

# MUDFA Contract Review Report

August 2008

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## Executive Summary

### High Level View

- Progress

Period 6 (18.08.08 – 14.09.08)			Overall Performance to Date		
PLANNED	ACTUAL	Variance	PLANNED	ACTUAL	Variance

TOTAL	Metres	883	781	-102	35379	24169	-11210
	Chambers	1	21	20	167	162	-5
BT/Comm	Metres	334	545	211	13867	10680	-3187
SGN	Metres	90	15	-75	4938	2937	-2001
Scot W	Metres	295	219	-76	11705	8321	-3384
Scot P	Metres	164	2	-162	4555	1917	-2638
Forth Ports	Metres	0	0	0	314	314	0
Gogar Comm	Metres	0	0	0	0	0	0
Gogar Scot P	Metres	0	0	0	0	0	0
Gogar Scot W	Metres	0	0	0	0	0	0

- Costs

See Appendix 1 – Period Costs Report

- HSQE

### Period Briefing Summary

#### General

- There were **no** RIDDOR reportable accidents.
- There were **4** accidents, **10** incidents and **7** near misses.
- The Tram Project to date AFR is **0.10**.
- The MUDFA Contractor Project to date AFR is **0.22**.
- The INFRACO Contractor Project to date AFR is 0.00.
- The total Project hours worked in the period were **91373**.

- The total Contractor hours worked in the period were **77499** of which **49205** were site hours.
- There were **3** safety tours in the period against **5** planned.

Comparison AFRs:

Organisation	Year to Date AFR
Scottish Water Solutions	0.28
May Gurney Integrated Services	0.16
Carillion Civils	0.22
Carillion Infrastructure	0.26

The seminar on Occupational Health in Construction, delivered by the HSE, occurred on the 29 July 2008. There was an excellent turn out from Contractor Directors, including Infracore work package contractors. The tie HSQE team was present. The HSE inspectors confirmed that occupational health would be specifically targeted during site visits.

## Quality

### Audit

- There were **3** audits in the period against **3** planned.
- There were **no** Audit Findings reported in the period.
- There were **10** Audit Findings verified by **tie** as closed in the period.
- There have been **116** Audit Findings raised to date.
- There are **55** Audit Findings currently open.

## Environment

There were **0** environmental incidents reported in the period.

### See Appendix 2 - Utility Damage Data

**Period Progress:** Works progressed in 8no areas (post embargo period)

- Constitution Street (1A)
- Leith Walk (1B)
- St Andrews Street (1C)
- Haymarket (1D)
- Haymarket Yard (2A)
- South Gyle (5B)
- Edinburgh Park (5C)
- Gogar Depot

Planned outputs in the period were significantly less than previous reflecting both the downturn in work sites available during the city centre embargo period and the period taken to reinstate the temporary closed off work areas. Key areas of focus in the period have been Leith Walk, in preparation to October start for Infracore and Haymarket, where initial commencement in August has been affected by more complex and demanding Traffic Management, which has resulted in sterilising a section of this key site, adjacent to

Haymarket station. Enabling works for the Mound have recommenced for a target completion date of the 20 September 2008, but successful completion is reliant on expeditious support from the Statutory Utility Companies (SUC), primarily SGN and SW.

### **Key Issues/Blockers**

- Aligning suitable resources (supervisory/operative) to match construction programme
- Reliability of programme information/details provided by Carillion, affecting completion of developed rev 07 programme
- Back end loading of programme – increasing resource demand
- Lack of visibility of TM interface – MUDFA/Infraco
- Management structure within the Carillion MUDFA team – ineffectual
- Release of IFC documentation for Section 1A, plates 1- 12. Impact on Infraco programmed works
- Continual problems with installed telecom ducting, requiring extensive remedial works to allow satisfactory handover of assets to SUC's, affecting release of sections
- Poor reinstatement (B0 material) St Andrew square and Leith Walk (footpath)
- Construction of side entry manholes in line with programmed areas
- Carillion temporary work designs – not aligned to programme requirements

### **Key Areas**

Works continued in Constitution Street (West), Duke Street through Baltic Street Junction into Tower Street. Works are progressing generally in line with section programme, but cognisance of side entry manholes in this section needs to be taken to allow construction of manholes during same period. Baltic Street Junction works have been deferred to post October/Xmas embargo (as agreed with FPA) in lieu of proposal to work on Ocean Drive and Ocean Terminal during the embargo.

Intensity of work within Leith Walk, specifically between chainages 100 – 350, remains focused on end of September completion. Critical areas within this section are Castlebank side entry manhole and works in Manderston Street and associated service crossings to Jane Street, primarily telecoms. Delay in temporary work proposals from CUS, regarding BT chamber works in Manderston Street, have impacted on progress with this critical element of works, which precedes the road crossings. Installation of temporary works commenced in latter part of w/c 8 September 2008.

Works South of London Road Junction recommenced and moved over to phase 3 of the works to complete telecom element earlier than previous planned. The construction of the 2 no BT chambers carried out over the embargo, adjacent to the Cathedral and Church, were completed within the period.

Works within St Andrew Street (North), Princes Street (East), George Street and South St David Street recommenced, as planned, 1 September 2008. Works to the Lothian Road junction diversions have been severely affected by the insufficient TM measures established by Carillion which were unsuitable for the works to commence. Decision taken to remove TM and focus on Mound preparatory works for planned start on 22 September 2008. Ongoing analyses of proposals which will allow both the Mound and Lothian Road works to run concurrent underway with MUDFA team.

The Mound start date latterly compromised by emergency works for Scottish Water, affecting resources assigned to complete outage works in South St David Street (over the weekend), which are a prerequisite to a critical water and subsequent gas main diversion for the enabling works in this area. Mound commencement date has been deferred to 29 September 2008 to allow for re-sequencing of these necessary works.

Haymarket utility diversionary works commenced Monday 18 August 2008, as planned. However, inconsistencies within the TM proposals led to a section of the works being sterilised, whilst alternative provisions were designed, allowing for the removal of the bus stop and taxi rank, adjacent to the station. Alternative proposals were tabled and approved w/c 8 September 2008 which will allow implementation on 15 September 2008. Latest revision of the rev 07 programme indicates an end of January 2009 completion. Currently reviewing de-scoping and alternative working methodology for a pre Christmas 2008 completion.

Haymarket Yards proposals to de-scope section of works awaiting confirmation from SGN that these are acceptable. Subject to satisfactory response, minor diversion required for SW main.

Critical signalling works at South Gyle installed w/c 8 September 2008. Works ongoing completion of remaining elements anticipated by 26 September 2008.

Gogar roundabout works completed on programme despite problems associated with an unknown damaged power cable, resulting in additional works to divert cable. Infraco commenced works in area as planned.

Progress on 800mm diameter watermain at Gogar depot affected by late delivery of critical 600mm diameter valves for final tie ins to existing 600mm watermain. Subsequent inspection of valves post delivery this week, uncovered unsatisfactory condition and state of 1no valve. This has been returned for replacement delivery date to tie in with transfer of flows date of 30 September 2008, 3 weeks later than planned previously. Infraco start in Gogar will not be delayed as 800 wm programme re-sequenced to release requisite areas as programmed previously.

1500mm sewer diversions works temporarily delayed by earlier discovery of contaminated land in initial drive chamber location MH1 on the North side. Alternative locations found for both MH1 and MH760 (south side) resulting in both avoidance of contaminated land and a 20lm reduction in the drive length from MH1 – MH760. Caisson construction progressing well and works 1 week delayed despite earlier problems. Anticipate this will be recovered during the currency of the works. Works still on programme for 23 January 2008 transfer of flows.

Section 7b detail design continues. Unforeseen issue with collateral warranty delaying trial hole works. Discussions ongoing with Carillion Corporate to resolve issue.

Further review of latest rev 07 construction programme from Carillion has highlighted significant anomalies within key factors affecting outputs, anticipated durations and completion dates for critical areas. The most critical areas, having greatest potential impact on Infraco, are Lothian road junction, the Mound and Haymarket. All presently indicate an overlap with Infraco programmed works. Carillion carrying out further review of the programme to recover these areas back in line with Infraco requirements. Programme review meeting to be convened in w/c 15 September 2008.

Discussion held with ADM milling, section 1 to review potential alternative utility diversions through Chancelot Mill. Early indications are proposals are acceptable in principle but require

further development. Satisfactory conclusion of these discussions would produce significant savings in the required diversions in this area.

IFA's for plates 1 – 5 received and under review by SUC's.

Review of proposed amendments to Rennie Isle and Victoria Bridges at Ocean Drive, have confirmed that temporary diversions adjacent to the bridge are not viable due to the abutment changes. Proposals to temporarily slew telecom ducting on bridge deck, during construction being discussed with Infracore.

AFA remains as previous at £48.585M

## **Section 1A**

### **Design**

#### **1-5**

Drawings 1-5: Design still in development. Critical section for Infracore start of November 2008.

#### **6-10**

6-10: Issued for approval but **tie** believe some savings can be made. Significant expenditure on electrical diversions (SP & FP). New proposals have been outlined; these will be verified prior to seeking approval. Trial holes have been undertaken within Forth Ports to determine extent of required diversions.

#### **11-12**

On hold pending approval of proposed temporary diversions by SUC's.

#### **13-15**

13: Works complete based on IFC issued in June 2007.

14-15: SDS regard these drawings as a revision to completed design. Work to these designs remains outstanding.

## **Section 1A 16-21 (Constitution Street)**

Traffic Management in place between Duke Street and Constitution Street (Section A – C)

### **Progress**

- Works ongoing in Sections D2 and E2 on Northbound side of Constitution Street between Queen Charlotte Street and Bernard Street
- TM diversions implemented for MUDFA works at Bernard Street/Constitution Street junction and in Constitution Street between Bernard Street and Tower Street – works commenced Monday 18 August 2008.
- BT works outside of LOD ongoing at junction of Johns Place and Queen Charlotte Street

### **Highlights**

- TM diversions implemented for MUDFA works at Bernard Street/Constitution Street Junction and in Constitution Street between Bernard Street and Tower Street – works commenced Monday 18 August 2008.

### **Key Issues/Blockers**

- Side entry manhole programme to be developed to align with live sections - Queen Charlotte Street Northwards. Duke Street southwards programme to tie identify/align with Infraco TM requirements for Leith Walk.

### **Programme Lookahead**

- Carillion to provide a mains abandonment programme and LV/HV jointing programme
- Scottish Water: Works outside of the LOD continue
- Planning/Completion of MUDFA works @ Queen Charlotte Street Junctions (SW/SGN/BT)

## **Section 1B Sheets 22-26 (Foot of the Walk to Balfour Street)**

Traffic Management in place between Balfour Street and the Foot of the Walk to accommodate MUDFA works

### **Progress**

- SGN service transfer works complete from Foot of the Walk to Steads Place. Advance works continued up to w/e 5 September 2008.
- Continuing works include installation of gas, water, power and telecoms apparatus in this area on both sides of Leith Walk – main focus on FOW to Steads Place.

### **Highlights**

- Completion of SGN service connections FOW to ch.350
- Service connections for SW ongoing

### **Key Issues/Blockers**

- Manderston Street Junction with Leith Walk – completion of MUDFA works in area

**Action:** Two no SGN diversions to be complete – intention to de-scope medium pressure crossing of Leith Walk and to amend connection detail of low pressure diversion at Manderston Street junction. Require SGN engagement.

### **Programme Lookahead**

- Programme in place to complete remaining works including side entry manholes. This does not involve gas mains abandonment works



## **Section 1B Sheets 27-31 (Balfour Street to McDonald Road)**

Limited Traffic Management in place between Balfour Street and McDonald Road to accommodate MUDFA works.

### **Progress**

- Service connections for SW ongoing

### **Highlights**

- SW service connections

### **Key Issues/Blockers**

- Outstanding MUDFA works on Leith Walk include gas, water, electric, telecoms and sewer related activities. The TM required to deliver these works requires to be signed off by the TMRP

**Action:** Carillion to provide TM proposals for review by ASAP and for approval thereafter

### **Programme Lookahead**

- Carillion to provide programme and TM proposals for remaining MUDFA works on Leith Walk

## Section 1C Sheets 32-38 (McDonald Road to York Place)

Traffic Management in place between Brunswick Street and Greenside Lane to accommodate MUDFA works

### Progress

- Areas of work sites given back to public, residents and businesses for parking and loading/unloading
- Phase 1 largely complete – planning in place for switch from Phase 1 to Phase 3

### Highlights

- Areas of work sites given back to public, residents and businesses for parking and loading/unloading

### Key Issue/Blockers

- Work site switch from Phase 1 to Phase 3 to be undertaken in late September

**Action:** Carillion to provide sufficient detail to TMRP for approval of switch

Adverse camber at London Road roundabout: Carillion to re-grade the adverse camber at the London Road roundabout

**Action:** Carillion to provide programme and TM proposals to ensure works are complete prior to embargo

### Programme Lookahead

- Commencement of Phase 3 TM arrangements
- Commencement of hybrid Phase 2 TM arrangements

## **Section 1C Sheets 39-41 (St Andrew Square)**

Traffic Management on York Place at its junction with North St Andrew Street; and between York Place and Princes Street on North and South St Andrew Street to accommodate BT related MUDFA works

### **Progress**

Progress during period against work programme:

- North St Andrew Street closed for MUDFA works – trial holes ongoing in this section to determine routes for MUDFA diversions
- TMRP approval to close South St Andrew Street for MUDFA works
- Partial implantation of The Mound/St Andrew Square diversions initiated
- Traffic Signal works (Civils and Signals) @ 3/5 junctions 100% complete
- Traffic Signal works (Civils and Signals) @ 1/5 junctions 80% complete
- Traffic Signal works (Civils and Signals) @ 1/5 junctions 40% complete
- Commencement of BT crossing of Princes Street at its junction with South St Andrew Street

### **Highlights**

- Majority of enabling works complete for The Mound and St Andrew Square Traffic Management arrangements
- De-scoping of some of the gas and water diversions on York Place

### **Key Issues/Blockers**

- Quality of reinstatement within this area not fit for purpose – numerous sections of reinstatement have sunk and have to be rectified – approx 75% of reinstatement are affected

**Action:** Carillion to provide action plan and programme

### **Programme Lookahead**

- Initiation of The Mound TM arrangements over the weekend of Saturday 27 and Sunday 28 September 2008 will allow for full closure of East side of St Andrew Square (if required immediately)

## **Section 1C Sheets 42-46 and Section 1D Sheets 47-48 (Princes Street)**

- Traffic Management on Princes Street at its junction with South St David Street to accommodate SW related Princes Street crossings and water and gas crossings at head of Waverley Bridge

### **Progress**

- Traffic Signal works @ George Street roundabouts 100% complete
- Traffic Signal works @ The Mound/Market Street junction substantially complete

### **Design**

- SDS has provided draft diversion design for SGN MP diversion at The Mound. Awaiting revised drawing from SDS for submission to SGN

### **Highlights**

- Traffic Signal works @ George Street roundabouts 100% complete

### **Key Issues/Blockers**

- The use of Traffic Signals on George Street junctions caused problems with vehicles u-turning around roundabouts.

**Action:** Extensive work carried out by **tie**, Faber Maunsell and Stakeholders to find solution. Amended signal timings trialled on Friday 12 September 2008 which are to be further trialled during Tuesday 16 September 2008.

### **Programme Lookahead**

- Commencement of MUDFA works at The Mound – TM arrangements installed over weekend of Saturday 27 and Sunday 28 September 2008.

## Section 1D Sheets 49-53 (Shandwick Place)

### Progress

- Snagging of Shandwick Place reinstatement ongoing to further finesse the Traffic Management arrangements

### Highlights

- None during period

### Key Issues/Blockers

- Outstanding Water diversion works to be completed at Lothian Road/Princes Street/South Charlotte Street Junction

**Action:** Revised design option to be presented to SW for approval.

**Action:** Revised design is likely to be able to be installed whilst The Mound TM arrangements are in place. TM requirements to be defined and presented for TMRP discussion and approval

### Programme Lookahead

Completion of water diversion works at Lothian Road/Princes Street/South Charlotte Street junction

## **Section 1D Sheets 53-56 (West Maitland Street to Haymarket)**

### **Progress**

- Haymarket MUDFA worksite established over the weekend of Saturday 16<sup>th</sup> and Sunday 17 August 2008.
- Snagging list identified by TMRP stakeholders to further finesse the operation of the TM arrangements for the Haymarket MUDFA works.

### **Highlights**

- Haymarket MUDFA worksite established over the weekend of Saturday 16 and Sunday 17 August 2008.
- TMRP sign off for TM arrangements to deal with issue of Taxi rank at Haymarket Station

### **Key Issues/Blockers**

- TM Proposals to negate taxi rank and bust stop adjacent to Haymarket Station approved.
- 2 weeks enabling required prior to release of the area (4 weeks delay to date for this area).

### **Programme Lookahead**

MUDFA diversion works

## **Section 2A**

### **Progress**

Works continue in this section under a RATS approach in this section.

### **Progress**

- Trial holes undertaken to assess available space for utility diversions

### **Highlights**

- None during the period

### **Key Issues/Blockers**

Acute lack of available space to locate diverted utilities

**Action:** Assessment of trial hole cards to allow proposals to be presented to SUC's for revision to IFC diversion drawings

### **Programme Lookahead**

- Continue with MUDFA works in the area on resolution of issues

## Section 5B Sheet 9 Carrick Knowe

### Progress

- Trial holes on the existing HV and pilot cables have been completed.
- Revised diversion has been agreed in principle with Scottish Power Systems.
- Location of the bridge foundations have been set-out by MUDFA.

### Key Issues/Blockers

- MUDFA require confirmation of the INFRACO excavation limits to finalise route for the diverted cables. The route can then be finalised with Scottish Power Systems.

### Programme Look-ahead

- Once the excavation limits have been provided SPS will book the jointing date and the diversion works programmed.



## Section 5B Sheets 14-20 (South Gyle Access Tram Stop to Edinburgh Park Tram Stop)

### Progress

- Critical path works on the Openreach ducts and chambers are 95% complete.
- Partial traffic management approved to allow for completion of works to remaining BT diversions on west side of junction. Work commenced 25 August 2008 following successful resolution to Siemens commercial issue.
- LV diversion in the footpath is complete pending jointing.

### Highlights

- BT duct routes on west side of Bankhead Drive junction completed.
- Only 20m of 4-way across East side of junction remain.

### Key Issues/Blockers

- Agreement to be reached with INFRACO on level of TM to be left by MUDFA at South Gyle Access. This is now dependent on confirmation of INFRACO works commencement.
- Await date for LV jointing from Carillion.
- Approval required from TMRP for the final stage of the BT 4-way duct crossing.

### Programme Look-ahead

- Complete Virgin CCTV Cabinet relocation
- Complete LV cable jointing.
- Complete BT 4-way duct crossing.
- Instruction has been issued to Carillion to proceed with the Grade 4/5 sewer repair following confirmation of request from Scottish Water.

## Section 5C Sheets 21-26 (Edinburgh Park Tram Stop to Gogarburn Tram Stop)

### Progress

- The 450mm Gyle water main remains 85% complete due to failed pressure test.
- Works at Lochside Avenue are approximately 90% complete pending completion of Gas and SP diversions.
- The remaining works at the Gyle Broadway are approximately 70%
- Gogar roundabout diversions and reinstatement completed 29 August 2008. Traffic management was reduced to single lane closure and handed over to INFRACO on 31 August 2008.

### Design

- Await confirmation from SDS of limits of Gyle Tram Halt Retaining Wall excavation.

### Issues/Blockers

- Scottish Power jointing for the 33kV cable diversion was cancelled due to failure to agree a wayleave with the Gyle Centre. Still awaiting outcome to wayleave approval. This issue is currently delaying completion to BT 24 diversion and subsequent commencement on site of BT cabling. Current impact on programme will be 8 weeks from agreement of wayleave.

**Action:** MUDFA are continuing to push the Gyle Centre to resolve this issue as a matter of urgency. BT has agreed in principle to modifying the BT 24 route and installation. This would allow work to continue around the SW jointing bay

- Investigation to locate leak on the 450mm DI water main test failure has resulted in Carillion re-entering the Gyle Car Park.

**Action:** Access agreed with Gyle Centre. Anticipated location of leak found to be in sound condition; investigation ongoing.

- Resolution of gas main diversion at Lochside Avenue ongoing. Carillion identified diversion as being sufficiently deep to remove need for diversion. Subsequent site survey by tie confirmed that this was not in fact the case. SGN and tie confirmed diversion should progress as specified.

**Action:** Close-out TQ to SGN requesting slew and lower of main to avoid full pipe diversion to mitigate delay and cost.

### Programme Look-ahead

- Completion of works at Lochside Avenue and removal of TM following completion of the gas main diversion.
- Review of BT programme in relation to works on site to ensure earliest start date. This is dependent on resolution of water main leak.
- Continue progress on remaining diversions adjacent to Gyle Tram stop.

## **Section 6 (Gogar Depot)**

### **Progress**

- Approximately 750m of 800m main has been laid. 19/22 thrust blocks completed.

### **Design**

- 1525mm Sewer issued for approval drawings were received on 15 May 2008. Drawings have been revised to optimise constructability. SDS have issued to **tie** and SW 10 September 2008.
- 800mm Water main diversion Drawings – Key issue at present is design of access chamber for 800 valves south of ETN twin crossing.

### **Key Issues/Blockers**

- 800 water main; Delivery of outstanding 800 valves now 10 and 17 September 2008. Original delivery date 4 September 2008.
- Completion of 800 connections adjacent to NR now critical.
- 1500 Sewer; CEC approval to pipe jack under A8.

### **Programme Look-ahead**

- 800 water main; Due to late delivery of valves water main to be commissioned 26 September 2008 with isolation of existing main 30 September 2008. Completion of twin connections at A8 and Railway 15 October 2008.
- 1500 Sewer Diversion; CUS to complete shaft ready for pipe jacking across A8 by 29 September 2008. Currently on programme for turn of flows 23 January 2009.

## Section 7A

### Progress/Issues

- MUDFA works at 7A were completed under RATS. Some remaining diversions have been allocated to Infraco due to earthworks or access restrictions making MUDFA diversions uneconomical.
- During the archaeological works unknown services have been located and MUDFA await provision of these records to confirm if any advance diversions can be carried out.

## Section 7B

### Design Progress

- Carillion/Grontmij currently working through data collection and initial identification of utilities.
- The location of a service corridor parallel to the tram path is critical and must co-ordinate with the not only the tram structures but ongoing BAA projects.
- Several meetings between BAA/tie/Grontmij have taken place in this period to progress the above.

### Key Issues/Blockers

- Carillion are still to appoint a Project Manager to co-ordinate their aspects of the project which has resulted in co-ordination issues due to holidays.

**Action:** Carillion have been asked to appoint someone to carry out this role as a matter of urgency.

### Programme Look-ahead

- Finalise the data collection and utility identification.
- Identify the available routes for the parallel service corridor.
- Identify location for trial holes to verify key or questionable services.
- Programme site start date for initial diversions end August 2008.

**See Appendix 3 – Performance Measures**

## 1.0 Traffic Management

See Appendix 4 – Traffic Signal Works

## 1.1 Commercial

See Appendix 5 – Risk Register

## 2.0 Operations Next Period

- Release of first section of Leith Walk, ch 100 – 350 (FOW)
- Commencement of the Mound diversions
- Continuation of St Andrew Street diversions
- Continuation of Haymarket works
- Completion of section 5B
- Continuation of water main, gas main section 5C
- Completion of 800mm water main (Gogar Depot)
- Commencement of 1500 pipe jack MH1 to MH 760

## 3.0 Initiatives

- Review methodology of operations to maximise work time
- Maximise recovery of costs associated with SUC C4 estimates via specialist consultant's advice/input – this would only be related to SW and BTO. Telecom specialist has joined the MUDFA team to assist in the design/construction and C4 implications related to betterment/deferment etc. Agreement reached with SGN for whole of the works – retained within the allowance (excl. MP gas main at the Mound). Agreement reached with Scottish Power for whole of the works.
- Provision of an independent survey team to carryout dilapidation surveys along the tram route (SDS responsibility) – protect **tie's** position from potential 3<sup>rd</sup> Party claims post MUDFA & INFRACO – Commencement of dilapidation surveys by independent body on 10 December 2007. Expect these to be completed by end of June 2008, due to additional requirement to survey the route of the diversions.
- Review of both MUDFA/INFRACO programmes to identify critical areas and where synergies can be adopted through interface of programmes. Revised 07 construction programme under review for final acceptance between end of July 2008 and mid August 2008.
- Review of section 1A diversions – assess potential programme gains due to implementation of temporary diversions, thereby allowing earlier construction start to INFRACO works. Awaiting details of retaining wall structure on Lindsay Road to verify alternative diversions. Proposed structural changes to bridges on Ocean drive under review to assess impact on temporary diversion proposals.
- Redesign wing-wall at Bankhead Drive through VE exercise to mitigate significant 1500 sewer diversion.

- Joint review of the delivery team and the way tie/Carillion operate in an effort to increase and maximise productivity and outputs.
- Coordinate CCTV permanent relocation, in final tram design, during the MUDFA contract via liaison within MUDFA/Infraco.

#### 4.0 Key Issues/Blockers

- SGN 30" gas main at the Mound: Ratifying commercial regarding minimum diversion. JC in discussion with Alan Ross. Support from SB and MB. **JC/AR**
- TEL Agreement – SUCs. **JC/MH/AR**
- Redesign of power cable diversions – Section 1A Plates 1-5. GB/JJ to review options and obtain approval from FPA and SP. **GB/JJ**
- Leith Walk Clearance Programme: Complexity of required TM to accommodate remaining works impacting on ability to commence works in line with programme. **MB/RA**
- Lothian road/Princes Street Junction diversions required in advance of Infraco commencement Jan'09. Investigating proposals to carry out works concurrent with the Mound. Critical to programme now. **MB/IC**
- Continual unauthorised removal of street furniture by CUS, again undermining confidence with CEC and LBC, in particular. **CUS**
- Late identification of design conflicts – utilities/structures, requiring redesign at 5no locations to date. Improper coordination of design functions. **(SDS issue)**
- Quality issues arising verifying compliance with standards. **GB/SB**
- Implementation (design/installation) of temporary works alignment with programme requirements **CUS**
- Collateral warranty with BAA **CUS**
- Wayleave SP/Gyle for SP cable diversion **A.Sim**



# Contract Review Report

## APPENDIX 1

### Period Costs Report







PROJECT MANAGERS REPORT

Period: 6  
Year: 08/09

Project Number: T18  
Project Title: MUDFA / Utilities

PROJECT DETAILS

Project Manager: Graeme Barclay      Line Manager:      Contract Value:     

Cost - Cumulative and period (£000s)

Work Package	YTD to period 5 - 08/09	Period 6 - 08/09		Variance	Comments
		Previous forecast	Actual		
Total tie PM costs	12	1	1	0	
Subtotal MUDFA	28,280	2,452	1,027	(1,426)	Reprofile as a result of Rev 07 programme and delayed commencement of AS sewer spend by Contractor
Subtotal utilities	10,123	394	344	(50)	Reprofile spend based upon rev 07 programme and telecoms related cabling issues
Total MUDFA / Utilities	38,403	2,846	1,371	(1,476)	
Total	38,416	2,846	1,371	(1,476)	

Accrual required - Period (£000s)

Work Package	Period 6 - 08/09		Variance	Comments
	Previous period actual	Current period		
Total tie PM costs	(3)	(3)	1	
Subtotal MUDFA	28,280	29,306	1,027	Cumulative effect of AMIS payment certificates 20 plus accrual for the period from 25/7/08 to period end
Subtotal utilities	10,123	10,467	344	Advance payments made to Utilities under NRSWA to achieve discount
Total MUDFA / Utilities	38,403	39,774	1,371	
Total	11,393	12,764	1,371	

08/09 forecast outturn (£000s)

Work Package	Previous forecast	Current forecast	Variance	Comments
Total tie PM costs	6	6	0	
Subtotal MUDFA	26,627	26,997	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Subtotal utilities	6,110	6,110	0	
Total MUDFA / Utilities	31,637	33,108	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Total	31,642	33,113	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA

Project Anticipated Final Cost (£000s)

Work Package	Financial Close budget	Current forecast	Variance	Comments
Total tie PM costs	13	16	2	
Subtotal MUDFA	36,916	39,852	2,937	AS 1500mm sewer xing (E 1,370m) plus the result of the reprofiling, indexation allowance and revised anticipated settlement for all issues
Subtotal utilities	11,627	11,627	0	
Total MUDFA / Utilities	48,543	51,480	2,937	AS 1500mm dia sewer crossing plus the result of the reprofiling, indexation allowance and revised anticipated settlement for all issues
Total	48,556	51,496	2,939	AS 1500mm dia sewer crossing plus the result of the reprofiling, indexation allowance and revised anticipated settlement for all issues

Project Anticipated Final Cost (£000s)

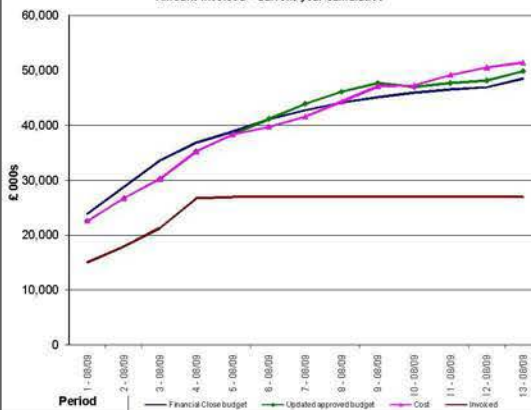
Work Package	Approved updated budget	Current forecast	Variance	Comments
Total tie PM costs	13	16	2	
Subtotal MUDFA	38,286	39,852	1,567	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Subtotal utilities	11,627	11,627	0	
Subtotal other	0	0	0	
Total MUDFA / Utilities	49,913	51,480	1,567	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Total	49,926	51,496	1,569	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA

Project Anticipated Final Cost (£000s)

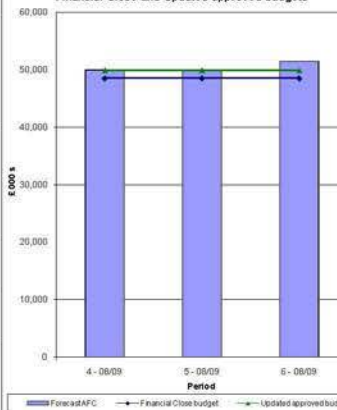
Work Package	Previous forecast	Current forecast	Variance	Comments
Total tie PM costs	16	16	0	
Subtotal MUDFA	38,382	39,852	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Subtotal utilities	11,627	11,627	0	
Total MUDFA / Utilities	50,009	51,480	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA
Total	50,024	51,496	1,471	Reprofile of spend to Rev 07 programme, prolonged preims, indexation allowance made for contractor & revised anticipated AFA

	Previous period	Current forecast	End 08/09	Comments
TSS allocation				

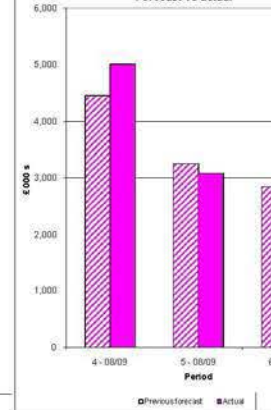
Cost (actual and forecast) v Financial Close and Updated approved budgets v Amount Invoiced - Current year cumulative

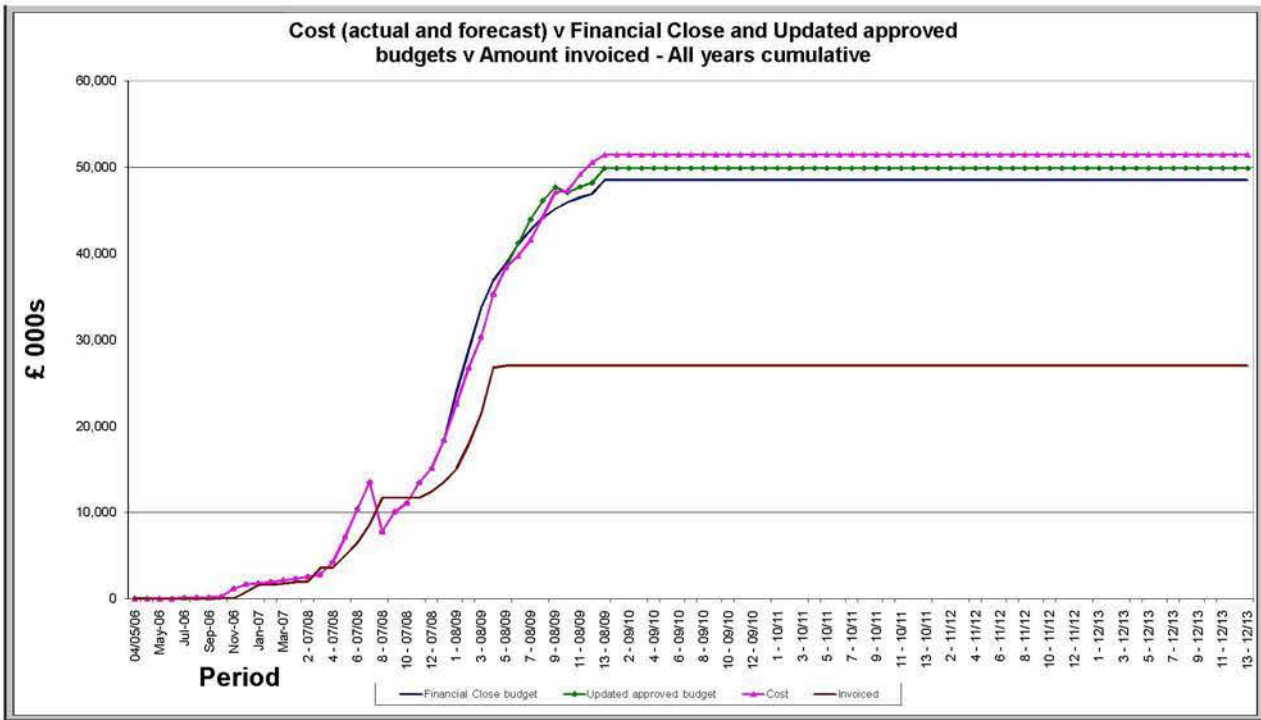


Anticipated Final Cost - Three period trend vs Financial Close and Updated approved budgets



Period Cost Forecast vs actual





**Project Managers Report**

Period           **6**       Project No **T18.01**  
Year             **08/09**     Project Title **MUDFA**

Risk Total Not Included In AFA From Dennis Summary (excluding Gas Main at Gogar £800k)	1,870,000		
Variation and claims assessment not included in AFA	<u>850,000</u>		
Sub-Total - Potential Costs Not In AFA	2,720,000		
Ddt : Potential Opportunities From Dennis Summary	<u>-1,550,000</u>		
<b>Total Potential Liability Not Included In AFA</b>	<b><u>1,170,000</u></b>		
<b>Based Upon a variance of 10% either above or below the Total Potential Liability not included in the AFA the anticipated range is between</b>	<b>1,053,000</b>	<b>and</b>	<b>1,287,000</b>
<b>The resultant range for the current AFA is circa :</b>	<b><u>52,532,648</u></b>	<b>and</b>	<b><u>52,766,648</u></b>

Project Managers Report

Period: 6  
Year: 08/09  
Project No: T18.01  
Project Title: MUDFA

Cost Forecast

Element	FBC	Adjusted FBC	Current AFC	Previous AFC	Movement	AMIS Replication Cert 20 - Period 5	adjustments	Certified Amount	Accruals	COWD
Pre Construction Services	996,353		996,353	996,353	-	987,610	-	987,611	-	987,611
Prelims	5,322,296		5,949,049	4,822,752	1,126,297	3,374,180	129,146	3,245,034	166,416	3,411,450
Measured Works	19,469,775	1,237,000	17,926,851	18,218,102	-291,251	13,539,259	240,172	13,299,087	5,772,147	19,071,234
Provisional Sums	8,611,031		8,611,031	8,611,031	-					
Contingency	347,000		347,000	347,000	-					
Variations	1,398,388		3,688,566	2,929,094	759,472	4,357,277	176,539	4,180,738	112,083	4,292,821
Sub Total	38,265,900	1,237,000	39,852,434	38,330,652	1,521,781	22,354,014	549,524	21,804,490	6,050,646	27,855,136
Claims	-		-	-	-	5,268,924	3,912,569	1,356,355	95,000	1,451,355
Miscellaneous	-		-	-	-					
T18.01 Total	38,265,900	1,237,000	39,852,434	38,330,652	1,521,781	27,622,938	4,462,093	23,160,845	6,145,646	29,306,491
Utilities	11,535,416		11,627,214	11,627,214	-	6,786,023		6,786,023	3,681,040	10,467,063
Total	49,801,316	1,237,000	51,479,648	49,957,866	1,521,781	34,408,961	4,462,093	29,946,868	9,826,696	39,773,564

Currently includes full SGN costs of £3.6m for Gogar, £185k Constitution at, £250k Design/supervision total £4.035 less SGN contribution of £1.2m total £2.835m. Includes SP C4 estimates plus allowances of £160k for jointing at 1A (1-12)

Variations/Claims Analysis	Anticipated Final Claimed	Taken to AFC	Balance not taken	Comments
Variations	2,929,094	2,929,094	0	
Claims	2,500,000	1,750,000	750,000	Claim allowance no details/ substantiation submitted from AMIS for claims in addition to the Settlement upto Oct 07 of £1,356,355
Indexation allowance for MUDFA Contractor from July 08 at 8.6% of projected costs to completion on the applicable items	759,468	759,468		Discussions ongoing with ICUS re timing for application of indexation and the index rate - however assumed both arguments are unsuccessful
Assessment taken of change to the remaining measured works value based upon the current rate of circa 20%.	3,766,430	3,766,430		
Potential insurance claims issues with properties in Leith walk potential affected by deep excavations adjacent to building and running sand ground conditions	100,000	Nil	100,000	Settlement for claims below the insurance policy excess - method and payment to be discussed and agreed with insurance department and also which budget

Risks/Opportunities	Included in AFC	Estimate balance not included in AFC	P80 Risk Allocation	Comments
<b>Risks</b>				
Traffic management/enabling works for phase 2-3 constitution street, Haymarket and models cost in excess of allowances made in contingency this year	800,000	750,000		
BAA fence/re-alignment at Gogar Depot	40,000	120,000		Original quote received from BAA amounted to circa £200k but BAA have written (w/ end 5/9/08) advising actual cost is circa £160k - currently awaiting detailed substantiation from BAA. These works are included in the INFRACO scope.
Diversions at 1A (1-10) more than anticipated	250,000	1,000,000		Currently being assessed and design reviewed - not finalised but extent reduced through ongoing discussions
SP cable tunnel in Leith Walk may require removal/alterations/relocation/protectio n to accommodate Tram and utility diversions			554,530	Extent and requirement for work to be established and agreed with Scottish Power - dependent upon Tram track design and associated loading to the existing tunnel. Risk ID 911 - probability high
Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope, design & construction method & progress			3,176,610	Extent of issue unknown but to date the issue and associated costs have been managed within the MUDFA measured works and PC & PS sums. Risk ID 164
Previously unidentified SGN IP Gas main diversion between Ingliston Park n Ride and the Hilton Hotel Section 2B		800,000		High level indicative budget cost received from SGN for the anticipated works details to be checked and also design to be challenged with SDS re retaining walls structures etc. If required propose to draw down Risk ID 164
	<b>1,090,000</b>	<b>2,670,000</b>	<b>3,731,140</b>	<b>Note : Total P80 risk allocation to complete MUDFA £5.8m</b>
<b>Opportunities</b>				
Potential recovery from SW for sewer surveys undertaken	0	450,000	0	Subject to ongoing discussions and final agreement with SW no benefit taken to date
Potential recovery from CEC for traffic management/enabling works required for their approval which are in addition to the required CEC standard specification	0	TBA	0	Subject to ongoing review by Faber Innes to identify the additional CEC requirements prior to submission and request for funding
BT contribution for betterment/deformation - allowance to be confirmed and agreed		500,000		Subject to ongoing discussions and agreement with BT once design complete and original asset information is available from BT - no benefit taken to date
SGN gas works to accommodate Gogar	0	600,000		Total actual cost for diversion by SGN maybe in excess of original C4 and not under NRSWA - included within utilities. Works complete and await final account from SU for audit and review
Potential recovery/transfer from INFRACO for removal of central reservations and traffic management enabling works	0	TBA	0	Subject to discussion and final agreement with INFRACO Contractor, with the INFRACO team to confirm the budget allowances for same within INFRACO tender no benefit taken to date.
	0	1,550,000	0	

Prov Sums/Measured Works Commitments	Contract Amount	AFC Measured and valued	Relevant Contract amount	Variance	Remaining Contract amount	Anticipated value	AFC (C+G)
Prov Sums (exc line 2 BAA 7a & 7b of £4.971m)	8,611,030	7,111,030	7,320,000	-208,970	1,500,000	1,973,556	9,084,586
Measured Works (inc prov sum line 2 for BAA 7a & 7b of £4.971m)	19,469,775	17,432,154	17,432,154	0	2,037,621	1,400,000	18,832,154



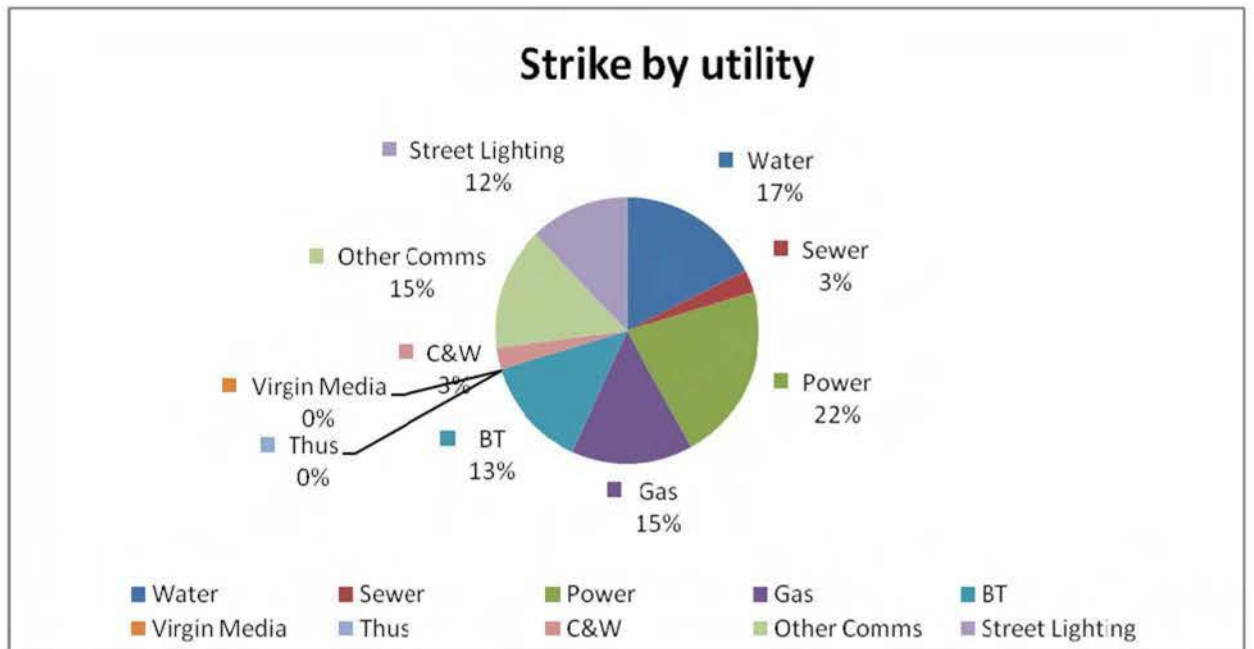
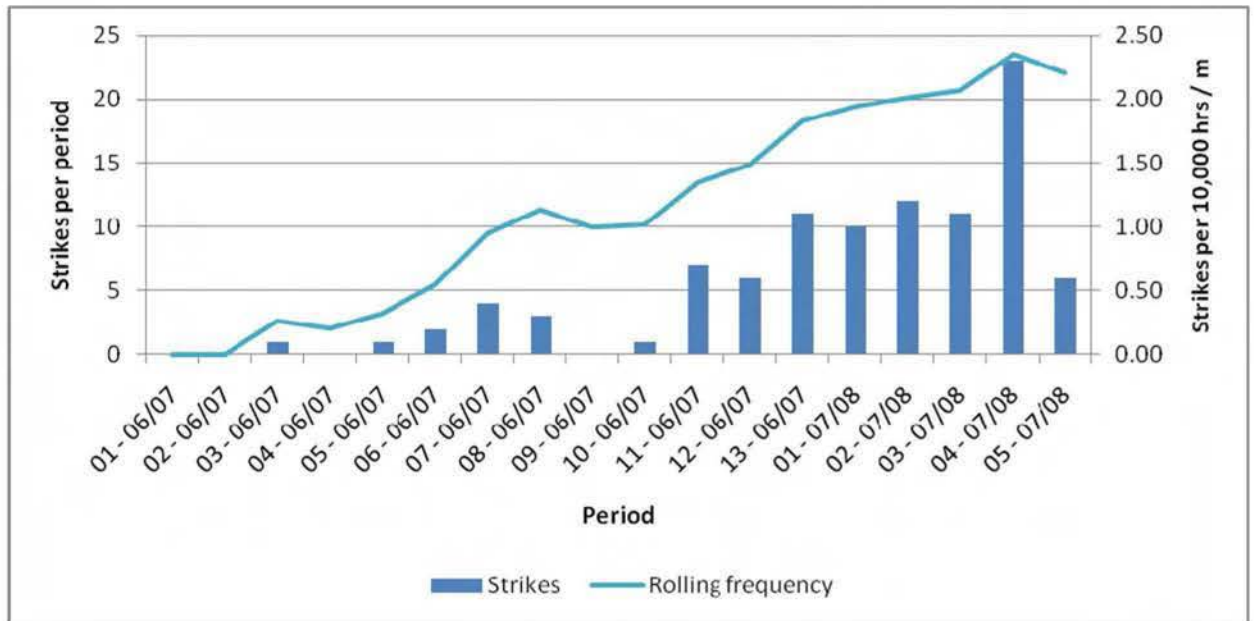
# Contract Review Report

## APPENDIX 2

### Utility Damage Data

# MUDFA Service Strike Information

Project to date



## MUDFA Incident Improvements and Initiatives

- A safety stand down was held on 15<sup>th</sup> and 16<sup>th</sup> July with all Carillion staff. The opportunity was taken to communicate the outcome of the RIDDOR investigation and the related issues, in addition to any other relevant aspects of the project. Other dates to be arranged, an invitation has been extended to interested parties with tie Ltd.
- Carillion have confirmed the adoption of existing safety/culture programmes such as; Target Zero, Don't Walk By and Awareness, Competence, Compliance and Excellence (AC<sup>2</sup>E) model philosophy. This has resulted in a visual campaign of posters and a series of internal briefings to staff.
- Health and Safety Coach employed to provide direct communications link between site operatives and project managers in respect of health and safety matters.
- Scottish Power Plant Protection officer has visited sites and spent time with Delivery Managers and has provided briefing materials for use by operational staff.
- Confined Space Awareness, Training ongoing.
- Creation of excavation support ready reckoner to aid suitable support system identification.
- Development of bespoke short term use support system (GRP shoring).
- Development and implementation of documentation to improve excavation support assessment and identification.
- Implementation of mandatory gloves and safety glasses policy at the end of September in line with Carillion Corporate Policy.
- There were 78 site inspections completed on Carillion work sites as per the audit/inspection schedule, there will be a further drive to increase both numbers and quality of inspections in period 6.



# Contract Review Report

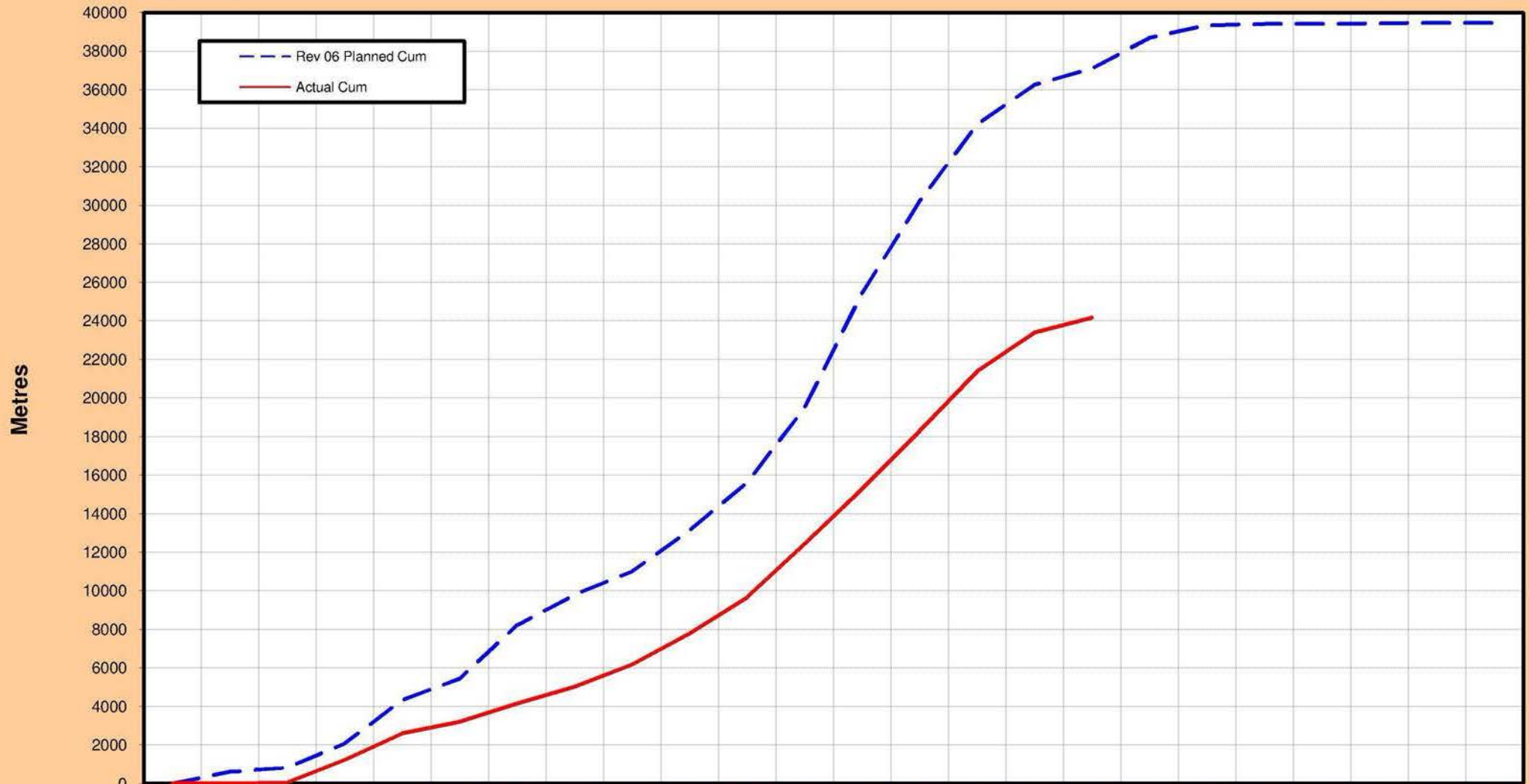
## APPENDIX 3

### Performance Measures





# Edinburgh Tram Project MUDFA Rev 06 Programme Project Metres Status



	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	621	828	2088	4339	5445	8226	9810	11014	13142	15622	19499	25443	30209	34204	36251	37090	38679	39347	39410	39410	39446	39467	39467
Actual Cum	0	8	64	1237	2605	3211	4154	5026	6186	7805	9665	12421	15288	18288	21382	23388	24169							

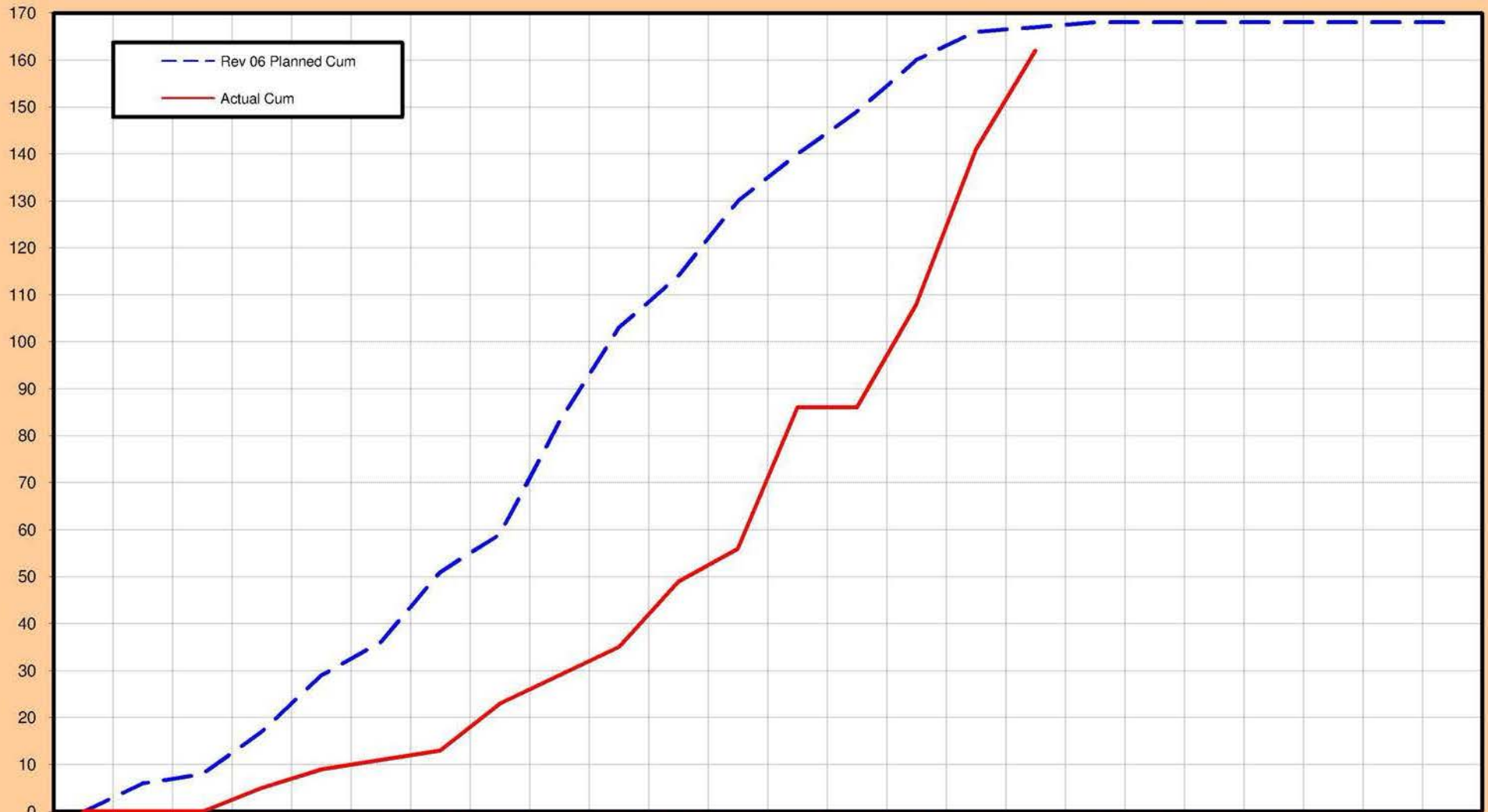
Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Project Chambers Status



No. of Chambers

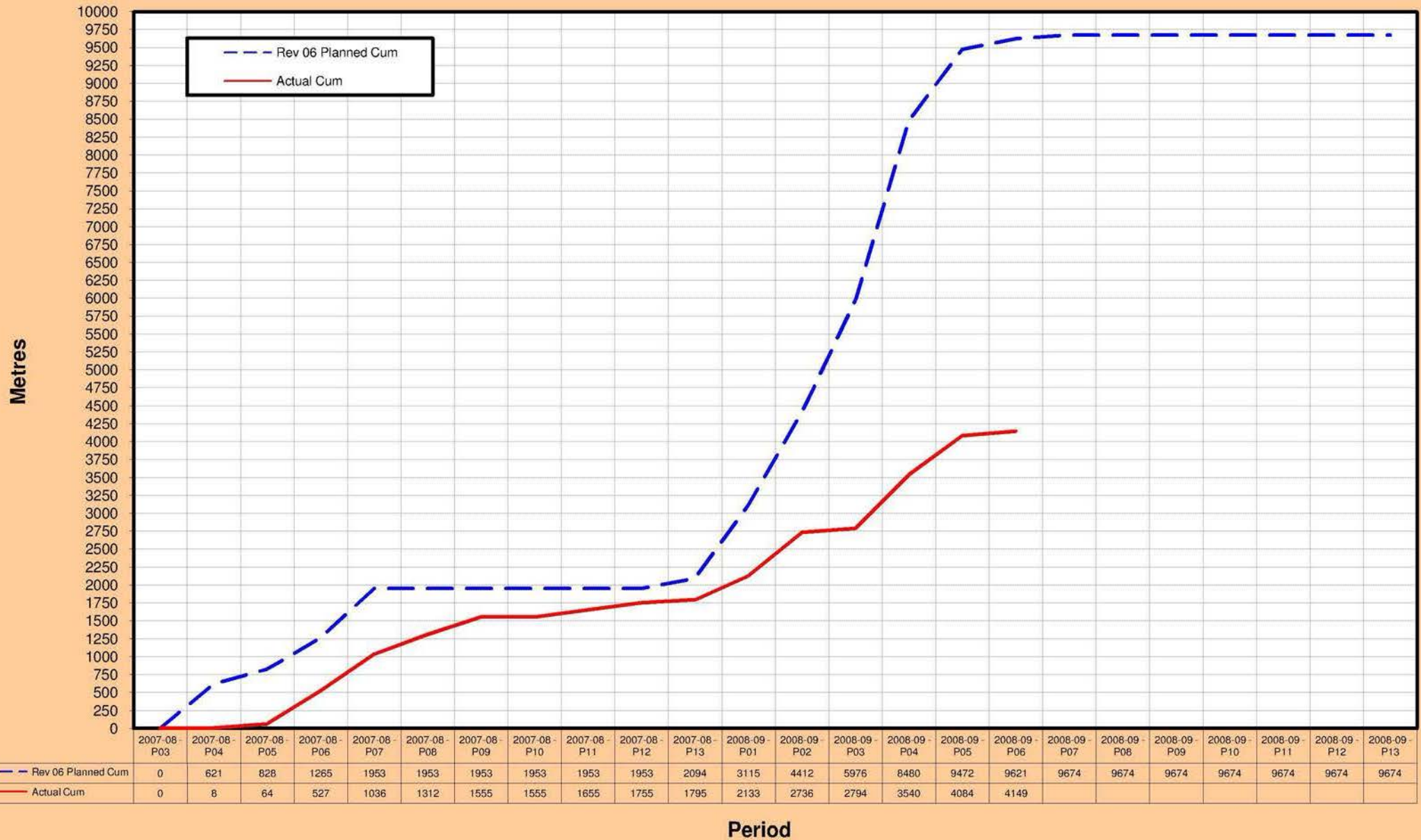


	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	6	8	17	29	36	51	59	83	103	114	130	140	149	160	166	167	168	168	168	168	168	168	168
Actual Cum	0	0	0	5	9	11	13	23	29	35	49	56	86	86	108	141	162							

Period

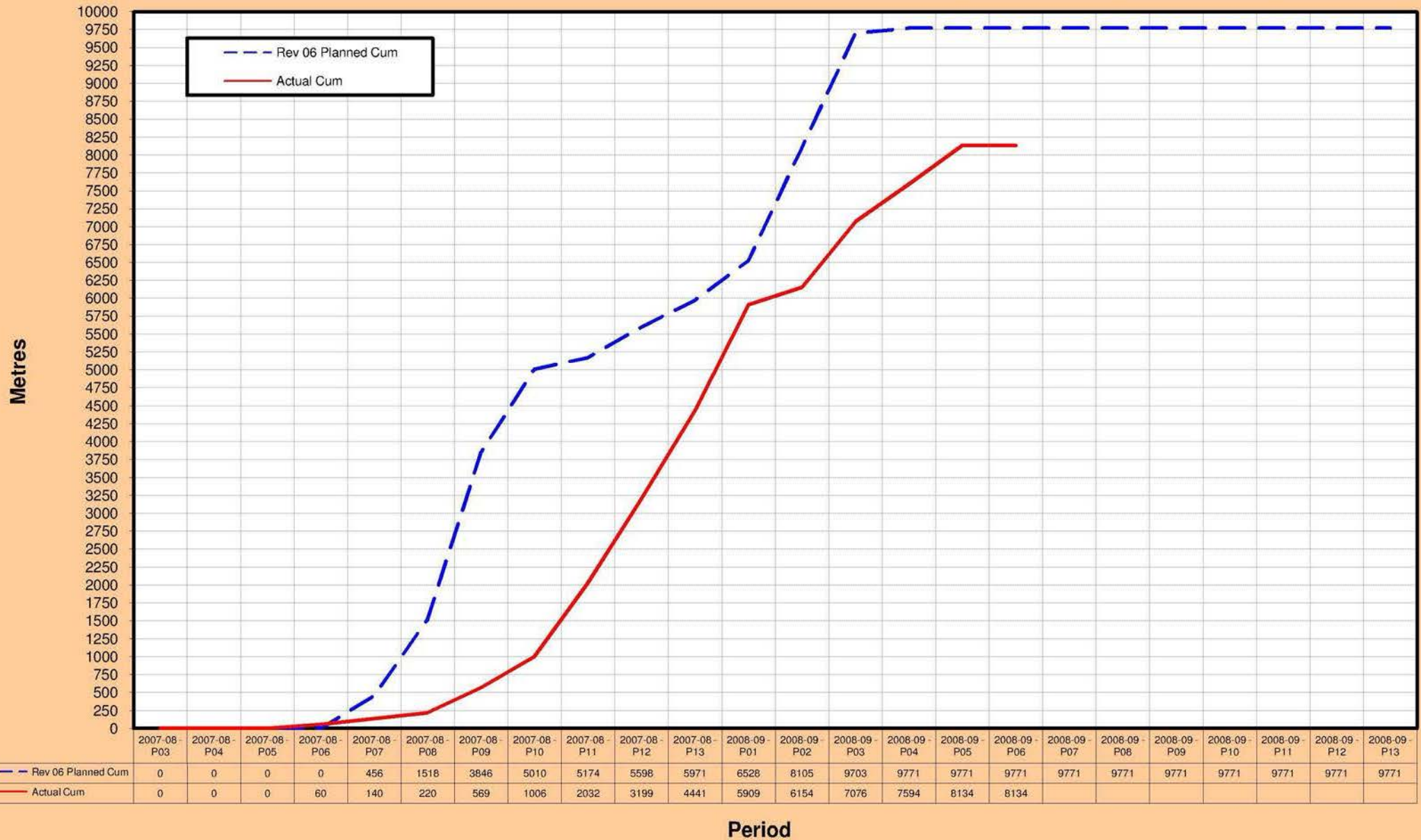


# Edinburgh Tram Project MUDFA Rev 06 Programme Section 1A - Metres Status



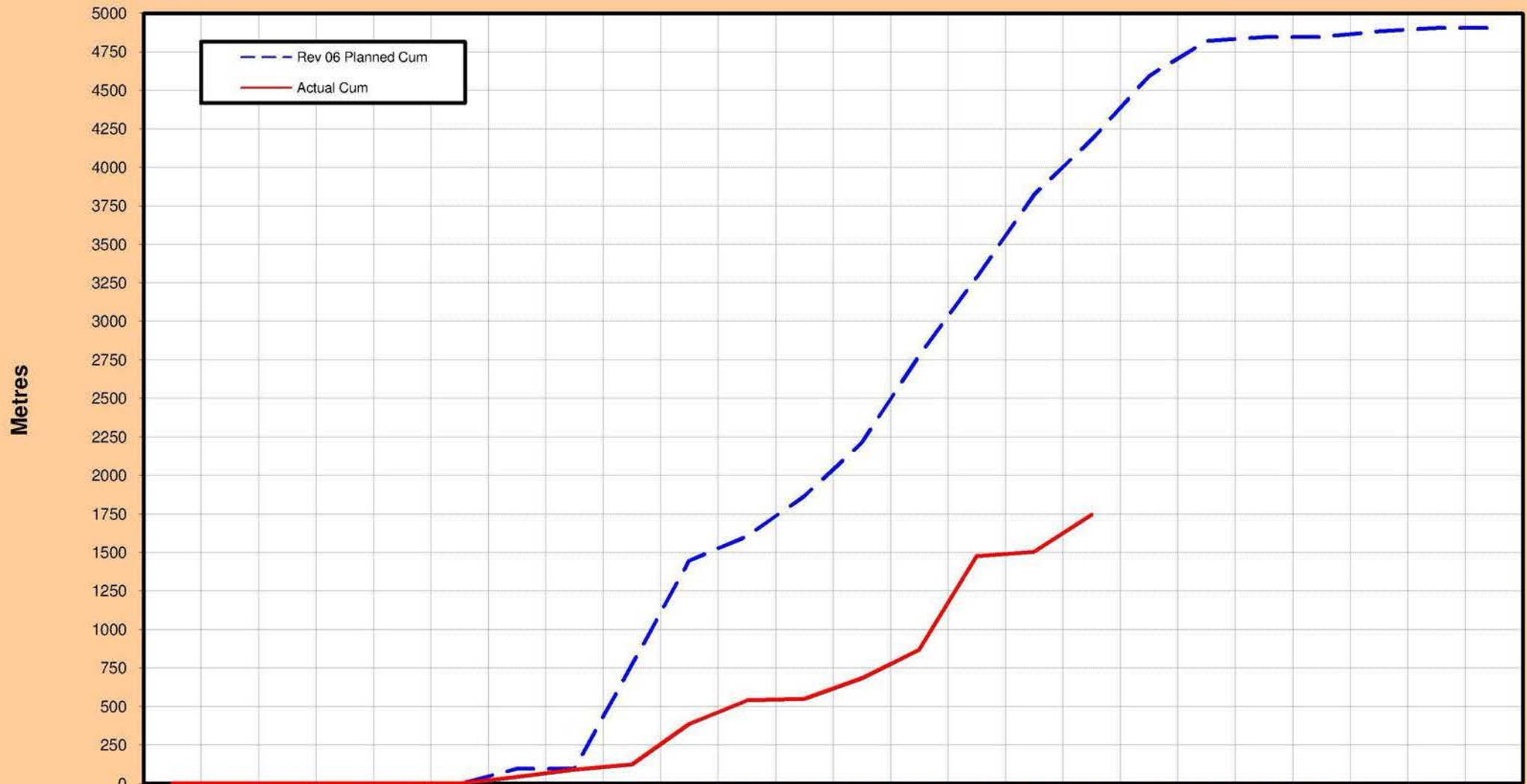


# Edinburgh Tram Project MUDFA Rev 06 Programme Section 1B - Metres Status





# Edinburgh Tram Project MUDFA Rev 06 Programme Section 1C - Metres Status

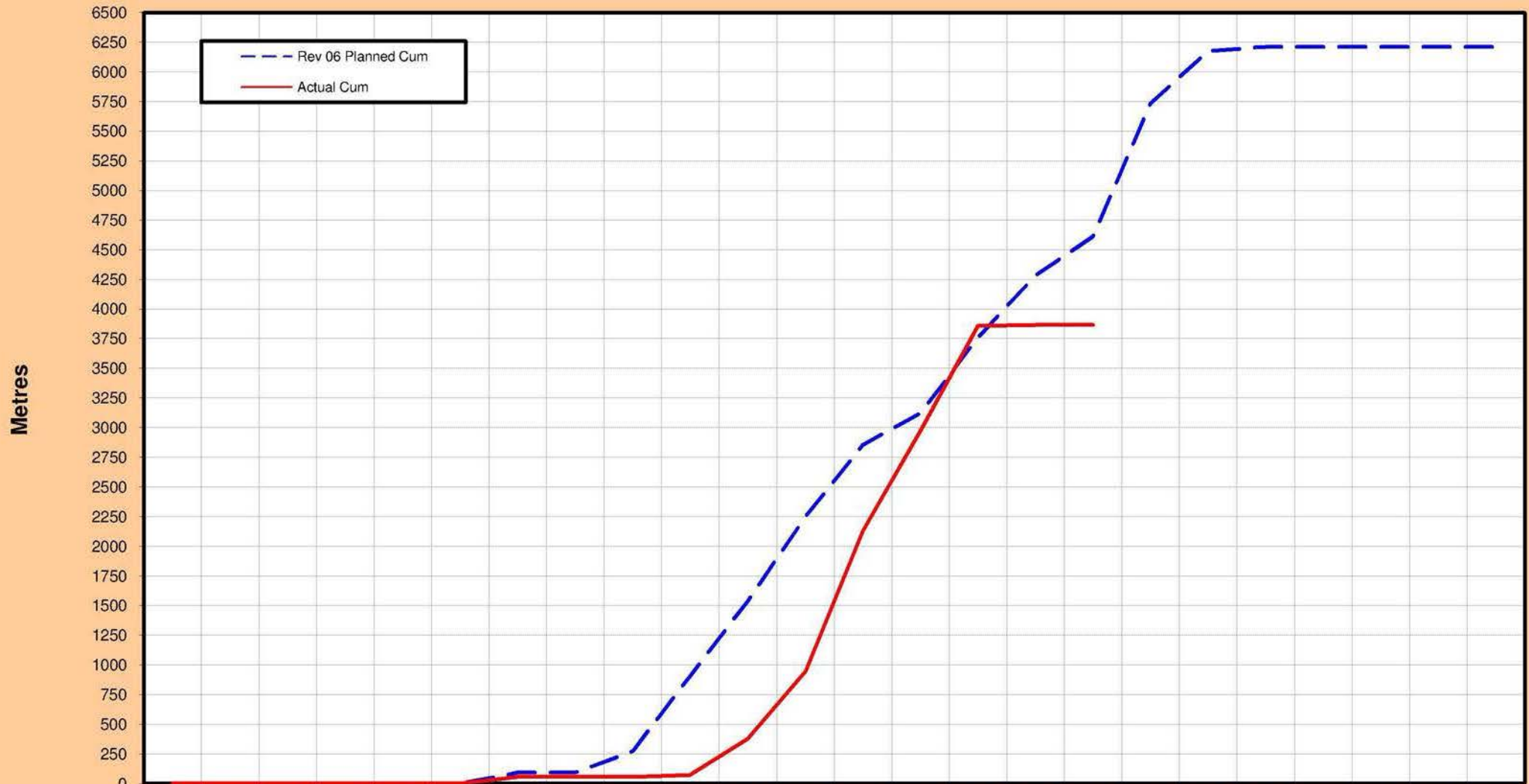


	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	0	0	0	96	96	772	1448	1604	1866	2212	2780	3287	3821	4180	4594	4820	4847	4847	4883	4904	4904
Actual Cum	0	0	0	0	0	0	45	90	124	387	541	552	684	870	1476	1506	1747							

Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 1D - Metres Status



	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	0	0	0	93	93	275	909	1539	2249	2856	3123	3761	4282	4613	5735	6177	6213	6213	6213	6213	6213
Actual Cum	0	0	0	0	0	0	56	56	56	75	380	943	2132	2974	3856	3867	3867							

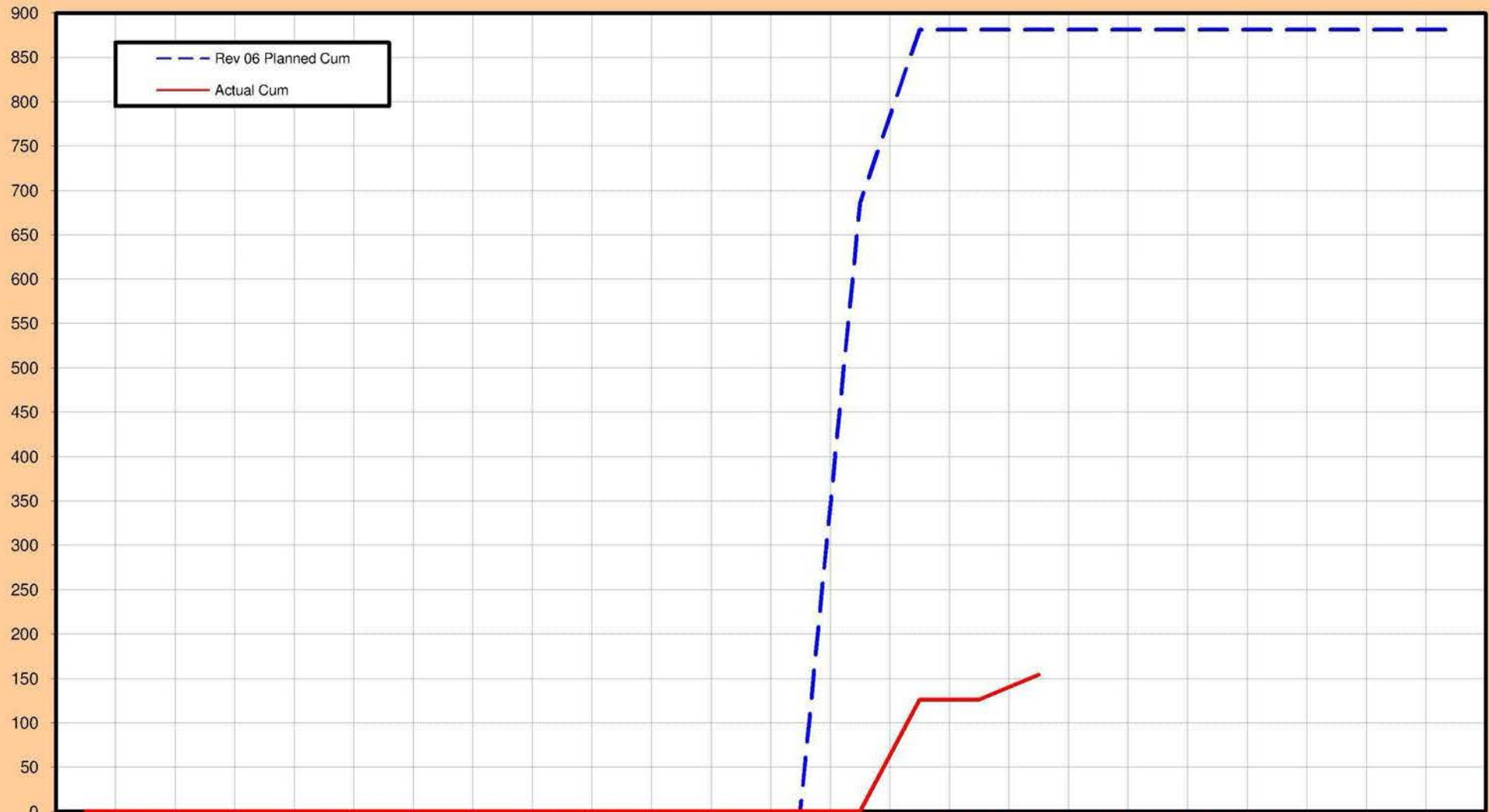
Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 2A - Metres Status



Metres

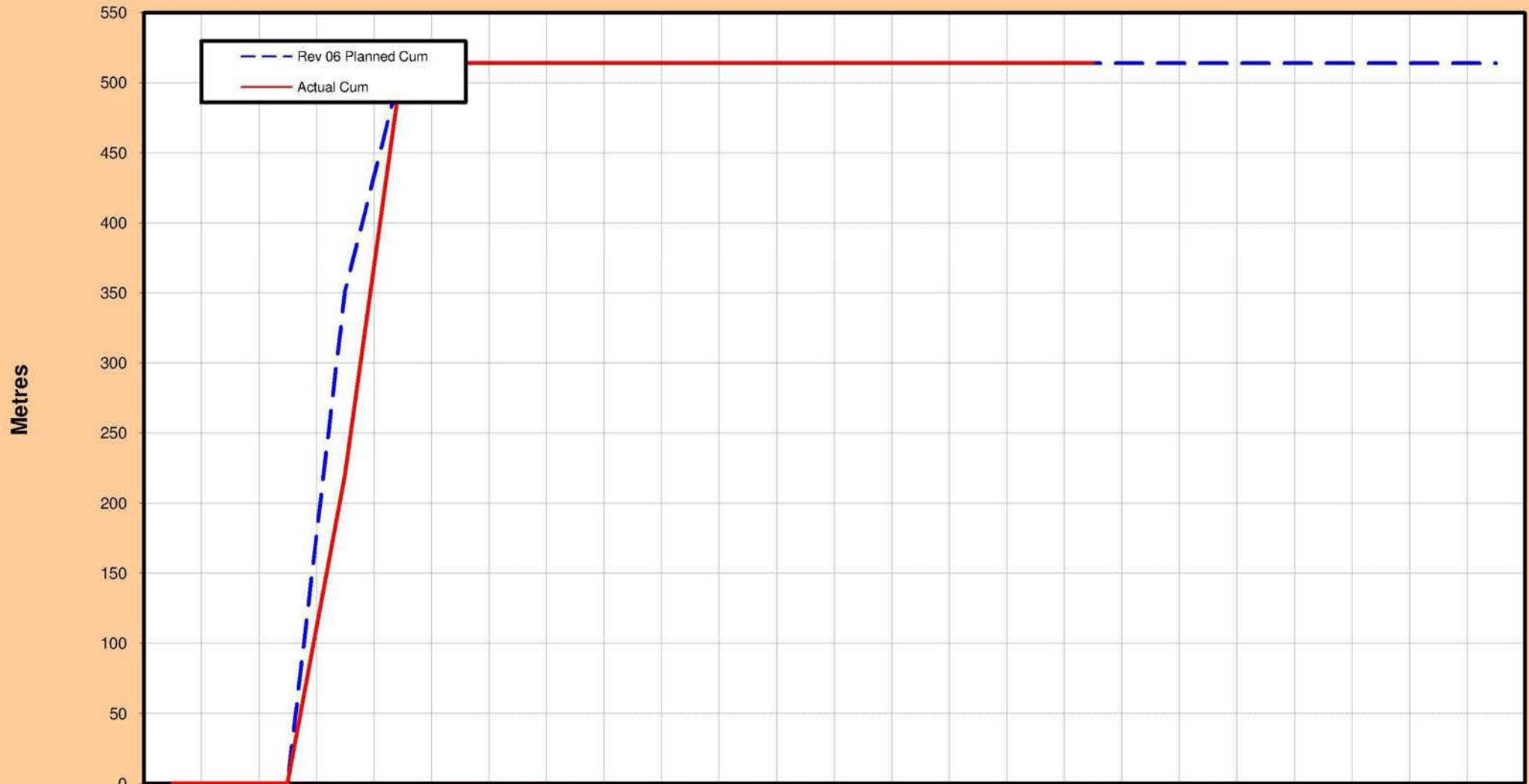


	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	0	0	0	0	0	0	0	0	0	0	686	881	881	881	881	881	881	881	881	881	881
Actual Cum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126	126	154							

Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 5A - Metres Status



	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	351	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
Actual Cum	0	0	0	220	514	514	514	514	514	514	514	514	514	514	514	514								

Period

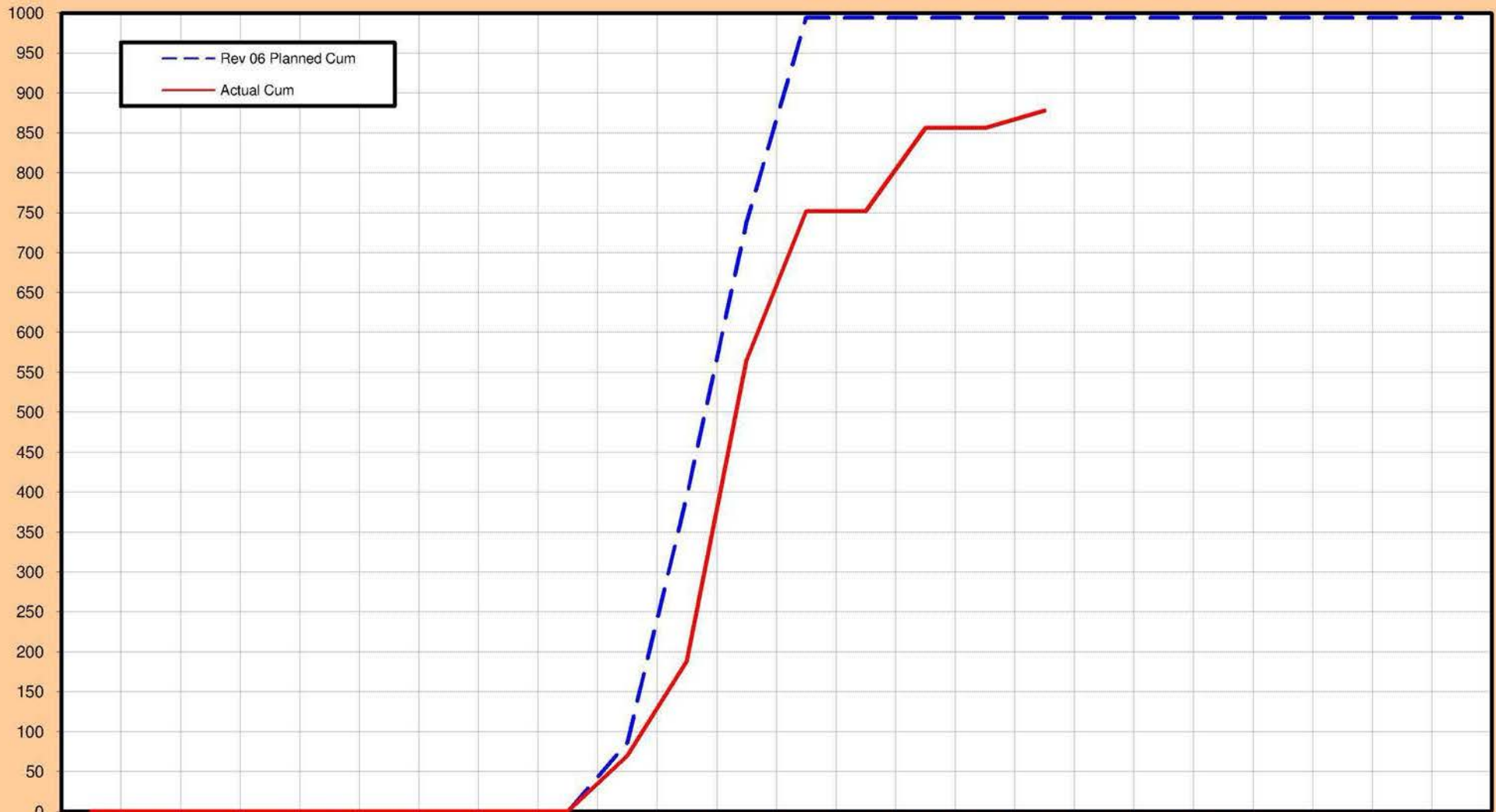




# Edinburgh Tram Project MUDFA Rev 06 Programme Section 5B - Metres Status



Metres

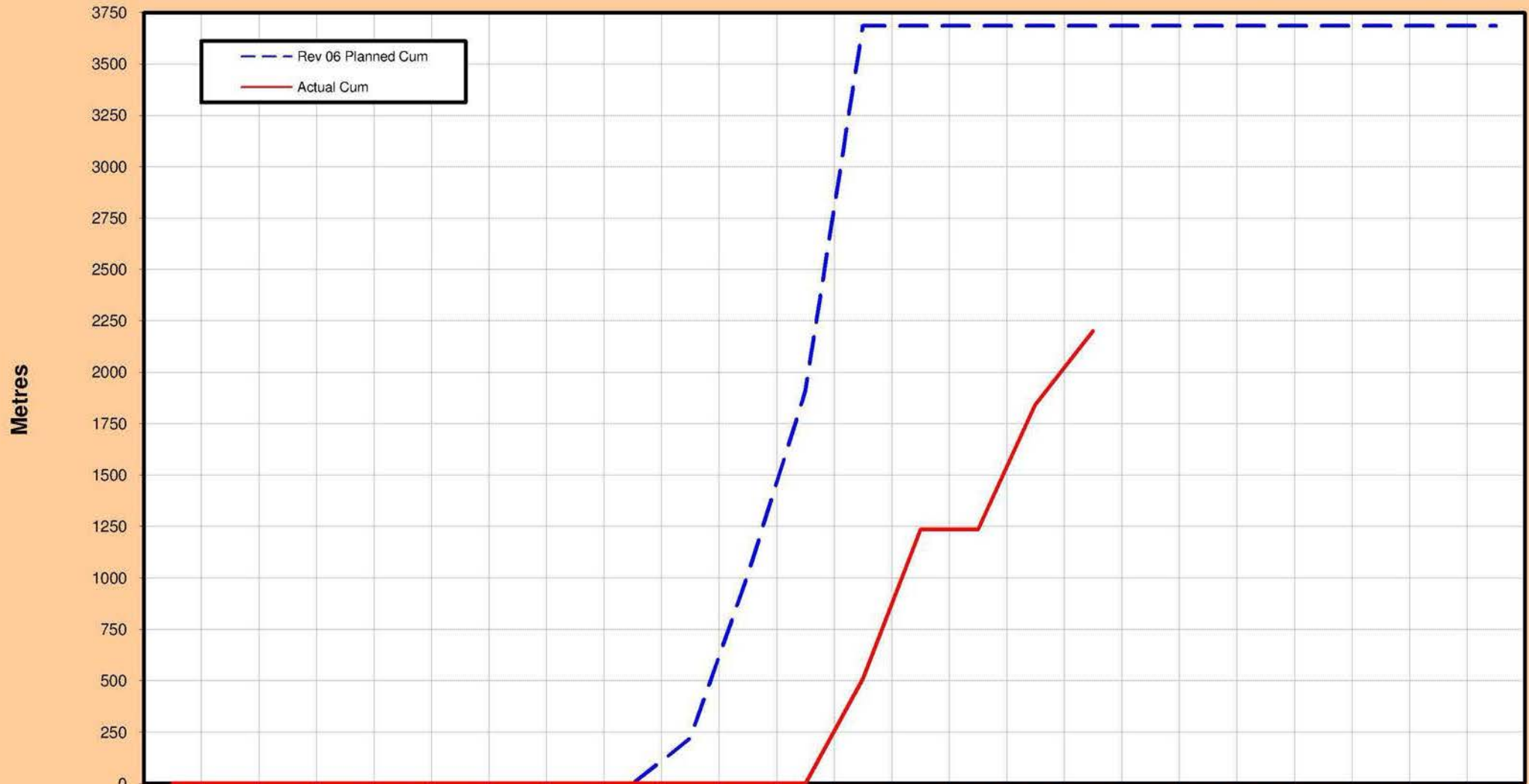


	2007-08 - P03	2007-08 - P04	2007-08 - P05	2007-08 - P06	2007-08 - P07	2007-08 - P08	2007-08 - P09	2007-08 - P10	2007-08 - P11	2007-08 - P12	2007-08 - P13	2008-09 - P01	2008-09 - P02	2008-09 - P03	2008-09 - P04	2008-09 - P05	2008-09 - P06	2008-09 - P07	2008-09 - P08	2008-09 - P09	2008-09 - P10	2008-09 - P11	2008-09 - P12	2008-09 - P13
Rev 06 Planned Cum	0	0	0	0	0	0	0	0	0	86	394	738	994	994	994	994	994	994	994	994	994	994	994	994
Actual Cum	0	0	0	0	0	0	0	0	0	70	189	565	752	752	856	856	878							

Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 5C - Metres Status



	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	0	0	0	0	0	0	220	1014	1909	3687	3687	3687	3687	3687	3687	3687	3687	3687	3687	3687	3687
Actual Cum	0	0	0	0	0	0	0	0	0	0	0	511	1235	1235	1846	2201								

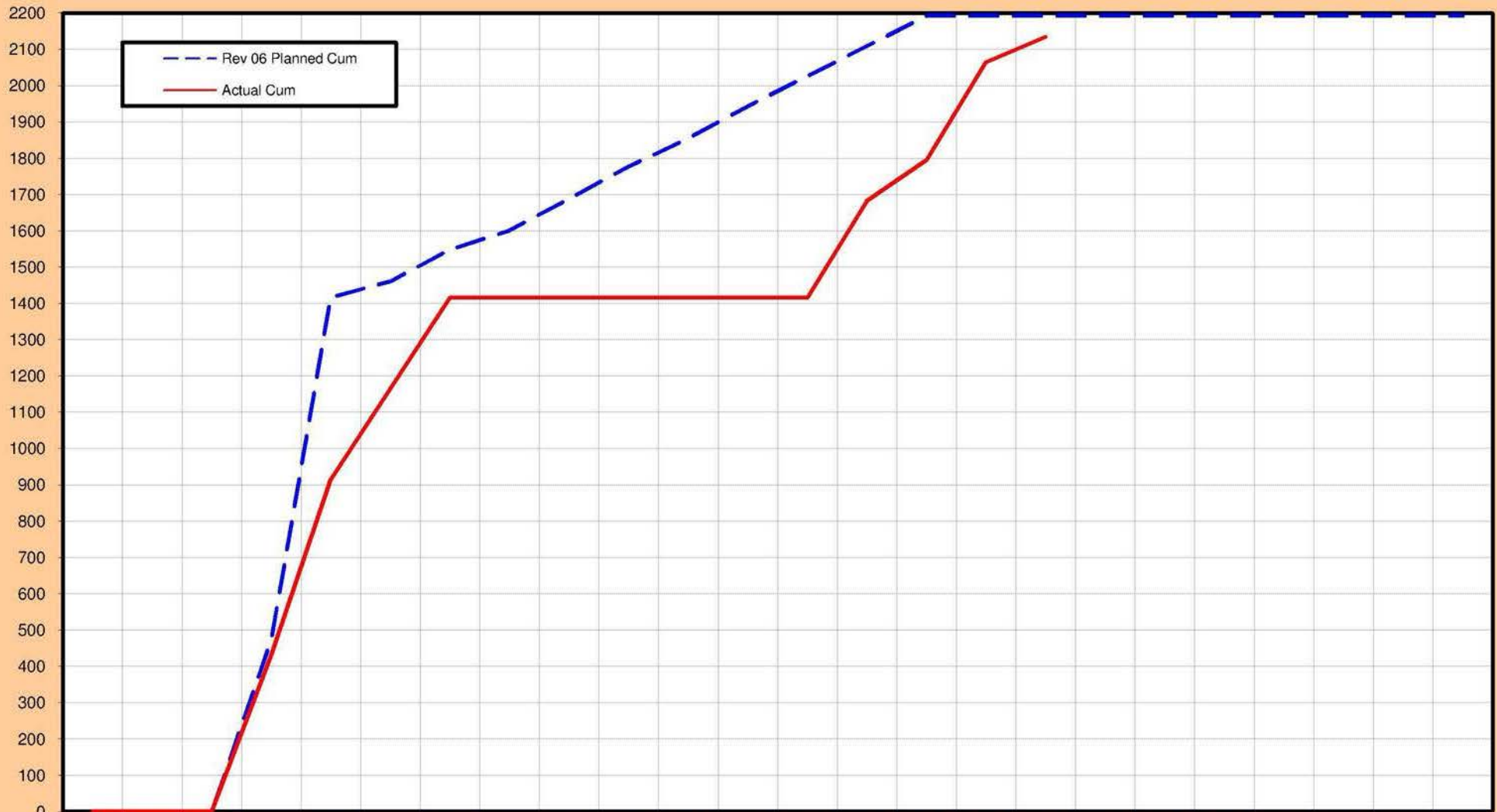
Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 6A - Metres Status



Metres

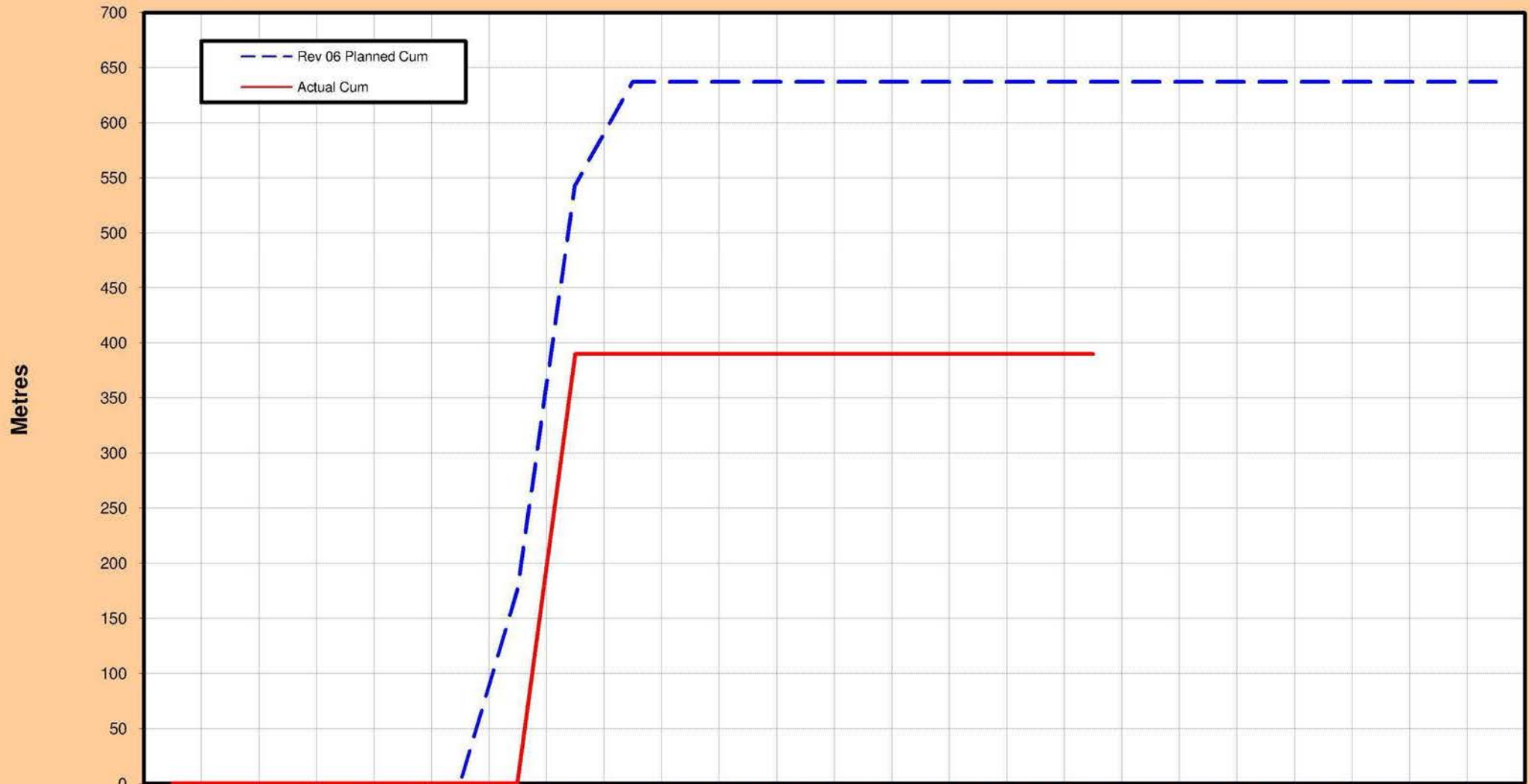


	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	472	1416	1460	1548	1601	1689	1777	1855	1943	2026	2109	2192	2192	2192	2192	2192	2192	2192	2192	2192	2192
Actual Cum	0	0	0	430	915	1165	1415	1415	1415	1415	1415	1415	1415	1683	1795	2065	2135							

Period



# Edinburgh Tram Project MUDFA Rev 06 Programme Section 07 - Metres Status



	2007-08-P03	2007-08-P04	2007-08-P05	2007-08-P06	2007-08-P07	2007-08-P08	2007-08-P09	2007-08-P10	2007-08-P11	2007-08-P12	2007-08-P13	2008-09-P01	2008-09-P02	2008-09-P03	2008-09-P04	2008-09-P05	2008-09-P06	2008-09-P07	2008-09-P08	2008-09-P09	2008-09-P10	2008-09-P11	2008-09-P12	2008-09-P13
Rev 06 Planned Cum	0	0	0	0	0	0	176	543	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637
Actual Cum	0	0	0	0	0	0	0	390	390	390	390	390	390	390	390	390	390							

Period



# Contract Review Report

## APPENDIX 4

### Traffic Signal Works

MUDFA TRAFFIC SIGNAL REQUIREMENTS – SEPTEMBER

REF NO.	JUNCTION	BRIEF WORKS DESCRIPTION	TS CONTRACTOR	COMPLETION DATE BY	TR2500s to CEC	TR2500s to CNTR	FAT	SAT	POWER SUPPLY ISSUES	TM REQUIRED FOR SIGNAL SWITCH OFFS/ OTHER NOTES
<b>MOUND/ ST ANDREWS SQUARE ASSOCIATED WORKS</b>										
1.	Princes St/ Frederick St	Head and PROM change	Siemens	07/09/08	✓	✓	03/09/08	07/09/08	X	COMPLETE
2.	George St/ Frederick St	Full installation – 4 arm.	PEEK	04/09/08	✓	✓	03/09/08	04/09/08	X	Switch On 12:00hrs 07/09/08 Scheme Under Review
3.	George St/ Hanover St	Full installation – 4 arm.	PEEK	07/09/08	✓	✓	03/09/08	07/09/08	X	Switch On 11:00hrs 07/09/08 Scheme Under Review
4.	George St/ St Andrews St	Crossings reconfiguration & upgrade	Micro-Sense	07/09/08	✓	✓	02/09/08	07/09/08	KG to confirm Scottish Power completed works	COMPLETE
5.	11th St David St/ St Andrews St	Full installation – 3 arm	Micro-Sense	07/09/08	✓	✓	02/09/08	07/09/08	KG to confirm Scottish Power completed works	COMPLETE
6.	Sth St David St/ St Andrews Sq	Full installation – 3 arm.	Micro-Sense	13/09/08	✓	✓	02/09/08	12/09/08	X	CEC engineer to be requested for SAT.
7.	Mound/ Market St  Are Loops installed?	Full installation – 4 arm.	Siemens	15/09/08	✓	✓	12/09/08	15/09/08	Electricity to be connected by Orion by 13.09.08. Order raised 10.09.08 KG	Requirement for old crossing to go off for Anti-Skid Friday 12/09/08. CEC engineer to be requested for SAT.
8.	Princes Street/ Sth St. David St.	Full Installation – 3 arm.	Siemens	19/09/08 Brought Forward??			16/09/08	19/09/08	X	Requirement for old crossing to go off, timeline TBC.
9.	Frederick St Puffin	Complete previous job	Siemens/ Lux Team	19/09/08 15/09/08	N/R	N/R	N/R	19/09/08	May need 3 <sup>rd</sup> party – WC to confirm with KG.	CEC engineer to be requested for SAT.
10.	Princes Street/ Waverley Bridge	Head and PROM change	Siemens	20/09/08			16/09/08	20/09/08	X	Junction Off – 3am 20/09/08 CEC engineer to be requested for SAT.
11.	Princes Street/ Frederick St	Head and PROM Change	Siemens	20/09/08			16/09/08	20/09/08	X	Junction Off – 3am 20/09/08 CEC engineer to be requested for SAT.
12.	Princes Street/ Hanover St	Head and PROM change	Siemens	20/09/08			16/09/08	20/09/08	X	Junction Off – 3am 20/09/08 CEC engineer to be requested for SAT.
13.	Queen St/ Hanover St	Head and PROM change	Siemens	20/09/08					X	Junction Off – 3am 20/09/08 CEC engineer to be requested for SAT.
<b>HAYMARKET ASSOCIATED WORKS</b>										
13.	Palmerston Pl/ Eglinton Cres/ Chester St	PROM change	Siemens	ASAP	✓	✓	11/09/08	T.B.C	X	CEC engineer to be requested for SAT.
14.	West Maitland St/ Palmerston Pl/ Torphichen	Relocation of controller & pedestrian crossing	Siemens	08/09/08	✓	✓	04/09/08	05/09/08	X	COMPLETE
<b>LEITH WALK &amp; CONSTITUTION ST ASSOCIATED WORKS</b>										
15.	Foot of the Walk	Cabling to repair current fault	Siemens	05/08/08	N/R	N/R	X	X	X	Junction Off – Stop/ Go Required Date TBC

REF NO.	JUNCTION	BRIEF WORKS DESCRIPTION	TS CONTRACTOR	COMPLETION DATE BY	TR2500s to CEC	TR2500s to CNTR	FAT	SAT	POWER SUPPLY ISSUES	TM REQUIRED FOR SIGNAL SWITCH OFFS/ OTHER NOTES
16.	Baltic Street/ Bernard St	Pole moves & PROM	Siemens/ Lux Team	10/09/08	✓		✓ 09/09/08	✓ 10/09/08	X	Junction Off for PROM Change Date TBC CEC engineer to be requested for SAT.
17.	Leith Walk/ Annandale St	Head & PROM Change	Siemens/ Lux Team	13/09/08			✓ 11/09/08	✓ 13/09/08	X	Junction Off Stop/ Go Required CEC engineer to be requested for SAT.
18.	Leith Walk Ped Crossing – Gayfield Sq	Reconfiguration for 2-way traffic on other side of road.	Siemens/ Lux Team	13/09/08	N/R	N/R	X	✓ 13/09/08	X	Existing Crossing Off 13 <sup>th</sup> Sept CEC engineer to be requested for SAT.
19.	Leith Walk/ Manderston Tie/FM to meet Infraco	Pole moves	Siemens/ Lux Team	TBC	N/R	N/R	X	X	X	Junction Off – Temp Give Way Date to TBC
20.	Leith Walk/ Brunswick Rd	Pole move	Siemens/ Lux Team	26/09/08	N/R	N/R	X	X	X	Junction Off – Stop/ Go Date to TBC
<b>OTHER MUDFA WORKS</b>										
21.	York Place	Signal pole removal – (pole physically done by CUS)	Siemens	01/09/08	N/R	N/R	✓	✓	X	COMPLETE
22.	Princes St/ Sth St Andrews St	Slave signal equipment put on temp NAL block	Siemens/ LUX Team	08/09/08	N/R	N/R	X	X	X	COMPLETE
23.	South Gyle Access/ Bankhead Drive	Pole moves & PROM	Siemens/ LUX Team	TBC	✓	✓	✓ 27/08/08	✓ T.B.C	X	COMPLETE
24.	Princes St/ Sth Charlotte Street	Cabling to repair current fault	Siemens/ LUX Team	TBC FM to Confirm	N/R	N/R	X	X	X	Junction Off – Traffic Wardens Required – Request to be made through B.McC – Date TBC
25.	Shandwick Pl/ Manor Pl	Pole move	Siemens/ LUX Team	TBC	N/R	N/R	X	X	X	Junction Off – Stop/ Go Required Date TBC
26.	South Gyle Access/ Bankhead Drive	PROM change – For INRACO site to be left.	Siemens/ LUX Team	TBC			✓ T.B.C	✓ T.B.C	X	Junction Off – Stop/ Go Required Date TBC CEC engineer to be requested for SAT.



# Contract Review Report

## APPENDIX 5

### Risk Register



Mudfa Risk Register - Period 6 2008-09

ARM Risk ID	Risk Description			Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
	Cause	Event	Effect								
139	Utilities diversion outline specification only from plans	Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated	G Barclay	High - 25.00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	Complete	Complete	31-May-08	A Hill
164	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; asbestos found in excavation for utilities diversion; unknown cellars and basements intrude into works area; other physical obstructions; other contaminated land	Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work.	Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	I Clark	High - 25.00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	Complete	Complete	31-May-08	A Hill

911	Scottish Power own and maintain a cable tunnel in the vicinity of Leith Walk that may or may not interfere with Tram construction and operation; exact location and depth of tunnel is unknown; condition of tunnel is unknown.	Presence of Scottish Power tunnel in Leith Walk requires approved construction methodology from Scottish power - works scheduled for August 08.	Tunnel may have to be decommissioned and re-laid in a more suitable location; tram alignment may require to be adjusted; special foundation solution e.g. cantilever may be required; increased capex; potential for tunnel collapse during operation and consequent disruption for tram.	M Blake	High - 24.00	Liase with Scottish Power to agree and approve method of crossing tunnel	On Programme	On Programme	31-Aug-08	M Blake
						Scottish Power to establish exact location of tunnel	Complete	Complete	2-Apr-07	M Blake
						SDS to try and ensure tram alignment footprint is outwith Scottish Power alignment - confirmation via thumbnails due 16th November	Complete	Complete	28-Dec-07	T
						tie to undertake engineering feasibility study	Complete	Complete	2-Apr-07	J Casserly
						Await proposal from Infracore for solution	On Programme	On Programme	30-Sep-08	B Bell
914	Required approval/acceptance turnaround time does not reflect SUC standard practice; SUCs do not have enough resource or process capability to achieve 20 day turnaround	Statutory Utility Companies unable to meet design approval/acceptance turnaround time to meet programme	Additional period required for design approval/acceptance turnaround	T Glazebrook	High - 20.00	SDS to obtain consent for design in accordance with programme requirements - Scottish Water and all Telecoms	On Programme	On Programme	30-Sep-08	I Clark
						SDS to obtain consent for design in accordance with programme requirements - SGN and Scottisk Power	On Programme	On Programme	30-Sep-08	M Blake
926	Complexity of traffic management proposals require additional approvals (relating mainly to city centre)	Approvals for traffic management proposals are not approved or take so long to approve that work cannot commence in line with the programme	Delay to project.	G Barclay	High - 18.00	Review traffic management requirements for rev 6 programme and the alignment of these requirements with programme start dates	On Programme	On Programme	30-Dec-08	K Rimmer