tie LIMITED

EDINBURGH TRAM NETWORK

INFRACO
FINAL EVALUATION REPORT

24th October 2007

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EXECUTIVE SUMMARY

The two remaining shortlisted Bidders (coded as Bruce and Wallace for this Evaluation Report) have complied with and engaged in the tender process required by the ITN and subsequent iterative improvements to ETN information with bid updates. Through the Negotiation process both Bidders have reached a position of proposing suitable and acceptable solutions against the minimum criteria to:

- Deliver the ETN in compliance with the requirements of the ITN and Employers Requirements.
- Provide an experienced and competent team for the implementation phases of the project.
- Complete the construction and Commissioning of the ETN to an acceptable Programme through the adoption of robust project execution controls and systems.
- Deliver the ETN infrastructure using technical solutions and components that meet the functional requirements.
- Adopt acceptable legal and commercial terms
- Provide acceptable insurance proposals.

The **tie** Evaluation Teams have assessed the submissions throughout the tender process to reach the conclusion that both Bidders have made acceptable Proposals that can be compared on a like for like basis with some defined and agreed normalisation. Prices are relatively close which substantiates the robustness of importing the cost data into the Business Case model. Wallace is ahead on the fully normalised cost for Phase 1a only and substantially ahead for the partially normalised pricing of the combined Phases 1a and 1b. The technical proposals from each Bidder are broadly comparable but Wallace proposes to adopt a more stable track construction technique for this critical element of the infrastructure.

Using the rigorous evaluation with a normalised cost analysis, it is recommended that the Wallace consortium be selected to proceed to the Preferred Bidder stage as they have provided the most beneficial proposals. The Preferred Bidder will now need to work with **tie** to collate a detailed package of cost and scope proposals that confirm the project viability on a substantially fixed price basis.

INTRODUCTION

As part of the Edinburgh Tram Network project, **tie** is procuring a Contractor to carry out and/or manage a comprehensive turnkey contract which will include the design (novated), construction, installation, commissioning, tram vehicle procurement (novated), system integration, infrastructure maintenance, tram maintenance and supply of related equipment and materials in respect of the Edinburgh Tram Network, trams and related infrastructure. Infraco is liable for the design of the Edinburgh Tram Network (using the design already prepared by Parsons Brinckerhoff Limited (the "SDS Provider")) and is obliged to carry out all works required for the Edinburgh Tram Network to be fully constructed and capable of entering into full public service. The Infraco will also be responsible for the design, construction, delivery and testing of the Trams to run on the completed Edinburgh Tram Network. Following the entry into public service of the Edinburgh Tram Network, the Infraco will be required to provide maintenance services for a period of 15 years.

Following the issue by **tie** of a Prior Information Notice and an OJEU Notice on 6 October 2005 and 27 January 2006 respectively, **tie** conducted a prequalification process to select Tenderers for the role of the Infraco. The prequalification process identified the following candidates for the Infraco competition (in alphabetical order):

- Amec Spie,
- BBS (Bilfinger Berger and Siemens) and
- Tramlines (Bombardier, Grant Rail and Laing O'Rourke)

tie undertook a process of pre-bid technical dialogue with each of these companies during the late summer of 2006 and issued the formal invitation to tender on 3 October 2006. Unfortunately Amec Spie withdrew their interest which left the other two making their initial tender returns on 12 January 2007. These bids were used to support the Project Outline Business Case so that the Project was assured further funding to proceed. An iterative process of further Information Releases and Bid Updates was then embarked upon with the two bidders. A series of Technical, Commercial and Contract meetings was held with each bidder independently to build a mutual understanding of the Infraco scope and risk apportionment. During this process, the Evaluation Methodology has been followed by the **tie** team, whereby deficiencies within the bids have been identified and explored with the relevant bidder. Wherever possible, technical alterations have been made to the bids by the tenderer to make them compliant with relevant adjustments of the commercial offers and Programme submissions. Where adequate adjustment has not been made to the bid proposal, **tie** has advised the tenderer of a suitable "Normalisation Cost" to be allowed against the financial assessment so that the bids can be considered on a like for like basis. The "Normalisation Cost " represents the cost or benefit to **tie** of providing an alternative technically compliant solution and the Bidders have always understood that the normalised bids will be used to identify the party being taken into the Preferred Bidder stage.

A final bid was submitted by each tenderer on 7 August 2007 to collate the previous correspondence and financial submissions. This has been used by the Evaluation team to reach an assessment of the relative merits of the two

bids by allocating technical responses to the original ITN questions in the agreed evaluation matrix. Contractual and commercial proposals have been similarly compared both against each other and the Project Estimate on a spreadsheet so that major variances can be identified and understood. This Report summarises these matrices and the written Assessments extracted from them.

In the Evaluation Methodology, a code name is ascribed to each of the candidates. Accordingly, the remaining candidates (BBS and Tramlines) are henceforth referred to by these code names, which are (in alphabetical order):

- Bruce
- Wallace

This report sets out the Evaluation of the final Infraco bids. The bids received have been evaluated in line with the Evaluation Methodology dated 11th October 2006 that was approved by the Tram Project Board. The Evaluation Team is identified within the paper and represents a senior and competent member from each of the **tie** operational teams.

2. STANDARD TENDER & VARIANTS

tie's ITN documents set out clear requirements for a Standard Tender and a number of mandatory or optional variants. These were based on the options for 6+6 tph, 8+8 tph, 3 or 15 years maintenance and the construction of Phase 1a with or without Phase 1b. At the first tender return date there was very little response against the specifics of these different options and it was agreed that the variants should be simplified to those given in the following table. The information provided by the Bidders has been set out in different ways so that the evaluators have needed to model the variants using the provided information so that a like for like comparison can be made.

FINALLY PROPOSED STANDARD AND MANDATORY VARIANT TENDER
for Infraco Consolidated Proposals
Showing Tram Fleet Size (in blue) and options on Infraco and Tramco (in orange or further alternatives in plum)

	15 year infrastructure maintenance (i.e. Years 0 to 15)			3 year infrastructure maintenance (i.e. Years 0 to 3)		
	Standard Tender			MV1		
	initially	by 2013	?	initially	by 2013	?
Fleet Size	27	+ 4 = 31	+3 = 30	27	+ 4 = 31	+3 = 30
PHASE 1a (only)						
Edinburgh Airport to Newhaven	6 TPH Airport to Ocean Terminal + 6 TPH Haymarket to Newhaven	8 TPH Airport to Ocean Terminal + 8 TPH Haymarket to Newhaven	10 TPH Airport to Ocean Terminal + 5 TPH Haymarket to Newhaven	6 TPH Airport to Ocean Terminal + 6 TPH Haymarket to Newhaven	8 TPH Airport to Ocean Terminal + 8 TPH Haymarket to Newhaven	10 TPH Airport to Ocean Terminal + 5 TPH Haymarket to Newhaven
PHASE 1a + PHASE 1b option						
Edinburgh Airport to Ocean Terminal	6 trams per hour	8 trams per hour	10 trams per hour	6 trams per hour	8 trams per hour	10 trams per hour
Granton Square to Newhaven	6 trams per hour	8 trams per hour	5 trams per hour	6 trams per hour	8 trams per hour	5 trams per hour

NOTES

1. The initial fleet size of 27 trams would initially support the 6 TPH operation of Phase 1a (with capacity for any initial problems). It would also support the 'ramp up' to 8 TPH on Phase 1a and allow testing of that operation or alternatively 6 TPH on the Phase 1a + Phase 1b option. As a further alternative it would also support 10 TPH between Airport and Ocean Terminal + 5 TPH between Haymarket and Newhaven.
2. If the Phase 1b option is implemented then the option to purchase a further 4 trams could also be exercised to bring the fleet size up to 31 trams to support the 8 TPH operation of Phase 1a + Phase 1b. This would be the intention but not necessarily definite.
3. A further alternative if the Phase 1b option is implemented would be to purchase a further 3 trams to bring the fleet size up to 30 trams to support the 10 TPH operation of Phase 1a + 5 TPH on Phase 1b.
4. Bidders are free to submit optional variants for alternative designs, programme, risk transfer or the like **PROVIDED** that they accompany the Standard Tender and Mandatory Variant MV1.
5. The Mandatory Variant MV1 are to incorporate a facility to extend beyond the three years, at **tie's** discretion.

Key Dates	**Phase 1a**	**Phase 1b Option**
Instruct Option	n/a	by March 2009
Commencement on Site	October 2007	July 2009
Completion of Construction Works	July 2010	July 2011
Commencement of Revenue Service (following completion of Trial Running)	December 2010	December 2011

Summary of Optional Variants

Tenderers were invited to submit any Optional Variants which they could demonstrate offer a benefit to **tie** in terms of design, programme, risk transfer etc., in a format similar to that required for the Mandatory Variant Tenders. These were generally presented as Value Engineering proposals and are being dealt with as a separate activity by **tie**.

An optional variant Tender must meet the following criteria:

- It must not adversely affect any health and safety criteria;
- It must offer better value than any compliant Tender by

optimization of time, cost, quality and risk. In this context, cost has been considered in terms of the net present cost. Better value will be a function of both construction and operating costs;

- The rationale of the variant Tender must be explained;
- It must accompany a fully compliant Tender;

A number of Supplier Specific variants were identified in the discussions with the bidders such as track and OLE. They were asked to provide priced proposals accordingly.

Both bidders complied with **tie**'s requirements for compliant tenders during the iterative process of further information releases, Technical and Clarification Questions, Meetings and updated bid submissions. The Evaluation has therefore been on a continually updating basis and it should be noted that this Report recommends the adoption of one party to become Preferred Bidder with a known set of issues that have still to be resolved before a full contract can be recommended.

Preferred Bidder Status

It is recognised that there is a body of detailed analysis and work that needs to be carried out to create a defined scope, cost, risk allocation, programme and contractual framework before a Contract Package can be executed. This can really only be achieved with a single Bidder allocating sufficient resource on the realistic prospect of being reimbursed for such effort. The tasks may include:

- Due Diligence of the SDS and their design to date
- Due Diligence of the Tramco and their design to date
- Detailed collation of a construction programme in liaison with CEC, Network Rail, MUDFA, 3rd Parties and recognition of the other known constraints
- Confirmation of the technical solutions to be adopted that may have impact upon other key documents such as design, Employers Requirements, Planning Permission
- Confirmation of the risk allocation to be adopted which may affect Contractual Terms, Insurance or Bond provision and Funder Liabilities
- Confirmation that the above scope can be provided within budget whilst allowing for any extant risks or scope through client contingencies.

The Preferred Bidder places one of the tenderers in pole position but does not relieve them of the need to remain competitive during the period to contract close. In theory their performance can be deemed inadequate or their proposals for a cost / time / quality package unacceptable so that the other Bidder is recalled to the competition. The increased prospect of signing the Contract does however encourage the Preferred Bidder to dedicate the required resources to the above tasks. There may also be an opportunity to agree a relatively small "preconstruction contract" to reimburse for mobilisation and long lead procurement activities.

3. EVALUATION

The evaluation of the bids falls into the following work streams as defined in the Evaluation Methodology:

- Programme and Project Execution
- Project Team
- Technical
- Financial
- Legal and Commercial
- Insurance

The detail of the process whereby the bids are evaluated is set out in the Evaluation Methodology. A summary of each of the evaluation workstreams is presented below. The detailed evaluation worksheets are set out in the appendices to this document.

The candidates' responses to the invitation to negotiate and subsequent clarifications have been factored into this evaluation.

To ease analysis, colour coding has been used within the detailed evaluation worksheets to represent the four evaluation categories. The correlation is as follows:

Blue	Exceptional
Green	Compliant
Yellow	Deficient
Red	Unacceptable

3.1 PROGRAMME AND PROJECT EXECUTION

In general the candidates have followed the format for responses prescribed at each stage of the bidding process. The key issues arising from the evaluation of each the Bidders submissions are as follows:

3.1.1 Wallace

The Wallace Consortium includes some very experienced and large international contractors. Their involvement in British light rail schemes has, however, been very limited and there is no local office establishment to support individual projects that they have won. This is largely being overcome by the deliberate and defined use of local subcontractors and suppliers who can be integrated into the corporate and project management structure. The consortium has offered joint and several liability and this has forced a cohesion to the bid proposals.

Specific points arising from the evaluation include:

Positive

- Good Corporate structure and Governance with a wealth of experience that is able to provide established and auditable procedures and systems to project level activities. Sample and auditable documents have been produced for things like Project Management Plans, Quality Assurance and Change Control Procedures. These need to be developed to be project specific during the Preferred Bidder stage.
- Project specific method statements have been started and there is a clear understanding of the requirements for working to Network Rail Line Standards. Wallace has confirmed that they understand and will comply with relevant statutory approvals requirements such as ROGS, HMRI and RAVR. The completion of the APA is required before compliance can be verified.
- Wallace has accepted the concept of having SDS and Tramco novated into their control for completion of design and integration of systems. The SDS design has essentially been adopted for the proposals and a matrix of extant design completion allocation between suppliers and consultants has been presented. A management and communication structure for these designers has been proposed but full liability for designs and achieving required consents and Approvals is deferred until Due Diligence has been successfully completed.
- Acceptable Stakeholder management proposals, including 3rd Party Conditions, were eventually presented. Wallace will employ a dedicated Public Liaison Manager to deal with all of the communications initiatives. There is an exhibited structure for recognising and resolving other stakeholder input through meetings and collaborative working with organisations such as **tie**, TEL, Transdev, 3rd Parties, CEC.
- Wallace has provided a realistic assessment of the issues relating to environmental control and sustainability with the proposed appointment of a dedicated Ecological Clerk of Works. The Code of

Construction Practice is accepted as a key constraint and the Considerate Contractors Scheme will be deployed.

- There is a sensible programme against **tie's** currently exhibited schedule of key dates. Manipulation of activities that are known to be at risk such as design delivery and Consents Approvals allows a proposed delivery into service of the ETN for the beginning of 2011. It is more likely that the programme to be developed during Preferred Bidder Stage will show a Spring 2011 date.

Negative

- The lack of structure to the submissions may indicate a poorly structured management team and raises concerns that **tie** may need to deploy additional resource to manage and control the contract.
- There are some project controls initiatives that have not been addressed in the submissions to date such as KPIs. Project Controls, including payment mechanisms, will need to be finalised during the Preferred Bidder Stage.
- Wallace has provided an early Risk Register and Schedule of Clarifications that identifies a number of Risks that they do not expect to be in a position to control and it is proposed that **tie** retain liability. Most of these issues should be resolved during the Due Diligence and Preferred Bidder stages and some others are being resolved by proposed amendments to Contract Conditions.
- Qualifications to the proposals include issues such as design delivery to programme that can be addressed during Due Diligence. The probability of encountering Utilities Assets during excavations is dealt with through Compensation or Relief Events as are unforeseen Ground conditions, contamination, obstructions and archaeological finds. Consents and Approvals for items such as TTROs and Buildings Fixings should be addressed during the Preferred Bidder stage.
- Most of the responses to specific questions do not explore the subject in any detail. An example may be that although the CoCP is accepted by Wallace, there is no indication of the mitigation measures that will be deployed to maintain compliance or the costs and time that could be saved if the conditions were to be relaxed. Such minimalist answers probably reflect the limited resource that could be mobilised for the tender team but if this Contractor were to be selected as Preferred Bidder, tie would need to achieve a greater level of detail in the proposals.

3.1.2 Bruce

The Bruce submission is organised and coherent. The Consortium has clearly allocated responsibilities for sections of the tender and implementation amongst the companies involved. Joint and several liability has been assumed and Bruce has indicated a good procedure for communications and systems integration. The whole approach has been professional and well presented.
The consortium members all have relevant British experience and some level of local presence from which resources can be provided. The E&M systems are more likely to be subcontracted to one of the major suppliers in the market.
Specific points arising from the evaluation of the Bruce proposal include:

Positive

- Clear demonstration of tried and tested corporate and project level procedures and systems including project controls. These systems, from each of the consortium members, are to be used on an integrated and hierarchical manner for the project.
- Bruce has assured that they can work collaboratively with the project stakeholders and have proposed the adoption of collective problem solving techniques and ADR procedures. A protocol for promoting partnering is provided. Good mobilisation proposals
- Despite agreeing that unforeseen ground conditions may lead to a Compensation or Relief Event, Bruce has indicated that every attempt will be made to mitigate any disruption through the redeployment of resources onto adjacent work fronts.
- There is a sensible programme against **tie's** currently exhibited schedule of key dates. Manipulation of activities that are known to be at risk such as design delivery and Consents Approvals allows a proposed delivery into service of the ETN for the beginning of 2011. It is more likely that the programme to be developed during Preferred Bidder Stage will show a Spring 2011 date.
- The mobilisation Plan presented provides some good detail of office and compound locations and the proposal for a centralised logistics centre to control JIT deliveries to work sites makes sense.
- Public communications and project team stakeholder management proposals are well developed with possibly the exclusion of specific staff allocation to these duties. Access for 3rd Parties and adjacent property users is understood with procedures instigated to check that requirements are dealt with. Management and integration of stakeholder design input with certification is allocated between the parties.
- A sample Environmental Management Plan has been presented with mitigation measures and sustainability issues described. Accreditation to ISO 14001 is demonstrated and more widely Quality Assurance is in accordance with ISO 9002 although there is little information in relation to the Maintenance part of the Contract.

Negative

- Bruce has made a superficial attempt at identifying potential risks and means of mitigating them. This may be a tendering strategy to

defer identification of cost and programme deficiencies but issues such as long lead materials supply (rail and copper) are as likely to remain an Infraco risk.

- Bruce has not yet addressed the implementation requirements of drawing down TTROs and all of the traffic signage and management that will be entailed. Some specific points of major traffic disruption have been considered but other method related statements presented lack a project specific detail at this stage.
- Although constraints such as the CoCP have been recognised, there is little exploration of the effects on cost and programme if these could be varied. These opportunities will need to be checked during the Preferred Bidder Stage if this contractor is selected.
- Bruce has confirmed compliance with all of the Network Rail interfaces requirements and statutory burdens such as ROGs and HMRI conditions but have made the point that they will not cover the costs of NR management charges or the rearrangement of possessions if required. The implications of the APA can only be addressed once presented during the Preferred Bidder stage.
- Construction methodology consents and approvals will be achieved by Bruce but they are expecting all other consents to be achieved by SDS or **tie** prior to full contract award.
- Questions relating to Incident and Crisis Management and Disaster Recovery have not been addressed.

3.2 PROJECT TEAM AND STRUCTURE

Both Bidders have advised some sample names and cvs for key members of their team and some of these have attended the meetings during the bid process. The teams will be essentially provided from their consortium parent companies resources during the construction and commissioning phase and recruited locally for the maintenance phase. Findings from the Evaluation include:

3.2.1 Wallace

Wallace has a well defined organisation chart that indicates the interfaces between the consortium members, subcontractors and suppliers. Outline resource schedules and some cvs have been provided for both the construction and maintenance phases. A good mobilisation strategy is described. They have proposed a project team including a good mix of personnel from their reference projects including employees with tram specific experience.

Positive

- There are interesting suggestions that the Wallace team could co-locate with **tie** at Citypoint during the Preferred Bidder Stage and perhaps in the longer term rather than establishing such a big office complex at the Depot site.
- Most of the E&M plant and installation will be provided using in-house staff with a wealth of experience.
- Management of any external suppliers and subcontractors will be carefully controlled using their established Supply Chain Strategy and integration of QA and Management Systems.
- There is an infrastructure maintenance proposal with indications of planned and collaborative working with the Operator and other Maintenance contractors. This is supported by an interface management plan.

Negative

- There is little attention to the concerns over recruitment of suitable staff to the project. Wallace is relying on the local contractors and suppliers supported by their own international resources.
- There does not appear to be any concern over procurement of long lead items such as rail and copper.
- Wallace continues to reserve their position on Tramco novation and liabilities until the exact Terms of Contract are presented. This may be readily resolved during Preferred Bidder Due Diligence but there could be a clash of competitor commercial interests.
- There is concern that the supply and installation of Trackwork and OLE is not resolved although Wallace has provided pricing against a technically acceptable solution. There would appear to be a lack of clarity between the scope of the civils contracts and the Trackwork installer. The selected technical solution is being left open by Wallace to allow them maximum commercial manoeuvrability at contract award.

- There is no indication of the provision of Tram Helpers during the construction period. The Public Liaison officer will ensure that all operatives display allegiance to the project and can answer direct queries or refer them to the central help desk.
- Sample CVs for Maintenance staff have not been supplied as these staff will not be recruited until the year before operations commence.
- The commissioning phase of the project has not been considered at this stage of the bid.

3.2.2 Bruce

The Bruce response is generally strong and builds on their staff's tram delivery record. The mobilisation and construction organisation is well defined and there are indications that even Maintenance staff will be appointed from as early as 6 months into the programme. Maintenance staff cover will be provided 24/7.

Positive

- A good proposal is made for local recruitment using established contacts with training and employment agencies.
- Depth of personnel within organisation
- Clear project organisation showing relationship to corporate management
- Designated project managers have been involved in developing the proposal.
- Bruce is able to provide considerable experience of working to Network Rail standards. Staff with relevant experience will be assigned to those sections of the project.
- The civils work will be carried out using consortium resources and the E&M work will be supplied and installed using established and suitably experienced subcontractors.
- A Joint Design Development Process is proposed to assist in building a coherent team of novated contractors and suppliers with the Operator. Co-location of these teams into the Depot Building during commissioning will assist the co-operation.
- Bruce has an established supply chain and has also provided a clear programme for awarding contracts and evaluating any new suppliers.

Negative

- A good proposal is made for the location of site offices and logistics centre but there is no real indication of co-location with SDS and the tie team.
- No sample CVs have been provided for maintenance staff so there is no indication of the level of experience available.
- There is no indication of commissioning activities and the relationship to construction and maintenance staff.
- Interfaces with CEC, TEL, Transdev are recognised but there is no indication of who owns the responsibility to make these interfaces work.

- There is a Communications Manager indicated but it is unclear how Bruce will comply with the requirements of the Employers Requirements in relation to Tram Helpers.
- There is no indication of concerns over long lead items such as rail and copper.
- A list of likely concerns in managing Tramco has been raised but these can only be addressed at Preferred Bidder stage.

3.3 TECHNICAL

This technical evaluation predominantly covers the physical characteristics of the Bidders Proposals, however the candidates' maintenance proposals have also been considered.

In broad terms both Bidders have submitted their proposals as predominantly using the SDS design which, it is anticipated, will comply with the Employers Requirements and 3rd Party Agreements. Both Bidders have qualified their technical submissions on the basis that liability for the SDS design cannot be accepted by the Infraco until successful Due Diligence has been carried out during the Preferred Bidder stage. A similar position is taken in regard to the Tramco novation and therefore any consequential design to items such as power consumption or run-times cannot be verified at this time.

3.3.1 Wallace

Positive

- Wallace has presented a **trackform** installation proposal that has wavered between using the SEDRA SDS system and the CDM Classic form of embedded track. Experience of using the latter in Manchester and Croydon has indicated significant deficiencies in service and despite Infraco having to take the responsibility for maintenance, this form cannot be recommended. Wallace has concluded negotiations by proposing to use the SEDRA system which is structurally acceptable.
- Wallace has proposed the sensible adoption of tried and tested **Points and Crossings** manufactured by Hanning and Kahl but the detail will need to be checked for wheel/rail interface compatibility.
- The Wallace proposals for **track drainage** include drain boxes every 60m to 70m connected into the existing carrier drains. This should be acceptable where the existing drains have the capacity.
- The proposed rail sections are suitable for return current conductors and Wallace has bid on the basis of not providing any **Stray Current** mats or collectors. This is in accordance with good European practice where stray current monitoring is acceptable.
- Wallace has bid against the **structures** design provided by SDS. Wallace has offered some savings in terms of cost and time if some of the structures can be re-engineered using steel or other functional structural forms. Re-use of excavated materials is also proposed where Specifications and designs can be amended.
- The Wallace proposals against **Power Supply** and protection are expectedly competent. Most of the equipment and installation is provided from within the consortium and their power simulation reports confirm the SDS design. The Russell Road Paralleling hut can be deleted if Phase 1b is not built. Stray current monitoring systems and proposals would appear to meet requirements.
- Wallace has provided a Provisional Sum against the hook-up to **Scottish Power** and accept that they will manage the interfaces.
- Wallace has offered an essentially in-house **Signalling and Communications** System which will provide the required level of

functionality, redundancy and reliability. They have not proposed any significant alternative innovative suggestions which would give acceptable levels of functionality and have qualified their interface to the Urban Traffic Control system.

- A comprehensive set of proposals for **Maintenance** has been further reinforced by meetings with knowledgeable people presented by Wallace. Staffing proposals have been streamlined to reflect the similar scopes of work for civils, E&M and vehicles maintenance activities. The pricing has been reduced to reflect this.

Negative

- The proposed SEDRA trackform only allows **noise and vibration** mitigation and enhancement by adding some combination of glued blocks, special shims and grouting in the fixings during installation. Wallace has not addressed this issue despite confirming compliance with the noise and vibration clauses within the Employers Requirements. The commercial bid may not reflect the need for such measures at sensitive receptor locations.
- The base offer of a standard LRT solution **OLE** is for auto-tensioned equipment throughout. Within street running sections a trolley wire is proposed but from Russell Road to the Airport it is a full catenary system. Whereas this is compliant with the ERs it does not appear to be in sympathy with the aesthetic ambitions of the Tram Design Manual.
- Wallace has advised that they intend to use the support locations identified by SDS but they expect all Consents for **Building Fixings** and pole locations to be achieved by **tie.** The auto-tension equipment requires strong building fixings and poles with obtrusive balance weights or spring tensioning mechanisms. Pole mounted motorised isolators and lightning protection are proposed and these can also be obtrusive so alternative cabinet mounted equipment has been requested due to the associated Planning risk. Wallace has confirmed the availability of all of these alternatives but have yet to provide the commercial variants for each element
- The information provided by Wallace in relation to the specification, supplier and cost of the **Depot Equipment** is not sufficiently detailed to allow comparison with alternative offers.

3.3.2 Bruce

Positive

- Bruce has proposed a two pour **trackform** construction technique using coated rail, aligned and levelled using base plates but then permanently encapsulated in concrete. Bruce has agreed that tie-bars will be required at key locations to maintain gauge and alignment. Installation and therefore the critical quality control will be achieved by one of the consortium members who is able to bring experience and lessons learned from previous British tram projects. The proposed construction methodology in sections of 300m to 400m at a time with both tracks available to the contractor may not

be achievable once the detail of the TTROs and junctions possessions has been agreed.

- The Bruce trackform provides full compliance to the ERs on **Stray Current** mats and collectors but with the coated rail it should be perfectly feasible to make the cost savings and move to a fully monitored traction power return circuit.
- Although few details have been provided against ballast or grass track, **drainage** and **points**, the Evaluation Team are not concerned at this stage of development.
- Bruce has bid against the **structures** design provided by SDS. Bruce has offered some savings in terms of cost and time if some of the structures can be re-engineered using steel or other less aesthetic structural forms. There is a risk of programme delay and cost incursion during the redesign and submission for Planning Consent.
- The proposals from a named supplier and installer for the **Power Supply** systems are thorough and project specific giving a good indication of appropriate solutions.
- The proposals from a good named supplier and installer for the **OLE** systems are also thorough and appropriate to the Edinburgh streetscape. Fixed Termination Trolley Wire within the street running sections is entirely compatible with the aesthetic aspirations of the Tram Design Manual and does not require any obtrusive wire level equipment. Auto-tensioned trolley wire off-street achieves the same visual acceptability although a separate VE proposal for manual isolators will achieve the best balanced solution in terms of cost, operation and safety.
- The OLE proposals are expected to be compatible with the **building fixings** locations identified by SDS
- The integrated **Signalling and Communications** System offered is built up from a number of different suppliers but integrated by the consortium. The system is based on loop detection with data transmitted to the UTC and Tram Control Centre. A VE option to use GPS based signalling may be attractive and achievable but the technical and cost benefits have still to be demonstrated. All signals proposals meet UK standards and Points machines are expected to be by Hanning and Kahl again. The system will provide the required level of functionality, redundancy and reliability.

Negative

- The coated track can be "tuned" to mitigate **noise and vibration** mitigation in particularly sensitive areas but Bruce has not been able to confirm that any such measures have been allowed for.
- The costs associated with achieving hook-up to the **Scottish Power** mains are qualified out.
- The **Depot Equipment** is to be subcontracted to a very experienced organisation and is therefore expectedly comprehensive and competent. There is a lack of detail at this stage regarding the specification and manufacturer of each piece of equipment that makes comparison with other bids impossible.

- The **Maintenance** proposals remain under-developed but generally indicate an understanding of the tasks and organisation required. The pricing information is still not available which does not allow for a fixed price at this stage.

3.4 FINANCIAL

During the bidding process bids have been returned at each stage and there have been changes, mainly reductions, through to the final bid at the conclusion of negotiations on Sept 14 2007. Details of the primary changes are summarised in Table 3.4.1, together with the details of changes through the negotiation phase.

Table 3.4.1. Changes in bids throughout the negotiation phase.

	Bruce			notes	Wallace			notes
	1A	1B	Total		1A	1B	Total	
Jan 07	249.3	59.9	309.2		243.8	52.1	295.8	
May 07	257.6	82.0	339.6	1	230.5	38.0	268.5	6
	+3.34%	+36.94%	+9.85%		-5.43%	-27.12%	-9.25%	
Aug 07	256.2	82.0	338.2	2	223.6	30.9	254.5	7
	-0.54%	0.00%	-0.41%	3	-3.00%	-18.58%	-5.20%	8
COMMENCE NEGOTIATIONS								
Aug 07 - 30/8/07	234.4	83.2	317.6		217.2	45.9	263.1	
	-8.51%	1.48%	-6.09%	4	-2.87%	48.54%	3.37%	9
05 Sep 07	228.3	83.2	311.5		214.0	49.1	263.1	
	-2.60%	0.00%	-1.92%	5	-1.47%	6.97%	0.00%	10
14 Sep 07 - now	217.4	80.8	298.2		208.7	51.7	260.4	
	-4.77%	-2.87%	-4.26%		-2.48%	5.30%	-1.03%	

Note: Based on un-normalised bid returns.

1. Revised bid submission
2. Revised bid submission
3. £21.8m reduction, letter of confirmation:
   £11m Systems reduction
   £4m Removal risk allowance
   £1.25m Reduction in traffic management
   £1.5m General review
   £2m Thinner track slab
   £1.7m General Discount
4. £6m reductions:
   £4m Trackwork reduction Section A
   £2m Trackwork reduction Section B
5. £10.9m reduction:
   £1m Due diligence allowance added
   £0.7m reduction due to 20% financing
   £0.7m added for sub-station
   £0.9m removal of EARL structure S33
   £5.2m removal of A8 Depot retaining wall
   £1.9m additional discount
   £2.5m reduction for PCG's instead of Bonds
   £1.5m Optimised budget savings
6. Revised bid submission
7. Revised bid submission:
   £6.9m reduction per letter dated 24th Aug. 07.
8. Confirmation of revised price proposal
   £6.4m Impact of No-EARL and inclusion of normalisation
9. £3.2m reduction:
   transfer from Phase 1a to 1b
10. £5.3m reduction:
    £2m removal of provisional sum for design completion
    £1.7m General discount
    £2m discount
    £0.4m added bond increase

This shows significant reductions in the Phase 1a capital cost by both bidders over the period from the return of Consolidated Proposals in May 07 to 14 September:

- Bruce - £40.2m (15.6%); and
- Wallace - £21.8m (9.5%).

The bidders returned various exclusions, qualifications and assumptions with each bid update. These were either negotiated out, normalised or noted for future resolution in the Preferred Bidder Period. A position common to both bidders was achieved during negotiations. Table 3.4.2 details the main exclusions, qualifications and assumptions remaining in force with each bidder at this time.

Table 3.4.2. Main exclusions, qualifications and assumptions in place with each bidder at this time.

Bruce	Wallace
a. Elements of bid designated "provisional" due to lack of design information, especially any 3rd party interfaces, structures and highway works.	a. Elements of bid designated "provisional" due to lack of design information, especially any 3rd party interfaces, structures and highway works
b. Unforeseen ground conditions.	b. Unforeseen ground conditions.
c. Dealing with utility diversions not carried out under MUDFA.	c. Dealing with utility diversions not carried out under MUDFA.
d. Picardy Place – this area is still subject to debate with regards to design solution and remains provisional.	d. Picardy Place – this area is still subject to debate with regards to design solution and remains provisional.

Outcome of the negotiations – Final Bid positions

The Position for Phase 1a at the end of negotiations is shown in Table 3.4.3.

Table 3.4.3. Summary of Final Bid for Phase 1a (un-normalised)

Phase 1A	Bruce	Wallace
	TOTAL	TOTAL
Prelims	71.320	70.938
Trackform	39.421	46.418
Depot	15.630	18.686
Structures	36.215	31.415
Highways	18.115	11.894
Tramstops	3.380	3.270
Buildings	1.944	3.275
Supervisory & Comms	13.680	5.296
OLE	16.416	14.974
Tramstop Equipment	0.290	1.514
Trams	-	1.019
Due Diligence	1.000	-
TOTAL	**217.411**	**208.700**

3.4.1 Provisional elements in bids

Table 3.4.4 shows the provisional elements (before normalisation) of each potential Infracos' bids.

Table 3.4.4. Provisional elements (before normalisation) of each bid.

PHASE 1A	Bruce					Wallace			
	BASE	PROV	TOTAL	% Prov		BASE	PROV	TOTAL	% Prov
PRELIMS	70,319,892	1,000,000	71,319,892	1.40%		69,937,757	1,000,000	70,937,757	1.41%
TRACK FORM	34,878,667	4,542,039	39,420,706	11.52%		46,418,161		46,418,161	0.00%
DEPOT	13,022,344	2,607,487	15,629,831	16.68%		18,686,351		18,686,351	0.00%
STRUCTURES	0	36,215,497	36,215,497	100.00%		0	31,415,121	31,415,121	100.00%
HIGHWAYS	0	18,114,954	18,114,954	100.00%		0	11,893,955	11,893,955	100.00%
TRAMSTOPS	3,220,806	158,911	3,379,717	4.70%		0	3,270,376	3,270,376	100.00%
BUILDINGS	1,476,657	467,759	1,944,416	24.06%		3,275,180	0	3,275,180	0.00%
SUPERVISORY & COMMS	13,679,795	0	13,679,795	0.00%		5,296,482	0	5,296,482	0.00%
OLE	16,416,066	0	16,416,066	0.00%		14,974,462	0	14,974,462	0.00%
TRAMSTOP EQUIPMENT	289,899	0	289,899	0.00%		1,513,587	0	1,513,587	0.00%
TRAMS	0	0	0	0.00%		1,018,910	0	1,018,910	0.00%
PREFERRED BIDDER DUE DILIGENCE	1,000,000		1,000,000						
TOTAL	154,304,126	63,106,647	217,410,773	29.03%		161,120,890	47,579,452	208,700,342	22.80%

The above shows that 29.0% of Bruce bid and 22.8% of Wallace bid are effectively provisional. In both cases the majority of this relates to highways, structures and drainage, these representing 25.0% of the total un-normalised price for Bruce and 22.3% for Wallace.

3.4.2 Value engineering

Both bidders have put forward a long list of potential VE items for consideration. These were evaluated by the technical team and those that were considered worthwhile pursuing have been incorporated into the project VE register

Details of the main VE items proposed by each bidder and the timing of their inclusion in the respective base bids (where agreed) are given in the notes to Table 3.4.1.

Further considerable VE opportunities have been identified within the Infraco works, but they are not yet included in the normalised bids. The specific opportunities identified for each bidder total £19.7m for Wallace and £20.3m for Bruce. Approximately 16% of these opportunities for each bidder are considered "banked" by the project.

Both bids include the following VE savings developed by the Project:

- Raising of the level of the depot by 2m;
- Substitution of a stabilised earth embankment for the piled wall at the depot; and
- Removal of the bridge over the EARL alignment at Ingliston.

Both bidders have accepted the concept of VE and are committed to refining the opportunities to maximise realistic savings.

3.4.3 Normalisation

Throughout the cycle of review and analysis, areas of added (extra) or omitted (missing) scope were revealed. The process of normalisation was used to ensure that both bids reflected the same scope and programme. A full list of the normalisation items applied to each bid at each stage is included in Appendix A which identifies those normalisation items that relate directly to the Infraco bids.

The normalised final bids for Phase 1a and Phase 1b are shown in Table 3.4.5.

Table 3.4.5. Normalised final bids for Phase 1a and Phase 1b.

EDINBURGH TRAM PROJECT SUMMARY OF FINAL BIDS								
	Bruce			Wallace				
	1A	1B	TOTAL	1A	1B	TOTAL	DIFFERENCE	
	£m	£m	£m	£m	£m	£m	£m	%
Firm	154,304	50,565	204,869	161,121	36,278	197,399	-7,470	-3.78%
Provisional	8,776	0	8,776	4,270	1,350	5,620	-3,156	-56.16%
Structures	36,215	19,962	56,177	31,415	5,510	36,926	-19,252	-52.14%
Highways	18,115	11,473	29,588	11,894	8,562	20,455	-9,132	-44.65%
Final Bid	217,411	82,000	299,411	208,700	51,700	260,400	-39,011	-14.98%
Normalisation (INFRACO Specific)	13,540	-1,808	11,731	17,803	5,690	23,494	11,762	
TOTAL BID	230,950	80,192	311,142	226,504	57,390	283,894	-27,248	-9.60%
Discount for 1B Concurrent		-25.000			-5.000			

The above include the bidders assessments for structures and highways. The resulting headline numbers have been used to update the Project Estimate as this represents the best estimate available for these elements.

3.4.4 Comparison of differences between bids

The Infraco Final Bids are summarised in elemental form below (Table 3.4.6). The figures presented here include Infraco based normalisation for comparison purposes and excludes non-Infraco normalisation, depot advance works items and VE.

Table 3.4.6. Summary of Infraco final bids in elemental form.

	Bruce			Wallace			Variance		
	1A	1B	TOTAL	1A	1B	TOTAL	1A	1B	TOTAL
Prelims	73.198	23.810	97.008	70.991	15.846	86.838	-3.01%	-33.45%	10.170
Trackform	40.576	15.966	56.542	47.874	14.267	62.140	17.98%	-10.64%	-5.598
Depot	16.112	-	16.112	18.786	-	18.786	16.60%		-2.674
Structures (Provisional)	37.816	17.904	55.720	33.193	8.739	41.932	-12.22%	-51.19%	13.788
Highways (Provisional)	26.455	11.473	37.928	24.569	8.716	33.286	-7.13%	-24.03%	4.643
Tramstops	3.212	1.090	4.302	3.085	1.350	4.435	-3.94%	23.81%	-0.133
Buildings	1.944	-	1.944	3.275	1.102	4.377	68.44%		-2.433
Supervisory & Comms	13.680	4.389	18.069	6.296	2.269	8.566	-53.97%	-48.30%	9.504
OLE	17.666	5.448	23.114	15.899	4.554	20.453	-10.00%	-16.40%	2.660
Tramstop Equipment	0.290	0.112	0.401	1.514	0.547	2.061	422.11%	390.65%	-1.660
Trams	-	-	-	1.019	-	1.019			-1.019
TOTAL	**230.950**	**80.192**	**311.142**	**226.504**	**57.390**	**283.894**	-1.93%	-28.43%	**27.248**

Note:- In variance column "-" means Wallace lower than Bruce.
Excludes non-Infraco normalisation, depot advance works items and VE.

Overall for both Phases, the bids are within 9% of each other and the variance between bids for Phase 1a is 2%. The main reason for the greater variance on Phase 1b is the allowance by Bruce for the delayed start to Phase 1b (£25m). This is reflected in their higher preliminaries costs and other areas. Other areas on Phase 1b where Bruce is significantly higher are structures, highways and comms.

The principal differences on elemental level between the normalised bids for Phase 1a are:

- Prelims – Bruce has included a higher allowance (+£2.2m) for this section than Wallace. This difference increases further when considering the whole of Phase 1a+1b, where Bruce allowances for Prelims are £10.2m (10%) higher than Wallace due to their view on the costs for the deferred start of construction of Phase 1b.
- Trackform – Wallace has proposed the SEDRA trackform which is preferred to the system proposed by Bruce. Bruce has allowed £7.2m less for this element (£5.6m for Phase 1a+1b). This reflects the differing approaches taken.
- Structures – This represents both bidders' assessment of the structures requirements based on the Preliminary Designs and emerging Detail Designs for certain structures as of March 07. The scope for Phase 1a includes 18 structures and 14 retaining walls and at present, the sums allowed by the bidders are provisional. The variance between the bids is £4.6m (£13.8m for Phase 1a+1b). Significant cost has been attached to the construction of Crewe Gardens piled retaining wall and Lindsay Road retaining structure. There are also a number of larger key structures on the route where CEC approval and traffic management will go some way to

dictating the final cost. Bruce has made the greater allowance for three key structures:

- S27 Edinburgh Park +£1.30 million;
- S28 A8 underpass +£3.25 million; and
- S32 Depot access bridge +£1.00 million;

In addition, Bruce has made significant provision for retaining wall structures within Phase 1b due to the lack of Detailed Design;

- Highways – Bruce has allowed an additional £1.9 (7%), for carrier drains, street lighting and road surface treatment (anti-skid material) at junctions (£4.6m for Phase 1a+1b);
- Supervisory and communications – Bruce allowance for Phase 1a is some £7.4m (54%) higher than that of Wallace (£9.5m for Phase 1a+1b). However, this is in part due to the differing approach between the bidders in allocation of preliminaries for this element; and
- OLE – Wallace have allowed £1.8m (£2.6m for Phase 1a +1b) more than Bruce for this element.

The comparison of the firm elements of Phase 1a is shown below (Table 3.4.7) and the two bids come within 5.1% of each other. This suggests a high degree of confidence can be attached to this proportion of the bids, especially the Prelims section.

Table 3.4.7. Firm elements for Phase 1a.

PHASE 1A	Bruce	Wallace	Variance	%
	BASE	BASE		
Prelims	70.320	69.938	-0.382	-0.54%
Trackform	34.879	46.418	11.539	33.08%
Depot	13.022	18.686	5.664	43.49%
Structures	-	-	-	-
Highways	-	-	-	-
Tramstops	3.221	-	-3.221	-100.00%
Buildings	1.477	3.275	1.799	121.80%
Supervisory & Comms	13.680	5.296	-8.383	-61.28%
OLE	16.416	14.974	-1.442	-8.78%
Tramstop Equipment	0.290	1.514	1.224	422.11%
Trams	-	1.019	1.019	
	153.304	161.121	7.817	5.10%

This pattern is not repeated for Phase 1b, where the firm elements in the Bruce bid are £14.3m (28.3%) higher than those by Wallace. This is due to

Bruce' considerable allowance for prelims based on the cost of delaying the start of construction for Phase 1b. Ignoring the prelims element of Phase 1b cuts this variance to £6.3m (23.6%). For details of Phase 1b firm elements see Table 3.4.8 below.

Table 3.4.8. Firm elements for Phase 1b.

PHASE 1B	Bruce	Wallace	Variance	%
	BASE	BASE		
Prelims	23.810	15.846	-7.964	-33.45%
Trackform	15.716	12.372	-3.344	-21.28%
Depot	-	-	-	-
Structures	-	-	-	-
Highways	-	-	-	-
Tramstops	1.090	-	-1.090	-100.00%
Buildings	-	1.102	1.102	
Supervisory & Comms	4.389	1.956	-2.433	-55.43%
OLE	5.448	4.454	-0.994	-18.24%
Tramstop Equipment	0.112	0.547	0.436	390.65%
Trams	-	-	-	
Total	50.565	36.278	-14.287	-28.25%

The main differences, excluding preliminaries, relate to trackform and supervisory and communications. It has to be noted that the focus of negotiations has been on Phase 1a only. Neither bidder has provided additional detail of the Phase 1b costs since the submission of consolidated proposals in March 07.

3.4.5 Normalisation of key provisional elements of bids - structures, highways and drainage

For the reasons outlined in the methodology section above, the allowances included in the bids for structures, highways and drainage are excluded in the evaluation of Phase 1a prices. The effect of normalising for these elements are shown in Table 3.4.9.

Table 3.4.9.

Normalised for Provisional Quantities on Roads, Pavings, Drainage and Structures	Bruce	Wallace	Variance	
	1A	1A		
Firm Elements of Bid	154.304	161.121	6.817	4.42%
Provisional Element				
Structures (Priced BoQ)	19.226	19.385	0.159	0.82%
Roads & Drainage (Priced BoQ)	10.621	9.571	-1.050	-9.89%
Provisional Sums	6.610	2.899	-3.711	-56.14%
Accommodation works	0.850	0.909	0.059	6.95%
OH & P on Prov. Sums	1.316	0.462	-0.854	-64.90%
Sub - Total	192.928	194.347	1.419	0.74%
Other Infraco Normalisations excluding Structures & Highways	3.598	3.349	-0.249	-6.92%
Incremental Adjustments	5.777	-3.025	-8.802	-152.36%
Total	**202.303**	**194.671**	**-7.632**	**-3.77%**

Aside from the normalisation for structures, highways and drainage, other key elements adjusted for in the normalised bids are:

- Programme – The Bruce' construction programme shows some significant overlaps in certain sections with the MUDFA programme. An adjustment has been made in the normalised bid to reflect the differential between the bidders for the durations between MUDFA completion and Infraco commencement at each section;
- Network Rail immunisation – Wallace proposes to potentially take on the required works on immunisation which translates in a reduction of £1.6m in the Infraco budget; and
- Tramco – Wallace propose to take CAF into their consortium. This has not yet been agreed with CAF, however they are not averse to the proposal and this provides a further £1m price reduction.

This analysis of the bids shows that the bid by Bruce is £7.6.m (3.8%) higher than that of Wallace.

3.4.6 Sensitivity analysis of Provisional Elements

Comparison of the rates in the main provisional sections, namely structures and highways, shows that, whilst Wallace have priced the highway works taking account of the different constraints along the alignment, there is little difference between rates for like items in both sections.

Given that the Project proposes to drive significant savings from the structures designs, the sensitivity of the costs is assessed on the basis of a 25% (circa £4.8m) saving in this area. The risk in respect of highways works relates to an

increase in quantity. Therefore sensitivity of the costs to this aspect is assessed by a 15% increase in quantity.

The sensitivity analysis shows that the difference widens slightly (some £0.2m). This shows that the ranking of the bidders would not be impacted by changes in the scope and quantities for Structures and Highways. This analysis also factors in the difference between the bidders in respect of OH&P rates.

3.4.7 Margins (OH&P) for evaluation of variations

Table 3.4.10 summarises the percentages to be applied to the evaluation of future changes calculated under the agreed mechanism.

Table 3.4.10. Percentages applied to future changes.

	Bruce	Wallace	
	Civils/Systems	**Civils**	**Systems**
Overheads	5%	Not stated	Not stated
Profit	10%	Not stated	Not stated
Combined	15%	10%	17%

Bruce has submitted combined margin percentages which are significantly higher than Wallace for comparable civils elements, but less than Wallaces requirement for systems (Table 3.4.10). In terms of sensitivity, it is arguable that the civils element will see the greatest pressure for scope increases as the design develops, with systems being more "off-the-shelf" type packages. However, the rates included within the body of the bid and on which prices will be adjusted in the Preferred Bidder Period are inclusive of OH&P. Therefore, these differences will make little difference during the period.

Table 3.4.11 shows the weighted average OH&P submitted by each bidder based on the proportions of civils to systems work in each bid.

Table 3.4.11. Weighted average H&P submitted by each bidder based on the proportions of civils to systems in each bid.

	OH&P %	Civils	OH&P %	Track & Systems	Total
Scope Increase		**£600,000**		**£400,000**	**£1,000,000**
Bruce	15%	90.0	15%	60.0	150.0
Wallace	10%	60.0	17%	68.0	128.0
Increased Margin		**30.0**			**17%**

This analysis assumes that the ratio of civils to systems is approximately 60 / 40. Taking an increase in contract scope of £1,000,000, the application of Bruce OH&P margin of 15% will incur a further £22,000 of margin, which represents an additional 17% over Wallace.

3.4.8 Schedule of rates for evaluation of minor variations

Within the Infraco bids, specific schedules of incidental rates have been provided by the bidders. These are designed to allow for the evaluation of minor, small scope changes through the agreed contractual change mechanism, Post Contract Award.

3.4.9 Schedule of rates for evaluation of major changes

Major changes would be evaluated using the agreed Final Bid proposal Rates and Prices contained in the Final Bill of Quantity documents, again using the agreed mechanism, based on the provision contained in the final Infraco contract.

Comparison of the rates for structures shows that although there are variances by individual structure, in totality the rates for structures average at less than 1% difference between the two bidders.

A more significant difference in rates is noticeable for Highways, with Bruce being higher by a total average of 9.9%.

3.4.10 Maintenance

Evaluation of maintenance proposals

Following the August submission, negotiations have been undertaken in parallel with the two Infraco Bidders on their proposals for maintenance. The Wallace proposal was originally significantly more expensive than the proposal from Bruce. However, through clarification, it became clear that they had assumed a doubling up of the required staffing.

Throughout the negotiation phase, both bidders have taken the opportunity to refine their prices with primary focus being placed on the maintenance offer for Phase 1a. Table 3.4.12 shows the position reached with each bidder, which in summary shows that for mobilisation and the first six years of operation Wallace has offered a lower price.

Table 3.4.12. Summary of Phase 1a maintenance costs for mobilisation and first six years of operation.

Phase 1A	Date	Mobilisation	Operation						Total
		1	1	2	3	4	5	6	6 years
Wallace	06-Sep-07	1,397	2,267	2,157	2,283	2,231	2,402	2,659	13,999
Bruce	07-Aug-07		2,765	2,828	2,841	2,723	2,771	2,834	16,762
	01-Sep-07	1,755	2,765	2,828	2,841	2,723	2,771	2,834	16,762
Variance		- 358	- 498	- 671	- 558	- 492	- 369	- 175	- 2,763

The difference between the two bidders opens up further when evaluating on a Phase 1a and 1b basis. Wallace originally submitted only a combined price for Phase 1a and 1b in August, and through subsequent clarification they have confirmed only a marginal price difference for the inclusion of Phase 1b. However, Bruce proposes sizeable additional prices for including the extension in their August submission and have not taken the opportunity to refine this in subsequent negotiations. Table 3.4.13 shows the position reached with the bidders.

Table 3.4.13. Summary of Phase 1a and Phase 1b maintenance costs for mobilisation and first six years of operation.

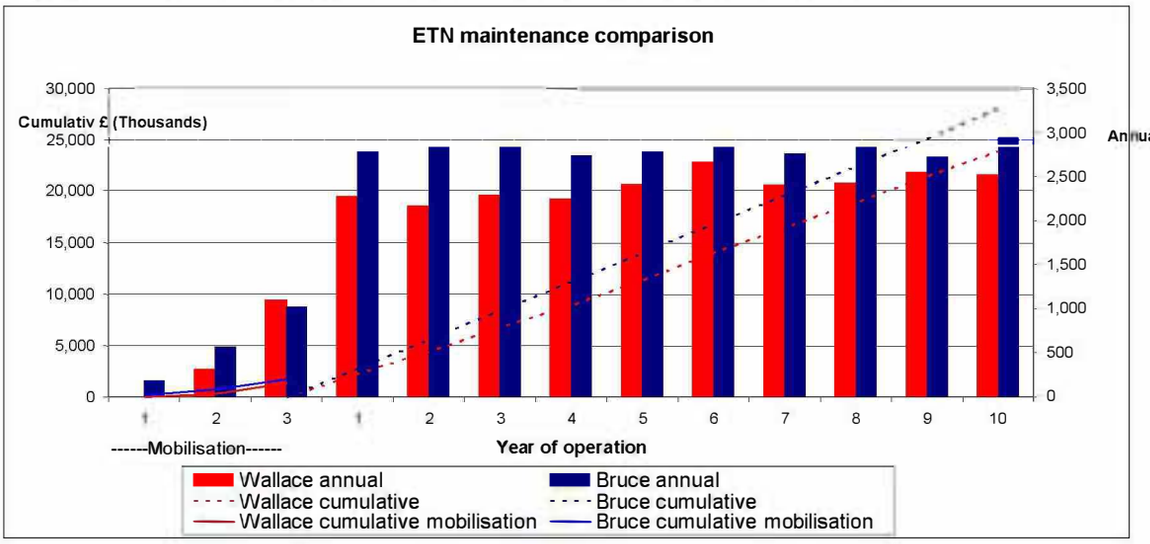
Phase 1A & 1B	Date	Mobilisation	Operation						Total
		1	1	2	3	4	5	6	6 years
Wallace	07-Aug-07	2,582	4,407	3,942	3,969	3,911	4,086	4,329	24,644
	06-Sep-07	1,397	2,285	2,175	2,325	2,274	2,461	2,727	14,247
	% reduction	46%							42%
Bruce	07-Aug-07	1,787	3,031	3,228	3,303	3,146	3,201	3,284	19,193
Variance		- 390	- 746	- 1,053	- 978	- 872	- 740	- 557	- 4,946

The prices submitted include for routine, reactive and lifecycle maintenance undertaken at the appropriate periods following the original equipment manufacturers regimes. Details of this have been obtained from both bidders during the process of the clarification and negotiation.

Based on the above analysis, it has been evaluated that overall Wallace offers the lowest cost option for the maintenance of the ETN, taking due cognisance of cost, programme, quality, safety, methodology issues and their track record in the delivery of maintenance for projects of this nature.

Figure 3.4.1 summarises the annual and annual cumulative maintenance costs included in each bidders' proposals.

Figure 3.4.1. Annual and cumulative maintenance costs for each bidder.



3.4.11 Present Value Model

The contractor's milestone schedules for Phase 1a have been adjusted to reflect the fully normalised bid position for capital works and maintenance figures added for the first six years.

The results of this PV model are shown in Table 3.4.14.

Table 3.4.14. Results of the PV model for capital works and the first six years of maintenance.

	Phase 1a
Bruce	216,860,564
Wallace	206,902,246
Variance	9,958,318
% Variance	4.6%

This confirms the position in respect of the normalised capital works that Wallace offers the lowest bid by a margin of £10m (4.6%).

Evaluation conclusions

The Evaluation has been undertaken based on the prices for Phase 1a. The conclusions in respect of this follows:

- The above analysis shows that when bids are considered on a fully normalised basis, in particular normalising for the very uncertain designs for structures and highways work, the bid by Wallace is £4.4m (2%) lower than that of Bruce;
- Applying the PV model as required by the Evaluation Methodology, thus discounting the capital works prices and the first six years maintenance price to the current date shows that Wallace are lower by £10m (4.6%);
- Wallace offers the lowest prices for maintenance works for Phase 1a, with Bruce prices being on average 16% higher;
- The underlying rates for work items constituting the principle provisional elements, structures and highways, are comparable and therefore any changes in quantity of these elements will not affect the ranking of the bidders; and
- Bruce OH&P percentage is 2.0 percentage points higher than that of Wallace. The impact of this difference is of some importance in the valuation of changes post contract which will be valued based on scheduled of resource rates, however the application of this method is likely to be limited.

3.5 LEGAL AND COMMERCIAL

The response to the contract documentation in the October 3 2006 ITN included by Tenderers as part of their Tender Submission and their subsequent submittals has been evaluated in accordance with the following key criteria (not listed in order of importance), which were stipulated in Section 6.8 of the ITN:

- the Tenderer's approach to overall risk allocation;
- the extent to which the Tenderer has supported any proposed revisions in the Infraco Contract Compliance Matrix with reasons acceptable to **tie**; and
- the extent to which the Tenderer has taken a pragmatic approach on proposed revisions to the Infraco Contract and its Schedules.

3.5.1 BRUCE

3.5.1.1 Legal Compliance Matrix and Contract Mark-Up

Bruce produced a full mark up of the draft Infraco Contract in early May 2007, followed by further commentary on the revised draft Infraco Contract. Bruce has provided contract mark up through the negotiation phase and, latterly, under instruction to respond to the reissue of the draft Infraco Contract by **tie** on 8 October. The quality of that important mark-up exercise has unfortunately been indifferent and piece-meal, punctuated with reserved positions. **tie** has engaged with Bruce to clarify and refine positions so that differences and open issues are understood. Bruce did not complete a Compliance Matrix, so that rationale for proposed revisions has mainly emerged during negotiations and has appeared in the draft Infraco Contract itself in the form of footnotes/drafting notes. A Compliance Matrix has been built up from these sources and verified against meeting outcomes and actual mark-up received.

3.5.1.2 Issues of Major Commercial Significance

- **Latent Defects**

  Bruce has offered a 12 year latent defect period for civils works and a 5 year period for E&M. This improved from an opening position of 5 years on both works elements.

- **Retention Bond and Parent Company Guarantee**

  tie sought a Performance Bond but this was not offered as an 'on demand' instrument. Accompanied by a cost saving to **tie**, Bruce has proposed a PCG from each consortium member. Bruce has not commented/accepted the requirement for a replacement bond in the event of a guarantor's corporate credit rating downgrade. Bruce has not agreed the levels for the Retention Bond. Some unacceptable mark-up has been included on the form of PCGs in connection with the indemnity, which is a significant protection.

- **Ground Condition Risks**

  The position taken by Bruce is that the Background Information supplied by **tie** prior to contact award will set a baseline on state of knowledge regarding site conditions. Any ground conditions or artificial obstructions not reasonably foreseeable by the Infraco (exercising reasonable duty of care to be expected of a competent contractor operating on a similar complex project) will give rise to

relief (time and money). This position is not capable of improvement due to the state of **tie's** technical data on the works areas.

- **Consents**

  Bruce's position on Consent responsibility is reserved pending due diligence on SDS programme deliverables. Bruce has discernible apprehension about consent responsibilities and this might prove difficult to close favourably at PB stage.

- **Liquidated and Ascertained Damages**

  Bruce has reserved position in relation to the proposed LADs level and regime pending further explanation from **tie**.

- **Qualifying Change in Law**

  Bruce offered a threshold of £75k above which it would look to **tie** for the cost of QCL. Individual thresholds for SDS, TramCo and Tram maintenance are accepted.

- **Indemnities and Cap on Liability**

  Clause 77, the Indemnity provision, has been the subject of intense negotiation. Bruce's position is an overall cap on liability of 25% of the Construction price during implementation and 25% of fees during maintenance period post service commencement. Consequential loss is capped at £5 million. During operational phase, the indemnity is only to cover death or bodily injury. In the final mark up of this clause, Bruce have also required OCIP insurance proceeds to be included within their indemnity cap which is a step back from previous position.

  Bruce has stated that on termination the indemnity will not be available to **tie**. This is a significant constraint on contractual protections.

- **Novations**

  Bruce accepts the two novations (SDS and TramCo), subject to due diligence on TramCo Contract and SDS Deliverables. No particular comments have been made on the two draft novation agreements.

- **Intellectual Property Rights (IPR)**

  Bruce's position on this provision remains unclear despite extensive discussion. The clause is important since it deals with the legal title and rights in the software and systems which comprise the technical core of the means to integrate infrastructure, trams and signalling/telecoms. It is important that **tie** obtains either full legal title to, or an acceptable form of licence to use, all the IPR which created for or deployed on the project. Appropriate access to and ownership of IPR is also important should **tie**/CEC wish to create security over the project for financing purposes in the future.

- **Compensation on Termination for Loss of Profit**

  Bruce seeks 15% profit element.

- **Dispute Resolution Procedure**

  Bruce has not commented on DRP (Schedule 9).

- **tie's Covenant**

  Bruce has accepted a letter of comfort regarding CEC's underwriting of **tie's** obligations to pay. Bruce wishes to see the grant funding arrangement from Transport Scotland, as permitted.

- **Third Party Agreements**

  Bruce has indicated that full due diligence is required on all third party agreements at PB stage.

3.5.1.3 Summary of Bruce's Legal Submission

Approach to overall risk allocation	Under pressure to take decisions and commit on key points to drafting which is clear, Bruce has preferred to reserve or agree in principle only.
Acceptability of amendments	Generally, when Bruce has chosen to focus its attention, the resulting contract revisions are unambiguous.
Pragmatic approach to negotiations	Even following an extension of deadline, Bruce has failed to take best advantage of negotiation/clarification time. The final mark-up of the Infraco Contract was not produced by Bruce, leading to more laborious evaluation.
Strengths/Advantages	Bruce's initial submission was comprehensive but contained many reservations some of which have remained stranded, despite **tie's** efforts to reach an outcome through compromise. Bruce made progress on technical/practical matters in the draft Contract, but not easily on contractual points.
Weaknesses/Disadvantages	Bruce's position on several key risk transfer provisions is either uncertain or is reserved. The legal evaluation team has been unable to dispel the impression that Bruce might seek appreciable shift on risk allocation during Preferred Bidder stage. That impression has heightened due to Bruce's more detailed legal responses not matching indications given in negotiations or becoming more risk averse. Bruce's decision not to have legal representation at recent contract meetings also created the sense that in depth contractual negotiation is being reserved intentionally.

3.5.2 WALLACE

3.5.2.1 Legal Compliance Matrix and Contract Mark-Up

Wallace did not submit a full mark-up of the contract or a Compliance Matrix with its ITN Submission. A full draft Infraco Contract and Compliance Matrix have however been developed for Wallace, from which their positions on all main issues (closed prior to Preferred Bidder phase) are capable of evaluation. The rationale for all important changes has been explained by Wallace. Wallace's performance in negotiations to close-out contractual issues has been sustained and methodical. Where a position needs to be reserved, Wallace has been open about the reasons.

3.5.2.2 Issues of Major Commercial Significance

- **Latent Defects**

  Wallace offers 20 years (common law position) latent defect liability although mark-up on the form of Collateral Warranty to be provided for designated third parties indicates a 10 year long stop. **tie** has instructed that this needs to be removed.

- **Retention Bond and Parent Company Guarantee**

  tie sought a Performance Bond but this was offered as a non "on demand" instrument. Accompanied by an increase in liability cap, Wallace has offered PCGs from each consortium members had has agreed that if any guarantor's credit rating is downgraded below BBB+, **tie** may require a substitute bond issued by a surety. Issue of one of the PCGs requires main Board approvals and internal clearances at the PCG amount required for Infraco. Some unacceptable commentary has been received on the draft PCG from one Wallace consortium member and **tie** has objected. Wallace has accepted the levels of Retention Bond in principle.

- **Ground Risks**

  Due to paucity of available technical data, the position taken by Wallace is that the Background Information supplied by **tie** prior to contact award will set a baseline on state of knowledge of site subside conditions. Any ground conditions or artificial obstructions not reasonably foreseeable by the Infraco (exercising reasonable duty of care to be expected of a competent contractor operating on a similar complex project) will give rise to relief (time and money).

- **Consents**

  Wallace has accepted a position where Infraco takes all consent risk, except where SDS has failed to consult adequately and a prior approval is not obtained, this is a Compensation Event. **tie** has TRO responsibility, otherwise all residual consent risk is Infraco responsibility.

- **Liquidated and Ascertained Damages**

  Wallace has reserved position, pending further explanation from **tie** as to the operation of the LADs regime regarding the cumulative effect of late sectional completions.

- **Qualifying Change in Law**

  Wallace has accepted a threshold of £150,000 for QCL above which **tie** would be responsible. Individual thresholds for SDS, TramCo and Tram maintenance are accepted. Wallace seeks compensation for the retrospective effect of any new law on installed infrastructure.

- **Indemnities and Cap on Liability**

  Wallace offers an overall indemnity cap, calculated at 30% of Construction Price and Maintenance fee, respectively for implementation and operational phases inclusive of LADs and PCG proceeds, but exclusive of insurance.

- **Novations**

  Wallace accepts the two novations (SDS and TramCo) subject to due diligence and has stipulated a "status quo" letter from **tie** on SDS Deliverables at contract award. The draft novation agreements are commented in acceptable means.

- **Intellectual Property Rights**

  Wallace has offered clear and acceptable transfer of title and licensing rights to IPR to safeguard network expansion and **tie's** rights on termination or expiry of the Infraco Contract.

- **Compensation on Termination (Loss of Profit)**

  As a component of compensation, Wallace seeks 17% for track and systems and 10% civils.

- **Dispute Resolution Procedures (Schedule 9)**

  Wallace has provided a number of technical comments on the DRP process, to do with statutory compliance and conjoinder.

- **tie's Covenant**

  Wallace has asked for a guarantee from CEC to underpin **tie's** payment obligations and for sight of the grant funding commitment, if permitted.

- **Third Party Agreements**

  Wallace has indicated that full due diligence is required on all third party agreements at PB stage and has required a revision to the draft contract terms permitting an element of risk pricing in any **tie** Change relating to the Infraco being required to undertake obligations under a third party commitment **tie** discloses or enters into post contract award.

3.5.2.3 Summary of Wallace's Legal Submission

Approach to overall risk allocation	Wallace's approach has improved measurably and the closing stages have seen Wallace's positions become clearer and shift positively. This should not however mask the fact that significant work remains to close out important points.
Acceptability of amendments	The Legal Evaluation team has a clear picture of all positions on critical issues.

Pragmatic approach to negotiations	Wallace has attempted to look for appropriate compromise in order to remove reserved positions. Wallace has engaged its full team (including external counsel) to achieve maximum benefit from negotiations for both parties.
Strengths/Advantages	Wallace's legal submission has matured over the last month and there is no reason to expect that this momentum cannot be sustained. The Wallace team has responded to time pressure and the challenge of decision-making to remove deadlock.
Weaknesses/Disadvantages	Wallace has at times taken a somewhat pedantic approach on second order issues. There are some significant reservations which will entail negotiating time and potential compromise by **tie** to resolve.

3.6 INSURANCE

The evaluation can be summarised as follows:

3.6.1 Wallace

Positives:-

- Most concerns have been dealt with and requirements are compliant.
- Accepted proposed ETN Owner Controlled Insurance Programme (OCIP)
- Accepted responsibility for OCIP deductibles, other than if another party was negligent.

Negatives:-

- One of the Wallace consortium does not have any Professional Indemnity (PI) insurance cover for direct and economic loss. It has cover for injury or damage to third parties only.
- In the BAFO Wallace stated that it did not believe a project specific insurance was necessary and would only add cost. No quotations were provided by **tie** to enable this decision to be made.
- The Evaluation Team requested an increased in the PI Limit of Indemnity to £20m, which has not been accepted.

3.6.2 Bruce

Positives

- Most concerns have been dealt with and requirements are compliant.
- Accepted proposed ETN Owner Controlled Insurance Programme (OCIP)

Negatives:

- One of the Bruce consortium does not have any PI insurance and another has only declared £5m.
- A consortium PI insurance of £10m with excess of £1m can be provided for £1.5m and if **tie** wants to increase the limit to £20m, a further £750,000 is required.
- During the negotiation the Team tried to persuade the bidder to accept responsibility for all OCIP deductibles, other than if another party was negligent. At this stage the bidder has not responded on this proposed change.

Recommendation and Actions Required

In the view of the Insurance Evaluation Team, based on the responses received to date, either Bidder can be accepted.

The following actions should be addressed with both bidders:

1. Due to one party having no PI insurance for economic loss:
    - With Wallace, request again for a quote for project-specific PI or that the party with adequate PI insurance, arranges for its PI cover to accept the joint and several liabilities under the consortium for a minimum limit of £10m.
    - Try to negotiate a reduction in the PI premiums with Bruce.
    - If no PI provided or found not to be value for money:-
        - 1) Complete a financial check on it to ensure adequate balance sheet capability,
        - 2) Increase the contractual cap to reflect the exposure and to exclude insurance proceeds.
        - 3) Ensure all Performance Bonds etc. cater for uninsured risk.
2. A review should be undertaken of the full PI cover of the parties who have PI insurance.
3. Further discussion should be undertaken on transferring responsibility to pay the OCIP deductibles with Bruce.
4. Contract mark-ups to be reviewed and amended.
5. If contract awarded, evidence of Required Insurances to be obtained from those parties who have not yet purchased the Required Insurances.
6. The Brokers Letter of Undertaking must be accepted.

4. CONCLUSIONS AND RECOMMENDATIONS

The evaluation has enabled a clear picture of the Bidders' relative strengths and weaknesses to be formed.

In overall terms, either of the Bidders could provide a good solution for Edinburgh Tram Network. They have both generally complied with **tie**'s tendering requirements. Accordingly, there is no reason to exclude either of the Bidders.

Both Bidders have sensible programmes and have demonstrated that they understand what is required to execute the project.

Either of the Bidders would be able to provide a suitably skilled team to execute the Edinburgh Tram project.

Technically, both bids broadly meet **tie**'s requirements.

Incremental Adjustments have been factored into the financial evaluation, reflecting the Bidders' relative strengths and deficiencies.

On most counts the Proposals and financial tender submitted by Wallace show a more beneficial position compared to Bruce. The normalised cost analysis provides a clear separation between the Bidders in favour of Wallace. The Wallace Bid is now within the parameters defined by the Business Case for the ETN and it is therefore recommended that Wallace be selected as Preferred Bidder. The Preferred Bidder will now need to work with **tie** to collate a detailed package of cost and scope proposals that confirm the project viability on a substantially fixed price basis.

Geoff Gilbert
Commercial Director
24th October 2007