

**Bilfinger Berger – Siemens – CAF Consortium**

**EDINBURGH TRAM NETWORK  
INFRACO CONTRACT**

**PERIOD REPORT No 8  
TO 8 NOVEMBER 2008**

## **CONTENTS**

- 1 Executive Summary**
- 2 HSQE Management**
  - 2.1 Health & Safety
  - 2.2 Quality
  - 2.3 Environment
  - 2.4 Management System / Deliverables
  - 2.5 KPIs
- 3 Programme**
  - 3.1 Contract Programme status
  - 3.2 Look Ahead programme
  - 3.3 Design and Consents Programme Status
  - 3.4 Tramco Programme Status
  - 3.5 Critical Impact Notices
- 4 Progress**
  - 4.1 Engineering
  - 4.2 Civil & Building Works
  - 4.3 E&M Systems
  - 4.4 Trams
  - 4.5 Testing, Commissioning and Start-up
- 5 Not Used**
- 6 Stakeholder and Third Party Issues**
- 7 Commercial**
  - 7.1 Milestones
  - 7.2 Changes/Instructions/Departures
  - 7.3 Risks and Opportunities
- 8 Resources**
- 9 Other Issues**
- 10 Appendices**
  - 10.1 KPI Report
  - 10.2 Programme Update
  - 10.3 Look-Ahead Programme
  - 10.4 Tram Programme
  - 10.5 RFI Register
  - 10.6 Civil Works Procurement Report
  - 10.7 Change Register
  - 10.8 Organisation Charts
  - 10.9 Production of Design
  - 10.10 Design Issues and Concerns

## Bilfinger Berger – Siemens – CAF Consortium

## 1 EXECUTIVE SUMMARY

27,000 hours were worked in the period, of which 10,000 were site hours, without any reportable accidents or incidents.

In the absence of a formal revision to the Contract programme, works are being planned and managed using the 12 week look-ahead programme. Significant progress has been made towards agreement of the impact of slippage of the design programme (V26-V31) at contract commencement. The basis for progress measurement in this report is the programme showing the agreed mitigated impact of the initial design slippage as 38 days (7 weeks 3 days) on the end date. The impact of issues arising following contract commencement are now being analysed with the aim of resolving all issues as soon as possible and progressing to development of proposals for recovering time.

A significant number of civil design packages are still not issued IFC, particularly those required for trackwork in sections 1 and 7 – section 4.1.1.2 of this report details the issues to be resolved.

System engineering and procurement is in progress, with initial trackwork material deliveries due in the period. The process of incorporating Consortium proposals into the civil designs, by means of Development Workshops with **tie**, has commenced but will be accelerated to produce approved designs to support procurement and construction.

Tram design and resolution of outstanding requirements is in progress, but resolution of communication system requirements is necessary. Detailed feedback from inspection of the mock-up has been actioned, to support a final approval inspection in the period.

Construction works are in progress in sections 1B, 2A, 5A, 5B, 5C and 7, but are all impacted by external issues which require resolution through the change process. In Leith Walk, un-diverted utilities in the first work site are severely hampering progress. On Edinburgh Park viaduct, significant changes to foundation works are required due to unsuitable ground conditions. BSC have progressed temporary works in advance of agreeing the necessary change to utilise available limited rail possessions, but look to getting the costs agreed as soon as possible.

The overall volume of changes, and in some cases requirement for design work to produce change estimates, is overloading available change management resources and introducing severe delay. Disagreement over liability for change, for example between Base Date information and IFC drawings when produced, is exacerbating the delays in agreement of changes.

## **2 HSQE MANAGEMENT**

### **2.1 Health & Safety**

#### **2.1.1 Safety Management, including CDM**

Various training awareness seminars have taken place over period 7/8 including;

- Detection equipment for on or near network rail property
- Network Rail safety bus deployed on site on the 27<sup>th</sup> of October to inform site operatives of the importance of PPE.
- Use of vibration monitoring equipment to record personnel levels of dose and raise awareness of the effects of vibration.

The Construction Phase Health & Safety Plan Rev 3 is currently being reviewed and updated to include new roles and responsibilities and include Work Package Contractor's Plans.

#### **2.1.2 Accidents & Incidents**

No accidents during period 7/8 till the 24<sup>th</sup> October 2008. There have been no accidents between the end of period 7 and up to 24<sup>th</sup> October 2008.

No Near Misses reported in the period.

No reportable incidents in the period.

AFR for the first seven periods is 0.00.

The total number of hours worked in period 7 was 27,083.

Non Site Hours = 16,885

Site Hours = 10,198

Breakdown of Site Hours

Parsons Brinckerhoff 750

BSC & Contractors 9,448

#### **2.1.3 Inspections**

An assessment audit was carried out on Graham's Construction local operations on the 28<sup>th</sup> October with Robert Bell of tie, and to the Head office in Ireland on 4<sup>th</sup> November.

### **2.2 Quality**

#### **2.2.1 Quality Management**

**Bilfinger Berger – Siemens – CAF Consortium**

The Project Management Plan (including Project Quality Plan) was reviewed at a meeting with **tie** on 20<sup>th</sup> August. Updates to the document are being progressed.

Inspection and Test Plans are being developed for scheduled work activities.

**2.2.2 NCR's**

1 No NCR raised by **tie** in the period for Edinburgh Park, in relation to securing of site accesses on the 24<sup>th</sup> October.

**2.2.3 Audits**

Internal audit carried out 16<sup>th</sup> & 17<sup>th</sup> September on Network Rail systems and procedures applicable to the contract : no NCR's were identified. A follow-up meeting on 4<sup>th</sup> November has identified areas where procedures can be simplified/improved- this will be implemented in the next period.

**2.2.4 Trend Analysis**

Nothing to report at present.

**2.3 Environment**

**2.3.1 Environmental Management**

The revised Construction Phase Project Environmental Management Plan has been resubmitted to **tie** for approval.

**2.3.2 Issues**

There was 1no: Environmental Event reported to **tie** in w/c the 20<sup>th</sup> October where Japanese Knotweed at the Viking Building was incorrectly cut and put in a mixed waste skip, requiring the entire skip to be disposed of as controlled waste.

**2.4 Management System / Deliverables**

**2.4.1 Deliverables**

**Inspection & Test Plans**

ITP's are being developed as required for scheduled work activities. A disagreement between **tie** and BSC exists regarding the scope of involvement of SDS in quality supervision. Resolution of open issues and achievement of approved ITP's is an urgent priority for BSC's new Quality Manager.

**Bilfinger Berger – Siemens – CAF Consortium**

**Project Management Plan**

Review and update in progress, for issue in the next period

**Archaeological & Heritage Mitigation Plan**

Plan reviewed by CEC. Meeting took place at Leith on w/c 29<sup>th</sup> September to agree inclusion on standing structures, and resubmitted to **tie** ion week commencing the 13<sup>th</sup> October.

**Construction Phase Project Environmental Management Plan**

Plan resubmitted to **tie** on week commencing the 6<sup>th</sup> October for approval.

**2.5 KPI's**

KPI spreadsheet for Period 7 was submitted to **tie** on 14<sup>th</sup> October along with associated notes; a further copy is attached.

### 3 PROGRAMME

#### 3.1 Contract Programme Status

Agreement in principle has been reached between **tie** and BSC on the mitigated time impact of the incorporation of the revised design programme, V31, at the date of contract commencement (14/5/08). This will be formalised when verification of consequential costs is completed and agreed. The resulting programme will be reissued as a revised Contract Programme, showing a 7 week 3 days slippage to the final Sectional Completion date compared with the original Contract Programme. An agreed programme for evaluation of impact of issues that have arisen since 14/5/08 is in progress.

The programme in the appendix to this report is the agreed V31 impacted programme. Progress achieved up to 24 October 2008 has then been recorded against the above baseline including inputting the latest IFC dates received from SDS (V37).

We have recently received a revised MUDFA programme. We are still considering how this new information can be appropriately incorporated into the Contract Programme. Therefore where MUDFA activities were shown as being completed on the Contract Programme they are now defaulting to 24 October 2008.

The result is the following changes to Section Completion Dates:

	24 October 2008 Update	26 September 2008	V31 Mitigated Impact
A	20 August 2010	22 July 2010	01 June 2010
B	02 December 2010	30 September 2010	01 July 2010
C	25 August 2011	07 July 2011	10 March 2011
D	21 February 2012	03 January 2011	06 September 2011

The above slippage is a direct consequence of incorporating revision V37 of the design programme into the contract programme and is brought about by significant changes to the IFC dates for the road and track works to the various sections of the works.

The need to undertake redesign at South Gyle Access Bridge and hence delay its construction is currently driving the final “Tram in Revenue Service” date. If the link between the bridge superstructure and trackwork is removed the end date comes forward to 08 February 2012.

Note – the links between the third party consents and the related activities present in the Contract Programme have been deleted to enable a true analysis to be provided of the current situation.

**Bilfinger Berger – Siemens – CAF Consortium**

### **3.2 Look Ahead Programmes**

The Look-Ahead Programme, attached as Appendix 10.3, for this period is a progress marked update of the works to the year end. Progress against this programme is reported in section 4.2.2 of this report. Further detail has been issued in the form of the Look-Ahead section Nov 08 – Jan 09 from the Construction Programme to provide a working programme of the activities to be undertaken in the next 3 months.

### **3.3 Design and Consents Programme Status**

Following the meeting **tie** / BSC held on 3 September 2008 to debate the effect of the issue of V31 of the design programme on the Contract Programme BSC have written to **tie** detailing their entitlement to an extension of time to the Contract Period. Following an exchange of correspondence, the time impact has been agreed as 38 business days, equivalent to 7 weeks and 3 days.

The combined effect of post V31 design programme slippages, late site possession due to the presence of MUDFA, the transfer of MUDFA scope to INFRACO, dealing with abandoned services, notified variation and alignments issues are currently being considered in a sequential manner by BSC and **tie**.

### **3.4 Tramco Programme Status**

Updated tram design, procurement, manufacturing, delivery and commissioning programme is attached as Appendix 10.4.

### **3.5 Critical Impact Notices**

The following present potential risks to the programme, a review of items identified here as Critical Impact and other issues of equivalent significance identified in correspondence is ongoing, with view to producing a more comprehensive listing in future :

#### **CIN001 - Completion of MUDFA works - ongoing**

MUDFA Programme received – Access Dates for Work Areas are being assessed and included in the development of the Construction Programme.

#### **CIN002 – Slippage of IFC dates post V31 - ongoing**

We continue to experience slippage to the programme as the result of the late release of IFC drawings. V37 has now been issued.

#### **CIN003 - Track/Roads Alignment Issues - update**

Works in Leith Walk are now in progress, but ongoing MUDFA Works will continue to disrupt BSC activities. Our current programme does not include for areas of full reconstruction in all areas of Leith Walk.



**Bilfinger Berger – Siemens – CAF Consortium**

**CIN004 - Transfer of MUDFA Works to INFRACO - ongoing**

These works will affect the commencement and/or programme of the Works. Works in Leith Walk are currently being affected by further service/utility works that need to be carried out for the design to be achieved.

**CIN005 - Network Rail Form C Implications - ongoing**

The Murrayfield structures and Bankhead Drive Retaining Walls continue to be delayed due to unresolved design issues.

## **4 PROGRESS**

Programme update attached as Appendix 10.2.

### **4.1 ENGINEERING**

#### **4.1.1 Civil & Building Design**

##### **4.1.1.1 Production of Design**

IFC design production is shown in appendix 10.9.

##### **4.1.1.2 Approvals & Consents**

###### **General**

**Prior Approvals.** Only 4 left to submit.

SDS continues to receive design changes from CEC during the formal consultation stage of the prior approvals, as listed below. These will, in many cases impact on the IFC dates and will require change instructions to be issued to BSC for the design to be amended.

In certain cases, the timeframe for applications has been extended to allow for revised designs to be submitted and also allow the Council to deal with representations which have been made on planning applications. This is not within the control of BSC.

**Drainage Consents.** SDS, BSC and **tie** is continuing to work closely with Scottish Water to progress the outstanding drainage consents.

**Technical Approvals (Roads).** Remaining design issues are being progressed at weekly Technical meetings with CEC. Prioritisation programme agreed with CEC meaning that the 6 Consents on Section 3 scheduled for approval on 31/10/08 are on hold. Number of Closeout reports for Roads Design being progressed by CEC.

**Technical Approvals (Structures).** Only 1 submission remains outstanding (Balgreen Road - submission due on 21.11.08). All others are either approved or with CEC for approval.

###### **Section 1**

###### **Outstanding - Planning**

- Two Ocean Terminal Batches (Tramstop and Bypass Road) on hold. Both have yet to be submitted due to delays in finalising the Forth Ports agreement. Forth Ports inputs to surface finishes has not been

**Bilfinger Berger – Siemens – CAF Consortium**

forthcoming. BSC/SDS proceeding with Informal Consultation without these inputs.

- New batch: 1/04a Victoria Dock Entrance Bridge has been submitted to CEC Planning to meet IFC deadline.
- Revisions to 1/17 Shandwick Place being made following Change. Submission due w/c/ 12 November.
- Three Listed Building Consents remain outstanding. CEC awaiting response from Historic Scotland.

**Outstanding - Technical**

- 1A Tower Place Bridge with CEC, 1A4 and 1C2, Roads with CEC, 1A3 due to be submitted

**Subsection 1A1**

Roads, Track, Drainage, Street Lighting & Landscaping – Subsection 1A1  
Bernard St to Foot of the walk

Roads, St Lighting, Landscaping, Drainage 1A1 IFC delayed due to TAA comments. Letter sent to BSC 29 August 2008. This delay also affects IFCs for Port of Leith TS, Bernard St TS, Foot of the Walk TS, 1A2 roads. Approval and comments received in SDS office 19 September 2008. Approx.40% complete.

Tram Stop – Bernard Street (Ch 102+240)

Prior Approval received. As 1.1, Technical approval and comments received on 19 September 2008. SDS in process of responding to comments and updating drawings in anticipation of submitting IFC.

Tram Stop – Foot of the Walk (Ch102+700)

As above.

**Subsection 1A2**

Roads, Track, Drainage, Street Lighting & Landscaping – Subsection 1A2 –  
Port of Leith to Bernard Street

Roads, Street Lighting, Landscaping, and Drainage 1A2 IFC delayed due to TAA comments. Letter sent to BSC 29 August 2008. This delay also affects IFCs for Port of Leith TS, Bernard St TS, Foot of the Walk TS, 1A2 roads. Approval and comments received in SDS office 19 September 2008. Approx.40% complete.

Tram Stop – Port of Leith (Ch 101+780)

Prior Approval received.

**Bilfinger Berger – Siemens – CAF Consortium**

**Subsection 1A3**

**Forth Ports** - Still not final agreement between CEC and Forth Ports on the proposed bypass road (Road 8). Instruction from **tie** does not contain required information related to finishes at Ocean Terminal. This may continue to delay Prior Approval, technical approval and IFC until Instruction is received on the finishes.

**Subsection 1A4**

Roads, Track, Street Lightning and Landscaping – Subsection 1A4 –  
Newhaven to Ocean Terminal

Objection to the Planning and Prior Approvals in the west of the site (Batches 1/01a, b, c) have been registered by an impacted Third party (ADM Milling) who was not party to the Forth Ports agreement. CEC have raised comment with SDS on this and have advised that they cannot come to decision until such issues are resolve. BSC/SDS have provided a design in accordance with the revised FP agreement, as instructed, and the negotiation with the 3<sup>rd</sup> party is outwith the scope of BSC. CEC requested delay to providing response to Planning Batches in this area.

Drainage – Subsection 1A4 Newhaven to Ocean Terminal

As above.

1A4 delayed due to redesign. Delay due to the CEC requirement to take account of a full access junction for the TAA.

Tram Stop – Newhaven (Ch 100+080)

Objection to the Planning and Prior Approvals in the west of the site (Batches 1/01a) have been registered by an impacted Third party (ADM Milling) who was not party to the Forth Ports agreement. CEC have raised comment with SDS on this and have advised that they cannot come to decision until such issues are resolve. SDS has provided a design in accordance with the revised Forth Ports agreement, as instructed, and the negotiation with the 3<sup>rd</sup> party is outwith the scope of SDS. CEC requested delay to providing response to this Prior Approval Batch (1/01a).

Delayed due to roads 1A4 redesign. Delay due to the CEC requirement to take account of a full access junction for the TAA.

**Subsection 1B**

Roads, Track, Drainage, Street Lighting & Landscaping – Subsection 1B

**Bilfinger Berger – Siemens – CAF Consortium**

IFC Issued. BSC/SDS still awaits final closeout of comments from CEC with respect to the demarcation between carriageway and tramway. This is delaying closeout report and Design Assurance Statement.

**Subsection 1C1**

Roads, Track, Street Lighting and Landscaping – Subsection 1C1 – London Road

SDS currently responding to CEC comments outstanding from TAA approval in anticipation of IFC issue. BSC/SDS still awaits final closeout of comments from CEC with respect to the demarcation between carriageway and tramway. This is delaying closeout report and Design Assurance Statement.

**Subsection 1C2**

Roads, Track, Street Lighting and Landscaping – Subsection 1C2 – London Road to Picardy Place

TAA submittal delayed with CEC request for additional information.

Drainage – Subsection 1C

TAA submittal on 14 October 2008, which was delayed with CEC request for additional information.

Tram Stop – Picardy Place (Ch120+600)

TAA submittal delayed with CEC request for additional information.

**Subsection 1C3**

Roads, Track, Street Lighting and Landscaping – Subsection 1C3 – York Place

As above

Tram Stop – Princes Street (Ch121+950)

Tramstops in section 1C3 are delayed due to the non receipt of RSA exceptions report and volume of comments. Princes Street requires completion of the comments by Roads so that interfaces can be finalised. Further delay that has arisen from the previous sets of comments received. Approximately 85% complete.

Tram Stop – St Andrews Square (Ch121+150)

Tramstop delayed due to the non receipt of RSA exceptions report and volume of comments. Letter sent 27 August 2008.

**Bilfinger Berger – Siemens – CAF Consortium**

St. Andrew Square tramstop requires completion of the comments by Roads so that interfaces can be finalised. Further delay that has arisen from the previous sets of comments received. Approximately 85% complete.

**Subsection 1D**

Roads, Track, Drainage, Street Lighting and Landscaping – Subsection 1D

ID Roads IFC late due to late return of TAA comments. The TAA comments are being delayed due to a change request at Haymarket, and the need for the Modelling and RSA to be complete before approval can be granted.

There is an outstanding change for the revision to lighting and relocation of cabinets. CEC response to comments is still outstanding. The modelling and RSA points are from CEC. SDS have submitted the RSA and the modelling has not been an issue for previous approvals. SDS awaits CEC TAA approval and any comments.

Haymarket Junction Roads - SDS have submitted updated Roads, Track, OLE and Street Lighting design to CEC in the Haymarket area to address the Road Safety Concern raised and consequently, CEC's non-acceptance of the originally instructed design. No formal comments (other than the non-acceptance of the RSA exception) from CEC on Section 1D have been received by SDS in accordance with the design submittal.

Haymarket Taxi Stand (Section 1D) - SDS have been advised informally by CEC that their Section 1D comments will contain a requirement to change the previously required bus lay-by in front of Haymarket station back to a taxi stance, similar to the existing condition

Tram Stop – Shandwick Place (Ch130+710)

There is an outstanding change for the movement of the Tramstop, revision to Street Lighting and relocation of cabinets. CEC response to comments is still outstanding. The modelling and RSA points are from CEC. SDS have since submitted the RSA and the modelling has not been an issue for previous approvals. BSC awaits CEC TAA approval and any comments.

Shandwick Place

IFC late due to late return of TAA comments. CEC have come back with several comments on the Prior Approval under which we applied for the change. There has also been an additional landscaping issue that CEC were holding up the PA with respect to wider public realm. I believe that this was resolved yesterday. BSC awaits CEC TAA approval and any comments.

On 14 August 2008, CEC provided a letter to SDS containing non-specific comments regarding the planning application submitted to CEC for Prior Approval on 25 April 2008. SDS provided requested information to CEC for

**Bilfinger Berger – Siemens – CAF Consortium**

their internal meeting on 22 August 2008. Meeting held on 25 September 2008 which outlined SDS' existing proposal to be retained.

**Section 2**

**Outstanding - Planning**

Potential for 2/01 Haymarket to be resubmitted for Prior Approval pending outcome of 1D Roads redesign.

**Outstanding - Technical:**

Closeout report to be completed following comments and Design Assurance Panel on 21 November.

**Section 5**

**Outstanding - Planning:**

5/06 Murrayfield Stadium Tramstop is pending consideration but on hold, 5/07a – Murrayfield Accommodation Works (Full Planning Permission), 5/30 - Tram Stop Gogarburn. RBS concept design now with tie.

**Outstanding - Technical:**

Close out reports with CEC on Roads 5B and 5C. Approvals expected by mid November.

Balgreen Road Network Rail Access Bridge to be submitted to CEC and Network Rail on 21 November 2008.

**Subsection 5A**

Roads, Track, Street Lighting and Landscaping – Subsection 5A

5A Roads, Drainage and Street Lighting IFC is outstanding due to delayed TAA comments. Partial submission made only. Partial submission refers to the Murrayfield Tramstop which is on hold.

Drainage – Subsection 5A

As above

Russell Road Retaining Wall 1 – W3 (Ch 510-200)

IFC Issued – Sewer Clash no longer an issue - Change Request is withdrawn

**Subsection 5B**

**Bilfinger Berger – Siemens – CAF Consortium**

Roads, Track, Drainage, Street Lighting and Landscaping – Subsection 5B

Roads, Drainage and Street Lighting IFC is outstanding due to delayed TAA comments initially, followed by the volume of comments. There is a follow on delay that has arisen from the previous sets of comments received. These are approximately 75% complete.

**Subsection 5C**

Roads, Track, Drainage, Street Lighting and Landscaping – Subsection 5C

5C Roads, Drainage and Street Lighting IFC is outstanding due to delayed TAA comments. There is further delay that has arisen from the previous sets of comments received. These are now approximately 70% complete.

Tram stop – Gogarburn (Ch 531+860)

On hold as instructed by tie awaiting RBS concept design

**Section 6**

**Outstanding - Planning:**

Warrants:

6/21a Depot Building Warrant Stage A (foundations and steelworks) has been approved. Additional information for remaining elements of Warrant with CEC for approval.

**Outstanding - Technical:**

Following SDS issue of supplementary information, the following 2 technical approvals are currently under consideration by CEC:

Roads and 6 Drainage

**Subsection 6**

Roads, Street Lighting & Landscaping – Subsection 6 – Depot, Drainage – Subsection 6 – Depot, Depot Earthworks, Depot Internal Retaining Walls, Depot Ductwork – External Services, Depot General Layout, Depot Building Foundations, Depot Main Building, Ground Floor Slab and Pits, Depot Building Steel Superstructure, Track – Subsection 6 – Depot, Depot Halt, OLE in Depot, Substation – Gogar Depot – SS01

**Section 7**

**Outstanding - Planning:**



**Bilfinger Berger – Siemens – CAF Consortium**

Remaining planning approval with CEC is 7/29 Airport Tramstop.

**Outstanding - Technical:**

technical approvals are currently pending consideration as follows:

7A Drainage, 7A Roads

**Subsection 7A**

Roads, Track, Drainage, Street Lighting and Landscaping

TAA comments received from CEC. SDS are currently compiling response.

Tram Stop – Edinburgh Airport (Ch 712+560)

BAA - SDS, TEL, Transdev, BSC, tie and BAA have agreed a Way Forward in Principal in order to progress the design and approvals at the Airport. SDS have issued the Prior Approval. BSC also await BAA's confirmation of the design for the covered walkway over the Kiosk. BAA still to confirm approval of concourse and kiosk.

Relocation of Burnside Road -

BSC await further instruction with regard to this change.

Gogar Burn Retaining Wall Two – W14 (Ch 712+220) (Ch 712+570) –

CEC request amendment to finish which will delay IFC

Gogar Burn Retaining Wall One – W14 (Ch 712+100) (Ch 712+190)

Delay of Prior Approval Batch 7/29 will delay IFC

Tram Stop – Ingliston Park & Ride (Ch 711+740)

IFC delayed due to Change Order from tie for BSC to design road and pedestrian links to Tram Stop. Design is ongoing.

**4.1.1.3 Issues and Concerns**

To highlight issues and concerns regarding design we have attached appendix 10.10. The illustration denotes current issues and the area in which they occur. This document is being used to define the agenda for a joint tie/BSC design issues resolution meeting, to achieve closeout.

**Bilfinger Berger – Siemens – CAF Consortium**

**4.1.2 E&M SYSTEMS DESIGN**

**4.1.2.1 EMC**

Test procedure for NR track in Nottingham is handed over and test still planned to take place in October. A SWCP workshop is planned on 27.10.2008 to inform the stakeholders about E&M measures.

**4.1.2.2 Overhead Line Equipment**

**Design**

Current progress includes preparation of pole design, table of foundations, anchor bolt configuration all in support of procurement of long lead time items to mitigate further delays. A proposed reduced OLE sectionalizing of the depot and mainline is currently being discussed with **tie** and interested parties.

**Approvals and Consents**

Principle of revised tensioning arrangements has been accepted by **tie**. Variances of drafted OLE design from planning approval submissions identified.

Proposed combined OLE/lighting pole designs submitted being reviewed internally by BSC.

To start procurement process the E&M design for OHLE need approvals before end of 2008.

**4.1.2.3 Traction Power Supplies**

**Design**

Design is further progressing. First design submissions, like “Principle Overall System Description” and “Control & Protection Concept” near completion. One main focus of TPS design here is currently on final specification of long lead time items (rectifier transformer, DC switchgear, medium voltage (11kV) switchgear). All this will in principle be described in above mentioned documents.

**Approvals and Consents**

No specific items identified at this moment.

**4.1.2.4 Traffic Light Control**

**Design**

Detailed design in preparation.

**Approvals and consents**

No current issues

**4.1.2.6 Trackwork**

**Bilfinger Berger – Siemens – CAF Consortium**

**Design**

Preliminary Track Design Report has been presented to SDS and is presently under review by SDS for first comments.

Verification of Alignment Drawings has been completed. The alignment contains discrepancies between the MX data files and the alignment drawings regarding cant, speed profiles and alignment differences in position of tangent points for which 19 Technical Queries have been raised with SDS. 11 Have been closed, 8 are still open, some of these are fundamental for the progress of the design.

The basis of design document as first part of the Basic design phase is in internal review.

Interfaces have been defined and resolution steps have been proposed. To be discussed in interface meetings.

An engineering document list was issued identifying the anticipated engineering documents for all Track design phases.

Rail wheel interface study assigned

**Issues and Concerns**

Mismatches between alignment drawings and MX data files being resolved by SDS.

Alignment is not fixed yet, SDS is still working on several sections based on requests of **tie**, this will constrain the detailed design

Changes in design due to VE-requests and Change Orders may influence the programme.

RFI (ETN(TRW)TIE=T&ABC#055681) September 25th 2008 to track stiffness specification may lead to delay in the supply of the sleepers, not yet closed out by **tie**.

RFI (ETN (TRK)TIE&ABC # 050016) August 20th 2008 "Change Trackforms" not yet closed out by **tie**. Design is ongoing based on contractual basis but

Trackwork specifications document from SDS is presently being revised and contains some changes which may have an impact on the track design process.

It has not been confirmed that the bolted crossings will be approved. If it has to be cast manganese it will delay the programme considerably.

The originally planned storage area in the depot is not available yet due to ongoing MUDFA delay in handing over the area. The first shipment of rails

**Bilfinger Berger – Siemens – CAF Consortium**

and sleepers will take place early November 2008. Solution to this issue needs urgent attention.

**4.1.2.7 Depot Workshop Equipment**

**Design**

Detailed design in preparation for wheel lathe and gantry crane.

**Approvals and Consents**

Under floor Wheel Lathe design submittals handed over in October.

**4.1.2.8 Signalling**

**Design**

The preliminary design for the signalling sub-systems is due to be finalized. Formal Submission has been planned by end of October 08. Based on a joint visit with the operator Transdev in Nottingham a detailed understanding of the operational needs in particular for the Supervisory Control Centre could be achieved which will be reflected in the design.

Based on the design of Leith Walk tram stop the duct requirements have been clarified between Civil and LVS, SIG and COM.

**Approvals and consents**

To support the approval of the Design a design review with tie/ Transdev will be arranged in November 08.

**4.1.2.9 Telecoms**

**Optical Fibre, Radio System and E&M Cubicles**

**Design**

The Optical Fibre Detailed Design and the E&M Cubicle will be completed by 31-Oct-08. The Radio System Detailed Design is ongoing, whereby currently the impact of Notice of Change No. 20 – Bustracker, TPDS & Radio will be investigated. Relevant quotation from the Bustracker supplier has been received and is under review. Radio equipment still based on contract requirements until further instruction.

**Approvals and consents**

No current issues

**Depot PABX, UPS, and PA**

**Design**

Combined Detailed Design to be completed 07/11/08.

**Bilfinger Berger – Siemens – CAF Consortium**

#### **4.1.2.10 HV/LV Power Supplies**

##### **Approvals and consents**

Completion of surveys and assessments is required to determine the extent of consents required by Scottish Power and Siemens.

#### **4.1.3 TRAM DESIGN**

As mentioned in Period Report n° 7, CAF has as an outstanding issue the definition of the followings systems:

- TPDS & Radio defined, purchased and provided by Siemens
- Bus Tracker defined, purchased and provided by **tie**/Lothian Buses

The impact can be seen on items 19 and 20 on CAF Programme attached as Appendix 10.4 Item 19 (Interface 1 – System Interface Basic Definition) has been moved forward in time compared with original programme and item 20 (Interface 2 – System Interface Complete Definition) still has not been modified.

The contractual situation requires CAF to install both systems. Nevertheless, the detailed analysis of the functionality of TPDS and Bus Tracker systems gives the possibility of integrating both systems into one only system. After consultation with Siemens and CAF, **tie** sent a Notice of Change (Number 20) to BSC to make an estimate of the mentioned integration. Acknowledging that the integration will have some benefits for all the parties involved, CAF, at this moment in time, needs a detailed and final definition of any of the two options either the integrated system or the independent systems in order to fulfil its commitments according to the contract.

Another design issue is related with mock-up approval. Two visits have been made on the 29th and 30th of September and on the 14th of October. The general impression is that the mock-up meets **tie** expectations. Fully compliant with British Standards, exterior and interior design and livery have been verbally approved, although the official approval will be issued when the mock-up is officially accepted. CAF is working in order to close the open points already mentioned in order to proceed to transport and deliver the mock-up in Edinburgh. CAF has proposed the 5th of November as the date for the visit to get the approval of the mock-up.

#### **4.1.4 System Assurance**

**tie** led reviews of SDS produced Assurance have commenced. BSC design management staff are attending reviews to ensure that Assurance output is in accordance with ICP requirements and available on time.

**Bilfinger Berger – Siemens – CAF Consortium**

**4.1.5 Design Change Management**

**Civil & Building Work**

Refer to Appendix 10.7

**E&M**

No comments

**4.1.6 Value Engineering**

**Civil & Building Works**

VE status is now reviewed in regular **tie**/BSC meeting

BSC have challenged the validity of **tie**'s instruction to deliver the VE saving on Roseburn Viaduct as detailed in Schedule 4. Given that the SRU agreement requires amendment to the design, we have progressed the outline design to the point that a change order to accommodate the SRU requirements could be actioned if issued by **tie**.

Instructions from **tie** to progress reassessment of other design-to-cost value engineering opportunities (VE7 Depot, VE12 Edinburgh Park Bridge, VE14 A8 underpass) have been actioned and estimate/programme information will be provided as soon as possible. Work on these items is already in progress, in accordance with IFC design and, where relevant, **tie** instructions, which will limit achievable VE savings.

**E&M Systems**

Impact of down rating UPS's as a Value Engineering exercising being considered

**4.1.7 Request for Information**

**4.2.6.1 Civil & Building Works**

See Appendix 10.5. RFI Register

**4.2.6.2 E&M Systems**

Interface management has identified misalignment between offer and SDS design and development and internal workshop has started.

**Bilfinger Berger – Siemens – CAF Consortium**

**4.2 CIVIL & BUILDING WORKS**

**4.2.1 Procurement**

**4.2.1.1 Subcontractors**

A subcontract procurement schedule, showing status at 23rd October, is attached as Appendix 10.5.

**Section 1A**

Section 1A has now been split into three areas, namely Newhaven to Ocean Terminal (1A1), Ocean Terminal to Bernard Street (1A2) and Bernard Street to Foot of the Walk (1A3).

Quotations are expected to be returned by the 10<sup>th</sup> November 2008, after which an adjudication process will take place with a view to engaging a subcontractor for Section 1A1 by the end of November 2008.

**Section 1B**

Having concluded our procurement process for Section 1B and requested of approval to subcontract this section of the works to Crummock Ltd, we are responding **tie**'s request for additional information before **tie** give their approval.

**Section 1C**

The east end of Section 1C will start within the next 6 weeks and we intend to extend Crummock's scope to include these initial areas.

**Section 1D**

We have received, and are currently reviewing returned tenders from several subcontractors for Section 1D and detailed negotiations with one or other party will commence on 27th October 2008. Section 1D is programmed to start in January 2009.

**Section 2A and 5A (Part)**

Until such times as we have concluded our subcontract discussions with Grahams we are proceeding with the employment of labour only subcontractors to progress the works.

Negotiations are ongoing with Graham's to conclude a subcontract order however they will not start in earnest on site until the beginning of January 2009

**Section 5A(part), 5B and 5C (part)**

**Bilfinger Berger – Siemens – CAF Consortium**

To secure possessions, Steel Foundations were employed to install temporary sheet piling at Edinburgh Park Bridge. Negotiations with a preferred subcontractor are ongoing.

Expanded Ltd for the A8 Underpass are working at A8 underpass

Enquiries have been sought for other smaller trade contractors, e.g. earthworks, drainage, ducting and concrete works to the track..

**Section 6**

We are currently finalising the terms and conditions of the full subcontractor order for Barr Ltd for the construction of the depot. In the meantime Barr Ltd will progress any area of the depot which is considered to be critical to our progress, at risk pending IFC design, and assuming that access is made available.

A formal request **tie** to subcontract the works to Barr Ltd has been submitted to **tie** and a response is awaited.

**Section 7A**

Final negotiations with Farrans to conclude a subcontractor order will be completed by 7/11/08. A formal request to subcontract the works to Farrans has been submitted and we are responding to **tie**'s requests for additional information.

**4.2.1.2 Materials**

Procurement of precast beams, bearing and other major materials are progressing.

**4.2.1.3 Long Lead Procurement Management**

Fairfield Mabey are manufacturing the steelwork for Water of Leith bridge.

Design issues preventing us issuing an order for the supply of the precast concrete beams to Edinburgh Park have now been resolved and an order is now placed.

**4.2.2 Construction**

**4.2.2.1 Progress on site, to 4<sup>th</sup> Nov 2008**

**Section 1A Newhaven Road to Foot of the Walk**

No activities planned to commence during the period.

**Section 1B Foot of Leith to McDonald Rd**



**Bilfinger Berger – Siemens – CAF Consortium**

Mobilisation of Satellite office 163 Leith Walk has continued. Building repairs have been completed. Internal decoration has been completed. Office was fully occupied on 1<sup>st</sup> October 2008.

Ch 100-350 - Traffic management was implemented on Thursday 2<sup>nd</sup> Oct. Crummock commenced construction activities on Mon 6<sup>th</sup> Oct, having been delayed for a week by incomplete MUDFA works. A number of services have been exposed which are within the works area and a number of queries have been raised by Crummock regarding utility diversions required to achieve kerb and carriageway construction. These will be forwarded to tie as RFI's but efforts are also being made to identify more efficient ways of resolving utility clashes to reduce delay to the works.

Northbound -

TM established south of Pilrig St. / North footpath stripped back to new kerbline and excavation to formation for kerb and road construction ongoing. Ongoing MUDFA Works at Manderston St. and on Leith Walk North of Pilrig St.

Progress:	Planned	90%
Actual	15%	

Southbound –

Planned start 4 Nov 2008

Leith Walk CH 350 to 600 –

Planned start 12 Nov 08

**Section 1C McDonald Rd to Princess Street West**

Traffic Management scheme has been submitted for approval to allow construction activities to commence on 30<sup>th</sup> Oct. Leith Walk Ch.0-375 – planned start was 31 Oct 08 – now delayed to 17 Nov 08. MUDFA continue to occupy the area.

**Section 1D Princess St to Haymarket**

A series of planning meetings have taken place. The construction programme is prepared and a Time-Location Chart has been drawn for stakeholder briefings. Next meeting is arranged for 4 Nov 2008. Preparation (not on site) will start for Princes St / Lothian Road and Haymarket Junctions on 24 Nov 08.

**Section 2A Haymarket to Roseburn Junction**

Haymarket Station Viaduct –Sub Structure Pier bases 2 & 3 have been cast. Wall reinforcement has been fixed and continuity welding will be carried out on the reinforcement on Monday the 27<sup>th</sup> October. Wall shutters are due to be erected following with the walls scheduled to be cast on Monday 3<sup>rd</sup> November 2007.

Abutment redesign is with CEC for technical approval and the temporary works design will be complete by 1<sup>st</sup> Nov.

**Bilfinger Berger – Siemens – CAF Consortium**

Progress -	Planned	47%
	Actual	20%

**Section 5A Roseburn Junction to Balgreen Rd**

Baird Drive Retaining Wall - Site Clearance has been completed.  
 Site access and temporary haul rd at Carrick Knowe has been established.  
 Jenners - Carrick Knowe site clearance is complete.  
 Site Clearance to Murrayfield Retaining wall has continued.  
 Demolition operations have continued at the Simlock building. Viking and NCR building demolition has been completed.

Murrayfield Tramstop Retaining Wall – IFCs expected 27 Oct 08.  
 Roseburn St Viaduct – Construction details to be addressed.

Murrayfield Stadium Underpass – Following assessment of further GI, SDS are proceeding with ground improvement design for Murrayfield Retaining Walls.

Russell Rd Underbridge – Further site investigation has been carried out to allow Temporary works design to progress. Samples have been tested and discussions are ongoing to investigate a soil nailing solution.

**Section 5B Balgreen Rd to Edinburgh Park Central**

Carrick Knowe Bridge – Site Access construction has continued Additional Site investigation has been carried out. Temporary works required for track support zone are complete. Haul road and piling platform to the South abutment completed during the disruptive possession of the 26<sup>th</sup> Oct.

Progress	Planned	11%
Actual	11%	

Track work – Site investigation has been completed.

Edinburgh Park Station Bridge – Site Access works been completed. Unforeseen ground conditions resulted in the re-design of Temporary Works. Additional excavation to a suitable formation and the import of structural fills has been necessary. This delayed the Form C submission by 3 weeks.

Additional structural earthworks excavation to piers 5, 6 & North Abutment has been completed and the bases blinded. Temporary works has been completed. Sheet piling to piers 3 and 4 adjacent to the railway completed in possessions.

This work was progressed in advance of instruction from **tie**, to ensure utilisation of available possessions – **tie** confirmation of change still awaited.

Progress	Temp Works	Planned	100%	Actual	100%
Substructure	Planned	55%	Actual	1%	

**Bilfinger Berger – Siemens – CAF Consortium**

**Section 5C Edinburgh Park Central to Gogarburn**

Erection of Edinburgh Park section office and compound is ongoing.

Site clearance/ temporary haul road construction has commenced.  
Excavation of unsuitable material and installation of a starter layer is ongoing

Gyle Centre Tram Stop Retaining Wall –

These works remain on hold awaiting MUDFA completion. Infraco works were due to start 01 August 2008 (V34) but are delayed dependent on completion of the MUDFA Work.

A8 Underpass – Diversion of existing services is complete for phase 1. Alternative pedestrian diversion has been established. Piling commenced on 15/10/08 and is scheduled for phase 1 completion on 6<sup>th</sup> November.

**Section 6A Depot**

BARR are scheduled to take partial possession of the site on Monday 3<sup>rd</sup> November following scheduled completion of the necessary of MUDFA works. Haul route access ramp to Section 7 has been completed.

**Section 7A Gogarburn to Edinburgh Airport**

Farran mobilisation is complete. Gogarburn haul route crossing is complete. Stockpiles from archaeological works are being moved to landscape area North West of Gogar Burn. Site clearance and limited topsoil strip and fencing works continue.

Progress - Section 7 works are 2.5 wks behind programme. The late IFC issues, Archaeological Dig, spoil removal, and preparation for the sewer diversion are the main issues in this delay.

**General**

MUDFA are planning to divert the existing 1500 dia. sewer which passes under the A8. This must be in time for the Phase 3 Infraco Underpass construction.

MUDFA should were expected to complete water main works at the Depot around a month later than originally anticipated 15 October 2008, pressure test failures have prevented the works being completed as of 30/10/08.

The scope of sewer diversion works at Gogarburn Bridge has yet to be resolved. SDS have provided backup information regarding the assumptions made in reaching the current design.

We have advised that should the sewer diversions be required, we are not currently in a position to carry out the works economically or efficiently. We would need to procure a specialist contractor and also recruit suitably qualified supervisory staff. Our proposals is that MUDFA should carry out these works – we are willing to work in coordination with the MUDFA contractor to progress bridge abutments simultaneously where possible.

**Submissions**

**Bilfinger Berger – Siemens – CAF Consortium**

43 Work package plans have now been approved/accepted  
31 Work package plans are currently in draft form or within the approvals process

**4.3 E&M Systems**

**4.3.1 OLE (Overhead Line Equipment)**

**Production / Procurement**

Procurement of long lead items under preparation (see above). Examples are poles and wires for tensioning devices.

**Issues and Concerns**

Changes as a result of Planning Approval process. Little impact if communicated prior to mid-October, however impact on cost and programme after this time will increase significantly.

Other key issue is currently to meet contract timeline. Design process in progress. Partial submission under preparation, rather submission of complete design packages as planned to be able to start procurement of long lead items (see above) immediately after approval.

**4.3.2 TPS (Traction Power Supply)**

**Production / Procurement**

Negotiations with suppliers underway, specifically for long lead items.

**Issues and Concern**

Quick and effective review and approval process required to support procurement on long lead items, to avoid any further time programme risks.

**4.3.3 TRW (Trackwork)**

**Production**

Wide range of preparation work and engineering  
Preparing method statements, risk assessments  
Delivery of 1000 t of Rails  
Delivery of 1000 pcs. Sleepers for Ballast Track  
Delivery of sleepers for 500 m of street track  
Delivery of extendable trailer for transport of rails and sleepers.  
Arrival of Road-Railcrane  
Arrival of several containers of other Plant

**4.3.4 DWE (Depot Workshop Equipment)**

**Production / Procurement**

No comments

**Bilfinger Berger – Siemens – CAF Consortium**

**Issues and Concerns**

RFI resolution ongoing

**4.3.5 Signalling, SCADA, PIS, PA, Comms**

**Production /Procurement**

Based on the request from TIE to investigate the opportunity to combine the TPDS onboard computer and radio with the Bustracker system onboard of the tram the procurement process for this equipment has been extended. Siemens has received a quotation from the Bustracker supplier INEO Systran which is under review.

**Issues and concerns**

The impact of TIE notice of change 20 is being assessed (TPDS onboard computer).

**SCADA, CIS, PA**

**Production**

Requirements from TPS etc collated for SCADA, preliminary design in progress scheduled for submission by end of October.  
Site visit carried out at the Nottingham Express Transit Depot on the 01/10/08 to review the operation of the Tram Control Room. Overview given by the Tram Operators.

**Issues and concerns**

Passenger Information Display customer requirements conflict with regard to the physical size of the units versus the message requirements/format. The Interface Control Form has been updated with the current proposal to meet the message requirements/format.

The mounting of the PID's at the Tramstops is currently under review with BB.

**Telecomms**

**Production**

No current issues.

**Issues and concerns**

The impact of TIE notice of change 20 is being assessed (Radio System). Aspirations for additional on-tram functionality may exceed available bandwidth capacity.

**4.3.6 TLC (Traffic Light Control)**

**Production**

Quotes being re-assessed for resubmission based on road junctions detailed in TIE Notice Of Change 16.

**Bilfinger Berger – Siemens – CAF Consortium**

**Issues and concerns**  
No current issues.

**4.3.7 HV/LV - Supply**

**Production**

Quotes from Scottish Power for Gogar Depot, Ingilston P&R, and Haymarket HV supplies expected 29/10/08.

**Issues and concerns**  
None at present

**4.4 TRAMS**

**4.4.1 Procurement**

Refer to programme (Appendix 10.4)

**4.5 Testing, Commissioning and Start-up**

No comments

**Bilfinger Berger – Siemens – CAF Consortium**

**5 NOT USED**

**6 STAKEHOLDER AND THIRD PARTY ISSUES**

Planning proposals for Section1D have been developed to enable public/stakeholder communication prior to commencement in January 2009. BSC are attending the monthly Project Stakeholder Consortium Committee meetings and attended the Tram Board to brief executives on current proposals.

**7 COMMERCIAL**

**7.1 Milestones**

**Milestones Achieved in the Period**

Month 6 Preliminaries (BB)  
Month 6 Preliminaries (S)  
Month 6 SDS Interface

**Milestones Programmed but not Achieved**

There are ongoing meetings with tie to discuss the Milestone Schedule and our next meeting is arranged for the 11<sup>th</sup> November 2008 where we discuss amongst other things any milestones which have not been achieved.

By agreement we will revise the milestone schedule to reflect progress to date and the future progress of the works.

From these discussions it has become evident that it is not clear from the infraco contract what information has to be in place before tie will issue a Construction Interim Milestone and this fact has led to some milestones not being certified.

It has been agreed to hold a further series of meetings with our respective Project Managers and set out clearly the criteria which need to be met to allow a milestone to be certified.

**7.2 Changes/Instructions/Departures**

See Appendix 10.6

**7.3 Risks and Opportunities**

Risks – a meeting to discuss Risks has yet to be convened.

**Bilfinger Berger – Siemens – CAF Consortium**

Opportunities – the subject of opportunities features on the agenda of VE meetings which are held on a regular basis.

**8 RESOURCES**

**8.1 Organisation Charts**

See Appendix 10.8

**9 OTHER ISSUES**

No comments

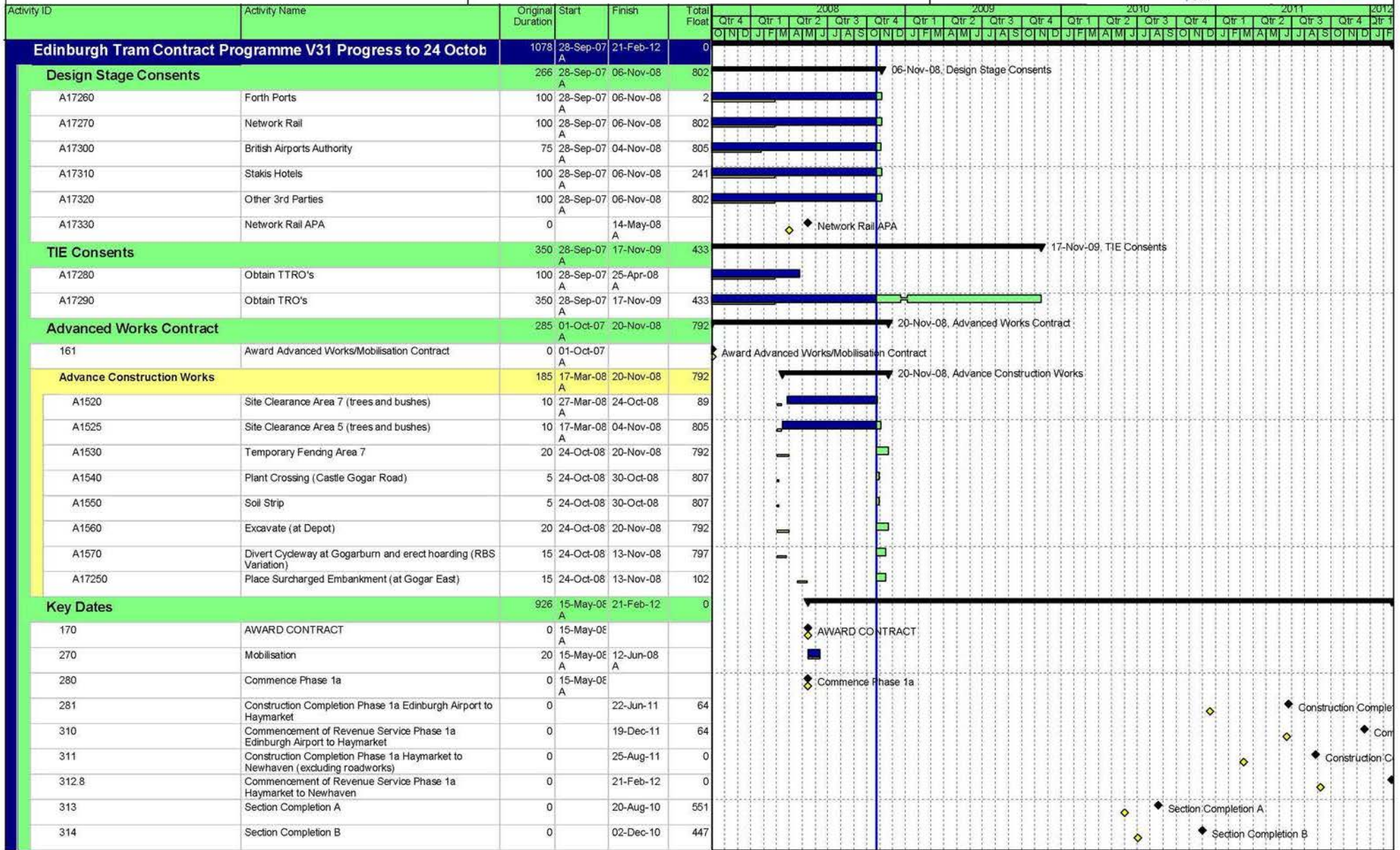


## **10 Appendices**

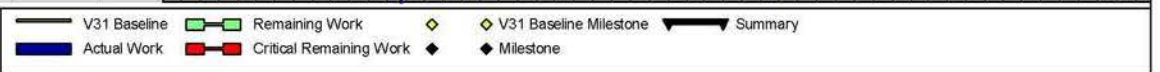
### **10.1 KPI Report**



## **10.2 Programme Update**



Date	Revision	Checked	Approved
24-Oct-08		scs	



CEC01169379\_0036















Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	2008												2009				2010				2011				2012			
						Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2					
<b>Ocean Terminal (inc.) to Port of Leith (exc.)</b>						685	24-Oct-08	11-Aug-11	127																								
<b>Roadworks</b>						493	26-May-09	25-May-11	26																								
12010	Issue Construction Drawings	0	26-May-09*	0																													
<b>Ocean Terminal Ch 850-1080</b>						47	09-Mar-10	17-May-10	188																								
A15510	Excavate for new channel and kerb line / remove existing kerbs	12	09-Mar-10	25-Mar-10	188																												
A15520	Construct Kerb lines	14	12-Mar-10	01-Apr-10	188																												
A15530	Reset Gullies	28	26-Mar-10	07-May-10	188																												
A15540	Surface new channel	6	07-May-10	17-May-10	188																												
A15550	Pavement Works	28	01-Apr-10	13-May-10	190																												
A15560	Street Lighting / Traffic Signals / Road Signs	7	01-Apr-10	13-Apr-10	211																												
<b>Ocean Terminal to Rennies Isle Ch 1080-1410</b>						53	10-Mar-11	25-May-11	26																								
A15450	Excavate for new channel and kerb line / remove existing kerbs	14	10-Mar-11	29-Mar-11	26																												
A15460	Construct Kerb lines	17	15-Mar-11	07-Apr-11	26																												
A15470	Reset Gullies	34	29-Mar-11	17-May-11	26																												
A15480	Surface new channel	6	18-May-11	25-May-11	26																												
A15490	Pavement Works	33	08-Apr-11	25-May-11	26																												
A15500	Street Lighting / Traffic Signals / Road Signs	7	08-Apr-11	18-Apr-11	52																												
<b>Rennies Isle to Casino Square Ch 1410-1880</b>						74	15-Dec-09	13-Apr-10	246																								
A15390	Excavate for new channel and kerb line / remove existing kerbs	19	15-Dec-09	25-Jan-10	246																												
A15400	Construct Kerb lines	24	18-Dec-09	04-Feb-10	246																												
A15410	Reset Gullies	48	15-Jan-10	24-Mar-10	253																												
A15420	Surface new channel	6	24-Mar-10	01-Apr-10	253																												
A15430	Pavement Works	47	04-Feb-10	13-Apr-10	246																												
A15440	Street Lighting / Traffic Signals / Road Signs	7	04-Feb-10	15-Feb-10	286																												
<b>Trackwork</b>						494	26-May-09	26-May-11	26																								
12020	Issue Construction Drawings	0	26-May-09*	0																													
<b>Ocean Terminal Ch 850-1080</b>						81	05-Mar-10	01-Jul-10	157																								
1A-23A-TRCK-70	Set Track (280m)	28	07-May-10	17-Jun-10	45																												
A15310	Establish Traffic Management & Temp. Fencing	2	05-Mar-10	09-Mar-10	72																												
A15320	Excavate box	12	09-Mar-10	25-Mar-10	72																												
A15330	Excavate, lay and concrete ducts	17	25-Mar-10	20-Apr-10	72																												
A15340	Excavate and construct OLE bases	17	25-Mar-10	20-Apr-10	72																												
A15360	Place upper concrete and cure	28	12-May-10	22-Jun-10	157																												
A15370	Street Surface finishes	6	22-Jun-10	30-Jun-10	157																												

Date	Revision	Checked	Approved
24-Oct-08		scs	

— V31 Baseline   
 ■ Remaining Work   
 ◇ V31 Baseline Milestone   
 ▬ Summary  
■ Actual Work   
 ■ Critical Remaining Work   
 ◆ Milestone

















































Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	2008												2009												2010												2011												2012			
						Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1	Qtr 2	Qtr 3										
						O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M										
<b>Shandwick Place Tram Stop</b>						477	10-Nov-08	20-Oct-10	324	20-Oct-10, Shandwick Place Tram Stop																																															
12300	Issue Construction Drawings	0	10-Nov-08*	0	◆ Issue: Construction Drawings																																																				
588	Order REC Supply	0	04-May-10	443	◆ Order: REC Supply																																																				
640	Civil Engineering And Building Works	65	18-Feb-10	21-May-10	216	[Bar chart showing work progress]																																																			
A2810	Deliver and Install Shelter	10	16-Jun-10	30-Jun-10	175	[Bar chart showing work progress]																																																			
A4638	Access for visual inspection for E&M Tram Stop installation (01D Shadwick Place)	0	31-May-10	451	◆ Access for visual inspection for E&M Tram Stop installation																																																				
A4639	Access for E&M Tram Stop installation (01D Shadwick Place)	0	30-Jun-10	232	◆ Access for E&M Tram Stop installation (01D Shadwick F																																																				
A4640	Install LV Power Supply and LV Power Equipment	25	30-Jun-10	08-Sep-10	175	[Bar chart showing work progress]																																																			
A4650	Install Telecon Equipment	20	08-Sep-10	06-Oct-10	185	[Bar chart showing work progress]																																																			
A4660	Install Station Control Equipment + AFC Equipment	25	08-Sep-10	13-Oct-10	175	[Bar chart showing work progress]																																																			
A4670	Package Test Tramstop	5	13-Oct-10	20-Oct-10	175	[Bar chart showing work progress]																																																			
<b>Roadworks</b>						569	10-Nov-08	11-Mar-11	129	11-Mar-11, Roadworks																																															
12310	Issue Construction Drawings	0	10-Nov-08*	0	◆ Issue: Construction Drawings																																																				
<b>Haymarket Ch 1250-1125</b>						381	05-Jan-09	15-Jul-10	260	15-Jul-10, Haymarket Ch 1250-1125																																															
<b>Phase 1</b>						17	05-Jan-09	27-Jan-09	105	27-Jan-09, Phase 1																																															
A6390	Establish Traffic Management & Temp. Fencing	2	05-Jan-09	06-Jan-09	105	[Bar chart showing work progress]																																																			
A6400	Remove island surfacing and exc. to formation	4	07-Jan-09	12-Jan-09	105	[Bar chart showing work progress]																																																			
A6410	Construct Kerb lines	2	13-Jan-09	14-Jan-09	105	[Bar chart showing work progress]																																																			
A6420	Move Gullies	2	15-Jan-09	16-Jan-09	105	[Bar chart showing work progress]																																																			
A6430	Sub base	2	19-Jan-09	20-Jan-09	105	[Bar chart showing work progress]																																																			
A6440	Roadbase/base course/wearing course/temp ramps	3	21-Jan-09	23-Jan-09	105	[Bar chart showing work progress]																																																			
A6450	Pavement Works	5	15-Jan-09	21-Jan-09	108	[Bar chart showing work progress]																																																			
A6460	White Lines	1	26-Jan-09	26-Jan-09	105	[Bar chart showing work progress]																																																			
A6470	Street Lighting / Traffic Signals / Road Signs	5	15-Jan-09	21-Jan-09	108	[Bar chart showing work progress]																																																			
A6475	Remove fencing and Traffic Management	1	27-Jan-09	27-Jan-09	105	[Bar chart showing work progress]																																																			
<b>Phase 2</b>						21	28-Jan-09	25-Feb-09	105	25-Feb-09, Phase 2																																															
A6480	Establish Traffic Management & Temp. Fencing	2	28-Jan-09	29-Jan-09	105	[Bar chart showing work progress]																																																			
A6490	Excavate for new channel and kerb line / remove existing kerbs	2	30-Jan-09	02-Feb-09	105	[Bar chart showing work progress]																																																			
A6500	Construct Kerb lines	2	03-Feb-09	04-Feb-09	105	[Bar chart showing work progress]																																																			
A6510	Reset Gullies	1	05-Feb-09	05-Feb-09	107	[Bar chart showing work progress]																																																			
A6520	Surface new channel	1	06-Feb-09	06-Feb-09	107	[Bar chart showing work progress]																																																			
A6540	Pavement Works	15	05-Feb-09	25-Feb-09	105	[Bar chart showing work progress]																																																			
A6550	White Lines	1	09-Feb-09	09-Feb-09	107	[Bar chart showing work progress]																																																			
A6560	Street Lighting / Traffic Signals / Road Signs	3	05-Feb-09	09-Feb-09	107	[Bar chart showing work progress]																																																			

Date	Revision	Checked	Approved
24-Oct-08		scs	

— V31 Baseline    
— Remaining Work    
◆ V31 Baseline Milestone    
— Summary  
█ Actual Work    
█ Critical Remaining Work    
◆ Milestone

CEC01169379\_0065







Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	2008												2009				2010				2011				2012										
						Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1							
						O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
<b>2nd half</b>						40	17-Jul-09	14-Sep-09	11																															
1D-14I-TRCK-70	Set Track (54m)	4	24-Jul-09	30-Jul-09	11																																			
A6650	Excavate box	1	17-Jul-09	20-Jul-09	13																																			
A6660	Excavate, lay and concrete ducts	2	20-Jul-09	22-Jul-09	13																																			
A6700	Place upper concrete and cure	4	29-Jul-09	08-Sep-09	11																																			
A6710	Street Surface finishes	3	08-Sep-09	11-Sep-09	11																																			
A6720	Remove fending and Traffic Management	1	11-Sep-09	14-Sep-09	11																																			
<b>Phase 5</b>						81	09-Nov-09	17-Mar-10	42																															
<b>1st half</b>						40	09-Nov-09	18-Jan-10	69																															
1D-14J-TRCK-70	Set Track (54m)	4	05-Jan-10	08-Jan-10	0																																			
A6920	Establish Traffic Management & Temp. Fending	2	09-Nov-09	11-Nov-09	11																																			
A6940	Excavate box	1	11-Nov-09	12-Nov-09	11																																			
A6950	Excavate, lay and concrete ducts	2	12-Nov-09	16-Nov-09	11																																			
A6960	Excavate and construct OLE bases	2	12-Nov-09	16-Nov-09	11																																			
A6990	Place upper concrete and cure	4	08-Jan-10	13-Jan-10	69																																			
A7000	Street Surface finishes	3	14-Jan-10	18-Jan-10	69																																			
<b>2nd half</b>						41	19-Jan-10	17-Mar-10	42																															
1D-14K-TRCK-70	Set Track (54m)	4	02-Mar-10	08-Mar-10	42																																			
A7010	Excavate box	1	19-Jan-10	19-Jan-10	69																																			
A7020	Excavate, lay and concrete ducts	2	20-Jan-10	21-Jan-10	69																																			
A7060	Place upper concrete and cure	4	05-Mar-10	11-Mar-10	42																																			
A7070	Street Surface finishes	3	11-Mar-10	16-Mar-10	42																																			
A7075	Remove fending and Traffic Management	1	16-Mar-10	17-Mar-10	42																																			
<b>Phase 6a</b>						69	17-Mar-10	24-Jun-10	80																															
<b>1st half</b>						55	17-Mar-10	04-Jun-10	1																															
1D-14L-TRCK-70	Set Track (54m)	3	21-May-10	26-May-10	1																																			
A7080	Establish Traffic Management & Temp. Fending	2	17-Mar-10	19-Mar-10	42																																			
A7100	Excavate box	1	19-Mar-10	22-Mar-10	42																																			
A7110	Excavate, lay and concrete ducts	2	22-Mar-10	24-Mar-10	42																																			
A7120	Excavate and construct OLE bases	2	22-Mar-10	24-Mar-10	42																																			
A7150	Place upper concrete and cure	3	26-May-10	01-Jun-10	1																																			
A7160	Street Surface finishes	3	01-Jun-10	04-Jun-10	1																																			
<b>2nd half</b>						14	04-Jun-10	24-Jun-10	80																															
1D-14M-TRCK-70	Set Track	3	10-Jun-10	15-Jun-10	0																																			

Date	Revision	Checked	Approved
24-Oct-08		scs	

— V31 Baseline    
■ Remaining Work    
◇ V31 Baseline Milestone    
▾ Summary  
■ Actual Work    
■ Critical Remaining Work    
◆ Milestone

CEC01169379\_0069





