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Edinburgh Tram Project  
Full Progress Report No. 11  
22<sup>nd</sup> July to 18<sup>th</sup> August 2012  
**FINAL**

CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT  
August 12



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Rev	Originator	Approved	Date
1	Shirley-Anne Collin	Julian Weatherley	29-08-2012
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## **1 Executive Summary**

There were 15 incidents recorded during the period. One of these has been identified as Serious / Significant. This related to a mini excavator overturning in Princes Street and is RIDDOR reportable.

Infraco have produced a risk assessment in relation to soil removed from Baird Drive. This is currently under review by SEPA.

Eleven weeks of the 22 week time bank have been confirmed as being eroded as a result of disruption to utilities works in Shandwick Place and the Waverley end of Princes Street.

Sectional completion dates for Section B, C and D are forecast for the 5<sup>th</sup> of March 2013, 31<sup>st</sup> of January 2014 and the 1<sup>st</sup> of May 2014 respectively. The critical path currently runs through Shandwick Place.

Turner & Townsend has presented to CEC the potential for further programme improvements achieved through changes to Employer's Requirements and the provision of additional resources.

Following completion of the resolution of a number of legacy carriageway and utility issues within Shandwick Place, Turner & Townsend envisage handing the north and south carriageways back to Infraco on the 27<sup>th</sup> of August 2012 and the 9<sup>th</sup> of September 2012 respectively.

Crummock and McNicholas have commenced enabling works within York Place on the 16<sup>th</sup> of July and works are progressing ahead of programme. In response to CEC's request, an option to complete the York Place works whilst maintaining access to the bus station is being considered and its input quantified.

A number of Scottish Water legacy issues remain which cannot be addressed without significant intrusive reconstruction works. Some of these may only be resolved through wider commercial discussions with Scottish Water.

A McNicholas advance works team has been established to prove and construct below ground civil works in the location of Type 2 conflicts. These works have been de-scoped from BBS.

Infraco are now progressing civil and track works between Haymarket and St Andrews Square within all On Street areas with the civils works relating to the Princes Street "plug" anticipated to be complete by early September 2012. Tram box excavation has commenced within the crescents area of Shandwick Place.

Bridge beams have been installed at Water of Leith, Balgreen Road and South Gyle Access Bridge. This completes all bridge beam lifts on the project.

Early works have commenced on the Edinburgh Gateway. It is anticipated that an instruction to progress with the main works will be issued by the 27<sup>th</sup> of August.

Authority levels have been increased in relation to the contractor's "permit to dig" arrangements following a number of recent Scottish Water service strikes.



Discussions are ongoing between CEC and the airport in relation to the resolution of issues at Eastfield Avenue Crossing. Turner & Townsend await CEC's instruction on the way forward.

Twenty one trams have now been delivered to the Gogar depot with seventeen having completed routine testing and commissioning.

The Infraco saving resulting from the Infraco de-scope items (e.g. type 2 civils, VE relating to setts) has been determined in part by the application of prelims and overhead. Position papers on these elements have been submitted to the Independent Certifier for an opinion. Infraco have requested contract variation prelims and overhead on the additions at 34% and 10% on the omissions.

Off-street changes relating from unidentified utilities, additional Scottish Water requirements and stakeholder issues (e.g. Scotrail and BAA) have occurred during the period.

Infraco have requested an instruction for the cost share relating to the 22 weeks programme saving resulting from the VE traffic management arrangements. In February Infraco insisted that an instruction was not required and it was agreed that the share of savings would be dependent upon the outcome of the V.E. programme initiative. Infraco's position is now that they require an instruction to be issued in the sum of £6.45M. Turner & Townsend have advised that a meeting is required with BBS to work through examples of how the intent of the programme V.E. initiative would turn out, given the various scenarios (e.g. part erosion of 22 weeks by CEC requiring utilities to be diverted, part erosion by BBS and part saving. Infraco had previously proposed that the share of savings did not require an instruction, however w/c 6<sup>th</sup> of August Infraco made a request that an instruction was issued. Turner & Townsend have raised concerns to CEC over issuing an instruction for Infraco's share of the original saving when neither the actual saving nor the mechanism for calculating prelims during 22 week period has been confirmed. Such an instruction would be outside the provisions of the BBS contract and Turner & Townsend's delegated authority. Written instruction from CEC would therefore be required prior to issue. Discussions are ongoing with CEC.

Turner & Townsend has advised that the commercial principles for the 22 week drawdown, the deferment of tram stop installations and the programme completion initiative require clarification to prevent an adverse impact on CEC's commercial interests.



## 2 Health, Safety & Environment

During the last period Turner & Townsend have been working to implement a number of initiatives regarding the Health and Safety on the project. These have comprised:

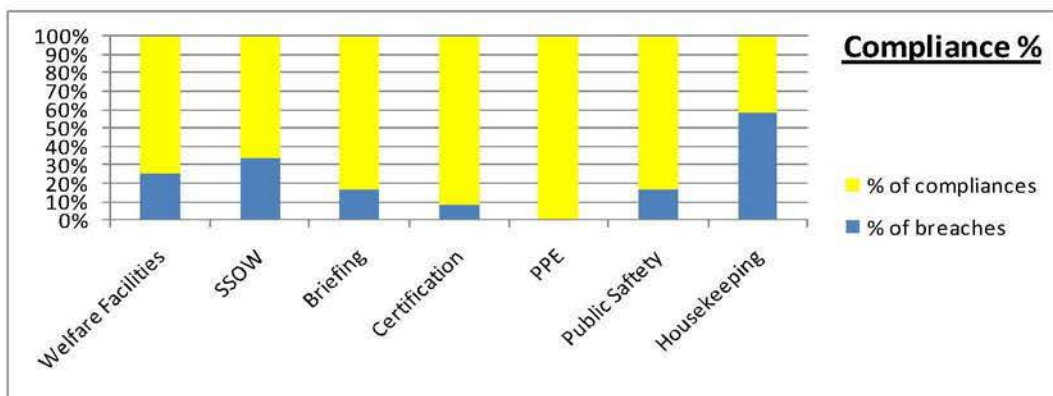
- Aligning the monitoring of works to provide the information required for the Project Health & Safety leading indicators.
- Undertaking targeted monitoring; to review the housekeeping on sites, focusing on general site issues and storage of materials.
- Progressing the recruitment of additional support to the health and safety team to provide assistance in undertaking monitoring of and positive intervention to the contractors' work sites and the close out of the actions that are identified within the monitoring

### 2.1 Management of Health & Safety

Joint monitoring between Turner & Townsend and the Principal Contractors has continued to progress well during this period.

Monitoring of the leading indicators developed by Turner & Townsend as an output from the 'Think before you act' forum has continued.

The results of this periods monitoring of leading indicators is identified below



The joint monitoring is identifying a number of areas which would benefit from further on-site support to the monitoring process. An exercise is currently ongoing to recruit additional resource to undertake inspections of construction worksites jointly with the contractor and to monitor the implementation of the actions identified by the contractors / project team to address the issues.

Bilfinger Berger – Siemens held their monthly Occupational Health & Safety Meeting on the 14<sup>th</sup> of August 2012 which was attended by Turner & Townsend. Agenda items for the meeting included:

**Traffic Management:**

- A presentation by Class 1 to address the issues regarding accessibility to traffic management schemes by a range of different users e.g. visually impaired, wheelchair users, cyclists and horse riders, together with examples of good practice. It was emphasised that traffic management had been designed and contractors should not amend the traffic management on site.

Discussion took place regarding the requirements for vehicles entering construction sites with regard to markings etc.

**Occupational health:**

- The Occupational Nurse for the project provided a review of the requirements for health surveillance and how it should be utilised to identify trends and issues within the work force.
- An update was provided regarding the visit by the Health and Safety Executive scheduled for the 25<sup>th</sup> of September as part of their project to assess the implementation of occupational health on construction projects.

**Workforce consultation:**

- It was reported that the recent workforce consultation meeting had been a beneficial event. Participation should be encouraged from the subcontractors to Siemens e.g. the contractors installing the trackwork.

**Stand Down for Safety:**

- McNicholas provided feedback on the stand down for safety event that had been held on 14<sup>th</sup> June 2012. Details were provided of the sessions that were held. One of the sessions comprised a safety survey. The responses identified that almost half the respondents believe that 'people' don't work safely unless supervised or will take risks at work.

**CoCP results / Monitoring Leading Indicators:**

- Turner & Townsend presented a review of the results of the CoCP inspections that had been undertaken in the last period. Turner & Townsend presented the chart identifying the monitoring of the leading indicators and explained the process by which the results of the joint inspections identified as leading indicators were highlighted and issues and trends monitored.

**First aid:**

- Bilfinger Berger – Siemens advised that in a number of their inspections the persons on site did not know who the first aider was.

**Protection of manholes:**

- The methods of protecting open manholes during construction was discussed.



**Working at height:**

- The issues regarding working at height and the use of running lines was discussed.

**2.2 Incident reporting**

During the last period there were 15 incidents on the Edinburgh Tram Project. There was one incident that was identified as serious / significant – this comprised the dangerous occurrence that was reported under RIDDOR relating to the overturning of a mini excavator. This incident was reported under the previous period report (period 4 - report No 10) due to its significance, but is also reported in this report as it actually occurred within P5 reporting period. The other incidents comprised two incidents involving members of the public, six incidents involving service damage, three environmental incidents, two minor injuries and one unsafe condition.

- The two incidents which involved members of the public comprised one incident where a pedestrian slipped on a temporary access bridge in Shandwick Place (subsequent investigation identified that an oily fluid had been spread along the pavement and over the bridge) and one incident where a number of heras fencing panels fell on a pedestrian.
- The six incidents which involved service damage comprised one to a Scottish Water main, two to comms (one overhead cable, one buried cable), one to a gas main and two to street-lighting. None of the incidents resulted in complaints due to disruption of services.
- Following the meetings held between Scottish Water, Bilfinger Berger, McNicholas, CEC and Turner & Townsend a report has been issued to Scottish Water identifying the proposed actions to strengthen agreed protocols (e.g. piling, access transfer certificate and technical query) relating to work affecting or adjacent to Scottish Water assets. A key action relates to the issuing responsibilities for the permit to dig consents. Following comments from Scottish Water regarding the status of closure of incidents a clear differentiation has been made between the close out of the incident reports and the agreement and completion of the works on site.
- Reports have been exchanged between Turner & Townsend and Scottish Water in relation to the Grosvenor Street Sewer collapse. The responsibility for the collapse of the sewer has still not been agreed. Colin Smith is progressing the issue in discussions with Scottish Water on behalf of CEC.
- A report has been received from McNicholas regarding the overturning of the mini excavator in Princes Street. This report has been reviewed by Turner & Townsend and comments discussed with McNicholas. The investigation of the incident has resulted in a major review of the Safety Management System being implemented on the Edinburgh Tram Project by McNicholas, particularly with reference to the level of involvement of management in the planning of work activities and the type of documentation that was being used. Reviews of the implementation of the actions are ongoing.



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**Incident Table:**

Incidents reported within this period:

1 Significant Incidents

Date	Location	Detail	Contractor	Classification
23/07/2012	St Andrew Street	Mini excavator being used as lifting equipment to transport a manhole biscuit overturned.	McNicholas	Dangerous occurrence
15/08/2012	Shandwick Place	Member of the public slipped on the temporary bridge walkway at Shandwick Place. Paramedics attended to the injured party.	Lagan Construction	Member of the public
15/08/2012	Shandwick Place	3 heras fencing panels fell onto MOP causing damage to jacket and minor injury to arm.	McNicholas	Member of the public
22/07/2012	Coates crescent	McNicholas were excavating a section of foamed concrete in Coates Crescent when they damaged a 25mm gas supply to a hostel.	McNicholas	Service damage
23/07/2012	Shandwick Place	Whilst breaking out foamed concrete a piece broke off damaging a water service.	McNicholas	Service damage
26/07/2012	York Place	Damage to a Virgin Media cable as a result of a duct being lifted by mechanical plant.	Crummock	Service damage
02/08/2012	Roseburn Street	Overhead BT cable damaged by telehandler.	Expanded	Service damage
04/08/2012	South Gyle	Damage to street lighting column at South Gyle access bridge due to installation of bridge beams	Expanded	Service damage
09/08/2012	York Place	Damage to street lighting cable during excavation.	Crummock	Service damage
30/07/2012	Shandwick Place	Report via CEC on-call that generator had been left running overnight.	Siemens	Environmental
03/08/2012	Edinburgh airport	Hydraulic leak on road sweeper resulted in hydraulic fluid being spilt on road.	Farrans	Environmental
05/08/2012	York Place	Metal Plate has moved on the bus lane in York Place and is causing a noise, keeping residents awake.	McNicholas	Environmental
27/07/2012	Balburnie Place	Individual stepped back into manhole injuring leg.	Grahams	Injury
01/08/2012	York Place	Breaking of cast iron pipe resulted in fragments of pipe being ejected and causing injury to person.	Crummock	Injury
05/08/2012	York Place	Failure of road surface on eastbound lane out-with work site.	McNicholas	Unsafe condition

### **2.3 Safety Initiatives**

A review of housekeeping on the sites has been the focus of review during this period. The results are included within the Deliver the Tram Safety Report which is included within the Health & Safety Dashboard (See Appendix 2).

The following safety initiatives will be targeted in the next period:

- Management of lifting operations.
- Vehicle movements in and around work sites.

The Bilfinger Berger Positive Intervention process is now being implemented. Positive highlighting of unsafe conditions is being identified as a value.

### **2.4 CDM Regulations**

The CDM process has been implemented for the enabling works at York Place which are being undertaken by Crummock. This has included:

- Review of site access and traffic management arrangements.
- Review of the further information requested for the Crummock construction phase plan
- Review of Crummock dedicated welfare arrangements.

### **2.5 Environmental**

Two environmental incidents were reported during period. One relating to noise from a generator at Coates Crescent; now being switched off in the evening. The 2<sup>nd</sup> incident related to a hydraulic oil spill from a road sweeper at the Airport. BBS have been asked to supply a more detailed report, specifically relating to the use of hydrants at the airport and the discharge of water from the road sweeper.

An incident investigation has been undertaken by BBS and the results reviewed by Turner & Townsend regarding the incident relating to a hydraulic oil spill by Grahams adjacent to Murrayfield Stadium.

The Ocean Terminal Monument has now been reinstated in its new location at Ocean terminal.

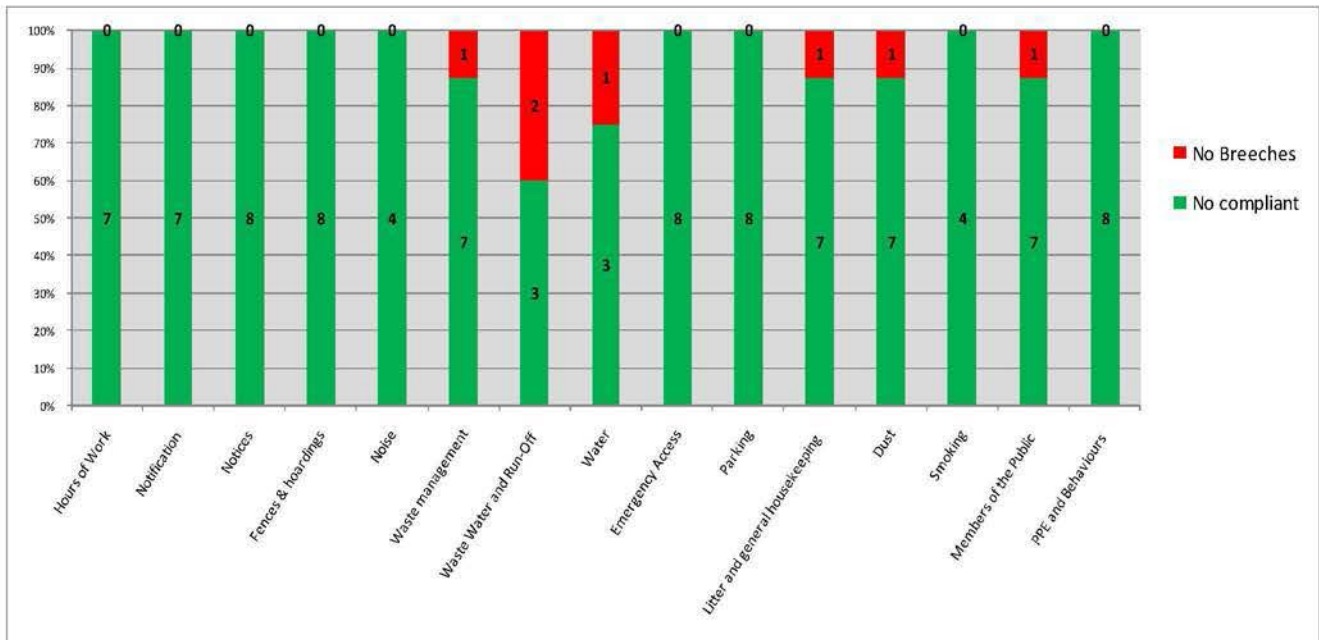
The Conan Doyle monument has been reinstated, this action was completed on Monday 20<sup>th</sup> August 2012, allowing McNicholas to commence public realm reinstatement works in the area.

An environmental inspection was carried out with BBS on the 8<sup>th</sup> of August 2012. The inspection covered all works from St Andrews Square to Murrayfield. No major issues identified however minor issues included general site tidiness, use of spill kits and awareness of the potential for hydraulic oil spill.

2.6 CoCP

CoCP compliance was recorded at 93% during the Period. The results of the CoCP monitoring have been passed to CEC Communication Team to be uploaded to the project web site. Details of the breaches are included within the Deliver the Tram Safety report included within Appendix 2.

% Compliance





## **3 Programme**

### **3.1 Progress this Period**

Progress remains steady across the majority of the length of the route. Of note has been the commencement of the electrical and mechanical works phase. This has occurred along the revenue track between the Airport and Depot as well as between Balgreen Road and Edinburgh Park Station.

Delays attributable to utility clashes at Shandwick Place, St Andrews St and South St Andrews Street / Waverley Junction continue to be recorded and impacts agreed upon each period. On the 25<sup>th</sup> of June 2012 the collapsed sewer remedial works were completed at Grosvenor Street and the site was handed back to Infraco.

The advance works at Cathedral Lane have been completed and the area is now ready for Infraco to commence works on the sub station.

Good progress has been observed on the Murrayfield Viaduct and Balgreen Road Bridge. However, the net result along the corridor has been a slip, of 3 days, to the overall completion due to poor progress of ground improvement activities to the Murrayfield Retaining Wall.

Progress at the Gateway has seen an improvement in its sectional completion date, of 20 days. This has contributed to further improvement in the forecast Section C & D dates.

The forecast completion for Section B has remained steady, continuing to be forecasted for the 5<sup>th</sup> of March 2013, ahead of the contractual date. This has been achieved through improved detail for Section B Testing and Commissioning and steady progress in period.

As a result of the Cost Engineering initiatives implemented in early 2012 and the implementation of the York Place Radical Programme, both the Section C & D dates continue to be forecast earlier than the contractual dates. Currently, the Section C & D dates are being forecast as 31<sup>st</sup> of January 2014 and the 1<sup>st</sup> May 2014 respectively.

### **3.2 22 Week "Time Bank"**

Based on Infraco's programme update contained within their period 5-4 progress report, and subsequent agreement in the 'Planners Forum', 11 weeks of the 22 week cost engineering programme saving has been eroded as a result of utilities works and the re-design of the On Street drainage.

This is a result of a movement of 0 weeks in the latest drawdown reconciliation, attributable to good progress on the critical activities (Shandwick Place) in the period.

With the majority of utility conflicts now resolved, real progress is being seen in most On Street areas. There is evidence to suggest erosion of the 22 weeks is beginning to bottom out and that there may be opportunities for some improvement to the draw down may occur in the next few periods.

With respect to the individual areas, it was agreed that 0 weeks slippage occurred in Haymarket and Shandwick Place, 2 weeks in Waverley Junction (the majority accepted by Infraco as slow mobilisation) and 4 weeks in St Andrews Street. The movement at St Andrews Street is

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attributable to construction sequencing that was not identified during the Cost Engineering exercise, requiring Waverley Junction to be completed first. This has been further compounded by traffic management issues, which BBS had not factored in their schedule, to retain the RBS access point throughout the works. Although it is believed that St Andrews Street will not become critical, and the delay is not due to Turner & Townsend works, it is being closely monitored.

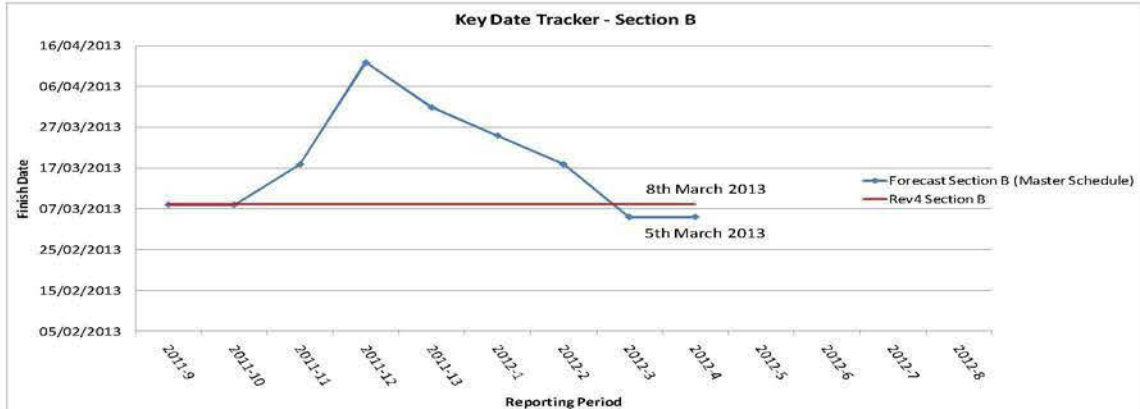
There is a risk to the Draw Down if the changes which restrict the York Place closure are confirmed (section 3.4.1). This would switch the critical works for On-Street from Shandwick Place to York Place. Works are ongoing to quantify the scale of the impact and will be reported upon in due course.

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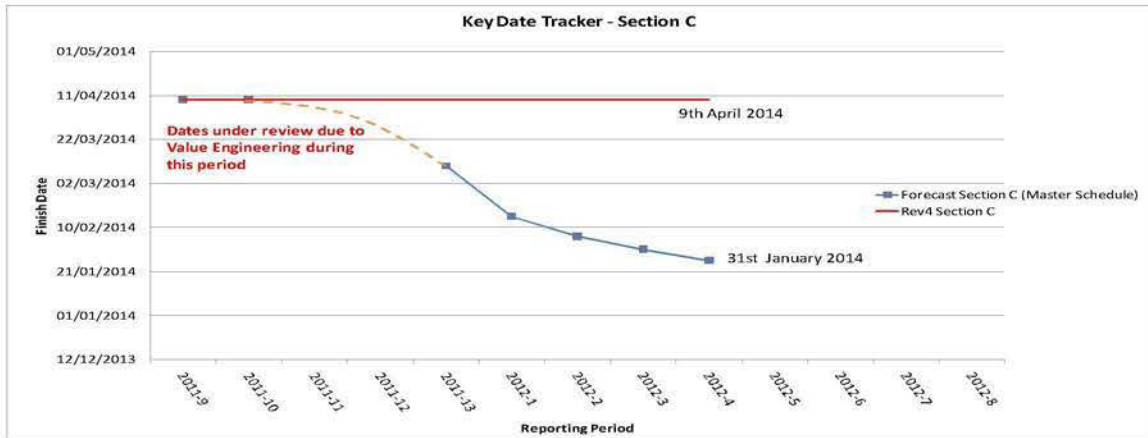
### 3.3 Key Dates Tracker

The charts below track the forecast dates (from the Master Schedule) for the Sectional Completion milestones against the contractual dates and their movement throughout the project lifecycle to date.

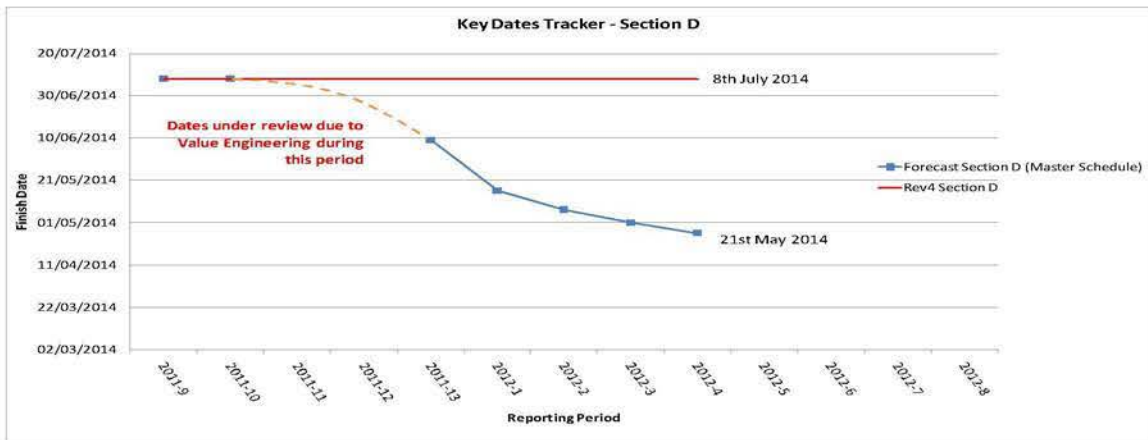
#### Section B; Test Track Complete



#### Section C; All Construction Complete (including T1 & T2 testing)



#### Section D; Open for Revenue





### 3.4 Programme Structure

#### 3.4.1 York Place 'Radical Programme'

Option 2; of the York Place Radical Programme has been implemented and works have commenced and the Master schedule has been updated to reflect the changes implemented.

As a result of CEC consultation with the stakeholder the project is exploring the potential to deliver the York Place works whilst keeping the bus station open. The potential impact is currently being determined.

#### 3.4.2 Critical Path (Master Schedule)

It is to be noted that the current forecast completion dates for Section B, C and D are in advance of the contractual dates, with an overall saving of more than 2 months to the schedule. The Critical Path referred to below, relates to the 'Longest Path' through the programme which would adversely affect the currently forecast end date if delayed.

Following the inclusion of the York Place 'Radical Programme' within the Master Programme, and the 'in-period' improvement to the forecast Gateway completion, the Critical Path now runs through:

**On Street:** Section 1D (Shandwick Place) / Section 1D E&M Installations

Very good progress is currently evident in the Shandwick Place area and there is a possibility in future periods that the critical path could switch to one of the alternate float paths below:

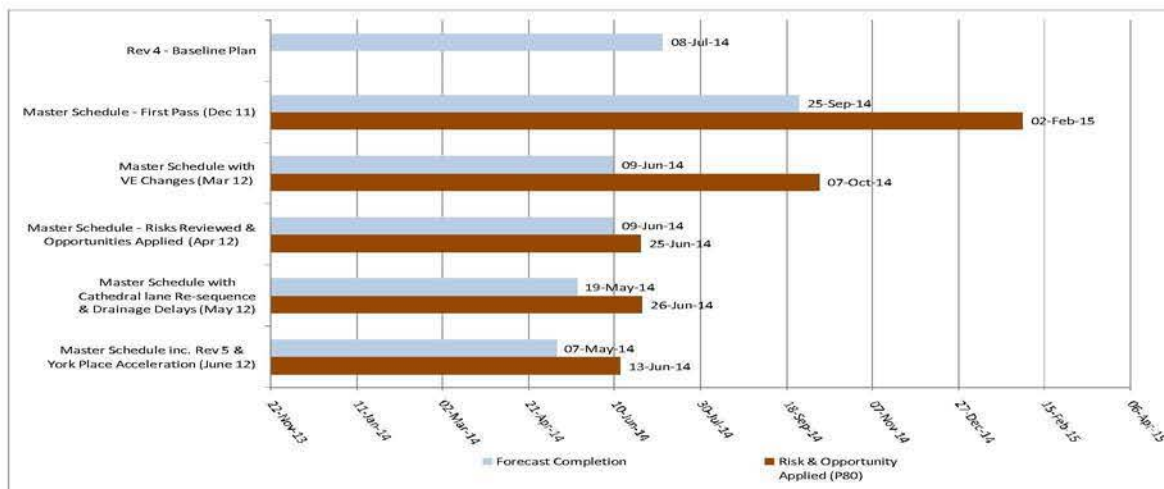
- 1 **Off Street:** Section 5C (Edinburgh Gateway) / Section 5A Testing & Commissioning
- 2 **Off Street:** Section 5A (Roseburn Junction to Balgreen Road)
- 3 **On Street:** Section 1C (Waverley Junction) / (York Place utilities / main works)

Turner & Townsend presented the opportunity for an On Street and Off Street programme improvement within a presentation to CEC on the 25<sup>th</sup> of July 2012. Further development of this thinking will take place prior to agreeing the next iteration of the construction programme in September 2012. Further works to validate the possibility of the discussed programme savings has been carried out, and a follow up meeting is scheduled for the 29<sup>th</sup> of August 2012.

## 4 Risk

### 4.1 QSRA Tracker

The QSRA remains unchanged for this period. The next update is forecast for September 2012. The chart below shows the forecast dates (before risks are included) and the 'impacted' dates at each iteration:



### 4.2 Project Risk update

Turner & Townsend undertook a review of the project risk register with CEC on 23 July 2012, as a result of which, a number of amendments were identified; see table below.

Each period the risk register is reviewed and risks are assessed on an ongoing basis, with a general trend of reduction of risks as the team continually mitigate against the potential impact.

At the last 4 weekly risk review the following risks were positively reduced or closed out. No new risks were identified in the period.

Risk	Mitigations/ Reasons
Tram (CAF)/Infrastructure (BBS) integration risk	Impacts reduced due to robust programme and time for commissioning
Late 3rd party claims for utility/property damages from works	Not thought to be as high cost impact as previously thought based on claims to date
Sub suppliers warranties expire during the maintenance period and Siemens may have legitimate claim due to delays	Closed out as warranty now agreed
Insufficient storage and associated security	Closed out as storage issues have been resolved and all materials have been received
NR disputes and compensation or suspension of works due NR Haymarket station project interface issues at station car park.	Closed out as work now advanced enough that issues are no longer anticipated

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## 5 Commercial

### 5.1 Cost Summary

Amount (£K)	Contract Sum	Approved Change	Revised Contract Sum
<b>Totals</b>	<b>479,660</b>	<b>13,716</b>	<b>493,376</b>
Change in Progress			6,735
Anticipated Change			6,781
Contributions			-8,365
<b>Forecast Change / Contributions</b>			<b>5,151</b>
<b>Forecast Total</b>			<b>498,527</b>
Risks (draft QCRA discussed with CEC, updates needed on key risks before formal issue)			4,500
Opportunities (refer opportunities section below)			4,500
<b>Risks &amp; Opportunities</b>			<b>4,500</b>
<b>Revised Forecast</b>			<b>503,027</b>
Budget			<b>500,154</b>

### 5.2 Movement from previous period

The overall forecast has **increased** by £363k in the period. The principal movements are identified below.

The Infracore contract forecast has **increased** by £60k from the previous forecast. Significant changes include:

- The forecast cost of the revised arrangements for the water main crossing at Lochside Avenue has **increased** the forecast by £120k.
- The forecast for TM associated with the early closure of York Place has **increased** the forecast by £240k. This item is included as an early warning as BBS have not yet confirmed that this work exceeds the contract scope and have not provided any details of the cost components. We have queried this and their contractual entitlement.



- The forecast associated with de-scoped works for the type 2 utility conflicts has **reduced** the forecast by £200k, principally as a consequence of traffic sign and street lighting work transferred to McNicholas.
- The forecast for Princes Street Outstanding works has **reduced** by £47k (this represents the balance between the estimate for road/footway repairs beyond the scope of the snagging with the actual costs).
- The forecast for engineering support from BBS associated with Cathedral Lane McNicholas ducting and drainage work has **reduced** by £55k.

The Utility forecast has **increased** by £803k in the period. Significant changes from the previous period's report include:

- Reforecast of costs associated with traffic sign bases, street lighting bases and all associated ducting.
- Removal of foam concrete from Shandwick Place to facilitate replacement of lead water supplies which is part of required legacy works
- Installation of gullies, previously part of Infraco's scope in On Street areas.
- Additional Scottish Water legacy works in Princes Street Gardens.

The risk allowance has **reduced** by £500k during the period. This is based on the latest outputs from the Quantitative Cost Risk Assessment (QCRA) and reflects the expected transfer of risk allowances into realised risks over time. The QCRA will be updated in the coming period to provide a revised forecast based upon work instructed and risk remaining.

### **5.3 Cost Summary**

Approved change has increased by £4,834k to £13,716k. This is mainly caused by the approval of the change from Rev 3A to Rev 4 programme of £4,541k which represents the delay to signing in September 2011 and the impact to the completion date in May to 8<sup>th</sup> July 2014. Other items include £286k for the most recent on street works estimate. A detailed summary is provided in the Approved Changes section of the report below. It is noted that although the change for the move from Rev 4 to Rev 4c programme has been approved as the Independent Certifier has issued the opinion paper, we are continuing to seek further backup from BBS to support this change principally in relation to the costs associated with the period at the end of the programme which is also influenced by other programme initiatives.

A meeting was held with the CEC project team on the 23<sup>rd</sup> of July to review the QCRA/QSRA. The probability and impact of risks were discussed and amended where required. Updates are required on the risks associated with Type 2 utilities (traffic signal poles and traffic signs etc), Scottish Water legacy items and additional scope not defined or costed (this risk covers ongoing Pricing Assumptions Variations on the on-street work and estimating tolerance for items excluded from the Contract Price such as floating track slab, cathedral lane substation and York Place terminal point, but an estimate allowance is included in the cost report).

The Leith Walk legacy works remain included in the cost report this period. CEC have requested that we report these separately. We will confirm with CEC the budget and anticipated final costs that will be removed and impact on the overall budget and anticipated final cost.

#### **5.4 Key Commercial Issues**

The following are the most significant commercial issues that are currently being reviewed between parties:

- 22 week value engineering saving: It was agreed with BBS that an instruction would not be issued for the financial adjustment associated with the reduction in prelims and apportionment client and contractor. The original basis of this VE opportunity was that both parties would share the savings generated by a 22 week reduction in the programme brought about by removing traffic management constraints, embargoes and resource constraints from the programme. However, the parties disagree over the principles to be applied when the 22 weeks are eroded. BBS maintain that they are entitled to the full value of their saving when erosion is caused by Client activities e.g. utility diversions. Our understanding is that the shared saving would be adjusted to reflect the final time saving achieved. There is potential risk to the forecast of £6.46m if all 22 weeks are eroded. The current timebank certificate indicates a time erosion of 11 weeks. It has been agreed that a meeting is required with BBS and CEC to review the outcomes from differing programme out-turns.
- Mark-ups on scope deductions: BBS have argued that contract mark-ups should not be applied to scope deductions, even where they are offset by scope additions. An example is where the scope of the value engineering of the setted areas On-Street has resulted in a reduction in direct costs compared to the contract price. However by applying the contract variation mark up at 34% to the revised scope and BBS's proposed mark up at 10% to the original contract work results in extra costs. The contract does not support this position. We have suggested a compromise which allows a reduced mark-up on de-scoped work only where there is no offsetting addition to scope. Positions have been submitted to the Independent Certifier and we are awaiting an opinion. This is now urgent as amounts need to be agreed to comply with agreement of the on street works estimate.
- Claims: although we have received no official notification, Infracore have indicated that there may be claims submitted for loss of productivity in On Street sections of work and by SDS for a 25% management fee. With regards to the loss of productivity, Schedule Part 45 does not appear to allow for such events as all additional costs are included in the period end On Street Works Estimate. Regarding SDS's management fee, BBS intend to apply for this in the final estimate proposal for Edinburgh Gateway and they claim that this has been agreed with the Independent Certifier. We have suggested that the contractual justification is confirmed and that amount and scope is clarified in detail.
- Off Street Utilities: BBS maintain that certain off street utilities are excluded from their price. This is based on pre settlement agreement discussions as there is no explicit exclusion in the settlement agreement. Position papers have been submitted and we are awaiting the Independent Certifier's Opinion.

These issues were discussed at the Valuation meetings and it has been agreed that matters should be resolved where possible in advance of the meetings and where there is a difference of



view the matters will be resolved at the Valuation meeting. In the event that the issue cannot be resolved at the meetings then the Independent Certifier will issue an Opinion Paper through an Appendix to the meeting minutes.

**5.5 Infraco (including Utility drawdown's and scope changes)**

**5.5.1 Approved Changes (Movement in the Period)**

The changes approved this period at the CEC/Turner & Townsend weekly change meetings are provided below.

<b>Approved Change</b>	<b>Amount (£K)</b>
Previous approved change	8,882
tNC 539: System Wide - Delay in signing - impact on commencement and completion	4,541
tNC 553: SDS to provide the services of Matt Fell until August 2012	16 *
tNC 555: Haymarket - OLE 196B design revision to avoid main sewer	0
tNC 557: Haymarket 1 - OLE Base Relocations (Design mods)	0
tNC 571: Hope Street Junction Design	12
tNC 587: Revise design for amendments to setts areas and specification	16
tNC 613: Temporary Bus Station at St Andrew Square/Waterloo Place - design	-50 **
tNC 620: Airport Tram Stop Design	19
tNC 623: Repair minor damage to Depot (Intercom, fence panel and broken slabs)	2
tNC 663: Heras fencing at depot	6
tNC 667: Call off service to respond to Network Rail TQs and interface issues	6
tNC 670: SDS Response to Road Safety Audit for Princes St	10
tNC 671: ScotRail car park security fence	10
tNC 673: Cancel order for OLE poles required for Secondary Phase 1a	-42
ICCO 010: Independent Certifiers Schedule Part 45 Period End Change Order to 23/6/2012	288
	13,716

\* Variance to previously approved change

\*\* transferred to Schedule Part 45 forecast (On Street Works)



### **5.5.2 Changes in Progress**

Changes in Progress include items which cannot be mitigated and the change is agreed in principle. Changes in this section of the cost report amount to £6,735k and are summarised as follows:

- Clause 80 (Off street) change £4,832k including:
  - Edinburgh Gateway: £4,075k (includes design changes and construction estimate) Note A final estimate has been submitted by BBS in the sum of £3,416K which has been accepted. A change order has been approved by CEC/TS.
  - City Chambers Control Centre and Annadale Street Communications Link: £190k
  - Water main crossing at Lochside Avenue: £140k
- Schedule Part 45 (On Street) Change £1,900 including:
  - Road repairs to the West side of St Andrew Square: Minus £700k
  - Amended sett specification: Minus £90k<sup>1</sup>
  - Floating Track Slab £976k
  - York Place TM: £248k<sup>2</sup>
  - Cathedral Lane Substation: £281k
  - York Place Tram stop & turnback: £944k

<sup>1</sup> This is dependent upon the correct application of prelims and overhead & profit refer explanation above.

<sup>2</sup> This includes amounts claimed by BBS in the On Street Works Estimate that we are investigating.

**FINAL**

### 5.5.3 Anticipated Changes

The movements in the period are provided below:

<b>Anticipated Change to 26 June reporting date</b>		<b>£7,057K</b>
<b>Infraco Works</b>		
Pricing Assumptions - 6.4.2.3 York Place Terminal Point	Cost moved to change in progress	-944
Piled OLE base in lieu of utility diversion	Incurred cost moved to On Street Works Estimate	-10
Remove drainage from Infraco scope	Saving value reduced as York Place work covered under the de-scope for the direct CEC Crummock contract	50
Remove excavation of trackbox from Infraco's contract	Saving value reduced as York Place work covered under the de-scope for the direct CEC Crummock contract	50
Descope traffic sign and street lighting bases	Saving value increased based on takeoff of descoped work	-300
Disposal of contaminated excavations at Shandwick Place	Contaminated ground encountered in Shandwick Place	75
<b>Utility Diversions</b>		
Forecast Adjustment		803k
		<b>£6,781k</b>

### 5.5.4 Contributions Register

Contributions from 3rd party, stakeholder or other CEC budgets are being developed in order that the amounts can be finalised. The current position is as follows.

<b>Works</b>	<b>£K</b>	<b>Status / Action</b>
Edinburgh Gateway – legacy design and project management	940	TS have been provided with details and agreement of expenditure is agreed each period
New Ingliston – ducts & crossings	540	Agreed with NIL
Cathedral Lane Sub-station	470	Costs submitted to Henderson Global (HG) amounting to £470k for design and the amended construction scope resulting from HG's requirements. £400k is included in the cost report to provide tolerance should the full

<b>Works</b>	<b>£K</b>	<b>Status / Action</b>
		amount not be recoverable from HG. Note that the final scope / costs are subject to site constraints.
RBS Tramstop	560	Agreed with RBS
St Andrew Sq Public Realm design	133	Contribution confirmed from separate CEC budget
CEC miscellaneous (George St)	318	Contribution received from separate CEC budget
Haymarket Station redevelopment	36	NR have agreed to undertake removal of staircase and parapet, NR to fund costs of sub-station plinth amendments and re-routing of Scottish Power cable.
Setts in On-Street Works	890	Forecast cost associated with setts in St Andrew Square. Final rates and costs to be agreed with Infraco.
Edinburgh Gateway	4,140	A final construction estimate on the agreed scope is currently being prepared by BBS. Costs will be funded by Transport Scotland.
Grosvenor Street Sewer – Insurance claim	188	Ongoing with Insurers
Tram Integration Manager	150	Contribution to be received from Transport Scotland
<b>Total</b>	<b>8,365</b>	

#### **5.5.5 Risk and Contingency Analysis**

At the Tram briefing meeting, 17th May 2012, the draft cost risk forecast and schedule risk forecast was presented in the sum of £5,000k. The risk estimate does not provide for the possibility of contributions not being received. The items at risk include Cathedral Lane substation, Haymarket Station, Network Rail amounts and the Grosvenor Street collapse.

A meeting was held with the CEC project team on the 23<sup>rd</sup> of July to review the QCRA/QSRA. The probability and impact of risks were discussed and amended where required. Updates are required on the following.

- ED071 – quantity, scope, method of execution and programme for the type 2 conflicts is required to replace the cost estimate in the cost forecast and to confirm the potential risks. The detailed planning will take some time, however a cost impact assessment will be made to identify the cost risk.



- ED019 - additional scope not defined or costed (this risk covers ongoing Pricing Assumptions Variations on the on-street work and estimating tolerance for items excluded from the Contract Price such as floating track slab, cathedral lane substation and York Place terminal point, but an estimate allowance is included in the cost report).
- ED109 - Scottish Water, review the legacy works Haymarket to York Place and any Scottish Water scope increases Off Street resulting from approvals. Also rationalise with risk ED123 SW scope increases.
- ED120 - Claims for loss of productivity. The current cost impact is £280K which is likely to be too low, given original indications from BBS. The probability is determined by the contractual stance since Schedule 45 does not make provision for disruption claims and the contractor willingly undertook work on a phased basis. The impact is a function of resources mobilised and non recovery of costs from contract milestones and the On Street Works Estimate. No further mention has been raised in the last period in relation to Crummock in section 1C however general comments have been made regarding the out of sequence working in section 1C (St Andrew Sq) and section 1D Shandwick Place.
- ED115 Leith Walk Utility works - the current assessment provides £160K which was against a baseline estimate of £2,700k. The tenders have been returned and a new baseline of £2,270k and therefore the risk impact / opportunity requires re-assessment. Key items include: works to valves, spatial constraints affecting the rebuilding of manholes and the length of gas/water separation. Discussions have been held with CEC regarding precedents for gas and water separation, the need to consult with the SGN and avoid the need for separation, plus the strategy for refining the scope of these works to prevent scope growth.

At a strategic project level, the key sensitivities are:

- Emerging Infracore scope items where there is ambiguity in the Settlement Agreement.
- Schedule opportunities – critical path and end date allowing for further erosion of the 22 week time bank, offset by potential opportunities of reducing testing and commissioning timeframes.
- Commercial principles for securing schedule savings – the principles of the cost share following adjustment for the 22 weeks saving and liability for prelims/overhead costs during the 22 week period.
- Failure to secure contributions - these include Henderson Global Cathedral Lane Sub-station, Network Rail Haymarket and ScotRail, compensation from Scottish Water or Insurers for the Grosvenor Street Sewer Collapse.

**FINAL**

**5.5.6 On Street – Schedule 45 Pricing Assumption Variations and Commercial Issues**

**Summary of the On Street Works Estimate Certified to Date:**

Description	ICC Certificates to Date (£k)	Action
Disruption and other costs associated with utilities	857	Ongoing monitoring of costs and mitigation of risks
Temporary accommodation for utilities contractor	2	Complete
Road re-construction protocol (opportunity to reduce depth)	0	Opportunities to be valued once scope established
Scottish Water diversion Princes St	253	Complete
Christmas embargo – temporary infill Princes St	204	Complete
Traffic Management costs for amended programme constraints	211	Ongoing review and mitigation of costs being carried out
Revised drainage design	131	Ongoing agreement on value of amended scope
Geotextile liner to Clifton Terrace void	2	Complete
Princes Street additional works	240	Agreement of final total costs currently being undertaken
York Place turnback and temporary tram stop	0	Ongoing – method of cost reimbursement to be agreed
Floating track slab	3	Ongoing – method of cost reimbursement to be agreed
<b>Total ICC Value to date</b>	<b>£1,903k</b>	

**5.6 Utilities**

**5.6.1 Budget**

The approved budget of £12,262k is unchanged during the period.

**5.6.2 Contract**

The contractor has offered a saving from the 11.48% management fee to 9.3% on the basis that as the contract is NEC Option E, cost reimbursable, the costs are audited and concluded on a quarterly basis.

These changes have been incorporated into our forecast.

**5.6.3 Approved Changes**

There have been no approved changes in scope in the period.

**5.6.4 Changes in Progress**

The contract form is NEC Option E – Cost Reimbursable. The contract is being administered by an NEC change management system which tracks orders/changes for specific items of work. This enables control over commitments and managing expenditure.



### 5.6.5 Anticipated Change

The cost estimate was originally developed on the basis of a cost per conflict type. Given a greater understanding of the nature of the diversions required, a programme with resources to suit the scope and programme sequence is updated and monitored on a regular basis. This resource plan has been used to form the basis of the estimate. This estimate is under continual review, comparing actual progress against planned and actual resources against planned. The sequence of work is as follows.

Priority	Original strategy	Revised strategy
Priority 1: works in advance of Infraco	Overhead Line Bases Road Level Conflicts Tram Ducting Chambers Tram Ducting Track Construction	Overhead Line Bases Road Level Conflicts Tram Ducting Chambers Tram Ducting Track Construction Drainage – transfer of some drainage networks in Haymarket, Shandwick Place and St Andrew Square from Infraco Drainage excavation, proving and identification of new routes owing to utility conflicts Drainage gully's IMU drains Track box and Tram duct excavation in Haymarket, Shandwick Place and St Andrew Square from Infraco Duct excavation Cathedral Lane Some kerb realignment
Priority 2: works in parallel with Infraco through call off or isolated work areas	Traffic Signal Pole Street Lighting Column Road Sign Base Kerb Re-alignment Drainage Drainage Gully	Traffic Signal Pole Street Lighting Column Road Sign Base Remaining kerb re-alignment Additional road gulleys and drainage required by final design development and excluded from the Infraco scope

The key issues being addressed in the estimate include:

- The majority of the Type 1 conflicts have been resolved, a review of this is being undertaken to determine if there is any residual work. Also the scope and methodology for diverting the Type 2 conflicts is being examined. This will involve a transfer of the excavations, foundation bases and ducting from Infraco to McNicholas.
- Scottish Water has submitted a proposal for management and supervision costs for On-Street, Off-Street and Legacy Works for the project until 2014. These costs are being challenged; however they are in excess of the forecast allowance which is based upon a December 2013 completion. A meeting was held 19 July 2012 and the forecast dates for each section were re-confirmed to allow the supervision cost forecast to be revised.

**FINAL**

**5.6.6 Legacy "snags" / defect correction Scottish Water assets Haymarket to York Place**

The scope of work is being developed through evaluation of the "snagging" lists and engagement with Scottish Water.

The current estimated cost is £1,229k and the scope is being developed and agreed with Scottish Water.

Grade 3, 4 and 5 sewer repairs – Scottish Water claim that tie committed to doing these works however in our view they would fall within the requested works provisions of the 3<sup>rd</sup> party agreement and therefore be funded by Scottish Water. These are not included in the cost report at this stage.

The sewer collapse in Haymarket is to be recovered through the insurance provisions or contribution from Scottish Water.

**5.6.7 Legacy works constructed under MUDFA**

The legacy works constructed under MUDFA are being programmed around the Infraco works. A summary is provided below:

- Princes Street is generally complete with some residual items yet to complete relating to the manhole within Princes Street gardens and the valve chamber.
- St Andrew Sq and Shandwick Place residual items being completed around the Infraco Works
- York Place items are being programmed with Crummock enabling works.

A review of the scope and completion programme is being undertaken.

**5.7 Tram Vehicles**

The budget for Tram Vehicles is £62.4m which is lower than the contract sum at £63.6m.

There are no changes to the forecast during the period. The forecast includes £150k for the Tram Integration Manager. This is offset by a contribution for this resource which is being sought from Transport Scotland.

**5.8 Payments and Cash flow**

A summary of the certified amounts are provided below.

	<b>Certified £K</b>	<b>Planned £K</b>	<b>Comment</b>
Infraco	316,219	321,028	Planned – based upon Rev 3A programme
Utilities	9,927	9,927	McNicholas plus SUC costs
Trams	60,531	60,531	Payments generally in accordance with milestone schedule. Incomplete milestones are not included in certified amounts.



## 6 On Street - Enabling Works & Utility Legacy Works

### 6.1 General

It was reported previously that Turner & Townsend had agreed to finalise some quite significant Scottish Water legacy issues and type 2 conflicts in Shandwick Place in parallel with excavating the remainder of the area to allow for reconstruction of the carriageway. These works have progressed well during the period and works on the north side of Shandwick Place were completed on the 27<sup>h</sup> of August to allow Infraco to commence carriageway reconstruction. The works on the south side of Shandwick Place are scheduled to be completed before the 9<sup>th</sup> of September ensuring Infraco remains on programme through this area.

### 6.2 York Place

York Place enabling works commenced on 16th July as planned and Phase 1 is progressing well and will be complete in early September. Drainage and ducting works are due to commence shortly.

Since the last period report it has been agreed with CEC that the bus station relocation, previously envisaged for Phase 2 of the York Place works, may no longer go ahead and egress from the bus station may be via a single lane from Elder Street to Broughton Street. This allows the bus station to remain open for the duration of the tram works. In response to this Turner & Townsend has re-evaluated the enabling works programme in York Place and confirmed to CEC that works can still be completed by the end of 2012 while retaining a single lane for buses, provided Infraco is able to provide a traffic lane at the junction of South St Andrew Street and Princes Street by mid September. A separate exercise is underway to review the impacts of the potential change on the Infraco programme.

The revised working arrangements with Crummock and McNicholas set out in last month's report are working satisfactorily and a fortnightly control meeting has been convened to ensure any issues are dealt with expeditiously.

### 6.3 Legacy Works

As reported previously there remain some key water issues that have the potential to cause significant difficulty for the project. These include apparatus currently located within the tram Dynamic Kinematic Envelope (DKE) and the tram DKE+2m that cannot be diverted and apparatus without the necessary separation distance from other utilities as a consequence of congested areas.

Good progress has been made in Shandwick Place and discussions are ongoing with Scottish Water on how to best deal with the remainder of the issues. Agreement on some of the legacy issues will only be reached when the wider commercial discussions with Scottish Water have concluded, at that time Turner & Townsend will need to ensure the residual works are planned in consultation with Infraco and at such a time as to minimise or avoid any delays.

The reinforced concrete works at Tower Place Bridge and the remedial works at Lindsay Road are now largely complete with only the lighting columns to Tower Place Bridge outstanding. In discussion with CECs Project Manager it is likely all works will be completed by the end of August.

#### **6.4 Grosvenor Street Sewer Collapse**

Following the sewer collapse in Grosvenor Street the tram drainage was redesigned to take account of the collapse and the necessary repairs and drainage works are now complete. In consultation with Scottish Water, Turner & Townsend has been investigating the cause of the collapse. McNicholas provided a report on the sewer collapse that concluded the collapse was not attributable to the current tram works. This was forwarded to Scottish Water and a response was been received challenging the McNicholas findings. Meetings have been held between CEC and Scottish Water to discuss how to best progress the matter and an update will be provided at the next tram briefing meeting.

#### **6.5 Type 2 Conflicts**

As reported last month and following discussions with Infraco and CEC, a proactive approach to the resolution of Type 2 utility conflicts (those outside the DKE+2m, including road sign bases, traffic signal bases and associated ducting) was agreed. A McNicholas advance works team has been established who are proving and diverting utilities (where required) and constructing below ground civils works for all type 2 conflicts. This has been formalised with Infraco and the requisite change notice has been issued. Once complete, Infraco will undertake the above ground construction elements.

Type 2 conflicts will occur where there is a requirement to construct road sign bases, lighting columns, traffic signal poles, duct chambers and ducting. The IFC drawings currently call for:

- 168 Road sign bases
- 75 Lighting columns
- 125 Traffic signal poles
- 110 Chambers
- 4800m Ducting

Conflicts will not be encountered in all areas and as works progress a trend analysis will be developed which will assist in projecting likely impacts. Turner & Townsend will continue to plan the execution of these works with Infraco such that any impact on Infraco's planned works programme is minimised.

#### **6.6 Look Ahead**

The York Place enabling works will continue and Turner & Townsend will continue to react to utility discoveries by Infraco. Work will also continue with Infraco in planning any further Scottish Water remedial works. The detailed planning and execution of "type 2" works will also continue in the period.



## **7 On Street - Main Works**

### **7.1 Progress in Period**

All On Street areas from Haymarket to Lothian Road and from Princes Street to North St Andrew Street remain in the possession of Infraco with some minor exceptions agreed where residual works are being carried out by McNicholas. Infraco has continued with track slab construction in all areas and is making good progress.

Track laying has also progressed well during the period and Turner & Townsend is currently assessing when all On Street track laying and the concrete support to the rail can be completed based on current progress, this will then feed into the wider assessment of programme currently underway.

The outbound track from Waverley Bridge to South St Andrew Street is critical for the implementation of the traffic management in York Place. All civil engineering and track works are due to be completed in early September. With these complete in early September the critical activities relate to the traffic management measures required to open the Princes Street plug. Work is ongoing at present with Infraco and an update on this matter will be provided at the tram briefing meeting on 30<sup>th</sup> August.

Despite works in St Andrew Square progressing well Infraco has confirmed that the completion date for St Andrew Street is likely to be the end of 2012. Given the enabling works programme in York Place this is considered manageable although it remains the case that the project critical path remains through this area in the event that the value engineering proposals through York Place cannot be delivered.

In Shandwick Place between the Crescents Infraco has commenced excavation works with McNicholas in attendance. Based on records available it is anticipated that the utility conflicts through this area will not be significant. In the same geographic location agreement has also been reached with CEC to de-scope the re-building of the Shandwick Place walls. It is anticipated these works will be carried out directly by CEC together with the excavation of tree pits and planting of new trees through the area. A programme is currently being finalised that will seek to avoid any disruption to Infraco.

The critical path for the On Street section is currently through Shandwick Place although this is likely to change following the programme review currently underway. This is discussed in more detail in the programme section of this report.

Princes Street snagging continued in the period and it is anticipated the majority of snags will be closed out by the end of August. Regarding future maintenance a meeting has been arranged with CEC to discuss the ongoing maintenance requirements for Princes Street.

Following planning approval for the Dublin Street Steps the only issue now left to resolve is reaching agreement with the building owner on the east corner of the street. Progress has been made in this regard and Infraco's engineers have provided a sketch setting out the owners requirements for CEC to include in any final legal agreement.



**7.2 Look Ahead**

**7.2.1 Haymarket to North St Andrew Street (excluding Princes Street)**

Infraco Works from Haymarket to Lothian Road and through St Andrew Square will continue in the period with the completion of tram ducting, construction of the track improvement layer, construction of track and construction of any outstanding OLE basis. It is also likely the works required for opening the Princes Street plug will be completed. In Shandwick Place at the Crescents the Excavation works will continue with McNicholas in attendance.



Princes Street/ St Andrews St



Haymarket/ Shandwick Place



Shandwick Place

## 8 Off Street Works

### 8.1 Progress in Period

#### 8.1.1 Bridge Beam Installations

This period has seen the successful installation of bridge beams in three locations. These installations have been required to be undertaken during weekend nightshift to allow timely and safe work adjacent to the Network Rail main lines.

- Water of Leith four twin bridge beam installation using a 500T mobile crane. Work carried out during possession/ isolation of the adjacent Network Rail Infrastructure, this installation was carried out over two weekends on the 29<sup>th</sup> July and 5<sup>th</sup> August.



- Balgreen Road bridge, installation of eight number beams using a 250T crane on the 29<sup>th</sup> of July; facilitated by a road closure;



- South Gyle access bridge beam installation was successfully completed on the 5<sup>th</sup> of August. Beams were installed during possession/ installation of the adjacent Network Rail Infrastructure. Beams installed using a 500T mobile crane.



Deck construction will now commence on all three of these bridges.



**FINAL**

### **8.1.2 Edinburgh Gateway**

The bulk of the earthwork excavation for the attenuation tank has been completed during this period.

The tender for Edinburgh Gateway has been returned; Turner & Townsend have reviewed Infraco's tender report and have issued queries to Infraco.

A meeting has been arranged for Monday 20<sup>th</sup> August 2012 with Bilfinger, Expanded and Turner & Townsend to review the Edinburgh Gateway tender. Following this meeting Bilfinger Berger are to update their tender estimate and re-submit on 24<sup>th</sup> August 2012 to allow Turner & Townsend to issue a TCO on the 27<sup>th</sup> August 2012.

### **8.1.3 Network Rail and ScotRail Interface**

The ScotRail shunt-line was in a very poor condition prior to tram works commencing and has been settling during the adjacent tram works. This line cannot remain operational if subjected to further settlement. This additional settlement is therefore unacceptable to ScotRail and Network Rail. Meetings have been held with Infraco's Structures and Track Competent Responsible Engineer (CRE), Infraco, Turner & Townsend and Network Rail to establish the current condition, settlement that the temporary and permanent works shall induce on the track and the actions required.

The Track CRE has recommended raising the track by placing a 150mm ballast layer under the existing track components. The new alignment of the track would be such that rotational movement would be allowed for by placing the cess rail (the rail closest to the tram works) higher than the six foot rail (the rail furthest from the tram works). In addition by placing 150mm of new ballast and realigning the track greater settlement could be accommodated and be easier to remediate. Settlement and remedial action will continue to be monitored in accordance with the track monitoring plan.

Network Rail and ScotRail are satisfied in principal with the proposals. Infraco consider these works to be additional to the existing Contract provisions.

### **8.1.4 Overhead Line, Track and Systems**

#### ***Airport to Gogar***

Overhead line poles are still to be erected between the Gogarburn Tram Stop and the Mini Test Track, with trackwork also requiring to be completed. The poles are programmed for erection on the 11<sup>th</sup> and 12<sup>th</sup> of September 2012. Gogar Bridge to Ingliston Park and Ride, all poles and their associated cantilevers are in place. The overhead line wire could be installed here, however has not been due to the threat of theft.

The erection of poles from Ingliston to the Hilton are planned for installation on the 13<sup>th</sup> of September with the Airport poles following after this once trackworks are complete. The wires will be installed at the beginning of October when all the poles are in place. The traction underground cables are currently being pulled on Section 7.

The Overhead Line team are installing poles along the entire contract once areas are available to them. The approach is to keep a team constantly occupied rather than using numerous teams



on an intermittent basis.

Systems cable pulling has commenced from Gogarburn to Ingliston Park and Ride. There is a significant amount of work to be undertaken on this and may well benefit from an additional gang.

***Gogar to Haymarket***

A track team has been working at the Gyle Broadway and the Gyle Tram Stop area during the period. Areas available to the track gangs, but where no work has been undertaken included:

- Edinburgh Park Station;
- Balgreen to Carrick Knowe Bridge, out bound track; and
- Haymarket Yards, off-street.

**8.1.5 Other items of progress:**

Haymarket Station Tram Stop civil and track works are due to be completed by the end of August 2012;



- Russell Road bridge deck works continued and road closure removal is planned for Friday the 24<sup>th</sup> of August 2012;
- The ScotRail Depot entrance work has commenced in the period;
- Russell Road Retaining Wall (W4), units 20-29 wall construction continued;

**FINAL**



Structure W18 Murrayfield Tram Stop continuing;



Roseburn Street Structures construction continued;

- Murrayfield Stadium Retaining Wall and Structure S505 ground improvements continued Soil mixing is now complete with the Load transfer mattress to be constructed;
- Murrayfield Underpass (S21C), ground improvements complete and underpass construction has commenced;
- Balgreen Road Tram Bridge, deck construction ongoing;
- Bankhead Drive tram drainage continuing;
- Edinburgh Park and Carrick Knowe Bridge hydro demolition to adjust levels for track installation;  
Edinburgh Park track works continuing;
- Gyle Broadway, track on north side completed and traffic management changed over;
- Track works being undertaken Gyle to A8 underpass;
- Edinburgh Gateway, bulk of earthwork excavation for attenuation tank completed;
- Gogarburn all track works complete;

**FINAL**

- Gogarburn platforms complete, commencement of platform furniture, Scottish Power have laid feed to the tram stop; and
- Tracklaying has commenced at the Airport tram stop.

## **8.2 Key Issues**

### **8.2.1 Scottish Water**

#### ***Buildovers***

The lack of buildover agreements between CEC and Scottish Water have seen difficulties arise (with Scottish Water) this period; in particular causing difficulties at Murrayfield Underpass S21C and with the installation of Bankhead Drive overhead line foundations. Turner & Townsend/ CEC shall issue a letter of comfort to Scottish Water addressing their concerns covering the period until the buildover has been signed off. OLE foundation works planned to commence on the 3<sup>rd</sup> September 2012. Murrayfield underpass is to be included in a route wide buildover agreement.

#### ***Murrayfield Sewer Strike***

The technical query to resolve the section of pipe at Murrayfield that had been filled with grout has been approved by Scottish Water. Scottish Water have conceded that an extra manhole with a shorter diversion may be installed by Infracore; rather than the previously requested 75metre renewal.

#### ***Edinburgh Gateway Discharge Consent***

Scottish Water have instructed pumping operations to cease at the Edinburgh Gateway location. Scottish Water stated that there were no settlement tanks and no discharge consents in place. This was subsequently found to be incorrect by the following activities;

- Infracore presenting the discharge consent that is currently in place;
- Infracore inviting David King, Scottish Water out to site to view the arrangements;
- David King confirming he was happy with the arrangement and that Infracore were working in accordance with the discharge consent; and
- Ken Power, Scottish Water confirming to Turner & Townsend that this issue could be closed on the tracker.

Scottish Water have subsequently requested that further investigations are made into this issue.

#### ***Carrick Knowe***

Infracore were required to undertake a post remedial works camera survey of the sewer that had been struck by a piling rig at Carrick Knowe. Infracore have duly undertaken this survey and the results have been passed onto Scottish Water. Scottish Water have requested further camera surveys downstream to ensure that the concrete from the piling rig is not present.



### ***Removal of Water Main Thrust Block***

During construction activities at South Gyle, Infraco removed a clean water thrust block. This thrust block had been part of a clean water diversion undertaken by MUDFA. Scottish Water had agreed to undertake the repair, however failed to complete the works. Scottish Water have asked for the works to be completed by the project.

### **8.2.2 Airport**

Airport Stop – Concrete Pour.



A meeting on Eastfield Avenue was held on the 17<sup>th</sup> of August with Turner & Townsend, Edinburgh Airport Limited, City of Edinburgh Council and Infraco in attendance and was a positive meeting. The main issues being; Eastfield Avenue alignment which all parties agreed to leave for discussions at a higher level and the works required around the Tram Stop concourse area. On the latter issue Turner & Townsend and CEC require to undertake an exercise with the parties responsible for each element; ramp from the bridge, area surrounding the tram stop concourse etc.

### **8.2.3 Edinburgh Gateway**

Network Rail have continued to raise concerns over the King Post Wall construction and the difficulty they may have installing a permanent solution with the King Post Wall solution already in place. CEC has advised representatives of the Major Transport Infrastructure Projects department of Transport Scotland and Network Rail of the critical nature of the tram element of works at Edinburgh Gateway and that no change can be accommodated.

**FINAL**



Attenuation Tank – Commencement of Steel Works

#### **8.2.4 Other Off Street issues**

- Radio tests at the depot have interfered with National Aviation Traffic (NATs) signals.

#### **8.3 Look Ahead**

The following works will be progressed during the coming period:

- Haymarket Yards, track installation works;
- Russell Road Retaining Wall (W3) construction;
- ScotRail Depot entrance works and relocation of gas governor;
- Russell Road Retaining Wall (W4), units 20-29 construction;
- W18 Murrayfield Tram Stop continuing;
- Roseburn Street structures construction continuing;
- Murrayfield Stadium Retaining Wall (S21B) ground improvements and construction;
- Murrayfield Underpass (S21C) underpass construction;
- Murrayfield Pitches reinforced earth retaining wall (S21D) construction;
- Water of Leith Bridge (S21E) deck construction;
- Baird Drive Retaining Wall construction recommencing to bring this to the correct level now that Water of Leith and Balgreen Road bridges are installed;



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- Balgreen Road Bridges, deck construction;
- Balgreen Road to Carrick Knowe, track installation works (subject to track team availability) and tram stop construction;
- Carrick Knowe Bridge, complete structure works;
- South Gyle Access Bridge, deck construction;
- Bankhead Drive, track drainage, ductwork and earthworks;
- Edinburgh Park Station Tram Stop, complete civil engineering works;

- Edinburgh Park, track works continuing;



- Gyle Broadway, track works and completion of piling for the overhead line masts;
- Eastfield Avenue power supply and installation of equipment;
- Gogarburn to Ingliston Park and Ride cable pulling.
- Low Voltage power supply installation to the former kiosk area; and
- Trackwork between the Airport Stop and Eastfield Avenue continuing



## 9 Trams

The delivery of the Trams to the Gogar Depot and their testing on the Mini Test Track (MTT) continues to progress well and ahead of schedule. There have now been 21 trams delivered to the Depot, with seventeen having completed routine testing on the MTT.



CAF increased the delivery rate of the trams during July and early August, this is to compensate for there being no further delivery of trams over the next period; this is due to Spanish holiday period. It is CAF's intention to continue this increased delivery rate, until all trams have been delivered. Whilst Turner & Townsend have received no official documentation confirming this; CAF had advised the tram delivery is likely to be completed in November 2012, significantly ahead of the programmed December completion date.

The Infraco Test and Commissioning Plan (Airport to York Place) and the Section B Completion Programme have now been formally reviewed and agreed by all parties. The requirements for Section B Completion were discussed at the initial Section B Test and Commissioning meeting; this was attended by BBS, CAF, ETL and Turner & Townsend. These meetings will now be held monthly, to progress all issues related to Section B handover.

Turner & Townsend are awaiting responses to change notices issued to CAF (to make safe the tram wiring) and to BBS (to allow the adaptation of the mybustracker / RailCom Manager interface, to meet contractual requirements), this is following the decision not to implement the Bus Tracker system onto trams at this time.

Further cost estimations may be requested from BBS should Lothian Buses determine that there may be operational benefits from implementing some additional functionality in the interface between the Mybustracker webpage and RailCom Manager System.

### 9.1 Key Issues

A lack of technical information on Ticket Vending Machines and Validators requirements is reported to be delaying the completion of tramstop design and equipment installation. Further information on the interface between the Fare Collection equipment and the Operator's infrastructure management system (RailCom) can only be provided when the scope and functionality of the system is defined and agreed. Turner & Townsend have arranged meetings with all stakeholders on the 21<sup>st</sup> of August 2012, to ensure this information is provided as soon as possible.

Turner & Townsend have identified an element of work to be completed by the Tram Inspector relating to the completion of testing on the Mini Test Track and additional work required for Section B handover, this was not included in the original budget. Discussions are ongoing with

Mott MacDonald to agree the scope of the additional Tram Inspector Services and with CEC to confirm budget requirements.

Turner & Townsend have requested an update to the reliability analysis (FMEA) documentation already provided by CAF, following the implementation of a modification on the (PISPASPA) Passenger Information System, Passenger Announcement System, Public Address / CCTV system/ CCTV system. This is necessary to ensure that the modification will have no effect on tram reliability in passenger service.

Turner & Townsend are chasing an investigation report from Lothian Buses, into an incident where a tram being shunted in the depot did not stop on request. CAF have implemented immediate actions to ensure the incident is not repeated.

## **9.2 Look Ahead**

The following items will be progressed during the coming period(s):

Test and Commissioning:

- Twenty second tram (#262) due to be delivered on the 18<sup>th</sup> of September 2012
- Delivery schedule will be updated to show new delivery completion date
- Interim Routine Testing scheduled to be completed on all trams by the 29<sup>th</sup> of January 2013.

System Acceptance and Integration:

- Turner & Townsend shall continue to participate in regular meetings to progress the T&C, integration and handover requirements to allow Section B completion.

Bus Tracker:

- Formal response is expected to the two change notices issued to CAF and BBS.

## **9.3 Fare Collection System**

Turner & Townsend have now adopted a Project Management role in the provision of the Fare Collection System. This system comprises the Ticket Vending Machines (TVMs), Hand Held Devices (HHDs), Platform Validators and the Back Office software which manages the system.

Turner & Townsend arranged a series of meetings on the 31st of July 2012 with all stakeholders, to agree how the procurement process should be managed to completion. During these meetings, CEC confirmed their intention to continue the procurement process with Almex as the Preferred Bidder.

Following these meetings, Turner & Townsend produced a paper detailing the scope of functionality available for the Fare Collection system, identifying areas of functionality that were a necessity to provide a working system and those that may not be necessary; however may be beneficial to the Operator. Costs were identified for each level of functionality available.

Further workshops have been arranged to determine and agree the final scope and functionality of the equipment to be procured, the timescales for delivery and the installation and test of the

system. Turner & Townsend have also arranged a workshop with Almex and BBS on the 21<sup>st</sup> of August 2012; this is to ensure that all technical information is provided to allow the completion of the tramstop design and the definition of the interfaces between the Fare Collection and RailCom Manager systems.

Fare Collection – Turner & Townsend will facilitate further workshops to:

- Determine and agree Ticket Vending Machines (TVM), Hand Held Devices (HHD) and Platform Validator numbers and functionality
- Provide any additional information required to complete the design of tramstops
- Manage actions required to allow the sign off of the Fare Collection contract
- Develop a schedule for the delivery, installation and test of Fare Collection equipment.



## **10 Assurance**

### **10.1 Progress in Period**

Evidence File – Currently no information can be uploaded to the evidence file as the site has not been transferred over to the new SharePoint. CEC are currently having problems transferring the existing information however it is anticipated that this will be resolved within the coming period.

Safety Verification (SV) audit TSA/12/01 report for Maintenance of Depot Workshop Equipment and Track has now been updated and reissued. A wash up meeting will be held on the 22<sup>nd</sup> of August 2012.

SVS Audit TSA/12/03 – Section 1C - Slips, Trips, Falls (2 Wheel Vehicles); the checksheet for this audit has been reissued to BBS. It has been agreed that BBS will advise of the evidence to address the audit questions and the Safety Verification team will review the evidence within the Edinburgh Tram system and collate a report. Evidence reference is to be provided by BBS week commencing the 13<sup>th</sup> of August 2012 and the Advice of possible Non-Conformance (ANC-02), in relation to SVS Audits currently remains outstanding.

### **10.2 Quality**

The monitoring of the NCRs raised on the project continues to be reviewed. Details of the NCRs are included below:

- The number of NCRs raised to date is 597
- 28 NCRs were raised during the period
- 4 NCRs were closed out during the period.

The reduction in the number of NCRs closed out is due to the absence of key personnel during the holiday period.

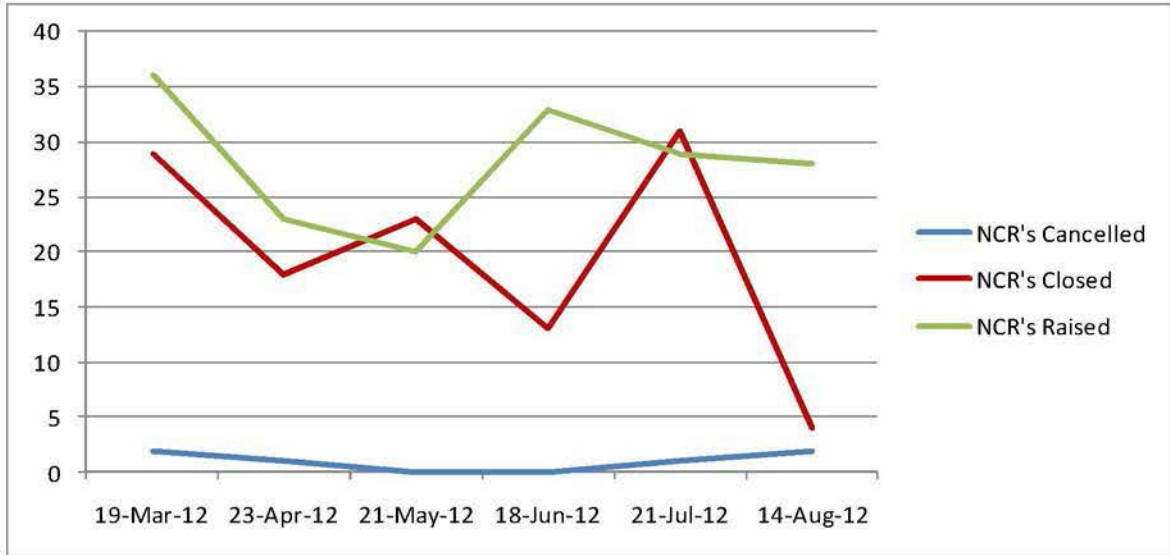
26 no open NCRs are greater than 6 months old. Details may be found within Section 6 of Deliver a Safe Tram Report (See Appendix 2)

Summary and classification of Non Conformances below:

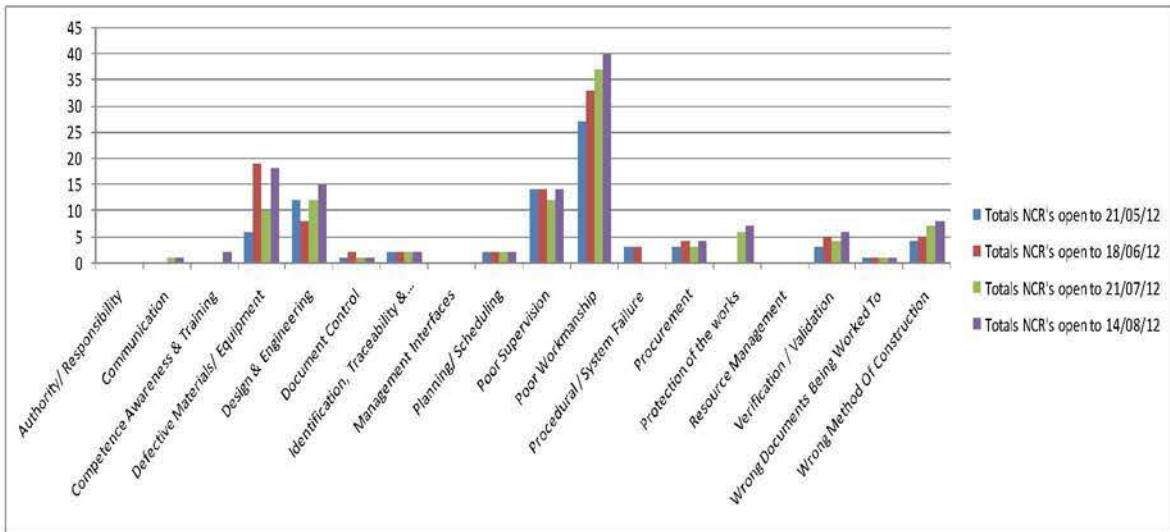
**Progress Report No. 11 - 22<sup>nd</sup> July to 18<sup>th</sup> August 2012**

**FINAL**

Summary of non conformances



Classification of open non conformances



## Appendix 1 – Dashboards



Produced by	Julian Weatherley & Shirley-Anne Collin	SECTION	SUMMARY DASHBOARD REPORT CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT		Employer	City of Edinburgh Council Waverley Court, Edinburgh, EH8 8BG	
Approved by	Julian Weatherley	Issue By:	Turner & Townsend Project Management Limited, 9 Lochside Avenue, Edinburgh Park		Address		
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> July to 18 <sup>th</sup> August 2012	Project:	Edinburgh Tram Network

**Executive Summary**

There were 15 incidents recorded during the period. One of these has been identified as Serious / Significant. This related to a mini excavator overturning in Princes Street and is RIDDOR reportable.

Infraco have produced a risk assessment in relation to soil removed from Baird Drive. This is currently under review by SEPA.

Eleven weeks of the 22 week time bank have been confirmed as being eroded as a result of disruption to utilities works in Shandwick Place and the Waverley end of Princes Street.

Sectional completion dates for Section B, C and D are forecast for the 5<sup>th</sup> of March 2013, 31<sup>st</sup> of January 2014 and the 1<sup>st</sup> of May 2014 respectively. The critical path currently runs through Shandwick Place.

Turner & Townsend has presented to CEC the potential for further programme improvements achieved through changes to Employer's Requirements and the provision of additional resources.

Following completion of the resolution of a number of legacy carriageway and utility issues within Shandwick Place, Turner & Townsend envisage handing the north and south carriageways back to Infraco on the 27<sup>th</sup> of August and the 9<sup>th</sup> of September respectively.

Crummock and McNicholas have commenced enabling works within York Place on the 16<sup>th</sup> of July and works are progressing ahead of programme. In response to CEC's request, an option to complete the York Place works whilst maintaining access to the bus station is being considered and it's input quantified.

A number of Scottish Water legacy issues remain which cannot be addressed without significant intrusive reconstruction works. Some of these may only be resolved through wider commercial discussions with Scottish Water.

A McNicholas advance works team has been established to prove and construct below ground civil works in the location of Type 2 conflicts. These works have been de-scoped from BBS.

Infraco are now progressing civil and track works between Haymarket and St Andrews Square within all On Street areas with the civils works relating to the Princes Street "plug" anticipated to be complete by early September 2012. Tram box excavation has commenced within the crescents area of Shandwick Place.

Bridge beams have been installed at Water of Leith, Balgreen Road and South Gyle Access Bridge. This completes all bridge beam lifts on the project.

Early works have commenced on the Edinburgh Gateway. It is anticipated that an instruction to progress with the main works will be issued by the 27<sup>th</sup> of August.

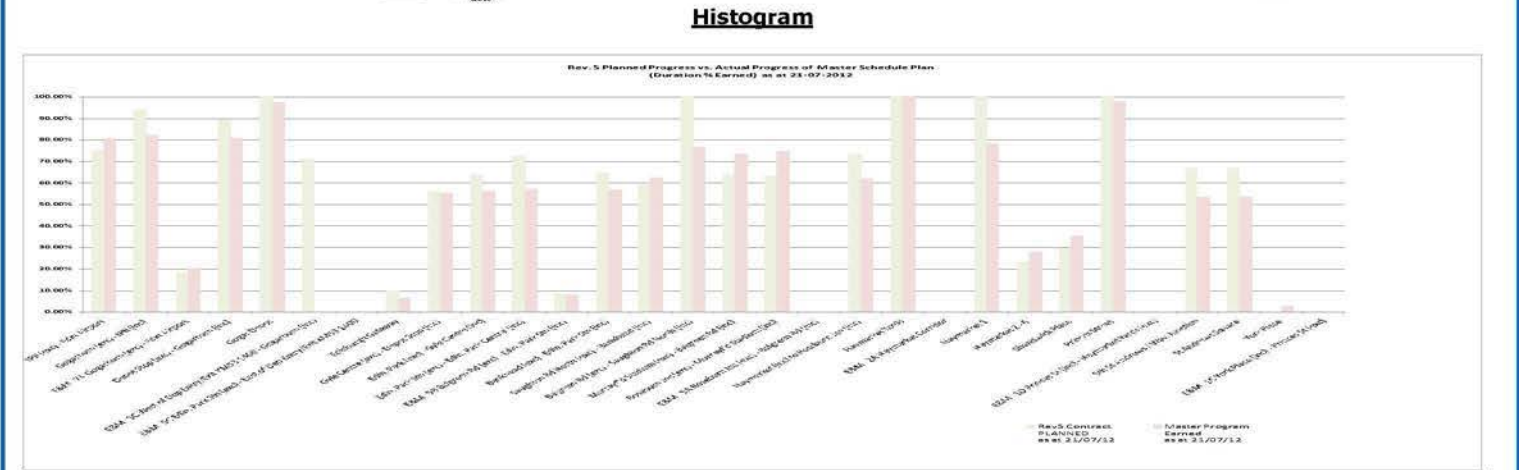
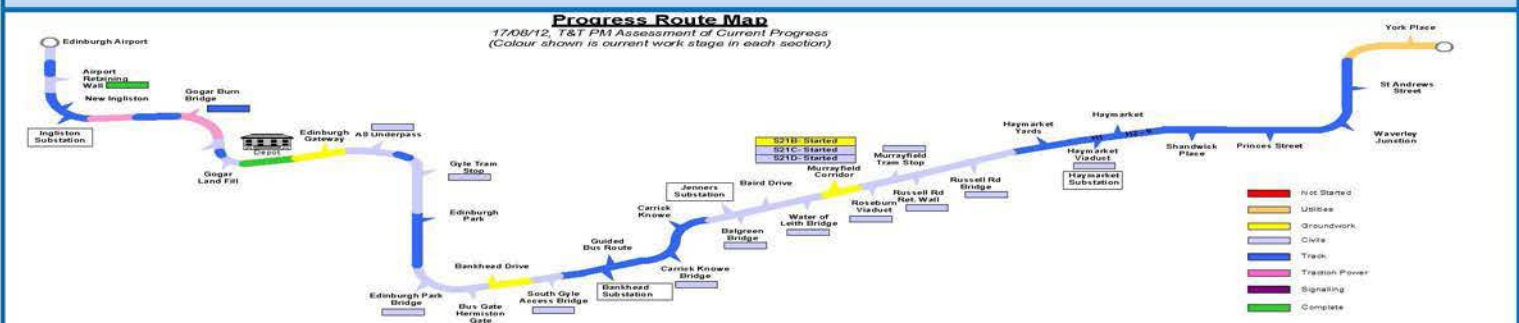
Authority levels have been increased in relation to the contractor's "permit to dig" arrangements following a number of recent Scottish Water service strikes.

Discussions are ongoing between CEC and the airport in relation to the resolution of issues at Eastfield Avenue Crossing. Turner & Townsend await CEC's instruction on the way forward.

Twenty one trams have now been delivered to the Gogar depot with seventeen having completed routine testing and commissioning.

The Infraco saving resulting from the Infraco de-scope items (e.g. type 2 civils, VE relating to setts) has been determined in part by the application of prelims and overhead. Position papers on these elements have been submitted to the Independent Certifier for an opinion. Infraco have requested contract variation prelims and overhead on the additions at 34% and 10% on the omissions.

- CEC Actions / Decisions**
- Scottish Water** - Buildover agreements require to be progressed.
  - Scottish Water** - Requires legal agreement for derogations to specification in Princes Street.
  - Network Rail** - Asset Protection Agreement requires to be finalised. (A. Sim)
  - Network Rail** - Bridge agreements require to be progressed. (A. Sim)
  - Network Rail - Verity House** - Commercial position to be decided and agreed with Network Rail.
  - Edinburgh Gateway** - Decision on way forward, following receipt of Tender returns.
  - Road Carriageway** - Finalisation of Road Carriageway design and construction.
  - Haymarket wayleave** - Close out of the wayleave with Scottish Power and Network Rail at Haymarket.
  - Fare Collection System** - The scope and functionality of the Fare Collection system must be confirmed and all stakeholders informed.
  - Ticket Vending Machine Procurement** - Confirmation required of procurement solution for TVMs.





Produced by	Julian Weatherley & Shirley-Anne Collin	SECTION	SUMMARY DASHBOARD REPORT CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT			Employer	City of Edinburgh Council Waverley Court, Edinburgh, EH8 8BG
Approved by	Julian Weatherley	Issue By:	Turner & Townsend Project Management Limited, 9 Lochside Avenue, Edinburgh Park			Address	
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> July to 18 <sup>th</sup> August 2012	Project:	Edinburgh Tram Network

KEY MILESTONES

Section	Description	A Rev 5 Schedule Date	B Forecast/Actual Date	B – A = C Var. (d's)	Completed	Crit. Path	Comments
<b>Section Completions</b>							
ALL	Section B; Test Track complete	08-Mar-13	05-Mar-13	3		Y	Critical Path now originates from 7A Tamping, which is planned to commence 22/ 07/ 12.
ALL	Section C; All construction complete	09-Apr-14	26-Jan-14	73		Y	20d recovery to Gateway switched the Critical Path to (On-St) Shandwick Place, giving 5d net improvement to Section C date
ALL	Section D; open for revenue	08-Jul-14	26-Apr-14	73		Y	20d recovery to Gateway switched the Critical Path to (On-St) Shandwick Place, giving 5d net improvement to Section D date
<b>On Street</b>							
<b>Haymarket</b>							
<b>Haymarket to Palmerston</b>							
On-Street	Civil Wrks complete (H1to H3B)	17-May-13	25-Mar-13	53		N	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	All Remaining Civils Wrks Complete (H4 to H6)	25-Jul-13	03-Jun-13	52		N	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>Shandwick Place</b>							
<b>Palmerston Place to Crescents (SP2 &amp; SP6)</b>							
On-Street	Civil Wrks Complete	18-Oct-13	18-Aug-13	60		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>Crescents including Atholl West Tie-in (SP4 &amp; SP5)</b>							
On-Street	Civil Wrks Complete	05-Jun-13	08-May-13	28		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>Crescents to Lothian Road (SP1 &amp; SP3)</b>							
On-Street	Civil Wrks Complete	25-Mar-13	07-Feb-13	46		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	All Remaining Wrks in Shandwick Place Complete	04-Dec-13	17-Oct-13	48		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>Princes Street</b>							
On-Street	Princes St Tram Stop Complete	04-Oct-12	18-Oct-12	-14		N	
On-Street	Commence M&E Wrks	07-Oct-13	23-Jul-13	76		N	
On-Street	All Remaining Wrks complete	22-Nov-13	23-Sep-13	60		N	
<b>South St Andrews St / Waverley Junction</b>							
On-Street	Outbound Civil Wrks Complete	10-Jul-12	09-Sep-12	-61		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	Open Y2 'Plug'	N/A	21-Sep-12			Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	Remaining Civil Wrks Complete	03-Oct-12	27-Nov-12	-55		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	All Remaining Wrks Complete	25-Oct-12	05-Feb-13	-103		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>St Andrews Square &amp; St Andrews St North</b>							
On-Street	Civil Wrks Complete	15-Oct-12	28-Nov-12	-44		N	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	All Remaining Wrks Complete	26-Oct-12	07-Jan-13	-73		N	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>York Place</b>							
On-Street	Complete Enabling Wrks	N/A	11-Dec-12	N/A		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	Commence Main Wrks	22-Nov-12	07-Jan-13	-46		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	Civils Wrks Complete	29-Oct-13	10-May-13	172		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
On-Street	All Remaining works Complete	18-Nov-13	02-Jul-13	139		Y	Dates Currently Under Review as part of a wider Value Engineering Initiative
<b>Off Street</b>							
Off-Street	W4, 19-29; Russell Rd. Retain Complete	29-Oct-12	14-Jan-13	-77		N	Progressing with all units 19-29
Off-Street	S21A Roseburn St. (501-505 Viaduct) Complete	18-Oct-12	15-Nov-12	-27		N	Steady progress in period and moved down priority level regards alternate critical float path (35d float).
Off-Street	Murrayfield ground improvements Complete	23-May-12	31-Jul-12	-69		N	S21B now driving completion, due to an 18d slip in period, attributed to S21A/B resource management issues with plant
Off-Street	Water of Leith Bridge Complete	31-Aug-12	13-Nov-12	-74		N	Bridge beams placed over wknds 31Jul and 5Aug. Progressing with Steelwork and Deck
Off-Street	S22A Balgreen Road Bridge Complete	18-Sep-12	02-Nov-12	-45		N	Out of sequence Pile Cap construction, has facilitated further 2wk recovery (10d float).
Off-Street	Track civils - (Formation and Ballast) between MUS and BAL Complete	06-Feb-13	04-Mar-13	-26		N	The alternate critical float path for Off-Street slipped by 3d S21B now driving (27d float).
Off-Street	S26 South Gyle Beam Inst'n Complete	05-Nov-12	18-Aug-12	78		N	Bridge beams placed weekend 4-5Aug
Off-Street	Gateway IFC Dwgs Issued	18-Jun-12	27-Jun-12	-9		N	Complete
Off-Street	Rail Systems Gyle - Depot	27-Nov-12	10-Dec-12	-13		N	
Off-Street	Gateway King Post Retaining Structure complete	03-Oct-12	11-Oct-12	-8		N	20d improvement due to Attenuation Tank earthworks, Rev5 shows this activity to be off the critical path.
Off-Street	Gateway Post Eathworks Drainage Complete	14-Nov-12	22-Nov-12	-8		Y	20d improvement due to Attenuation Tank earthworks, still remains the final section of works for Off-Street
<b>Depot &amp; Test facilities</b>							
Depot & Test Facilities	WHB&C Retaining Walls at Airport Complete	09-Aug-12	27-Jun-12	43		N	Complete
Depot & Test Facilities	Gogar Burn Tram Stop Complete	17-Oct-12	09-Nov-12	-23		N	Platforms have been constructed
Depot & Test Facilities	Tamping Ballast Section 7A Complete	26-Sep-12	26-Oct-12	-30		Y	Remains key Date driving Section B completion
Depot & Test Facilities	Rail Systems 7A Complete	17-Sep-12	09-Nov-12	-53		N	No change
Depot & Test Facilities	Overhead Catenary Systems 7A Complete (pre SP2.0 testing)	28-Nov-12	05-Nov-12	21		Y	OHLE works now underway, completion however is driven by Tamping 7A
Depot & Test Facilities	AIR-Depot Test Track available (post IR10)	14-Dec-12	07-Dec-12	7		Y	Now driven by Tamping 7A, OHLE and revised logic from commissioning plan
Depot & Test Facilities	AIR Tram Stop Complete	21-Dec-12	08-Oct-12	74		N	Confirmation of wayleaves, has further improved forecast dates by 40d as per Section B plan for installation, T&C



Produced by	Graeme Walker, Hazel Kennedy & Shirley-Anne Collin	SECTION	<b>HEALTH &amp; SAFETY</b>		Employer	City of Edinburgh Council
Approved by	Julian Weatherley	Issue By:	CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT		Address	Waverley Court, Edinburgh, EH8 8BG
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> of July to 18 <sup>th</sup> of August 12	Project:
						Edinburgh Tram Network

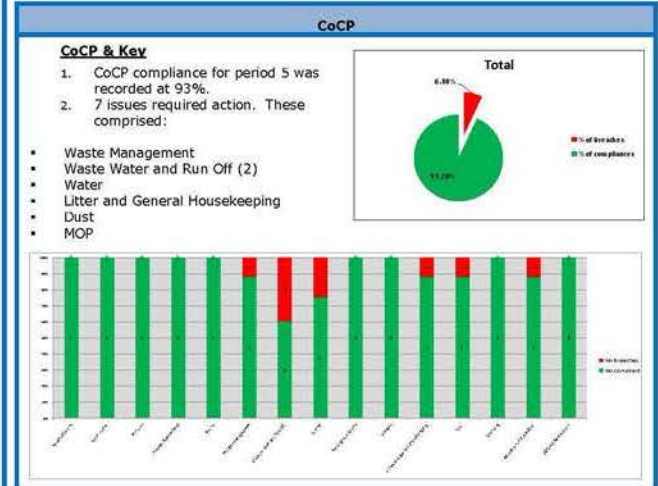
**PROGRESS**

**SUMMARY**

During the last period Turner & Townsend have been working to implement a number of key initiatives regarding health and safety on the project. These have comprised:

- Aligning the monitoring process to provide the information that is required for the leading indicators that have been identified.
- Undertaking targeted monitoring to review the housekeeping on sites, focusing on general site issues and storage of materials.

Progressing the recruitment of additional support to the health and safety team to provide assistance in undertaking monitoring of the contractors' work sites and the close out of the actions that are identified within the monitoring.



**CDM Regulations**

The CDM process has been implemented for the enabling works at York Place which are being undertaken by Crummock. This has included:

- Review of site access and traffic management arrangements.
- Review of the further information requested for the Crummock construction phase plan
- Review of Crummock dedicated welfare arrangements.

**Initiatives**

**Deliver the Tram Safety**

Following issues with housekeeping focus on monitoring has been undertaken with regard to the condition of the work sites - littering and the storage of materials.

The following safety initiatives have been identified to be initiated in the next period:

- Management of lifting operations.
- Vehicle movements in and around work sites.

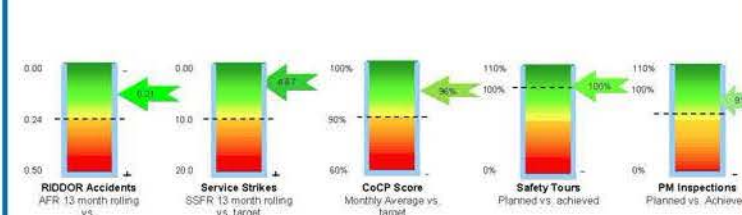
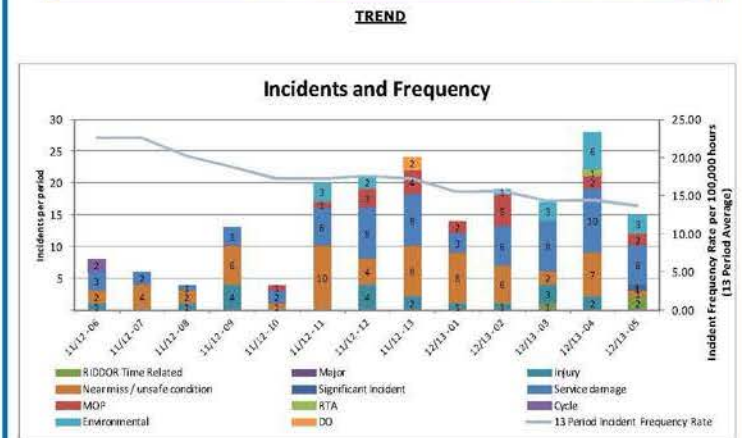
**HEALTH & SAFETY**

**Incidents**

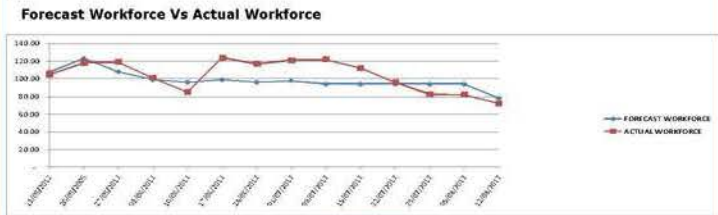
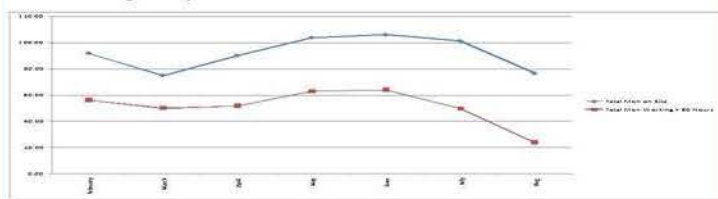
There were 15 incidents reported during the period since the last dashboard. A summary is provided below. The RIDDOR reportable incident related to the overturning of the mini excavator which was reported within the P4 report. Full details can be obtained on page 7 of the Progress Report.

The rolling 13 Period AFR is 0.21

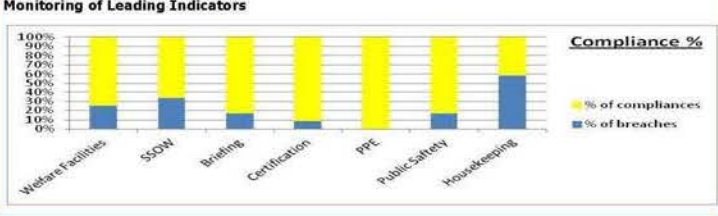
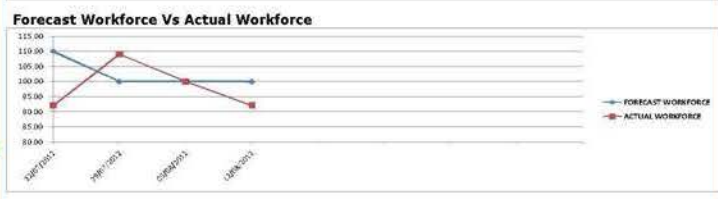
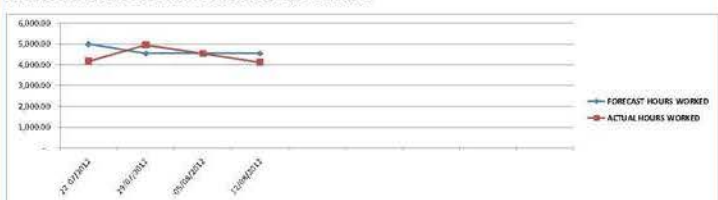
Classification	Number	Major	Serious / significant	Minor	RIDDOR Reportable
Member of public	2			2	0
Service damage	6			6	0
Environmental	3			3	0
Major	0			0	0
Injury > 3 day	2			2	0
Injury < 3 day	0			0	0
Dangerous occurrence	0			0	0
Road traffic accident	0			0	0
Near miss / unsafe condition	1			1	0
Significant Incident	1				1
<b>TOTAL</b>	<b>15</b>			<b>14</b>	<b>1</b>



**McNicholas**



**Crummock**



CEC01951549\_0049



Produced by	Graeme Walker & Shirley-Anne Collin	SECTION	QUALITY, ASSURANCE & ENVIRONMENTAL CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT		Employer	City of Edinburgh Council
Approved by	Julian Weatherley	Issue By:	Turner & Townsend Project Management Limited, 9 Lochside Avenue, Edinburgh Park		Address	Waverley Court, Edinburgh, EH8 8BG
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> July 2012 to 18 <sup>th</sup> August 2012	Project:
						Edinburgh Tram Network

**PROGRESS**

**SUMMARY**

- Environmental**- Two Environmental Incidents were reported during the period.
- Assurance** – Evidence File – Will be transferred from 'old' SharePoint to 'new' SharePoint; date to be confirmed.
- Requirements Management** – Verification and Validation Agreed Status now 100% complete. Requirements requiring concessions are now being progressed.
- Safety Verification Scheme Audits** – Safety Verification audit TSA/12/01 report has been updated and reissued. Checklist for Safety Verification audit TSA/12/03 has been reissued to BBS.
- Non Conformance Advise** - Advice of possible Non-Conformance (ANC-02, in relation to SVS Audits currently remains outstanding.

**ENVIRONMENT**

**Environmental**

- Two environmental incidents were reported during period. One relating to noise from a generator at Coates Crescent; this is now being switched off in the evening. The 2<sup>nd</sup> incident related to an hydraulic oil spill from a road sweeper at the Airport. BBS have been asked to supply a more detailed report, specifically relating to the use of hydrants at the airport and the discharge of water from the road sweeper.
- An incident investigation has been undertaken by BBS and the results reviewed by Turner & Townsend regarding the incident relating to a hydraulic oil spill by Grahams adjacent to Murrayfield Stadium.
- The Ocean Terminal Monument has now been reinstated to a new location at Ocean terminal.
- The Conan Doyle monument is currently being reinstated and will be completed on the 17<sup>th</sup> of August 2012, allowing McNicholas to commence public realm reinstatement works in the area.
- An environmental inspection was carried out with BBS on the 8<sup>th</sup> of August 2012. The inspection covered all works from St Andrews Square to Murrayfield. No major issues identified however; minor issues included general site tidiness, use of spill kits and awareness of the potential for hydraulic oil spill.

**QUALITY**

**NCR's by Period**

Total No of NCR's raised is 597.  
 28 NCR's were raised during the period  
 4 NCR's were closed out during the period  
 26 no open NCR's are greater than 6 months old. (The low number of NCR's closed out in the period is primarily due to the holiday period).

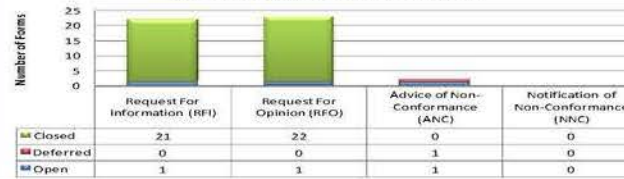


**INDEPENDENT COMPETENT PERSON**

- Project Safety Certification Committee meeting took place 1 August 2012. Agreed that PSCC meetings would now take place on a monthly basis and that these would be held in place of the ICP meeting which will now be held on an adhoc basis. Next PSCC will take place on the 29<sup>th</sup> August 2012
- Advice of Non Compliance 002 – Due to cancellation of Safety Verification Audit, Safety Verification Scheme Audit TSA/12/03 and Infracore to support the current format – a way forward has been agreed with regard to SV audits. The ANC currently remains open.

ICP Correspondence	Open	Deferred	Closed	Total
Request For Information (RFI)	1	0	21	22
Request For Opinion (RFO)	1	0	22	23
Advice of Non-Conformance (ANC)	1	1	0	2
Notification of Non-Conformance (NNC)	0	0	0	0

**ICP Correspondence Status**



**REQUIREMENT MANAGEMENT**

**Progress**

- Verification and Validation Agreed Status now at 100% complete. Requirements requiring concession being progressed. A further 4 concessions have been added hence the percentage of those agreed is currently 19%

Total Number of Concessions	Concessions Agreed %
58	19%

Verification & Validation Agreed %	Requirements Accepted %
100	2

**DEPOT SNAGS**

**3 Snags remain open, key snags to be closed are;**

- Tram Wash Door -Barr are to fix but we are having trouble getting Barr to respond to the issues.
- Wheel Lathe Water Ingress - Investigations ongoing. The rail welds and joints have been checked, but these are not responsible. We are pursuing the approach of stopping the water getting into the system rather than tanking the pit. As this is the case it was agreed at the Ready for Operation meeting on 14<sup>th</sup> June 2012 it will stay as a snag and not be changed to a defect. This will necessitate the snag list possibly not being closed out by the end June.
- Stabling Yard Points - Safety Verification Scheme issue which has a history regarding construction/maintenance tolerance's and Wheel Rail Interface. The Independent Competent Person is involved with this issue. We are awaiting a response from BBS.

**CONSENTS**

**Combined Consents required**

	Total Required	Total On Hold	Total Outstanding	Total Closed
Third party	19	4	13	2
Technical Informatives	6	1	3	2
Planning Consents	38	15	6	17
Other Approvals	12	0	5	7
Legal Agreements	15	0	10	5

**No Update on this section for Period 5 - Key Consents, with full list in the appendix.**

- Network Rail Asset Protection Agreement - delayed due to Network Rail
- Earthing and Bonding technical informative - delayed due to late submission from BBS

**SUCCESSSES**

- All stakeholders are cooperating well at the depot.
- New assurance system implemented for Tram delivery
- Introduction of additional staff and working patterns
- GIS information provided by Scottish Water.

**OPPORTUNITIES**

- Increased monitoring of onsite activities. Project Management resources are will become part of integral assurance process.
- Safety seminars to be arranged for project managers.
- Review of supervisor competencies
- Agree detailed assurance programme for review.

**FAILURES**

- None.

**THREATS**

- Statuary bodies co-operation.
- Late issue of documentation by BBS.
- Potential gaps between contracted maintenance responsibilities
- Visibility of BBS design and assurance documentation.



Produced by	Rob Leech & Shirley-Anne Collin	SECTION	ON STREET DASHBOARD REPORT CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT	Employer	City of Edinburgh Council
Approved by	Julian Weatherley	Issue By:	Turner & Townsend Project Management Limited, 9 Lochside Avenue, Edinburgh Park	Address	Waverley Court, Edinburgh, EH8 8BG
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> of July to 18 <sup>th</sup> of August 12
				Project:	Edinburgh Tram Network

PERIOD
<b>PROGRESS</b>
<ol style="list-style-type: none"> <li>All available sites are in the possession of Infraco for installation of trackwork.</li> <li>Infraco progressing well with track installation in Shandwick Place and Princes Street/South St Andrews St.</li> <li>York Place Phase 1 works progressing well.</li> <li>Study underway to assess keeping bus station open for duration of the works</li> <li>Legacy Works tender accepted by CEC – Final scope of works to be agreed with Scottish Water before works commence.</li> <li>Shandwick Place legacy works being completed to meet Infraco programme.</li> <li>Strategy for dealing with Type 2 conflicts agreed and instructions issued.</li> <li>Works required to open plug have progressed well – traffic management measures being finalised.</li> <li>Excavation works underway in the Crescents.</li> <li>Re-building Shandwick Place walls de-scoped from Infraco.</li> <li>Dublin Street Steps – Owners formal agreement being finalised</li> <li>Works at Tower Place Bridge and Lindsay Road complete.</li> </ol>

LOOK AHEAD
<ol style="list-style-type: none"> <li>Track laying will continue in St Andrew Square and from Lothian Road to Haymarket.</li> <li>Carriageway reconstruction will commence in Shandwick Place.</li> <li>Continue with Type 2 conflicts.</li> <li>Continue excavation works in crescents to commence trackworks.</li> <li>Princes Street plug on target for completion by 21<sup>st</sup> September 2012 to allow access to closure of York place.</li> <li>Turner &amp; Townsend will continue to react to utility discoveries by Infraco.</li> <li>Scope finalisation with SW for legacy works north of York Place to continue.</li> <li>Continue to work with Infraco to recover time lost due to utility conflicts – replenish the time bank.</li> <li>Crummock to commence drainage and ducting works in York Place.</li> </ol>

Legacy – Progress				
Total Snags 861				
Completed Snags 282				
Section	Live	Closed	% Complets	Total
1A	160	0	0%	160
1B	219	0	1%	219
1C	87	142	82%	229
1D	57	95	70%	152
2A	17	2	16%	19
3	0	0	0%	0
4	0	0	0%	0
5A	9	0	0%	9
5B	11	2	37%	13
5C	3	9	75%	12
6	5	22	88%	27
7A	8	11	58%	19
7A	2	0	0%	2
ALL	578	283	40%	861


St Andrews St                      Shandwick Place



St Andrews Square                      Haymarket



Princes St/ St Andrew Square                      Haymarket/ Shandwick Place

KEY ISSUES
<ol style="list-style-type: none"> <li>Scottish Water relationship generally, and Princes Street issues requiring derogation.</li> <li>York Place planning and retaining single lane</li> <li>Type 2 conflicts and SW Legacy issues – Possible delays.</li> <li>Legacy works North of York Place.</li> <li>Time Bank Recovery.</li> </ol>

CEC ACTIONS / DECISIONS
<ol style="list-style-type: none"> <li>SW requires legal agreement for derogations to specification in Princes Street.</li> <li>Dublin Street Steps – Legal Agreement with landowner</li> <li>OLE Building Fixings – Legal Agreement with landowners</li> </ol>

SOFT ANALYSIS	
<b>SUCCESSSES</b> <ol style="list-style-type: none"> <li>Working relationships with BBS remains good, particularly on site</li> <li>Speedy reaction to conflict issues</li> </ol>	<b>OPPORTUNITIES</b> <ol style="list-style-type: none"> <li>Optimize revised traffic phasing and work with Infraco to replenish time bank</li> <li>Return buses to Shandwick Place before 31<sup>st</sup> March 2013</li> <li>Clear York place before end 2012 to allow Infraco trackslab works to commence – target 11 December 2012</li> </ol>
<b>FAILURES</b> <ol style="list-style-type: none"> <li>Carriageway vertical alignment in south St Andrew St</li> <li>SDS OLE design</li> <li>MUDFA design, as built, contract administration &amp; supervision</li> </ol>	<b>THREATS</b> <ol style="list-style-type: none"> <li>Type 2 Conflicts</li> <li>Legacy works at Leith Walk</li> <li>Legacy works within tram worksites</li> <li>Scottish Water relationship and derogations required to specification along route.</li> <li>Unknown utilities</li> <li>Owner consent at Dublin Street Steps</li> <li>Infraco delay to Rev 5 due to utilities</li> </ol>



PROGRESS IN PERIOD

PHOTOS

PROGRESS IN PERIOD

- Haymarket Station Tram Stop civil and track works due to be completed by the end of August 2012;
- Russell Road bridge deck works continued and road closure removed on 24th August 2012;
- ScotRail Depot entrance work commenced in the period;
- Technical solution found for the movement of the shunt line at ScotRail.
- Russell Road Retaining Wall (W4), units 20-29 wall construction continued;
- Structure W18 Murrayfield Tram Stop continuing;
- Roseburn Street Structures construction continued;
- Murrayfield Stadium Retaining Wall (S505) ground improvements complete;
- Murrayfield Underpass (S21C), ground improvements complete and underpass construction commenced;
- Water of Leith bridge beams installed over two weekends;
- Balgreen Road bridge eight bridge beams installed;
- Balgreen Road Tram bridge, deck construction;
- Bankhead Drive tram drainage continuing;
- Edinburgh Park track works continuing;
- Gyle Broadway, track on north side completed and traffic management changed over;
- Track works being undertaken Gyle to A8 underpass;
- Edinburgh Gateway bulk of earthwork excavation for attenuation tank completed;
- Gogarburn all track works complete;
- Gogarburn platforms complete, Scottish Power have laid feed to the tramstop;
- Ingliston Park and Ride, commence installation of tram furniture; and
- Tracklaying has commenced at the Airport tram stop.

Water of Leith Bridge Beams Installed



South Gyle Access Bridge Beam Installed



South Gyle Access Bridge Beam Installed



KEY ISSUES

- Eastfield Avenue issues still requires resolution with the airport.
- Edinburgh Gateway Network Rail have raised concerns over the construction of the permanent solution with the King Post Wall in place.
- Culture within the Scottish Water team; lack of willingness to help and looking for additional issues.
- Increase in Infracore utility issues requiring an instruction.
- Radio tests at the depot have interfered with NATs signals therefore further tests shall be required.

CEC ACTIONS / DECISIONS

- Close out of the wayleave with Scottish Power and Network Rail at Haymarket.
- Scottish Water buildover agreements require to be progressed.
- Verity House commercial position to be decided and agreed with Network Rail.
- Network Rail Asset Protection Agreement requires to be finalised.
- Network Rail Bridge agreements require to be progressed.

LOOK AHEAD

The following items will be progressing during the coming period:

- Haymarket Yards, track installation works;
- Russell Road Retaining Wall (W3) construction;
- ScotRail Depot entrance works and relocation of gas governor;
- Russell Road Retaining Wall (W4), units 20-29 construction;
- Murrayfield Structures construction continuing; tram stop, Roseburn Street structures, retaining wall (S21B), Underpass (S21C), reinforced earth retaining wall (S21D),
- Water of Leith Bridge (S21E) deck construction;
- Baird Drive Retaining Wall construction recommencing to bring this to the correct level now that Water of Leith and Balgreen Road bridges are installed;
- Balgreen Road Bridges, deck construction;
- Balgreen Road to Carrick Knowe, track installation works (subject to track team availability) and tram stop construction;
- Carrick Knowe bridge, complete structure works;
- South Gyle Access bridge, deck construction;
- Bankhead Drive, track drainage, ductwork and earthworks;
- Edinburgh Park Station Tram Stop, complete civil engineering works;
- Edinburgh Park, track works continuing;
- Gyle Broadway, track works and completion of piling for the overhead line masts;
- Eastfield Avenue power supply and installation of equipment;
- Low Voltage power supply installation to the former kiosk area; and
- Trackwork between the Airport Stop and Eastfield Avenue continuing.

SOFT ANALYSIS

SUCCESSSES

- Bridge beam installations at South Gyle, Water of Leith and Balgreen.
- ScotRail shuntline technical solution established, commercial discussion required.
- Ground improvements complete.

OPPORTUNITIES

- Early diversion of the Edinburgh Gateway sewer.
- Purchase of the temporary mast maybe negated by using the current aerial within the depot.
- Manage the amount of snagging off street by drafting and agreeing process with Scottish Water.

FAILURES

None

THREATS

- Edinburgh Gateway/Murrayfield potentially on the critical path for the project.
- Network Rail concerns over the King Post Wall at Edinburgh Gateway.
- Scottish Water looking for opportunities to increase the project scope.
- As built requests from Scottish Water not consistent with the contract requirements.



Produced by	Willie Delaney, & Shirley-Anne Collin	SECTION	TRAMS CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT		Employer	City of Edinburgh Council
Approved by	Julian Weatherley	Issue By:	Turner & Townsend Project Management Limited, 9 Lochside Avenue, Edinburgh Park		Address	Waverley Court, Edinburgh, EH8 8BG
Status	FINAL	Issue Date	29-08-2012	REPORTING PERIOD	22 <sup>nd</sup> July to 18 <sup>th</sup> August 2012	Project:
						Edinburgh Tram Network

PROGRESS IN PERIOD	PHOTOGRAPHS / KPIS	KEY ISSUES
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**PROGRESS IN PERIOD**

- Test and Commissioning – Testing on the Mini Test Track (MTT) continues to progress well ahead of schedule:
  - Twenty one trams have now been delivered to Gogar Depot
  - Seventeen have completed Interim Routine Testing on the MTT

There is no plan to deliver any additional trams in the coming period; this is due to the Spanish holidays. It is however CAF's intention to complete the delivery of all remaining trams by November, significantly ahead of the currently planned completion date of December 2012 this has been advised by CAF, however Turner & Townsend have no official documentation confirming this. The tram delivery schedule will be updated prior to the September report to reflect this.
- System Acceptance and Integration – Following acceptance of the BBS Test and Commissioning (T&C) Plan and Programme, Turner & Townsend are now participating in regular meetings with CAF, BBS and Lothian Buses to plan and manage the T&C process on Section B
- Bus Tracker – Following the decision not to implement the Bus Tracker system on trams at this time, Turner & Townsend have issued change notices to both CAF and BBS (Siemens) as follows:
  - CAF – To safely terminate wiring and connections on trams; and
  - Siemens – To provide an estimate to amend the interface between the Mybustracker webpage and the RailCom Manager, to meet contractual requirements.

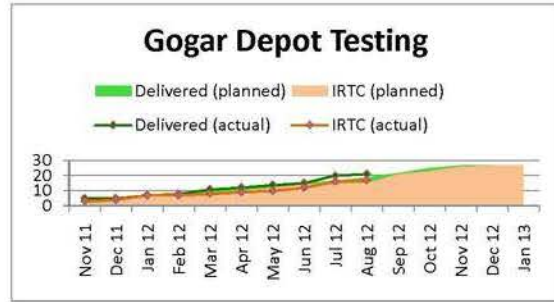
There may be further change notices raised should Lothian Buses decide that potential functionality upgrades to the current RailCom Manager interface may offer benefits to tram operations.
- Fare Collection - Turner & Townsend have adopted a Project Management role in the provision of Ticket Vending Machines (TVMs), Hand Held Devices (HHD) and Platform Validators.
 

Meetings were held on 31<sup>st</sup> July 2012 with all stakeholders (CEC, LB, ETL, Almex, BB, and Siemens), to agree how the procurement process should be managed. Further workshops have been arranged to determine and agree the scope and functionality of the equipment to be procured.

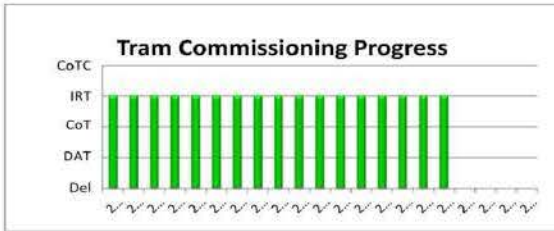
Regular meetings have been scheduled to review progress trackers, to ensure that the Fare Collection equipment is delivered, installed and tested to an agreed timetable.



Tram testing at Gogar Depot



Trams scheduled for delivery	Date
Tram 22 (#262)	18/09/2012
Tram 24 (#266)	02/10/2012
Tram 25 (#tbc)	w/e 05/10/2012



CoTC - Certificate of Tram Commissioning	Further action required
IRTC - Interim Routine Test Certificate (MTT)	Tests Completed
CoTD - Certificate of Tram Delivery	
DAT - Delivery Acceptance Test	

**KEY ISSUES**

- A lack of technical information on Ticket Vending Machine and Validators requirements is reported to be delaying the completion of tramstop design and equipment installation. Further information on the interface between the Fare Collection equipment and the Operator's infrastructure management system (RailCom) can only be provided when the scope and functionality of the system is defined and agreed.
 

Turner & Townsend have arranged meetings with all stakeholders to ensure this information becomes available as soon as possible.
- Turner & Townsend have identified an element of work to be completed by the Tram Inspector relating to the completion of testing on the Mini Test Track and additional work required for Section B handover, which was not included in the original budget. Discussions are ongoing with Mott MacDonald to agree the scope of the additional Tram Inspector Services and with CEC to confirm budget requirements.

**OPERATIONAL ISSUES**

- Turner & Townsend have requested an update to the reliability analysis (FMEA) documentation already provided by CAF, following the implementation of a modification on the (PISPASPA) Passenger Information System, Passenger Announcement System, Public Address / CCTV system. This is necessary to ensure that the modification will have no effect on reliability in passenger service.
- Turner & Townsend are chasing an investigation report from Lothian Buses, into an incident where a tram being shunted in the depot did not stop on request. CAF have implemented immediate actions to ensure the incident is not repeated.

**CEC ACTIONS / DECISIONS**

- The scope and functionality of the Fare Collection system must be confirmed and all stakeholders informed

**SOFT ANALYSIS**

SUCCESSES	OPPORTUNITIES
<ol style="list-style-type: none"> <li>Tram delivery and testing continues ahead of schedule. CAF intend to complete delivery way ahead of the scheduled December date.</li> <li>Turner &amp; Townsend have now taken a more active role in the procurement of Fare Collection equipment.</li> </ol>	<ol style="list-style-type: none"> <li>Start system testing and commissioning on completion of Off Street Section (Airport to Shandwick Place crossover) leading to earlier commencement of Revenue Service date (early partial service on Off Street Section and early service on full route)</li> <li>Further review of BBS Section B completion programme may allow trams to be commissioned ahead of current schedule</li> <li>Increase in tram delivery rate could allow all trams to be delivered well ahead of schedule</li> </ol>
FAILURES	THREATS
None identified	<ol style="list-style-type: none"> <li>Lack of information on TVM procurement is delaying the completion of tramstop design and equipment installation</li> <li>FRACAS / Engineering Change procedures required to manage technical issues raised.</li> </ol>

**LOOK AHEAD**

The following items will be progressed during the coming period(s):

- Test and Commissioning:
  - Twenty second tram (#262) due to be delivered on the 18<sup>th</sup> September 2012
  - Delivery schedule will be updated to show new delivery completion date
  - Interim Routine Testing scheduled to be completed on all trams by 29<sup>th</sup> January 2013.
- System Acceptance and Integration – Turner & Townsend shall continue to participate in regular meetings to progress the T&C, integration and handover requirements to allow Section B completion.
- Bus Tracker – Formal response is expected to the two change notices issued to CAF and BBS.
- Fare Collection – Turner & Townsend will facilitate further workshops to:
  - Determine and agree TVM, HDD and Platform Validator numbers and functionality;
  - Provide any additional information required to complete the design of tramstops;
  - Manage actions required to allow the sign off of the Fare Collection contract;
  - Develop a schedule for the delivery, installation and test of Fare Collection equipment.



<b>Produced by</b>	Shirley Collin, Mike Mackenzie & Peter Smith	<b>Function</b>	<b>COMMERCIAL</b>		<b>Employer</b>	City of Edinburgh Council	
<b>Approved by</b>	Gary Easton	<b>Issued By:</b>	Turner & Townsend Project Management Limited 9 Lochside Avenue, Edinburgh Park		<b>Address</b>	Waverley Court, Edinburgh, EH8 8BG	
<b>Status</b>	<b>FINAL</b>	<b>Issue date</b>	29-08-2012	<b>Reporting Period</b>	23 July to 18 Aug 2012	<b>Project</b>	Edinburgh Tram Network

SUMMARY				VALUE ENGINEERING			CHANGE		
	£K	Contract Sum	Approved Change	Revised Contract Sum	<b>Item</b>	<b>£K</b>	<b>Comment</b>		
Totals		<b>479,660</b>	<b>13,716</b>	<b>493,376</b>	Remove embargoes and revised TM	6,460	22 week saving reduced to 16.6 at period end 28/4/12		
Change in Progress				6,735	Setts (separate CEC budget)	980	£88k CEC contribution (SAS) and £95K for revised specification.		
Anticipated Change				6,781	De-scope public realm at St Andrew Sq	700	Instructed, monitored through changes in progress		
Contributions				-8,365	Contributions 3rd Party Agreements	2,997	Miscellaneous 3 <sup>rd</sup> party contributions		
Forecast Change / Contributions				<b>5,151</b>	De-scope works at Forth Ports	2,445	Instructed, approved change		
Forecast Total				<b>498,527</b>	Omit Airport Tram Kiosk and Canopy	150	Instructed, monitored through changes in progress		
Risks (refer risk section below)				4,500	Temporary tram stop at York Place	150	Instructed, monitored through changes in progress		
Opportunities (refer opportunities section below)				4,500	Redeployment of Trams	CEC	Included in CEC budget code		
Risks & Opportunities				<b>4,500</b>	Cancel track York Place to Newhaven	1,100	Instructed, approved change		
Revised Forecast				<b>503,027</b>	Omit Siemens works at Tower Place	100	Instructed, approved change		
Budget				<b>500,154</b>	Road re-construction depth	700	Instructed, monitored through changes in progress		
					Design freeze north of York Place	1,600	Infracore design costs expended		
					Lay off TM at Forth Ports/Leith Walk	1,600	TM not included in Infracore budget provision		
					Roseburn Viaduct Cladding	308	Instructed, monitored through changes in progress		
					De-scope crew relief facilities (Haymarket)	74	Instructed, monitored through changes in progress		
					<b>Opportunities secured</b>	<b>8,854</b>			
					<b>Opportunities to secure</b>	<b>7,310</b>			
					1. Embargoes and TM – total value based on 22 week saving. 11 weeks currently eroded. Forecast assumes erosion of entire 22 weeks (based on QSRA). However opportunity to accelerate utilities in YP under review. BBS disagree with our method of evaluating this value which introduces a risk of up to £6.5M. 2. York Place Tramstop – design principles established, cost check in progress 3. Road reconstruction depth – Opportunity to reduce road reconstruction depth being identified on site				
<b>RISK - Significant Movement in Period (Jul/Aug 12):</b>									
<b>Risk ID</b>	<b>Risk Description</b>	<b>Old Level</b>	<b>Movement</b>	<b>New Level</b>	<b>Comments</b>				
ED051	Insufficient storage and associated security	GREEN	CLOSED	CLOSED	Storage issues resolved				
ED055	Sub suppliers warranties expire during the maintenance period and Siemens may have legitimate claim due to delays	GREEN	CLOSED	CLOSED	Maintenance period is Section D plus 10 years				
ED045	NR disputes and compensation or suspension of works due NR Haymarket station project interface issues at station car park.	GREEN	CLOSED	CLOSED	Interface section of work now completed				
ED121	Failure to recover costs for utilities off street from BBS paid by CEC (SGN diversion and others)	NEW	NEW	RED	Legacy issues				
ED120	Risk of claims for loss of productivity due to delayed access to site	NEW	NEW	AMBER	Delayed handover for site access				
ED123	Scottish Water Scope Increases	NEW	NEW	RED	Scottish Water work may currently be underestimated				
Additional Comments:									
Risks reviewed, actions updated and added and amendments to probabilities and impacts made. Above are the significant changed in the period.									
				<b>On Street Works Estimate</b>					
	<b>Description</b>	<b>ICC Certificates to Date (£k)</b>	<b>Action</b>						
	Disruption and other costs associated with utilities	857	Ongoing monitoring of costs and mitigation of risks						
	Temporary accommodation for utilities contractor	2	Complete						
	Road re-construction protocol (opportunity to reduce depth)	0	Opportunities to be valued once scope established						
	Scottish Water diversion Princes St	253	Complete						
	Christmas embargo – temporary infill Princes St	204	Complete						
	Traffic Management costs for amended programme constraints	211	Ongoing review and mitigation of costs being carried out						
	Revised drainage design	131	Ongoing agreement on value of amended scope						
	Geotextile liner to Clifton Terrace void	2	Complete						
	Princes Street additional works	240	Agreement of final total costs currently being undertaken						
	York Place turnback and temporary tram stop	0	Ongoing – method of cost reimbursement to be agreed						
	Floating track slab	3	Ongoing – method of cost reimbursement to be agreed						
	<b>Total ICC Value to date</b>	<b>£1,903k</b>							
<b>Commercial Issues</b>									
	<b>Issue</b>	<b>Status</b>	<b>Action</b>						
	Mark-ups on omissions and negative changes. BBS are proposing a reduced mark-up on such items from what is stated in the contract		Turner & Townsend require instruction from the independent certifier on the mark-ups to be applied to omissions and negative changes as we consider what is being proposed by BBS to be a departure from the contract.						
	ScotRail requested works		Investigation into potential contribution from ScotRail for works which are additional to the Employer's Requirements						
	Gogar Castle Road		Requirement to be challenged to remove potential additional cost						
	Off Street Utilities; BBS claim certain utilities (principally SGN diversion in NIL land) are excluded from their price.		Turner & Townsend require instruction from the independent certifier as acceptance would be a departure from the settlement agreement						
	Rev 3a to 4 Prolongation costs; BBS have not justified the costs incurred to T&T's satisfaction		CEC to confirm if they require T&T to pursue further to establish if costs have been incurred.						
	Rev 4 to Rev4c Cost Engineering; BBS maintain that their portion of the VE saving (£6.5M) should not be eroded by the time bank drawdown		Turner & Townsend have forwarded a paper to CEC providing a commentary and demonstrating the effect of this issue. Further guidance is sought from the IC on the intention of this VE item.						
	Claims for disruption; BBS have stated that there is a cost for disruption in section 1C		Schedule part 45 makes no provision for claims for delay and disruption beyond what is included in the period end estimate (i.e. any claim should form part of period end estimate)						

## Appendix 2 – Health, Safety & Environment

### **Deliver the Tram Safely / Deliver a safe Tram**



### 1.0 Executive Summary

#### Executive Summary

- **Independent Competent Person** – ANC 002 - Confirmation of 'Duty Holder' ability to deliver Safety Verification remains open, however a way forward with regard to Safety Verification Auditing has been agreed
- **Requirements Management** –Requirements requiring concession being progressed. 4 further concessions have been added.
- **Evidence File** – IT are currently experiencing problems with the transfer of information to the new system, as only part of the information is transferring. IT has advised that this will be complete during period 6.
- **Safety Verification Scheme Audits** –Safety Verification audit TSA/12/02 updated and re-issued. Check sheet for TSA/12/03 issued to BBS, response expected week commencing 13<sup>th</sup> August 2012.
- **Design** – 3 building fixing approvals remain outstanding. All owners requested further information. A formal agreement has now been sent to each owner. This action remains outstanding
- **Tram** - 21 vehicles have now been delivered to the depot and are undergoing static and dynamic testing.

#### Non Conformance Reports

- Total No of NCRs raised is 597.
- 28 NCRs were raised during the period and 4 NCRs were closed out during the period. There are 121 NCRs open, 458 NCRs closed and 18 NCRs cancelled/withdrawn. 26 no open NCRs are greater than 6 months old.

### 2.0 Safety Verification Scheme (SVS)

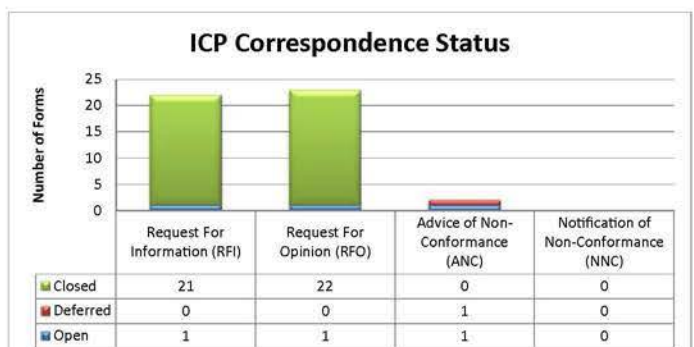
- Evidence File – Currently no information can be uploaded to the evidence file as the site has not been transferred over to the new SharePoint. IT are currently having problems transferring the existing information to the new system; currently unable to transfer the information in its entirety. The situation is currently being reviewed and will hopefully be resolved during period 6.
- Safety Verification (SV) audit TSA/12/01 report for Maintenance of Depot Workshop Equipment and Track has now been updated and reissued. A wash up meeting will be held on the 22<sup>nd</sup> August 2012.
- SVS Audit TSA/12/03 – Section 1C - Slips, Trips, Falls (2 Wheel Vehicles); the check sheet for this audit has been reissued to BBS. It has been agreed that BBS will advise of the evidence to address the audit questions and the Safety Verification team will review the evidence within the Edinburgh Tram system and collate a report. Evidence reference to be provided by BBS week commencing 13<sup>th</sup> August 2012 and the Advice of possible Non-Conformance (ANC-02), in relation to SVS Audits currently remains outstanding.

### 3.0 Independent Competent Person

#### ICP Issues

- PSCC meeting took place 1 August 2012. Agreed that PSCC meetings would now take place on a monthly basis and that these would be held in place of the ICP meeting which will now be held on an adhoc basis. Next PSCC will take place on the 29<sup>th</sup> August 2012
- ANC 002 – Due to cancellation of SV audit SVS Audit TSA/12/03 and Infraco to support the current format – a way forward has been agreed with regard to SV audits, as detailed opposite. The ANC currently remains open.

ICP Correspondence	Open	Deferred	Closed	Total
Request For Information (RFI)	1	0	21	22
Request For Opinion (RFO)	1	0	22	23
Advice of Non-Conformance (ANC)	1	1	0	2
Notification of Non-Conformance (NNC)	0	0	0	0



### 4.0 BBS Design Construction and Testing & Commissioning Assurance

#### Design

##### Electromagnetic Compatibility (EMC)

- BBS Correspondence (Ref. ETN(BBS)CEC\$TEE&ABC#054959) SIT Procedure - Overall Magnetic and Radiated Emissions (IO 1.0) was submitted for information during the period 2. The document has been reviewed and comments have been passed to BBS correspondence reference INF CORR 8492 sent 6<sup>th</sup> August 2012.
- A meeting was held with BBS during period 4 to discuss the results to date for Rail Conductance. BBS stated that results for Princes St do not meet the contract criteria of being 5 times better than standard. BBS will produce a rationale in support of a concession to this requirement. A draft of the rationale is currently being reviewed and a follow up meeting is to be held during the next period.
- SDS provided information to enable Network Rail (NWR) to provide a non-objection to the proposed location for the Radio Mast near to the Edinburgh Gateway stop. SDS followed up their request for non-objection from NWR, stating that they are compliant with NWR standards in the planned location. NWR has now confirmed that the statement of compliance is with the appropriate standard.
- BBS Correspondence ETN(BBS)CEC&TEE&ABC#060100 SIT Procedure - Immunisation Measurements (10 2.0) was submitted for review. The document is currently being reviewed internally and also by NWR.

##### Trackform

- Rheda City Track Typical Sections were submitted during the period. These have been reviewed by TSS and significant concerns have been raised in relation to the ability to maintain the tracks in the future. Turner & Townsend have discussed with TSS and BBS and are now developing a formalised response.

##### Building Fixings

- 3 building fixing approvals remain outstanding. All owners requested further information. A formal agreement has now been sent to each. Currently awaiting approval / return. This action remains outstanding.

#### Testing & Commissioning

- Depot and mini-test track operations continue. 21 vehicles have now been delivered and are undergoing static and dynamic testing, with next delivery is scheduled for the 18<sup>th</sup> September 2012



### 5.0 Operator/Maintainer Safety Management System (inc. T&C)

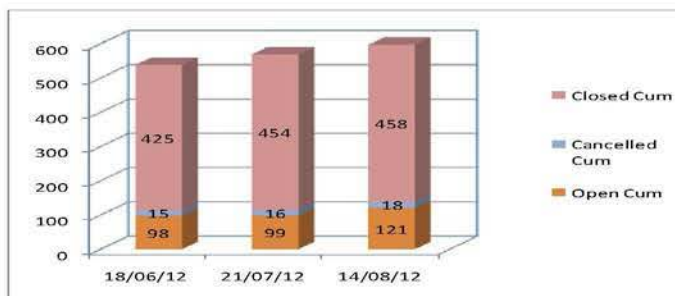
- Depot and mini-test track operations continue. 21 vehicles have now been delivered and are undergoing static and dynamic testing.
- The peer review by Lloyd’s Register Rail of the operating and maintenance organisation and its processes is ongoing. The draft report has been received and is under review by the management team. This will be the fourth peer review which Lloyd’s has carried out to date, with a further review scheduled prior to shadow running.
- Recruitment of additional drivers and controllers to facilitate Section B test track activities from early December is ongoing, as are preparations for their training and assessment. Supplier training in control systems, (SCADA, TPDS, IVU, CCTV), has been provisionally booked for October. Operational procedures for airport test track operations have been drafted.
- An environmental audit took place in June. The stage two certification audit for ISO BS EN 9001 and the stage one certification audits for ISO BS EN14001 and BS 18001 took place in the last week in June. These went well and the assessor’s recommendation was that ISO BS EN 9001 certification be awarded. Stage two certification audits for ISO BS EN14001 and BS 18001 are scheduled for September and December respectively.
- Support has been provided to the project on the design and location of operational signage and the risk assessment of crossings and junctions, e.g. Haymarket depot access point.

#### ▪ Metrics

- Currently progressing with QM 73 and QM 78 however these metrics inspections cannot be closed until all relevant Verification and Validation evidence is reviewed and accepted / approved. This process is progressing as part of the requirements management review with close out of the depot evidence not expected to be complete until December 2012.

#### ▪ 6.0 NCR’s

- Total number of Non Conformance Reports raised - 597
- Total number of Non Conformance Reports raised in period 5 - 28
- Total number of Non Conformance Reports closed in period – 5 – This low number is primarily due to the holiday period.
- Number of Non Conformance Reports greater than 6 months old – 26





### 7.0 Requirements Management

#### Progress

- Verification and Validation Agreed Status 100% complete. Requirements requiring concession being progressed. A further 4 concessions have been added hence the percentage of those agreed is currently 19%.

<b>Total Number of Concessions</b>	<b>% Agreed</b>
58	19

<b>Verification &amp; Validation Method Agreed %</b>	<b>Requirements Approved %</b>
100	2

### 8.0 Deliver a Safe Tram – Required Actions

- Evidence File to be moved to new SharePoint system as a matter of urgency.
- Next PSCC meeting to be held on the 29<sup>th</sup> August 2012.
- SVS Audits to progress using newly agreed method. TSA/12/03 to be addressed during period 6.

## Project Report – Period 5

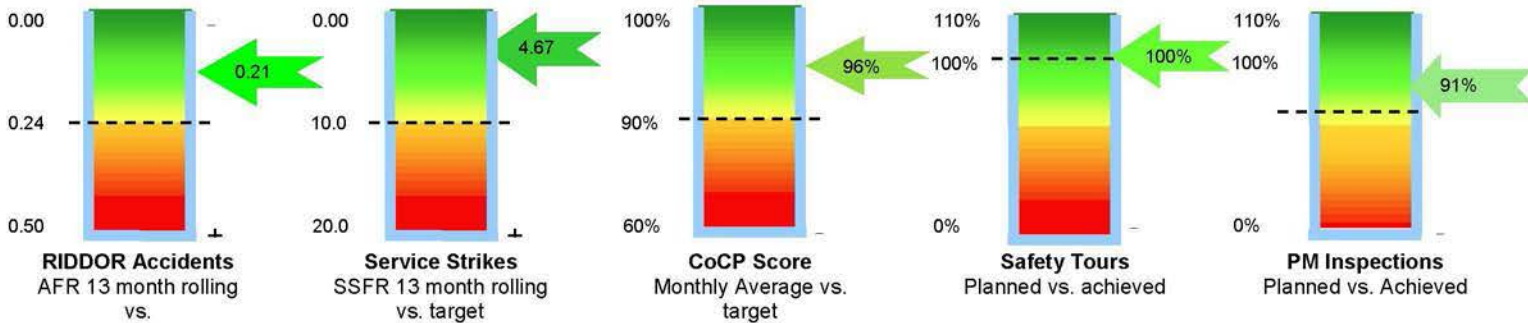
Project	12/13 - 05	Period	Hours	Time Related RIDDOR	Major RIDDOR	Other injuries	Near miss / unsafe condition	Service damage	Significant Incident	Environmental	RTA	MOP	AFR	SFR
		Period	139,626	2	0	0	1	6	1	3	0	2	1.43	4.30
13 period rolling	1,414,335	3	0	19	61	66	1	18	1	20	0.21	4.67		

Infra	12/13 - 05	Period	Hours	>3 day RIDDOR	Major RIDDOR	Other injuries	Near miss / unsafe condition	Service damage	Significant Incident	Environmental	RTA	MOP	AFR	SFR
		Period	110,000	1	0	0	0	2	0	2	0	2	0.91	1.82
13 period rolling	1,072,019	2	0	19	40	38	0	11	1	14	0.19	3.54		

Other (Tram)	12/13 - 05	Period	Hours	>3 day RIDDOR	Major RIDDOR	Other injuries	Near miss / unsafe condition	Service damage	Significant Incident	Environmental	RTA	MOP	AFR	SFR
		Period	17,626	1	0	0	1	3	1	1	0	0	5.67	17.02
13 period rolling	194,316	1	0	0	21	27	1	7	0	6	0.51	13.89		



### EXECUTIVE SUMMARY

There was 1 serious / significant incident reported within the period which was previously reported in the P4 report. Significant changes to the McNicholas safety management system have been implemented following the investigation into the incident.

There were 14 other incidents (2 Member of the Public, 6 service damage, 3 environmental incidents, 2 minor injury's and 1 unsafe condition) See Appendix A for details.

The rolling 13 Period AFR is at 0.21, better than the benchmark KPI of 0.23 for the project.

CoCP compliance was recorded at 93% during Period 5

91% of planned PM joint inspections have been carried out during Period 5.

100% of planned safety tours were carried out during Period 5.

## Project Report – Period 5

**HS&E INSPECTIONS SUMMARY** (a summary of significant inspection findings can be found in appendix B)

Project Running Totals	HS&E Tours (Directors)	HS&E PM Inspection
Number planned	1	12
Number achieved	1	11

### HSQ&E KEY ACHIEVEMENTS

The rolling 13 Period AFR is at 0.21, better than the benchmark KPI of 0.23 for the project.

### Key Issues – Points to Note

During the last period Turner & Townsend have been working to implement a number of key initiatives regarding health and safety on the project. These have comprised:

- Aligning the monitoring process to provide the information that is required for the leading indicators that have been identified.
- Undertaking targeted monitoring to review the housekeeping on sites, focusing on general site issues and storage of materials.

Progressing the recruitment of additional support to the health and safety team to provide assistance in undertaking monitoring of the contractors' work sites and the close out of the actions that are identified within the monitoring.

### ENVIRONMENTAL SUMMARY

List any significant environmental events, initiatives, breaches etc

Two environmental incidents were reported during period. One relating to noise from a generator at Coates Crescent; now being switched off in the evening. The 2<sup>nd</sup> incident related to a hydraulic Oil spill from a road sweeper at the Airport. BBS have been asked to supply a more detailed report, specifically relating to the use of hydrants at the airport and the discharge of water from the road sweeper.

An incident investigation has been undertaken by BBS and the results reviewed by Turner & Townsend regarding the incident relating to a hydraulic oil spill by Grahams adjacent to Murrayfield Stadium.

The Ocean Terminal Monument has now been reinstated to a new location at Ocean terminal.

The Conan Doyle monument is currently being reinstated and will be complete 17<sup>th</sup> August 2012, allowing McNicholas to commence public realm reinstatement works in the area.

An environmental inspection was carried out with BBS on the 8<sup>th</sup> August 2012. The inspection covered all works from St Andrews Square to Murrayfield. No major issues identified however minor issues included general site tidiness, use of spill kits and awareness of the potential for hydraulic oil spill.

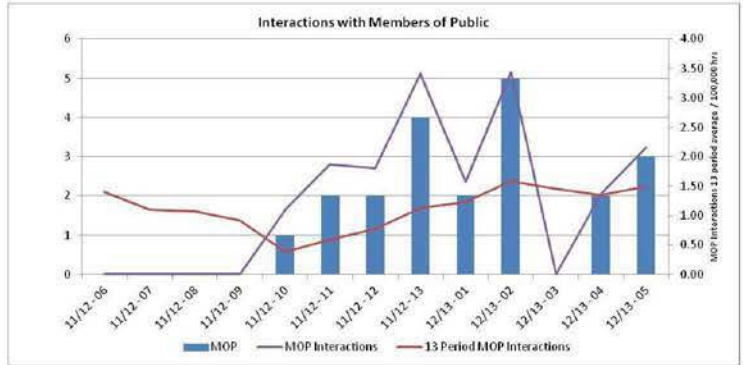


### Member of Public Interaction Summary

List any significant interactions with members of the public, including RTA's, alleged incidents

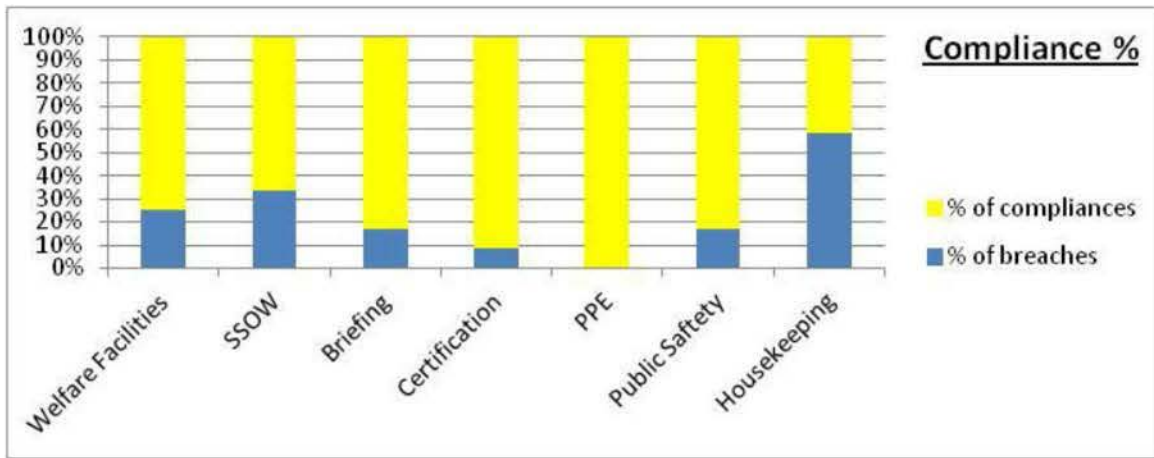
There three reported Member of Public incidents during the Period.

One related to a member of the public slipping on a temporary bridge forming a temporary walkway, where it was subsequently identified that an oily fluid had been spilt on the pavement and walkway, and the second related to 3no heras fencing panels falling onto a member of public causing damage to a jacket and minor injuries to their arm.



### Leading Indicators

Include details of compliance against leading indicators



### CDM Compliance

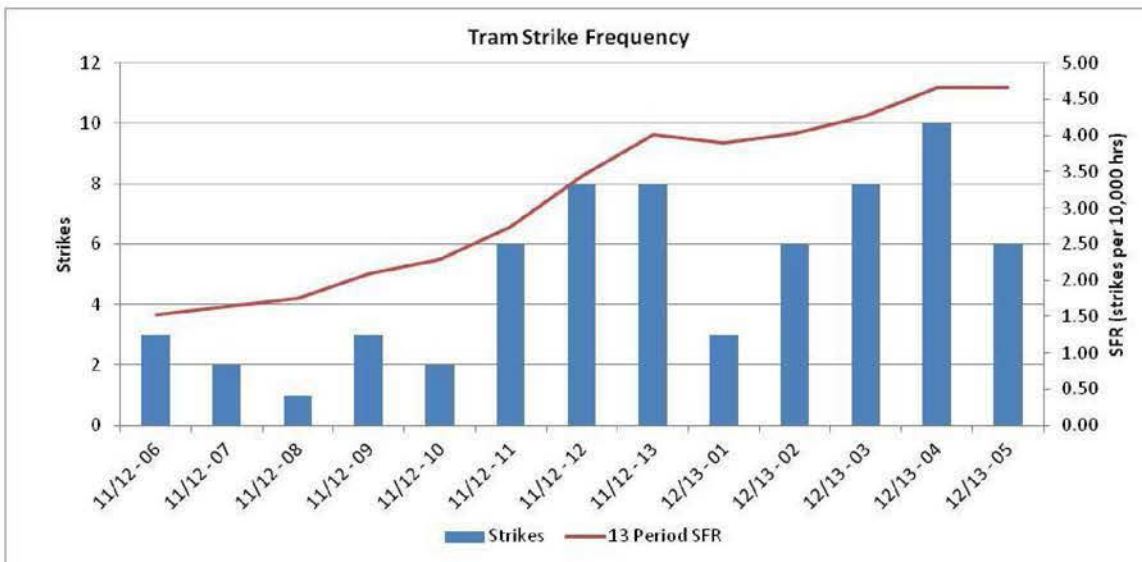
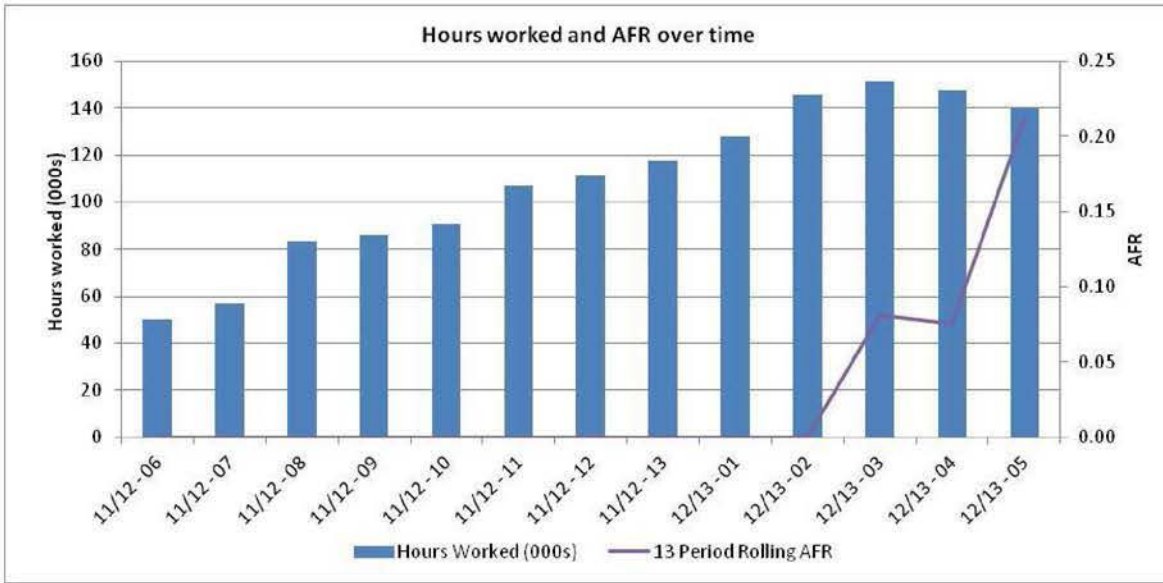
List any significant quality events, initiatives, breaches etc

The CDM process has been implemented for the enabling works at York Place which are being undertaken by Crummock. This has included:

- Review of site access and traffic management arrangements.
- Review of the further information requested for the Crummock construction phase plan
- Review of Crummock dedicated welfare arrangements.

**Project Report – Period 5**

**GRAPHS**



## Project Report – Period 5

### APPENDIX A

There have been 15 incidents in total since the issue of the last DtTS. One of the incidents which has been classified as a serious significant incident was reported previously in the P4 report due to its significance but has been included in the P5 information.

#### Serious / Significant Incident in P5 (Previously reported in the P4 report)

AIIR Ref:	1725	Contractor:	McNicholas		
Location:	Princes Street				
Project:	Utilities works	Date & Time:	23/07/12 14:30		
Sub Contractor:		Contractor Reference:			
Project Manager:	Stephen Lewcock	Is the accident / incident Serious / Significant or Major?	Yes X	No	
Description:	Mini excavator being used as lifting equipment to transport a manhole biscuit overturned. No injuries.				
Action taken by Contractor:	Incident reported to the Health and Safety Executive as a Dangerous Occurrence under the RIDDOR Regulations. Incident being fully investigated and report prepared. The investigation of the incident has resulted in a major review of the safety management system being implemented on the Edinburgh tram project by McNicholas, particularly with reference to the level of involvement of management in the planning of work activities and the type of documentation that was being used. Reviews of the implementation of the actions are ongoing				
Action taken by Project Team (if required):	Turner & Townsend have reviewed and commented to McNicholas regarding investigation findings.				

#### Other Incidents since last DtTS report

AIIR num	Date of event	Period	Type	Significal	Workstream	Contractor involve	Initial description
AIIR01722	22/07/12	12/13 - 05	Service damage	No	Other (tram)	McNicholas	Nicholas were excavating a section of foam concrete in Coates Crescent when they damaged a 25mm gas supply to a Hostel
AIIR01725	23/07/12	12/13 - 05	Significant Incident	Yes	Other (tram)	McNicholas	Mini excavator being used as lifting equipment to transport a manhole biscuit overturned. No injuries
AIIR01726	23/07/12	12/13 - 05	Service damage	No	Other (tram)	McNicholas	Whilst breaking out foamed concrete a piece broke off damaging a water service
AIIR01727	26/07/12	12/13 - 05	Service Damage	No	Other (tram)	Crummock	Damage to a Virgin Media cable as a result of duct being lifted by mechanical plant
AIIR01731	30/07/12	12/13 - 05	Environmental	No	Infraco	Siemens	Site cabin lights and generator left running. Noise was keeping residents awake. Call was from CEC call centre, via a member of the public
AIIR01732	27/07/12	12/13 - 05	>3 day	No	Infraco	Grahams	Individual stepped back into manhole injuring leg

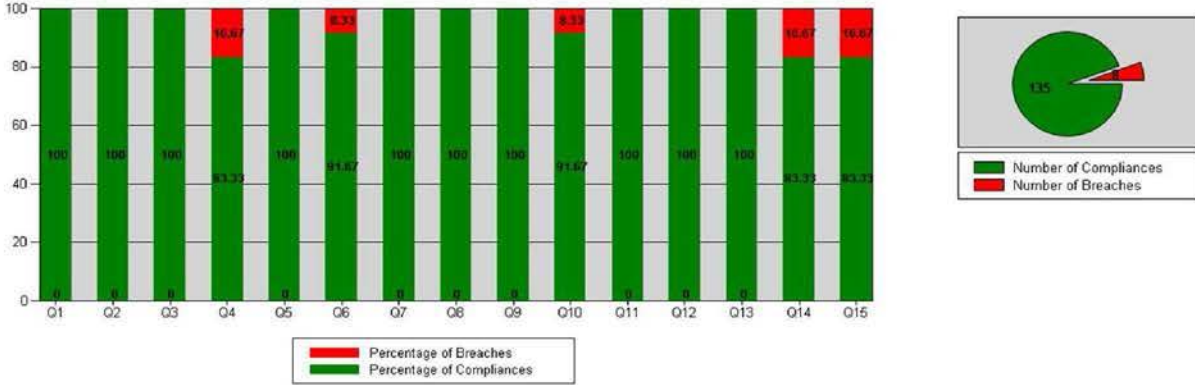


## Project Report – Period 5

AllR num	Date of event	Period	Type	Significant	Workstream	Contractor involved	Initial description
AIIR01733	01/08/12	12/13 - 05	>3 day	No	Other (tram)	Crummock	Breaking of cast iron pipe resulted in fragments of pipe being ejected and causing injury to person's arm.
AIIR01734	02/08/12	12/13 - 05	Service damage	No	Infraco	Expanded	Overhead BT cable damaged by telehandler
AIIR01735	03/08/12	12/13 - 05	Environmental	No	Infraco	Farrans	Hydraulic leak on road sweeper resulted in hydraulic fluid being spilt on road
AIIR01737	04/08/12	12/13 - 05	Service damage	No	Infraco	Expanded	Damage to street lighting column at South Gyle access bridge due to installation of bridge beams.
AIIR01738	05/08/12	12/13 - 05	Near miss / unsafe condition	No	Other (tram)	McNicholas	Bus lane needs remedial works to be carried out by CEC Roads Department. Pothole caved in, preventing use of road. N.B. this was not resultant from ongoing tram works. CEC Roads Department issue.
AIIR01739	05/08/12	12/13 - 05	Environmental	No	Other (tram)	McNicholas	Metal plate has moved on the bus lane in York Place and is causing a noise, keeping residents awake.
AIIR01740	09/08/12	12/13 - 05	Service damage	No	Utilities	Crummock	Damage to street lighting cable during excavation
AIIR01741	15/08/12	12/13 - 05	MOP	No	Infraco	Lagan	Member of the public slipped on the temporary walkway at Shandwick Place. Paramedics called to attend to the injured party.
AIIR01742	15/08/12	12/13 - 05	MOP	No	Infraco	Lagan	3 heras fencing panels fell onto MOP causing damage to jacket and minor injury to arm

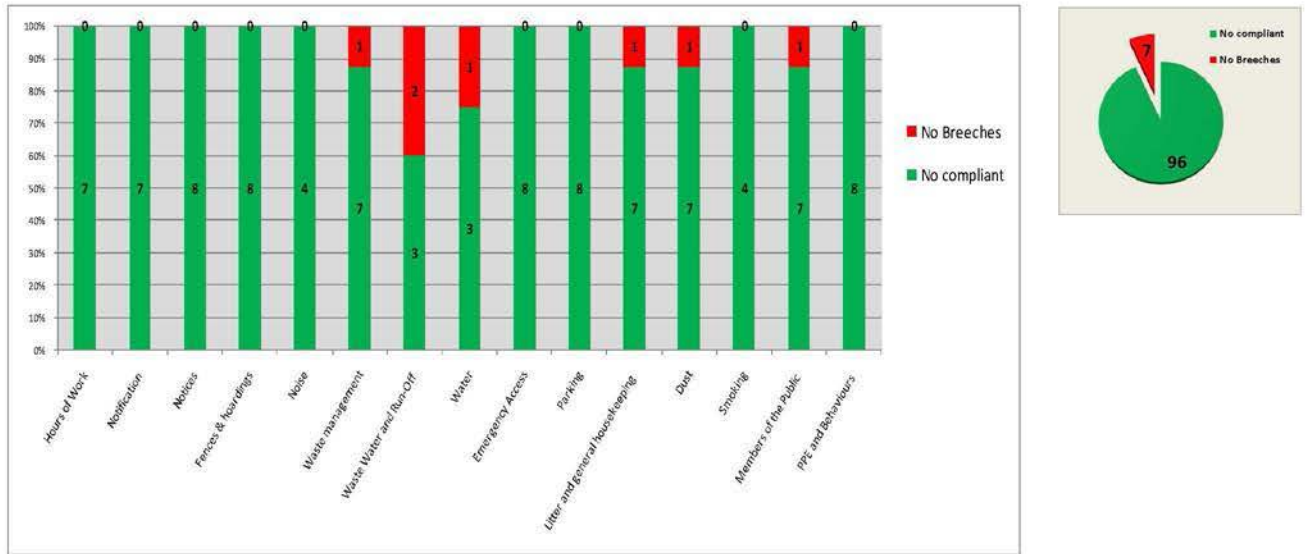
### APPENDIX B – COCP INSPECTIONS

#### COCP Inspections / Issues Period 4 (previous period)



#### COCP Inspections / Issues Period 5

CoCP compliance was recorded at 93% during Period 5



#### Summary of issues identified during Turner & Townsend CoCP inspections and action taken

Subject	Location	Contractor	Issue detail	Action taken or required to be taken by contractor	Date to rectify or rectified
Waste Management Waste Water and Run-Off	Gyle	Coffey	Dumper being used as concrete wash-out. Dumper had hole in base, so wash-out was coming straight out of dumper flowing along road and into gully.	Spoke to concrete truck operator at time, who was aware of the dumper spilling wash-out, however did not seem bothered. The Coffey operative on site was going to clean up area, and stop leak in the dumper. Spoke to BBS and sent photos of incident, who were going to deal with it. Also spoke to S Smith who will raise with the BBS environmental team. Gully will also have to be cleaned out.	ASAP

## Project Report – Period 5

Subject	Location	Contractor	Issue detail	Action taken or required to be taken by contractor	Date to rectify or rectified
Waste Water and Run-Off	Murrayfield Corridor S21C	Grahams	Keller Foundations' piling rig burst hydraulic hose causing spillage onto piling mat and part of access road on Murrayfield corridor access road next to underpass 21C.	Spillage kits 2no used to clean up spillage.	10/08/12
Litter and general housekeeping	Gogarburn	Crummock	General housekeeping untidy, no designated/safe walkway through site.	Spoke to D Phelps	26/07/12
Litter and general housekeeping	St Andrew Square	Crummock	Large amount of litter around site from local McDonalds and KFC fast food shops. The site team are struggling to stay on top of the litter. Currently there is only one public bin in the area as the others are fenced off within the site.	S Smith (T&T) agreed to speak with CEC to discuss the potential for getting some temporary bins in the area while works are on going.	18/08/12
Dust	Murrayfield	Grahams	Dumper generating dust while moving about site.	Contractor to use water dousing as required.	Ongoing.
Member of public	Murrayfield Tram Stop	Grahams	Heras fence blocks sticking out causing tripping hazard on site footpath.	Removed after speaking to engineer.	03/08/12



## Appendix 3 – Cost Report & Contingency Analysis

**Section 1 - Project Summary**

	Budget Information			Committed			Forecast					Third Party Contributions		Variance		Actuals	
	A	B	C=A+B	D	E	F=D+E	G	H	I	J	K=F+G+H+I+J	L	M=K-L	N=M-C	O=M/C-1	P	Q
	Original Budget	Budget Variation	Current Budget	Original Contract Value	Approved Contract Changes	Current Contract Value	Changes in Progress	Anticipated Change	Opportunities	Risk / Mitigated	Anticipated Final Cost	Estimated Contribution Value	Anticipated Final Project Cost	Budget Variance (Value)	Budget Variance (%)	COWD to Date	Outstanding Amount
<b>Edinburgh Tram Programme</b>	500,154	0	500,154	479,660	13,716	493,376	6,735	6,781	0	4,500	511,392	-8,365	503,027	2,873	1%	394,607	98,769
1 Infraco - Off Street	360,060	1,444	361,504	362,501	1,444	363,945	4,834	90	0	0	368,869	-6,534	362,335	831	0%	306,264	57,681
2 Infraco - On Street	38,817	1,902	40,719	47,384	1,902	49,286	1,901	-855	0	0	50,332	-1,493	48,839	8,120	20%	15,769	33,517
3 Infraco - Other	3,218	0	3,218	3,218	0	3,218	0	0	0	0	3,218	0	3,218	0	0%	675	2,543
2.1 York Place Direct Works	0	0	0		1,015	1,015		300			1,315		1,315	1,315		200	815
4.1 Utilities (Post Mediation)	1,812	9,485	11,297	1,812	9,485	11,297	0	4,562	0	0	15,859	-188	15,671	4,374	39%	10,336	961
4.2 Legacy Utilities (Revised Tram Route)	0	965	965	0	965	965	0	264	0	0	1,229	0	1,229	264	27%	1,001	-36
4.3 Legacy Utilities (Leith Walk)	1,100	-1,100	0	1,100	-1,100	0	0	2,270	0	0	2,270	0	2,270	2,270		0	0
5 Tram vehicles	62,400	5	62,405	63,645	5	63,650	0	150	0	0	63,800	-150	63,650	1,245	2%	60,362	3,288
6 Project Management (refer to CEC Report)		0	0			0					0		0	0			
7 Preparing for Operations (refer to CEC Report)		0	0			0					0		0	0			
8 Specified Risk Allowance	32,747	-12,701	20,046	0	0	0	0			4,500	4,500		4,500	-15,546	-78%	0	0

**Comments:**  
Report excludes Enabling work packages reported under T19 and utilities reported under T18  
Contributions include amounts relevant to reported budgets only. Any further contributions are reported by CEC.  
Includes changes issued to 23/7/12

**Risk:**  
QCRA as last presentation - slides 18 May 2012.  
Note: BBS portion of program saving, £6.5m not included.

**Actions**  
Ongoing risk mitigation of major risks.  
Realisation of opportunities associated with specification reductions (road surfacing) and time (York Place)

**Infraco Cost Report Section 1 - Commercial Summary**

	Budget Information			Committed			Forecast					Third Party Contributions		Variance		Actuals	
	A	B	C = A + B	D	E	F = D + E	G	H	I	J	K = F + G + H + I + J	L	M = K - L	N = M - C	O = M / C - 1	P	Q
	Original Budget	Budget Variation	Current Budget	Original Contract Value	Approved Contract Changes	Current Contract Value	Changes in Progress	Anticipated Change	Opportunities	Risk / Provision	Anticipated Final Cost	Estimated Contribution Value	Anticipated Final Project Cost	Budget Variance (Value)	Budget Variance (%)	COWD to Date	Outstanding Amount
Infraco Contract	402,095	3,346	405,441	413,103	3,346	416,449	6,735	-765	0	0	422,419	-8,027	414,392	8,951	4.19%	322,708	93,741
Off Steet	360,060	1,444	361,504	362,501	1,444	363,945	4,834	90	0	0	368,869	-6,534	362,335	831	2.04%	306,264	57,681
00 Preliminaries and Other Items	150,408	5,074	155,482	150,409	5,074	155,483	15	30	0		155,528	0	155,528	46	0.03%	117,852	37,631
01 Newhaven Road to Haymarket	85,368	-3,387	81,981	87,738	-3,387	84,351	373	0	0		84,724	-318	84,406	2,425	3.35%	88,452	-4,101
02 Haymarket Corridor	8,692	-4	8,688	8,692	-4	8,688	0	0	0		8,688	-14	8,674	-14	0.00%	7,198	1,490
05 Roseburn Junction to Gogar	80,035	-152	79,883	80,105	-152	79,953	4,332	60	0		84,345	-5,102	79,243	-640	5.59%	59,562	20,391
06 Depot	19,979	238	20,217	19,979	238	20,217	88	0	0		20,305	0	20,305	88	0.44%	19,095	1,122
07 Gogar to Edinburgh Airport	15,578	-325	15,253	15,578	-325	15,253	26	0	0		15,279	-1,100	14,179	-1,074	0.17%	14,105	1,148
On Street	38,817	1,902	40,719	47,384	1,902	49,286	1,901	-855	0	0	50,332	-1,493	48,839	8,120	23.61%	15,769	33,517
00 Preliminaries and Other Items	21,837	90	21,927	21,837	90	21,927	1	0	0		21,928	0	21,928	1	0.00%	8,189	13,738
01 Newhaven Road to Haymarket	16,980	1,812	18,792	25,547	1,812	27,359	1,900	-855	0		28,404	-1,493	26,911	8,119	51.15%	7,580	19,779
Other	3,218	0	3,218	3,218	0	3,218	0	0	0	0	3,218	0	3,218	0	0.00%	675	2,543
00 Maintenance & Mobilisation	2,205	0	2,205	2,205	0	2,205	0	0	0		2,205	0	2,205	0	0.00%	675	1,530
00 Spare Parts	1,013	0	1,013	1,013	0	1,013	0	0	0		1,013	0	1,013	0	0.00%	0	1,013

**Comments:**

Summary sheet values in £k. All other sheet values in £.  
 Opportunities include for time saving based on current QSRA.  
 Excludes £3.2m phase 1b payment (refer to budget T19.C)

**Risk**

Refer to Risk register for risks identified against infraco programme  
 All risk is held at programme level. This section of the cost report makes no allowance for risk.  
 Refer to the outputs of the QCRA/QSRA for further information on risk.

**Actions**



**Edinburgh Trams**  
City of Edinburgh Council



Reporting Period: 12-05 - Rev 0 - 17/08/2012

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**Infraco Cost Report Section 2A - Approved Change - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
501	Hawthornevale Cycle Link - Change the design to widen the footway alongside the south side of Lindsay Road	20,021	20,021	0		01	01
502	Amend the design of Ocean Drive to reinstate the footpath to the north of Ocean Drive	10,231	10,231	0		01	01
503	OLE temporary portals at depot access bridge to allow finalisation without Edinburgh Gateway	67,646	67,646	0	Edinburgh Gateway funding	05	01
504	Review of the banned right turn into Blenheim Place as part of the design for Section 1C2 roads	46,247	46,247	0		01	01
505	York Place Terminal Point - Production of a feasibility report, initial feasibility design for option ii), run time modelling etc	228,653	228,653	0		01	01
506	Design for providing a new cycleway from the Mound to Princes Street	9,437	9,437	0		01	01
506.1	Design for providing a new cycleway from the Mound to Princes Street	1,669	1,669	0		01	01
507	Provide a clarification report and completion of the St. Andrew's Square Public Realm design	133,075	133,075	0	Included within contributions	01	01
508	Obtain EAL approval for the highways design drawings at Eastfield Avenue tram crossing	10,025	10,025	0		07	01
509	Design of Cathedral Lane Substation	233,596	233,596	0		01	01
511	Storm Water Connection from Gogar Lodge to the landowners new septic tank	5,750	5,750	0		05	01
512	Re-design of Ocean Terminal Bypass Road	53,685	53,685	0		01	01
513	Revised design to minimise utility diversions / conflicts - used for slit trenching and trial holes	156,870	156,870	0		01	02
514	Utility Mapping	92,756	92,756	0	Time chargeable costs. L&M Surveys and Class One. Complete	01	02
516	Additional Water main requirement at Depot and Mini Test Track	51,282	51,282	0		06	01
517	Additional BT Ducts at Depot and Mini Test Track	2,996	2,996	0		06	01
520	Valve chamber access and alteration works to 800mm water main at the Depot	105,326	105,326	0		06	01
524	Airport to Gyle - NIL Design Finalisation (also includes Construction)	-40,559	-40,559	0		07	01
526	Airport to Gyle - Tram Delivery Temporary Works	6,878	6,878	0		07	01
529	Design Gogar Castle Access Road tram crossing and approaches	31,308	31,308	0		05	01

**Infracost Report Section 2A - Approved Change - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
530	Amend the design of the Depot Road turning head as per RDC191. Option 2	30,458	30,458	0		06	01
531	Edinburgh Gateway - Advance Temporary Works design	9,349	9,349	0		05	01
534	SP Insurance Ducts - Install Insurance ducts at various locations	5,637	5,637	0		07	01
536	System Wide - Tramstop Cabinets - reduction in 10 years maintenance liability	0	0	0	No saving to contract	01	01
538	Depot - Tramwash Continuous Mode - Requirement for additional hand lances washers	0	0	0	Change rejected - included within contract	06	01
539	System Wide - Delay in signing - impact on commencement and completion	4,541,161	4,541,161	0	Meeting scheduled to review cost incurred at delay commencement	00	04
540	Section 7 - Plot 304 - Omit Landscaping works	-201,120	-201,120	0		07	01
544	Extension to Edinburgh Park Office to accommodate CEC / Transport Scotland	159,900	159,900	0		00	01
550	Shandwick Place OLE & Landscape Design Revision	0	0	0	Design costs to be grouped under tnc 562 (BBS PMC 045)	01	01
553	SDS to provide the services of Matt Fell until August 2012	126,175	110,000	16,175		00	02
555	Haymarket - OLE 196B design revision to avoid main sewer	0	0	0	Design costs to be grouped under tnc 562 (BBS PMC 045)	01	02
557	Haymarket 1 - OLE Base Relocations (Design mods)	0	0	0	Design costs to be grouped under tnc 562 (BBS PMC 045)	01	02
558	Site Wide - Provision of a CAD Technician	1,693	1,693	0		01	02
559	Detailed Design of York Place	56,438	56,438	0	tnc issued - awaiting BBS estimate	01	01
561	Omit all works at the Forth Ports area	-2,443,000	-2,443,000	0	Work deleted from scope.	01	01
562	On Street Generally - OLE Design Changes for On Street Section (PMC 045) - SIEMENS DESIGN WORKS	135,000	135,000	0	Includes original tNC 550, 555, 563	01	02
563	On Street - Amend pile caps from square / rectangular to circular	0	0	0	Design costs to be grouped under tnc 562 (BBS PMC 045)	01	02
564	Worksite Modelling - (TM)	10,000	10,000	0		01	03
565	Advanced design works for Edinburgh Gateway Minimum Option	2,650	2,650	0		05	01

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**Infracost Report Section 2A - Approved Change - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
565.1	Advanced design works for Edinburgh Gateway Minimum Option	3,350	3,350	0		05	01
566	On Street Generally - Ducting Design Changes Due to Utilities Conflicts	60,000	60,000	0		00	02
567	On Street Generally - Drainage Design Changes Due to Utilities Conflicts	100,000	100,000	0		00	02
568	On Street Generally - Trackform Design Changes Due to Utilities Conflicts	30,000	30,000	0		00	02
569	Additional Running Costs associated with the extension to the Edinburgh Park offices	79,200	79,200	0		00	01
571	Hope Street Junction Design	12,061	5,000	7,061		01	01
572	Cathedral Lane Substation - Retaining Wall Design	34,459	34,459	0	Value based on submitted estimate from BBS	01	01
574	Haymarket Station - Delete viaduct cladding	-5,571	-5,571	0		02	01
576	Depot - Reinstatement to 250mm Water main Remedial Works	36,788	36,788	0		07	01
577	Haymarket Viaduct - Deletion of Sub Station Retaining Wall and Plinth	1,580	1,580	0		02	01
578	SI Provisional Sum Allowance	-57,984	-57,984	0		01	02
580	Cancellation of trackwork materials York Place to Newhaven	-1,100,000	-1,100,000	0	Change resulting from value engineering exercise	01	02
581	Omit Siemens work to Tower Place and Victoria Dock bridges	-100,000	-100,000	0	Change resulting from value engineering exercise	01	02
582	Delete proposed cladding installation costs on Roseburn Viaduct Structures	-308,004	-308,004	0	Change resulting from value engineering exercise	05	01
585	Descopie of Service Vehicle	-21,565	-21,565	0		00	01
586	St Andrew Square - tie in detail	15,228	15,228	0	Change resulting from value engineering exercise	01	01
587	Revise design for amendments to setts areas and specification	15,512	30,000	-14,488	Subject to separate CEC budget	01	01
589	Descoping airport tramstop kiosk and canopy	-150,000	-150,000	0		07	01
591	Diversion of Scottish Power Cable at Haymarket Viaduct	21,789	21,789	0	NR contribution	05	01
595	Haymarket Viaduct - Deletion of fitting out of Crew Relief Facility	-74,001	-74,001	0		05	01



**Infraco Cost Report Section 2A - Approved Change - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
597	Section 1D - Omit disconnection of Bus Tracker	-14,928	-14,928	0		01	01
601	Clarification on length of shelter to RBS tram stop (8m)	27,863	27,863	0		05	01
602	Omit purchase of poles for PIDs North of York Place	-23,740	-23,740	0		01	01
609	Traffic Management provision in section 1A	133,140	133,140	0		01	03
615	Haymarket Viaduct - design wall for blocking off void under the bridge deck as a result of the crew relief facility being omitted	3,000	3,000	0		05	01
616	Haymarket Viaduct - construct wall for blocking off void under the bridge deck as a result of the crew relief facility being omitted	10,798	10,798	0		05	01
617	Tram stops branding changes. Requirement for etched glass to be confirmed	0	0	0	Value TBC	05	01
618	Gogar Depot 1800 mm Diameter Manhole - TQ736	6,176	6,176	0		06	01
619	Omit Track Welding Equipment	-14,420	-14,420	0		06	01
620	Airport Tram Stop Design	17,784	10,000	7,784		05	01
621	Amend the dates of the HV meter installation at substations	12,507	12,507	0		05	01
623	Repair minor damage to Depot (Intercom, fence panel and broken slabs)	1,867	3,000	-1,133		07	01
624	Compressed Air Supply to Depot Gantry Road and workshop	5,576	5,576	0		07	01
640	Unimog Insurance	-1,000	-1,000	0		00	01
652	Maintenance of The Depot Workshop Equipment	49,633	49,633	0		06	01
663	Heras fencing at depot	6,424	7,000	-576		06	01
667	Call off service to respond to Network Rail TQs and interface issues	6,000	5,000	1,000		05	01
668	De-scoping of Infraco works in York Place to be undertaken direct by Crummock.	-1,015,156	-1,015,156	0		01	01
670	SDS Response to Road Safety Audit for Princes St	10,000	10,000	0		01	01
671	ScotRail car park security fence	10,000	10,000	0	Contribution from ScotRail to be reviewed	05	01

**Infracost Report Section 2A - Approved Change - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
673	Cancel order for OLE poles required for Secondary Phase 1a	-41,789	-41,594	-195		01	01
Total		1,443,811	1,428,182	15,628			





**Infracost Report Section 3A - Change in Progress - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
525	Airport to Gyle - Site Access for Remedial Works	0	0	0	all costs associated with this change allocated to TNC 576	07	01
527	Ingliston - Reimbursement of Costs paid directly to SGN for the diversion of approximately 120m of 10" steel IP gas main to accommodate the new Edinburgh Tram at Ingliston	0	0	0	Saving from Infracost, not included during the period as cost not shown in utility budget	07	01
541	Princes Street - City Chamber - Annandale Street Communication Links. Usage of CEC available BT-Lines to avoid provision of direct FO link from Princes Street to City Chambers	190,000	190,000	0	Off and on street combined under Clause 80	01	01
556	Track Work Materials York Place to Newhaven - Price Fixing for Rheda City C and D	0	0	0	Included in VE register	01	01
573	Roseburn Delta - Non DDA Compliant Footpath	0	0	0	TNC covers design only. Costs associated with this change included in the anticipated change section	05	01
575	Haymarket Station - Take Down Viaduct Staircase and Parapet. TNC now withdrawn - Network Rail carrying out work	0	0	0	Work to be carried out by Network Rail	02	01
592	Haymarket Yards - Realign kerbs at Car Park Entrance	0	0	0	Currently on hold pending A. Sim review.	05	01
593	Secondary Phase 1a - Cessation of Design Work North of York Place	0	0	0	Saving opportunity being investigated in relation to future ownership of design etc prior to finalising value.	01	01
594	Edinburgh Gateway slope option - design costs	200,000	200,000	0	Covers design works only. Construction costs in tNC 6473	05	01
603	Bus Tracker Interface Specification	10,000	10,000	0	Cost based on option 2	01	01
605	Depot - Sub-Station Switching	80,000	80,000	0	Includes allowance up to Section B completion date (8/3/13)	06	03
608	Delete 110v sockets on Off Street Tram Stops	-16,500	-16,500	0	Assume £1.5k per tram stop. Awaiting estimate	05	01
610	Edinburgh Gateway - Siemens Long Lead Items	65,000	65,000	0		05	01
622	LV power for sub-station and Tramstop.	0	0	0		05	01
625	Engineering attendance on site at Cathedral Lane.	0	55,000	-55,000	All costs captured against tNC 566	01	01
626	Advanced procurement of Edinburgh Gateway Materials and Equipment.	0	0	0	Costs included in tNC 594	05	01
627	Delete pedestrian guardrail in the area outside St John's Church (Design)	0	5,000	-5,000	No costs related to tNC	01	01
628	Prepare MUDFA As Built drawings	100,000	100,000	0	Requirements to be confirmed	01	01
632	Resolve Depot Building water ingress	0	0	0	Assumed to be BBS liability	06	01

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**Infracost Report Section 3A - Change in Progress - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
636	Twin Crossing at Lochside Avenue	140,000	20,000	120,000		05	01
643	Edinburgh Gateway Construction	3,875,000	3,875,000	0	Construction costs; excludes fees and OLE Poles (refer to tNC 594 & 610)	05	01
647	Design work to support VE on carriageway reconstruction & kerb realignment	50,000	50,000	0		01	01
648	Cabinet Position For Street Lighting - design	10,000	10,000	0	Provision of as-built drawings	01	01
649	Princes Street Blister - Design Works	0	0	0	No cost impact	01	01
651	Defer Off Street Tramstop Shelter Installation and Fit-out	50,000	50,000	0		05	01
653	Provision of IFC Drawings in DWG CAD format	4,924	5,000	-76	Contractual requirements being reviewed - BBS have stated that there is a charge for this work.	01	01
655	Revise CCTV & PA coverage at Murrayfield tram stop	5,000	5,000	0		05	01
657	Drainage As Built Drawings - Princes Street	15,000	15,000	0		00	01
661	Blank off signage to Depot	10,000	10,000	0	On hold - may not be required	05	01
662	Eastfield Avenue Topographical Survey	3,000	3,000	0		07	01
664	Gogar Castle Access Road - Additional High Friction Surfacing	6,000	6,000	0	Requirements being investigated	07	01
666	Pedestrian gate next to the vehicle access gate at the ScotRail Depot.	2,000	2,000	0		05	01
669	SGN Remedial Works - backfill at New Ingliston Land	12,000	12,000	0		07	03
674	Topographical survey at Eastfield avenue - DESIGN	5,000	0	5,000		07	01
675	Remove concrete around the water meter at the ScotRail Depot.	1,000	0	1,000		05	01
676	Design associated with work to Lord Bodos Bar	3,000	0	3,000		01	01
679	Works to prevent water stagnation at Depot (L8 Compliance)	2,500	0	2,500		06	01
681	Hoarding design for York Place	0	0	0		01	01
683	Carry out trial holes to locate 125mm diameter pipe at Depot	5,000	0	5,000		06	01

**Infraco Cost Report Section 3A - Change in Progress - Clause 80**

TNC No.	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
684	Repair works to utility trough cover slabs damaged by tram deliveries	0	0	0	No cost included at present - assume recharge to CAF contract	06	01
685	Provide technical information on Lindsay Road works	5,000	0	5,000		01	01
<b>Total</b>		4,832,924	4,751,500	81,424			



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**Infraco Cost Report Section 3B - Change in Progress - Schedule 45**

TNC No.	Description	In Progress	Certified	Total Forecast	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
513.1	Revised design to minimise utility diversions / conflicts - used for slit trenching and trial holes	0	17,210	17,210	17,210	0		01	02
521	Haymarket - Temporary Accommodation	0	1,543	1,543	1,543	0		01	02
522	Haymarket 1 - Road Reconstruction	0	0	0	0	0	Included in VE register	01	02
523	Haymarket 1 - Additional CBR / Plate Testing	0	0	0	0	0	Included within on street priority works (contract milestones)	01	02
528	Haymarket 1 - Slit trench excavation to validate utilities	0	6,565	6,565	6,565	0	Included within on street priority works (contract milestones)	01	02
532	Princes Street - Temporary traffic management design - WITHDRAWN	0	0	0	0	0	Further information required	01	02
533	Princes Street - 500mm Water Main Diversion	0	0	0	0	0	Costs contained within 535	01	02
535	Princes Street - 500mm Water Main Diversion - rev 3 dwg	0	252,986	252,986	252,986	0		01	02
537	Haymarket 1 - Additional visit of Tar planer to facilitate slewing of BT ducts - WITHDRAWN	0	0	0	0	0	Withdrawn	01	02
543	Haymarket H1 - Utilities affecting the construction of OHLE foundations	0	256,091	256,091	256,247	-156	Only covers section H1. H2 to YP included in item 7 of Anticipated Change.	01	02
545	Site Wide - Power to bus trackers affecting the ability to remove site clearance items	0	0	0	0	0	McNicholas to remove. Contra charge BBS; allowance included for BBS attendance	00	02
546	All drainage now measured through on street works estimate	0	0	0	21,482	-21,482		00	02
547	Haymarket H1 - Third Party (McNicholas) affecting ability to progress the works	1,106	6,465	7,571	12,174	-4,603		00	02
548	Haymarket H1 - BT Fibre Optic Service requires diverting	0	83,053	83,053	83,053	0		00	02
549	Princes Street - Amend the design of the St. Johns Church OLE bases	0	32,642	32,642	54,413	-21,771	Opportunity to deduct original scope to be pursued once acceptance of revised pole locations is achieved.	01	02
551	Princes Street - 2011 Christmas Embargo - Temporary Surfacing of Track Infills	0	203,511	203,511	203,511	0		01	02
552	Princes Street - BT diversion @ junction of Princes Street and South St. David Street	0	0	0	0	0	Costs included within TNC 535	01	02
554	St Andrew Square & Shandwick Place - Traffic Management Requirements	20,000	196,442	216,442	236,097	-19,655	Refer to Revised issue of TNC	01	02
560	St. Andrew Square - Omit £0.7m of repairs to road surface finishing	-700,000	0	-700,000	-700,000	0		01	02

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**Infraco Cost Report Section 3B - Change in Progress - Schedule 45**

TNC No.	Description	In Progress	Certified	Total Forecast	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
570	Omit the Removal of Trees in Shandwick Place	-9,066	3,299	-5,767	-5,767	0		01	02
579	Removal of embargo and revised traffic management	0	0	0	0	0	Change resulting from value engineering exercise	01	02
583	Ordering setts for on street works	-90,000	0	-90,000	-90,000	0	Saving based on spreadsheet issued to CEC (GE to AC 22/05/2012). Final value still to be agreed with BBS	01	02
584	Road Reconstruction specification	0	201	201	201	0	Change resulting from value engineering exercise	01	02
588	Stafford St Return of Parking Spaces	0	0	0	0	0		01	02
590	New cycleway from The Mound into Princes Street	0	30,375	30,375	30,375	0		01	02
596	Section 1D - Costs associated with amended drainage design	0	118,851	118,851	118,453	398		01	02
598	Section 1D - Incorporate geotextile liner into Clifton Terrace void in accordance with requirements from Archaeologist	0	1,760	1,760	1,760	0		01	02
599	Floating track slab	976,986	3,014	980,000	980,000	0	Verbal advice from Siemens and Bilfinger Berger of cost of providing floating slab at all locations identified. Potential opportunity to reduce if marginal locations are omitted. Subject to final report from BBS.	01	01
600	Shandwick place - OLE bases affecting utilities (Piling)	13,439	300,812	314,251	310,835	3,415		01	02
604	St Andrew Sq - OLE bases affecting utilities (Piling)	0	37,550	37,550	37,550	0		01	02
606	York Place - Waverley Bridge - Works Delayed and disrupted as a result of works carried out by Third parties	12,426	50,310	62,736	56,578	6,158		01	02
607	Delete 110v sockets on On Street Tram Stops	-4,500	0	-4,500	-4,500	0	Assume £1.5k per tram stop. Awaiting estimate	01	01
611	Excavation of Track Slab to be carried out by McNicholas	0	0	0	0	0	Refer to Anticipated change section for costs	01	01
612	Tram stops branding changes. Requirement for etched glass to be confirmed (cost excluded)	0	0	0	0	0	Value TBC	00	01
613	Temporary Bus Station at St Andrew Square/Waterloo Place - design	40,293	8,885	49,178	50,000	-822		01	01
614	Rothsay Place Traffic Management Amendment	10,000	0	10,000	10,000	0		01	01
629	Utilities affecting Track Excavation at Shandwick Place (S1)	3,379	33,299	36,677	78,245	-41,567		01	02

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**Infraco Cost Report Section 3B - Change in Progress - Schedule 45**

TNC No.	Description	In Progress	Certified	Total Forecast	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
630	Utilities affecting Track Excavation at Shandwick Place (S2)	1,487	25,580	27,067	55,531	-28,465		01	02
631	Third parties affecting progress at Shandwick Place (S2)	0	7,161	7,161	7,161	0		01	02
633	Ponding on Princes St at junctions of Frederick St/Castle St	0	0	0	0	0		01	01
634	Descope duct installation at Cathedral Lane	0	0	0	0	0	In Anticipated change section	01	01
635	Amend on street drainage scope	245	8,800	9,045	8,841	204		01	02
637	St Andrew Square Pedestrian Crossing	0	3,027	3,027	5,000	-1,973		01	01
638	Remove pedestrian guardrail outside St John's Church	5,000	0	5,000	5,000	0		01	01
639	York Place - Traffic Management Design	248,116	2,193	250,309	10,000	240,309		01	01
641	Cathedral Lane substation - scope change to suit Henderson Global requirements. Excludes demolition.	281,000	0	281,000	281,000	0	This allowance is for the extra over cost included in the contract for construction of the new tram substation only. There is no allowance for any works in constructing Henderson Global's substation. Design work is included in TNC 509	01	01
642	York Place temporary Tram Stop	944,000	0	944,000	0	944,000	Excludes design work (see tNC 505) and sheet piling work to strengthen basement (included in risk allowance).	01	01
644	Finials for On Street Poles	30,000	0	30,000	30,000	0		01	01
645	Princes Street Outstanding Works	32,233	209,959	242,192	289,951	-47,759		01	01
646	Cabinet Position For Street Lighting	20,000	0	20,000	20,000	0	Relates to locations only - assume no additional work	01	01
650	Princes Street Blister	10,000	0	10,000	10,000	0		01	01
654	De-scope coloured high friction surfacing at Princes / Sth St David Street Jctn	0	0	0	0	0	Savings contained in tNC 560	01	01
656	Defer On Street Tramstop Shelter Installation and Fit-out	10,000	0	10,000	10,000	0		01	01
658	Clarification of scope to Shandwick Place Wall	0	0	0	0	0	Work to be descope from BBS. No adjustment as work will be carried out by others.	01	01
659	Road signage at Junction of Manor Place / Melville Street	2,000	0	2,000	2,000	0		01	01



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**Infraco Cost Report Section 3B - Change in Progress - Schedule 45**

TNC No.	Description	In Progress	Certified	Total Forecast	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
660	Princes Street Traffic Management	10,000	0	10,000	10,000	0		01	01
665	Removal of Princes Street "plug"	0	0	0	0	0	Current requirements to be established	01	02
677	Install 20mph roundels on Landsdowne Crescent	1,500	0	1,500	0	1,500		01	01
678	Temporary traffic management design at York Place to keep bus station access open	20,000	0	20,000	0	20,000		01	01
680	Coates Crescent - Bus running single lane	10,000	0	10,000	0	10,000	Feasibility study	01	01
682	Descope work associated with street lighting, road signage & traffic signals	0	0	0	0	0	Included in anticipated change section	01	01
686	Alter kerbs next to CEC Connection Manhole	1,000	0	1,000	0	1,000		01	01
<b>Total</b>		<b>1,900,643</b>	<b>1,901,584</b>	<b>3,802,227</b>	<b>2,763,496</b>	<b>1,038,731</b>			

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**Infraco Cost Report Section 4 - Anticipated Change**

Ref No	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
2	Pricing Assumptions - 6.4.2.3 York Place Terminal Point	0	944,000	-944,000	Cost now contained in tNC 642	01	02
4	Pricing Assumptions - 6.4.2.6 Dublin Street	70,000	70,000	0	Excludes piling if required. Includes allowance for works to adjacent properties.	01	02
6	Track Lowering - bridging trackform over utilities in St Andrew Square	150,000	150,000	0	Requirement for 30m section in St Andrews Square. Costs will come through On Street Works estimates	01	02
7	Piled OLE base in lieu of utility diversion	90,000	100,000	-10,000	Allowance for remaining scope at 23/06/2012. 1 OLE base at Shandwick Place; 2 piles, 3 bases. Costs will come through On Street Works estimates	01	02
14	Roseburn Delta - non DDA footpath	30,000	30,000	0	No design required. Temporary footpath alignment to be agreed on site. Potential modifications to surface water drainage resulting from revised earthworks and Scottish Water approvals.	05	01
15	MUDFA Reinstatement - Hope Street / Lothian Road	30,000	30,000	0	CEC may undertake this work	01	01
23	Drainage redesign and amendments to numbers / depths of manholes, carrier drains / drainage connections.	50,000	50,000	0	Additional design £50k; costs associated with standing time and or delay captured in Schedule Part 45 Costs	01	02
24	Remove drainage from Infraco scope	-200,000	-250,000	50,000	Extent of deduction to be fully established. BBS are disputing the markup that applies to deductions. Reduced in period to take account of York Place removed elsewhere	01	01
25	Remove excavation of trackbox from Infraco's contract	-200,000	-250,000	50,000	Value to be determined by detailed site measure and application of Schedule 45 rates. Quantification to be agreed with BBS. Note that this value has been reduced as BBS are disputing the method of calculating the deduction. Reduced in period as York Place removed	01	01
26	Remove ducting in Cathedral Lane from Infraco's contract	-75,000	-75,000	0		01	01
27	Amend road reconstruction depth from Contract Requirements	-700,000	-700,000	0	Principles instructed, saving subject to site conditions	01	01

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**Infraco Cost Report Section 4 - Anticipated Change**

Ref No	Description	Forecast Amount	Previous Period	Change from Previous Period	Notes	Section Code	Change Code
28	Opportunity to reduce cost associated with the temporary tram stop at York Place	-150,000	-150,000	0	Design optimisation - still to be realised	01	01
30	Schedule Part E, Item 8. Trackside Signage	37,320	37,320	0	Includes allowance for additional signage requirements identified during the testing and commissioning	01	01
31	Schedule Part E, Item 10. OLE Change: Grosvenor Street Pole Movement	12,440	12,440	0	Current requirements to be established	01	01
32	Schedule Part E, Item 11. Unsuitable building fixings Section 1A	118,258	118,258	0	Current requirements to be established	01	01
33	Schedule Part E, Item 12. SDS Lighting Design update impacts OLE combined poles	62,200	62,200	0	Current requirements to be established	01	01
34	Schedule Part E, Item 14. SDS alignment update to match built structures	124,400	124,400	0	Current requirements to be established	01	01
35	Defer tram stop construction	30,000	30,000	0	Increased protection / security	00	01
36	Install fencing to mini test track	20,000	20,000	0		05	01
37	Redesign of OLE bases along Roseburn corridor where they are sited outside of the LOD	10,000	10,000	0		05	01
39	Desclope traffic sign and street lighting bases	-350,000	-50,000	-300,000	McNicholas to undertake bases and ducts. Value increased in line with measure	01	01
40	Disposal of contaminated excavations at Shandwick Place	75,000		75,000	Full extent and cost to be established.	01	01
<b>Total</b>		<b>-765,382</b>	<b>313,618</b>	<b>-1,079,000</b>			

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**Edinburgh Trams**  
**City of Edinburgh Council**



Reporting Period: 12-05 - Rev 0 - 17/08/2012

**Infraco Cost Report Section 5 - Opportunities**

Ref No	Description	Approved Changes	Changes in Progress	Anticipated Changes	Contributions	Secured	To be secured	Total Opportunity	Value per CS report Jan 2012	Notes
01	Remove embargoes and revised TM	0	0	0	0	0	0	0	-6,460,000	Subject to completion of sections in advance of contract dates. Initial opportunity based on 22 week time saving assumed in the Rev 4C programme. Current master programme indicates 4 week saving as a result of York Place
02	Edinburgh Gateway	0	0	0	-4,140,000	-4,140,000	0	-4,140,000	0	Awaiting instruction from Transport Scotland
03	Setts (separate CEC budget)	0	-90,000	0	-890,000	-980,000	0	-980,000	-1,000,000	Funded by separate CEC budget (added to contributions register)
04	De-scope public realm at St Andrew Sq	0	-700,000	0	0	-700,000	0	-700,000	-700,000	Instructed
05	Contributions 3rd Party Agreements	0	0	0	-2,996,875	-2,996,875	0	-2,996,875	-2,500,000	Refer to contributions register
06	De-scope works at Forth Ports	-2,443,000	0	0	0	-2,443,000	0	-2,443,000	-2,450,000	Instructed
07	Omit Airport Tram Kiosk and Canopy	-150,000	0	0	0	-150,000	0	-150,000	-150,000	Approved, replacement materials t.b.c
08	Temporary tram stop at York Place	0	0	-150,000	0	-150,000	0	-150,000	-150,000	Design optimisation
09	Redeployment of Trams	0	0	0	0	0	0	0	-5,000,000	Included in CEC budget code
10	Cancel track York Place to Newhaven	-1,100,000	0	0	0	-1,100,000	0	-1,100,000	-1,100,000	Instructed
11	Omit Siemens works at Tower Place	-100,000	0	0	0	-100,000	0	-100,000	-100,000	Instructed
12	Turner & Townsend / CEC resources	0	0	0	0	0	0	0	0	Ongoing
13	Shared recovery vehicle	0	0	0	0	0	0	0	0	Not taken forward
14	Road re-construction depth	0	0	-700,000	0	-700,000	0	-700,000	-700,000	Principles instructed, saving subject to site conditions
15	Design freeze north of York Place	0	0	0	0	0	0	0	-250,000	Infraco design costs expended
16	Reduced requirement for storage	0	0	0	0	0	0	0	-1,000,000	Included in CEC budget code
17	Lay off TM at Forth Ports/Leith Walk	0	0	0	0	0	0	0	-180,000	TM not included in Infraco budget provision
18	Roseburn Viaduct Cladding	-308,004	0	0	0	-308,004	0	-308,004	-300,000	Instructed

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**Infracost Report Section 5 - Opportunities**

Ref No	Description	Approved Changes	Changes in Progress	Anticipated Changes	Contributions	Secured	To be secured	Total Opportunity	Value per CS report Jan 2012	Notes
19	Delete Crew Relief Facility	-74,001	0	0	0	-74,001		-74,001		Instructed
Total		-4,175,005	-790,000	-850,000	-8,026,875	-13,841,880	0	-13,841,880	-22,040,000	

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## Infracost Report Section 6 - Credits &amp; Contributions

Ref No	Description	Included in Contract Sum	Approved Changes	Changes in Progress	Anticipated Changes	Total Forecast	Previous Period	Change from Previous	Contribution Received	Notes	Section Code	Change Code
01	Edinburgh Gateway Feasibility	860,000	82,995	0		940,000	940,000	0	528,000	£1.2m in total. Remainder of the costs included in CEC sections of the project budget.	05	01
02	New Ingliston Future Proof measures	540,000	0	0		540,000	540,000	0		Construction works element of overall settlement with NIL. Remaining amount contained in Land budget	07	01
03	Henderson Global - Cathedral Lane substation	-44,596	233,596	281,000		470,000	470,000	0		Full extent of agreement with Henderson Global to be established. Allowance assumes all design costs and proportion of construction costs associated with future substation will be borne by Henderson Global. Cost of £470k has been submitted to Henderson Global	01	01
04	RBS Tramstop	560,000	0	0		560,000	560,000	0		Agreement reached with RBS 11/06/2012	07	01
05	St Andrew Square Public Realm design		133,075	0		133,075	133,075	0	133,000	As per agreed change value. Assumed to be recovered from separate budget	01	01
06	Forth Ports		0	0		0	0	0		Forth Ports work removed from scope - no further contribution from Forth Ports assumed	01	01
07	CEC Miscellaneous. Mainly George Street CEC costs (£298k)	318,213	0	0		318,213	318,213	0	318,213	CEC finance have confirmed that a credit has been received in the amount shown. The extent of the workscope associated with this credit is not clear.	01	01
08	Network Rail - Haymarket station refurbishment	0	13,798	0		13,798	13,798	0		Majority of this work now being carried out by Network Rail. Remaining allowance for wall to crew relief facilities	02	01
09	Contribution from CEC for public realm work (granite setts) at St Andrews Square	890,000	0	0		890,000	890,000	0		No change in scope allowed for - setts funded by CEC. Saving based on spreadsheet issued to CEC (GE to AC 22/05/2012).	01	01
10	Network Rail - Scottish Power Cable diversion - Haymarket Station (TNC 591)		21,789	0		21,789	21,789	0			05	01
11	Edinburgh Gateway Construction		0	4,140,000		4,140,000	4,140,000	0		Potential for additional contribution from TS for reused poles	05	01
Total		3,123,617	485,253	4,421,000	0	8,026,875	8,026,875	0	979,213			



**Infraco Cost Report Section 7 - Change Summary**

Change Code	Description	Approved Change	Change in Progress	Anticipated Change	Contributions	Total
01	Scope Change	-2,457,922	7,388,551	-1,125,382		3,805,247
02	PAVs (Utilities, etc)	1,119,016	-746,985	360,000		732,031
03	Miscellaneous Client Risk Items	143,140	92,000	0		235,140
04	Time Delay	4,541,161	0	0		4,541,161
05	Project Contributions	0	0	0	-8,026,875	-8,026,875
<b>Total</b>		<b>3,345,395</b>	<b>6,733,566</b>	<b>-765,382</b>	<b>-8,026,875</b>	<b>1,286,704</b>

**Notes:**

Some CE's have costs which relate to more than one change code. In such instances they have been allocated to the predominant reason.

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**Infracost Report Section 8 - Period Movement**

Ref No.	Description	Approved Off	Approved On	In Progress Off	In Progress On	Total
539	System Wide - Delay in signing - impact on commencement and completion	4,541,161		-4,541,161	0	0
543	Haymarket H1 - Utilities affecting the construction of OHLE foundations	0		0	-156	-156
546	All drainage now measured through on street works estimate	0		0	-21,482	-21,482
547	Haymarket H1 - Third Party (McNicholas) affecting ability to progress the works	0		0	-4,603	-4,603
549	Princes Street - Amend the design of the St. Johns Church OLE bases	0		0	-21,771	-21,771
553	SDS to provide the services of Matt Fell until August 2012	16,175		0	0	16,175
554	St Andrew Square & Shandwick Place - Traffic Management Requirements	0		0	-19,655	-19,655
571	Hope Street Junction Design	12,061		-5,000	0	7,061
587	Revise design for amendments to setts areas and specification	15,512		-30,000	0	-14,488
596	Section 1D - Costs associated with amended drainage design	0		0	398	398
600	Shandwick place - OLE bases affecting utilities (Piling)	0		0	3,415	3,415
606	York Place - Waverley Bridge - Works Delayed and disrupted as a result of works carried out by Third parties	0		0	6,158	6,158
620	Airport Tram Stop Design	17,784		-10,000	0	7,784
623	Repair minor damage to Depot (Intercom, fence panel and broken slabs)	1,867		-3,000	0	-1,133

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**Infracost Report Section 8 - Period Movement**

Ref No.	Description	Approved Off	Approved On	In Progress Off	In Progress On	Total
625	Engineering attendance on site at Cathedral Lane.	0		-55,000	0	-55,000
627	Delete pedestrian guardrail in the area outside St John's Church (Design)	0		-5,000	0	-5,000
629	Utilities affecting Track Excavation at Shandwick Place (S1)	0		0	-41,567	-41,567
630	Utilities affecting Track Excavation at Shandwick Place (S2)	0		0	-28,465	-28,465
635	Amend on street drainage scope	0		0	204	204
636	Twin Crossing at Lochside Avenue	0		120,000	0	120,000
637	St Andrew Square Pedestrian Crossing	0		0	-1,973	-1,973
639	York Place - Traffic Management Design	0		0	240,309	240,309
642	York Place temporary Tram Stop	0		0	944,000	944,000
645	Princes Street Outstanding Works	0		0	-47,759	-47,759
653	Provision of IFC Drawings in DWG CAD format	0		-76	0	-76
663	Heras fencing at depot	6,424		-7,000	0	-576
667	Call off service to respond to Network Rail TQs and interface issues	6,000		-5,000	0	1,000
670	SDS Response to Road Safety Audit for Princes St	10,000		-10,000	0	0
671	ScotRail car park security fence	10,000		-10,000	0	0

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**Infraco Cost Report Section 8 - Period Movement**

Ref No.	Description	Approved Off	Approved On	In Progress Off	In Progress On	Total
672	Depot - Provide a wet vac to mechanically remove water ingress	0		-1,000	0	-1,000
673	Cancel order for OLE poles required for Secondary Phase 1a	-41,789		41,594	0	-195
674	Topographical survey at Eastfield avenue - DESIGN	0		5,000	0	5,000
675	Remove concrete around the water meter at the ScotRail Depot.	0		1,000	0	1,000
676	Design associated with work to Lord Bodos Bar	0		3,000	0	3,000
677	Install 20mph roundels on Landsdowne Crescent	0		0	1,500	1,500
678	Temporary traffic management design at York Place to keep bus station access open	0		0	20,000	20,000
679	Works to prevent water stagnation at Depot (L8 Compliance)	0		2,500	0	2,500
680	Coates Crescent - Bus running single lane	0		0	10,000	10,000
683	Carry out trial holes to locate 125mm diameter pipe at Depot	0		5,000	0	5,000
685	Provide technical information on Lindsay Road works	0		5,000	0	5,000
686	Alter kerbs next to CEC Connection Manhole	0		0	1,000	1,000
<b>Total</b>		<b>4,595,195</b>	<b>0</b>	<b>-4,499,143</b>	<b>1,039,553</b>	<b>1,135,605</b>

Anticipated Change				0	-1,079,000	-1,079,000
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**Infraco Cost Report Section 8 - Period Movement**

Ref No.	Description	Approved Off	Approved On	In Progress Off	In Progress On	Total
	Opportunities			0	0	0
	Change to Anticipated Final Cost	4,595,195	0	-4,499,143	-39,447	56,605
	Contributions			0	0	0
	Change to Anticipated Final Project Cost	4,595,195	0	-4,499,143	-39,447	56,605

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**Utilities Cost Report: Section 1 - Utilities Summary**

	Budget Information			Committed			Forecast					Third Party Contributions		Variance		Actuals	
	A	B	C = A + B	D	E	F = D + E	G	H	I	J	K = F + G + H + I + J	L	M = K - L	N = M - C	O = M / C - 1	P	Q
	Original Budget	Budget Variation	Current Budget	Original Contract Value	Approved Contract Changes	Current Contract Value	Changes in Progress	Anticipated Change	Opportunities	Risk / Provision	Anticipated Final Cost	Estimated Contribution Value	Anticipated Final Project Cost	Budget Variance (Value)	Budget Variance (%)	Cost of Work Done	Outstanding Amount
Post Settlement Utilities	2,912	9,350	12,262	2,912	9,350	12,262	0	7,096	0	0	19,358	-188	19,170	6,908	56.3%	11,337	925
McNicholas	1,812	9,064	10,876	1,812	9,064	10,876	0	3,358	0	0	14,234	-188	14,046	3,170	29.1%	9,942	934
01 Conflicts	1,812	4,144	5,956	1,812	4,144	5,956		1,277			7,233		7,233	1,277	21.4%	4,759	1,197
01A Drainage		1,980	1,980		1,980	1,980		391			2,371		2,371	391	19.7%	2,219	-239
01B Grosvenor St / Haymarket Sewer Collapse		188	188		188	188		-18			170	-188	-18	-206	-109.6%	170	18
01C Tower Place Bridge		50	50		50	50		24			74		74	24	48.0%	74	-24
01D Princes Street Outstanding Works		143	143		143	143		-36			107		107	-36	-25.2%	69	74
02 Legacy Works		965	965		965	965		264			1,229		1,229	264	27.4%	1,001	-36
03 Standby Team		0	0		0	0		0			0		0	0		0	0
04 Management Team		788	788		788	788		738			1,526		1,526	738	93.7%	697	91
05 Design Team		775	775		775	775		678			1,453		1,453	678	87.5%	928	-153
06 Accomodation		31	31		31	31		40			71		71	40	129.0%	25	6
Statutory Utility Companies	0	1,386	1,386	0	1,386	1,386	0	1,468	0	0	2,854	0	2,854	1,468	105.9%	1,395	-9
01 Scottish Power		126	126		126	126		89			215		215	89	70.6%	123	3
02 Scottish Gas Networks		55	55		55	55		70			125		125	70	127.3%	48	7
03 Scottish Water		693	693		693	693		907			1,600		1,600	907	130.9%	795	-102
04 Virgin Media		104	104		104	104		155			259		259	155	149.0%	175	-71
05 Verizon		20	20		20	20		-14			6		6	-14	-70.0%	6	14
06 Cable & Wireless		49	49		49	49		84			133		133	84	171.4%	50	-1
07 Fibrenet		250	250		250	250		-62			188		188	-62	-24.8%	188	62
08 BT		89	89		89	89		410			499		499	410	460.7%	70	19
09 Siemens		0	0		0	0		14			14		14	14		7	-7
12 Contributions (all companies)		0	0		0	0		-185			-185		-185	-185		-67	67
00 Legacy Works	1,100	-1,100	0	1,100	-1,100	0		2,270			2,270		2,270	2,270		0	0

Comments:  
All values are in £k.

Risk  
Refer to Risk register for risks identified against McNicholas programme  
All risk is held at programme level. This section of the cost report makes no allowance for risk.

Actions

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## Appendix 4 – Change Log





















Item No.	PH.C No.	U.O. No.	Location	Description	Network for Change?	On Street / Off Street	Class 30 / Schedule 05	TA Change / Owner	Change Category / R/C/CL/BLK	Budget Cost for Risk and Potential Changes	Letter Ref	Site Details / Due	Is Mobile Returned NY	Is Mobile Returned NY	Value (Design)	Value (Construction)	Time Implications	Is It Issued / Approved by / CEC/TA/	Date Approved / Subjected	Approved Cost for Change / Changes	Date ID / Issued	TOO RETURNED / VOLUME / OUT	Comments	
652	156		On Street - Prince St	Project 15 - Traffic Management: Review and redesign of temporary construction site at Prince St (near 15th St)	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N	45	N/A	45	CEC	04/07/2012		14/07/2012	N/A - 15th St		ON HOLD, NEED FURTHER INFORMATION ON REASON	
653			Off Street - Cedar Boulevard Bridge	Review of the Cedar Boulevard Bridge on the approach to the Cedar Boulevard Bridge	Off Street	Class 30	Class 30	UC	CR										09/07/2012					
654	159	509	Off Street - 15th St	15th St Bridge - 15th St	Off Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012	66,221.88		14/07/2012	N/A - 15th St		
655	221		Off Street - Depot	Purchase of heavy lifting equipment (crane) for the Depot	Off Street	Class 30	Class 30	UC	UC		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012	66,221.88		14/07/2012	N/A - 15th St		
656	172	535	Off Street - Station St	Station St - Station St	Off Street	Class 30	Class 30	UC	UC		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		ON HOLD, Awaiting INSTRUCTIONS NOT REQUIRED
657	219	534	Off Street - Oak Walk	Off Street - Oak Walk	Off Street	Class 30	Class 30	UC	UC	61,000.00	14/07/2012	14/07/2012	N		61,000.00		CEC	09/07/2012			14/07/2012	N/A - 15th St		TA/CO for call off to be made to the Network & B.M. Dates, some items require to be made, please should be referred to EA, remainder referred to TIC 155
658	215	535	On Street - York Place	On Street - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		URGENT TICKET FOR YORK PLACE, DEAPPROVED TO ISSUE
659	159		On Street - Station St	Station St - Station St	On Street	Class 30	Class 30	UC	UC		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
670		592	On Street - Prince St	Prince St - Prince St	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
671		597	Off Street - Station St	Station St - Station St	Off Street	Class 30	Class 30	UC	UC		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
672			BLANK FOR FUTURE USE																					
673	76	598	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
674			Off Street	Off Street	Off Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
675			On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
676		605	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
677			On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
678			On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
679		601	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
680		602	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
681		603	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
682			On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
683		604	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
684			On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue
685		605	On Street - York Place	York Place - York Place	On Street	Class 30	Class 30	UC	CR		14/07/2012	14/07/2012	N		N/A		CEC	09/07/2012			14/07/2012	N/A - 15th St		TIC and CO being prepared for issue

## Appendix 5 – Risk Register







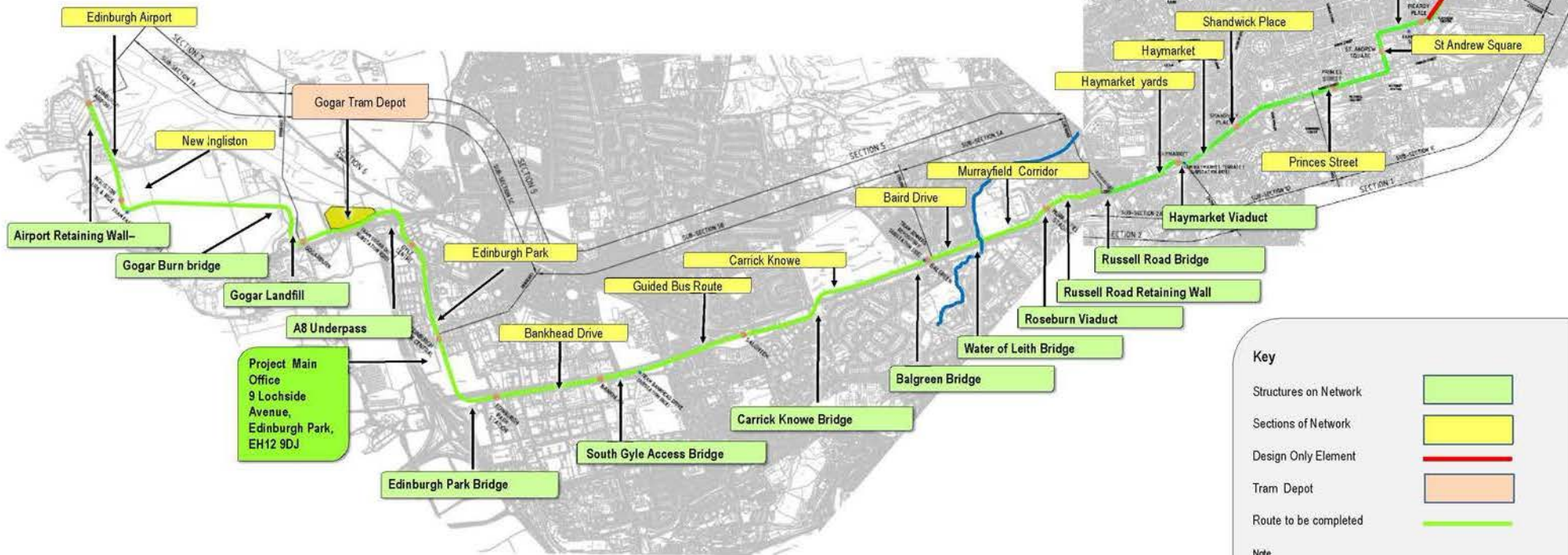






## Appendix 6 – Route Map

# Edinburgh Tram Network – Route Map & Key Locations



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## Appendix 7 – Acronyms



## ACRONYMS

ACCB	Accommodation and Boundary Works
AiP	Approval in Principle
ANC	Advice of Non Compliance
APPP	Prior Approvals – Detail Design
APPR	Approvals
APPT	Technical Approvals – Detail Design
ARCH	Architecture
AUXI	Auxilliary Power
BAA	British Airports Authority
BBS	Bilfinger Berger Siemens
BLDS	Buildings
BRDG	Bridges
BSC	Bilfinger Berger / Siemens / CAF - previous consortium
CAF	Tram Provider - (Construcciones y Auxiliar de Ferrocarriles)
CAR	Corrective Action Request
CAR	Water Environment (Controlled Activities) Regulations 2011
CDM	Construction (Design and Management) Regulations 2007
CEC	City of Edinburgh Council
CECS	CEC Services
CFS	Case for Safety
CHAR	Charette Changes
COCP	Code of Construction Practice
COMM	Commissioning
CVI	Confirmation of Verbal Instruction
DAS	Design Assurance Statement
DASB	Design – As Built
DaST	Deliver a Safe Tram
DDAP	Detailed Design Assurance Plan
DEMO	Demolition
DEPO	Depot
DKE	Dynamic Kinetic Envelope
DoC	Declaration of Conformity
DRAN	Drainage
DtTS	Deliver the Tram Safely
E&M	Electrical & Mechanical
EAL	Edinburgh Airport Limited
EART	Earthworks / Embankments
ELEC	Electricity
EMC	Electromagnetic Compatability
ENVI	Environmental
ER's	Employers Requirements
ESM	Engineering Safety Management
FAT	Factory Acceptance Test
FATs	Factory Acceptance Tests
GASS	Gas
GEOT	Geotechnical
HAZID	Hazard Identification Study
HAZOP	Hazard and Operability Study
HIGH	Highways
HIRA	Hazard Identification and Risk Assessment
HMRI	Railway Inspectorate
HS	Historic Scotland
HSE	Health and Safety Executive
HV	High Voltage
ICCO	Independent Certifiers Change Order
ICP	Independent Competent Person

IDC	Inter Disciplinary Check
IDR	Inter Disciplinary Review
Infraco	Infrastructure contract
ISA	Independent Safety Assessor
ISRP	Infrastructure Safety Review Panel
ITP	Inspection and Test Plan
JNCS	Junctions
KPI	Key Performance Indicator
LAND	Landscaping
LIGH	Lighting
LOLER	Lifting Operations and Lifting Equipment Regulations 1998
MANA	Management
MECH	Mechanical
MILE	Milestones
MISC	Miscellaneous
MODL	Modelling
MUDFA	Multi-Utility Diversions Framework Agreement
MUDFA	Multi Utility Diversions Framework Agreement
MULT	Multi-Discipline
NCR	Non Conformance Report
NR	Network Rail
NWR	Network Rail
O&M	Operation and Maintenance
OCC	Operational Control Centre
OCIP	Owner Controlled Insurance Policy
OCL	Overhead Catenary Line
OLE	Overhead Line Equipment
ORA	Operational Risk Assessment
ORR	Office of Rail Regulation
ORS	Operational Radio System
OTHW	Other Works
PHA	Preliminary Hazard Analysis
PLAT	Platforms
PM	Planned Maintenance
POWR	Power (Traction)
PSCC	Project Safety Certification Committee
QCRA	Quantified Cost Risk Analysis
QRA	Quantified Risk Analysis
QSRA -	Quantative Schedule Risk Analysis
RAIB	Rail Accident Investigation Branch
RAM	Reliability Availability Maintainability
REL	Railway Electrification
RFI	Request for Information
RFO	Request for Opinion
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurences Regulations 1995
ROGS	The Railway and other Guided Transport System (Safety) Regulations 2006
RSA	Road Safety Audit
RSAR	Road Safety Audit Report
S&T	Signalling and Telecoms
SAC	Safety Application Condition
SAT	System Acceptance Test
SATs	Site Acceptance tests
SCADA	Supervisory Control and Data Acquisition
SDS	System Design Services
SEPA	Scottish Environmental Protection Agency
SEWR	Sewerage
SFAIRP	So Far As Is Reasonably Practicable
SGN	Scotland Gas Networks
SI	Site Instruction
SIGN	Signalling
SIT	System Integration Test
SMS	Safety Management System
SNH	Scottish Natural Heritage
SP	Scottish Power
STAK	Stakeholder
STRL	Street Lighting
STRU	Structures / Retaining Structures
SUBM	Submissions
SUBS	Sub-Stations
SURV	Surveys

SW	Scottish Water
TPS	Traction Power Supply
T&T	Turner & Townsend
TCO	Tie Change Order
TM	Traffic Management
TNC	Tie Notice of Change
TS	Transport Scotland
TSS	Technical Support Services
UCO	Utilities Change Order
UNC	Utilities Notice of Change