award of the Tramco and Infraco contracts, most importantly the mechanism by which increases in capital costs would be managed, funded, or shared in the unlikely event that the forecast outturn costs for the project at any time exceeded the funding available.

Procurement strategy and progress

Overview of Procurement Strategy

1.77 The Procurement Strategy being followed by **tie** responds to feedback from the national Audit Office in 2004 on the effectiveness of light rail schemes. The objectives of the Procurement Strategy are summarised as follows:

- Transfer design, construction and maintenance performance risks to the private sector
- Minimise the risk premia (and/or exclusions of liability) that bidders for a design, construct and maintain contract normally include. Usually at tender stage bidders would not have a design with key consents proven to meet the contract performance obligations and hence they would usually add risk premiums for this.
- Mitigation of utilities diversion risk (i.e. potential impact of delays to utilities diversion programme on Infraco works).

- Gain the early involvement of the operator to mitigate the risk relating to the future operation of the tram.

1.78 The five key contracts that tie has or will enter into are:

- **Development Partnering and Operating Franchise Agreement (DPOFA)**
  Awarded to Transdev in 2004
- **System Design Services (SDS)**
  Awarded to Parsons Brinkerhoff in September 2005
- **Joint Revenue Committee (JRC)**
  Awarded to Steer Davis Gleave in September 2005
- **Multi Utilities Diversion Framework Agreement (MUDFA)**
  Awarded to Alfred McAlpine in October 2006
- **Infrastructure provider and maintenance (Infraco)**
  Tender documents issued in October 2006 and due to be returned in early 2007
- **Vehicle supply and maintenance (Tramco)**
  Tenders received in October 2006 and currently being evaluated.

1.79 In addition to advance utility diversions, the outcome of the strategy will be two contracts with different private sector entities: an operating contract, the DPOFA, and an infrastructure contract, the Infraco. The Infraco will act as a "holding contract" with the intention that the design and vehicle provision (including maintenance contract) will be novated to the Infraco at the point of award. The entire strategy has been developed to help facilitate the speedy implementation and completion of the construction phase of the project and to remove uncertainty and therefore cost from bidders' proposals i.e. deliver value for money.

1.80 In summary the key attributes of the strategy are:

- The separation of system delivery and operations - to focus organisations on their strengths and to minimise mark-ups and risk premiums.
- Early introduction of the operator – to ensure effectiveness of design, construction and commissioning ready for operation.
- Early commencement of design by the SDS contractor – to reduce scope and pricing risk in Infraco and Tramco bids and to reduce the overall project programme.
- Separate procurement of the tram vehicles – to enable the selection of the optimum combination of tram vehicle and infrastructure suppliers.
- Re-aggregation of the supply chain at the point of award – by novation of the SDS and Tramco contracts to Infraco, thereby creating single point responsibility for design, construction, commissioning and subsequent maintenance of the tram system, with consequential transfer of performance risk to the private sector.
- Maintenance of the tram vehicles and infrastructure for up to 15 years post commencement of operations by Tramco and Infraco – to incentivise selection of components with 'whole life' costs in mind and to incentivise Infraco to mitigate the risk of latent defects arising during the operational phase.
- Separate procurement of utilities works under MUDFA - to enable completion of the utilities diversions before commencement of infrastructure works thus reducing risk during the construction phase and avoiding the risk premiums that would otherwise be included if this work was included with the Infraco package.
- Validation of the SDS designs by a Technical Support Services (TSS) consultant – to provide comfort that the designs produced will deliver the required performance.

- Incentivise delivery in accordance with programme - by adopting a milestone payment mechanism in the SDS, Tramco and Infraco contracts, with a significant element of the price withheld pending completion of system reliability tests.
- Bonds and Warranties in the SDS, Tramco and Infraco contracts - to provide recourse in the event of failure.

1.81 These arrangements provide early involvement of the tram system operator, risk transfer to the private sector at an affordable level, a shorter overall programme and a single point of responsibility for the delivery of the operating tram system and subsequent maintenance.

1.82 Section 7 provides a detailed analysis of the procurement strategy and Section 10 describes the approach to risk management in all aspects of the project.

Risks retained by the public sector

1.83 The Procurement Strategy when fully implemented will be effective in transferring a very significant number of risks to the private sector. However, as explained above, the strategy is also predicated on delivering value for money and certain risks are retained in the public sector where they can be effectively managed. tie maintains a comprehensive register of all identified risks in relation to the project and has an active management and mitigation plan for each risk. Where these risks can be quantified they have be assessed and included in the risk allowance in the capital cost estimates.

1.84 As the project moves towards construction, the following are the most significant risks which could impact on the delivery of the project on time and within the capital cost estimates (including risk allowances):

- **Utility diversions** – **tie** must manage the interface between utility diversions and the follow on works by Infraco. A significant delay in the hand over of worksites to the Infraco could result in significant financial penalties to the extent these are not met by the MUDFA contractor's liability limits. A prompt start to utility diversions is a key element of the mitigation of this risk.

- **Changes to scope or specification** – A great deal of care has been taken in defining the scope and specification of the tram project throughout the Parliamentary process and during design development with input from TEL and Transdev and extensive consultation with CEC and Transport Scotland. However significant unforeseen changes to scope and specification could have a very significant impact on the deliverability of the project. Effective management of the consideration of any significant changes through the Governance processes implemented for the project will be vital to mitigate this risk.

- **Obtaining consents and approvals –** Responsibility for the preparation and application for most necessary consents and approvals has been passed to the SDS provider and this risk will pass to the Infraco at the point of novation. However **tie** and the other stakeholders must continue to ensure there are clear strategies and effective processes to deliver all consents and approvals including planning approvals and Traffic Regulation Orders.

Programme

1.85 The table below presents the key milestone dates with respect to the continuing procurement and implementation of Phase 1 of the tram in chronological order. The detailed programme from which these dates have been extracted is described in Section 11 and has been prepared on the basis that construction of Phase 1a will commence in December 2007 and Phase 1b will commence in June 2009, with opening dates in December 2010 and December 2011 respectively. The programme for implementation of Phase 1b will require to be kept under review as the resolution of affordability constraints becomes clear.

1.86 tie, CEC and Transport Scotland will continue to develop the integrated programme for review, approval and decision making by stakeholders required to meet these milestones in accordance with the agreed Governance structure for the tram project.

Milestones	**Date**
Approval of Draft Final Business Case by CEC	21 Dec 06
Approval of Draft Final Business Case by Transport Minister – approval and funding for utility diversions	15 Feb 06
TRO process commences	13 March 07
Tramco - complete initial evaluation/negotiation	19 Mar 07
MUDFA - completion of pre-construction period of MUDFA contract	02 Apr 07
MUDFA - commencement of utility diversions	Apr 07
Infraco – return of stage 2 bids	05 April 07
Tramco - appointment of Preferred Bidder	10 May 07
Infraco - completion of evaluation/negotiation of bid	10 May 07
Infraco - appointment of Preferred Bidder.	10 May 07
Tramco/Infraco - facilitation of novation negotiation complete	07 Jun 07
Tramco/Infraco - final negotiation and appointment	19 Jul 07
Infraco - negotiation of Phase 1b complete.	13 Sep 07
Approval of Final Business Case by CEC and Transport Scotland – approval and funding for Infraco / Tramco	27 Sep 07
Tramco/Infraco - award following CEC/TS approval & cooling off period.	11 Oct 07
Construction commences on Phase 1a	07 Dec 07
TRO process complete	17 July 08
Construction commences on Phase 1b	29 Jun 09
Construction complete Phase 1a	08 July 10
Operations commence Phase 1a	Dec 10
Construction complete Phase 1b	11 July 11
Operations commence Phase 1b	Dec 11

Funding requirements from April 2007

1.87 To date, Transport Scotland and CEC have approved sufficient funding to meet forecast expenditure up to 31st March 2007. This includes funding of payments of compensation under a General Vesting Declaration process to secure land required for the construction of Phase 1a insofar as it is not already owned by CEC or contributed under section 75 agreements.

1.88 Upon approval of this Draft Final Business Case, tie will require approval of additional funding amounting to £61m for forecast expenditure in the period from April 2007 to the planned award of Infraco and Tramco in October 2007. This additional funding will provide c£30m for all scheduled utility diversion activities (including those under MUDFA) and certain other ancillary and advance works required to be undertaken prior to the commencement of Infrastructure works. The balance will be required for continuing design, project management and progression of approvals and consents.

Summary of specific approvals arising from this business case

1. Commence utility diversions under the MUDFA contract and other advance works in preparation for the awards of the Infraco contract programmed for October 2007 – such approval being conditional on an analysis of the first stage Infraco tenders demonstrating the continued affordability of Phase 1a.

2. Proceed with detailed design and procurement in accordance with the principles and programme detailed in this Draft Final Business Case

3. Funding to cover the period from 1 April 2007 to financial close in October 2007 in the amounts of £61m.

Conclusion

1.89 The Edinburgh tram project has now been under assessment for 6 years. During that period, the underlying rationale for the project, support to the growth of the Edinburgh economy by providing high quality transport connectivity, has been reinforced by events. The city's economy and population continue to grow and the prospects are that this will continue. The Scottish economy as a whole is strongly influenced by the success of Edinburgh.

1.90 The business case seeks to set out in an objective and clear manner the advantages and disadvantages of the proposed scheme as a means of providing the enhancement to transport provision which the city will require if its growth ambitions are to be realised. The documentation is detailed and complicated, reflecting the scale of the scheme and the need for rigorous, professional analysis of the proposal. In its entirety, the document should represent a "balanced scorecard" assessing all the key aspects of the proposal. The document also sets out the means by which the project may be implemented in a risk-controlled manner, should the business case be approved.

1.91 The responsibility for delivering this document was given to the Tram Project Board by the City of Edinburgh Council through Transport Edinburgh Limited and by Transport Scotland. It is these organisations who now have the responsibility of concluding on the way forward for the project, based on the evidence presented in this business case.