



Transport Edinburgh
Trams for Edinburgh
Lothian Buses

MUDFA Sub Committee Report Papers For Meeting 17 December 2007

Distribution

Willie Gallagher
Matthew Crosse
Tom Condie
Steven Bell
Susan Clark
Graeme Barclay
Mike Connelly

Stewart McGarrity
Duncan Fraser
Tom Clark
Miriam Thorne
Keith Rimmer
Bill Campbell
Bill Nicholls

Colin McLauchlan
Alan Dolan
Andy Malkin



Agenda

Sub-Committee Meeting

to be held at Kingdom Brunel Room, Citypoint II

on Monday 17 December 2007 at 2pm

1. Actions from previous minutes.

2. Construction Director's Report
 - Executive Summary
 - Progress (period)
 - Operations (next period)
 - Initiatives
 - Key Issues/Blockers
 - Recommendations

3. Appendices
 - Appendix 1: Utility Damage Data
 - Appendix 2: Design Tracker
 - Appendix 3: Stakeholder Engagement Analysis
 - Appendix 4: Risk Register
 - Appendix 5: Forecast Design Issuance
 - Appendix 6: Progress Curves

4. AOB



MUDFA Sub-Committee Meeting

AGENDA ITEM 1

Actions from Previous Minutes

tie Limited

Minutes of Sub-Committee Board Meeting

Date: 21 November 2007

Time: 14.00

Venue: Isambard, CityPoint II

In Attendance	Graeme Barclay	GB
	Matthew Crosse	MC
	Steven Bell	SB
	Michael Blake	MB
	Tom Clark	TCL
	Alan Dolan	AD
	Steve Reynolds	SR
	Andy Malkin	AM
	Bill Campbell	BC
	Keith Rimmer	KR
	Stan Honeyman	SHM
	Steve Hudson	SH
Apologies	Willie Gallagher	WG
	Stewart McGarrity	SM
	Tom Condie	TC
	Bill Nicholls	BN
Circulation	As Above	
	MUDFA Team	

	ACTIONS	ACTION BY	DATE DUE
1.1	[1.4] Trench Reinstatement – potential to use foam concrete as backfill. Plan of action to be agreed Proposal received from AMIS – needs to be discussed GB/AM GB to put paper forward to SB on best way forward as agreed with CEC.	GB/AM GB	26.11.07 Complete
1.2	[1.5] BT Chamber – current status is that SDS are waiting to hear from BT as to whether or not the chamber can be moved forward. SDS will have a conclusion by the end of next week.	AD	30.11.07
1.3	[1.8] S5A – remaining works to be done are SGN/SW and these will move across to Infracore. Area completion certificate to be put together to show what remains to be done. We should have confirmation at		

	<p>the next meeting that the process has been implemented and confirmed by tie, SDS and AMIS. All relevant information from contractors should then be put together ready to go to Infraco.</p> <p>This being formalised now should be complete by the end of next week.</p>	GB	Complete
1.4	<p>[1.11] DKE – element to be addressed as to how utilities gain emergency access to services. A meeting has been held with Steve Williamson - GB to look at this further.</p>	GB	Ongoing
1.5	<p>[1.12] TQ Process – SDS confirm agreement of process. However Brian McCrear (BM) not of that understanding.</p> <p>AD to meet with BM to confirm process prior to Critical Issues meeting.</p>	AD	30.11.07
1.6	<p>[1.14] Retrospective Review – To go through this in detail at the next meeting.</p> <p>Presentation required on the output of lessons learned focusing on HSQE.</p>	GB	Ongoing
1.7	<p>At the next meeting GB is to show planned progress against actual progress – a breakdown is required for each service.</p>	GB	Ongoing
1.8	<p>Health & Safety – Currently reporting on incidents, however solutions of how to prevent these are needed. Stan Honeyman/Jim Ritchie/Graeme Strachan to work through what is needed to be done and what has already been put in place- to update at the next meeting.</p>	SHM/JR/GS	17.12.07
1.9	<p>Rev 6 Programme – clear coherent summary required from GB/AM on what the Revision 6 Programme now is.</p>	GB/AM	Complete
1.10	<p>Road Reinstatement – GB putting together analysis paper to go to SB.</p>	GB	Complete
1.11	<p>Need to add into report brief overview of what we are doing to mitigate the key issues/blockers.</p>	GB	Ongoing
1.12	<p>Progress Performance Curves – SB would like to see these in more detail with notes added.</p>	GB	17.12.07
1.13	<p>Risk Register – some of the dates shown are incorrect - SB to discuss with Mark Hamill.</p>	SB	17.12.07

1.14	Design Issue Section 1B – Plates 49-51 to be issued 26.11.07 Section 5B – Plates 14-20 – issue date 30.11.07 – SDS cannot make this date, AD to inform tie of revised date next week. Section 6 – Topo overlaid onto Gogar area – Ian Clark/AD to go through this.	AD	26.11.07
1.15	Review of construction and related processes required – GB to update at next meeting.	GB	17.12.07
	Next Meeting 17 December 2007		



MUDFA Sub-Committee Meeting

AGENDA ITEM 2

Construction Director's Report

Edinburgh TRAM Project

Paper to : Utility Sub-Committee

Subject : Construction Director's Report

Date : 17 December 2007

Executive Summary

High Level View

- Progress

		Period 9 10.11.07 to 07.12.07			Overall Performance to Date		
		PLANNED	ACTUAL	Variance	PLANNED	ACTUAL	Variance
TOTAL	Metres	480	719	239	4819	4749	-70
	Chambers	4	3	-1	21	24	3
BT/Comm	Metres	243	112	-131	799	1134	335
SGN	Metres	42	42	0	141	128	-13
Scot W	Metres	116	429	313	1789	1346	-443
Scot P	Metres	79	136	57	361	429	68
Forth Ports	Metres	0	0	0	314	297	-17
Gogar Comm	Metres	0	0	0	683	683	0
Gogar Scot P	Metres	0	0	0	115	115	0
Gogar Scot W	Metres	0	0	0	617	617	0

The above relates to Rev 06 Programme.

98.5% production achieved against planned.

- **H&S**

There was one accident reported to **tie** this period.

- 16/11/07 (AIIR 00037) IP Believes he stood on a Rawl bolt causing him to slip and stumble onto edge of the excavation striking his back. IP visited doctor and was off work for 2 days

The accident frequency rate (AFR) remains 0.00.

Two Incidents reported this period

- 19/11/07 (A11R 00036) Loss of water due to damaged pipework. Bottled water distributed and repairs carried out next day.
- 12/11/07 (AIIR 00033) A car run through the cones at works area out with working hours. Police dealing with incident, however AMIS Reinstated cones.

Three Near misses reported this period

- 13/11/07 (AIIR 00034) Project Manager for **tie Ltd** passed the CCTV survey works which were ongoing between manholes at either side of the A8 at Gogar. Found that an operative was working in a manhole (approx. 10m deep) without a gas monitor or rope connection to the surface, All Sub Contractors will be required to demonstrate competence directly for the project works despite the acceptance by SUC's or any other parties.
- 08/11/07 (AIIR00035) Operative struck on face next to his eye while dressing the edges of blocks with a hammer. No eye protection was being worn. Operative issued with eye protection and PPE Briefing received.
- 09/11/07 (AIIR 00031) Operative discovered to be working in 2m depth trench with no shoring provided. AMIS Trialling light weight plastic shoring.

Two site inspections carried out at utilities diversions inspection;

- 28/11/07 at Jane Street 1B, 4 x Actions identified and 1 x observation all actions to be closed out by 07/12/07 score 82.5%.
- 28/11/07 2 x Actions identified 1 x observations all actions to be closed out by 07/12/07 score 90%.

See Appendix 1 - Utility Damage Data

Section 1A

Trial holes to inform construction commenced 4 December 2007. 68 No trial holes are planned, 35 No to be completed pre Christmas, with the remaining 33 No planned for completion in January 2008.

Negotiated approval of works to proceed during Xmas embargo period with FPA. Water connection works were carried out on Ocean Drive during w/c 19 and 26 October 2007, Works comprised transferring 3 x water connections and Forth Ports supply onto new water main installed as part of pre-embargo MUDFA works.

Section 1B

The centre reservation along Leith Walk has been removed between its junction with Annandale Street and Dalmeny Street. Temporary road reinstatement installed in its place to provide a greater working area for the utility diversions and greater flexibility with traffic management along Leith Walk to facilitate achieving the Rev 06 Programme. Removal of the centre reservation is required for INFRACO works. All the proposals have been discussed and agreed with the Traffic Management Panel prior to implementation with local business' and stakeholders informed.

Jane Street road closure commenced 15 October 2007 for twelve weeks to accommodate major exchange BT chamber. These works are being delayed due to the close proximity of an existing 450mm Diameter sewer (directly below existing BT chamber position). Concern over the rate of progress here, as there are early indications that the programme is exhibiting signs of slippage. Discussions held with AMIS to address this quickly. (Refer to key issues)

Section 1C

The utility road crossings (5 No) in Princes Street at the junctions of Frederick Street and Castle Street were completed during w/c 26 November 2007. Remaining 4 No to be carried out subsequent to Christmas embargo.

The centre reservation along Princes Street has been removed between The Mound and Frederick Street. It is planned to remove the remaining sections of between Waverley Bridge and South St Charlotte Street in January 2008. Temporary road reinstatement installed in its place to provide a greater working area for the utility diversions and greater flexibility with traffic management along Princes Street to facilitate achieving the Rev 06 Programme. Removal of the centre reservation is required for INFRACO works. All the proposals have been discussed and agreed with the Traffic Management Panel prior to implementation with local business' and stakeholders informed.

Trial Holes (16 No) to inform construction commenced in St Andrews Square on Tuesday 27th November.

High level programme for City Centre (St Andrews Sq – Haymarket) signed off by Stakeholders. Enabling works due to commence w/c 7 January 2008 in St Andrews Square and Princes Street. Comms notices to be issued Monday 10 December 2007 in line with 4 week notice period

Communications strategy being developed to support the MUDFA works in the City Centre

All works within the city centre stopped earlier than planned, 30 November 2007 as opposed to the revised 7 December 2007 (agreed with CEC), due to potential PR issue with Harvey Nicholls.

Section 1D

A series of trial holes requested by EICC in Morrison Street commenced 19 November 2007 – these are non-MUDFA works which will not impact on the MUDFA programme. All trial holes complete by agreed 30 November 2007 deadline.

45 No trial holes to inform construction along Shandwick Place were undertaken in the period. The remaining 31 No planned trial holes will be completed in the next period.

High level programme for City Centre (St Andrews Sq – Haymarket) signed off by Stakeholders. Enabling works due to commence w/c 7 January 2008 on Princes Street, Frederick Street, George Street, Charlotte Square, Hope Street, Queensferry Street, Melville Street and Manor Place. Comms notices to be issued Monday 10 December 2007 in line with 4 week notice period

Communications strategy being developed to support the MUDFA works in the City Centre

Section 5A, 5B & 5C

The MUDFA works available within Section 5A were completed on 5 October 2007 this amounted to 70% of the utility diversions required in this area. The remaining 30% of utility diversions are being transferred to the INFRACO Contractors scope. Section 5B plates 6-13 were issued as IFC on 19 October 2007. A total of ten conflicts were identified and all have been transferred to Infraco mainly for the installation of ducting due to the change of track levels.

5C IFC utility drawings awaited for review by **tie**. The majority of the works in this section will be adjacent to the Gyle Roundabout. A number of private diversions required are owned by Edinburgh Park, including CCTV ducts and mast and bollard mounted footpath lighting. Discussions progressing well with key parties to develop diversionary routes/design.

Section 6 (Utilities)

Diversion of the 33kv SP cable completed and energised.

250mm water main diversion 90% complete (RATs) (Risk And Trade off). Currently awaiting final acceptance of the method statement from Scottish Water for testing and commissioning of the main.

800mm water main diversion final levels under design following the relocation to the depot access road with a reduced minimum cover of 900mm, agreed with Scottish Water. To the West side of the depot the pipe will be located off the access road but at the foot of the embankment.

These works will be carried out under a RATs proposal – early discussions underway with SW to this effect. Anticipate commencement now in early part of January 2008.

Section 6 (Gogar)

Gogar Depot Earthworks completed as far as practicably possible. Site made safe and secure and transferred back to tie 13 November 2007.

Section 7A & 7B

7A (RATS) are approximately 50% complete on site. A number of water pipes have not been located despite significant trial holes and it is anticipated that Infracore will install insurance ducts in the anticipated location to account for any future diversions.

A Utility Workshop for 7B has been arranged with BAA for 19 December 2007 to review the existing utility information and agree the strategy for resolving utility conflicts.

See Appendix 6 – Progress Curves

1.0 Design

See Appendix 2 – Design Tracker

1.1 Traffic Management

- The MUDFA works are continuing on Lane 1 Northbound of Leith Walk between McDonald Rd and Balfour Street. A contra-flow on the southbound side of the carriageway was installed through this works section on Tuesday the 30th of October. AMIS have reinstated a section of the completed works and the cross-over to the contra-flow has moved N/B to Middlefield. The TMRP have approved the closure of Pilrig Street on the 3rd of December for 2 weeks to allow ducting operations in this area.
- The Central Reserve removal works between Balfour St and Annandale Street have been completed. AMIS proposes that the removal of the Central Reserve between Montgomery Street and Picardy Place RA will be undertaken early in 2008.
- The cross carriageway ducting operations on Princes Street between Castle Street and The Mound commenced for a period of 3 weeks on the 12th of November. The works have been completed as programmed.
- The Traffic Management required to undertake the works starting in the City Centre in January 2008 is currently under consideration. The diversion routes required to allow progression of the MUDFA works are under development and a modelling exercise is required of the affected junctions to assess suitable rephrasing of Traffic Signals and access issues.

1.2 Communications & Stakeholder

General

- The customer interaction cycle has continued since the last report and feedback indicates very strongly that this form of face to face communication is paying real dividends to the overall delivery of the existing works on Leith Walk and Princes Street. The last month has also been relatively quiet in media terms with very little adverse publicity. Businesses on Leith Walk have been encouraged to apply for the business support scheme through a proactive letter in the Edinburgh Evening News. This has resulted in a steady increase in the number of applications for support now being received. The Lothian Assessor has now indicated that he is to grant rate relief to business frontagers. This will also apply to businesses on Jane Street which is a concession to the original agreement. This is good news to businesses in other similar situations such as Stafford Street which would have been exempt under the rules. The names of all business facility managers are beginning to be received and passed to the MUDFA team. These names will be important for the communication flow when works may be intrusive such as water supply interruption.

Delivery

- Princes Street and Leith Walk:

All businesses have been personally kept informed of all developments in their area. In 95% of cases this has been well received and any concerns expressed have been concentrated on delivery and access arrangements all of which have been resolved very quickly.

- Water supply interruption: there have been two cases on where this was planned in the last month and in both cases work progressed with virtually no complaint. The only complaints were two instances of poor water pressure. In both cases these were resolved within 2 hours of having been reported.
- Xmas embargo: All work in the city centre has now stopped until 7th January. There was some confusion noted on when the embargo started which was brought to our attention by the city retail forum. This was resolved successfully.
- January '08 works: all works scheduled to start in January have been notified to businesses on Monday 10th December. So far no issues have resulted from these notices.
- February '08 onwards: the team preparations have now reached an advanced stage and can manage any late adjustments to the programme.
- Unresolved: the business community have requested a copy of Rev 6 of the programme. Internally we need to resolve how we intend to communicate this programme at a high level.

See Appendix 3 - Stakeholder Engagement Analysis

1.3 Commercial

- All the potential issues related to the delayed commencement of the AMIS MUDFA utility diversion works. All issues arising prior to September 2007 have been agreed with AMIS and a settlement agreed which is within the liability previously made. Meeting arranged 12 December 2007 to review all commercial issues and develop way forward.
- The potential issue associated with the access to the SU apparatus which will remain within the DKE, specifically along Constitution Street and Shandwick Place is being progressed. Following a meeting with TEL to define access parameters DLA Piper have been commissioned to draft a formal legal agreement for TEL/CEC/Statutory Utilities. The basis of the proposed agreement has been communicated to the affected SU's.
- Road reinstatement issue and potential revised specification based upon performance has been progressed by tie/CEC in the period. Material and

principle of performance parameters and protocol have been agreed upon. Awaiting confirmation back from CEC (DF) on rate applied to B.0 material, this presently appears high.

- A joint review, tie/AMIS, of the required utility diversions to update the AFA based upon the currently issued IFC and the issued for approval drawings in the period is underway and will be completed in January 2008. The joint review will be based upon approximately 80% of the design for the Project.

See Appendix 4 – Risk Register

2.0 Operations Next Period

2.1 Construction

- Continuation of the work fronts in Leith Walk.
- Trial hole operations – Constitution Street.
- Completion of remaining CCTV surveys – section 1A & 3
- Continuation of RATs in section 7A.
- Review of potential earlier start in utility diversions alongside OTL – reprioritisation of SDS design packages to assist this.
- Review of impending city centre works with Comms, TM, Ops and programme to align efforts.
- **NB** All city centre operations temporarily halted 30 November 2007 due to Xmas embargo. These will recommence on the 7 January 2008.

2.2 Design

See Appendix 5 – Forecast Design Issuance

2.3 Programme

Extensive review by all parties; tie, AMIS and Key Stakeholders has resulted in acceptance of the Revision 06 Programme. City Centre programme logic around St Andrew's Square, the Mound and Princes Street was key to its acceptance. Micro programme required around St Andrews sq to ensure full visibility of programmed works in this sensitive area.

The following key issues have had a major impact on the Rev 06 programme:

- BT cabling and jointing programme – working with BT to explore ways of reducing the impact, including BT working 24/7 and allowing early access for BT cabling and jointing by sub-area, requiring detailed integration with Infracore. The program aims to minimise potential interfaces between MUDFA and Infracore to maximise the window of opportunity for BT cabling and jointing works;
- Traffic Management interface between works in St Andrews Square, the

Mound and Lothian Road junction. Several meetings have resulted in way forward with the construction works in this vicinity, whilst minimising disruption to the traffic flow and businesses.

- **NB: A Significant Increase in the Traffic Management and Construction works around Princes Street, St Andrew's Square and York Place are due to commence end of January 2008. This will require substantial liaisons with all Key Stakeholders to ensure expectations of anticipated works are fully understood and appreciated. Definitive Traffic Management proposals are ongoing.**

3.0 Initiatives

- Review of service utility diversions requirements based on revised depth and protection. Area of review 400 – 1200 depth range below FRL. Further review of latest detail of INFRACO proposed RHEDA CITY track system and potential reduced diversions ongoing. Overall construction depth to be of the order of 350 – 400mm.
- Maximise recovery of costs associated with SUC C4 estimates via specialist consultant's advice/input. Awaiting Corduroys response to their initial formal proposal and in discussions with SUC's to have Berkeley's as their representative to reduce the number of interfaces. Also considering a BT specialist to join the MUDFA team for a short period of time to assist in the design and C4 implications related to betterment/deferment etc.
- Provision of an independent survey team to carryout dilapidation surveys along the tram route (SDS responsibility) – protect tie's position from potential 3rd Party claims post MUDFA & INFRACO – Commencement of dilapidation surveys by independent body on 10th December '07.
- RAT's proposal put forward for section 7 and 6 (800mm diam WM) – minimising depth of excavation from 2.3m to 900mm cover will generate cost savings to diversion works.
- Performance specification process and preferred material agreed in principle with CEC. Awaiting confirmation of rates for supply of B.0 material from Proficio (CEC). Potential programme benefits overall in enhanced performance of production.
- Review of both MUDFA/INFRACO programmes to identify critical areas wherein synergies can be adopted through interface of programmes.
- Review of section 1A diversions – assess potential programme gains due to implementation of temporary diversions, thereby allowing earlier construction start to INFRACO works.

4.0 Key Issues/Blockers

- BT cabling and jointing programme – working with BT to explore ways of reducing the impact, including BT working 24/7 and allowing early access for BT cabling and jointing by sub-area, requiring detailed integration with Infraco. The programme aims to minimise potential interfaces between MUDFA and Infraco to maximise the window of opportunity for BT cabling and jointing works.
- SGN technical and commercial issues resolved with the exception of a 30" gas main at the Mound – options reviewed.
- MUDFA/INFRACO programme interfaces
- AMIS resource levels – concern at their ability to match programme demands. Particular regard to major increase from Jan'08 onwards. Meeting held to discuss issue to ensure actions in place to recover present deficit and address future demands.

5.0 Recommendations

DPD is requested to:

- Note the contents of this paper
- Note challenges and workload entailed in the delivery of the MUDFA Programme and associated works and actions/mitigation measures being implemented to minimise costs and delays

Proposed	Graeme Barclay Construction Director	17 December 2007
Recommended	Matthew Crosse Project Director	17 December 2007



MUDFA Sub-Committee Meeting

AGENDA ITEM 3

Appendices



MUDFA Sub-Committee Meeting

APPENDIX 1

Utility Damage Data

Utility Damage data

The following Tables/Graphs provide details of the utility damage that has occurred since the commencement of MUDFA works.

Hours to date 119780, Metreage of all diversions Based on information received from AMIS 7592m as period 9 end.

This information allows tie to report on the utility damage against man hours and metreage.

This information should allow tie to forecast utility damage based on supplied figures

10 x Damages per 8536m = 1 per 853.6 m average!

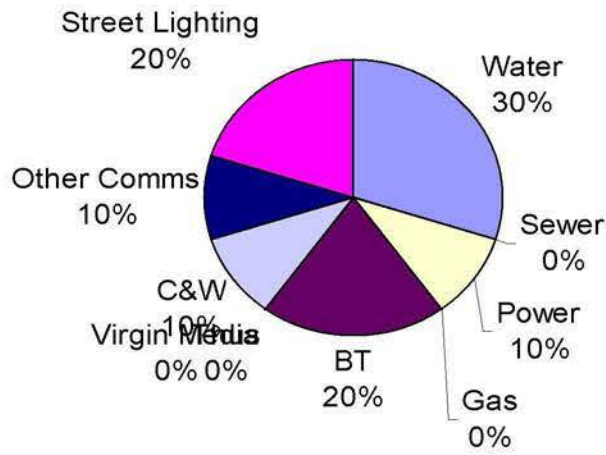
10 x Damages 119780 hrs = 1 per 11,780hrs

Utility	Rolling Number of Strikes
Water	3
Sewer	0
Power	1
Gas	0
BT	2
Virgin Media	0
Thus	0
C&W	1
Other Comms	1
Street Lighting	2

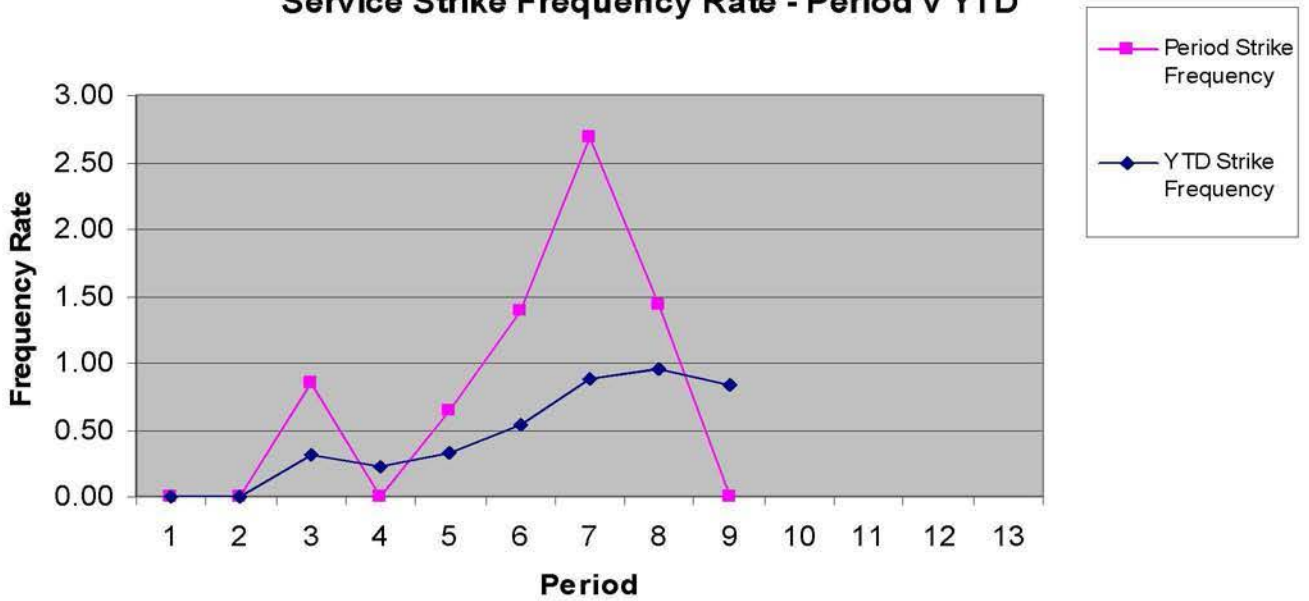
Period	Period Strike Frequency	YTD Strike Frequency
1	0.00	0.00
2	0.00	0.00
3	0.86	0.32
4	0.00	0.22
5	0.64	0.33
6	1.38	0.53
7	2.68	0.89
8	1.43	0.96
9	0.00	0.83
10		
11		
12		
13		

<u>Year to Date Service Strike Information</u>	
Hours Expended in Period =	14000
Hours Expended year to date =	119780
Service strikes in period =	0
Service Strikes Year to date =	10
<u>Period Service Strike Frequency Rate (per 10000hrs) =</u>	<u>0/00</u>
<u>Year to date Service Strike Frequency Rate (per 10000hrs) =</u>	<u>0.83</u>

Year to Date Number of Strikes



Service Strike Frequency Rate - Period v YTD





MUDFA Sub-Committee Meeting

APPENDIX 2

Design Tracker

MUDFA Design Tracker
 SDS Design Status @ 04th December 2007

Section	Drawing Nos	Issue to SUC's for Approval			SUC Approval			Issue Approved IFC Package			IFC to Const'n Start	MUDFA Revision 06 - Final Issue Construction Start		Remarks	
		PLANNED	SDS F'CAST	ACTUAL	PLANNED	F'CAST	ACTUAL	PLANNED	F'CAST	ACTUAL		DAYS	PLANNED		ACTUAL
1A	plates 01-05	26-Oct-07	15-Feb-08		09-Nov-07	29-Feb-08		23-Nov-07	14-Mar-08		28	07-Apr-08		MUDFA works will be novated to INFRACO	
1A	plates 06-10	26-Oct-07	18-Jan-08		09-Nov-07	01-Feb-08		23-Nov-07	15-Feb-08		52	07-Apr-08		Revised Road & track alignment issued. Requires formal agreement with Forth Ports & CEC before Road & Tram Alignment design (5 weeks) & Utility design (6 weeks) can commence. Requires re-programme of construction works. Utility design to be commenced on plates 06-10 (tie to instruct SDS) which will bring back forecast IFC date to Feb 2008.	
1A	plates 11-12	26-Oct-07	15-Feb-08		09-Nov-07	29-Feb-08		23-Nov-07	14-Mar-08		28	07-Apr-08		MUDFA works will be novated to INFRACO	
1A	plates 13-15	04-Feb-07	07-Jan-07	01-Jun-07	11-May-07	22-Jun-07	22-Jun-07	25-May-07	03-Jul-07	05-Jul-07	6	06-Jul-07	06-Jul-07	Works commenced on site 09th July 2007 after partial approval for 11am finish Sewer Sewer Mainline A Survey (5 programmed) 20th & 29th October 2007 awaiting to be finished. Designs to be completed	
1A	plates 16-21	14-Sep-07	02-Nov-07	09-Oct-07	21-Sep-07	10-Dec-07		05-Oct-07	07-Jan-08		70	17-Mar-08		BT C4 for outside LOD not due from BT until 05th Oct 2007. Alignment Changes in plates 16 & 17 will affect plate 15. ** (Diversion currently underway plate 15)** As-built drawings for plate 14 & 15 required to be submitted to SDS by 05th Oct 2007 at the latest. RoR issued to SDS on 12-Nov-07. Status of Approvals: SGN - Approval Outstanding; SP - Approved 26-Nov-07; SW-C - Approval Outstanding SW-F - BT - Approval Outstanding; C&W - Approved 27-Nov-07; Thus - Approved 09-Nov-07; VM - Approved 27-Nov-07; Geo-Networks - Design Available	
1B	plates 22-25	21-Aug-07	07-Sep-07	10-Sep-07	07-Sep-07	01-Oct-07	11-Oct-07	21-Sep-07	13-Oct-07	12-Oct-07	183	21-Jan-08			
1B	plates 27-31	06-Jul-07	09-Jun-07	09-Jun-07	13-Jul-07	21-Sep-07	21-Aug-07	27-Jul-07	31-Aug-07	31-Aug-07	4	05-Sep-07	05-Sep-07		
1C	plates 32-38	12-Oct-07	31-Oct-07	06-Nov-07	19-Oct-07	27-Nov-07		02-Nov-07	11-Dec-07		125	14-Apr-08		SDS issued 2 no. cross-section details for SP tunnel crossings on 20-Nov-07. tie ROR issued to SDS on 20-Nov-07. Status of Approvals: SGN - Approved 26-Nov-07; SP - SP have already approved plates 32-38. Will re-submit full approval letter for 32-38. SW-C - Approval Outstanding BT - Approval Outstanding C&W - Approval Outstanding Thus - Approval Outstanding VM - Approval Outstanding Vag2007 -	
1C	plates 39-41	12-Oct-07	12-Nov-07	15-Nov-07	19-Oct-07	14-Dec-07		02-Nov-07	23-Dec-07		28	07-Jan-08		tie ROR issued to SDS on 30-Nov-07 (excluding Thus & VM). Status of Approvals: SGN - Approved 22-Nov-07; SP - Approval Outstanding SW-C - Approval Outstanding BT - Approval Outstanding C&W - Approval Outstanding Thus - Approval Outstanding VM - Approval Outstanding Verizon - Awaiting Verizon design	
1C	plates 42-44	14-Sep-07	12-Sep-07	12-Sep-07	21-Sep-07	08-Oct-07	17-Oct-07	05-Oct-07	18-Oct-07	17-Oct-07	92	07-Jan-08			
1C	plate 44	14-Sep-07	08-Oct-07	11-Sep-07	21-Sep-07	26-Oct-07	13-Oct-07	05-Oct-07	09-Nov-07	17-Oct-07	226	09-Jan-08			
1C	plates 45-48	31-Aug-07	02-Sep-07	02-Sep-07	07-Sep-07	28-Sep-07	09-Oct-07	21-Sep-07	05-Oct-07	05-Oct-07	28	12-Nov-07	12-Nov-07		
1D	plates 49-51	26-Sep-07	18-Oct-07	22-Oct-07	05-Oct-07	23-Nov-07	24-Nov-07	19-Oct-07	07-Dec-07	09-Nov-07	95	19-Jan-08			
1D	plates 52-56	28-Sep-07	08-Nov-07	09-Nov-07	05-Oct-07	14-Dec-07		19-Oct-07	17-Jan-08		39	04-Feb-08		Status of Approvals: SGN - Approval Outstanding; SP - Approval Outstanding SW-C - Approval Outstanding BT - Approved 23-Nov-07; C&W - Approval Outstanding Thus - Approval Outstanding VM - Approval Outstanding.	

MUDFA Design Tracker
 SDS Design Status @ 04th December 2007

Section	Drawing Nos	Issue to SUC's for Approval			SUC Approval			Issue Approved IFC Package			IFC to Const'n Start	MUDFA Revision 06 - Final Issue Construction Start		Remarks
		PLANNED	SDS F'CAST	ACTUAL	PLANNED	F'CAST	ACTUAL	PLANNED	F'CAST	ACTUAL		PLANNED	ACTUAL	
2A	plates 1-3	14-Sep-07	14-Dec-07		21-Sep-07	11-Jan-08		05-Oct-07	25-Jan-08		122	26-May-08		BT Design was issue to tie on 26th November 2007. Design will be issued for approval on 14th December 2007.
3A	plates 1-3	01-Jan-07	15-Jun-07	17-Jul-07	04-Aug-07	10-Aug-07	10-Aug-07	18-Aug-07	10-Aug-07	10-Aug-07	10	05-Aug-07	05-Aug-07	SDS INDICATE NO DIVERSIONS FOR MUDFA
3A	plates 3-5	10-Aug-07	14-Sep-07	26-Sep-07	24-Aug-07	26-Oct-07	16-Oct-07	11-Sep-07	09-Nov-07	09-Nov-07	148	14-Jul-08		IFC package issued 09-Nov-07 (Only 2 diversions for Scottish Power - Non-MUDFA).
5B	plates W-13	25-Jun-07	25-Jun-07	22-Jul-07	15-Aug-07	05-Oct-07	19-Oct-07	14-Sep-07	10-Oct-07	18-Oct-07	188	04-Feb-08		
5B	plates 14-20	03-Aug-07	09-Nov-07	02-Nov-07	17-Aug-07	30-Nov-07		14-Sep-07	07-Dec-07		136	21-Apr-08		<p>Status of Approvals:</p> <p>RoR cannot be completed until all drawings in this section are issued. No Composite issued yet.</p> <p>SDS are targeting 07-Dec-07 for issue of IFC drawings.</p> <p>SGN - Approved 26-Nov-07. SP - Approved 05-Nov-07 (excluding Transmission cables which were issued to SP on 28-Nov-07 for approval) SW-C - Issued for Approval on 09-Nov-07. Approval Outstanding BT - Approval Outstanding C&W - Not issued Thus - Approval Outstanding VM - Approval Outstanding</p> <p>Design of works outside LOD at Gyle is causing SDS problems. Deed of Servitude required for plates 23-24 design to continue. Thereafter 2 weeks design to issue to SUC's for Approval.</p>
5C	plates 21-26	13-Jul-07	14-Dec-07		27-Jul-07	11-Jan-08		10-Aug-07	25-Jan-08		31	25-Feb-08		<p>Status of Approvals:</p> <p>SGN - SP - SW-C - BT - C&W - Thus - VM -</p>
6A	plates 1-2	28-Sep-07	03-Dec-07		19-Oct-07	17-Jan-08		02-Nov-07	07-Feb-08			03-Sep-07	03-Sep-07	<p>CRITICAL ISSUE: SDS have re-forecast SW design for issue to SUC for approval to 19-Nov-07 from 26-Oct-07 in previous update. IFC will not be available until 17-Dec-07, previous update showed IFC available 22-Nov-07. This will have a serious impact on Depot programme.</p> <p>Line & Level of 800mm water main was issued 26-Oct-07.</p> <p>Utility diversion works commenced on 03-Sep-07 for temporary slew of C&W diversion & SW 250 main removal & capping, all of which is now completed.</p>
7A	plates 1-7 (demarkation splits plate 7)	24-Aug-07	14-Dec-07		07-Sep-07	28-Dec-07		21-Sep-07	11-Jan-08			27-Nov-07	27-Nov-07	<p>RATS works commenced on-site on 27-Nov-07.</p> <p>Status of Approvals:</p> <p>SGN - Utility design to be defined following new alignment & levels on 23-Nov-07. SP - Utility design to be defined following new alignment & levels on 23-Nov-07. SW-C - Utility design to be defined following new alignment & levels on 23-Nov-07. BT - SDS received BT C4 design on 23-Oct-07. C&W - CW have confirmed they have no assets in the area. Thus - Thus have no apparatus in this section. VM - VM have no assets in the area although they have requested an additional crossing. Additional crossing not in SDS section; SDS to ask for approval on 1-7 only as per drawings previously issued.</p>
7B	plates 7-9 AMIS / E	01-Feb-07	01-Feb-07		15-Feb-08	15-Feb-07		29-Feb-08	29-Feb-08			31-Mar-08		AMIS Outline Programme of Design is Prelim Design Nov-Dec 2007 & 2 stage Detailed Design period of Jan-Apr 2008. Construction programmed Non critical diversions April to May 2008 & Critical Systems May to August 2008.
3A	plates 1-23	26-Oct-07	30-Nov-07	19-Apr-07	02-Nov-07	29-Mar-08		16-Nov-07	25-Apr-08		115	16-Aug-08		
3B	plates 24-33	09-Nov-07	30-Nov-07	20-Feb-08	16-Nov-07	29-Mar-08		30-Nov-07	25-Apr-08		206	17-Nov-08		
3C	plates 34-42	09-Nov-07	30-Nov-07	23-Feb-08	16-Nov-07	28-Mar-08		30-Nov-07	25-Apr-08		220	01-Dec-08		

tie Forecast dates are based on 2 weeks for SUC approval from SDS Issue to SUC's.

tie Forecast dates are based on 2 weeks for Issue Approved IFC Package from SUC approval.

YELLOW indicates October IFC targets, GREEN complete or ahead of programme, AMBER missed target, RED Critical Issue

IFC to Construction Start days: - Less than 28 days critical RED, 28-42 days AMBER

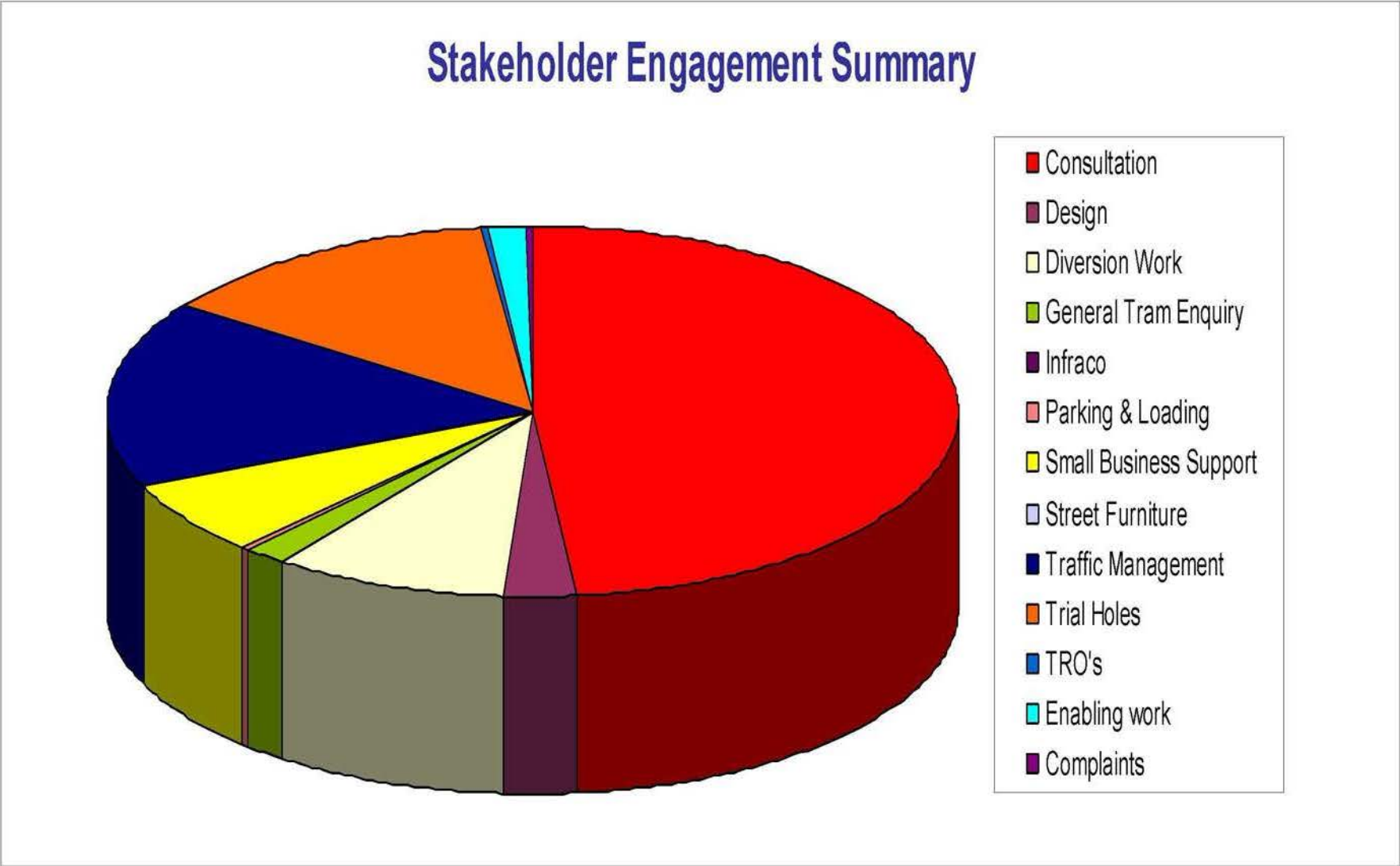


MUDFA Sub-Committee Meeting

APPENDIX 3

Stakeholder Engagement Analysis

Stakeholder Engagement Analysis – Cumulative to 8/12/07



Analysis of Complaints- period ended 8/12/07

No.	Date	Complaint Description	Resolution
1	11/11/2007	Poor water pressure following supply restoration	Plumber in attendance, problem resolved
2	13/11/2007	No water supply following shut off	Plumber attended, supply already restored. Enquiry initially actioned by Scottish Water
3	15/11/2007	Noisy road plate cover outside hotel, complaint by residents re. noise created by late night traffic	Plate pinned
4	15/11/2007	Repeat of 3 above. Noisy road plate cover outside hotel, still disturbing residents	Plate repositioned. Problem resolved.
5	20/11/2007	Complaint re. venue of consultation event	Explanation given re. venue availability and timing.
6	22/11/2007	Customer asking re. compensation following fall (on 31 st October)	Advice given re. involving Tracey Kinloch. Claim being progressed.
7	23/11/2007	Complaint re wider consultation event arrangements	Explanation given re. venue availability and timing.
8	23/11/2007	Complaint re. lack of notice of water interruption	Details checked. It became apparent this was non tram works related
9	30/11/2007	Complaint re. Pilrig street closure and traffic management	Explanation given plus tram helper details if there are any special needs.
10	06/12/2007	Customer complained of poor water pressure	Plumber in attendance, problem resolved.



MUDFA Sub-Committee Meeting

APPENDIX 4

Risk Register

MUDFA RISK REGISTER - NOV 07

Risk Description											
ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
139	Utilities diversion outline specification only from plans	Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated	G Barclay	High - 25.00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	On Programme	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	31-Jan-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.	On Programme	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	31-Jan-08	A Hill
342	Tram alignment at A8 crossing at Gogar coincides BT data nests/cable (main coms link between Glasgow and Edinburgh)	A8 crossing tunnel requires special design or BT data nest/cables require to be moved	Capex cost to cover BT data nest/cable move; additional design costs; delay while works to undertake move are carried out; additional tunnelling costs.	I Clark	High - 24.00		Confirmation of BT requirements to tie	On Programme	Complete	15-Oct-07	I Clark

MUDFA RISK REGISTER - NOV 07

Risk Description											
ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
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 radical solution	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		Scottish Power to establish exact location of tunnel	Complete	Complete	2-Apr-07	I Clark
							SDS to try and ensure tram alignment footprint is outwith Scottish Power alignment - confirmation via thumbnails due 16th November	On Programme	On Programme	28-Dec-07	T Glazebrook
							tie to undertake engineering feasibility study	Complete	Complete	2-Apr-07	J Casserly
926	Major single safety incident during construction	Safety incident during MUDFA Diversions - Gas/Power/Water	Injury to employee. Delay (potentially critical) due to HSE investigation and rework. PR risk to tie and stakeholders.	G Barclay	High - 22.00						
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	Complete	Complete	31-Dec-07	I Clark
							SDS to obtain consent for design in accordance with programme requirements - SGN and Scottisk Power	On Programme	On Programme	30-Dec-07	M Blake

MUDFA RISK REGISTER - NOV 07

Risk Description											
ARM Risk ID	Cause	Event	Effect	Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
21	Design constraints e.g. presence of other utilities, proximity of LoD boundary, diversion technical requirements etc.	Design requires that Utilities are diverted outside of LoD	Additional design; additional land purchase required and consequent contact with landowners; design may result in increased work quantities due to extent of diversions; potential increased duration of works.	T Glazebrook	High - 19.00		AMIS to seek to divert under Statutory Utility powers where outwith LoD	Complete	Complete	28-Dec-07	G Barclay
							GIS used to identify diversions outwith LoDs and respective landowners	On Programme	Complete	31-Aug-07	E Cropley
							SDS to aim to design diversions within LoD	On Programme	On Programme	28-Dec-07	T Glazebrook
							SDS to undertake design checks to ensure diversion in LoD	On Programme	On Programme	28-Dec-07	T Glazebrook



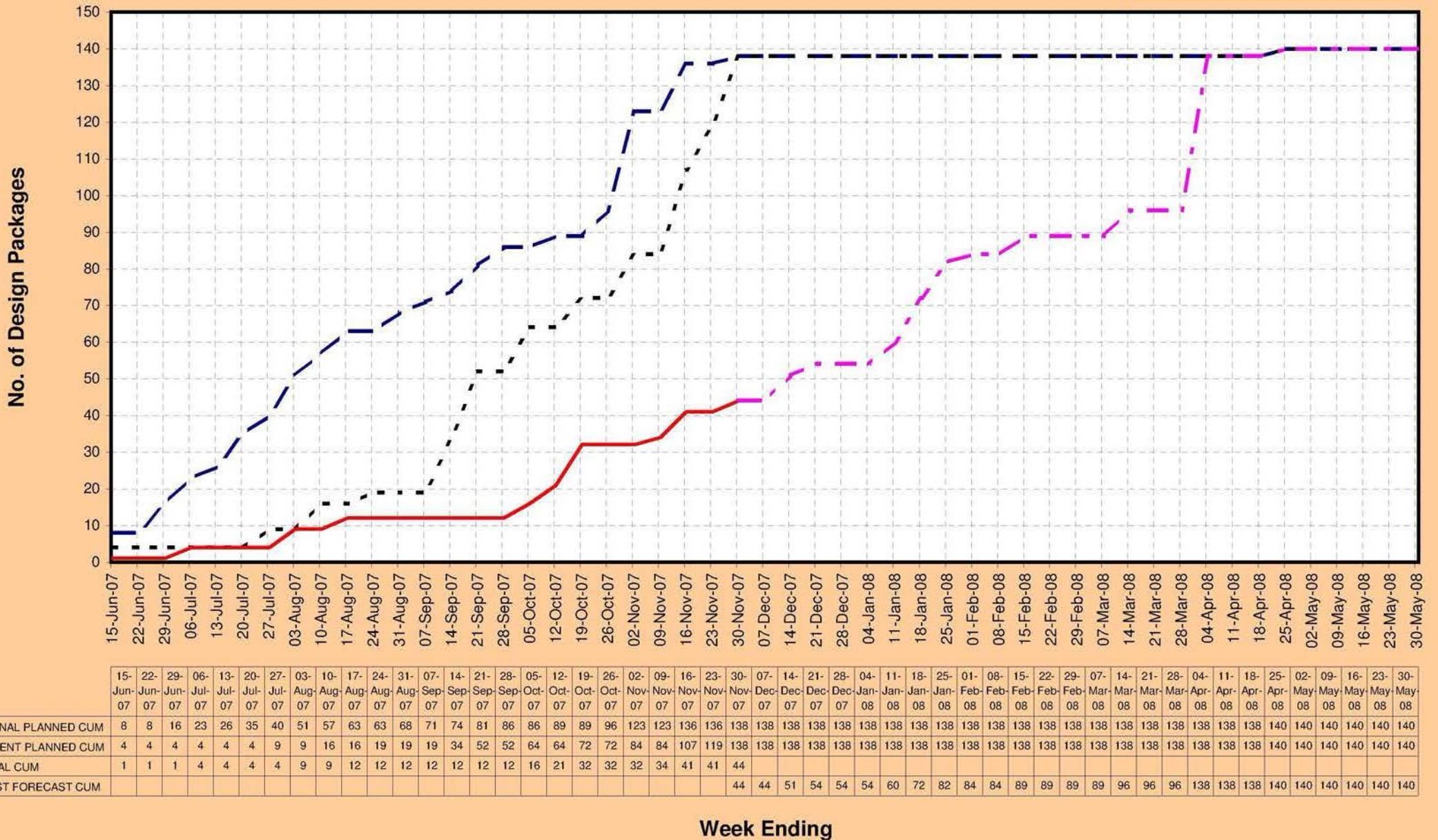
MUDFA Sub-Committee Meeting

APPENDIX 5

Forecast Design Issuance



MUDFA Issue of IFC Design Packages for Construction (Current Planned Dates based on SDS Planned @ 17th August 2007)





MUDFA Sub-Committee Meeting

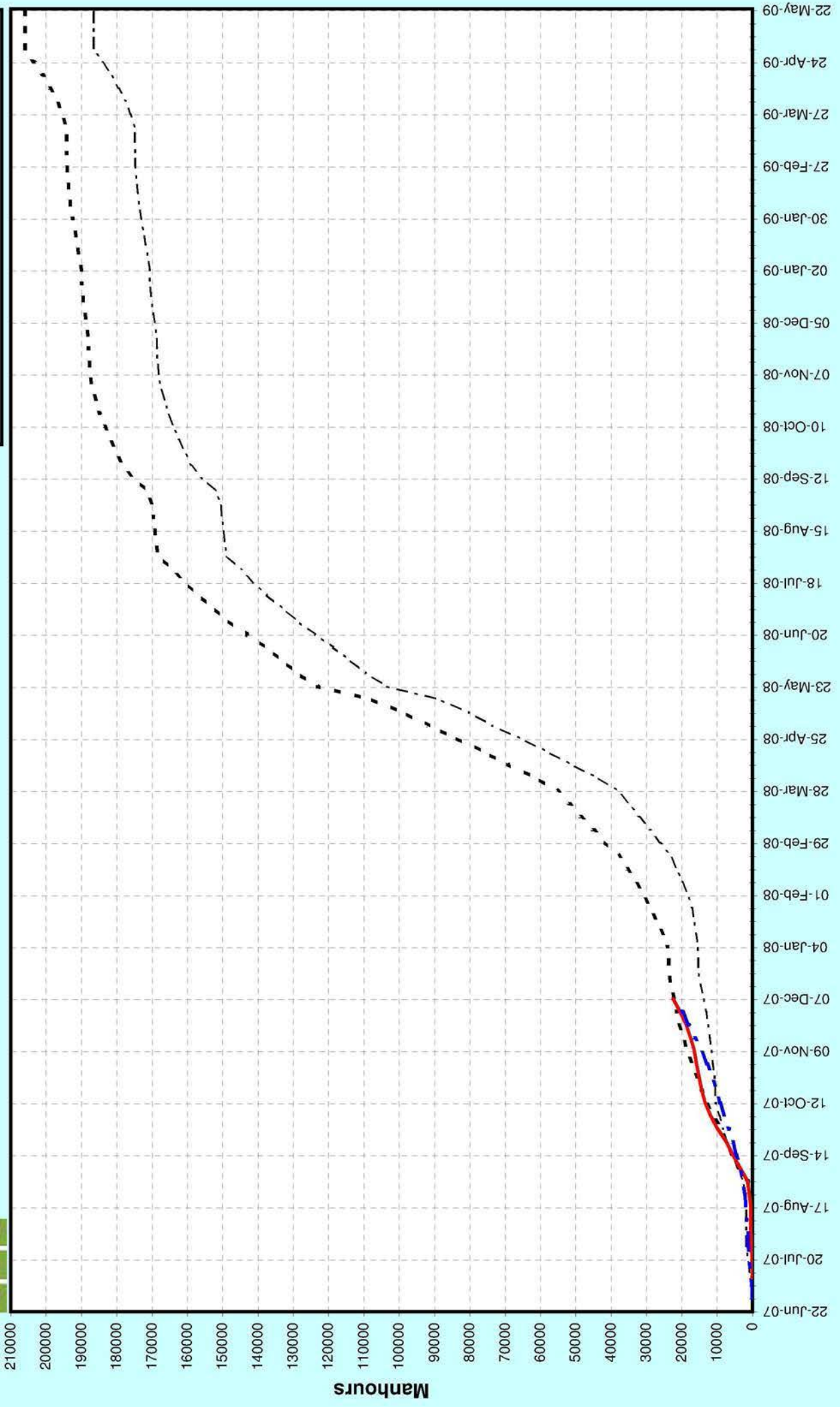
APPENDIX 6

Progress Curves



Edinburgh Tram Project
MUDFA - Overall Manhour Progress
(Rev 06 Baseline based on Approved WO Measure + AFA)

- - - Cum Original Budget Hours AFA
- - - Cum Current Budget Hours AFA + Approved WO: 21429
- Cum Earned Value Hours: 22530
- - - WO Cum Actual Hours: 21386



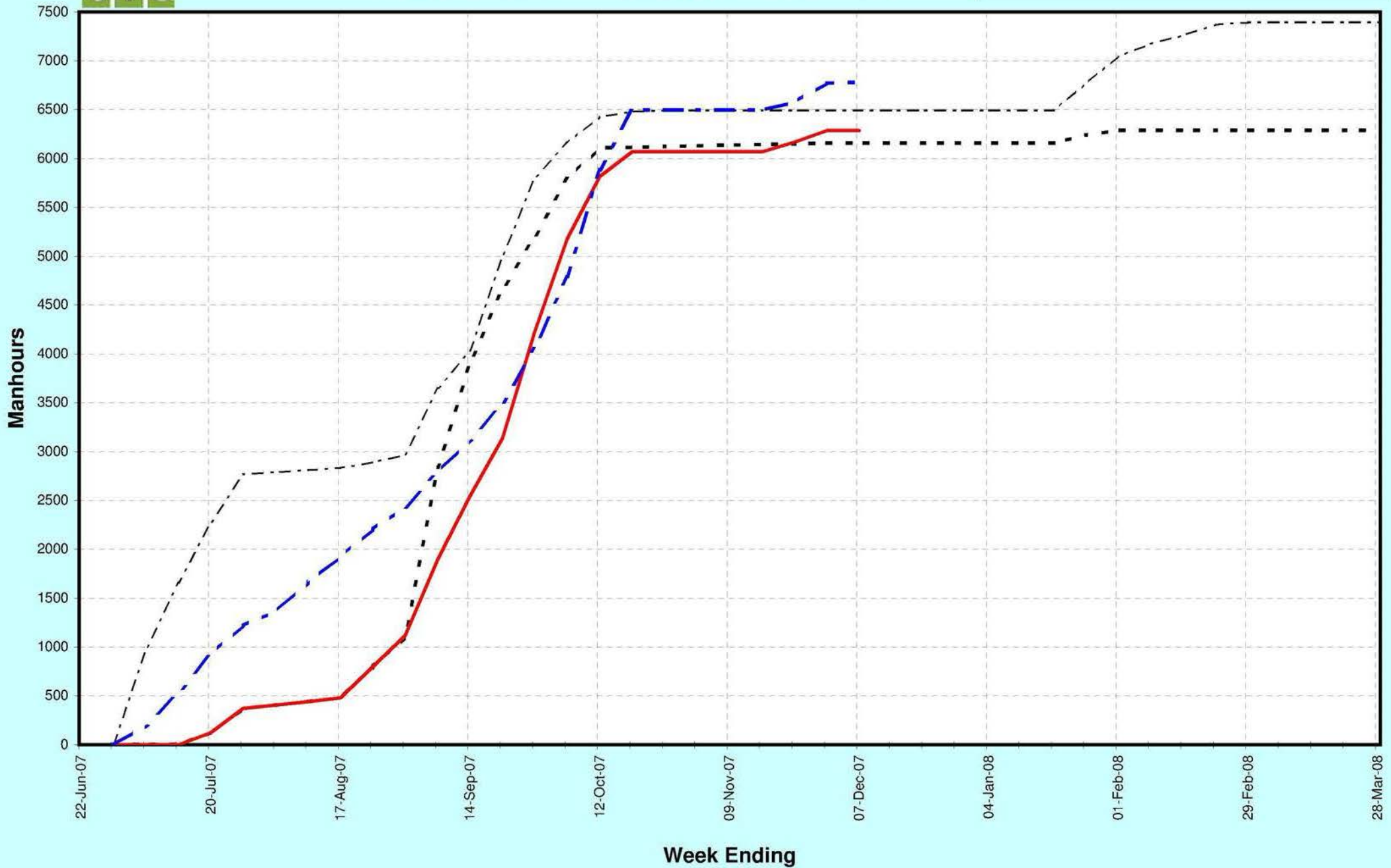


Edinburgh Tram Project

MUDFA - WO 1AWSI003/001 - Tower Street to Rennie's Isle Bridge

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 6169
- Cum Earned Value Hours: 6287
- - - Cum Actual Hours: 6777.5



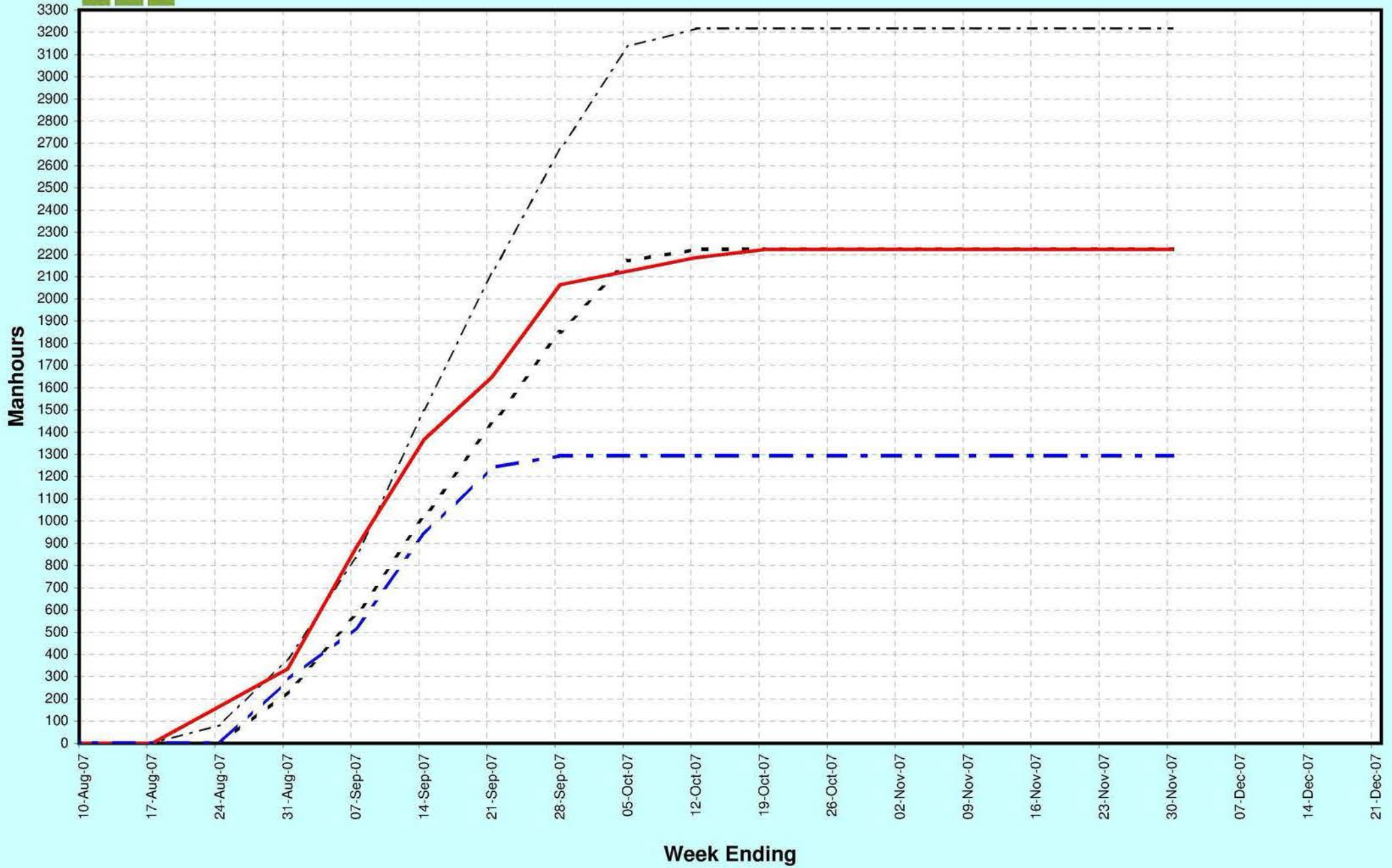


Edinburgh Tram Project

MUDFA - WO 5AWSI008/002 - Russell Road to Roseburn Street

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- . - Cum Current Budget Hours: 2223
- Cum Earned Value Hours: 2223
- . - Cum Actual Hours: 1294



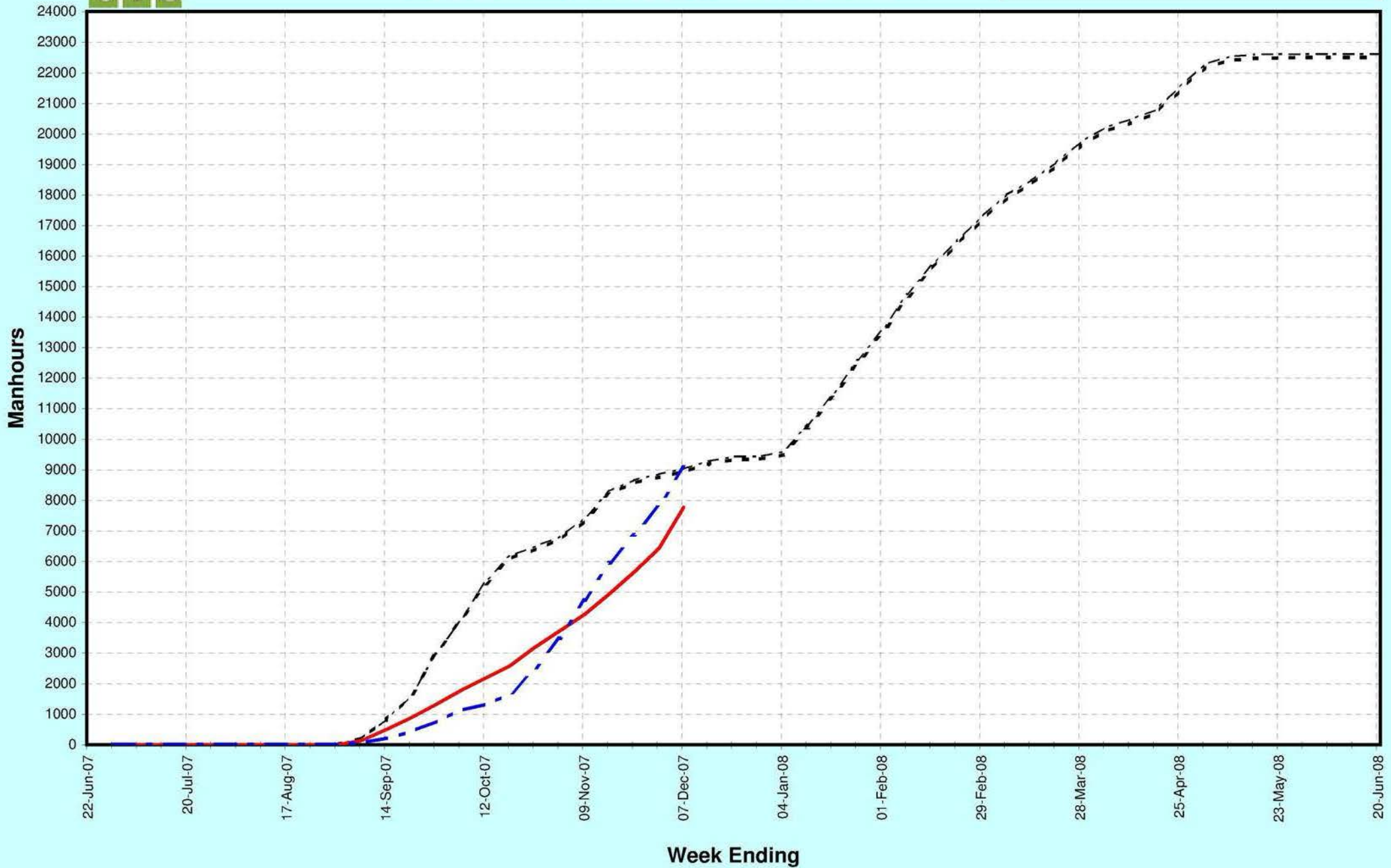


Edinburgh Tram Project

MUDFA - WO 1BWSI001/001 - McDonald Road to Balfour Street

(Rev 06 Baseline based on Approved WO Measure)

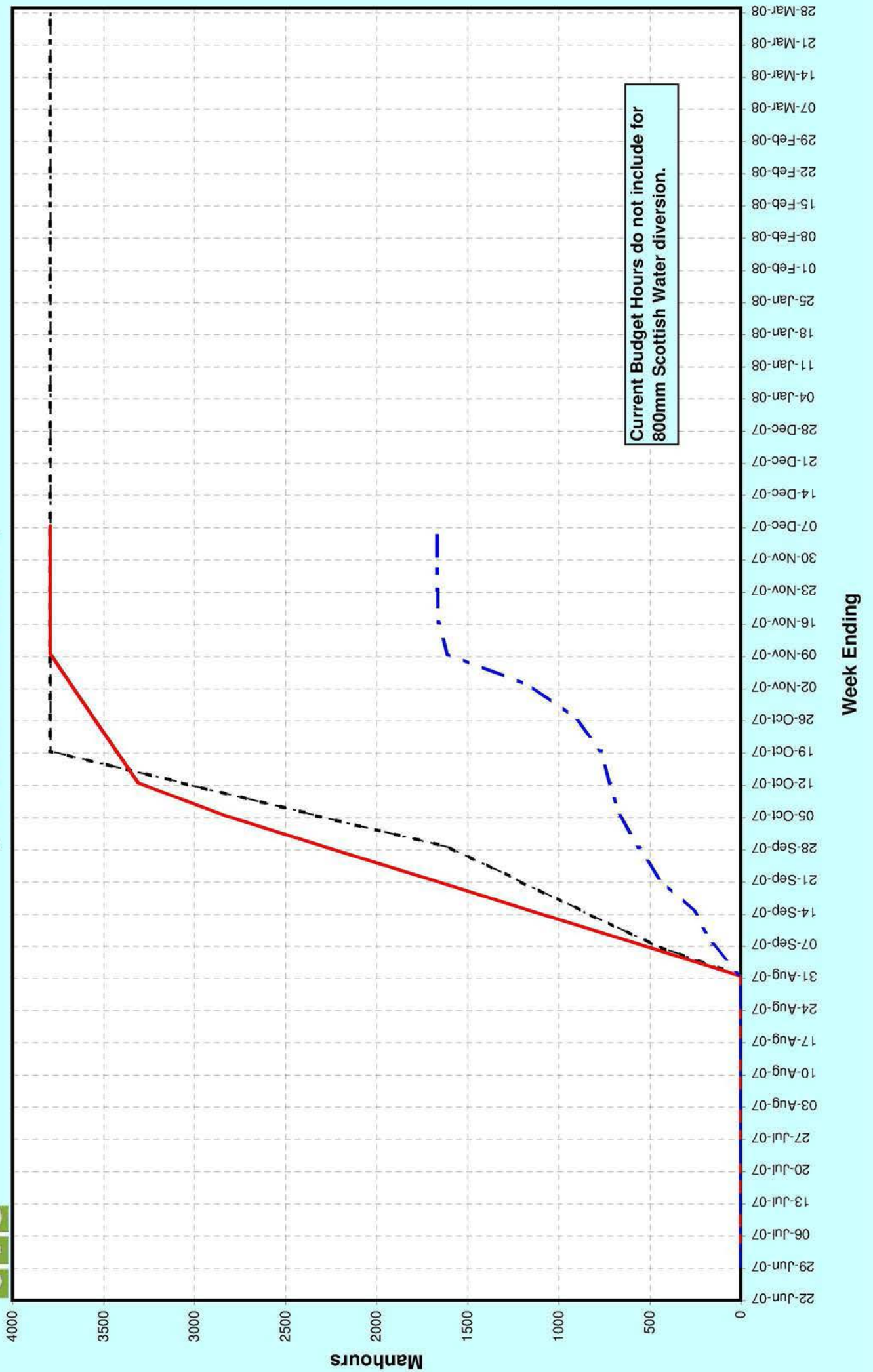
- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 8766
- Cum Earned Value Hours: 7774
- - - Cum Actual Hours: 9082





Edinburgh Tram Project Gogar Depot - Utility Diversions (Rev 06 Baseline based on AFA)

Cum Original Budget Hours
Cum Current Budget Hours: 3792
Cum Earned Value Hours: 3792
Cum Actual Hours: 1666.5



Current Budget Hours do not include for 800mm Scottish Water diversion.

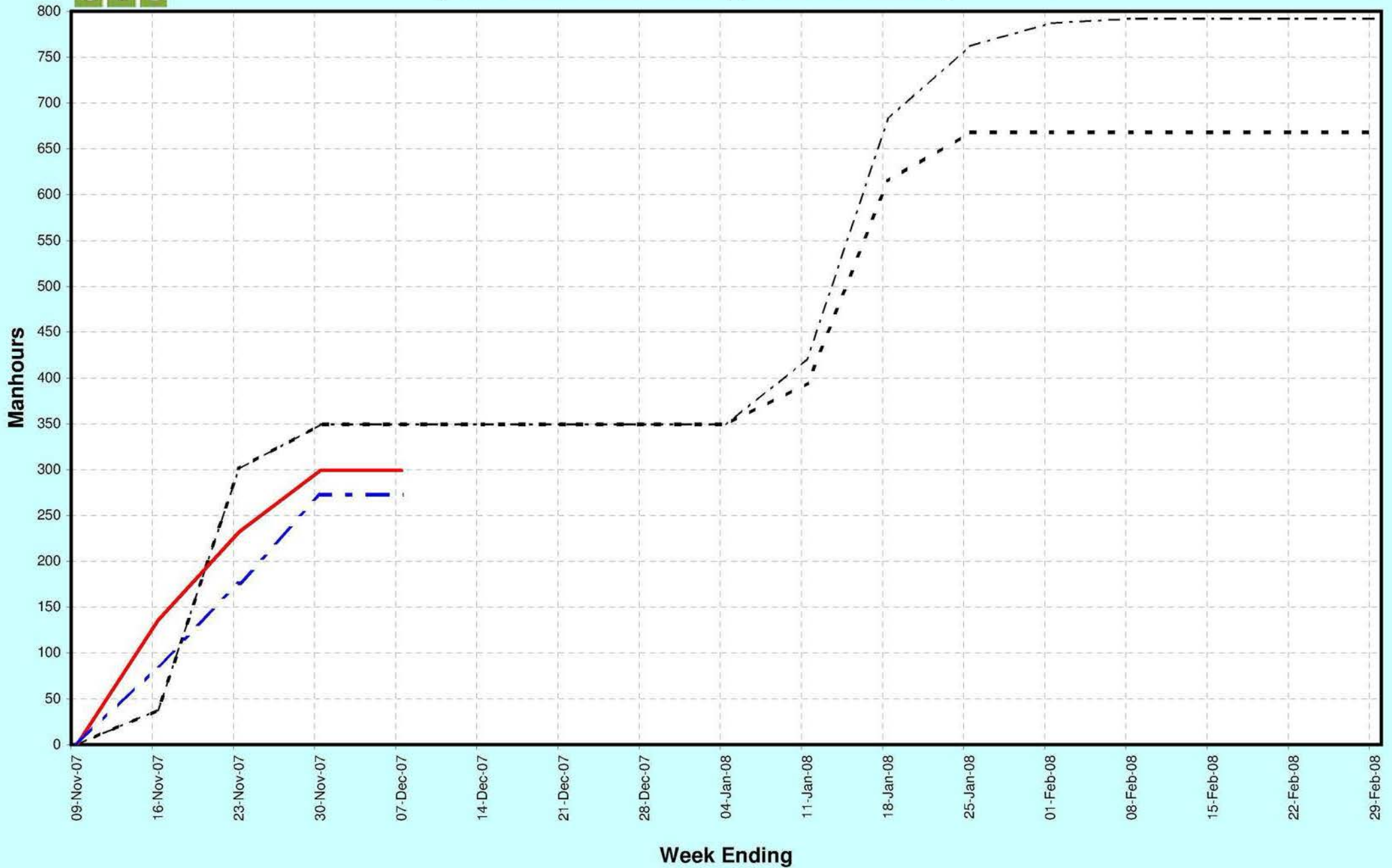


Edinburgh Tram Project

MUDFA - WO 1CWSI001/002 - The Mound to Castle Street East

(Rev 06 Baseline based on Approved WO Measure)

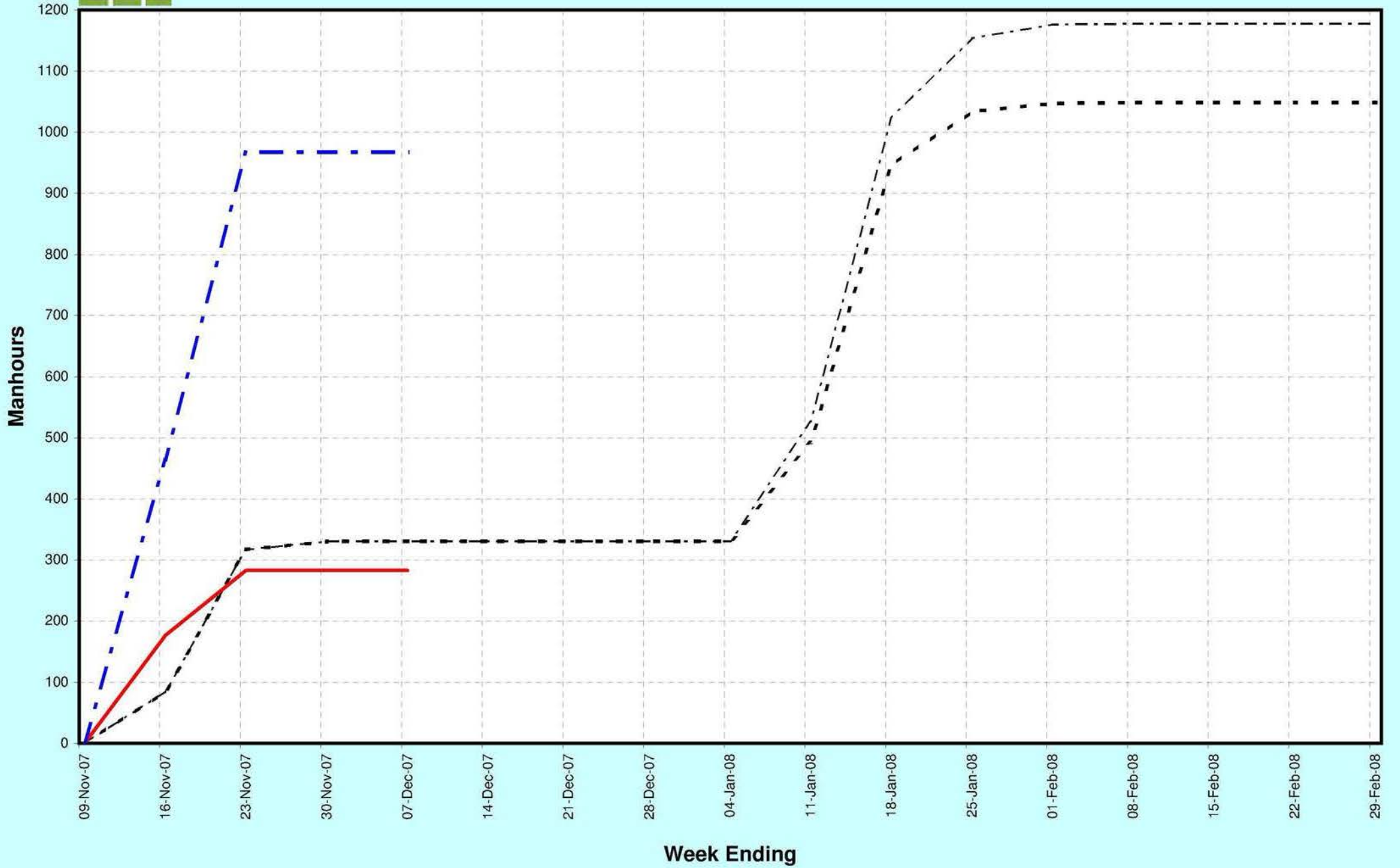
- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 349
- Cum Earned Value Hours: 299
- - - Cum Actual Hours: 272.5





Edinburgh Tram Project
MUDFA - WO 1DWSI005/002 - South Charlotte Street to Castle Street West
(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 330
- Cum Earned Value Hours: 283
- - - Cum Actual Hours: 967

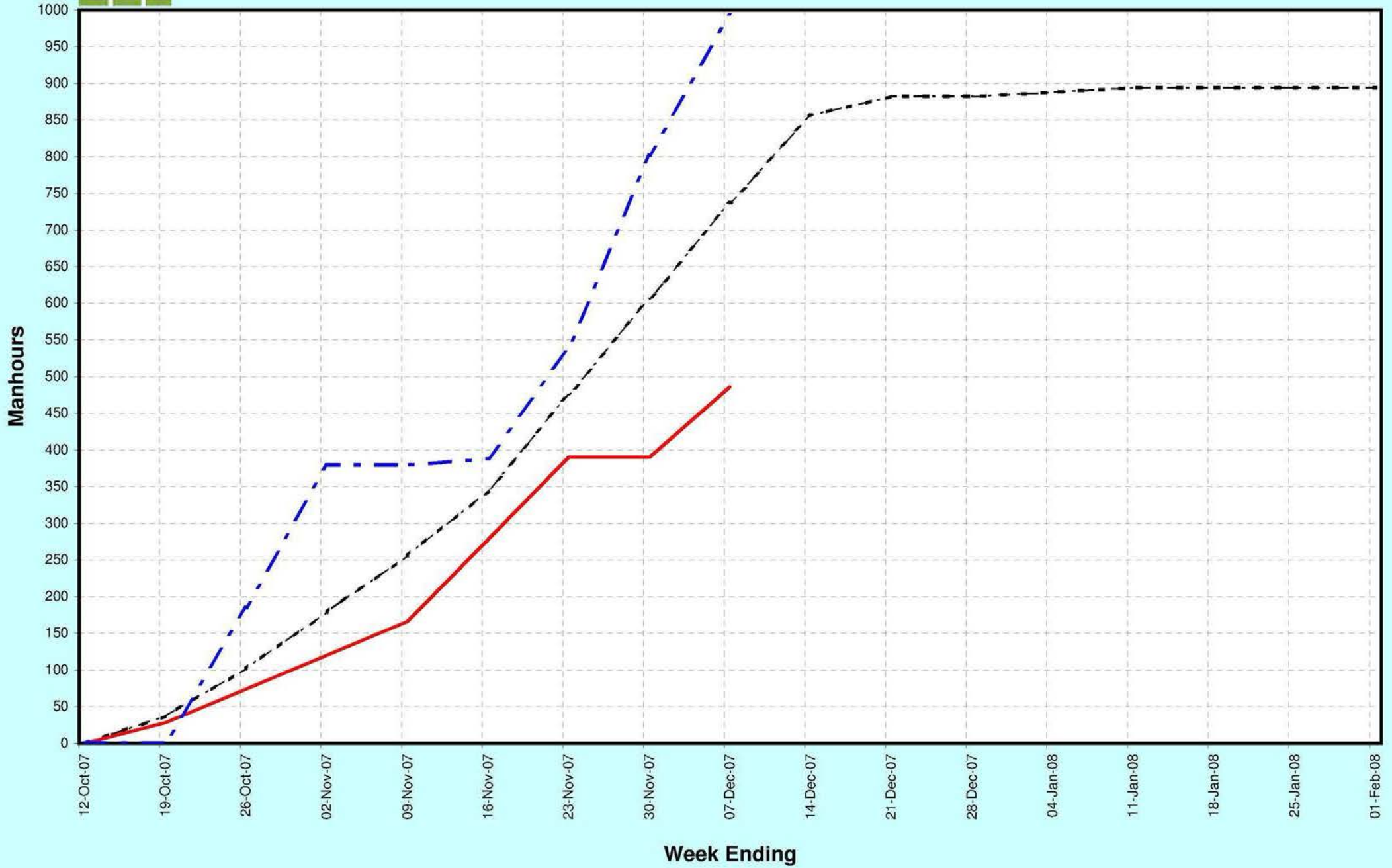


CEC01452779_0042



Edinburgh Tram Project MUDFA - RAT 1B-1 - Jane Street BTO Chamber Works (Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- . - Cum Current Budget Hours: 606
- Cum Earned Value Hours: 486
- - - Cum Actual Hours: 993



CEC01452779_0043

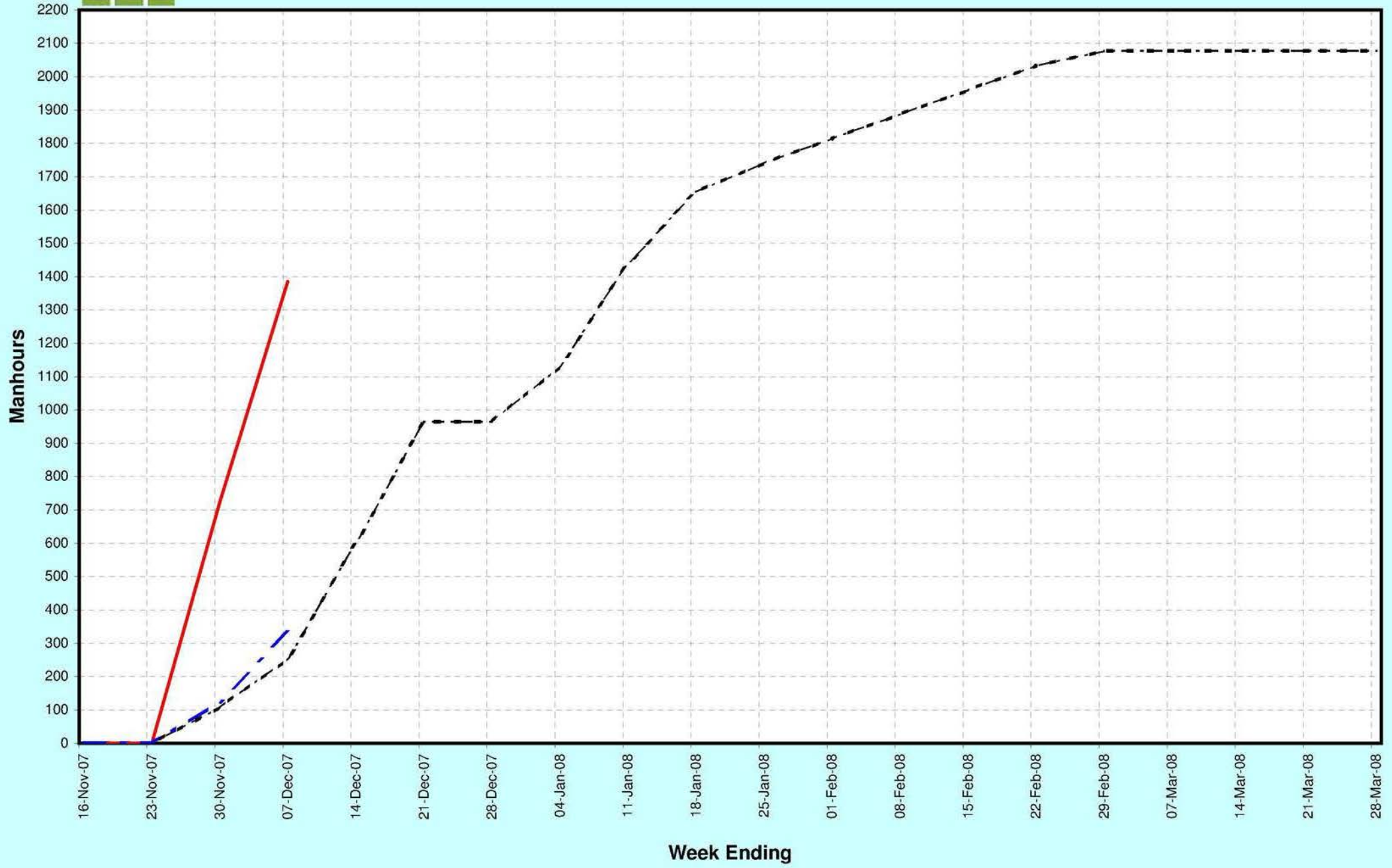


Edinburgh Tram Project

MUDFA - RAT 7A - Gogar Mains Opening to Ingliston Park & Ride

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 108
- Cum Earned Value Hours: 1386
- - - Cum Actual Hours: 333.5

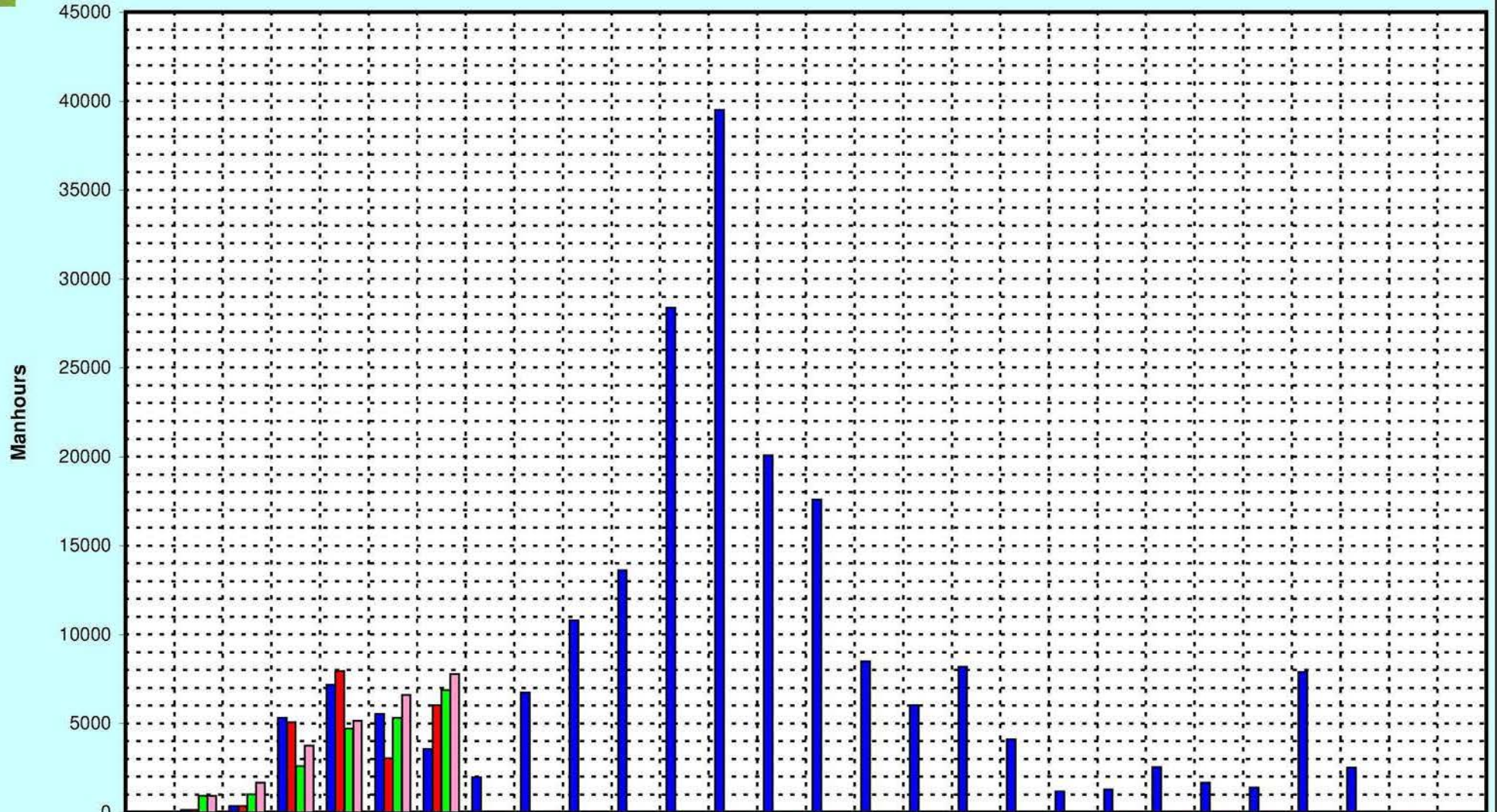




Edinburgh Tram Project

MUDFA - Overall Manhour Period Progress Histogram (Baseline based on Approved WO Measure + AFA)

- Current Budget Hours AFA + Approved WO
- Earned Value Hours
- WO Actual Hours
- WO + Trial Holes Actual Hours

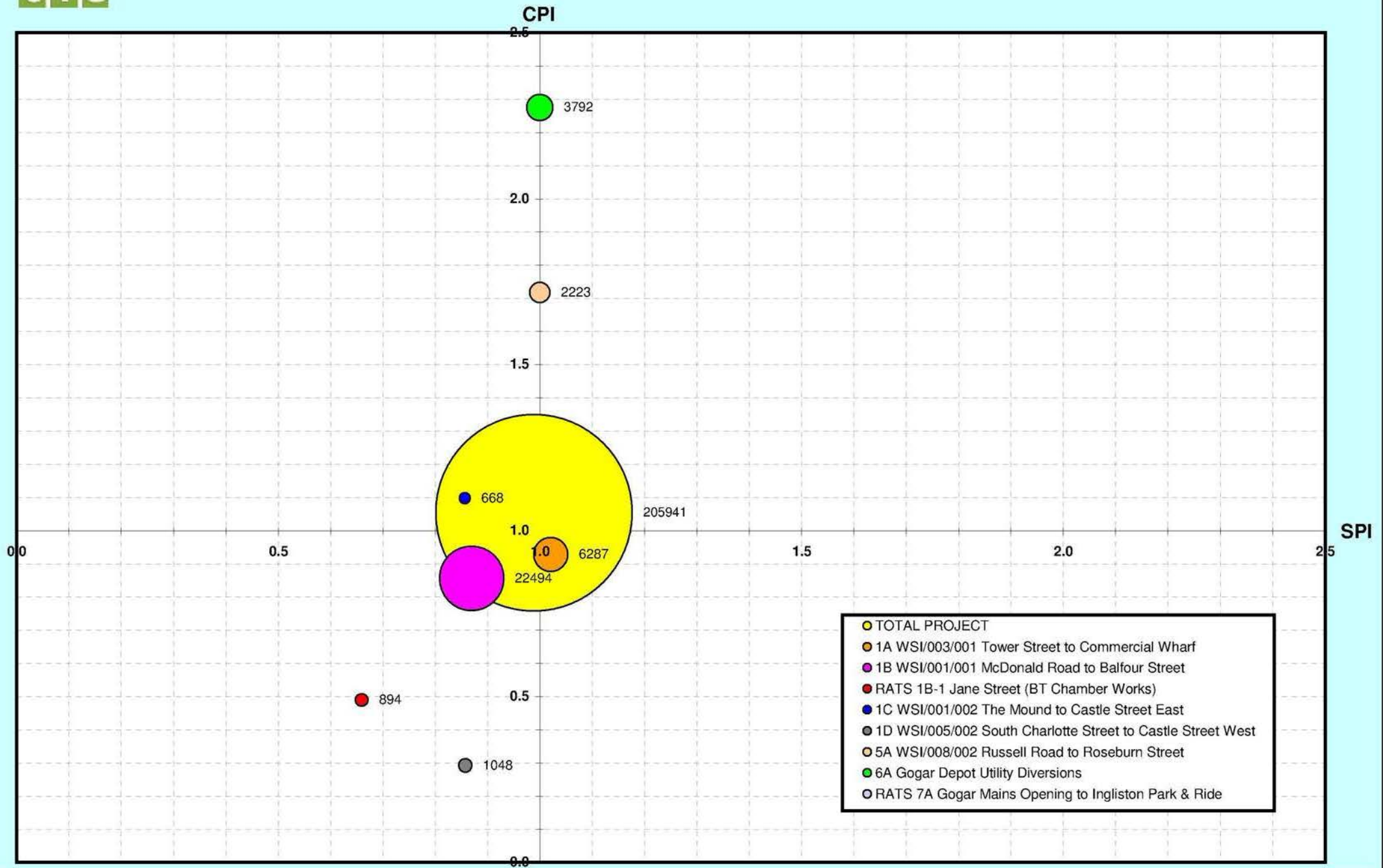


	2007-08 Period 03	2007-08 Period 04	2007-08 Period 05	2007-08 Period 06	2007-08 Period 07	2007-08 Period 08	2007-08 Period 09	2007-08 Period 10	2007-08 Period 11	2007-08 Period 12	2007-08 Period 13	2008-09 Period 01	2008-09 Period 02	2008-09 Period 03	2008-09 Period 04	2008-09 Period 05	2008-09 Period 06	2008-09 Period 07	2008-09 Period 08	2008-09 Period 09	2008-09 Period 10	2008-09 Period 11	2008-09 Period 12	2008-09 Period 13	2009-10 Period 01	2009-10 Period 02	2009-10 Period 03	2009-10 Period 04
■ Current Budget Hours AFA + Approved WO	0	126	356	5303	7177	5527	3562	1963	6741	10792	13609	28391	39500	20075	17586	8492	6007	8171	4106	1180	1283	2537	1656	1386	7892	2523	0	0
■ Earned Value Hours	0	123	355	5061	7945	3027	6019																					
■ WO Actual Hours	0	927.5	996.5	2599	4697.5	5296.5	6869																					
■ WO + Trial Holes Actual Hours	0	927.5	1663.5	3737	5155.5	6593.5	7768.5																					

4 Week Period



Edinburgh Tram Project MUDFA Work Orders Schedule & Cost Performance Index Status - we 07th December 2007





**Edinburgh Tram Project
MUDFA Programme
Progress Summary**



Work Order	Work Site Status	Current Budget Manhours	Weekly Performance (Week Ending 07th December 2007)							Cumulative Performance to Week Ending 07th December 2007						
			Planned Manhours	Earned Manhours	Actual Manhours	Schedule Performance Index	Cost Performance Index	Planned Percent Complete	Actual Percent Complete	Planned Manhours	Earned Manhours	Actual Manhours	Schedule Performance Index	Cost Performance Index	Planned Percent Complete	Percent Complete
1A WSI/003/001 Tower Street to Commercial Wharf	OPEN	6287	0	0	6	-	0.00	-	-	6158	6287	6777.5	1.02	0.93	97.9%	100.0%
1B WSI/001/001 McDonald Road to Balfour Street	OPEN	22494	251	1345	1278	5.36	1.05	1.1%	6.0%	8941	7774	9082	0.87	0.86	39.7%	34.6%
RATS 1B-1 Jane Street (BT Chamber Works)	OPEN	894	131	96	191	0.73	0.50	14.7%	10.7%	737	486	993	0.66	0.49	82.4%	54.4%
5A WSI/008/002 Russell Road to Roseburn Street	CLOSED	2223	0	0	0	-	-	-	-	2223	2223	1294	1.00	1.72	100.0%	100.0%
6A Gogar Depot Utility Diversions	OPEN	3792	0	0	0	-	-	-	-	3792	3792	1666.5	1.00	2.28	100.0%	100.0%
1C WSI/001/002 The Mound to Castle Street East	OPEN	668	0	0	0	-	-	-	-	349	299	272.5	0.86	1.10	52.2%	44.8%
1D WSI/005/002 South Charlotte Street to Castle Street West	OPEN	1048	0	0	0	-	-	-	-	330	283	967	0.86	0.29	31.5%	27.0%
RATS 7A Gogar Mains Opening to Ingliston Park & Ride	OPEN	2077	146	660	208.5	4.52	3.17	7.0%	31.8%	254	1386	333.5	5.46	4.16	12.2%	66.7%
TOTAL PROJECT		205941	528	2101	1683.5	3.98	1.25	0.3%	1.0%	22784	22530	21386	0.99	1.05	11.1%	10.9%