

MUDFA Contract Review Report

1 February 2008

Executive Summary

High Level View

- Progress

		Period 11 05.01.08 to 01.02.08			Overall Performance to Date		
		PLANNED	ACTUAL	Variance	PLANNED	ACTUAL	Variance
TOTAL	Metres	380	1160	780	6585	6186	-399
	Chambers	0	10	10	23	38	15
BT/Comm	Metres	91	598	507	3002	2833	-169
SGN	Metres	97	13	-84	258	141	-117
Scot W	Metres	179	467	288	2510	2391	-119
Scot P	Metres	13	65	52	501	507	6
Forth Ports	Metres	0	17	17	314	314	0
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

- Costs

See Appendix 1 – Period Costs Report

- H&S

All Risk Assessments/Method Statements are reviewed in compliance with company procedure CP 7101.

Due to the departure of Phil Douglas from the MUDFA team Neil Hobson is managing the control of Access Permits. 14 permits remain in place during this period

There were seven minor incidents reported and seven near misses reported during this period.

AFR remains at 0.

No statutory authority's inspection or site visits carried out

6 x Safety inspections carried out:

- 2 x HSQE Adviser 100% and 95%
- 1 x Project Director 95%
- 1 x Assistant Project Manager 87.5%
- 1 x HSQE Manager 70%
- 1 x Susan Clark (Safety Tour) 6 comments made. AMIS response required

Others: 1 x Outstanding NCR; 1 x planned Audit – AMIS Environmental Management 20/02/08; 1 x safety notice delivered.

Lookahead: Jim Ritchie to assess construction industry damage average rather than utility industry damage for next reporting period.

See Appendix 2 - Utility Damage Data

Section 1A

Trial holes to inform construction recommenced 7th January 2008. The remaining 33 no. required, primarily at the lower, North end of the section, completed. 1 no. around the junction of Leith Walk with Great Junction and Constitution Street ongoing to provide an alternative location of a major telecom chamber, which will minimise TM requirements at this junction.

Works outwith the LOD, around Constitution Street have commenced -

- Scottish Power – phase 1 now complete. Phase 2 dependent on TM being in place (March)
- SGN – commenced 28th January. Completion due 29th February
- SW – CDM issue resolved. Design work ongoing.
- BTO – design works ongoing
- Comms notification for SP/SGN works provided by MUDFA
- All works being monitored by archaeologist.

Section 1B

Jane Street road closure commenced 15 October 2007 for twelve weeks to accommodate major exchange BT chamber. Despite severe congestion of services and additional works to overcome previously unidentified sewer, immediate to the ex chamber, the works were completed and the road opened to traffic on programme. – 14th January'08.

TM in place to accommodate all diversionary works from McDonald road down to Manderston Street.

Section 1C

The remainder of the utility road crossings (6 No) in Princes Street between the junctions of Frederick Street and Castle Street commenced on the 7th January. Their commencement coincided with the start of the enabling works for Phase 1 of the city centre diversionary works. The crossings are progressing well and will be complete

prior to the start of the main diversionary works, as planned. The works to the crossings has been coincident with the removal of the last sections of central reserve on Princes Street.

Diversions between the Mound and South St Andrew Street behind programme due to extent of existing services and requirements to alter/amend TM impacting on progress. May be a problem for the SGN MP main trial hole on Hanover Street.

BTO diversionary works commenced in St Andrew Street, south end, on the 8th January. These will be ongoing for some 16 weeks.

The enabling works at Frasers corner, Frederick and St Andrew square have been ongoing since the 8th January. These are being carried out by resources from Alfred McAlpine Construction services. These are targeted for completion (Phase 1 only) by the 25th February. Continuation of further enabling works (Phase 2) will continue thereon.

The necessary TM design work for Phase 1 has been completed with the specific requirements of all the alterations to the traffic signals and appropriate signage detailed out. Procurement of both traffic signal equipment and signage is well underway. Traffic signal alterations are programmed for completion by the 25th February – installed, commissioned and operational.

Communication notices/ letters will be issued out beginning next week (9,000 letters) confirming start date of Phase 1 construction works 1st March'08.

Section 1D

The remaining 31No planned trial holes along Shandwick place up to Haymarket junction have been progressing since 7th January. These are due to be complete prior to Shandwick place closure – presently on programme.

Communications teams have been contacting all the affected businesses and residences to obtain access/ loading/ special requirement needs along Shandwick place to develop a support strategy which will be incorporated within the overall construction philosophy for this closed off section.

Section 5A, 5B & 5C

5B IFC utility drawings issued 18th January. Preliminary review has confirmed there are works to be carried out by MUDFA. (remainder will be transferred to INFRACO). 5C IFA drawings issued 25th January. Current forecast for IFC 8th February – this is based on SDS quality being significantly better than previously experienced in section 5B.

The majority of the works in this section will be adjacent to the Gyle Roundabout and Gyle Broadway. Drawings issued to Edinburgh Park (IFA) 30th January.

Section 6 (Utilities)

Diversion of the 33kv SP cable completed and energised.

250mm water main diversion completed under RATs. Currently experiencing difficulties in obtaining satisfactory pressure test. Investigations underway to locate failing joint/s.

800mm water main design drawings reviewed for discussion with SW in w/c 28th January. The delay in these drawings (issue was anticipated in latter part of December'07) has exacerbated relations with SW and put these works on the critical path for the Gogar depot construction works. These works, which were anticipated to commence in January, will now start mid February/March earliest. Discussions ongoing with both SW and AMIS to obtain earliest commencement to this operation. Latest design indicates mechanical restraining joints in lieu of thrust blocks – no discussion in this respect with the construction team.

Section 6 (Gogar)

No works carried out in depot over this period. Removal of final earthwork quantities delayed by SGN IP main and BAA fence (which is sterilising proposed route for 800mm watermain). Ongoing discussions with BAA have confirmed definitive date for fence repositioning still under debate with BAA and CAA.

Section 7A & 7B

7A (RATS) are complete on site. A number of utilities identified previously under RATs will be carried out under the INFRACO contract. Details of these services have been forwarded onto INFRACO.

AMIS in discussions with Grontmij regarding programme requirements. Workshop to be arranged with key team members to review scope and timeframes.

See Appendix 3 – Performance Measures

1.0 Design Status

Section	Drawing for Approval	Drawing for Construction	Completion
1a 6-10	Expected 15 Feb	Target 29 Feb	14 March
1a 16-21	Expected 8 Feb	Target 22 Feb	7 March
1c 32-38	Approval delayed	Target 8 Feb	23 Feb
1c 44	SGN to complete design	Target 29 Feb	4 March
2a 1-3	Approval delayed	Target 29 Feb	14 March
5c 21-26	Produced 25 Jan	Target 22 Feb	7 March
6a 1-2	Approval delayed	Target 21 Feb	14 March

See Appendix 4 – Design Tracker

1.1 Traffic Management

- Traffic modeling for Phase 1 city centre works completed. Scope and definition of requirements provided and procurement of both signage and requisite equipment underway.
- Refer to appendix for future TM modeling and design requirements within the city centre. (incl. Leith Walk)
- Additional resources to manage TM needs have been procured. These will be in place for w/c 11/2/08.

See Appendix 5 – Traffic Modelling

1.2 Communications & Stakeholder

- Communications teams (AMIS & tie) are being amalgamated to improve synergy within the team – all will be under the direct control of tie. This will be completed by beginning of February. Comms team carrying out preparatory work and developing requirement strategy for business/residences within Shandwick Place in readiness for street closure on the 3rd March'08 – commencement of Phase 1, city centre operations. Comms surgeries have been held over the intervening period to prepare and manage general public expectations for the coming major construction activity within the city centre.

1.3 Commercial

- 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. Revised rate received back from CEC (DF) on rate applied to B.0 material, this is being reviewed in terms of the commercial implications.
- 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 February 2008. The joint review will be based upon approximately 90% of the design for the Project.

See Appendix 6 – Risk Register

2.0 Operations Next Period

2.1 Construction

Section 1

- Sewer Surveys planned for Forth Ports – commence in early March
- TM design work instigated for Constitution Street and Foot of the Walk
- SGN works continue outside of LOD at Constitution Street
- MUDFA diversions continue on Leith Walk (Manderston Street – McDonald Road)
- Construction of large BT chamber commences at junction of York Place/North St Andrew Street
- MUDFA BT works continue in St Andrew Square/North and South St Andrew Street
- Work continues on Princes St crossings and linear runs around Waverley Bridge/St Andrew Square end
- Trial excavations on SGN 24"/30" main commence – completion before Shandwick Place closure
- Further civils enabling works required to enable Shandwick Place closure
- Installation of new traffic signals and pedestrian crossings around Shandwick Place diversion route.
- Re-phasing of existing traffic signals by CEC around Shandwick Place diversion route
- Shandwick Place closure goes live along with associated traffic diversions

Section 5B

- 14-20 IFC pack has been issued to AMIS awaiting Work Pack from them. Construction start date will be delayed from 4th February 2008 due to the late issue of the drawings and schedules.

Section 7A

- RATS diversion completed.

Section 7B

- Workshop with BAA to be arranged following feedback from Grontmij.

2.2 Programme

- Programme of works for section 1C city centre Phase 1, delayed by 4 weeks due to the extensive TM measures to be implemented prior to construction works commencing on the 3rd March. Consequently Phase 2 will now commence end April. Programme of TM requirements has been established to ensure future works avoid delay to commencement due to design/modelling needs.

Additional TM resources have been employed to cover future workload. Review of current position within rev 06 required to account for the above referred to delay and amended accordingly to reflect appropriate action where necessary. (this will be reviewed in the next period).

3.0 Resources

See Appendix 7 – TSS Resources

4.0 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. Protected services identified on 'as-builts' for informing SUC's/ INFRACO et al.
- 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. 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).
- 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. Expect these to be completed by end of March'08.
- RAT's proposal put forward for section 7b and following discussions with BAA, principle to adopt process on less complex utility diversions accepted.
- Performance specification process and preferred material agreed in principle with CEC. Confirmation of rates for supply of B.0 material from Proficio (CEC) received. 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. Ongoing development.
- Review of section 1A diversions – assess potential programme gains due to implementation of temporary diversions, thereby allowing earlier construction start to INFRACO works.

5.0 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 30" gas main at the Mound – commercial resolution required. Agreement reached on preferred solution.
- MUDFA/INFRACO programme interfaces.
- Latest IFC drawings are primarily based on drawings yet to have final approval from CEC – there is a potential problem if any of these are subsequently 'not approved'.
- Design delays in issuance of IFC drawings. Trend beginning to show again.
- 1500mm sewer under proposed A8 underpass. Risk of not achieving alternative solution agreement to the proposed divert option under the A8. Significant financial risk – circa £2.5M.



Contract Review Report

APPENDIX 1

Period Costs Report



Contract Review Report

APPENDIX 2

Utility Damage Data

Utility Damage data

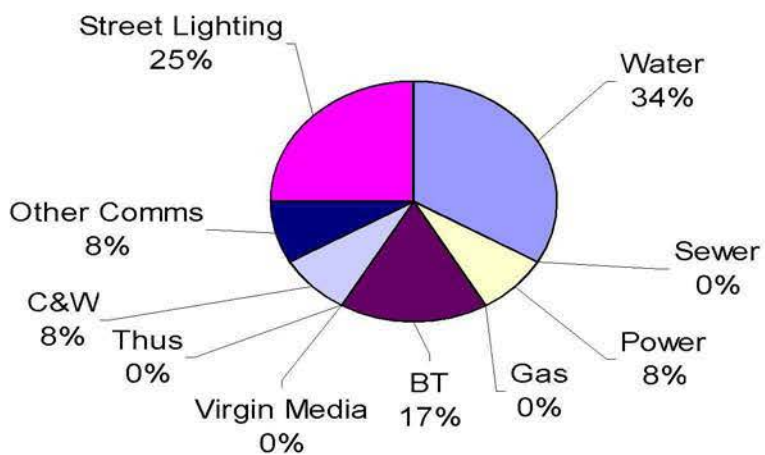
The following Tables/Graphs provide details of the utility damage that has occurred since the commencement of MUDFA works. 02/07/07
 Hours to date 143569, Metreage of all diversions Based on information received from AMIS ?????m as period 11 end.
 This information allows tie to report on the utility damage against man hours and metreage.
 This information should allow tie to forecast utility damage based on supplied figures
 10 x Damages per 4749m = 1 per 474.9 m average! Based on QS figures.
 10 x Damages 119780 hrs = 1 per 11,780hrs

Utility	Rolling Number of Strikes
Water	4
Sewer	0
Power	1
Gas	0
BT	2
Virgin Media	0
Thus	0
C&W	1
Other Comms	1
Street Lighting	3

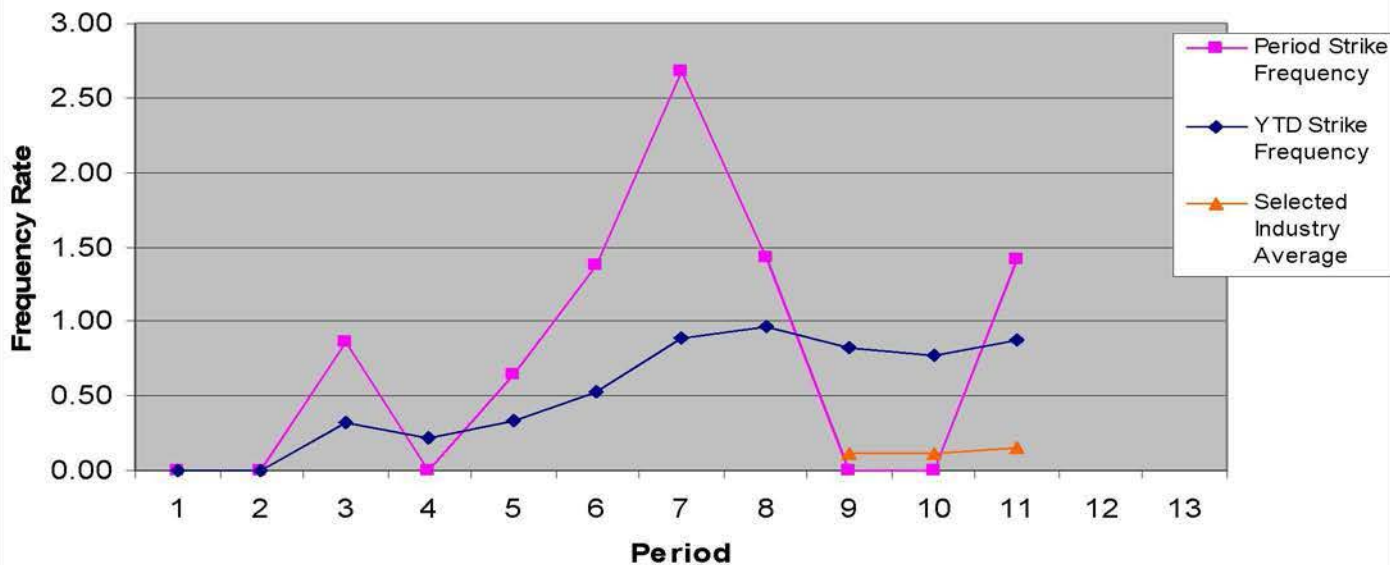
Period	Period Strike Frequency	YTD Strike Frequency
1	0.00	0.00
2	0.00	0.00
3	0.86	0.32
4	0.00	0.22
5	0.64	0.33
6	1.38	0.53
7	2.68	0.89
8	1.43	0.96
9	0.00	0.83
10	0.00	0.77
11	1.42	0.88
12		
13		

<u>Year to Date Service Strike Information</u>	
Hours Expended in Period =	14093
Hours Expended year to date =	143569
Service strikes in period =	2
Service Strikes Year to date =	12
<u>Period Service Strike</u>	
<u>Frequency Rate (per 10000hrs) =</u>	<u>1.42</u>
<u>Year to date Service Strike</u>	
<u>Frequency Rate (per 10000hrs) =</u>	<u>0.88</u>

Year to Date Number of Strikes



Service Strike Frequency Rate - Period v YTD



Period	Period Strike Frequency	YTD Strike Frequency	SW YTD Freq
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	0.12
10	0.00	0.77	0.12
11	1.42	0.88	0.15
12			
13			



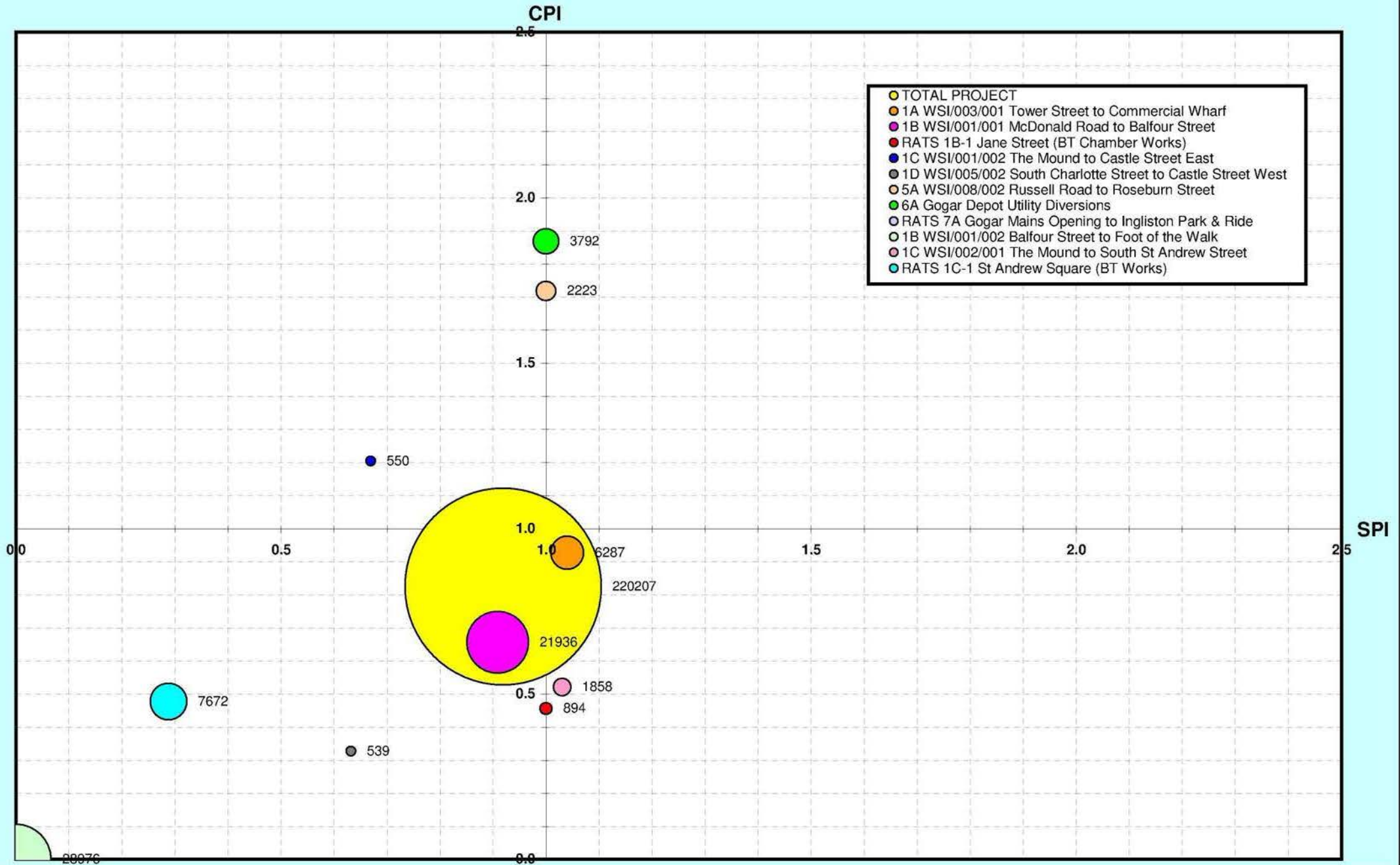
Contract Review Report

APPENDIX 3

Performance Measures



Edinburgh Tram Project
MUDFA Work Orders
Schedule & Cost Performance Index Status - we 25th January 2008





**Edinburgh Tram Project
MUDFA (Revision 06) Programme
Work Order Progress Summary**



Work Order	Work Site Status	Original Budget Manhours	Current Budget Manhours	Weekly Performance (Week Ending 25th January 2008)							Cumulative Performance to Week Ending 25th January 2008						
				Current Planned Manhours	Earned Manhours	Actual Manhours	Schedule Performance Index	Cost Performance Index	Planned Percent Complete	Actual Percent Complete	Current 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	CLOSED	7391	6287	239	0	0	0.00	-	3.8%	-	6045	6287	6777.5	1.04	0.93	96.2%	100.0%
1B WSI/001/001 McDonald Road to Balfour Street	OPEN	22611	21936	912	361	1040	0.42	0.37	4.2%	1.7%	10176	9252	14093.5	0.91	0.66	46.4%	42.2%
1B WSI/001/002 Balfour Street to Foot of the Walk	OPEN	28976	28976	193	0	302.5	0.00	0.00	0.7%	-	193	0	731.5	0.00	0.00	0.7%	-
RATS 1B-1 Jane Street (BT Chamber Works)	CLOSED	894	894	0	0	0	-	-	-	-	894	894	1956.5	1.00	0.46	100.0%	100.0%
5A WSI/008/002 Russell Road to Roseburn Street	CLOSED	3216	2223	0	0	0	-	-	-	-	2223	2223	1294	1.00	1.72	100.0%	100.0%
6A Gogar Depot Utility Diversions	OPEN	3792	3792	0	0	203	-	0.00	-	-	3792	3792	2029	1.00	1.87	100.0%	100.0%
1C WSI/001/002 The Mound to Castle Street East	OPEN	668	550	52	34	33	0.65	1.03	9.5%	6.2%	550	368	305.5	0.67	1.20	100.0%	66.9%
1C WSI/002/001 The Mound to South St Andrew Street	OPEN	4616	1856	202	56	277.5	0.28	0.20	10.9%	3.0%	522	538	1031.5	1.03	0.52	28.1%	29.0%
RATS 1C-1 St Andrew Square (BT Works)	OPEN	7715	7672	1040	251	564	0.24	0.45	13.6%	3.3%	1882	542	1134.5	0.29	0.48	24.5%	7.1%
1D WSI/005/002 South Charlotte Street to Castle Street West	OPEN	1177	539	45	57	71	1.27	0.80	8.3%	10.6%	538	340	1038	0.63	0.33	99.8%	63.1%
RATS 7A Gogar Mains Opening to Ingliston Park & Ride	CLOSED	2077	1250	73	0	0	0.00	-	5.8%	-	914	1250	486.5	1.37	2.57	73.1%	100.0%
TOTAL PROJECT		186549	220207	2756	779	2491	0.28	0.31	1.3%	0.4%	27729	25466	30678	0.92	0.83	12.6%	11.6%

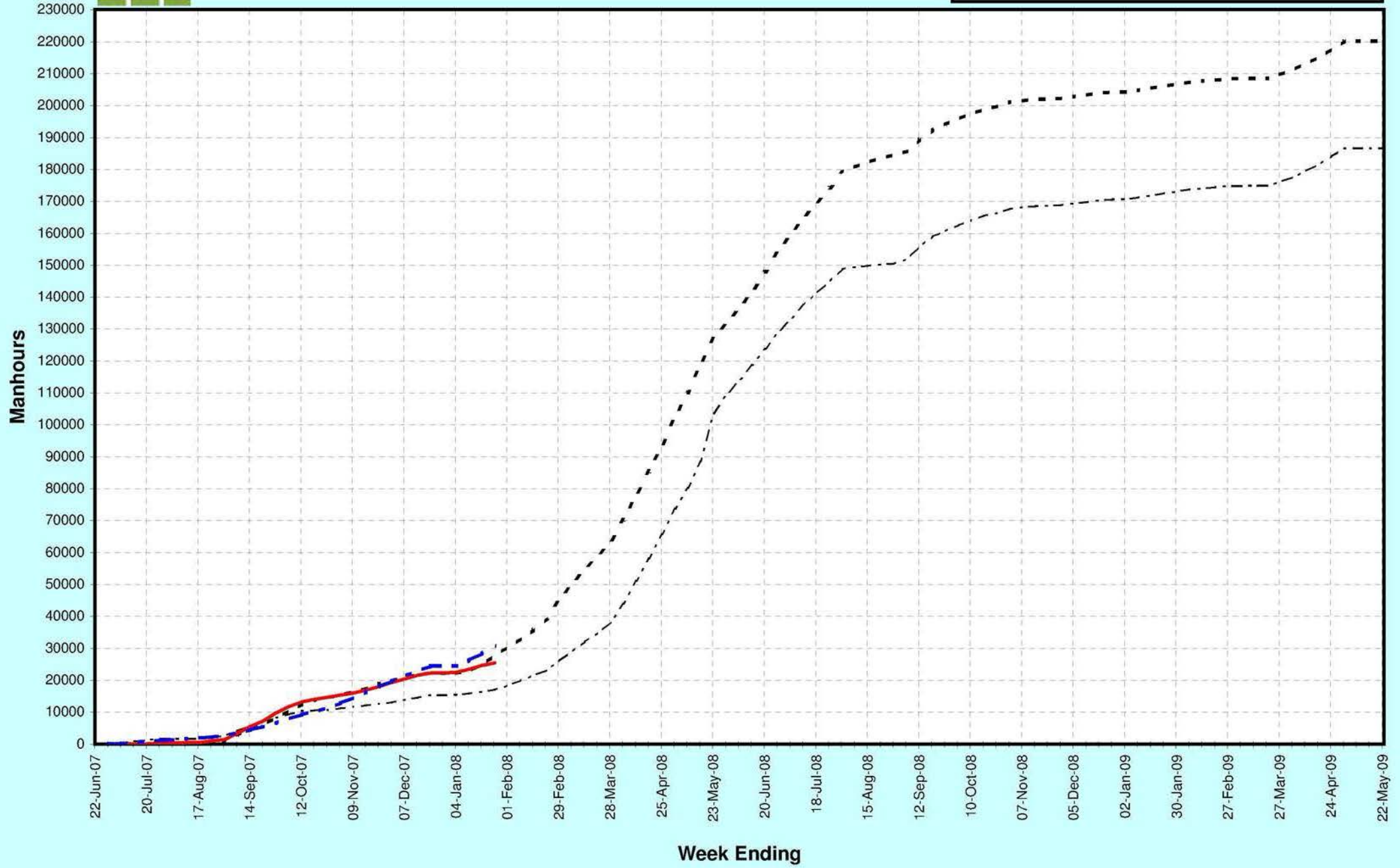


Edinburgh Tram Project

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: 27728
- Cum Earned Value Hours: 25486
- - - WO Cum Actual Hours: 30878



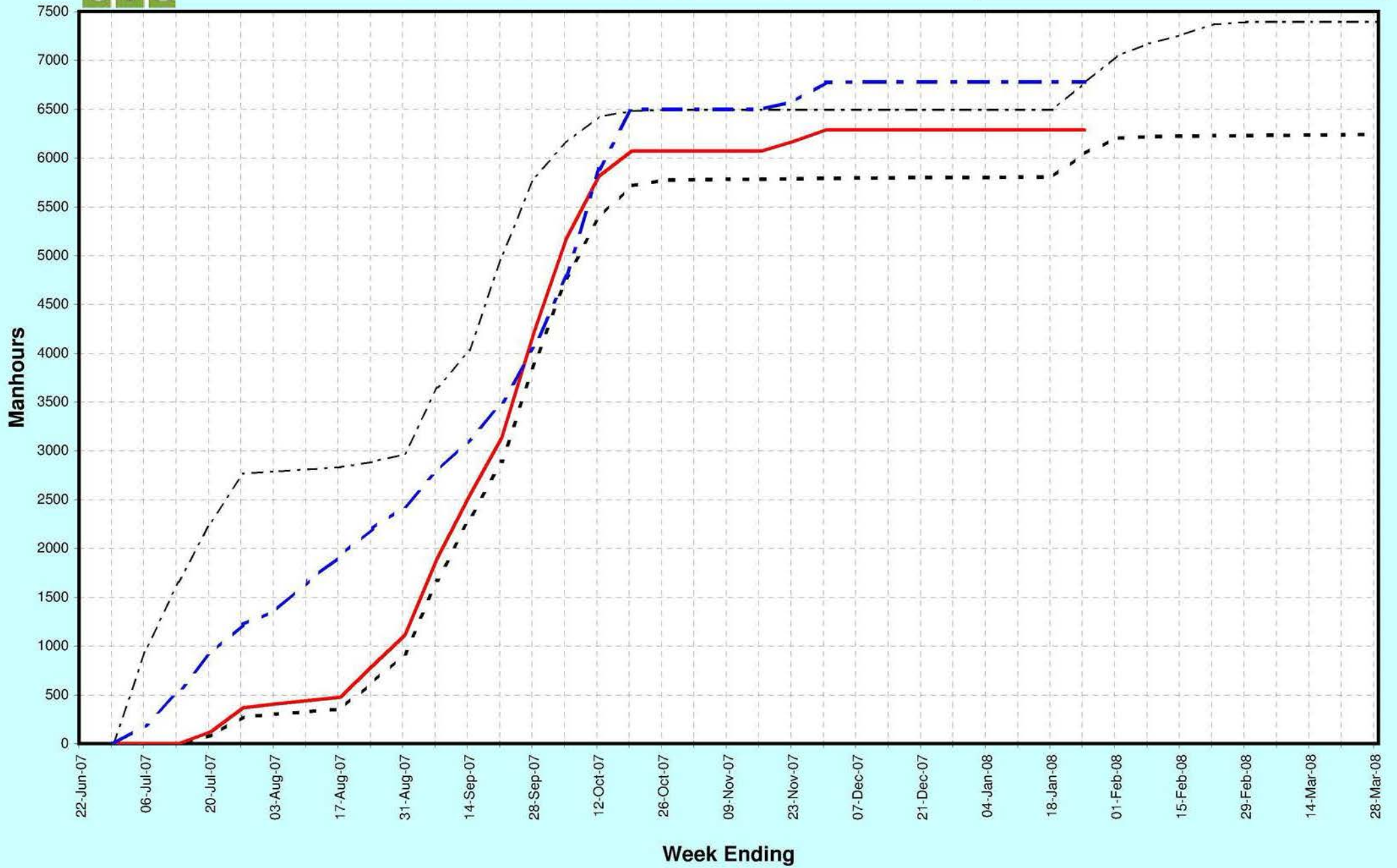


Edinburgh Tram Project

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: 6045
- Cum Earned Value Hours: 6287
- - - Cum Actual Hours: 6777.5



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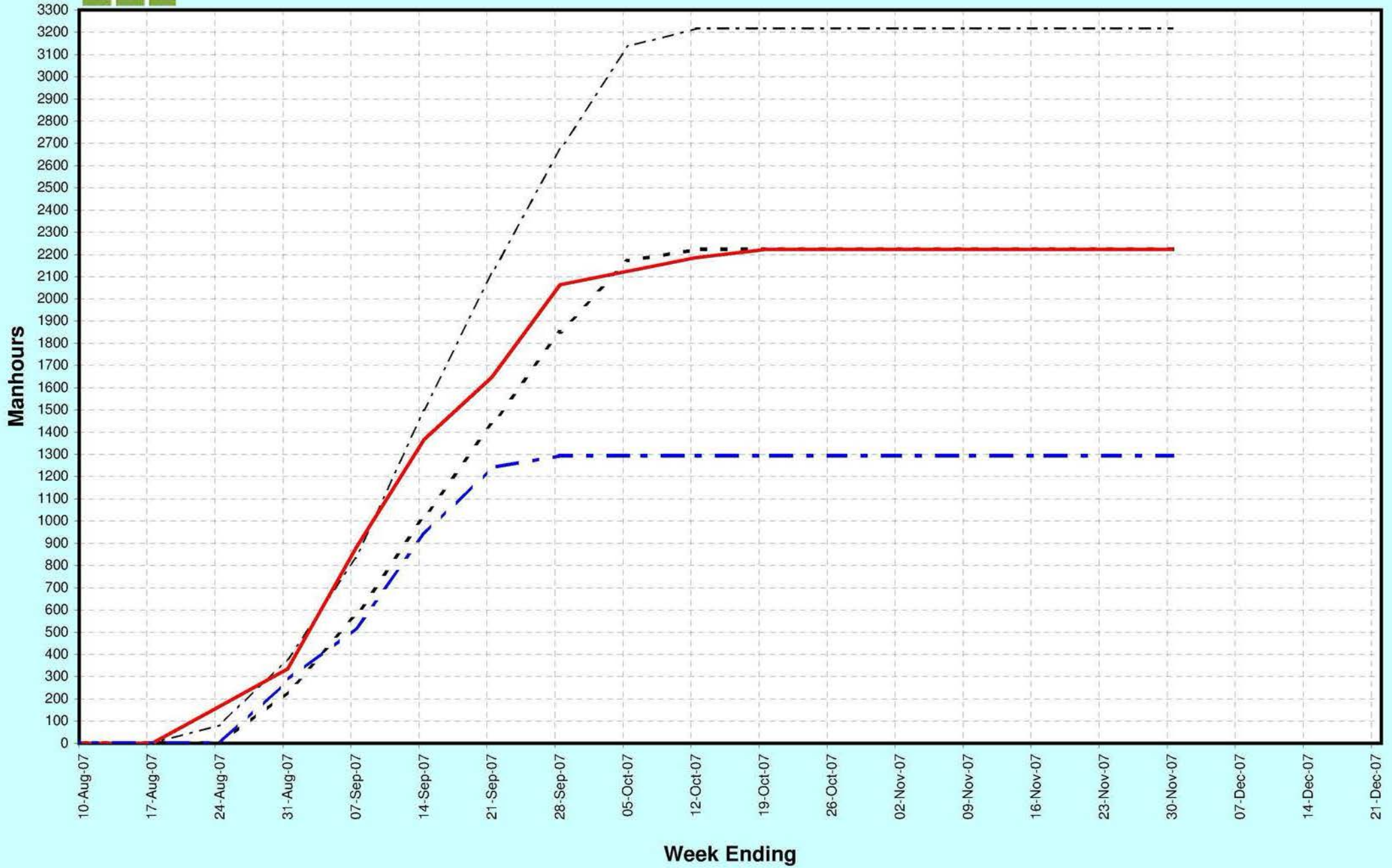


Edinburgh Tram Project

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



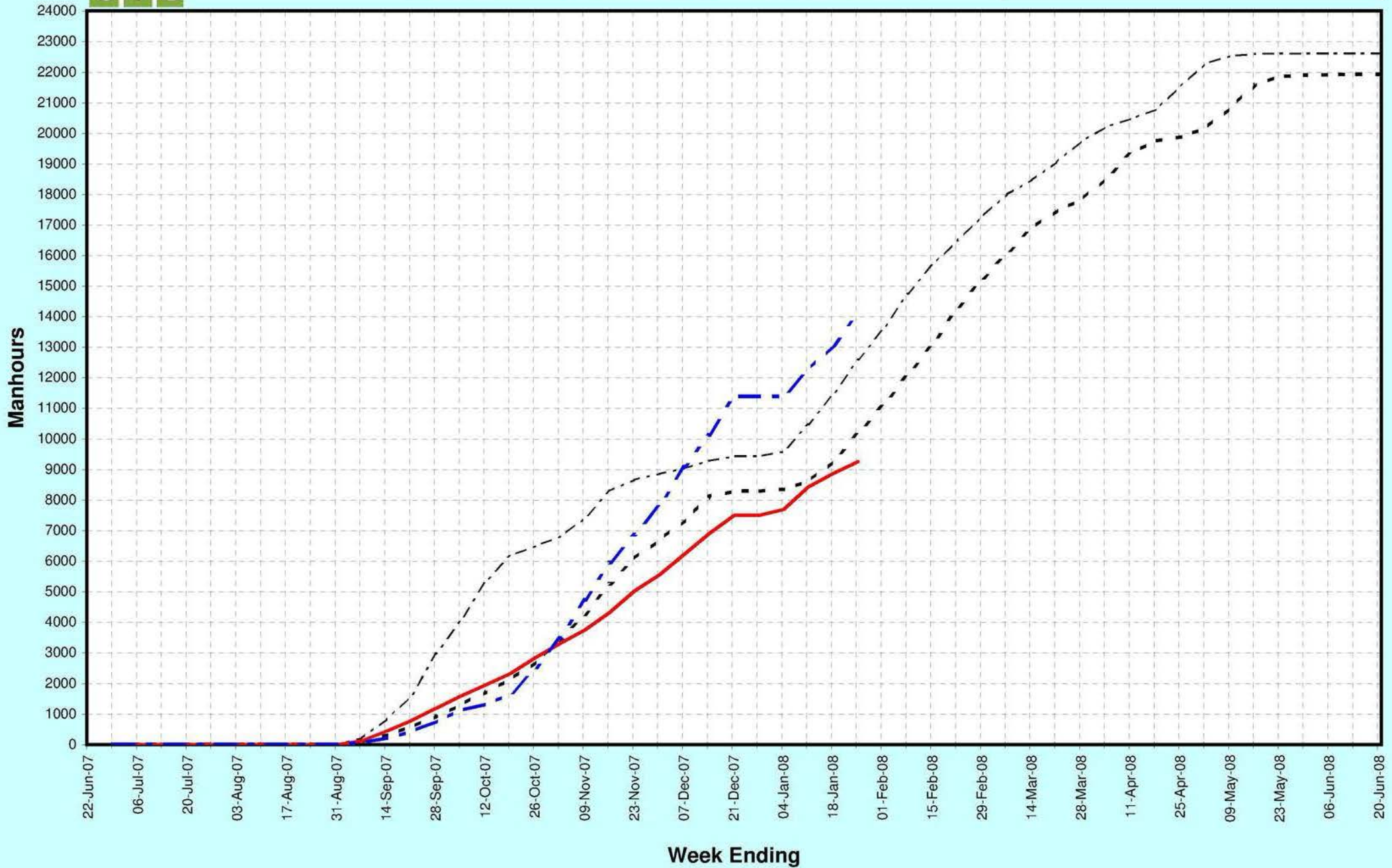


Edinburgh Tram Project

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

(Rev 06 Baseline based on Approved WO Measure)

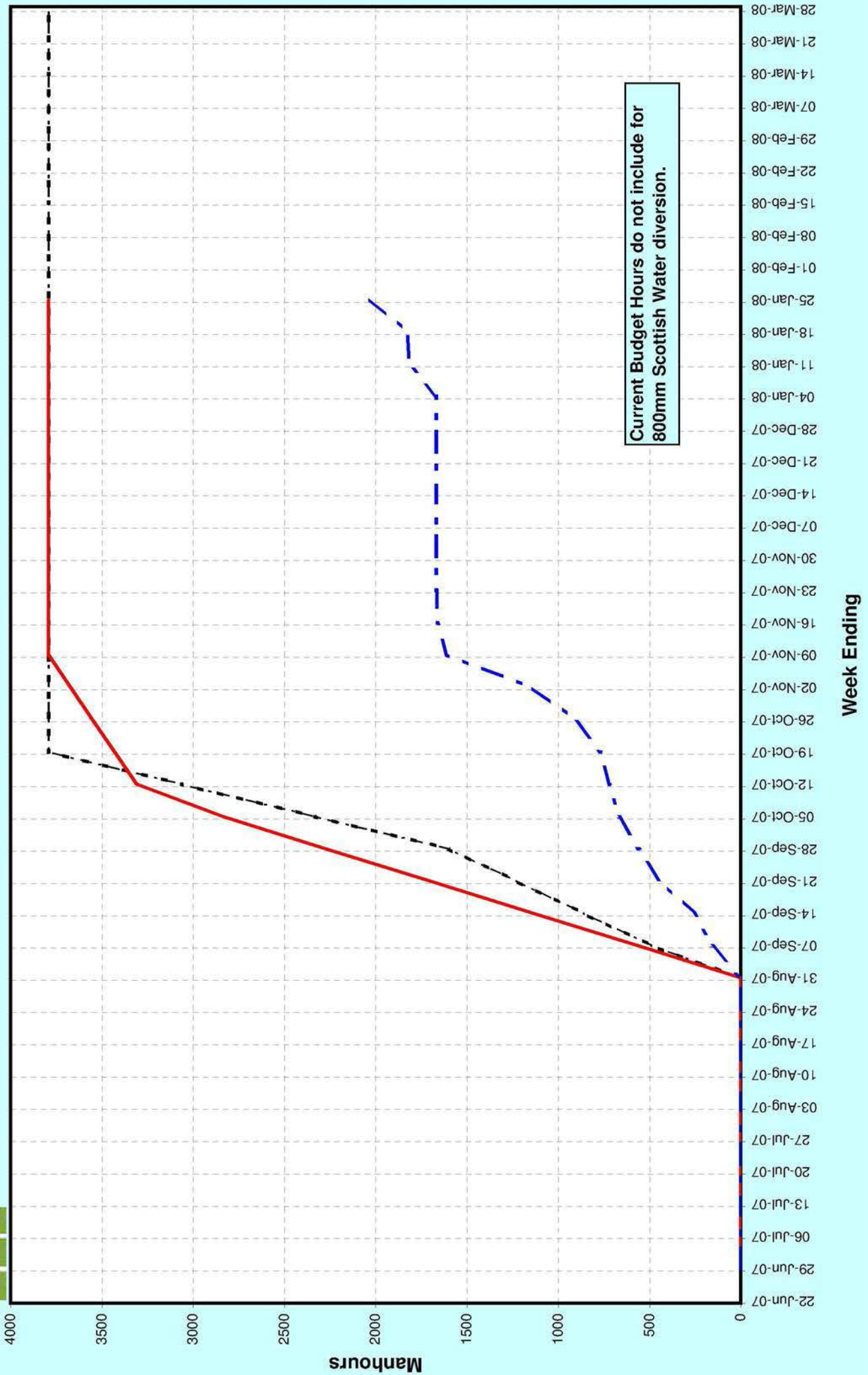
- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 10176
- Cum Earned Value Hours: 9252
- - - Cum Actual Hours: 14093.5





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: 2029



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

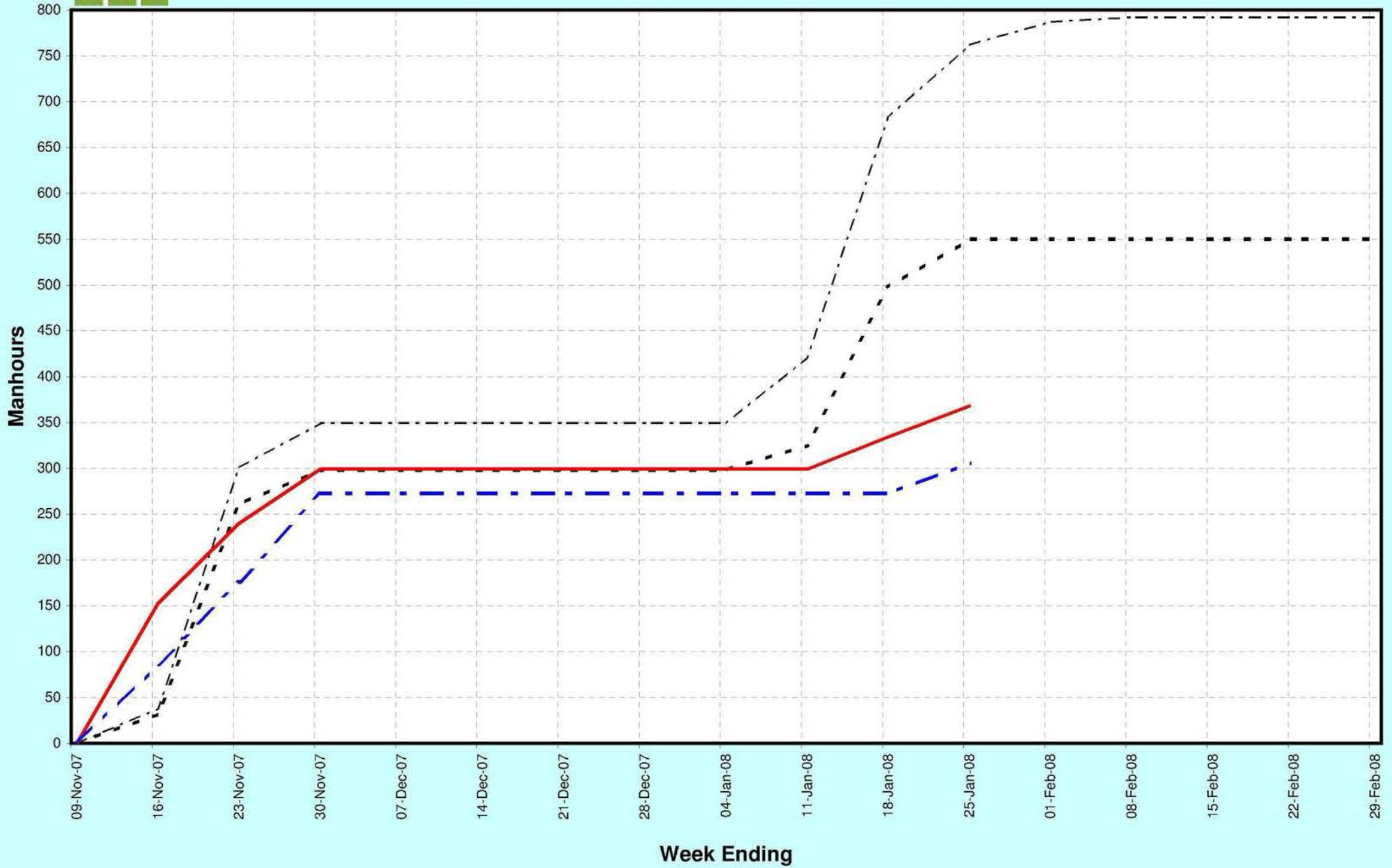


Edinburgh Tram Project

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: 550
- Cum Earned Value Hours: 368
- - - Cum Actual Hours: 305.5



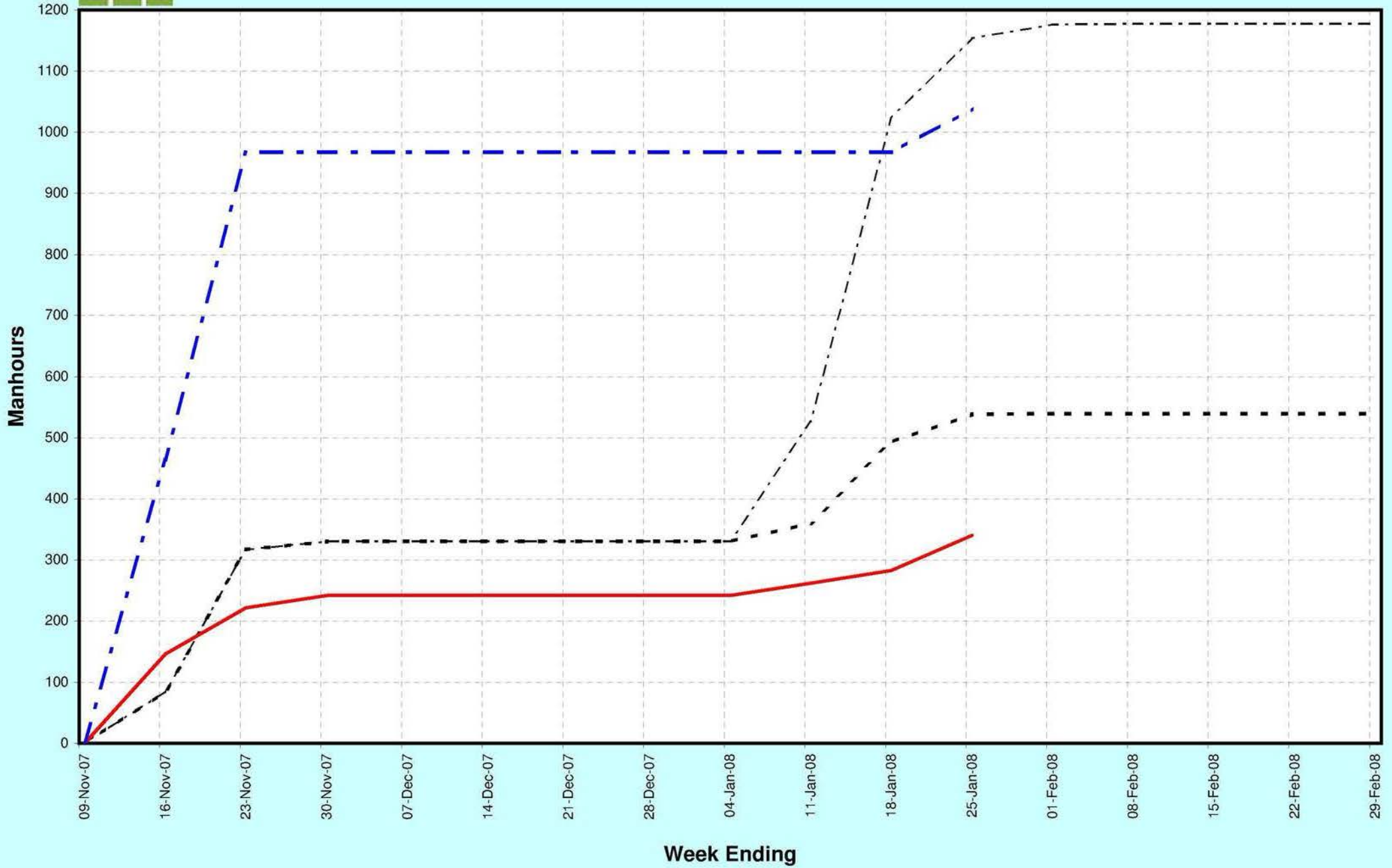


Edinburgh Tram Project

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: 538
- Cum Earned Value Hours: 340
- - - Cum Actual Hours: 1038



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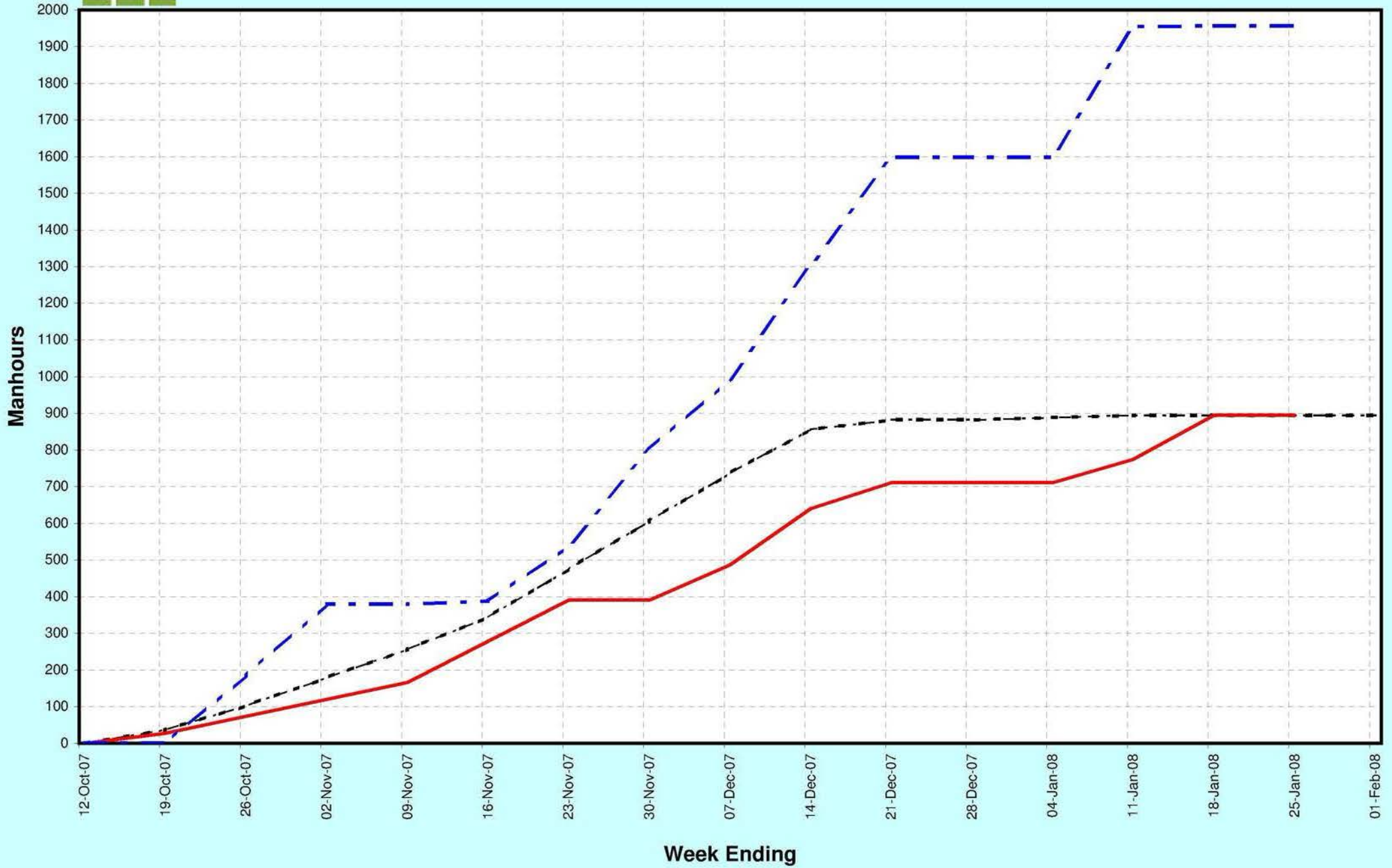


Edinburgh Tram Project

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: 894
- Cum Earned Value Hours: 894
- - - Cum Actual Hours: 1956.5



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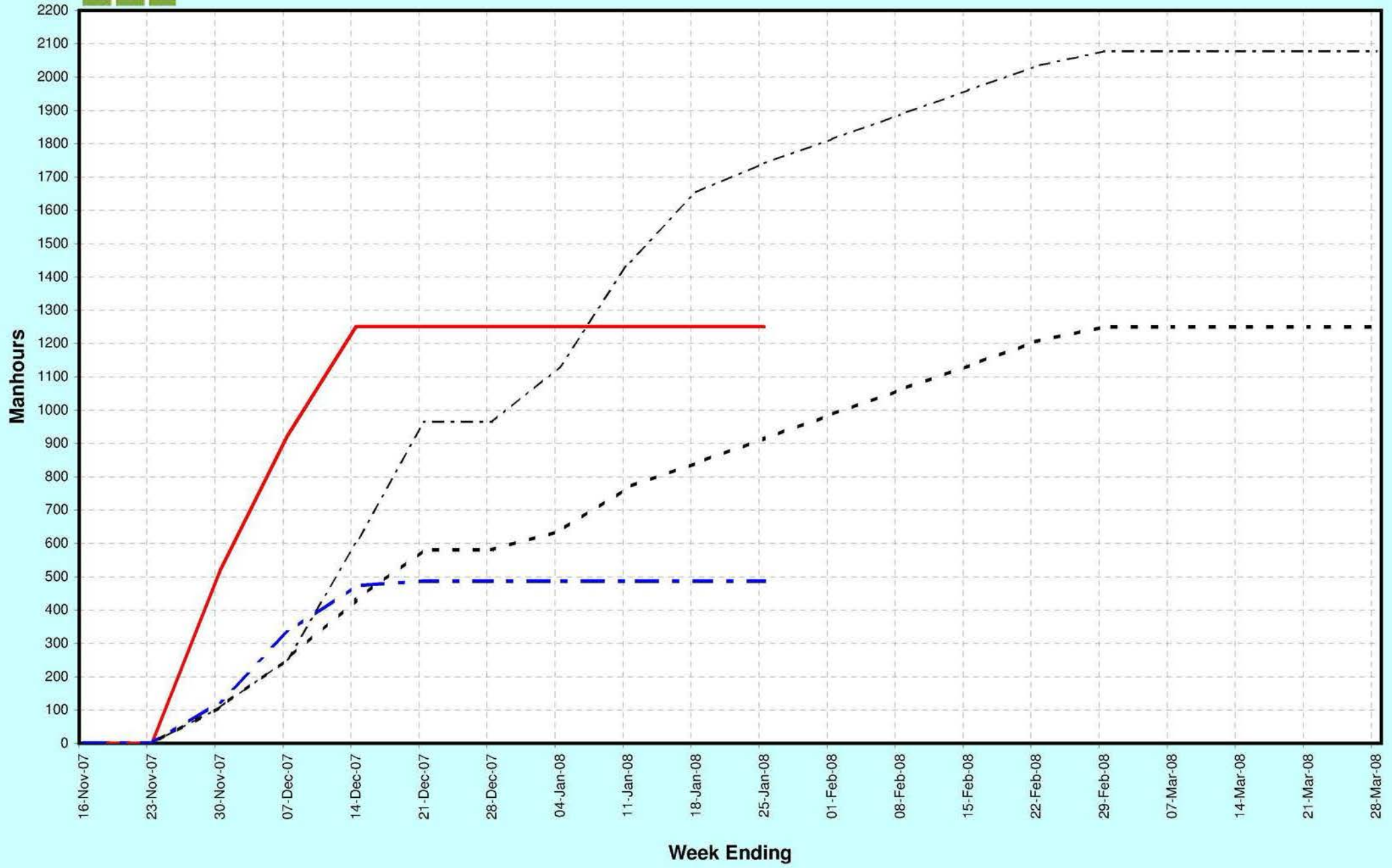


Edinburgh Tram Project

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: 914
- Cum Earned Value Hours: 1250
- - - Cum Actual Hours: 486.5



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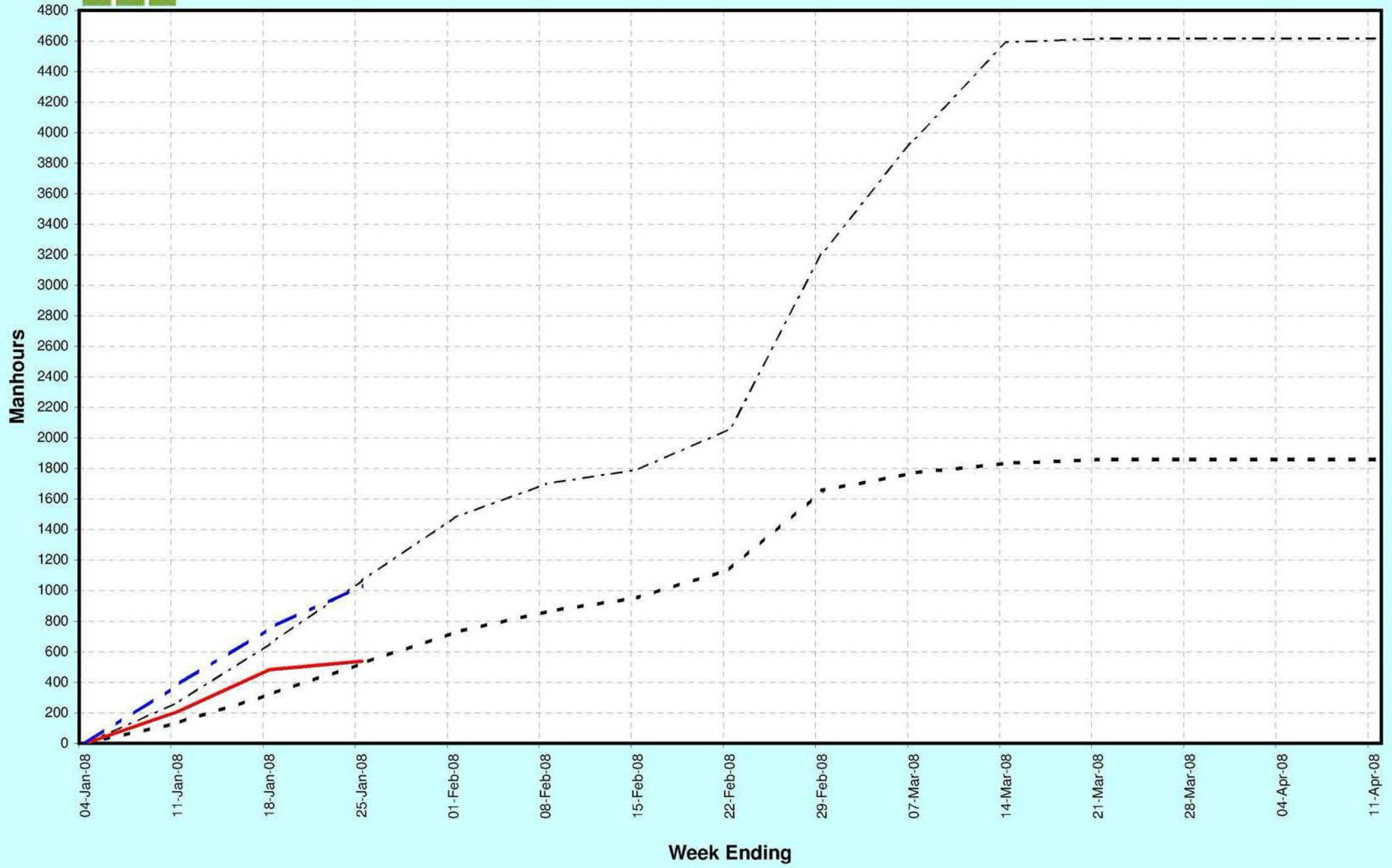


Edinburgh Tram Project

MUDFA - WO 1CWSI002/001 - The Mound to St Andrew Street

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 522
- Cum Earned Value Hours: 538
- - - Cum Actual Hours: 1031.5



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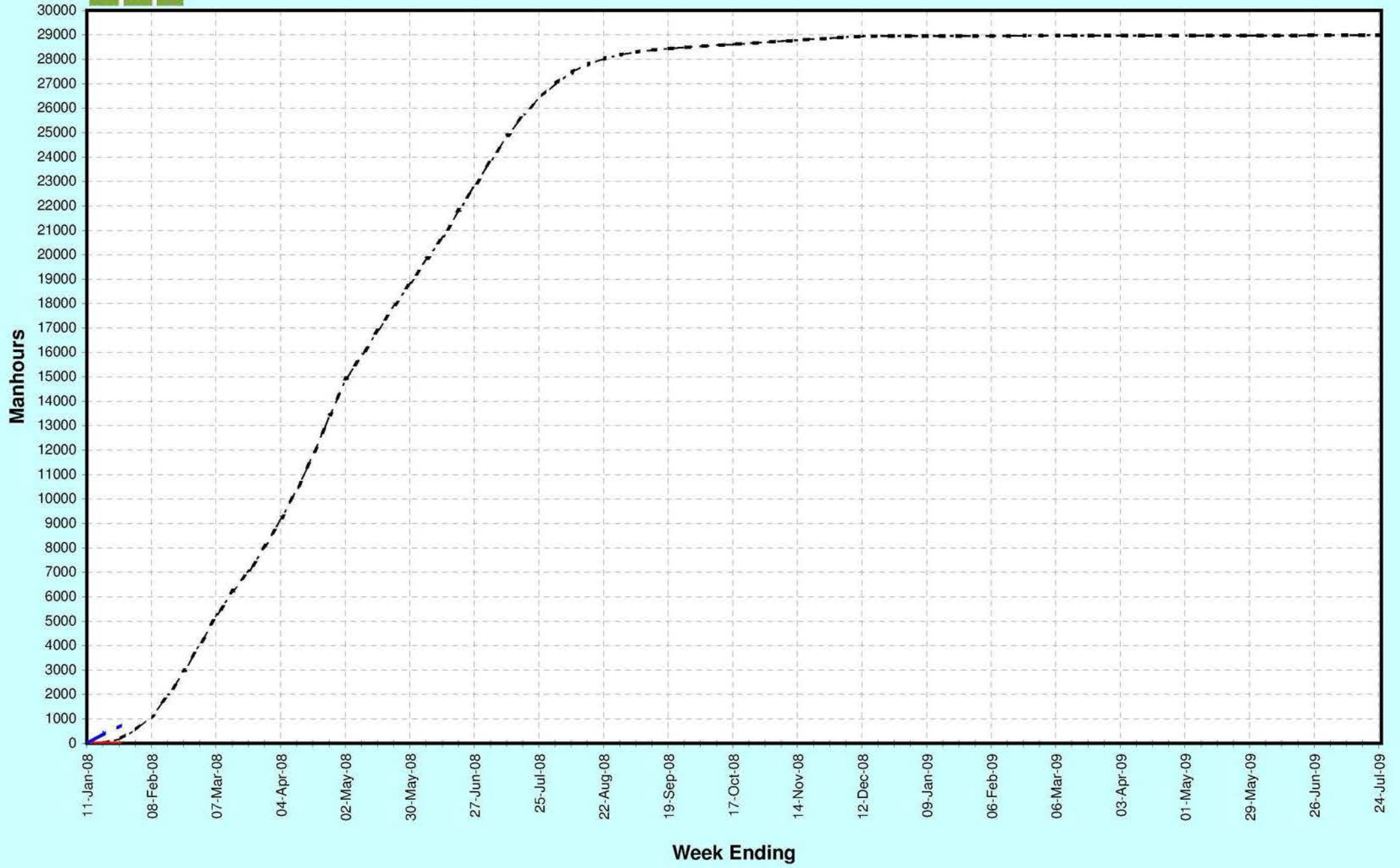


Edinburgh Tram Project

MUDFA - WO 1BWSI001/002 - Balfour Street to Foot of the Walk

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- . - Cum Current Budget Hours: 224
- Cum Earned Value Hours: 0
- - - Cum Actual Hours: 731.5



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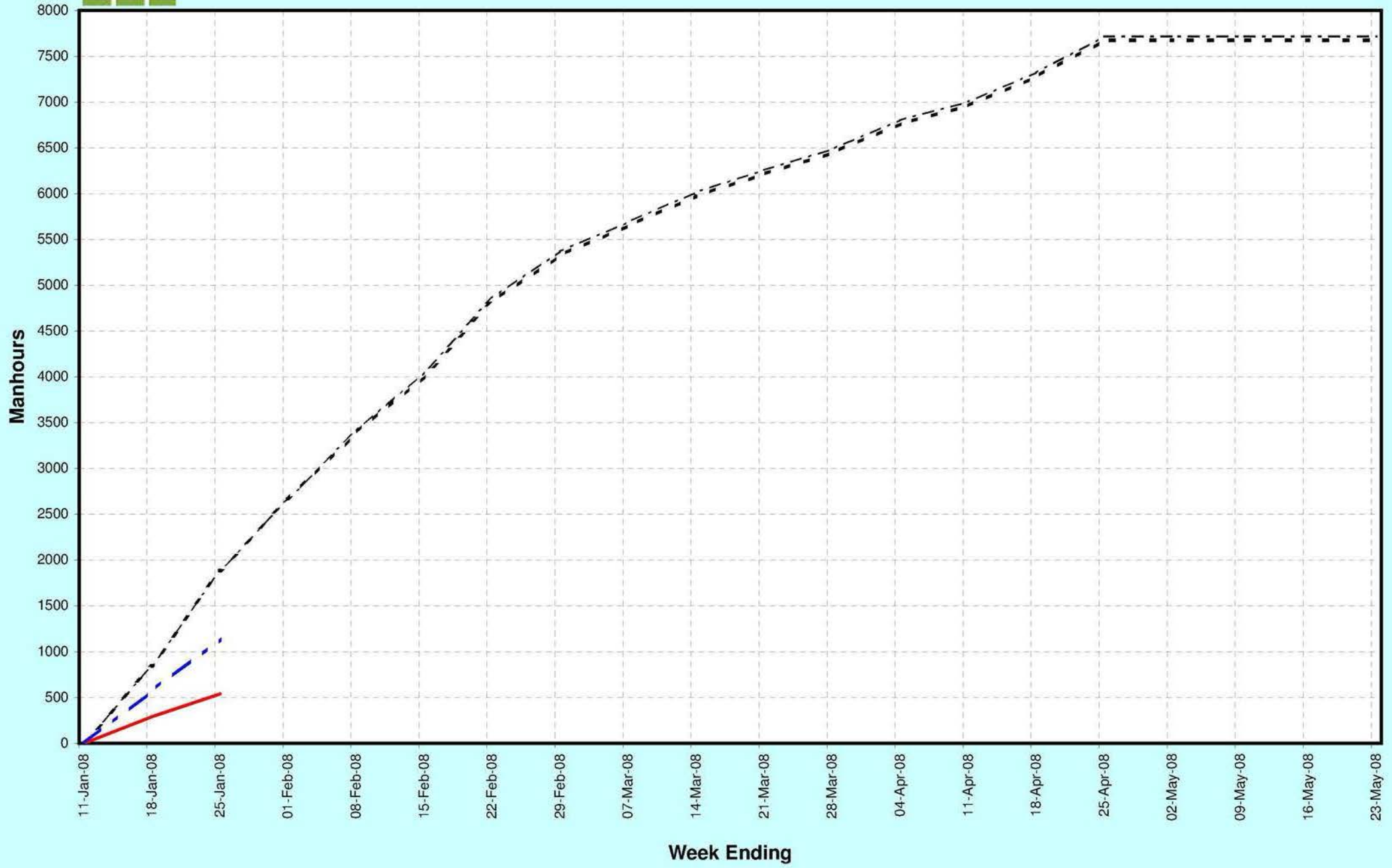


Edinburgh Tram Project

MUDFA - RAT 1C-1 - BT Works - St Andrew Square

(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 1882
- Cum Earned Value Hours: 542
- - - Cum Actual Hours: 1134.5



CEC01448120_0028



Contract Review Report

APPENDIX 4

Design Tracker

MUDFA Design Tracker
SDS Design Status @ 31st January 2008

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	
1A	plates 01-05	26-Oct-07	02-Nov-07		09-Nov-07	15-Feb-08		23-Nov-07	08-Apr-08		15	07-Apr-08		MUDFA works will be novated to INFRACO
1A	plates 06-10	26-Oct-07	02-Nov-07		09-Nov-07	15-Feb-08		23-Nov-07	08-Apr-08		31	07-Apr-08		
1A	plates 11-12	26-Oct-07	02-Nov-07		09-Nov-07	15-Feb-08		23-Nov-07	08-Apr-08		15	07-Apr-08		MUDFA works will be novated to INFRACO
1A	plates 13-15	04-May-07	05-Jun-07	01-Jan-07	11-May-07	22-Jun-07	22-Jun-07	25-May-07	03-Jun-07	01-Jul-07	4	04-Jul-07	05-Aug-07	<p>RoR issued on 04 July 2007 after verbal approval for Trem Project</p> <p>SGN, Sween, Matthews & Surveys (re-quoted 24th & 25th October 2007) required to be finalized. Ongoing to be completed.</p> <p>SDS re-forecast IFC issue by 15-Feb-08.</p> <p>RoR issued to SDS on 12-Nov-07.</p> <p>Status of Approvals:</p> <p>SGN - Approval Outstanding SGN meeting to take place on 11-Jan-08. Revised design to be implemented - will delay IFC.</p> <p>SP - Approved 28-Nov-07</p> <p>SW-C - Verbal Approval 13-Dec-07. Caveat on Soil Sampling SW-F.</p> <p>BT - Approved 30-Nov-07.</p> <p>C&W - Approved 27-Nov-07.</p> <p>Thus - Approved 09-Nov-07.</p> <p>VM - Approved 27-Nov-07.</p> <p>Geo-Networks - Design issued 03-Dec-07</p>
1A	plates 16-21	14-Sep-07	02-Nov-07	29-Oct-07	21-Sep-07	08-Feb-08		05-Oct-07	15-Feb-08		31	17-Mar-08		
1B	plates 22-26	11-Aug-07	07-Sep-07	10-Sep-07	07-Sep-07	01-Oct-07	11-Oct-07	21-Sep-07	19-Oct-07	19-Oct-07	81	21-Jan-08		
1B	plates 27-31	05-Sep-07	09-Jan-07	06-Jan-07	12-Jan-07	21-Aug-07	21-Aug-07	21-Sep-07	21-Aug-07	31-Aug-07	3	05-Sep-07	05-Sep-07	<p>SGN IFC design re-issued on 04-Dec-07 to plates 27-31 with updated concrete drawing.</p>
1C	plates 32-38	12-Oct-07	31-Oct-07	06-Nov-07	19-Oct-07	01-Feb-08		02-Nov-07	08-Feb-08		66	14-Apr-08		<p>SDS re-issued cross-section details on 24th January 2008.</p> <p>Re ROR issued to SDS on 20-Nov-07.</p> <p>Status of Approvals:</p> <p>SGN - Approved 26-Nov-07. SGN have now indicated they are unhappy with clearance over SP tunnel. MB to discuss issue with SGN.</p> <p>SP - Approved 21-Dec-07</p> <p>SW-C - Approval Outstanding. SP Tunnel x-sections were re-issued to SW for comment prior to Xmas. Will be discussed at SW Meeting on 17-Jan-08.</p> <p>BT - Approved 13-Dec-07.</p> <p>C&W - Approved 14-Dec-07.</p> <p>Thus - Approved 12-Dec-07.</p> <p>VM - Approved 19-Dec-07.</p> <p>Verzon -</p>
1D	plates 39-41	12-Oct-07	02-Nov-07	16-Nov-07	19-Oct-07	17-Dec-07	26-Dec-07	02-Nov-07	21-Dec-07	21-Dec-07	3	07-Jan-08		
1D	plates 42-43	14-Sep-07	13-Sep-07	12-Sep-07	21-Sep-07	06-Oct-07	12-Oct-07	09-Oct-07	19-Oct-07	17-Oct-07	17	01-Jan-08		
1E	plates 44	14-Sep-07	22-Oct-07	15-Sep-07	21-Sep-07	26-Oct-07	12-Oct-07	05-Oct-07	04-Nov-07	17-Oct-07	236	09-Jan-08		
1C	plates 45-48	11-Aug-07	03-Sep-07	03-Sep-07	07-Sep-07	07-Sep-07	09-Oct-07	21-Sep-07	05-Oct-07	06-Oct-07	38	12-Nov-07	12-Nov-07	
1D	plates 49-51	28-Sep-07	18-Oct-07	22-Oct-07	05-Oct-07	22-Nov-07	22-Nov-07	19-Oct-07	07-Dec-07	26-Nov-07	62	26-Jan-08		IFC issued 20th November 2007
1D	plates 52-56	28-Sep-07	06-Nov-07	09-Nov-07	05-Oct-07	06-Jan-08	09-Jan-08	18-Oct-07	11-Jan-08	14-Jan-08	7	04-Feb-08		

MUDFA Design Tracker
 SDS Design Status @ 31st January 2008

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	
2A	plates 1-3	14-Sep-07	31-Jan-08		21-Sep-07	14-Feb-08		05-Oct-07	28-Feb-08		88	26-May-08		Issues with space outside the exclusion zone for both SW & SGN. SGN will provide design on 31st January.
5A	plates 1-3	01-Jun-07	12-Jul-07	12-Jul-07	04-Aug-07	10-Aug-07	10-Aug-07	15-Aug-07	10-Aug-07	10-Aug-07	81	20-Aug-07	20-Aug-07	
5A	plates 4-6	10-Aug-07	14-Sep-07	28-Sep-07	24-Aug-07	26-Oct-07	16-Oct-07	17-Sep-07	08-Nov-07	03-Nov-07	143	14-Jul-08		SDS INDICATE NO DIVERSIONS FOR MUDFA. IFC package issued 09-Nov-07 (Only 2 diversions for Scottish Power - Non MUDFA)
5B	plates 6-13	22-Jun-07	22-Jun-07	22-Jun-07	13-Aug-07	05-Oct-07	19-Oct-07	14-Sep-07	19-Oct-07	10-Oct-07	108	04-Feb-08		
5B	plates 14-20	03-Aug-07	08-Nov-07	02-Nov-07	17-Aug-07	17-Dec-07	18-Dec-07	14-Sep-07	18-Jan-08	18-Jan-08	111	24-Feb-08		
5C	plates 21-26	13-Jul-07	18-Jan-08	18-Jan-08	27-Jul-07	23-Aug-07		10-Aug-07	28-Feb-08		179	25-Feb-08		SDS have been instructed to issue design for approval after confirmation Deed of Servitude will be in place. LM Surveys will prepare As-Built drawings for C&W diversion & SW 250mm main at Depot today (11-Jan-08) for inclusion in SDS design which will be issued for approval 18-Jan-08. Requirement for IFC package to be split 24-26 (required for works commence on-site 25-Feb-08) & 21-23 (required for works commence on-site 21-Apr-08) Status of Approvals: SGN - Verbal Approval SP - Verbal Approval SW-C - Verbal Approval BT - Verbal Approval C&W - Verbal Approval Thus - Verbal Approval VM - Verbal Approval Easynet - Verbal Approval
6A	plates 1-2	28-Sep-07	03-Jan-08		19-Oct-07	13-Nov-07		02-Nov-07	28-Feb-08			03-Sep-07	03-Sep-07	Line & Level of 900mm water main will be issued for discussion on 16-Jan-08. SDS to confirm dates for preparing 900mm valve arrangement design. 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. Status of Approvals: SGN - Verbal Approval NO ASSETS designed by SDS. SP - Written approval obtained. Will require re-design based on depot move. SW-C - 800mm drawings submitted to SW on 22nd January. SW will meet to discuss on 31st January. BT - Approval given to 1 conflict being abandoned. C&W - SDS received survey info from tie 12-Oct-07. Design to be amended. Thus - Minor change updated, SUC contact changed. SDS trying to arrange meeting with new contact. VM - Approved. NO ASSETS
7A	plates 1-7 (dam at station splits plate 1)	24-Aug-07	14-Dec-07		07-Sep-07	25-Dec-07		21-Sep-07	11-Jan-08			17-Nov-07	17-Nov-07	RATS works commenced on site on 27-Nov-07.
7B	plates 7-9 AMIS / Grantinj	01-Feb-07	27-Feb-08		15-Feb-08	07-Apr-08		29-Feb-08	14-Jun-08		129	31-Mar-08		As-Built to be produced on completion of works 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	16-Apr-07	02-Nov-07	28-Mar-08		16-Nov-07	25-Apr-08		115	18-Aug-08		
3B	plates 24-33	09-Nov-07	30-Nov-07	20-Dec-07	16-Nov-07	28-Mar-08		30-Nov-07	25-Apr-08		206	17-Nov-08		
3C	plates 34-42	09-Nov-07	30-Nov-07	23-Feb-07	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, 28-56 days AMBER



Contract Review Report

APPENDIX 5

Traffic Modelling

Lead in Time required to Allow Modelling Exercise for forthcoming MUDFA Works

Location of Works	Current Modelling and TM Desgn Position	Programmed Start Date	Required Date to Start Modelling - 10 week lead in	Required Date to Start Modelling - 6 week lead in
Gogar RA / A8	No modelling required, may be need for minor TM design	25/02/2008	17/12/2007	14/01/2008
Shandwick Place Closure (Phase 1)	Modelling & TM design ongoing	03/03/2008	24/12/2007	21/01/2008
Constitution St / FOTW	Brief prepared and await procurement method to initiate works	17/03/2008	07/01/2008	04/02/2008
London Road RA	No works actioned	21/04/2008	11/02/2008	10/03/2008
Hope Street re-designation (Phase 2)	Faber issued modelling and TM design brief	09/06/2008	31/03/2008	28/04/2008
Picardy Place	No works actioned	16/06/2008	07/04/2008	05/05/2008
Haymarket / Manor Place	No works actioned	14/07/2008	05/05/2008	02/06/2008



Contract Review Report

APPENDIX 6

Risk Register

EDINBURGH TRAM PROJECT

Risk Allocation Report

Current Period End 09-Dec-07

Sim Run P90 1A+1B 53010.73 £k

Risk Mean Sum 3848.84 £k

Total Allocation £k Phase 1A 17167.65 Phase 1B 700.54 £k

WBS Item	Allocated Risks	Impact Assessment 26 Nov 2007				Exposure Period		No of Periods	Sim Run Risk Mean	P90 Risk Allocation	Proportion allocated to 1A	Parameter used to Split 1A/1B	P90 Risk Allocation 1A	P90 Risk Allocation 1B	P90 Value Per Period			
		Current Impact Assessment £k				Start	End											
		Risk ID	Cause	Risk Event	Effect	Prob	Min									Most likely	Max	
7.2 MUDFA/Utilities	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 obs	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.	95.00%	1000	3000	6000	02-Apr-07	31-Dec-08	15	3168.956977	4365.40	95		4147.13	218.27	291.03
7.2 MUDFA/Utilities	130	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	90.00%	0	1200	2400	02-Apr-07	31-Dec-08	15	1080.409707	1488.32	95		1413.90	74.42	99.22
7.2 MUDFA/Utilities	342	Tram alignment at AB crossing at Gogar co-incident BT data nest/cable (main core link between Glasgow and Edinburgh)	AB 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	95.00%	1000	1250	1500	04-Apr-07	30-Sep-08	12	1,000.15	1377.76	100		1377.76	0.00	114.81
7.2 MUDFA/Utilities	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	95.00%		880		02-Mar-07	31-Dec-08	15	836.00	1151.63	95		1094.03	57.58	76.78
7.2 MUDFA/Utilities	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 close	90.00%	400	500	600	02-Apr-07	31-Oct-08	13	399.96	550.97	100		550.97	0.00	42.38
									8934.09			8583.82	350.27					

6485.484642

8,934.09

17,168

Business Folder: TIE Ltd **Risk ID :** 139
Area of Risk: 7.2 MUDFA/Utilities
Event: Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD
Owner: G Barclay
Risk Area (OB): Client Specific > Poor Project Intelligence **Status:** Open

Description

Effect: Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated

Cause: Utilities diversion outline specification only from plans

Risk Rating: 25.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)	
	Current	Planned Residual	Current	Planned Residual
	Catastrophic	NIL	Catastrophic	NIL
Min	0.00		4.00	
Expected	1200.00	0.00	15.00	0.00
Max	2400.00		26.00	

Model Notes

Probability: Current Frequent 90.00% Planned Residual NIL 0.00%

Title: Detailed investigation and strategy development

Plan Owner: G Barclay

High Level Plan

Description

Fallback Plan

Description

Title	Action Owner	Due
Carry out GPR Adien survey	J Casserly	31-Oct-2007
Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	J McAloon	23-Nov-2007
In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	A Hill	31-Jan-2008

Caveat: Uncontrolled when printed

Classification: Commercially Sensitive

Business Folder: TIE Ltd **Risk ID :** 164
Area of Risk: 7.2 MUDFA/Utilities
Event Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work.
Owner I Clark
Risk Area (OB) Client Specific > Poor Project Intelligence **Status:** Open

Description

Effect: Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.

Cause 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

Risk Rating: 25.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)		Health & Safety (N/A)		Reputation (N/A)	
	Current	Planned Residual	Current	Planned Residual	Current	Planned Residual	Current	Planned Residual
	Catastrophic	NIL	Major	NIL	Catastrophic	NIL	Major	NIL
Min	1000.00		4.00		5.00		4.00	
Expected	3000.00	0.00	13.00	0.00	5.00	0.00	4.00	0.00
Max	6000.00		26.00		5.00		4.00	

Model Notes Probability of this event has increase from 80% to 95% as a result of the trial excavation and subsequent findings on inadequacy of GPR surveys. Capex impact is comprised of the cost of additional work (max £4m) plus the cost of delay during investigation and solution development (£1k per day for max 100 days). It is thought that the maximum total critical programme impact could be upto 26 weeks even taking into account re-deployment of resources to an alternative workfront. This risk now takes account Risks 209 and 864 which related to specific items.

Probability: Current Frequent 95.00% Planned Residual NIL 0.00%

Title Detailed investigation and strategy development

Plan Owner G Barclay

High Level Plan

Description

Fallback Plan

Description

Title	Action Owner	Due
Carry out GPR Adien survey	J Casserly	31-Oct-2007
Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	J McAloon	23-Nov-2007
In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	A Hill	31-Jan-2008

Caveat: Uncontrolled when printed

Classification: Commercially Sensitive

Business Folder: TIE Ltd **Risk ID :** 342
Area of Risk: 7.2 MUDFA/Utilities
Event: A8 crossing tunnel requires special design or BT data nest/cables require to be moved
Owner: I Clark
Risk Area (OB): Project Specific > Other **Status:** Open

Description

Effect: Capex cost to cover BT data nest/cable move; additional design costs; delay while works to undertake move are carried out; additional tunnelling costs.

Cause: Tram alignment at A8 crossing at Gogar co-incides BT data nests/cable (main coms link between Glasgow and Edinburgh)

Risk Rating: 24.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)	
	Current	Planned Residual	Current	Planned Residual
	Catastrophic	NIL	Catastrophic	NIL
Min	1000.00		16.25	
Expected	1250.00	0.00	16.25	0.00
Max	1500.00		16.25	

Model Notes: Latest position (Nov 07) is that the nest of cables require to be lifted (North side) to allow the A8 crossing tunnel passage. South side BT diversion required in advance of the A8 tunnel construction. Costs to be ratified on receipt of design.

Probability: Current Probable 80.00% Planned Residual NIL 0.00%

Title: Agree protection of cables with BT

Plan Owner: G Barclay

High Level Plan Description

Fallback Plan Description: Diversion required

Title	Action Owner	Due
Confirmation of BT requirements to tie	I Clark	15-Oct-2007

Caveat: Uncontrolled when printed **Classification:** Commercially Sensitive

Business Folder: TIE Ltd **Risk ID :** 911
Area of Risk: 7.2 MUDFA/Utilities
Event Presence of Scottish Power tunnel in Leith Walk requires radical solution
Owner M Blake
Risk Area (OB) **Status:** Open

Description

Effect: 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.

Cause 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.

Risk Rating: 24.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)		OPEX Cost p.a. (£k)	
	Current	Planned Residual	Current	Planned Residual	Current	Planned Residual
	Moderate	NIL	Catastrophic	NIL	Minor	Insignificant
Min	400.00	0.00	16.00	0.00	25.00	0.00
Expected	500.00		16.00		62.50	
Max	600.00	0.00	16.00	0.00	100.00	25.00

Model Notes

Probability: Current Probable 80.00% Planned Residual NIL 0.00%

Title Establish requirements and develop engineering solution

Plan Owner G Barclay

High Level Plan Description Feasibility study followed by solution development

Fallback Plan Description Undertake worst case scenario i.e. decommission and re-lay tunnel OR construct without moving tunnel and accept that there may be disruption to tram operations due to tunnel collapse or maintenance.

Title	Action Owner	Due
Scottish Power to establish exact location of tunnel	M Blake	02-Apr-2007
tie to undertake engineering feasibility study	J Casserly	02-Apr-2007
SDS to try and ensure tram alignment footprint is outwith Scottish Power alignment - confirmation via thumbnails due 16th November	T Glazebrook	28-Dec-2007

Caveat: Uncontrolled when printed

Classification: Commercially Sensitive

Business Folder: TIE Ltd **Risk ID :** 914
Area of Risk: 7.2 MUDFA/Utilities
Event: Statutory Utility Companies unable to meet design approval/acceptance turnaround time to meet programme
Owner: T Glazebrook

Risk Area (OB) **Status:** Open

Description

Effect: Additional period required for design approval/acceptance turnaround

Cause: 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

Risk Rating: 20.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)	
	Current	Planned Residual	Current	Planned Residual
	Major	NIL	Major	NIL

Expected 880.00 0.00 8.00 0.00

Model Notes Probability varies from utility to utility.

Probability: Current Frequent 95.00% Planned Residual NIL 0.00%

Title SUC review periods

Plan Owner G Barclay

High Level Plan Description

Fallback Plan Description

Title	Action Owner	Due
SDS to obtain consent for design in accordance with programme requirements - SGN and Scottisk Power	M Blake	28-Feb-2008
SDS to obtain consent for design in accordance with programme requirements - Scottish Water and all Telecoms	I Clark	28-Feb-2008

Caveat: Uncontrolled when printed

Classification: Commercially Sensitive

Business Folder: TIE Ltd **Risk ID :** 926
Area of Risk: 7.2 MUDFA/Utilities
Event: Approvals for traffic management proposals are not approved or take so long to approve that work cannot commence in line with the programme
Owner: G Barclay
Risk Area (OB): Project Specific > Other **Status:** Open
Description:
Effect: Delay to project.
Cause: Complexity of traffic management proposals require additional approvals (relating mainly to city centre)

Risk Rating: 18.0 **Significance:** High

Assessment Matrix Edinburgh Tram

Model Notes	CAPEX Cost (£k)		Programme (Weeks)		Health & Safety (N/A)		Reputation (N/A)	
	Current	Planned Residual	Current	Planned Residual	Current	Planned Residual	Current	Planned Residual
	NIL	NIL	Major	NIL	NIL	NIL	Major	NIL
Min	0.00		4.00		0.00		4.00	
Expected	0.00	0.00	8.50	0.00	0.00	0.00	4.00	0.00
Max	0.00		13.00		0.00		4.00	

Model Notes

Probability: Current Possible 50.00% Planned Residual NIL 0.00%

Title: Review requirements against Rev 6 programme
Plan Owner: K Rimmer

High Level Plan Description

Fallback Plan Description

Title	Action Owner	Due
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Review traffic management requirements for rev 6 programme and the alignment of these requirements with programme start dates	K Rimmer	01-Apr-2008
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Report Filters and Ordering

Business Area:	TIE Ltd
Business Folder:	TIE Ltd
Business Activity:	7.2 MUDFA/Utilities
Include Children:	Yes
Include to Depth:	All
Tree Type:	None Specified
Include Indirect:	No
Summary Details:	All
Impact Reassess't:	No
Event	All
Owner	All
Originator:	All
Project Phase	All
Risk Area (OB)	All
Status:	Open
Type	All
Contract Impacted	All
Exposure	Both
Black Flag:	All
Plan Owner:	All
Action	All
Status:	All
Action Owner	All
Type:	All
Date Filter:	No date filters applied
Custom Filter:	undefined
Ordering:	Results ordered by: Current Significance Descending



Contract Review Report

APPENDIX 7

TSS Resources

tie Ltd

TRAM HEADS: COSTED
Year 08/09

Surname	Department	Role	Period	11	12	13	1	2	3	4	5	6	7	8	9	10	Grand Total
McAloon	TSS	Planner	TRAM	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00
Hill	TSS	MUDFA Engineering / Technical	TRAM	1.00	1.00	1.00	1.00	1.00	1.00								6.00
Cheung M	TSS	MUDFA Engineering / Technical	TRAM	1.00	0.50												1.50
Johnstone	TSS	MUDFA Engineering / Technical	TRAM	1.00	1.00	1.00											3.00
Tunncliffe	TSS	MUDFA Technical Asst	TRAM	1.00													1.00
Cheung S	TSS	MUDFA Technical Asst	TRAM	0.50	1.00	1.00	1.00										3.50
Ogilvie H	TSS	MUDFA Technical Asst	TRAM	1.00	0.50												1.50
Edmundson G	TSS	MUDFA TM Asst	TRAM		0.50	1.00	1.00	1.00	1.00								4.50
TOTAL			TRAM	6.5	5.5	5.0	4.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	34.0

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