



4 Week Period Reporting Pack 08/09

Project Title:
Edinburgh Tram Project

Reporting Period:
Period 09 2008/09

Transport Scotland Project Manager:
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Progress Meeting Date:

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Date: 12/12/08

For and on behalf of **tie Limited**

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1 Executive Summary

1.1 Key issues

HSQE



There was one 'major' reportable accident during Period 9. An office worker for BSC slipped on the internal staircase at the consortium office in Edinburgh Park. She fell and injured her shoulder. Initially it was thought to be badly bruised, but upon attendance to hospital it was discovered to be fractured. An investigation has been undertaken by BSC and their report will be reviewed by **tie**.

This takes the 13 period rolling AFR to 0.29 which is now above the target of 0.24 accidents per 100,000 hours. It is possible to achieve the target of 0.24 by Period 13. Actions to achieve the target will be discussed and agreed with both Principal Contractors during Period 10.

Programme

Overall progress remains behind both the four-month look-ahead and the master programme primarily due to:

- Design slippages between v26 / v31 at the time of Financial Close;
- Design slippage since novation of design to Infraco (now recorded in v39 of the design programme);
- Design changes as a result of the Prior and Technical Approvals process;
- Requirement for re-design of temporary works;
- Incomplete utility diversions caused in part by traffic management constraints; and
- Slow mobilisation of Infraco.

The table in section 4.2 identifies the geographic areas of slippage in the current programme and the types of action that can be taken to improve the programmed end date.

The time impact (38 days) of the v26 / v31 design programmes at the time of Financial Close was agreed in Period 8 and the commercial effect of this is now being discussed.

tie has agreed with BSC a process to create a re-calibrated programme. This involves a process which started on 20th October, with members of both organisations taking time out to review slippage, opportunities for improvement, inclusion of recently agreed additional embargos and work on agreeing a revised contract programme. Much of the required data has now been amassed and, following meetings towards the end of Period 9 between **tie** and BSC, this process will be tested in Period 10/11 with a dedicated team being established to finalise the new programme.

Opportunities for improvement include:

- The use of additional resources;
- Improved productivity;
- The use of alternative technology for OLE installation and track-laying;

- Constructing the structures in parallel rather than sequentially;
- Removing embedded project logic which is no longer relevant; and
- Better use of integrated traffic management.

The underlying contractual issues are complicated and their resolution will require a concentrated management effort. There is also a need for a reasonable degree of engagement from BSC. Taking this into account, it is anticipated that a revised Infraco contract programme and overall revision to the Tram Master Project Programme will be ready during Q1 2009. Infraco proposals for recovering the effects of their slow mobilisation will be included within the revised programme.

A process has been put in place to identify and manage all design issues which are blockers to the construction programme. The programme blockers have been captured in a programme blockers map to visually identify the critical areas of constraint, impact on programme and actions / opportunities to resolve the issue. This is being reviewed every two weeks by the joint teams and prioritised to focus efforts of resolving issues which impact programme most.

Progress – Design

Good progress is generally being made in Prior and Technical Approvals. The main areas of concern which are receiving focussed attention are the incorporation of CEC comments into road designs and gaining Scottish Water consents. Changes to the design programme and any impact on construction will be addressed as part of the overall programme re-calibration exercise. There are also a number of re-designs underway as a result of the Prior / Technical Approvals process, the impact of which is recorded in the programme.

Progress – MUDFA

The programme impacts of the revised programme were agreed with Carillion in Period 8 and will be included in the recalibration exercise and any commercial impacts will be reported in due course.

Cumulative progress to date is as follows:

	Planned (Rev 7.9)	Actual	Total
Metres	41,725	30,445	52,594
Chambers	247	210	348

Reasons for lower than planned productivity include:

- Quality issues with the 800mm water-main at the Gogar depot, as well as with BT chambers and ducts;
- Re-sequencing at Haymarket due to traffic management;
- Close down of sites on Leith Walk due to new embargo;
- Lack of design for Section 1a; and
- Outstanding technical queries relating to cellars in St. Andrews Square.

Remedial actions are underway to address all of these issues and the net effect will be shown in the programme re-calibration (as above).

Good progress has been made on the A8 sewer diversion and the tunnel drive has commenced and is on programme for completion prior to the commencement of Phase 3 of the A8 underpass in February 2009.

Progress – Infraco (including Tramco)

The project continues to experience problems with slow mobilisation and, in particular, appointment of direct BSC resource and final appointment of the main package contractors. However, work has commenced on a number of worksites including the Haymarket and

Edinburgh Park viaducts, Carricknowe bridge and the A8 underpass. Significantly, the on-street works also commenced with roadworks on Leith Walk using sub-contractor resources (Crummock).

Progress against the four-month programme continues to be reported to weekly. Delivery against this has been disappointing with only 14% (plan 79%) being achieved. This is due to:

- Leith Walk works being delayed due to utility works not being completed to programme – works commenced on 8 October;
- Haymarket viaduct re-design work at bankseat – now resolved and work has recommenced;
- Delay of the concrete pour at Edinburgh Park and Haymarket viaducts due to a lack of test and inspection plans – this is now resolved; and
- Re-design of temporary works required for various structures in the Network Rail corridor.

It is currently anticipated that the resolution of some areas of re-design for temporary works would see approximately 25% of the programme being completed prior to Christmas.

The tram mock-up has arrived in Edinburgh and is being used in consultation with special interest groups to fine-tune the design.

Progress – Other

- Building fixings – deemed consent has been obtained from 306 owners as well as 66 consents with the owners' agreement. There are 12 fixings where matters remain unresolved and negotiations are ongoing. However, there remains a possibility that these relevant owners may have to be referred to the Sheriff for resolution in February. CEC are leading the legal process, supported by the project team;
- Haymarket carpark compensation – **tie** have agreed compensation with Network Rail and will seek to settle this before the end of the current financial year. **tie** await confirmation from TS that the additional compensation payable to First Scotrail as a result of the extension of the FSR franchise from Nov 2011 to Nov 2014 will be funded by TS as a change;
- Following a successful trial for measurement of stray traction current between Nottingham Express Transit and NR, Infraco are currently considering three possible immunisation solutions. A decision is due in January 09;
- Although the Murrayfield pitch relocation works are 2-3 weeks behind programme, they will be completed by Christmas; and
- Detailed work commenced for the Christmas embargo and the Princes St blockade (commencing in early 2009). There has been significant temporary traffic management, modelling and scrutiny from the Traffic Peer Review Group (TPRG) to support these elements of work and a recommendation to close Princes St in 2009 is being made to a full council meeting on 18th December.

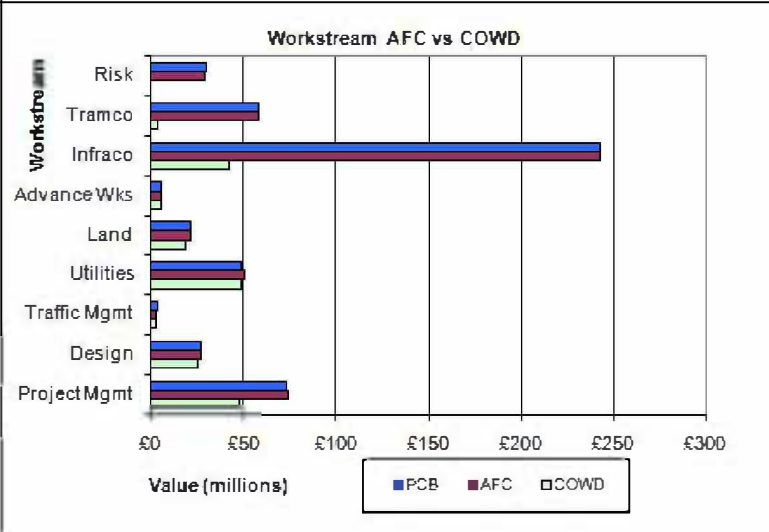
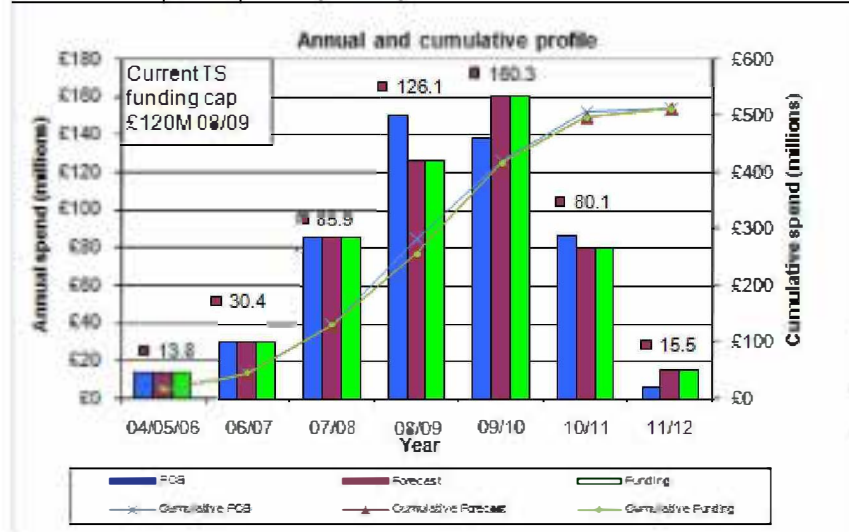
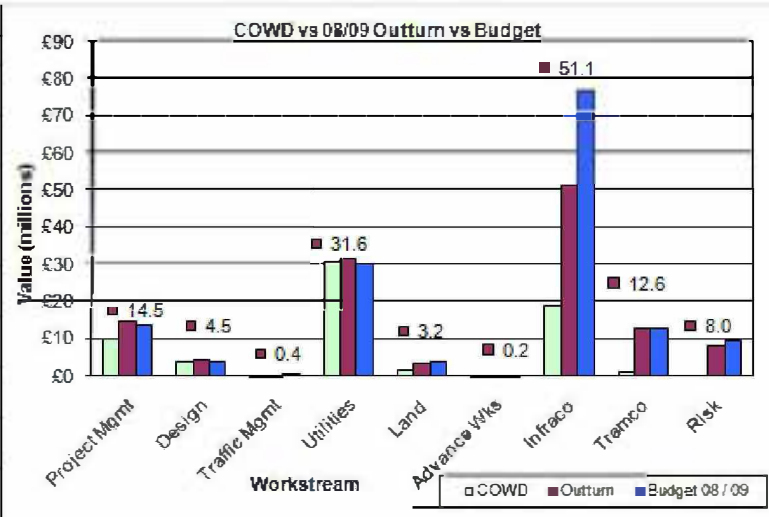
Cost

The AFC for Phase 1a of the project remains unchanged from last period at £512m, including a risk allowance of £29m. The adequacy of this risk allowance is kept under constant review and as such will be critically assessed as discussions with Infraco regarding the re-calibrated master programme and the commercial impacts thereof. Funding available remains at £545m.

Cumulative expenditure to date (end of P9 08/09) on Phase 1a is £196.0m. Expenditure to date for FY08/09, at £66.0m, is £42.4m lower than the 'budget' for the year to date. This is primarily due to deferment of the initial Tramco milestones (now forecast in Periods 10 and 11), protracted closure of the Infraco contract suite and slow Infraco mobilisation.

The FY08/09 outturn forecast remains at £126.1m (TS share £116.3m) following a comprehensive review in Period 8 of the most likely value of work which will be

Period 08/09 - 09 COWD (£000s)				
Workstream	F/cast	Act	Var	Comments
Project Mgmt	1,053	1,062	10	
Design	137	192	56	
Traffic Mgmt	26	26	0	
Utilities	1,733	3,720	1,987	Timeline of risk crystallisation profile to be reviewed in Period 10
Land	749	196	(553)	Delay in agreement of compensation for First Scot Rail
Advance Wks	50	0	(50)	Release of Accrual
Infraco	2,538	2,180	(358)	Slow progress (7/15 planned milestones achieved). Primary impacted sections are: 5a, 5b and 5c.
Tramco	0	0	0	
Total	7,485	7,377	(108)	As above



completed in the current financial year. There are remaining sensitivities around this outturn including the completion of utilities works as programmed and timely commencement of infrastructure works on-street and at the depot in January 2009.

Risk

The detailed development of the Infraco element of the Project Risk Register and associated treatment plans has progressed well in Period 9. A total of eight separate risk reviews were held during the period. The QRA was reviewed in the period and the total risk and contingency for the project remains at £28.9m.

The top five primary (most current and relevant) risks for the project continue to be:

- Uncertainty of utilities location and consequential required diversions / unforeseen utility services within LoD;
- Unknown or abandoned assets or unforeseen / contaminated ground conditions affect scope of MUDFA work;
- Late Prior Approval consents;
- Tramway runs through area of previously unidentified contamination and material requires to be removed; and
- Amendments to design scope from current baseline and functional specification.

There are 53 risks in the risk register. Two new risks were identified in the period and two risks were closed. Treatment plans are in place for each risk and are being monitored.

Potential changes

The following potential changes which will impact cost and programme have been identified:

- Conclusion of the programme re-calibration;
- Carillion settlement / impact of Rev 7.9 of the programme;
- Gogar interchange – impact of changes to facilitate the provision of the Gogar interchange station;
- Additional embargo imposed in Leith Walk and Constitution St;
- Princes St traffic management – additional contingency measures to keep the city moving; and
- Manor Place – consequence of delaying the Manor Place closure until after the festive embargo.

Communications

Our media team has handled various issues including: David Mackay's appointment as interim **tie** Chairman, the city centre embargo, Line 1b and the arrival of the tram rails. The team has been working closely with stakeholders regarding the city centre embargo works and ongoing work throughout the rest of the route. The Schools Programme's activities have visited the Risk Factory with the intention to include tram risks as part of their ongoing School's Programme.

Media activity next period will be focused on infrastructure work in the city centre, specifically on Princes Street and Leith Walk, as well as coverage on the tram mock up. The final launch of the new Edinburgh Trams website will take place in December 2008.

2 Progress

2.1 Overall

Overall progress remains behind both the four-month look-ahead and the master programme primarily due to:

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- Incomplete utility diversions cause in part by traffic management constraints; and
- Slow mobilisation of Infraco.

The time impact (38 days) of the v26 / v31 design programmes at the time of Financial Close was agreed in Period 8 and the commercial consequence of this is now being discussed.

Whilst an unmitigated straight import of the progressed programme into the master programme forecasts a potential revenue service slippage into the first quarter of 2012, **tie** is confident that sufficient float and false logic constraints exist in the programme, along with construction methodology improvements, to maintain the open for revenue service date as July 2011 (with a range of May 2011 to December 2011). The table in section 4.2 identifies the geographic areas of slippage in the current programme and the types of action that can be taken to improve the programmed end date.

tie has agreed with BSC a process to create a re-calibrated programme. This involves a process which started on 20th October, with members of both organisations taking time out to review slippage, opportunities for improvement, inclusion of recently agreed additional embargos and work on agreeing a revised contract programme. Much of the required data has now been amassed and, following meetings towards the end of Period 9 between **tie** and BSC, this process will be tested in Period 10/11 with a dedicated team being established to finalise the new programme.

Opportunities for improvement include:

- The use of additional resources;
- Improved productivity;
- The use of alternative technology for OLE installation and track-laying;
- Constructing the structures in parallel rather than sequentially;
- Removing embedded project logic which is no longer relevant; and
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The underlying contractual issues are complicated and their resolution will require a concentrated management effort. There is also a need for a reasonable degree of engagement from BSC. Taking this into account, it is anticipated that a revised Infraco contract programme and overall revision to the Tram Master Project Programme will be ready during Q1 2009. Infraco proposals for recovering the effects of their slow mobilisation will be included within the revised programme.

The programme impacts of the revised programme were agreed with Carillion in Period 8 and will be included in the recalibration exercise and any commercial impacts will be reported in due course.

A process has been put in place to identify and manage all design issues which are blockers to the construction programme. This involves a two-weekly meeting with all players to systematically work through issues and solutions. The programme blockers have been captured in a programme blockers map to visually identify the critical areas of constraint, impact on programme and actions / opportunities to resolve the issue. This is being reviewed

every two weeks by the joint teams and prioritised to focus efforts of resolving issues which impact programme most.

2.2 Design

The design is progressing as follows:

- IFCs – Phase 1a 53 issued out of 78 , the slippage is being addressed as part of the re-calibration of programme;
- Prior Approvals are progressing well – there are some design issues to resolve but approvals are now over 80% complete and only five remain to be submitted. These are related to the resolution of long-running 3rd party issues (SRU, Forth Ports and RBS);
- Structures approvals are progressing well – two structures remain to be approved (Tower Place bridge and Balgreen Road NR access bridge) although timescales remain tight versus IFC;
- Roads and drainage approvals remain difficult although positive progress has been made to resolve CEC detailed comments with only four areas outstanding for Phase 1a; and
- Scottish Water are making better progress with drainage outfall consents, although these are still relatively slow. They are continuing to work to a prioritised order of consents.

What is not captured in the above or the table below is the quantum of designs which are required to go through a re-design process as a result of either the approvals process or value engineering. This will be reported on in future months but the impact is captured in the programme analysis.

Phase 1a only	Submitted to CEC		Granted by CEC		% complete Granted of total
	v31	Actual	v31	Actual	
Prior approvals (54)	53	49	53	45	83%
Technical approvals (80)	75	71	73	64	80%
IFC (submitted to tie) (91)			78	53	68%

Reasons for design slippage are being reviewed and recorded each week at the design taskforce meeting which is focused on resolving outstanding design issues. This slippage will be addressed as part of the re-calibration of the programme. **tie** are identifying and implementing opportunities to mitigate the impacts of this slippage.

2.3 Utility works (MUDFA)

Rev.07 Figures	Period		Delta	Cumulative		Delta
	Plan	Actual		Plan	Actual	
MUDFA PERIOD 09 PROGRESS						
Section 1a Newhaven to Foot of the Walk	14.3%	0.3%	-14.0%	65.6%	33.6%	-32.0%
Section 1b Foot of the Walk to McDonald Road	2.8%	2.2%	-0.6%	100.0%	97.7%	-2.3%
Section 1c McDonald Road to Princes Street West	9.4%	8.1%	-1.3%	78.2%	42.1%	-36.1%
Section 1d Princes Street West to Haymarket	5.1%	4.7%	-0.4%	88.2%	70.5%	-17.7%
Combined Sections 1A-1B-1C-1D (On-Street) Newhaven Road to Haymarket	8.9%	3.5%	-5.4%	80.3%	56.1%	-24.2%
Section 2 Haymarket to Roseburn Junction	41.9%	7.4%	-34.5%	100.0%	27.1%	-72.9%
Section 5a Roseburn Junction to Balgreen Road	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%
Section 5b Balgreen Road to Edinburgh Park Central	0.0%	1.6%	1.6%	100.0%	100.0%	0.0%
Section 5c Edinburgh Park Central to Gogarburn	0.0%	5.4%	5.4%	100.0%	94.5%	-5.5%
Section 6 Gogar Depot	0.0%	0.0%	0.0%	100.0%	97.4%	-2.6%
Section 7a Gogarburn to Edinburgh Airport	10.9%	0.0%	-10.9%	23.8%	10.2%	-13.6%
Combined Sections 2A-5A-5B-5C-6A-7A (Off-Street) Haymarket to Edinburgh Airport	6.8%	2.2%	-4.6%	75.7%	63.6%	-12.1%
FULL ROUTE PHASE 1A NEWHAVEN ROAD TO EDINBURGH AIRPORT	8.4%	3.2%	-5.2%	79.3%	57.6%	-21.7%

Section	Commentary
Section 1a Newhaven to Foot of the Walk	Proposals agreed with FPA regarding re-sequencing works. IFC's awaited for plates 1-5 and 6-10. SDS progressing with drawings for January / February 09 issue.
Section 1b Foot of the Walk to McDonald Road	Integrated programme being developed with Infraco with regard to when and where MUDFA and Infraco contractors can work on Leith Walk. Jane Street BTO works delayed until after embargo – works require closure of Jane Street. Delay in temporary works proposals from CUS regarding BT chamber works in Manderson St and these have delayed the Manderston St Gas diversion and this will now re-commence post embargo (requires re-excavation – approximately eight weeks).
Section 1c McDonald Road to Princes Street West	Mound works targeted to recommence on 19 th Jan 2009.
Section 1d Princes Street West to Haymarket	Water mains south side of junction 80% complete awaiting meter by-pass completion. Track realignment. Proposed solution for gas main and water main discussed both parties – accepted in principle. Solution requires the demolition of existing BT chamber. TM not installed at Manor Place. Cancelled late Friday 28 th November at the request from CEC. Potential six week delay to Haymarket works.
Section 2 Haymarket to Roseburn Junction	Work commenced on the gas main. Scottish Power diversion D/02 on north side of Haymarket Yards commenced.
Section 5a Roseburn Junction to Balgreen Road	COMPLETE
Section 5b Balgreen Road to Edinburgh Park Central	Utility diversion works complete and BT snagging ongoing. IFC for sewer manholes have been issued to CUS. Work has commenced on a further two of the six remaining manholes. Resolution of the proposed sewer diversions design at South Gyle access bridge achieved. SW accept proposal to pile around existing sewer.
Section 5c Edinburgh Park Central to Gogarburn	1,500mm Sewer diversion on programme for completion prior to the commencement of Phase 3 of A8 Underpass in February 2009. Turn OfFlows targeted for 23/2/09. The 450mm Gyle water main has progressed to 90% complete following problems with the fusion joints. The wayleave issue affecting the BT 24-way duct and Scottish Power jointing for the 33kV cable has now been resolved.
Section 6 Gogar Depot	800mm water main remedial to incorrectly fitted gaskets continues approximately 150 linear metres of the affected 600 linear metres replaced. Thrust block removal critical to programme completion. This is still on target for completion by Christmas.
Section 7a Gogarburn to Edinburgh Airport	Trial hole works commenced with BAA contractor. Works programmed completion tied in with BAA programmed works start of 12/3/09

2.4 Tramworks (Infraco)

The project continues to experience problems with slow mobilisation and, in particular, appointment of direct BSC resource and final appointment of the main package contractors. However, work has continued on a number of worksites including the Haymarket and Edinburgh Park viaducts, Carricknowe bridge and the A8 underpass. Significantly, the on-street works also continue with roadworks on Leith Walk using sub-contractor resources (Crummock).

The tram mock-up has arrived in Edinburgh and is being used in consultation with special interest groups to fine-tune the design.

tie has agreed with BSC a process to create a re-calibrated programme. This involves a process which started on 20th October, with members of both organisations taking time out to review slippage, opportunities for improvement, inclusion of recently agreed additional embargos and work on agreeing a revised contract programme. Much of the required data has now been amassed and following meetings towards the end of Period 9 between **tie** and BSC this process will be tested early in Period 10/11.

Opportunities for improvement include

- The use of additional resources;
- Improved productivity;
- The use of alternative technology for OLE installation and track-laying;
- Constructing the structures in parallel rather than sequentially;
- Removing embedded project logic which is no longer relevant; and
- Better use of integrated traffic management.

Progress against Contract Programme

Summary against the agreed Infraco contract and four month look ahead (1 September to 31 December 2008) milestones are shown in the table below (number of milestones).

Milestone progress

	Period (4-month look-ahead)			Cumulative (4-month look-ahead)			Cumulative (contract programme)		
	Planned	Achieved	%	Planned	Achieved	%	Planned	Achieved	%
Prelims	3	3	100%	27	27	100%	27	27	100%
Construction	12	4	33%	13	7	54%	174	7	4%
Total	15	7	47%	40	34	85%	201	40	20%

Progress is also being recorded against the contract programme as in the table below. In both the contract and four-month programme progress, the common denominator is that every activity in the programmes has a work content generated against it which translates into a weighting allowing accurate reporting of progress.

	Period		Delta	Cumulative		Delta
	Plan	Actual		Plan	Actual	
INFRACO PERIOD 09 PROGRESS						
Section 1a Newhaven to Foot of the Walk	2.1%	0.0%	-2.1%	2.4%	0.0%	-2.4%
Section 1b Foot of the Walk to McDonald Road	3.5%	0.5%	-2.9%	13.5%	1.4%	-12.1%
Section 1c McDonald Road to Princes Street West	0.7%	0.0%	-0.7%	1.0%	0.0%	-1.0%
Section 1d Princes Street West to Haymarket	0.0%	0.6%	0.6%	0.0%	0.6%	0.6%
Combined Sections 1A-1B-1C-1D (On-Street) Newhaven Road to Haymarket	1.5%	0.2%	-1.3%	3.3%	0.3%	-2.9%
Section 2 Haymarket to Roseburn Junction	4.4%	2.9%	-1.5%	49.1%	10.7%	-38.3%
Section 5a Roseburn Junction to Balgreen Road	4.6%	0.0%	-4.6%	29.6%	1.4%	-28.2%
Section 5b Balgreen Road to Edinburgh Park Central	7.6%	0.2%	-7.3%	41.5%	0.6%	-40.8%
Section 5c Edinburgh Park Central to Gogarburn	5.4%	0.0%	-5.4%	28.0%	1.2%	-26.8%
Section 6 Gogar Depot	6.2%	0.0%	-6.2%	39.9%	0.0%	-39.9%
Section 7a Gogarburn to Edinburgh Airport	4.6%	1.1%	-3.4%	31.8%	1.3%	-30.5%
Combined Sections 2A-5A-5B-5C-6A-7A (Off-Street) Haymarket to Edinburgh Airport	5.9%	0.4%	-5.5%	36.5%	1.5%	-35.0%
FULL ROUTE PHASE 1A NEWHAVEN ROAD TO EDINBURGH AIRPORT	4.2%	0.3%	-3.8%	23.4%	1.0%	-22.4%

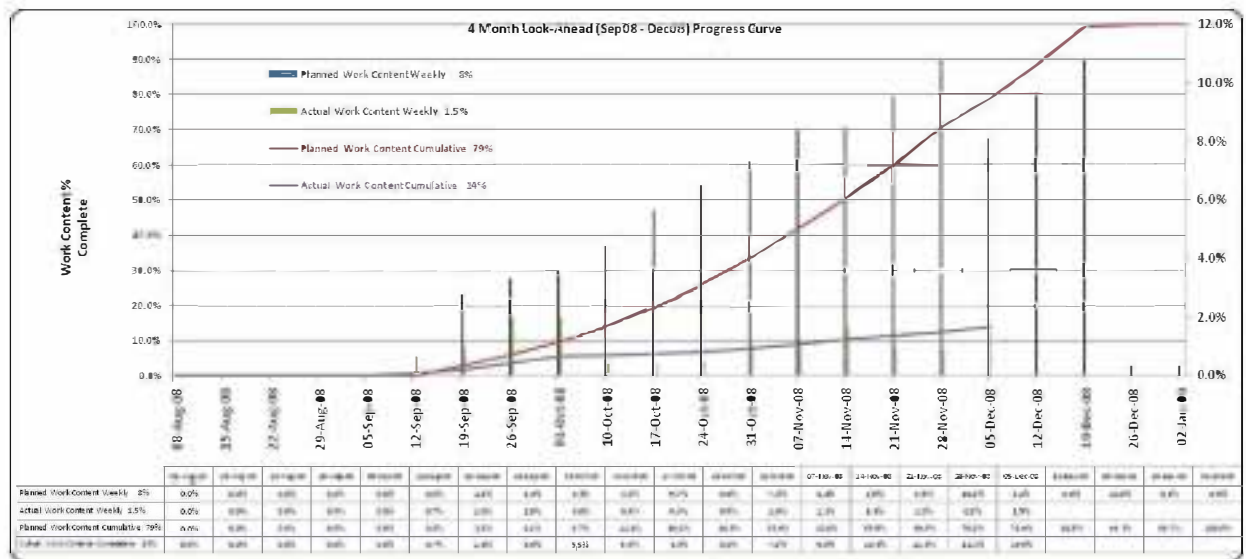
Section	Commentary
Section 1a Newhaven to Foot of the Walk	Section 1A4 road / track works between Newhaven Road and Ocean Terminal were due to have commenced the first week of November. This awaits IFC design with 1A4 track IFC due 15 Jan 09.
Section 1b Foot of the Walk to McDonald Road	Roadworks have been slowed as existing utilities exposed along with archaeological finds.
Section 1c McDonald Road to Princes Street West	Roadworks delayed due to a range of factors including utility works not being complete, contractor work package plans not in place and traffic management not approved. Actions are underway to address these issues.
Section 1d Princes Street west to Haymarket	No construction works planned for P9. Detailed preparation for the Princes St blockade is underway including enabling works and Traffic Management.
Section 2 Haymarket to Roseburn Junction	Haymarket Viaduct redesign resolved. Works recommenced. Bankseat and Pier 1 base blinded. Reinforced steelwork underway.
Section 5a Roseburn Junction to Balgreen Road	Temporary works re-design delaying various structures. Demolitions are progressing in Roseburn Street. Various site clearances underway.
Section 5b Balgreen Road to Edinburgh Park Central	Unforeseen ground conditions resulted in re-design of temporary works at Edinburgh Park viaduct. Site clearance, haul road and piling platform for Carricknowe bridge south abutment complete.
Section 5c Edinburgh Park Central to Gogarburn	A8 underpass continues. Site clearance continues for trackworks between Edinburgh Park and the Gyle

	Track awaiting design IFC due late Period 9
Section 6 Gogar Depot	800mm water main is programmed to be complete by Christmas break to allow Barr Construction full access to the depot site from January 2009. Provision has been made to provide limited access to commence works prior to Christmas to allow work to proceed.
Section 7a Gogarburn to Edinburgh Airport	Gogarburn underbridge earthworks have commenced.

The progress is reported against week 13 of a 16-week programme. Key reasons for slippage include:

- Leith Walk works being delayed due to utility works not being completed to programme – works commenced on 8 October;
- Haymarket viaduct re-design work at bankseat – now resolved and work has recommenced;
- Delay of the concrete pour at Edinburgh Park and Haymarket viaducts due to a lack of test and inspection plans – this is now resolved; and
- Re-design of temporary works required for various structures in the Network Rail corridor.

It is currently anticipated that the resolution of some areas of re-design for temporary works would see approximately 25% of the programme being completed prior to Christmas.



2.5 Tram construction (Tramco)

Completion of the tram mock-up was achieved in the period and it arrived in Edinburgh during December. Good progress is being made with delivery of deliverables against the schedule. The production line due to be operational from Q1 2009 with the delivery of the first tram still on schedule for April 2010.

2.6 Testing and commissioning

The process for acceptance of the Edinburgh Tram Project is designed to ensure that it is delivered in an acceptably safe, compliant and efficient manner. The objectives of the process are to ensure that the system performance, integrity, reliability, availability and safety are rigorously tested and that throughout all stages of the delivery process the many sub-systems and the overall system are validated and verified against the requirements and applicable standards. To achieve these objectives there is a layered approach to the overall testing and commissioning as laid out in the table below.

What	Who	Status
Design assurance	BSC (SDS) / tie	Underway.
Quality	Infraco	Started - Inspection and test plans submitted as part of each work package plan.
Systems Safety	Infraco / Independent Competent Person(ICP) / TEL / Transdev	Started - Safety verification plan in place and process of verification already underway. The ICP has been appointed and has started his verification process.
Performance	Infraco / Transdev / TEL	Requirements set out in the employer's requirements and will be tested following completion of each section of the network.

2.7 Interface with other projects

The following table identifies the other projects ongoing within the city which may impact on the Tram project. This is reviewed on an ongoing basis to identify conflicts and mitigations.

External Projects	Promoter	Project Description	Potential Conflict	Tram Contract Dates		Project Dates		Comments
				Start	Finish	Start	Finish	
Waverley Steps	Transport Scotland	Refurbishment of existing Waverley Steps with inclusion of new escalators and elevators	Reviewed with both TS and Waverley Steps project team. No conflict	Feb-09	Jul-09	Sep-09	Mar-11	Although the main construction works will be complete by end Jul-09 this area will be revisited in Q3/Q4 2010 for OHL installation
Waverley Station re-roofing	Transport Scotland	New roof and general upgrade to station interior	May be Traffic Management issues	Feb-09	Jul-09	Apr-10	Apr-14	Although the main construction works will be complete by end Jul-09 this area will be revisited in Q3/Q4 2010 for OHL installation
Gogar Surface Station	Transport Scotland	New station to east of Gogar depot	Unknown as yet but expected to include: 1. Re-design impacts 2. Tram alignment issues 3. Traffic Management clashes 4. Potential site access issues etc	Aug-08	Jul-10	Oct-09	Mar-11	All works with the exception of track installation between Gyle Centre and depot stop and E&M Installations will be complete by end of 2009
St. James Centre re-development	CEC / Henderson Global	Redevelopment of existing shopping centre.	Interface with Picardy Place junction re-construction and Cathedral Lane sub-station	Jan-10	Mar-11	TBA	TBA	Inclusive of E&M works. Track installation should be complete by October 2010 but civils and E&M will continue to Mar-11
Haymarket Interchange		Haymarket Accessibility Project (planned for 2009-10).	Utility diversions continue until Feb 2009. Potential interface with Infraco works at Haymarket junction commencing Jan 2009	Jan-09	Nov-09	TBA	TBA	Haymarket junction re-construction is 6 phases due to complete Nov-09 although Shandwick Place will still be under construction to January 2010 with Torphichen to follow.
Haymarket Station re-furbishment	Network Rail / Scotrail	Main Building refurbishment works	Any external works could conflict with TM for either or both MUDFA and Infraco and could conflict with Infraco construction works	Now	Nov-09	Nov-08	2009	Require more detailed information
Haymarket Terrace	DTZ Surveyors	Common Repairs to buildings at 2-4-6-8-68 and 74 Haymarket Terrace	Scaffolding and external repairs	Now	Dec-09	ASAP	ASAP	CEC will not issue scaffold permits until all tram TM is removed.
National Portrait Gallery		Major building construction and re-furbishment	Interface with Infraco works on St Andrew Street / York Place	Apr-10	Nov-10	Apr-09	Nov-11	Other than removal and return off artefacts all works are expected to be internal to Gallery
Baxter Place	Fitzpatrick	Conversion of existing	Proposal to divert existing utilities	Now	Mar-11	TBA	2010	

External Projects	Promoter	Project Description	Potential Conflict	Tram Contract Dates		Project Dates		Comments
				Start	Finish	Start	Finish	
Development	Hotel Group	building adjacent Greenside Lane and with frontage onto Leith Street	through basement of building. Also potential TM interface issues with Picardy Place construction.					
Pollution Prevention works	Network Rail / Scotrail	Re-location of existing diesel tanks at Haymarket Sprinter Depot	Interface with S21A Roseburn Street viaduct and associated track	Jan-09	Apr-10	Apr-08	Nov-08	PP project on target at end of period 6 to complete in Nov. VE design on Roseburn viaduct will see this structure re-programmed.
Airdrie - Bathgate	Transport Scotland	New track installation	Tram possessions mainly "piggy-backed" on A2B possessions which could be altered / cancelled			Mar-09	Mar-10	Various possessions and RotR workings
RBS Tramstop - Gogarburn	RBS	Design by RBS - Build by Infraco	Design and consents not in place in a timely manner to allow Infraco to build to programme	Jul-09	Oct-09	TBA	TBA	
St. Andrew Square development	CEC	Demolition of existing buildings bordering South Side St. Andrew Square, South St David Street and Meuse Lane	Infraco programme	Sep-09	Nov-10	Oct-08	Jul-09	CEC Advised 10/9/8 that this development should be delayed to a more suitable commencement date.
Princes Street Hotel	Deramore Property Group	Redevelopment of existing buildings at 121 - 123 Princes Street to 80,000 square feet 3 floor of retail and 100 bedroom hotel	Direct clash with Infraco programmed works in Princes Street during blockade	Jan-09	Jul-09	Early 2009	Jun-11	Currently in planning stage.
New Hotel in Haymarket	Tiger Developments	New build hotel	Utility diversions and potential linterface with Infraco works.	Jan-09	Nov-09	Nov-08	2012	Risk has diminished. Manageable conflict

Colour code

Green	No conflict anticipated but being monitored
Amber	Managing any conflict
Red	Conflict which causes programme concern / unknown effect on tram programme

This has been sent to TS for their input for projects they are sponsoring and will continue to be reviewed by **tie** to identify any potential impacts on the Tram programme as early as possible in order to manage them. A review of the TS projects was carried out towards the end of Period 9 with TS. A further session is planned towards the end of Period 10 or early in Period 11.

2.8 Other

Temporary traffic regulation orders (TTROs)

- The city centre embargo was implemented by 28th November and the Leith Walk embargo will be realised by 12th December ; and
- Works progress to plan the Princes St blockade in early 2009. This will commence on 5th January with the start of enabling works before the full diversions are implemented in mid-end February. Contingency and emergency plans are being put in place to complement the diversions.

Traffic regulation orders (TROs)

A TRO programme is in place to ensure that the required TROs for the project are in place by November 2009. The informal consultation process for this is underway and comments are being recycled into any required small design changes. A method for tracking these changes is being established.

Additionally the draft schedules and articles are under preparation and formal consultation due to start in January 2009 and the public deposit in March 2009.

Network Rail

- Infraco has now delivered its EMC Management Plan and EMC Strategy for NR infrastructure assets and established the scope for the immunisation works. Programme for these works is being developed with Infraco;
- Following a successful trial for measurement of stray traction current between Nottingham Express Transit and NR, Infraco are currently considering three possible immunisation solutions:
 1. No additional measures required for ETN and no modification of NR infrastructure;
 2. Additional insulation measures on ETN and no modification of NR infrastructure; and
 3. No additional measures required for ETN and modify NR infrastructure with FETR.A decision for which solution to progress is due in January 09;
- Infraco will be developing the full assurance case for NR acceptance. Preliminary assurance case to enable traction power testing and commissioning will be completed by August 2009; Further assurance will be provided up to and including bringing into service;
- The lift and shift project scope is complete. Additional works identified are:
 - Scottish Power cable – mitigation is to work around the route of the cable; and
 - C&W cable at the Water of Leith bridge – SDS has designed a diversion and the works will be transferred into Infraco scope although the apparatus will be moved by C&W;
- The pollution prevention project at Haymarket depot is reported to be over-running by four weeks. A local agreement with First ScotRail has been reached to accommodate any potential overlap between completion of the pollution prevention activities and commencement of the Infraco works; and
- Works will be ongoing through the Network Rail Christmas period at Carricknowe and Edinburgh Park.

Third party interfaces

- NR – the Bridge Agreements is not yet concluded but is expected by the end of the year. Outstanding issue on indemnities to close out. An Operating Agreement with NR is expected to be agreed by Q1 2009;
- Forth Ports – SDS will deliver agreement plans by mid December and **tie** will finalise commercial arrangements with Forth Ports to conclude the agreement;

- Haymarket carpark compensation – **tie** have agreed compensation with Network Rail and will seek to settle this before the end of the current financial year. **tie** await confirmation from TS that the additional compensation payable to First Scotrail as a result of the extension of the FSR franchise from Nov 2011 to Nov 2014 will be funded by TS as a change; and
- Building fixings – deemed consent has been obtained from 306 owners as well as 66 consents with the owners' agreement. There are 12 fixings where matters remain unresolved and negotiations remain ongoing. However, there remains a possibility that these relevant owners may have to be referred to the Sheriff for resolution in February. CEC are leading the legal process, supported by the project team.

Murrayfield pitches relocation

Construction works for the relocation of the Murrayfield training pitches are progressing well. However, poor weather conditions have slowed work progress. The programme is now running approximately 2-3 weeks behind schedule and is now expected to be complete by Christmas. The completion of this project provides unrestricted access to the structures to be built between the north side of the existing railway embankment and the south perimeter of Murrayfield.

Fastlink

Competitive tenders for the roadworks required to take buses off the guided busway have been received and a contract has been awarded to Frontline Construction and works have commenced. The enabling works require to be completed to allow priority measures to be put in place for bus traffic that is displaced from the guided busway during tram works commencing mid January 2009. The TRO process has commenced and the statutory consultation has been completed.

3 Headline cost report

3.1 Current financial year

	FY 08/09 COWD Period			FY 08/09 COWD Year To Date			FY 08/09 COWD Full Year Forecast			COWD To Date Actual	Costs To Go Forecast	Total AFC Forecast
	Actual	Budget	Variance	Actual	Budget	Variance	Forecast	Budget	Variance			
Total Project COWD	7.377	23.863	-16.487	66.039	108.406	-42.367	126.104	150.851	-24.747	196.080	315.938	512.017
Other Funding	0.654	1.970	-1.316	4.929	8.382	-3.453	9.844	30.852	-21.008	16.235	26.041	42.276
Dem and on TS	6.722	21.893	-15.170	61.110	100.024	-38.914	116.261	120.000	-3.739	179.845	289.896	469.741

- Year to date COWD is £42.4m lower than 'budget' (Period 8 £25.9m) due to:
 - Delayed award of Infraco and Tramco (which was four weeks later than anticipated when the budget was established), slow mobilisation of the infrastructure works compared to the contractual programme and the deferment of the initial Tramco milestones to programme - £39.3m; and
 - £6.1m of profiled risk to P9 which has not been utilised to this point; and
 - The above is partially offset by an increase in utilities, primarily driven by the undertaking of critical sewer diversionary works at Gogar (funded by risk) (£2.9m);
- The opportunities to mitigate the impact of slow mobilisation of the infrastructure works are being developed over a period of time with the Infraco contractor as described in Section 2, with a view to managing any resultant conflicts between the utilities and infrastructure programmes and maintaining the scheduled opening date of the tram in July 2011; and
- The reported full year FY08/09 expenditure has been maintained at £126.1m and is profiled in the table below. There is no variance to last period, following the comprehensive review undertaken by **tie** in Period 8, of the most likely value of work to be completed in the current financial year. The review sought to anticipate the outcome of the ongoing discussions with the Infraco on a revised master programme.

Reforecast profile for FY08/09

£m	YTD	P10-13	Total FY08/09
Infrastructure and vehicles	19.7	43.9	63.7
Utilities diversions	30.3	1.3	31.5
Design	3.9	0.7	4.5
Land and compensation	1.3	1.5	2.8
Resources and insurance	10.9	4.7	15.6
Base costs	66.0	52.1	118.1
Risk allowance	0.0	8.0	8.0
Total Phase 1a	66.0	60.1	126.1
Phase 1b	0.0	0.0	0.0

- The profile above reflects a very significant increase in activity by the Infrastructure contractor in the last quarter of the year. Work has now commenced on the relatively high value structures and in addition construction is scheduled to start in earnest on-street and at the depot in January 09;
- Tramco costs forecast for Periods 10 and 11 total £11.7m reflecting the milestones for completion of design and commencement of Tram construction – there are currently no circumstances foreseen which might give rise to these costs being delayed;
- The principal downside sensitivities of this revised outturn forecast are as follows:
 - Commencement of on-street works and depot construction in early 2009 as planned – one period across the board delay equals c£3m; and
 - We have visibility of where c50% of the £8m risk allowance allocated to the current year is likely to be utilised (subject to approval of the risk drawdown) but utilisation of the remaining £4m is uncertain but has been retained in the forecast pending resolution of a updated programme with Infraco lest that should have an impact on the current year;
- The Phase1b costs in FY0809 (provided for information only in previous periods and which represented the commencement of utility diversions) are now assumed to be

expended in FY0910. A decision (by CEC and Transport Scotland) on whether to exercise the option to construct the Phase 1b infrastructure at this time is expected prior to the end of the financial year;

- Based on the outturn above, the TS share of Phase 1a costs in FY08/09 at 91.7% (500/545) would be between £108.9m of Base Costs excluding risk allowance or £116.3m of the total costs, including risk allowance and this should be viewed in light of the principal downside sensitivities described above. This is being kept under review in the context of FY0809 funding allocated to the project by TS of £120m; and
- As previously reported and agreed with CEC and TS, initial milestones under the Infraco and Tramco contracts in the aggregate amount of £24.2m, in respect of advance material purchases, have been classified as prepayments and will be reclassified as expenditure against funding in the periods when the related materials are delivered to site and incorporated in the works.

3.2 Next financial year

- The forecast COWD for FY09/10 is shown in the table at 3.3 below and is now £160.3m (Period 8 £158.5m). The increase is primarily due to the re-profiling of the Infraco works at the depot which has reduced the current year forecast and increased FY09/10 accordingly. The amount is also sensitive to the extent of call on the risk allowance profiled to that year of £13.0m. Greater certainty with regard to the FY09/10 forecast will be gained when an updated programme for the infrastructure works is agreed with the Infraco contractor.

3.3 Total project anticipated forecast cost

Phase 1a AFC and profiling

£m	Cum FY07/08	FY08/09	FY09/10	Balance	AFC
Infrastructure and vehicles	30.7	63.7	137.8	72.8	304.9
Utilities diversions	18.4	31.5	0.0	0.0	49.9
Design	21.4	4.5	0.8	0.0	26.8
Land and compensation	16.8	2.8	0.1	0.8	20.6
Resources and insurance	42.7	15.6	8.6	14.0	80.9
Base costs	130.0	118.1	147.3	87.6	483.1
Risk Allowance	0.0	8.0	13.0	8.0	28.9
Total Phase 1a	130.0	126.1	160.3	95.6	512.0
Phase 1b	3.0	0.0	33.0	51.3	87.3

- The cost estimate for delivery of Phase1a of the project remains at £512m with a risk allowance of £28.9m;
- There has been only one significant drawdown against the risk allowance at Financial Close (the diversion of the A8 sewer and for which full provision was made in the risk allowance). The risk allowance has been assessed as providing adequate specific provision for any additional utility diversion costs up to completion of that element of the project;
- All primary risks being managed in relation to the infrastructure works are recognised and provided for in the risk allowance – including those related to the completion of outstanding design at Financial Close and a more general provision for delay or recovery of time on a complex project such as this. These provisions reflect the nature of the contract as a fixed price contract to deliver to a contractual programme;
- The adequacy of this risk allowance is kept under constant review and as such will be critically assessed as discussions with the Infraco with respect to an updated master programme and the commercial impacts thereof; and
- As previously agreed, cumulative costs incurred to the end of FY07/08 also include £3m incurred on Phase 1b design, meaning that total costs to the end of FY07/08 were

£133m. The full estimate for Phase 1b is subject to finalisation in accordance with a value engineered and approved / consented design and programme. The finalised price will be valid if an option under the Infraco contract is exercised in sufficient time to allow construction of Phase 1b to commence in July 2009. Infraco are currently formally estimating the final price.

3.4 Change control

- The current change control position is summarised in the table below:

BASE ESTIMATE	498.10	87.30	585.40
APPROVED CHANGES - to Financial Close	13.91	0.00	13.91
CONTROL BUDGET - Baseline	512.02	87.30	599.32
APPROVED CHANGES - post Financial Close	0.00	0.00	0.00
REVISED CONTROL BUDGET	512.02	87.30	599.32
ANTICIPATED CHANGES	0.00	0.00	0.00
CURRENT AFC	512.02	87.30	599.32
PREVIOUS AFC	512.02	87.30	599.32

- Base estimate – The position at Final Business Case (Oct 2007);
- Approved changes to Financial Close – The financial impact of the project control budget having been reset to reflect final Infraco and Tramco Contract Award levels and a consequential reappraisal of the risk allowance. This was approved at the Tram Project Board on 4th June;
- Control budget baseline (New Project Control Budget) – The baseline within which all future project change control will be reported against;
- Approved changes post Financial Close – Tram Project Board approved changes from this point on. There are none to report with financial effect on the Control Budget at this point. The funding for the utility (sewer) diversionary work at Gogar and the Infraco main site office rental costs have been met from a drawdown of funds from the project risk allowance; and
- Anticipated changes – Future potential changes that are work in progress prior to formal approval. These include the conclusion of the programme re-calibration, Carillion settlement / impact of Rev 7.9 of the programme, Gogar interchange (impact of changes to facilitate the provision of the Gogar interchange station), additional embargo imposed in Leith Walk and Constitution St., Princes St traffic management (additional contingency measures to keep the city moving) and Manor Place (consequence of delaying the Manor Place closure until after the festive embargo). Risks to this position are described in Section 5 below.

4 Time schedule report

4.1 Report against key milestones

Whilst an unmitigated straight import of the progressed programme into the master programme forecasts a potential revenue service slippage into the first quarter of 2012, **tie** is confident that sufficient float and false logic constraints exist in the programme, along with construction methodology improvements, to maintain the open for revenue service date as July 2011 (with a range of May 2011 to December 2011).

The agreed baseline programme reference for this project is that at Financial Close leading to revenue service in July 2011.

Milestones	Baseline programme date	Actual / current forecast date
Approval of DFBC by CEC	21 Dec 06A	21 Dec 06A
TRO process commences	14Dec07A	10-Dec-07A
MUDFA – commencement of utility diversions	02 Apr 07A	02 Apr 07A
Approval of FBC by TS – approval and funding for Infraco / Tramco	09 Jan 08	Dec 07A
Tramco / Infraco – award following CEC / TS approval and cooling off period and SDS novation.	28 Jan 08	14 May 08A
Construction commences	14-Apr-08	14-May-08A
Haymarket viaduct commences	08-May-08	01-Sep-08A
Edinburgh Park viaduct commences	06-Aug-08	01-Sep-08A
A8 underpass commences	08-Aug-08	28-Aug-08A
Carricknowe Bridge commences	21-Aug-08	19-Aug-08A
All demolition work complete	22-Aug-08	30-Jan-09
Tram mock-up delivered	Oct 2008	Nov 2008A
First track installation commences – on street	03-Nov-08	27-Feb-09
MUDFA works complete	Nov 2008	Jun 2009
Haymarket viaduct complete	08-Dec-08	27-May-09
Roseburn viaduct commences	20-Jan-09	09-Jul-09
Design assurance complete	20-Jan-09	15-May-09
All Issue for Construction (IFC) drawings delivered	21-Jan-09	22-May-09
Princes Street closed	03-Feb-09	03-Feb-09
Roseburn viaduct complete	20-Apr-10	13-Aug-10
Carricknowe bridge complete	11-May-09	15-Jul-09
All consents and approvals granted	18-May-09	18-May-09
Edinburgh Park viaduct complete	24-May-09	11-Aug-09
A8 underpass complete	14-Jul-09	02-Nov-09
Princes Street re-opened	01-Aug-09	01-Aug-09
NR immunisation complete	Nov 2009	Nov 2009
TRO process complete	01-Dec-09	23-Apr-10
1 st OHL installed (Commence Section 2)	11-Dec-09	07-Dec-09
Commission Section 2 (Haymarket to Roseburn junction)	11-Jan-10	17-Mar-10
Commission Section 6 (depot)	25-Mar-10	26-Apr-10
1 st Tram delivered	09-Apr-10	09-Apr-10
Test track complete	23-Apr-10	02-Dec-10
1 st section (other than depot) complete ready for energisation	25-June-10	17-Mar-10
Commission Section 7 (Gogar to Edinburgh Airport)	25-June-10	19-Nov-10
Driver recruitment commences	July 2010	Oct 2010
Commission Section 5 (Roseburn junction to Gogar)	09-Nov-10	10-Aug-11
Driver training commences (excludes Depot)	Nov 2010	Sep 2011
System testing complete off street	09-Dec-10	09-Sep-11

Final tram delivered	17-Jan-11	17-Jan-11
Construction Line 1a complete	17-Jan-11	26-Sep-11
System testing complete on street	16-Feb-11	14-Oct-11
Commission Section 1 (Newhaven to Haymarket)	11-Mar-11	26-Sep-11
Letter of "no objection" from Independent Competent Person to commence tram running	17-Apr-11	13-Dec-11
Shadow running starts	18-Apr-11	13-Dec-11
Shadow running complete	July 2011	Mar 2012
Letter of "no objection" from Independent Competent Person to commence revenue service	July 2011	Mar 2012
Open for revenue service	July 2011	Mar 2012

Guidance for Completion:

Legend for colouring of Actual / forecast date text

Green: Actual / forecast date is ahead or in line with baseline
Yellow: Slight slippage – readily recoverable with action.
Pink: Significant slippage but expect recovery can be achieved
Red: Notable / significant slippage – difficult to recover, even with action.

4.2 Key issues affecting schedule

A number of specific areas are being examined to support July 2011 revenue service in line with the contract programme. Each area is being managed with full visibility and ownership by tie's project management team. The table below indicates the extent of unmitigated potential slippage and opportunities for recovery which will form the basis of discussions with BSC for a revised programme:

Section	Contract Programme Finish	Live Programme Finish	Opportunities
Section A – Depot commissioned and energised	25 Mar 10	05 Aug 10	BSC have commenced. Steelwork fabrication slot pre-booked.
Section B – Test track	23 April 10	22 Dec 10	Test track can be completed with OLE whilst tramstop furniture is completed. Construction inter-dependability between structures has eased allowing parallel builds. Additional dedicated track and OHL gangs identified for Test Track.
Section C – construction works complete	17 Jan 11	14 Sep 11	Track installation logic can be re-sequenced to allow earlier commencement. Additional track resources Parallel installation of track and OLE and improved productivity. Construction inter-dependability between structures has eased allowing parallel builds. Integrated MUDFA and Infracore worksites utilising combined traffic management. Additional dedicated track and OHL gangs identified for Depot and Test Track. The easing of the construction inter-dependability will see circa 3-4 months improvement in the off-street section although this does not improve the route Open for Revenue Service date. The introduction of 1 additional track gang and 1 additional OHL gang could see an improvement of circa 3 months to the forecast Open for Revenue Service date.

Section D – open for revenue service	16 July 11	12 Mar 12	As above
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A wide range of detailed specific programme issues is being examined to achieve the recovery required.

4.3 12-week look-ahead

Milestones	Actual / current forecast date
1B Roadworks Foot of the Walk – Balfour Street	16-Oct-08A
1C Roadworks McDonald Road to Picardy Place	19-Feb-09
1D Roadworks – Enabling Works	05-Jan-09
1D Roadworks and trackworks Princes Street	20-Feb-09
1D Roadworks Lothian Road junction	29-Jan-09
1D Roadworks Haymarket	19-Feb-09
S19 Haymarket Viaduct	01-Sep-08A
2A Trackworks Haymarket to Roseburn junction	23-Jan-09
S20 Russell Road bridge	08-Dec-08
W3/W4 Russell Road retaining walls	08-Dec-08
W18 Murrayfield tramstop retaining wall	08-Dec-08
S21B Murrayfield Stadium retaining wall	08-Dec-08
S21C Murrayfield underpass	05-Jan-09
W8 Baird Drive retaining wall	01-Sep-08A
S23 Carricknowe bridge	20-Oct-08A
5B Trackworks Balgreen Road to Saughton Road North	16-Feb-09
5B Trackworks Saughton Road North to Bankhead	19-Jan-09
W11 Bankhead Drive retaining wall	05-Jan-09
S26 South Gyle access bridge	05-Jan-09
5B Trackworks Bankhead to Edinburgh Park Station	12-Nov-08A
S27 Edinburgh Park viaduct	25-Aug-08A
W16 Gyle Centre tramstop retaining wall	29-Jan-09
5C Trackworks Edinburgh Park to Gyle	09-Oct-08A
W28 A8 underpass	01-Sep-08A
Gogar depot earthworks	08-Dec-08
Gogar depot building foundations	26-Jan-09
Gogar depot access roads	16-Feb-09
S29 Gogar underbridge	13-Oct-08A
S30 Gogarburn culvert No.1	01-Dec-08A

5 Risk and opportunity

5.1 Review of risk register

Reviews

The following reviews took place in the period:

Date	Format of review	Attendees	Comments
17/11/08	Infraco Risk Review	Infraco Commercial Manager Project Risk Manager	Current risk allowance reviewed. Gaps in risk allowance identified
19/11/08	SDS Risk Review	Project Risk Manager SDS Project Manager	Each risk and treatment plan reviewed. Risks transferred to Infraco
24/11/08	Mudfa Risk Review	Project Risk Manager MUDFA Commercial Manager	Each risk and treatment plan reviewed. New risks identified and added. Risk allowance reviewed and reallocated as per new risks.
26/11/08	QRA Review	Project Risk Manager Commercial Director Infraco Commercial Manager	Review of revised risk allowance
26/11/08	OLE and Power risk register	Project Risk Manager OLE and Power Project Manager	Each risk and treatment plan reviewed
26/11/08	Structures risk register review	Project Risk Manager Structures Project Manager	Each risk and treatment plan reviewed
1/12/08	Network Rail risk register review	Project Risk Manager NR Project Manager	Each risk and treatment plan reviewed.
3/12/08	Depot risk register review	Project Risk Manager Depot Risk Manager	Each risk and treatment plan reviewed

Risk Register

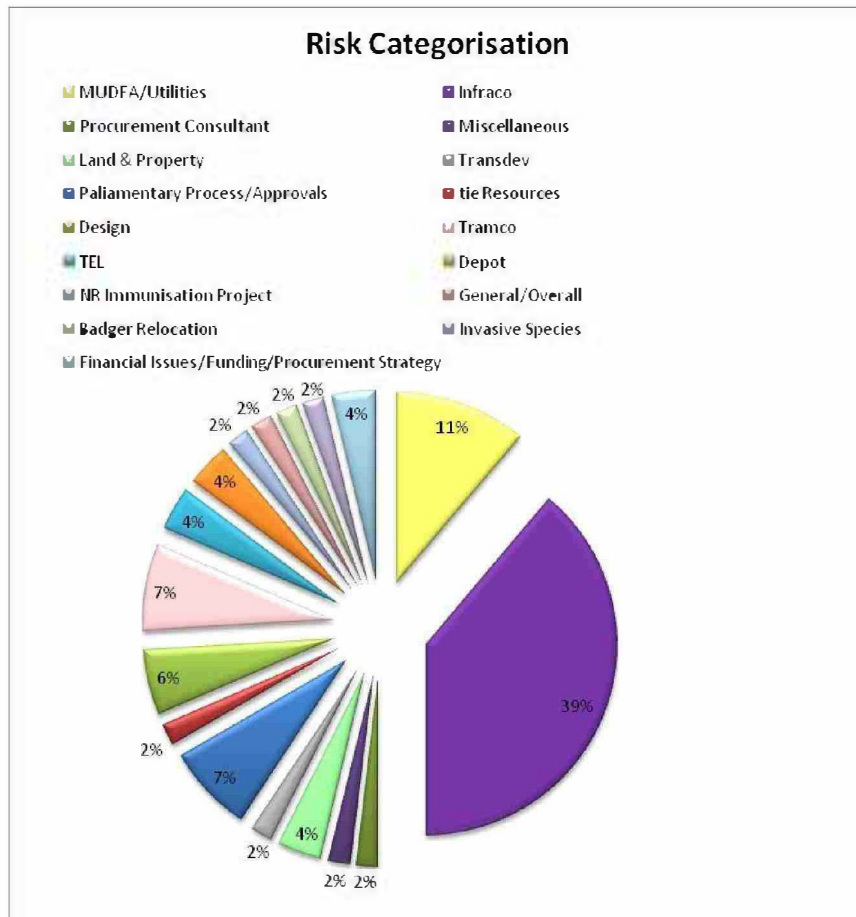
The Primary Risk Register is attached at Appendix D. The Primary Risk Register contains those high impact risks which are impacting (or have the potential to impact) the project at this moment in time.

There are currently 53 risks in the Project Risk Register. The top five project risks are listed on the next page.

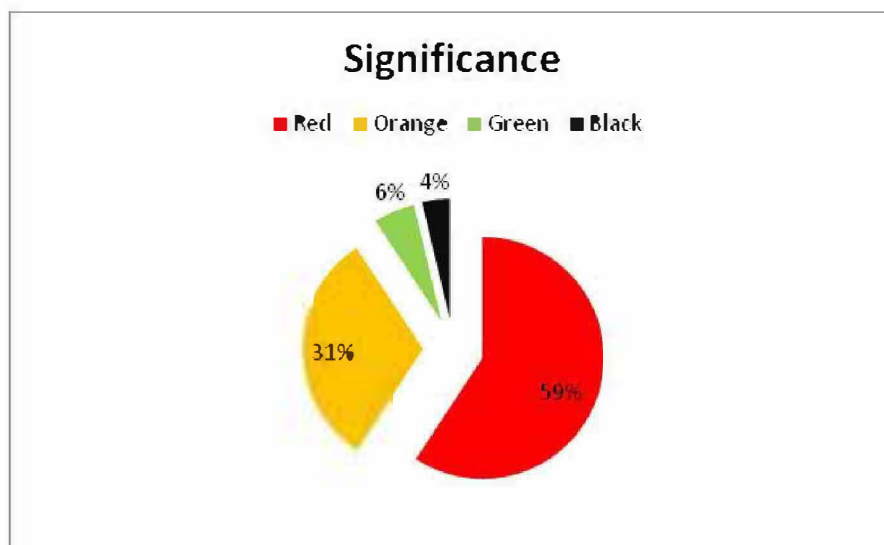
Top 5 Risks - Period 9

ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
116	CEC do not achieve capability to deliver	CEC able to honour their funding commitment	Potential showstopper to project if contribution not reached; Line 1B may depend on incremental funding from CEC	S McGarity	NIL-000	Project	CEC has formed a multi-discipline Tram Contributions Group to monitor identified sources of £45m contribution including critically developers contributions. Tie are invited to that group. (see add info)	On Programme	On Programme	31-Jul-11	CEC
							CEC to deliver necessary contributions for 1a	On Programme	On Programme	31-Jul-11	CEC
							Tram Project Board to monitor progress towards gaining contributions	On Programme	On Programme	31-Jul-11	MacKay
118		Extent of concessionary fare support commitment from TS provides inadequate comfort to CEC	CEC withdraw support for FBC and project fails	G Bissett	NIL-000	Project	Negotiate the terms of Government commitment to concessionary fare support to level which is satisfactory to CEC	On Programme	Complete	31-Jan-08	G Bissett
138	Utilities diversion outline specification only from plans	Uncertainty of utilities location and consequently required diversion work within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimate	G Barclay			Carry out GPR A diens survey Identify suitable resources (contractors) to carry out remedial programme to meet required timescales	Complete	Complete	31-Oct-07	J Casserly
							In conjunction with MUDFA, undertake trial excavations to confirm locations of utilities and inform designer	On Programme	On Programme	30-Jan-08	A Hill
154	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; asbestos found in excavation for utilities services, unknown cables and equipment; utility infrastructure; other physical structures; other contaminated soil	Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work	Highly likely to increase in time and labour requirement, increase in Capex cost as a result of additional works	I Clark			Carry out GPR A diens survey Identify increase in services diversions MUDFA to resource programme to meet required timescales	Complete	Complete	31-Oct-07	J Casserly
							In conjunction with MUDFA, undertake trial excavations to confirm locations of utilities and inform designer	On Programme	On Programme	30-Jan-08	A Hill
152	Scope of works relating to Wide Area Modelling (WAM) have not been agreed with SDS because they consider this to be out with the scope of their contract	Uncertainty about extent of construction works required on road network relating to Wide Area Modelling issues	Potential claim from SDS to deal with additional design work; Potential construction costs to deal with WAM issues (difficult to quantify without design) over and above those already included	K Rimmer			Agree design requirements relating to WAM with SDS Employ further traffic management resources Finalise boundaries of Tram responsibility for WAM requirements Obtain design and quantify construction cost for inclusion in base estimate Provision of £500k in Draft Final Business Case estimate to deal with WAM requirements	Complete	Complete	31-May-07	T Glazebrook
								Complete	Complete	31-Jan-07	C McLaughlan
								Complete	Complete	31-May-07	A Sm
								On Programme	Complete	31-Jul-07	T Glazebrook
								Complete	Complete	31-Jan-07	G Gilbert

The risks within the Project Risk Register are categorised below:



The ratings of the risks are illustrated below:



New risks

There were two new risks added to the Project Risk Register during the period. Both are to MUDFA and are listed below:

- 1. Indexation claim for programme past July 2008 impacts on cost:** the MUDFA Commercial Manager has indicated that CUS will be making this claim, as permitted by the contract. **tie's** commercial team will attempt to minimise the impact of this claim; and
- 2. Additional traffic management and enabling works are required to meet stakeholder constraints applied post-contract award:** this is a cost which will need to be met by **tie** but will be, where possible, kept as low as possible.

The following new risks were added to the Infraco concerns register during the period:

- 1. Cancellation of possession due to failure to meet planning timescales set out in Network Rail procedure:** This risk has arisen due to Network Rail introducing new procedures for the management and planning of disruptive possessions. **tie** will attempt to mitigate this risk by ensuring detailed plans are submitted on time by BSC for approval by **tie** before going to Network Rail; and
- 2. BSC fail to timeously plan works to be carried out during September '09:** There were no Form C's or Work Package Plans were in place for the disruptive possessions which booked for October 2008 and as a result the temporary works which were due to take place at Carrick Knowe were not carried out. This risk is borne of the concern that BSC fail to plan properly for the disruptive possessions booked for September 2009. **tie** will attempt to manage this by ensuring BSC meet the deadlines set by Network Rail for the submission of necessary information.

Reassessed and closed risks

Within the Project Risk Register, the following risks were reassessed after discussions with the Infraco Commercial Manager and Commercial Director and the impacts of the risks subsequently increased:

- Risk Id 974 - Increase in levels of spoil excavation at the depot; and
- Risk Id 172 – Tramway runs through area of possible contamination (at Gogarburn) and solution required to for unstable ground.

The following risks were closed in the period:

- 1. Access to land eradicate invasive species is not available when required:** this risk was closed as all necessary access has been granted; and
- 2. Invasive species eradication methodology does not work – species reinvade after three years:** this risk has been closed as the risk has transferred to Infraco.

Transferred risks

A number of risks were transferred from other WBSs to Infraco. Those risks transferred are listed below:

Scottish Power tunnel in Leith walk giving increased capital expenditure (ID911)	Transferred from MUDFA
Inaccurate topographical survey results (ID974)	Transferred from depot
Design assumptions lead to noise and vibration measures being inadequate during operation (ID336)	Transferred from design
Network rail design not appropriate for Tram > unsuitable (ID932)	Transferred from NR Immunisation
Lighting design to be approved by CEC (ID994)	Transferred from design
Land not yet acquired > potential delays (ID162)	Transferred from design
Work package delay risk to Infraco (ID271)	Transferred from Parliamentary Process
Programme delay due to prior consents not delivered (ID44)	Transferred from Procurement Consultant

5.2 Risk action plan for next 2 periods

Action Owner	Risk ID	Action ID	Action Name	Due	Active	Complete	Late	Period 10/11
A Richards	901	170	Infraco/Tramco/operator to establish, implement, and train staff in safe systems of work under the Case for Safety	31/01/2009	Yes	No	No	11
A Richards	901	171	Properly define tram/depot interfaces and ensure correct commissioning and training	01/01/2009	Yes	No	No	10
A Richards	60	519	Pre- and Post Construction Condition Surveys	30/12/2008	Yes	No	No	10
A Sim	279	614	Draft depot and station change proposals to NR	31/01/2009	No	Yes	No	11
A Richards	902	175	Ensure Tram paint & detailing will be vandal resistant and easy to repair; TMA obligations are clear	19/01/2008	Yes	No	Yes	11
M Blake	911	628	Liase with Scottish Power to agree and approve method of crossing tunnel	31/12/2008	Yes	No	No	10
P Douglas	931	605	MUDFA trial holes to verify GPR surveys	31/01/2009	Yes	No	No	11
R Bell	1078	647	Engagement between tie and BSC at different levels. Regular review of BSC management of third parties as per Employers Requirements.	31/12/2008	Yes	No	No	10
R Bell	1079	648	Ongoing review of BSC resources and formal review at 4-weekly meeting. Objectives to be set for BSC at monthly meetings in order to monitor progress.	31/12/2008	Yes	No	No	10
R Bell	1080	649	Minimise contractors exposure by identifying other work scopes outside the embargo area.	12/12/2008	Yes	No	No	10
R Bell	1081	650	Production of robust programme to mitigate losses	05/01/2009	Yes	No	No	11
T Glazebrook	1077	646	Establish a process which will act as a control mechanism for design changes. (If one exists already then ensure process is complied with)	31/12/2008	Yes	No	No	10
W Biggins	115	505	Book contingency possessions	31/12/2008	Yes	No	No	10

5.3 Cost Quantative Risk Analysis

The cost QRA has remained constant during Period 9. The current P80 figure is £23,579k. In addition to this figure is £5,370k which constitutes risk allowances for specific items and contingency. The total project risk allocation is therefore £28,949k. This will be reviewed in Periods 10/11 in line with the programme re-calibration.

The following table illustrates what risk and contingency has been drawn down to date:

Item	Amount	Source of Funding	Notes
Sewer diversion at A8	£1,370,000	Contained within QRA	Risk Id 342
Seminar on Hearts Memorial monument relocation	£9,750	Contingency	
Currency cost relating to Tramco at Financial Close	£6,478	Contingency	

Sensitivity analysis of cost QRA: Language of third risk down



The above chart highlights those component risks which are correlated most closely with the overall risk allocation. These risks are the ones which, if changed in terms of probability or impact, would have the most significant effect on the final output.

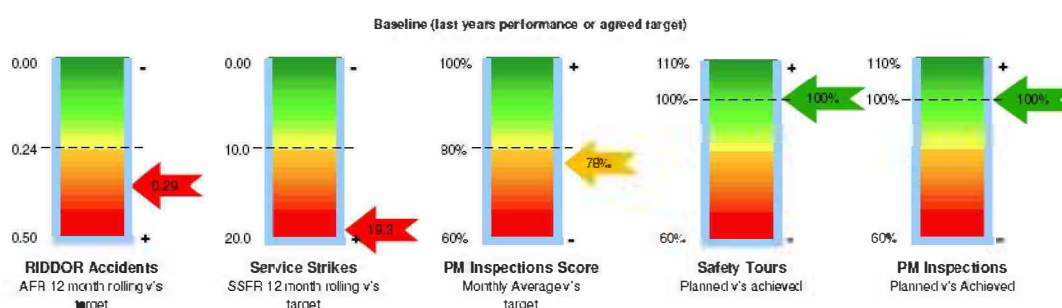
5.4 Schedule QRA

tie are currently working with the supplier of Active Risk Manager (ARM – the risk management software which tie uses) with a view to integrating Primavera and ARM so that a schedule risk analysis can be developed. A schedule QRA will be created in line with the recalibration of the overall programme.

6 Health, safety, quality and environment

6.1 H&S accidents and incidents, near misses, other or initiatives

HS&E ACCIDENTS and INCIDENTS SUMMARY											
Project Running Totals	Hours	>3 day	Major	Injury	NM / Unsafe Condition	Service damage	ENV	RTA	MOP	AFR	SFR
Period 9	125,198	0	1	2	14	13	0	1	10	0.80	10.38
Year to Date	884,479	0	3	21	83	171	2	11	57	0.34	19.33
13 period rolling	1,042,180	0	3	27	99	202	2	11	61	0.29	19.38



There was one 'major' reportable accident during Period 9. An office worker for BSC slipped on the internal staircase at the consortium office in Edinburgh Park. She fell and injured her shoulder. Initially it was thought to be badly bruised, but upon attendance to hospital it was discovered to be fractured. An investigation has been undertaken by BSC and their report will be reviewed by tie.

The 13 period rolling AFR is now 0.29 which is now above the target of 0.24 accidents per 100,000 hours. It is possible to achieve the target of 0.24 by Period 13. Actions to achieve the target will be discussed and agreed with both Principal Contractors during Period 10.

The frequency of service strikes fell during Period 9 for MUDFA but increased for Infracore compared to those recorded during the previous period. However, the total number of strikes for the 13 periods continues to climb. tie are selecting a number of significant strikes for further investigation. Each power service damaged will automatically be classed as "significant" and be investigated by tie.

There was a meeting held with the Health and Safety Executive on the 3rd of December. During the meeting the HSE expressed their concern with the lack of progress from CUS and BSC on Occupational Health Management. tie are facilitating a recovery plan with CUS and BSC and will address the lack progress made. A further meeting with the HSE is planned for April 2009.

All of the planned Health and Safety inspections / tours were achieved in Period 9 which is an increase on last period and has met the mandatory 100% target. Inspections carried out by Project Managers scored on average 78% during Period 9 against a target of 80%. Three inspections fell below compliance and are being addressed with Carillion.

6.2 Environment

There were no environmental incidents during Period 9. A potential issue arose with the application of CAR (Controlled Activities Regulations) licences by BSC to SEPA. This has

been addressed and BSC have met with SEPA and licences have been applied for where applicable. **tie** are monitoring the application of the licences.

6.3 Quality

Two audits have undertaken on a BSC proposed main contractors, Mackenzie Construction and Expanded. **tie** were present as an observer for both audits and will formally review BSC's audit report.

7 Stakeholder and communication

7.1 Stakeholder / communication strategy / plan

The Communications and Stakeholder Strategy is under review and will be refreshed in January 2009. A communications review was held on 1 December involving **tie** and the CEC communications team. The aim of this was to strengthen the integration between **tie** and CEC and to ensure a consistent communication message is being conveyed. As part of this, a series of Communication Groups have been created and attached is a diagram illustrating these groups.

7.2 Stakeholder / communication update

Our media team has handled various issues including: David Mackay's appointment as interim **tie** Chairman; the city centre embargo; Line 1b and coverage on the arrival of the tram rails.

The team has been working closely with stakeholders regarding the city centre embargo works plus works ongoing throughout the rest of the route. This has been achieved through regular notifications, face to face engagement and website updates.

Marketing materials produced this period have included articles to New Scottish Enlightenment and a double page spread in Tramways and Urban Transit magazine.

The new tram website is due to be launched in December 2008 and throughout this period the team have been focused on content management, business information requests, user group testing and technical trouble shooting.

The Schools Programme's activities have included: local primary school engagement; setting up a pen-pal scheme with the European School Agencies, visiting the Risk Factory with the intention to include tram risks as part of their ongoing school's programme; producing and distributing a health and safety fact sheet for schools and affiliated centres in January 2009.

The stakeholder team have been handling telephone and email requests for information including European students regarding engineering, design and interface challenges that the project has faced.

7.3 Communication and stakeholder action plan for next period

Communications will be sent to local businesses and residents regarding the post embargo city centre works; Princes Street infrastructure works; Leith Walk post embargo works – including track and utility; re-notification for Haymarket Phase 2. These works will also be supported by face to face engagement, fact sheets and website updates.

Information surgeries will also be held in January for the upcoming works in Princes Street. Media activity next period will be focused on infrastructure work in the city centre, specifically on Princes Street and Leith Walk, plus coverage on the tram mock up. Updates will be produced to support all key work areas, particularly for the infrastructure works on Princes Street and Leith Walk, plus Phase 2 of the utility works at Haymarket. The final launch of the new Edinburgh Trams website will take place in December 2008.

Appendix 'A' Detailed cost report

FY 08/09: Demand on TS 116.261

1: HEADLINE FINANCIAL COMMENTARY

PERIOD RESULTS:

Period is for Phase 1a only. See Section 3 of the TS report.

YTD RESULTS:

YTD is for Phase 1a only. See Section 3 of the TS report.

FULL YEAR FORECAST:

FY 0809 is for Phase 1a only. See Section 3 of the TS report.

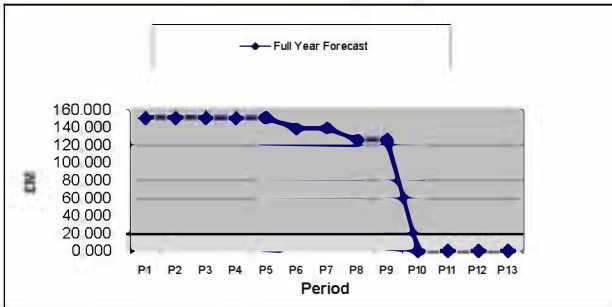
AFC:

AFC is for Phase 1a only. See Section 3 of the TS report.

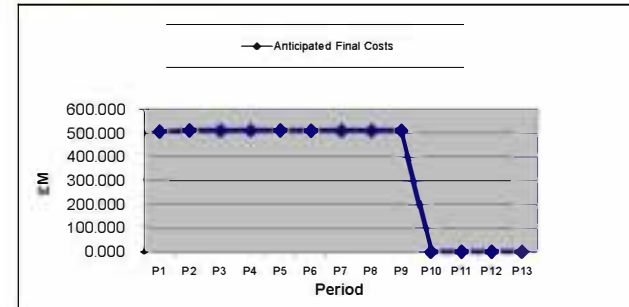
2: SUMMARY

	FY 08/09			FY 08/09			FY 08/09			COWD To Date	Costs To Go	Total AFC
	Actual	Budget	Variance	Actual	Budget	Variance	Forecast	Budget	Variance			
Total Project COWD	7.377	23.863	-16.487	66.039	108.406	-42.367	126.104	150.851	-24.747	196.080	315.938	512.017
Other Funding	0.654	1.970	-1.316	4.929	8.382	-3.453	9.844	30.852	-21.008	16.235	26.041	42.276
Demand on TS	6.722	21.893	-15.170	61.110	100.024	-38.914	116.261	120.000	-3.739	179.845	289.896	469.741

GRAPH 1 - Period Trend of Full Year Forecast (FY 08/09)



GRAPH 2 - Period Trend of AFC



3: RISK AND OPPORTUNITIES TO:

FULL YEAR FORECAST:

See Section 3 of the TS report

AFC:

See Section 3 of the TS report

4: ACCRUALS COMMENTARY

5: TOTAL PROJECT ELEMENT SPEND BREAKDOWN (TS & 3rd Party Costs)

PLANNED/EMERGING/FORECAST

Allocated in accordance with standard WBS. Values relevant to

business case or other agreed baseline date to be known as original estimate

Relevant Baseline date **FBC 20/12/2007**

	Estimated Cost			Actual Cost/Forecast			Variance
	Original Estimate	Escalated Original Estimate	Escalated Latest Estimate	Cost Of Work Done (COWD)	Forecast to Completion	Anticipated Final Costs (AFC)	
General Overall	28.233	28.233	28.847	22.929	5.918	28.847	0.000
Procurement Consultant	68.126	68.126	69.645	46.364	23.281	69.645	0.000
Design	23.683	23.683	26.828	25.292	1.535	26.828	0.000
Financial Issues/Funding/Procurement Strategy	2.258	2.258	2.630	2.134	0.496	2.630	0.000
Parliamentary Process/Approvals	0.329	0.329	0.319	0.319	0.000	0.319	0.000
Procurement Construction Works	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Construction Works	273.102	273.102	296.648	95.403	201.245	296.648	0.000
Testing & Commissioning	1.984	1.984	0.000	0.000	0.000	0.000	0.000
Handing Over & Service Operations	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NOP/Rail Projects Interface (Promoters View)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Interfacing Developments	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TRAMS, Vehicles (Edinburgh TRAMS Use Only)	51.370	51.370	58.152	3.639	54.513	58.152	0.000
Risk	48.974	48.974	28.950	0.000	28.950	28.950	0.000
Opportunity (Negative Value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OB/Contingency	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	498.060	498.060	512.017	196.080	315.938	512.017	0.000

6: Current Year 08/09 - Baseline Budget

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	Total
1 Total Project COWD - Budget	6.457	13.085	14.265	7.667	8.688	8.763	10.395	15.222	23.863	6.198	13.563	12.195	10.490	150.851
2 Other Funding - Budget	-0.036	1.080	1.178	0.633	0.717	0.724	0.858	1.257	1.970	0.512	1.120	10.348	10.490	30.852
3 Demand on TS - Budget	6.493	12.005	13.088	7.034	7.971	8.039	9.537	13.965	21.893	5.686	12.443	1.847	0.000	120.000

7: Current Year 08/09 - Actuals (Updated 4 weekly)

4 Total Project COWD + Revised Forecast	6.457	11.287	10.360	8.162	7.371	3.744	5.531	5.750	7.377	15.574	15.703	15.656	13.132	126.104
7 Other Funding + Revised Forecast	-0.036	0.932	0.855	0.674	0.609	0.309	0.457	0.475	0.654	1.228	1.297	1.293	1.097	9.844
10 Total Demand on TS	6.493	10.355	9.505	7.488	6.762	3.435	5.074	5.275	6.722	14.346	14.406	14.363	12.035	116.261

8: Variance tracker

12 Variance Line 1 to Line 4 - Project Actual vs Budget	0.000	-1.798	-3.905	0.495	-1.318	-5.018	-4.864	-9.472	-16.487	9.376	2.140	3.461	2.643	-24.747
13 Variance Line 2 to Line 7 - Oth Funding Actual vs Budget	0.000	-0.148	-0.322	0.041	-0.109	-0.414	-0.402	-0.782	-1.316	0.716	0.177	-9.055	-9.393	-21.008
14 Variance Line 3 to Line 10 - Demand on TS vs Budget	0.000	-1.650	-3.583	0.454	-1.209	-4.604	-4.463	-8.690	-15.170	8.660	1.963	12.516	12.035	-3.739

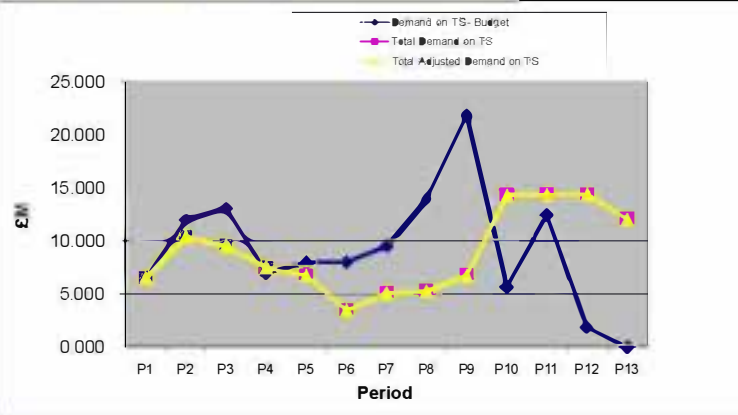
9: Next Year 09/10 - Forecast (Updated 4 weekly)

	Q1	Q2	Q3	Q4	Total	Financial Commentary - FY 09/10 Onwards
16 Total Project COWD	42.477	32.060	38.472	47.261	160.271	All costs are for Phase 1a only. See section 3 of the TS report.
19 Other Funding	3.510	2.647	3.177	3.902	13.236	
22 Total Demand on TS	38.967	29.413	35.296	43.359	147.035	

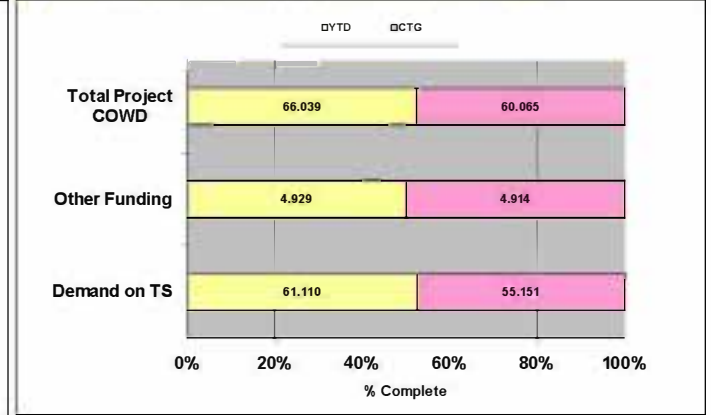
10: All Years (Escalated) (Updated 4 weekly)

	FY 03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FUTURE	TOTAL
24 Total Project COWD	0.000	3.093	10.664	30.431	85.852	126.104	160.271	80.113	15.489	0.000	0.000			512.017
27 Other Funding	0.000	0.000	1.000	0.019	10.287	9.844	13.236	6.615	1.276	0.000	0.000			42.276
30 Total Demand on TS	0.000	3.093	9.664	30.412	75.565	116.261	147.035	73.498	14.213	0.000	0.000	0.000	0.000	469.741

GRAPH 3 - Demand on TS: Actual/Budget Run Rate - Current Year FY 08/09



GRAPH 4 - Year To Date/ Costs To Go - % Complete - Current Year FY 08/09



11: Other Funding

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	Total
Budget (Current Year 08/09)														
CEC	-0.036	1.080	1.178	0.633	0.717	0.724	0.858	1.257	1.970	0.512	1.120	10.348	10.490	30.852
Other Funding Stream														0.000
Other Funding Stream														0.000
Other Funding Stream														0.000
Other Funding Stream														0.000
Total Budget Other Funding	-0.036	1.080	1.178	0.633	0.717	0.724	0.858	1.257	1.970	0.512	1.120	10.348	10.490	30.852
Actual (Current Year 08/09)														
CEC	-0.036	0.932	0.855	0.674	0.609	0.309	0.457	0.475	0.654	1.228	1.297	1.293	1.097	9.844
Other Funding Stream														0.000
Other Funding Stream														0.000
Other Funding Stream														0.000
Other Funding Stream														0.000
Total Actual Other Funding	-0.036	0.932	0.855	0.674	0.609	0.309	0.457	0.475	0.654	1.228	1.297	1.293	1.097	9.844

12: Promoter Full Year Forecast Run Rate

Period Trend of Full Year Forecast (Current Year 08/09)	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
Full Year Forecast	150.851	150.851	150.984	150.537	150.647	138.759	138.792	126.104	126.104				

13: Promoter AFC Run Rate

Period Trend of AFC	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
Anticipated Final Cost	508.017	512.017	512.017	512.017	512.017	512.017	512.017	512.017	512.017				

Appendix 'B' Change control register

(Register and other information as volunteered or requested from delivery organisation / promoter – There are none to report on at this point)

Appendix 'C' Programme information

To be sent separately to TS by CD:



- **Milestone Schedule Summary (progress against baseline)**
- **Full Detailed Time Schedule (progress against baseline)**
- **Critical Path**
- **12 Week Look Ahead Extract from Schedule**

Appendix 'D' Primary risk register

Period 9 - 2008/009 Primary Risk Register

Risk Description											
ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
139	Utilities diversion outline specification only from plans	Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated	G Barclay	High - 25-00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	30-Jan-09	A Hill
164	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; asbestos found in excavation for utilities diversion; unknown cellars and basements intrude into works area; other physical obstructions; other contaminated land	Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work.	Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	I Clark	High - 25-00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	30-Jan-09	A Hill
44	SDS contractor does not deliver the required prior approval consents in line with SDS V31	Late prior approval consents	Delay to programme with additional resource costs and delay to infraco. Impact upon risk balance.	D Sharp	High - 25-00		Evaluation of prior approval programme	Complete	Complete	31-Oct-08	D Sharp
							Hold fortnightly Roads Design Group	Complete	Complete	31-Dec-07	T Glazebrook
							Informal consultation prior to statutory consultation	On Programme	On Programme	31-Dec-08	T Glazebrook
							Integrate CEC into tie organisation/accomodation (office move)	Complete	Complete	4-Jun-07	T Glazebrook
							Weekly Meetings of Approvals Task Force	On Programme	On Programme	31-Dec-08	D Sharp
173	Uncertainty over extent of contaminated land on route	Tramway runs through area of previously unidentified contamination and material requires to be removed and replaced (dig and dump).	Increase in costs to remove material to special and other tip.	R Bell	High - 25-00		Issue containation and gi report to Infracco bidders	Complete	Complete	2-Mar-07	B Dawson
							tie to obtain ground investigation and contamination reports from SDS	Complete	Complete	30-Mar-07	A McGregor

Risk Description		ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
52	Political and/or Stakeholder objectives change or require design developments that constitute a change of scope; Planning Department requires scope over and above baseline scope in order to give approval (may be as a result of lack of agreement over interpretation of planning legal requirements).		Amendments to design scope from current baseline and functional specification.		Programme delay as a result of re-work; Programme delay due late receipt of change requirements and lack of resolution; Scope/cost creep (dealt with through change process); Project ultimately could become unaffordable.	D Sharp	High		Close working relationship with CEC and stakeholders	On Programme	On Programme	31-Jan-11	L Murphy
									Weekly critical issues meeting	On Programme	Complete	31-Jul-08	T Glazebrook
928	Major single safety incident (including a dangerous occurrence) during construction		Safety incident during construction		Delay (potentially critical) due to HSE investigation and rework. PR risk to tie and stakeholders.	S Clark	High		All Site Staff to get CSCS or equivalent	On Programme	On Programme	31-Jan-11	C McLauchlan
									Develop and Implement Incident Management Processes	Complete	Complete	27-Apr-07	T Condie
									HSQE Audits, site inspections and Management Safety Tours to be carried out	On Programme	On Programme	31-Dec-10	T Condie
									Safety Induction to be carried out for all site staff	On Programme	On Programme	31-Dec-10	T Condie
931	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; known redundant utilities; unknown live utilities; unknown redundant utilities.		Unknown or abandoned assets impacts scope of Infraco work		Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	D Sharp	High		Site Supervisors to be appointed by tie	Complete	Complete	28-Feb-07	S Clark
									GPR surveys in areas where there are likely to be services	Complete	Complete	1-Apr-07	T Glazebrook
									MUDFA trial holes to verify GPR surveys	On Programme	On Programme	31-Jan-09	P Douglas
977	Legal challenge. Extension of statutory consultation process. Large number of objections. TRO process is subject to a public hearing process.		Delay in achievement of TRO(s) due to a large number of public objections and/or a legal challenge to using a TTR to construct Infraco.		Requirement to start construction using TTRs	K Rimmer	High		Use of TTRs to undertake construction of permanent works in advance of permanent TROs being approved.	On Programme	On Programme	30-Jan-11	K Rimmer

Risk Description		ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
271	Inadequate quality of submission of approval. Partial submission of package. Programme compression. Lack of CEC resources.	Failure to process prior approvals applications within 8 weeks	Delay and disruption to Infraco programme	D Sharp			Agree approvals submission arrangements with CEC to align with SDS design programme and procurement programme.	Complete	Complete	31-Mar-08	T Glazebrook		
							Assure the quality and timing of submissions	On Programme	On Programme	31-Dec-08	D Sharp		
							Final agreement to be approved by Roads Authority, CEC Promoter, CEC in-house legal and tie	Complete	Complete	28-Feb-07	T Craggs		
							Finalise alignments and gain agreement from CEC	Complete	Complete	29-Dec-06	T Craggs		
							Weekly meetings of Approvals Task Force	On Programme	On Programme	31-Dec-08	D Sharp		
Where appropriate increase case officer resource to cope with programme compression	Complete	Complete	31-Oct-08	D Fraser									
1033	Failure of Infraco to mobilise in time to commence work in line with programme.	Delay to programme. Cost overruns. Negative publicity. Criticism from stakeholders	S Bell			Continued focus at Infraco progress meetings as well as programme workshops to mitigate the impacts of any delay	On Programme	On Programme	Complete	S Bell			
						Implementation of Advanced Works programme in order to mitigate potential future issues during construction	On Programme	On Programme	Complete	R Bell			
						Infraco given instructions to proceed at risk	On Programme	On Programme	Complete	R Bell			
						Pressue from Approvals Task Force to ensure Technical and Prior Approvals are delivered	On Programme	On Programme	31-Dec-08	D Sharp			

Risk Description											
ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
1076	Utilities do not finish diversion works prior to Tramworks commencing work	Tramworks are unable to commence work or work is delayed/disrupted	Delay and disruption claims from BSC.	R Bell	High - 18.00		Tramworks PMs attendance at Traffic Management meetings. Weekly meetings between tie Tramworks and Utilities PMs. 4-weekly tie Tramworks/Utilities management meetings. Identification of programme clashes between Tramworks and Utilities works tracked	N/A	On Programme	31-Jul-09	R Bell
1077	Lack of visibility of design changes between November 2007 and May 2008	Tramworks price based on a design which may have been altered. Unclear who authorised design change.		R Bell	High - 11.00		Establish a process which will act as a control mechanism for design changes. (If one exists already then ensure process is complied with)	N/A	On Programme	31-Dec-08	T Glazebrook
1078	Lack of effective engagement from BSC leaders towards tie and third parties (NR, BAA, Forth Ports) and the Tram project as a whole.	Failure of partnership approach between tie and BSC. Failure to maintain effective third party relationships with key third parties.		R Bell	High - 11.00		Engagement between tie and BSC at different levels. Regular review of BSC management of third parties as per Employers Requirements.	N/A	On Programme	31-Dec-08	R Bell
1079	Failure of BSC to effectively resource up for project	Lack of competent resources within BSC to safely and effectively deliver Tram project	Delay to programme and additional cost	R Bell	High - 11.00		Ongoing review of BSC resources and formal review at 4-weekly meeting. Objectives to be set for BSC at monthly meetings in order to monitor progress.	N/A	On Programme	31-Dec-08	R Bell
1080	TPB have agreed a 5 week embargo on Leith Walk from 12 Dec 08 to 19 Jan 09.	Leith Walk embargo causes delay to construction and utility diversion works.	Delay to programme, extension of time claim. Additional costs.	R Bell	High - 11.00		Minimise contractors exposure by identifying other work scopes outside the embargo area.	N/A	On Programme	31-Jan-09	R Bell
1081	Traffic modelling has shown that one lane needs to be kept open on Princes Street during works	Princes Street works take longer than programmed due to one lane being kept open.	Delay to programme, extension of time claim. Additional costs.	R Bell	High - 11.00		Production of robust programme to mitigate losses	N/A	On Programme	5-Jan-09	R Bell

Appendix 'E' Resource information

(Updated Organisation Charts, Notifying Changes of Key Personnel –
N/A)