



Transport Edinburgh
Trams for Edinburgh
Lothian Buses

MUDFA Sub Committee Report Papers For Meeting 12 March 2008

Distribution

Willie Gallagher
Tom Condie
Steven Bell
Susan Clark
Graeme Barclay
Mike Connelly
Colin McLauchlan

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

Alan Dolan
Andy Malkin



Agenda

Sub-Committee Meeting

to be held at Kingdom Meeting Room, Citypoint II

on Wednesday 12 March 2008 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: Traffic Modelling
- Appendix 4: Stakeholder Activities
- Appendix 5: Risk Register

4. AOB



MUDFA Sub-Committee Meeting

AGENDA ITEM 1

Actions from Previous Minutes

tie Limited

Minutes of Sub-Committee Board Meeting

Date: 13 February 2008

Time: 14.00

Venue: Kingdom Meeting Room, CityPoint II

In Attendance

Willie Gallagher	WG
Graeme Barclay	GB
Steven Bell	SB
Susan Clark	SC
Stewart McGarrity	SM
Tom Condie	TC
Tom Clark	TCL
Mike Connelly	MC
Steve Gorry	SG
Andy Malkin	AM
Steve Hudson	SH
Bill Campbell	BC
Keith Rimmer	KR

Apologies

Colin McLauchlan	CM
SDS	

Circulation

As Above
MUDFA Team

	ACTIONS	ACTION BY	DATE DUE
1.1	[1.1] DKE – element to be addressed as to how utilities gain emergency access to services. This requires SUC involvement and discussions are ongoing. GB to prepare plan to close out – forward to SB.	GB	COMPLETE
1.2	[1.5] GB to provide summary checklist for section release; will be complete for next period.	GB	Ongoing
1.3	Worksites; issue of reports being made of worksites with no-one working on them. AMIS state they are not under-resourced but there are circumstances where work cannot be carried out on a particular section. If this is the case then we must be communicating this to the businesses/public. We must ensure Comms team are informed of this; would it be possible to have signs stating reason for suspended works?	BC	Ongoing
1.4	Shandwick Place: There will be major press coverage on the weekend prior to starting work on this section.		

	There will be issues of logistical loading/unloading of deliveries to businesses in that section. We must ensure we have management resources that weekend. We must communicate who is prime contact for that weekend. AM to plan resources and present proposals	GB/AM	COMPLETE
1.5	Extended Working Hours – work was stopped last weekend due to excessive noise. . Is it possible to have a signed off process that will prevent this happening in the future? GB to look into this.	JR (Jim Ritchie)	COMPLETE
1.6	Design Status: WG would like to see clear issues with design shown section by section in the next report. Current areas of concern are Sections 5C & 1A; GB to email concerns to WG who will then forward to Steve Reynolds. Note: SB raised with SR/JC (SDS) on 14.02.08	JJ GB/WG	COMPLETE COMPLETE
1.7	Constitution Street; all TM requirements should be finalised Monday. Meeting to be arranged; a checklist is required to be signed off by all parties confirming agreement. Once agreed SB to discuss with MC: notifications to go out.	MB SB	COMPLETE <u>20.02.08</u>
1.8	Communications: WG would like to see clearer signage out on site. Visual banners/signs similar to what we have at Gogar are required. Steel Panels possibly to be put in place where we can have changeable information put in place. Some research needs to be done as to what is required and the best way to do this; Barry Cross is researching the design and GB will then look at the construction. Signage: we need to be looking at the whole route and preparing for this in advance. SB to liaise with BC. Input required from CEC to ensure we are not in breach of any council legislation.	BC/GB BC/SB	COMPLETE <u>12.03.08</u>
1.9	Reinstatement: must have this commercial issue finalised prior to next meeting.	GB/JC	COMPLETE
1.10	A8 Underpass: potential programme gains. GB has request estimate of what the temporary works will be, including programme implications. Information expected Friday.	GB	COMPLETE
1.11	Branch Review of the management process at MUDFA to be carried out by Jim McEwan. WG will review upon his return from holiday.	WG	<u>07.03.08</u>

1.12	SDS are not present at all meetings; TE to contact Steve Reynolds to request SDS have representative at the meeting each month.	TE	COMPLETE
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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 : 12 March 2008

Executive Summary

High Level View

- Progress

		Period 12 (02.02.08 to 29.02.08)			Overall Performance to Date		
		PLANNED	ACTUAL	Variance	PLANNED	ACTUAL	Variance
TOTAL	Metres	3169	1619	-1550	9754	7805	-1949
	Chambers	56	6	-50	79	44	-35
BT/Comm	Metres	1042	507	-535	2441	1783	-658
SGN	Metres	391	314	-77	649	455	-194
Scot W	Metres	1110	778	-332	3620	3169	-451
Scot P	Metres	330	10	-320	831	517	-314
Forth Ports	Metres	0	0	0	314	314	0
Gogar Comm	Metres	0	0	0	0	0	0
Gogar Scot P	Metres	0	0	0	0	0	0
Gogar Scot W	Metres	0	0	0	0	0	0

H&S

- All RA/ MS are reviewed in compliance with Company Procedure CP7101
- 1/ Class A3 02/02/08 Delivery of Materials rejected
- 2/ Class A3 15/02/08 Drilling Unidentified Utilities Accepted.
- There have been **zero** accidents/incidents reported this period. The Accident Frequency rate (AFR) for the project is **zero**.
- There have been 5 X PU Strikes this period resulting in a utility strike rate of 2.8 compared with 4.26 for period 11

Other incidents include

- Operative cut hand while lifting pieces of re-enforced concrete: Awaiting AMIS report.
- Safety hat blown from operatives head struck passing lady on leg: Awaiting AMIS report.
- Construction of BT chamber opposite Jane Street Leith walk has been reported to have caused structural damage to a property. Awaiting AMIS report.
- CEC noise abatement officer stopped White line removal due to excessive noise. Awaiting AMIS report.

Audits

- An audit was carried out on AMIS Environmental Management Plan, this resulted in 7 findings. The HSQE are in discussion with AMIS with a view on corrective action and closures

Inductions

- Due to ramp up in works and the start of Shandwick Place closure 101 inductions were carried out. Comprising of AMIS site employees, logistical workers, SUC and signal teams.
- The commitment and hard work from staff involved with the programme, planning and implementation of the Shandwick Place closure resulted less than anticipated disruption to the surrounding area.

See Appendix 1 - Utility Damage Data

Section 1A

- Trial hole at Foot of the Walk (outside Woolworths) demonstrated that major telecom chamber can be located in the footway as opposed to carriageway as originally proposed and approved BT
- Works outwith the LOD around Constitution Street have commenced,
- Scottish Power – phase 1 now complete. Phase 2 to commence on 31 March in conjunction with MUDFA TM arrangements for Foot of the Walk/Constitution Street
- SGN – commenced 28 January. Completion due initially end of February 2008 but will extend into 7th March 2008.
- SW – CDM issue resolved. Design work ongoing.
- BTO – design works ongoing
- Clarification of CDM responsibilities with utilities confirmed with SGN, SP, BTO.
- All works being monitored by archaeologist.
- Traffic Management Modelling of Foot of the Walk/Constitution Street complete. Traffic Modelling supports the proposed traffic diversion routes. Responsibility Matrix in place to ensure all TM design, civil works, traffic signal works, parking issues etc required to deliver MUDFA worksite are completed to allow for 31 March 2008 MUDFA works commencement.

Procurement of TM organised and confirmed delivery, installation and commission by 31 March received from Siemens.

Section 1B

- Traffic Management in place to accommodate all diversionary works from McDonald Road down to Manderston Street. BT Chamber excavation opposite Jane Street, suspected of causing minor settlement in adjacent building. Excavation immediate to building flooded with concrete. Structural Engineer inspection carried out by loss adjusters.
- Progress in period less than anticipated. Review of resource numbers, types of work practices ongoing

Section 1C

- Trial hole at the top of Dublin Street demonstrated that major telecom chamber can be located in the footway as opposed to carriageway as originally proposed and approved BT. Traffic Management in place on York Place to allow 34 way and 9 way duct runs to be installed in the carriageway
- BTO diversionary works ongoing in South St Andrew Street and St Andrew's Square on the 8 January 2008. These will be ongoing for some 16 weeks.
- 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. Increase to work site was suspended for three weeks whilst location of SGN MP main in Hanover Street was confirmed. Instruction to recommence has been issued to AMIS
- The remainder of the utility road crossings (6 No) in Princes Street between the junctions of Frederick Street and Castle Street commenced on 7 January 2008 are now complete.
- Large trial excavation (approx 25m x 2m x 1.8m) completed on the SGN MP main in The Mound. Outside diameter measurements recorded by specialist connections contractor to allow long lead time items to be ordered

Section 1D

- The remaining 31 planned trial holes along Shandwick Place up to Haymarket Junction have been progressing since 7 January 2008. These were all completed in advance to the Phase 1 Shandwick Place closure
- The civil works to enable the closure of Shandwick Place (Phase 1) have been ongoing since 8 January 2008. These were completed by 1st March 2008. Continuation of further enabling works (Phase 2) will continue thereon.

Section 5A, 5B & 5C

- **Section 5A** works by MUDFA have been completed. Remaining works novated to INFRACO.

- **Section 5B** - IFC utility drawings issued 18 January 2008. MUDFA works were re-5B - programmed and commenced 25 February 2008. Traffic Management requirements for Northbound South Gyle access need to be reviewed and will require removal of the central reservation.
- **Section 5C** - IFA drawings issued 25 January 2008. Current forecast for IFC 6 March 2008, delayed from 8 February 2008. The majority of the works in this section will be adjacent to the Gyle Roundabout and Gyle Broadway, and in the South Gyle Access junction with Bankhead Drive. Drawings issued to Edinburgh Park (IFA) 30 January 2008 for approval.

Section 6 (Utilities)

- Diversion of the 33kv SP cable completed and energised.
- 250mm water main diversion completed under RATs. Hydrostatic test completed and presently progressing finalisation of acceptance with Scottish Water.
- 800mm water main design drawings reviewed for discussion with SW w/c 28th January 2008. 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 drawings remain outstanding. These works, which were anticipated to commence in January 2008, will now start at the beginning of May 2008 at earliest (refer to Section 6 comments).
- The design to revert back to predominantly push fit connections and thrust blocks has been progressed by SDS, however, there is a need for mechanical joints at the connections to the existing mains.

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 water main). BAA has now agreed on the requirements for the amended fence line but no date has been provided. Earliest completion anticipated end April 2008

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. First workshop was held with BAA on Friday 15 February 2008.
- DLA draft of D&B contract issued to AMIS for review and acceptance. Carillion takeover and consequential governance influence may affect construction start in April 2008.

Action Plan

- Overall progress in period has identified a reduction in outputs, due to increasing workload and number of live sections.
- Skill base of workforce personnel has been reassessed and changes to work force carried out accordingly, which has resulted in resource shortages in the interim. Additional suitably qualified resources have been identified internally and externally (subcontractors). Additional resources, circa 30no. have been employed to carry out works in Shandwick Place – to ensure no impact on ongoing works elsewhere.
- Works due to commence in Constitution Street will be carried out by subcontracted personnel, over and above presently on site. Again to ensure no detrimental effect on work ongoing. Further resources supervision and labour are being recruited to address downturn in outputs.
- Present programme status reflects 3 weeks delay overall. This translates into a recovery period of some 15no additional personnel over a period of 3 months, based on present outputs. This period would be reduced as output measures improve. Key areas to be targeted are North end of Leith Walk (output 33%) and the Mound/St Andrew Square (output 58%), which are substantially lower than the section overall average output of 80%.

1.0 Design Status

Section	Drawings for Approval	Drawings for Construction According to SDS	tie opinion
1A 1-5	Drawings for track alignment show a conflict with SP primary S/S. Retaining wall for the new road will conflict with SP cables and SGN pipe. Design to be revisited	Four weeks	Target Four Weeks
1A 6-10	Issued for Construction drawings awaiting approval from Forth Ports and SP SP have a problem with this design as the majority of diversions run into drawings 1-5. Similar situation with Forth Ports	Two weeks	Target Two Weeks
1C 32-38	Plan approved but approval of tunnel crossing delayed. Scottish Power concern relates to crossing which are also in the proximity of the	IFC on 5 March 2008 depending on approval	Two weeks

	track slab		
1C plate 44	Info required from SGN Information from recent trial holes required for them to progress. Tie and SGN will progress design, then pass to SDS formalise IFC drawings	No statement	Four weeks
2A 1-3	SGN input required Meeting 5 March 2008 SDS & tie design and project managers.	Delivery promised 7 March 2008.	28 March 2008
5C 21-26	Produced 25 Jan 2008	Errors in design revised to 29 th Feb. Now promised 6 th March. Easynet responsible for hold up	21 March 2008
6A 1-2	Scottish Water & C & W	Although in section 5c this has been taken as separate package to speed up process Promised for 7 th March	14 March 2008
6 Gogar	Proposal delivered to SW 28 Feb 2008. SW having internal workshop 4 March 2008. Meeting with tie and SDS Thursday 6 March 2008.	Iteration of SDS design expected from Thursday meeting.	4 weeks

See Appendix 2 – Design Tracker

1.1 Traffic Management

- Traffic Modelling and design for Phase 1 city centre works completed. TM requirements both signage and requisite equipment installed and completed.
- 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 and in place.
- Traffic Modelling and design completed for Constitution Street/Foot of the Walk.

See Appendix 3 – Traffic Modelling

1.2 Communications & Stakeholder

1.2.1 Media and Communications

Achievements in the month:-

- 9,000 notification letters sent to residents and businesses in Shandwick Place and the wider community at the start of February.

- Construction Update Leaflet 1 produced for Shandwick Place. 19,000 printed and distributed to: local businesses, community councils, councillors, libraries, Lothian Bus Shops, garages and at the Gyle Centre Roadshow.
- Shandwick Place Update 2 produced and distributed by email to **tie** staff, partners, plus 2,000 businesses and residents in Shandwick Place and the surrounding areas.
- Production and installation of route signage
- Production of Helpline Cards for operators on-site. Provides helpline number and Media House number for specific media enquiries.

1.2.2 Planned activities in the month include:-

- Week commencing 3 March 2008 - Shandwick Place Update 2 distributed to 2,000 local businesses and residents. Local garages and other key locations provided with new update
- Coverage on Shandwick Place included in Outlook Spring Publication. To be published at the end of March 2008
- Work with CEC Communications to brief Councillors on a regular basis. Full Council briefing originally set for March. Date to be confirmed.
- Issue and notification of Constitution Street closure 31 March 2008 to affected businesses/residences.
- Arrange surgeries for local businesses for Foot of the Walk/Constitution Street works.

1.2.3 Site works

- The Trams for Edinburgh website was updated during the month to reflect all MUDFA activity.

1.2.4 Customer Interaction Cycle

- Inbound demand continued to rise reflecting the increased notification send out and intensity of MUDFA operations. There were in excess of 160 inbound enquiries in the month, the highest recorded. The analysis is shown in the report appendices.
- Proactive contact by Tram Construction Advisers remains at a high level and plans are at an advanced stage for further recruitment to reflect the increase in active work sites.

1.2.5 Stakeholder Engagement

- Key stakeholder engagement activities in the month included the following:-
- **Business Support** – The activity in this area this month was the most intense since the project began with more than 109 businesses receiving support

packs in the month. The cumulative payout on the small business support scheme currently stands at £328,000.

See Appendix 4 – Stakeholder Activities

1.3 Commercial

- Allowance budget to variations for City Centre enabling works Phase 2 & 3, Constitution Street Enabling Works, Haymarket enabling works, Traffic Management Modelling Works and the 1500mm diameter sewer diversion under the A8 at Gogar – authorisation sheets and details will be tabled during the Period 12 PM review meeting.
- Potential issues related to deep excavations along Leith Walk may have affected the adjacent existing structures. This is a potential OCIP insurance issue and the insurers have been informed and a structural engineer representing the insurers has visited the site and inspected the affected properties. A sum of £100k has been allocated within the MUDFA contingency budget for potential settlement of issues below the excess – to be discussed with insurance department.
- 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. DLA Piper has produced a draft agreement between TEL, CEC and the affected SU's which has been issued to Alastair Richards for comment/approval prior to issue to SU's.
- 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 by the end of Period 13. The joint review will be based upon approximately 90% of the design for the Project Require approval to transfer contingency
- Guidance is required related the Contract and specifically the insurance provisions as a result of the purchase of AMIS by Carillion. AMIS' insurance cover has expired and tie await confirmation of their insurance cover which will be in the name of Carillion with a statement from the insurance brokers/Carillion confirming MUDFA works are covered.

See Appendix 5 – Risk Register

2.0 Operations Next Period

2.1 Construction

- Sewer Surveys planned for Forth Ports – commenced 25th February 2008.
- TM design work instigated for Constitution Street and Foot of the Walk – responsibility matrix in place to capture all actions, owners and timescales

- TM design work instigated (if required) for London Road Roundabout/South end of Leith 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
- Phase 1 Shandwick Place closure – Saturday 1 March 2008
- Review of TM requirements for Phase 3 to commence in this period (Phase 2 started).
- Diversionary works proceed along Shandwick Place – commencement 3 March 2008.
- Enabling works for closure of Constitution Street diversions commence 3 March 2008 (completion 28 March 2008).

2.2 Programme

- Impact of 4 week delay to Phase 1 commencement and subsequent 2 week delay in Constitution Street closure to be assessed in rev 06 programme.
- Latest production figures indicate outputs have dropped significantly (approx 50% output planned achieved), especially in the last period. Indications are we are 3-4 weeks behind programme. Refer to Action Plan (at end of Progress Period).

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. Protected services identified on 'as-builts' for informing SUC's/ INFRACO et al. Method of measurement may affect overall saving.
- 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 10 December 2007. Expect these to be completed by end of March 2008.
- 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. Revised design programme impacting on ability to obtain visibility of interfaces.
- 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 30" gas main at the Mound – commercial resolution required. Agreement reached on preferred solution. Trial holes have verified the location of the 24th main connection. Early indications are that this may result in pipe diversion overall length not exceeding 100LM.
- 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. Section 5C delayed four weeks due to inaccuracies within initial package. IFC reissue was due 6 March 2008. Most likely to be 21 March 2008. Construction was due to commence 25 February 2008; now probably beginning April earliest.

- 1500mm sewer under proposed A8 underpass. Risk of not achieving alternative solution agreement to the proposed divert option under the A8. Significant financial risk. Latest information would indicate secondary diversions would be required over and above the underpass diversion. (North Side). Option report developed summarising pros/cons of each. Decision based on report, taken to divert around underpass.

Proposed Graeme Barclay
 Construction Director 12 March 2008

Recommended Steven Bell
 Project Director 12 March 2008



MUDFA Sub-Committee Meeting

AGENDA ITEM 3

Appendices



MUDFA Sub-Committee Meeting

APPENDIX 1

Utility Damage Data

Location and/or Street Name

Plate Number / Diversion Number

Trench Excavation :

Trench depth & width as per specification: Yes.....No.....N/A

Has re-instatement been identified as temporary or permanent? This has to be agreed by tie site representative and AMIS FLM. Yes.....No.....N/A

Has Contractor check list been prepared and available Yes.....No.....N/A

Pipe / Duct Installation

Bed material & depth as per specification: Yes.....No.....N/A...

Pipes used conform to specification Yes.....No.....N/A...

Route free from stones, debris, obstructions, etc: Yes.....No.....N/A...

Sides supported and shored where required Yes.....No.....N/A...

Pipes cleaned and proved: with End caps fitted where applicable Yes.....No.....N/A...

Welding equipment: Suitable & correctly set-up: Yes.....No.....N/A...

Clearance from other utilities as per required specification Yes.....No.....N/A...

CORRECTIVE ACTION IDENTIFIED

.....

.....

tie Verified by Date

Contractor Verified by Date

Trench Reinstatement :

Pipe surround material & depth as per specification: Yes.....No..... N/A.....

Warning Tape type, width and location (depth) as per specification: Yes.....No.....N/A.....

Backfill material type and compaction as per specification: Yes.....No.....N/A.....

Final Tar reinstatement as per specification: Yes.....No.....N/A.....

CORRECTIVE ACTION IDENTIFIED

.....

.....

tie Verified by Date

Contractor Verified by Date

Inspections carried out by: (signatures)(Site inspector)

Dates: Fromto.....

Year to Date Service Strike Information

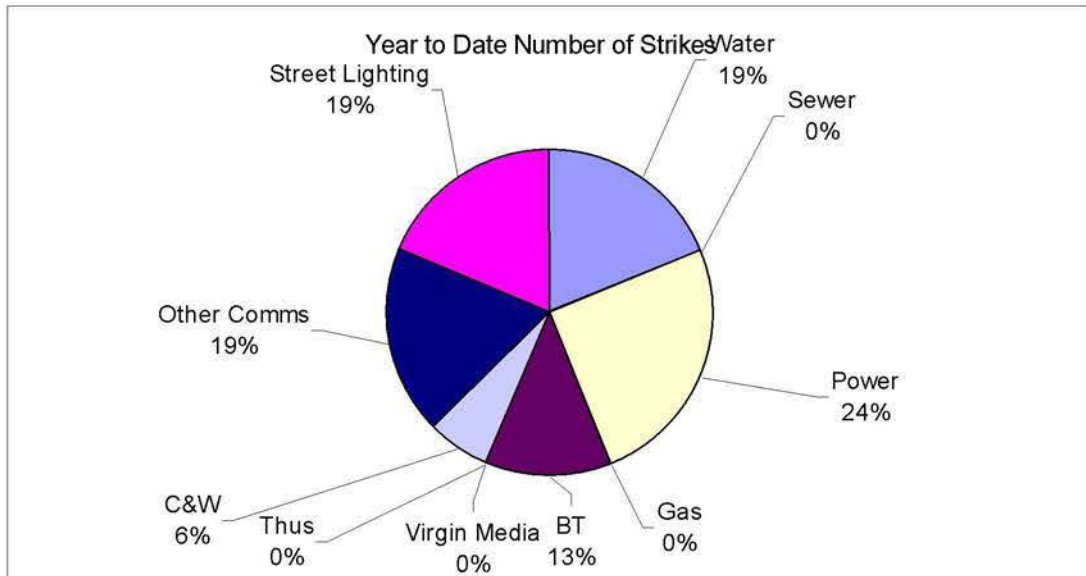
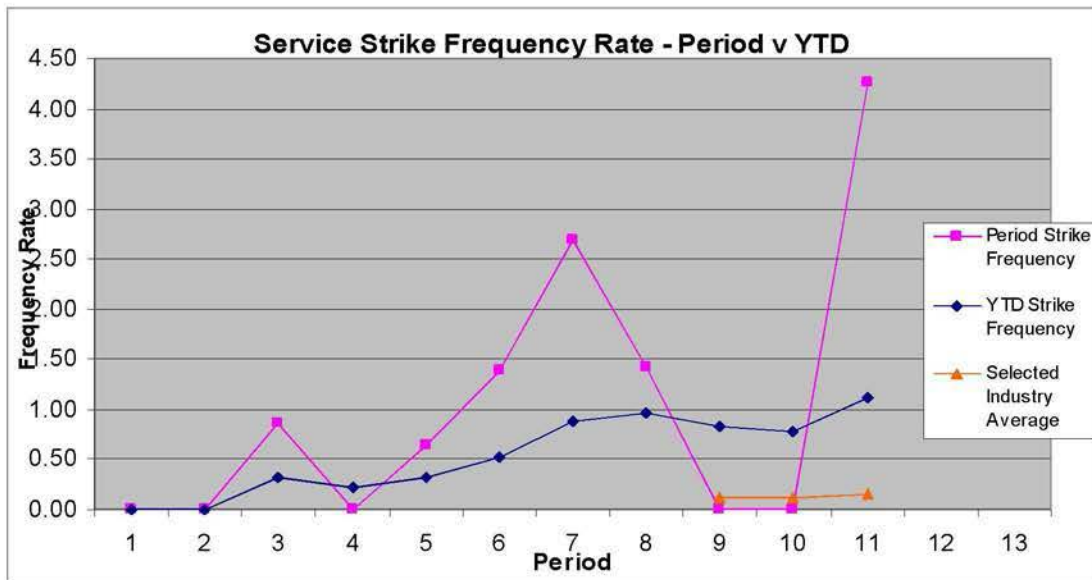
Hours Expended in Period =	14093
Hours Expended year to date =	143569
Service strikes in period =	6
Service Strikes Year to date =	16

Period Service Strike

Frequency Rate (per 10000hrs) = 4.26

Year to date Service Strike

Frequency Rate (per 10000hrs) = 1.11



Tables 1 to 5

Table 1

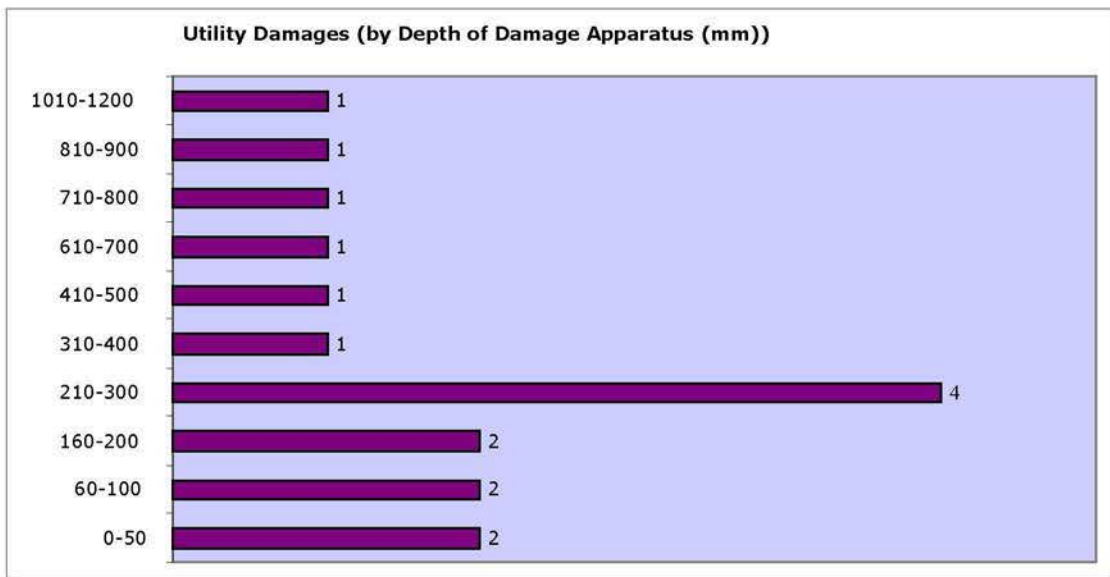
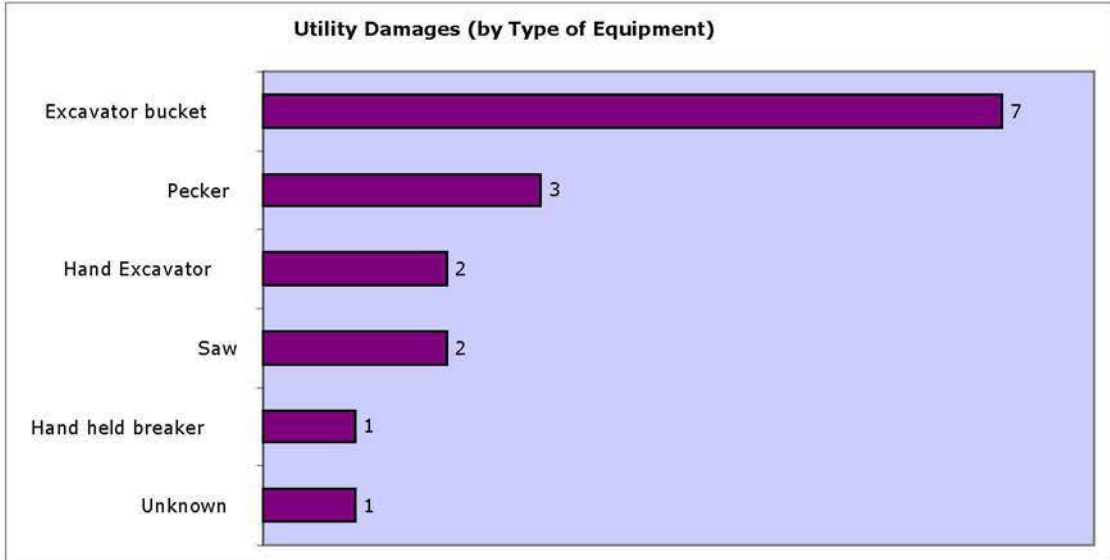
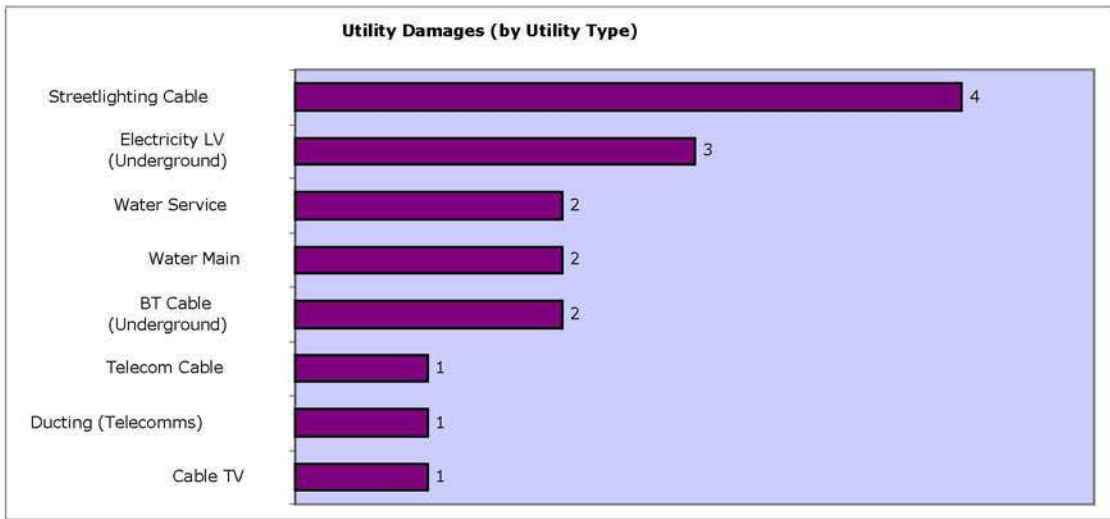
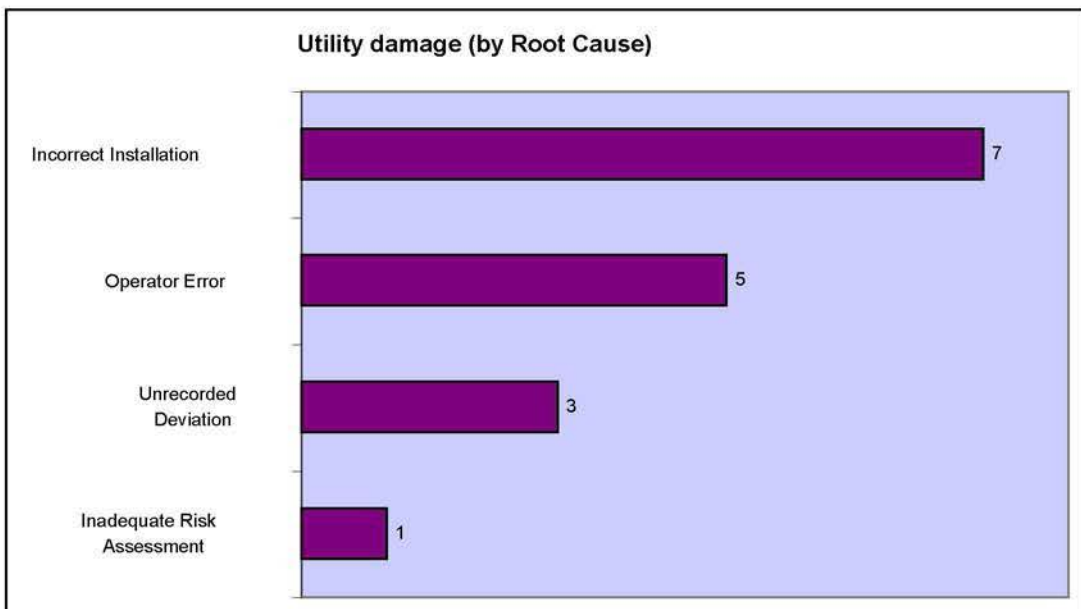
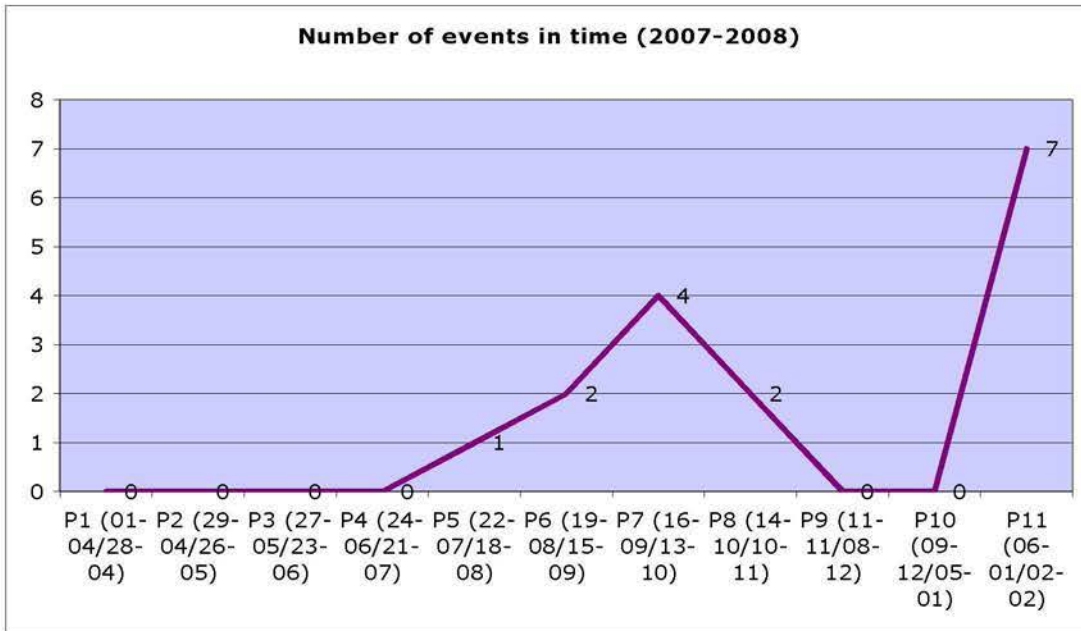


Table 4





MUDFA Sub-Committee Meeting

APPENDIX 2

Design Tracker

MUDFA Design Tracker
SDS Design Status @ 07th March 2008

Section	Drawing Nos	Issue to SUC's for Approval			SUC Approval			Issue Approved IFC Package			IFC to Const'n Start	MUDFA Revision 05 - 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	26-Mar-08		09-Nov-07	11-Apr-08		23-Nov-07	26-Apr-08		13	12-May-08		Service diversion cannot be determined until completion of retaining wall design.
1A	plates 06-10	26-Oct-07	15-Feb-08	11-Feb-08	09-Nov-07	18-Nov-08		23-Nov-07	21-Apr-08		13	07-Apr-08		Status of Approvals: SGN - Approved SP - Approval Outstanding SW-C - Approved SW-F - BT - Approved C&W - Approved Thus - Approved VM - Approved Forth Pans - Approval Outstanding Design will not commence until completion of bridge design.
1A	plates 11-12	26-Oct-07	21-Mar-08		09-Nov-07	04-Apr-08		23-Nov-07	18-Apr-08		11	07-Apr-08		
1A	plates 13-15	04-May-07	01-Jun-07	01-Jun-07	11-May-07	22-Jun-07	22-Jun-07	25-May-07	03-Jul-07	03-Jul-07	0	09-Jul-07	09-Jul-07	Works commenced on site 09th July 2007 after political approval for Train Project. SW-F Sewer Manhole & Surveys (Programmed 24th & 25th October 2007) awaiting to be finalised. Designs to be completed. RoR issued to SDS on 12-Nov-07.
1A	plates 16-21	14-Sep-07	02-Nov-07	29-Oct-07	21-Sep-07	08-Feb-08	04-Mar-08	05-Oct-07	11-Mar-08	07-Mar-08	10	17-Mar-08		Revised Construction Start Date 31-Mar-08.
1B	plates 22-26	31-Aug-07	07-Sep-07	10-Sep-07	07-Sep-07	01-Oct-07	11-Oct-07	21-Sep-07	12-Oct-07	12-Oct-07	101	21-Jan-08		
1B	plates 27-31	06-Jul-07	09-Jun-07	09-Jun-07	19-Jul-07	21-Aug-07	21-Aug-07	27-Jul-07	31-Aug-07	31-Aug-07	5	08-Sep-07	08-Sep-07	SGN IFC drawings issued on 04-Dec-07 for plates 27/31 with updated composite drawing.
1C	plates 32-38	12-Oct-07	31-Oct-07	06-Nov-07	19-Oct-07	13-Mar-08		02-Nov-07	21-Apr-08		34	14-Apr-08		SDS re-issued cross-section details on 24th January 2008. Re ROR issued to SDS on 20-Nov-07. Status of Approvals: SGN - Approved 26-Nov-07. SGN have now indicated they are unhappy with clearance over SP tunnel. MB to discuss issue with SGN. SP - Approved 21-Dec-07. SW-C - Verbal Approval. BT - Approved 13-Dec-07. C&W - Approved 14-Dec-07. Thus - Approved 12-Dec-07. VM - Approved 19-Dec-07. Verizon -
1C	plates 39-41	12-Oct-07	12-Nov-07	15-Nov-07	19-Oct-07	17-Dec-07	20-Dec-07	02-Nov-07	21-Dec-07	21-Dec-07	13	07-Jan-08		
1C	plates 42-43	14-Sep-07	12-Sep-07	12-Sep-07	21-Sep-07	05-Oct-07	12-Oct-07	05-Oct-07	19-Oct-07	17-Oct-07	82	07-Jan-08		
1C	plate 44	14-Sep-07	08-Oct-07	13-Sep-07	21-Sep-07	26-Oct-07	12-Oct-07	05-Oct-07	09-Nov-07	17-Oct-07	256	09-Jun-08		
1C	plates 45-48	31-Aug-07	03-Sep-07	03-Sep-07	07-Sep-07	28-Sep-07	03-Oct-07	21-Sep-07	06-Oct-07	06-Oct-07	38	12-Nov-07	12-Nov-07	
1D	plates 49-51	28-Sep-07	19-Oct-07	22-Oct-07	05-Oct-07	29-Nov-07	23-Nov-07	19-Oct-07	07-Dec-07	26-Nov-07	63	28-Jan-08		IFC issued 20th November 2007
1D	plates 52-56	28-Sep-07	08-Nov-07	09-Nov-07	05-Oct-07	09-Jan-08	09-Jan-08	19-Oct-07	11-Jan-08	14-Jan-08	23	04-Feb-08		

MUDFA Design Tracker
SDS Design Status @ 07th March 2008

Section	Drawing Nos	Issue to SUC's for Approval			SUC Approval			Issue Approved IFC Package			IFC to Const'n Start	MUDFA Revision 05 - 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	28-Mar-08		21-Sep-07	11-Apr-08		05-Oct-07	25-Apr-08		31	26-May-08		IFA issue delayed by re-work associated with re-issue for Section 5C.
5A	plates 1-3	01-Jun-07	12-Jul-07	12-Jul-07	04-Aug-07	10-Aug-07	10-Aug-07	18-Aug-07	10-Aug-07	14-Aug-07	0	20-Aug-07	20-Aug-07	IFC Drawing Plates Issued: Composite - Sheets 01.02.03 Cross Sections SCN - Sheets 01.02.03 SP - Sheets 01.02.03 Issued 14-Aug-07 & Re-Issued 05-Sep-07 SW-C - Sheets 01.02.03 SW-F BT - Sheets 01.02.03 VM - Sheets 01.02.03 C&W - Sheets 01.02.03 Thus Version - Sheets 01.02.03 SDS INDICATE NO DIVERSIONS FOR MUDFA IFC package issued 09-Nov-07 (Only 2 diversions for Scottish Power - Non-MUDFA).
5A	plates 4-5	10-Aug-07	14-Sep-07	28-Sep-07	24-Aug-07	26-Oct-07	16-Oct-07	17-Sep-07	09-Nov-07	09-Nov-07	248	14-Jul-08		
5B	plates 11-13	22-Jun-07	22-Jun-07	22-Jun-07	13-Aug-07	06-Oct-07	19-Oct-07	14-Sep-07	19-Oct-07	19-Oct-07	108	04-Feb-08		
5B	plates 14-20	03-Aug-07	09-Nov-07	02-Nov-07	17-Aug-07	17-Dec-07	19-Dec-07	14-Sep-07	18-Jan-08	18-Jan-08	12	04-Feb-08		IFC Drawing Plates Issued: Cross Sections & Composite - Sheets 14.15.16.17.18.19 & 20 SCN - Sheets 16 & 19 SP - Sheets 14.15.16.17.18.19.20 SW-C - Sheet 15 SW-F BT - Sheets 15 & 20 VM - Sheets 15.16 & 20 C&W - Sheets 15.16 & 20 Thus - Sheets 15.16 & 20
5C	plates 21-26	13-Jul-07	16-Jan-08	29-Jan-08	27-Jul-07	01-Feb-08	15-Feb-08	10-Aug-07	08-Feb-08	20-Feb-08	0	25-Feb-08		IFC package was issued on 20-Feb-08 with errors. IFC Package - SDS re-forecast to be re-issued 07-Mar-08. tie anticipate this to be 21-Mar-08. Revised Constuction Start will be 4 weeks later on 21-Apr-08.
6A	plates 1-2	28-Sep-07	14-Mar-08		19-Oct-07	28-Mar-08		02-Nov-07	11-Apr-08			03-Sep-07	03-Sep-07	Line & Level of 800mm water main will be issued for discussion on 15-Jan-08. SDS to confirm dates for preparing 800mm 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: SCN - Verbal Approval. NO ASSETS designed by SDS. SP - Written approval obtained. Will require re-design based on depot move. SW-C - 800mm drawings issued today to SW for review. Tie-in details target for approval of 14-Mar-08. 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. "AMIS proposal RATS initiative for this area"
7A	plates 1-7 (demarcation splits plate 7)	24-Aug-07	14-Dec-07		07-Sep-07	26-Dec-07		21-Sep-07	11-Jan-08			27-Nov-07	27-Nov-07	IFC works commenced on-site on 27-Nov-07. 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.
7B	plates 7-9 AMIS / Grontmij	01-Feb-07	28-Mar-08		15-Feb-08	11-Apr-08		29-Feb-08	18-Apr-08		16	31-Mar-08		
3A	plates 1-23	26-Oct-07	30-Nov-07	19-Apr-07	02-Nov-07	28-Mar-08		16-Nov-07	25-Apr-08		115	18-Aug-08		Re-start of design dependant on response to SDS letter regarding additional cost implications for re-commencing design works.
3B	plates 24-33	09-Nov-07	30-Nov-07	20-Dec-06	16-Nov-07	28-Mar-08		30-Nov-07	25-Apr-08		206	17-Nov-08		Re-start of design dependant on response to SDS letter regarding additional cost implications for re-commencing design works.
3C	plates 34-42	09-Nov-07	30-Nov-07	22-Feb-07	16-Nov-07	28-Mar-08		30-Nov-07	25-Apr-08		220	01-Dec-08		Re-start of design dependant on response to SDS letter regarding additional cost implications for re-commencing design works.

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

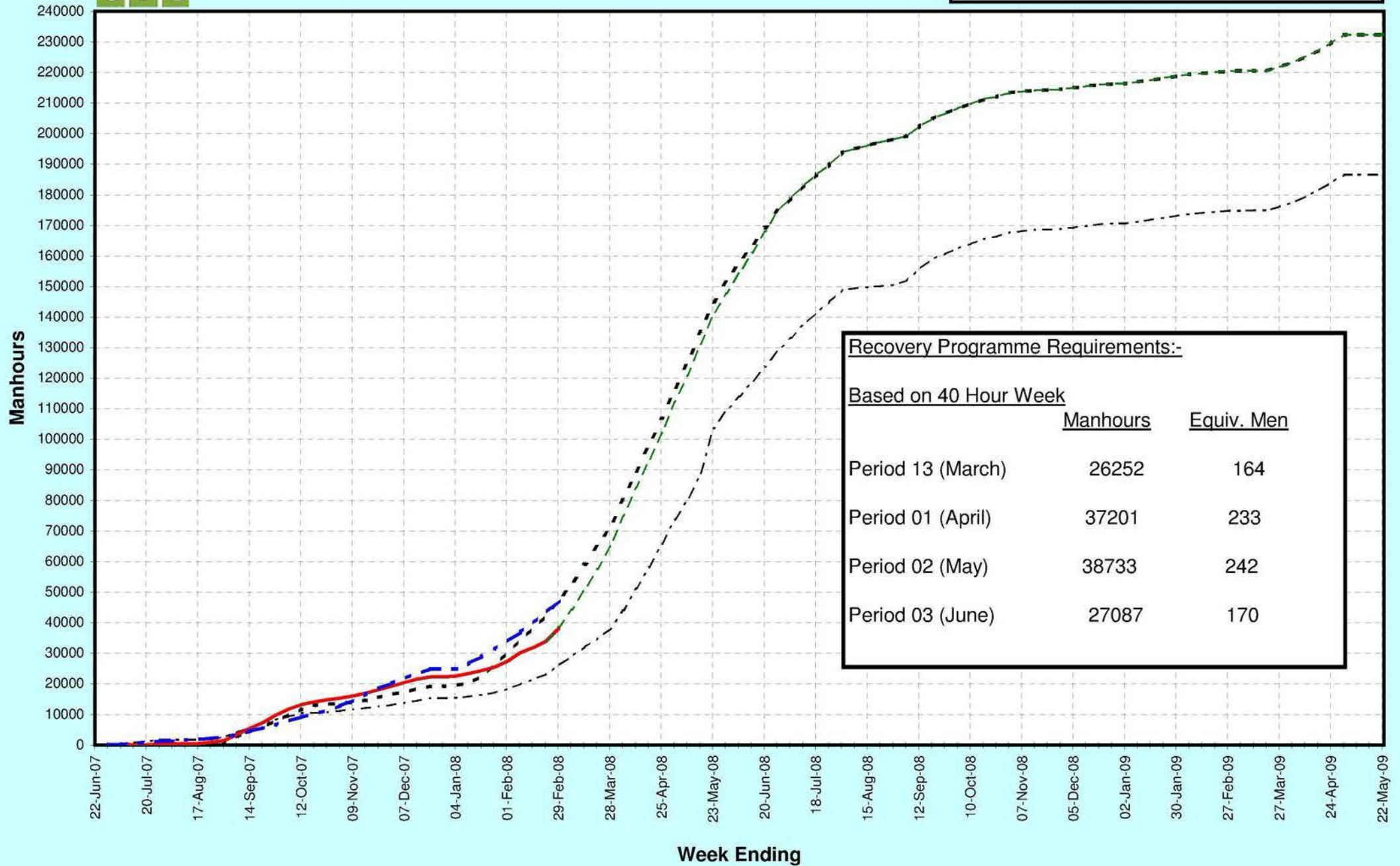
IFC to Construction Start days: - Less than 28 days critical RED, 28-56 days AMBER

CEC01453676_0027



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: 447326
- Cum Earned Value Hours: 38095
- WO Cum Actual Hours: 47110
- - - Cum Recovery Programme



Recovery Programme Requirements:-

Based on 40 Hour Week

	<u>Manhours</u>	<u>Equiv. Men</u>
Period 13 (March)	26252	164
Period 01 (April)	37201	233
Period 02 (May)	38733	242
Period 03 (June)	27087	170

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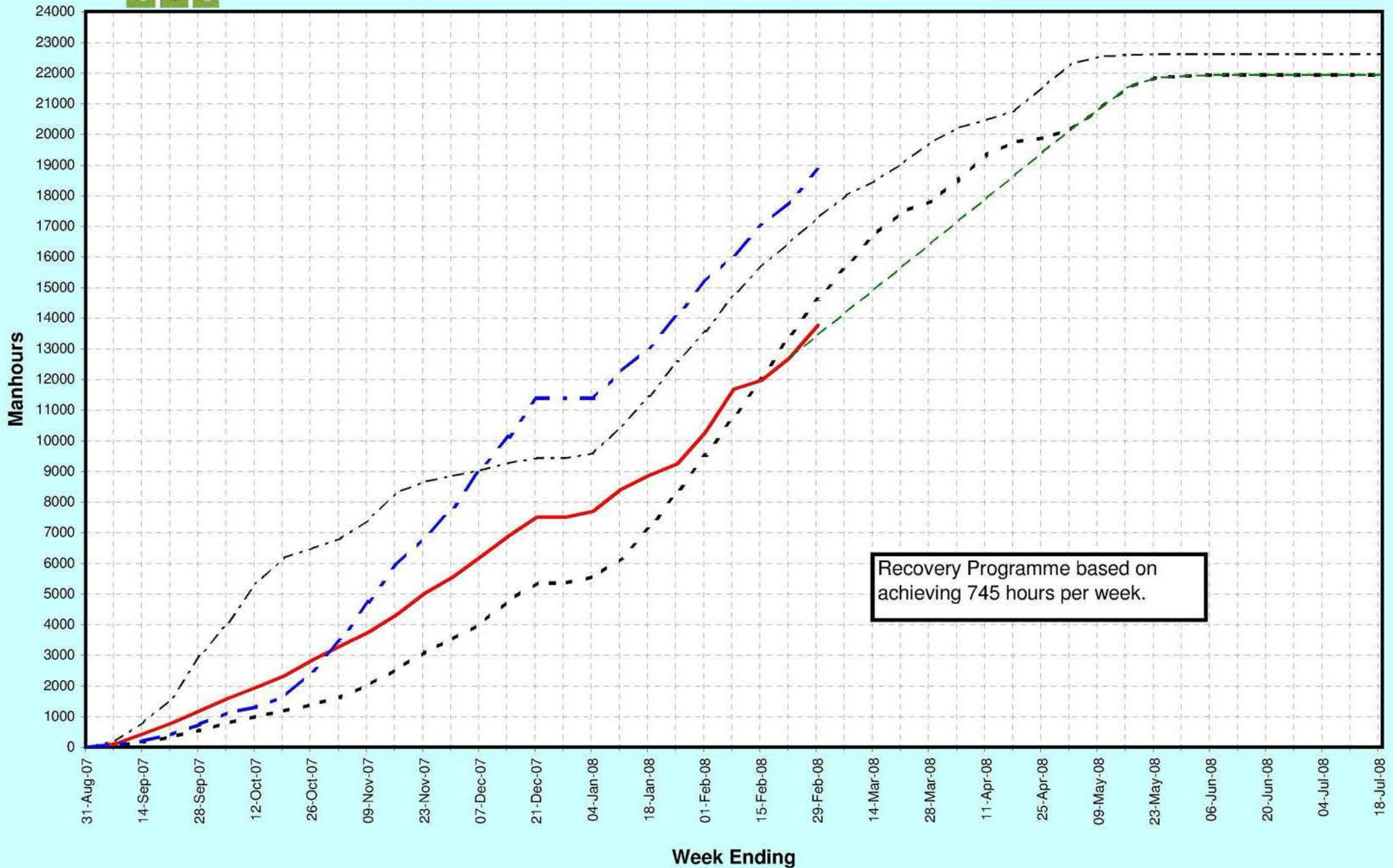


Edinburgh Tram Project

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: 14616
- Cum Earned Value Hours: 13777
- - - Cum Actual Hours: 18836
- - - Cum Recovery Programme



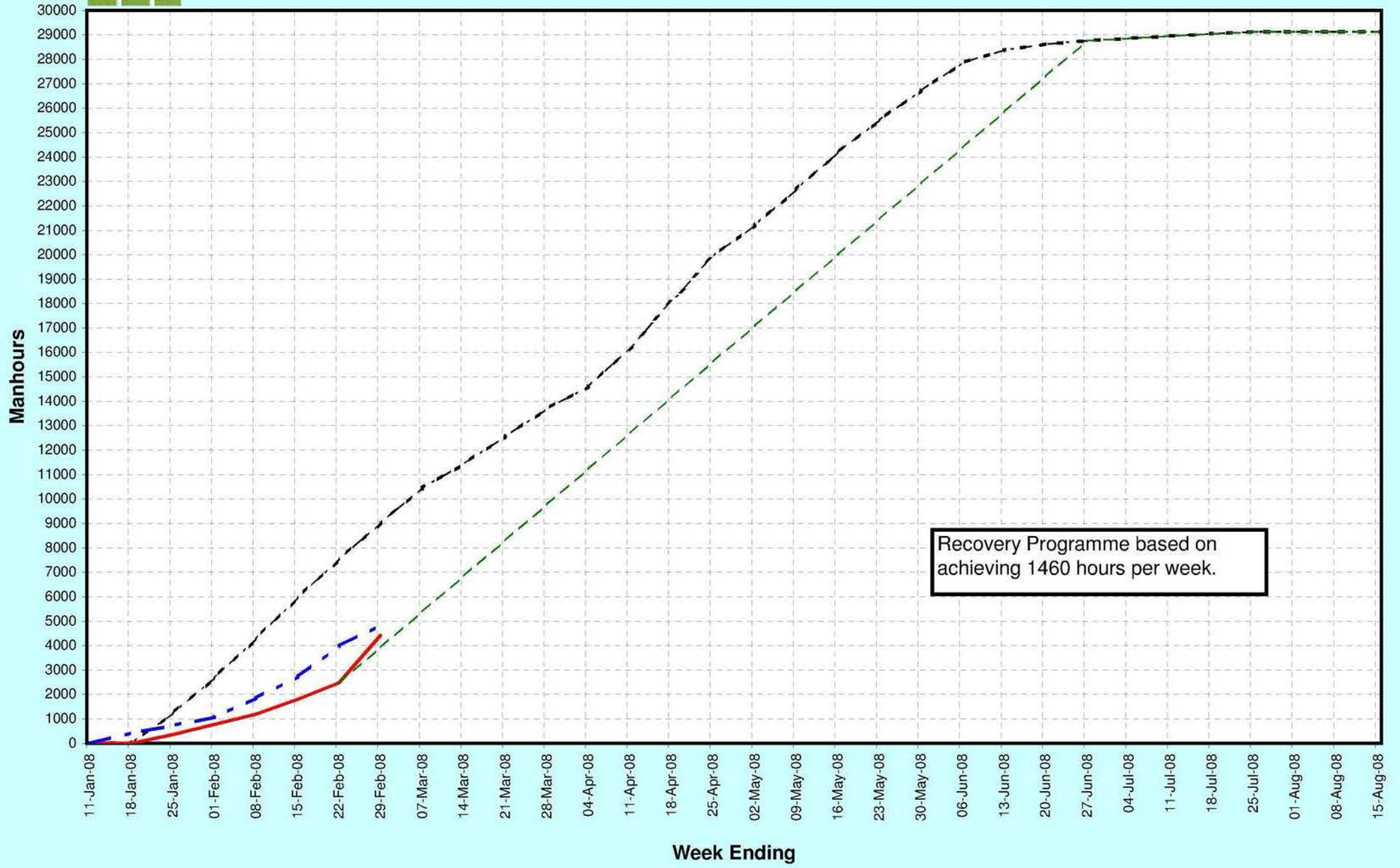


Edinburgh Tram Project

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: 9019
- Cum Earned Value Hours: 4425
- - - Cum Actual Hours: 4843
- - - Cum Recovery Programme



Recovery Programme based on achieving 1460 hours per week.

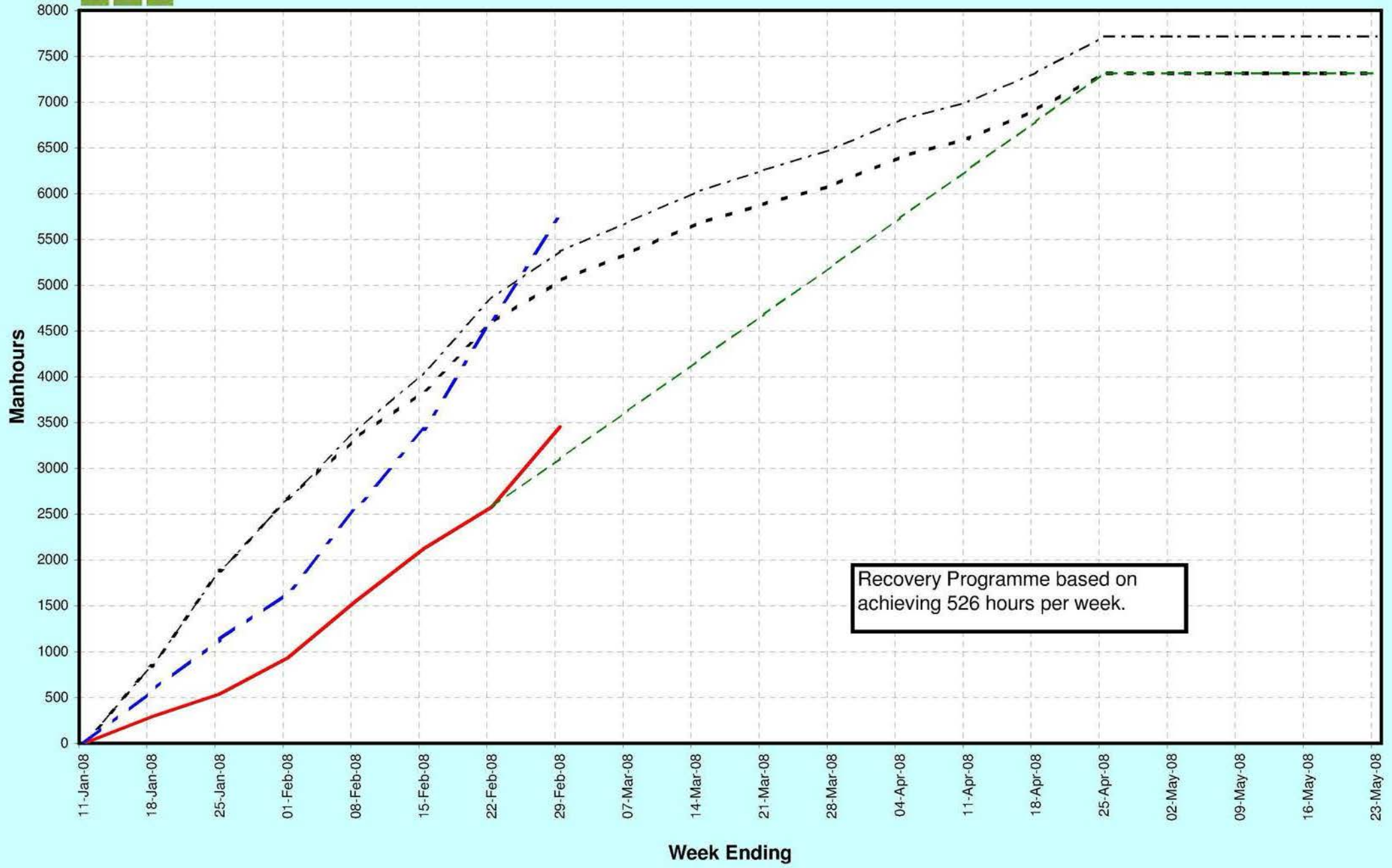


Edinburgh Tram Project

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

(Rev 06 Baseline based on Approved WO Measure)

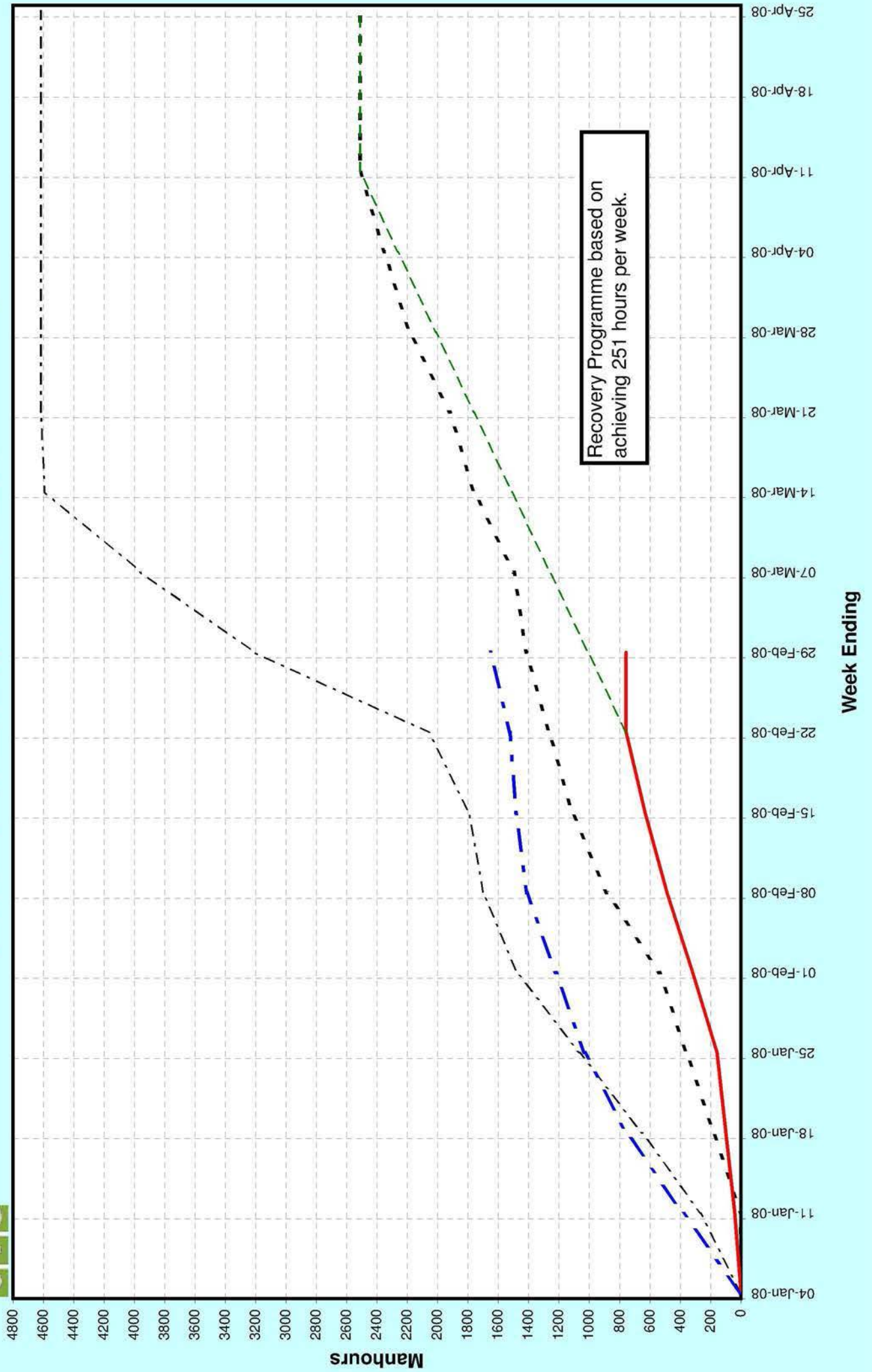
- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 5052
- Cum Earned Value Hours: 3455
- - - Cum Actual Hours: 5755
- - - Cum Recovery Programme





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: 1416
- - - Cum Earned Value Hours: 757
- - - Cum Actual Hours: 1651.5
- - - Cum Recovery Programme



Recovery Programme based on achieving 251 hours per week.

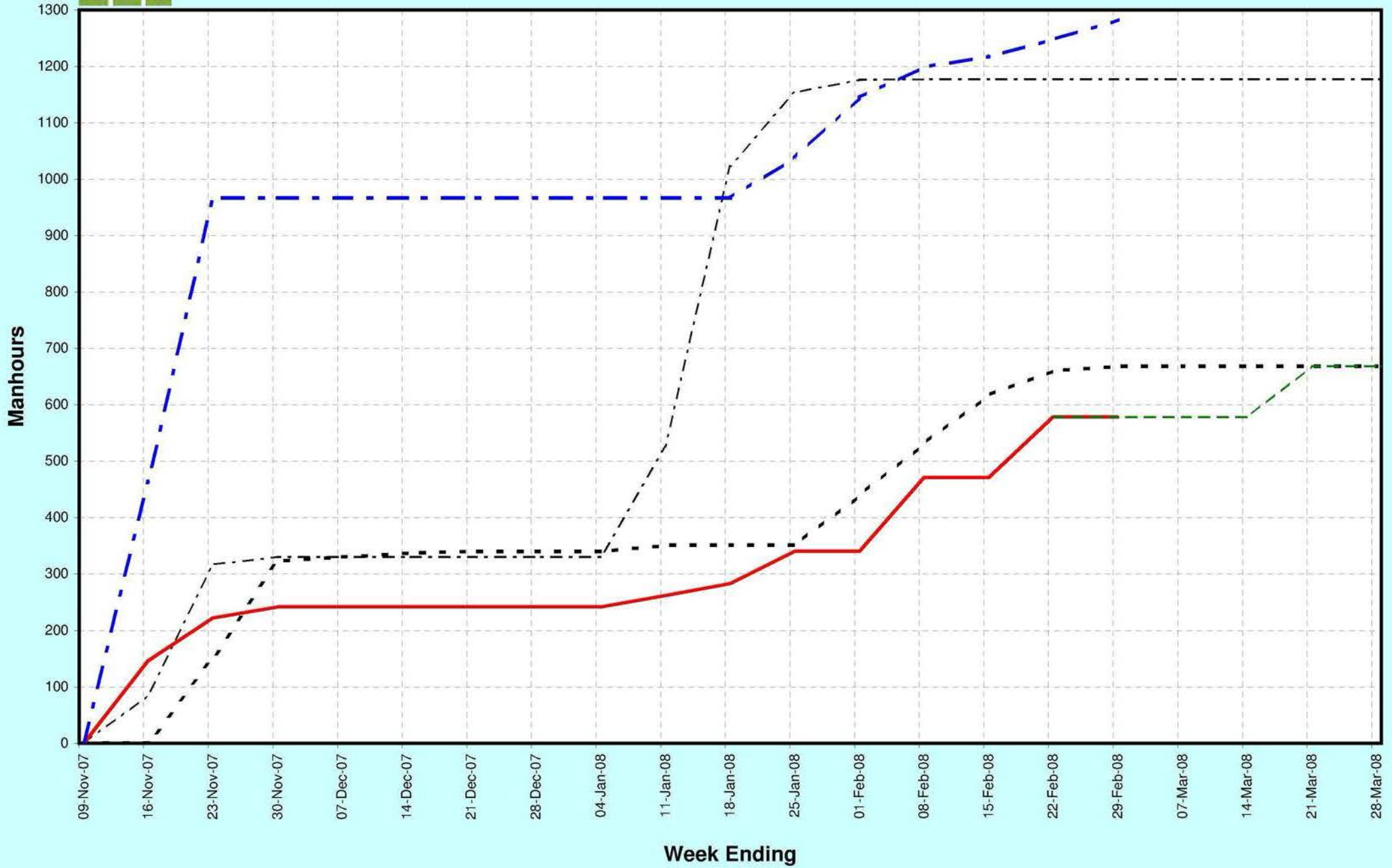


Edinburgh Tram Project

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: 668
- Cum Earned Value Hours: 578
- Cum Actual Hours: 1282.5
- - - Cum Recovery Programme

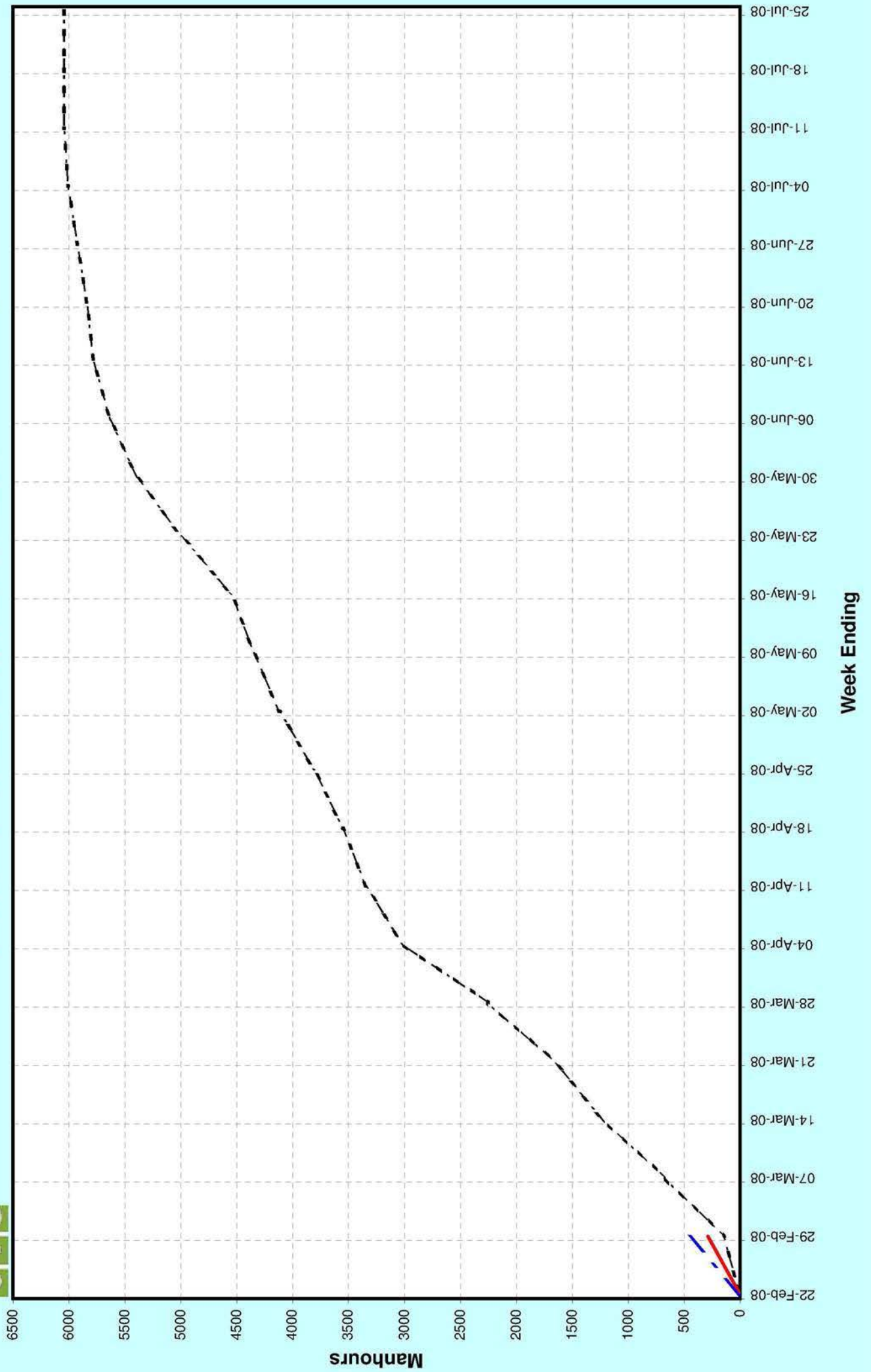


CEC01453676_0033



Edinburgh Tram Project
MUDFA - WO 5BWSI/001/001 - Edinburgh Park Central to Broomhouse Road
(Rev 06 Baseline based on Approved WO Measure)

- - - Cum Original Budget Hours
- - - Cum Current Budget Hours: 147
- - - Cum Earned Value Hours: 289
- - - Cum Actual Hours: 454

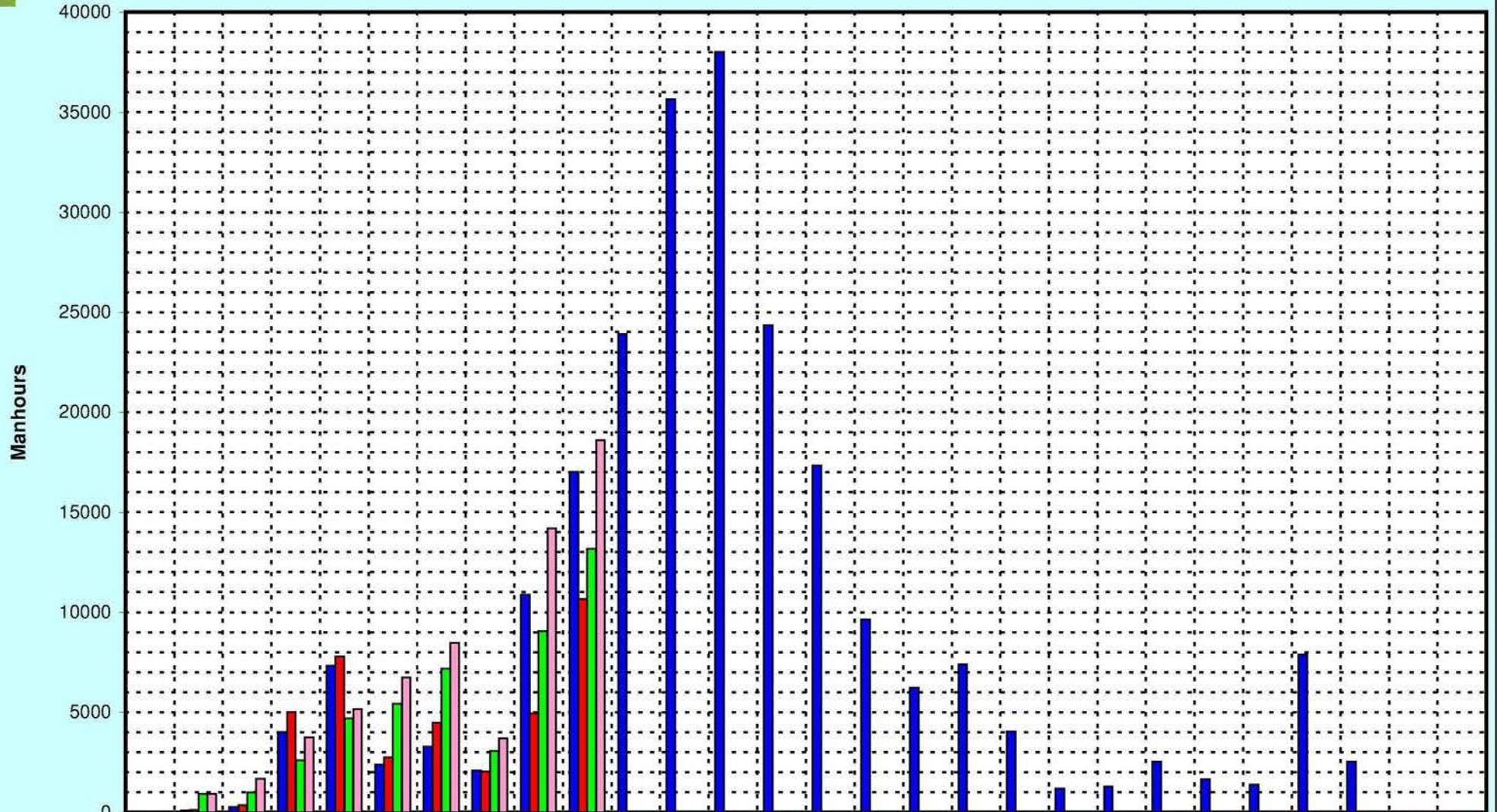




Edinburgh Tram Project

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	87	270	4012	7325	2388	3278	2082	10868	17016	23898	35645	38007	24345	17340	9629	6221	7388	4028	1180	1283	2537	1656	1386	7892	2523	0	0
■ Earned Value Hours	0	123	355	5011	7776	2737	4469	2028	4948	10648																		
■ WO Actual Hours	0	927.5	996.5	2599	4697.5	5433.5	7181	3059.5	9042	13173.5																		
■ WO + Trial Holes Actual Hours	0	927.5	1663.5	3737	5155.5	6730.5	8460	3699.5	14186	18601																		

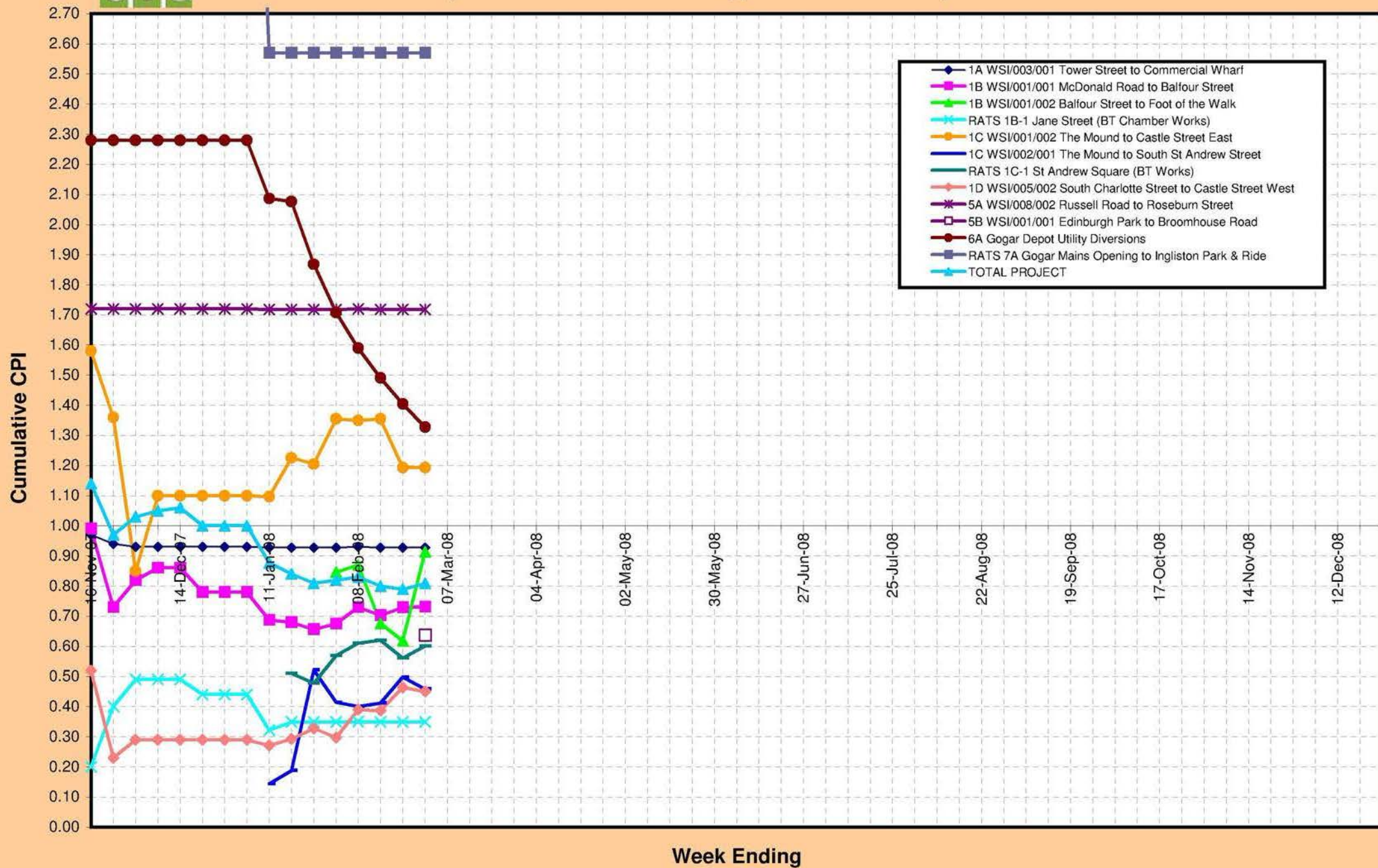
4 Week Period



Edinburgh Tram Project

MUDFA - Work Order Cost Performance Index Trend

(Rev 06 Baseline based on Approved WO Measure)

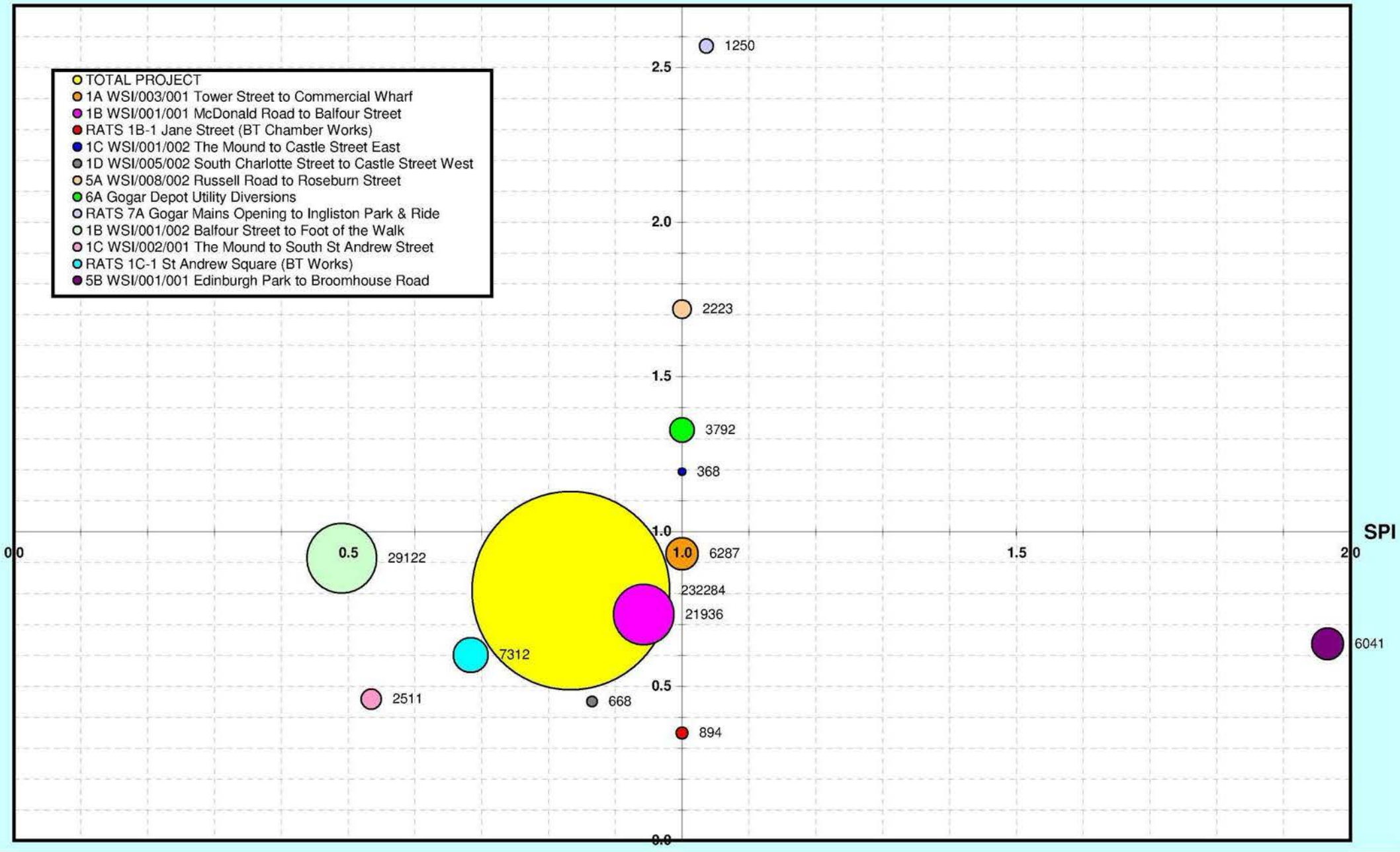




**Edinburgh Tram Project
MUDFA Work Orders
Schedule & Cost Performance Index Status - we 29th February 2008**

CPI

- TOTAL PROJECT
- 1A WSI/003/001 Tower Street to Commercial Wharf
- 1B WSI/001/001 McDonald Road to Balfour Street
- RATS 1B-1 Jane Street (BT Chamber Works)
- 1C WSI/001/002 The Mound to Castle Street East
- 1D WSI/005/002 South Charlotte Street to Castle Street West
- 5A WSI/008/002 Russell Road to Roseburn Street
- 6A Gogar Depot Utility Diversions
- RATS 7A Gogar Mains Opening to Ingliston Park & Ride
- 1B WSI/001/002 Balfour Street to Foot of the Walk
- 1C WSI/002/001 The Mound to South St Andrew Street
- RATS 1C-1 St Andrew Square (BT Works)
- 5B WSI/001/001 Edinburgh Park to Broomhouse Road



CEC01453676_0038



**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 29th February 2008)							Cumulative Performance to Week Ending 29th February 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	0	0	0	-	-	-	-	6287	6287	6777.5	1.00	0.93	100.0%	100.0%
1B WSI/001/001 McDonald Road to Balfour Street	OPEN	22611	21936	1176	1068	1018	0.91	1.05	5.4%	4.9%	14616	13777	18836	0.94	0.73	66.6%	62.8%
1B WSI/001/002 Balfour Street to Foot of the Walk	OPEN	29118	29122	1490	1956	850.5	1.31	2.30	5.1%	6.7%	9019	4425	4843	0.49	0.91	31.0%	15.2%
RATS 1B-1 Jane Street (BT Chamber Works)	CLOSED	894	894	0	0	0	-	-	-	-	894	894	2566	1.00	0.35	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%
5B WSI/001/001 Edinburgh Park to Broomhouse Road	OPEN	6041	6041	147	289	454	1.97	0.64	2.4%	4.8%	147	289	454	1.97	0.64	2.4%	4.8%
6A Gogar Depot Utility Diversions	OPEN	3792	3792	0	0	156	-	0.00	-	-	3792	3792	2655.5	1.00	1.33	100.0%	100.0%
1C WSI/001/002 The Mound to Castle Street East	CLOSED	668	368	0	0	0	-	-	-	-	368	368	308.5	1.00	1.19	100.0%	100.0%
1C WSI/002/001 The Mound to South St Andrew Street	OPEN	4616	2511	152	0	129.5	0.00	0.00	6.1%	-	1416	757	1651.5	0.53	0.46	56.4%	30.1%
RATS 1C-1 St Andrew Square (BT Works)	OPEN	7715	7312	461	875	1137.5	1.90	0.77	6.3%	12.0%	5052	3455	5755	0.68	0.60	69.1%	47.3%
1D WSI/005/002 South Charlotte Street to Castle Street West	OPEN	1177	668	8	0	35	0.00	0.00	1.2%	-	668	578	1282.5	0.87	0.45	100.0%	86.5%
1D WSI/004/001 Shendwick Place West End to South Charlotte St	OPEN	22991	22991	0	0	0	-	-	-	-	0	0	0	-	-	-	-
RATS 7A Gogar Mains Opening to Ingliston Park & Ride	CLOSED	2077	1250	73	0	0	0.00	-	5.8%	-	1206	1250	486.5	1.04	2.57	96.5%	100.0%
TOTAL PROJECT		186597	232284	3507	4188	3780.5	1.19	1.11	1.5%	1.8%	45688	38095	47110	0.83	0.81	19.7%	16.4%



MUDFA Sub-Committee Meeting

APPENDIX 3

Traffic Modelling

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

Location of Works	Current Modelling and TM Design Position	Programmed Start Date	Required Date to Start Modelling - 10 week lead in	Required Date to Start Modelling - 6 week lead in
Shandwick Place Closure (Phase 1)	Modelling & TM design completed and installed	03/03/2008	24/12/2007	21/01/2008
Constitution St / FOTW	TM modelling and design completed. TM procurement initiated	31/03/2008	21/01/2008	18/02/2008
Gogar RA / A8	No modelling required, localised TM required.	04/04/2008	25/01/2008	22/02/2008
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	14/04/2008	04/02/2008	03/03/2008
Picardy Place	No works actioned	16/06/2008	07/04/2008	05/05/2008
Haymarket / Manor Place/the Mound	TM modelling target commencement mid March	14/07/2008	05/05/2008	02/06/2008

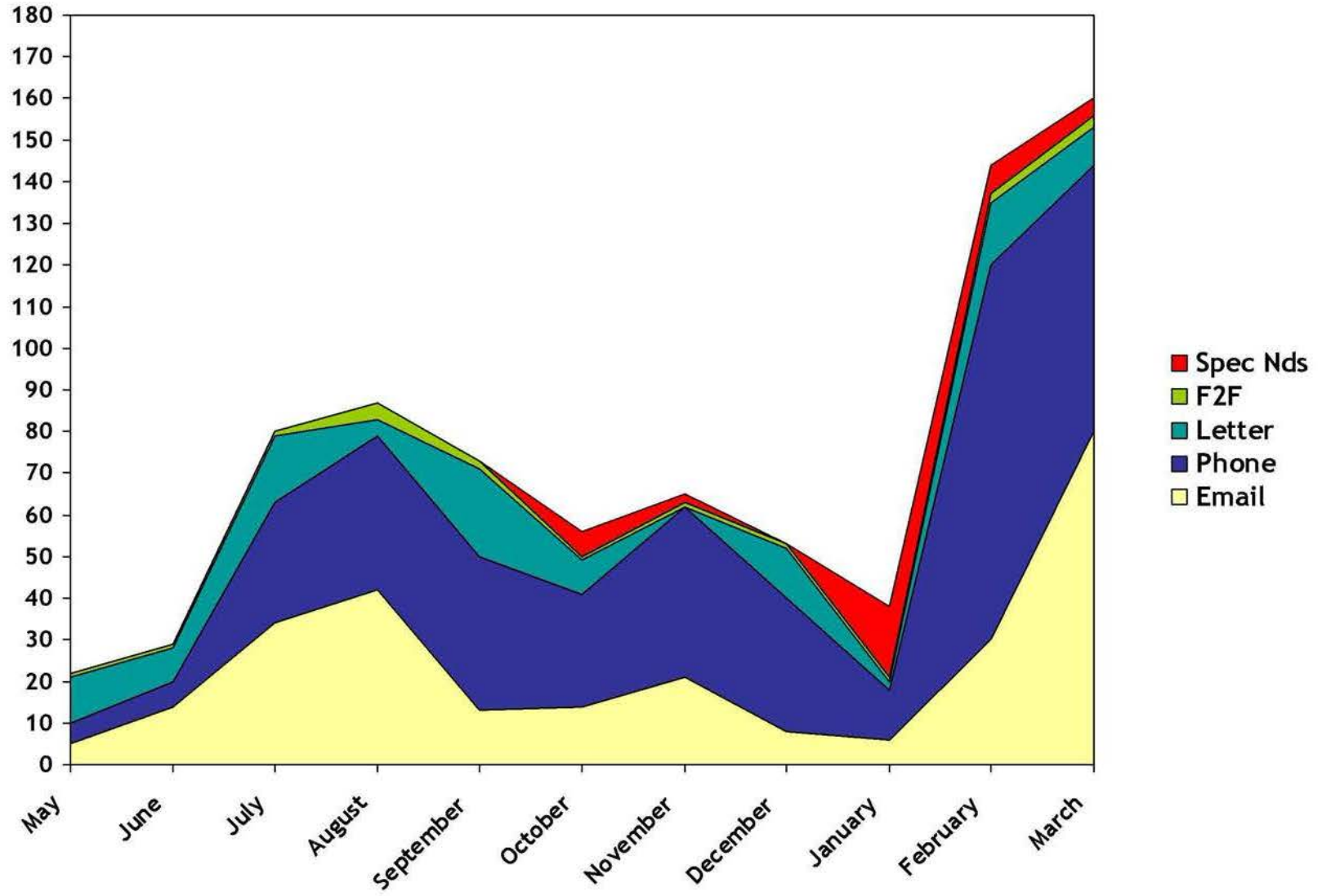


MUDFA Sub-Committee Meeting

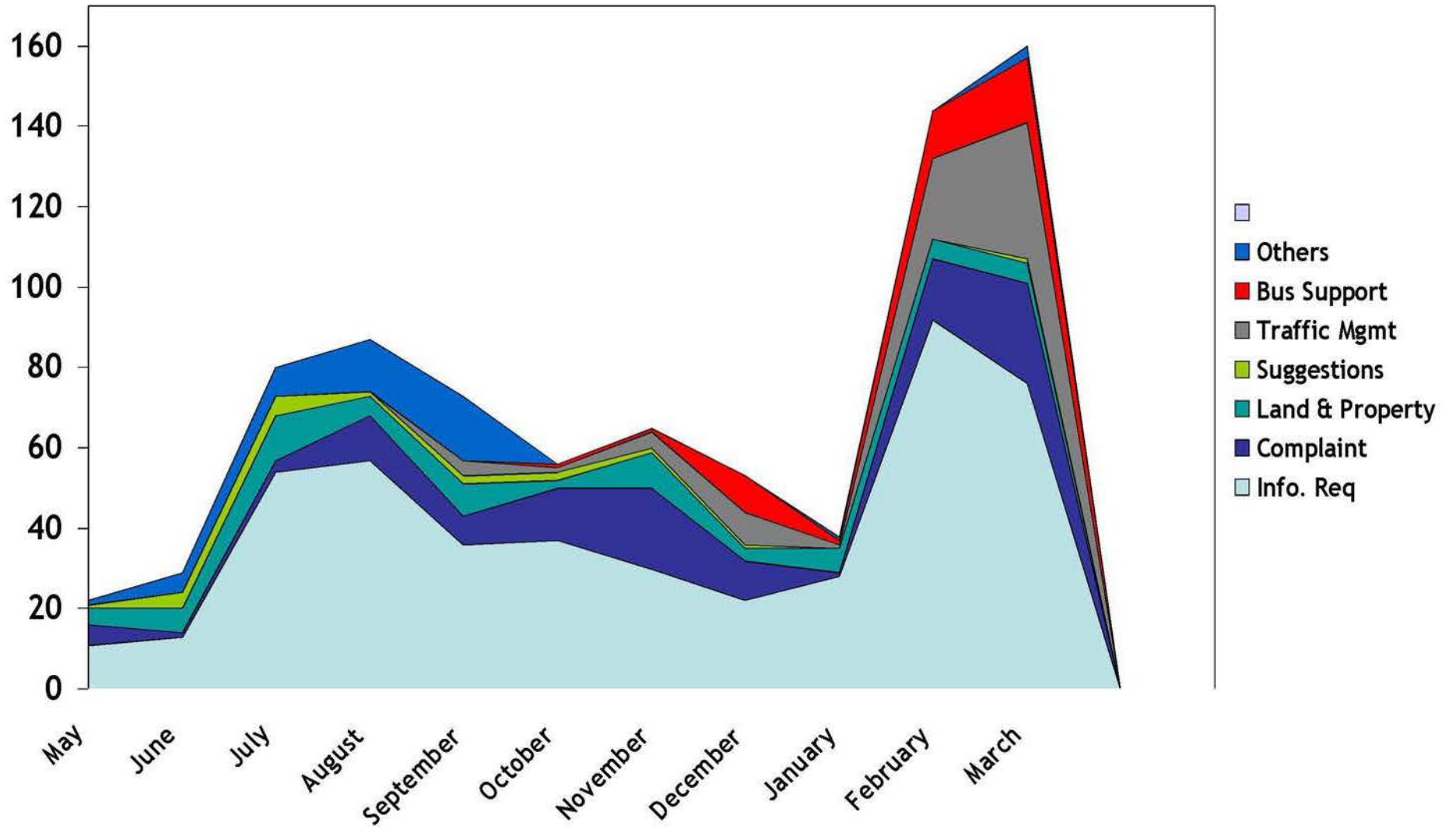
APPENDIX 4

Stakeholder Activities

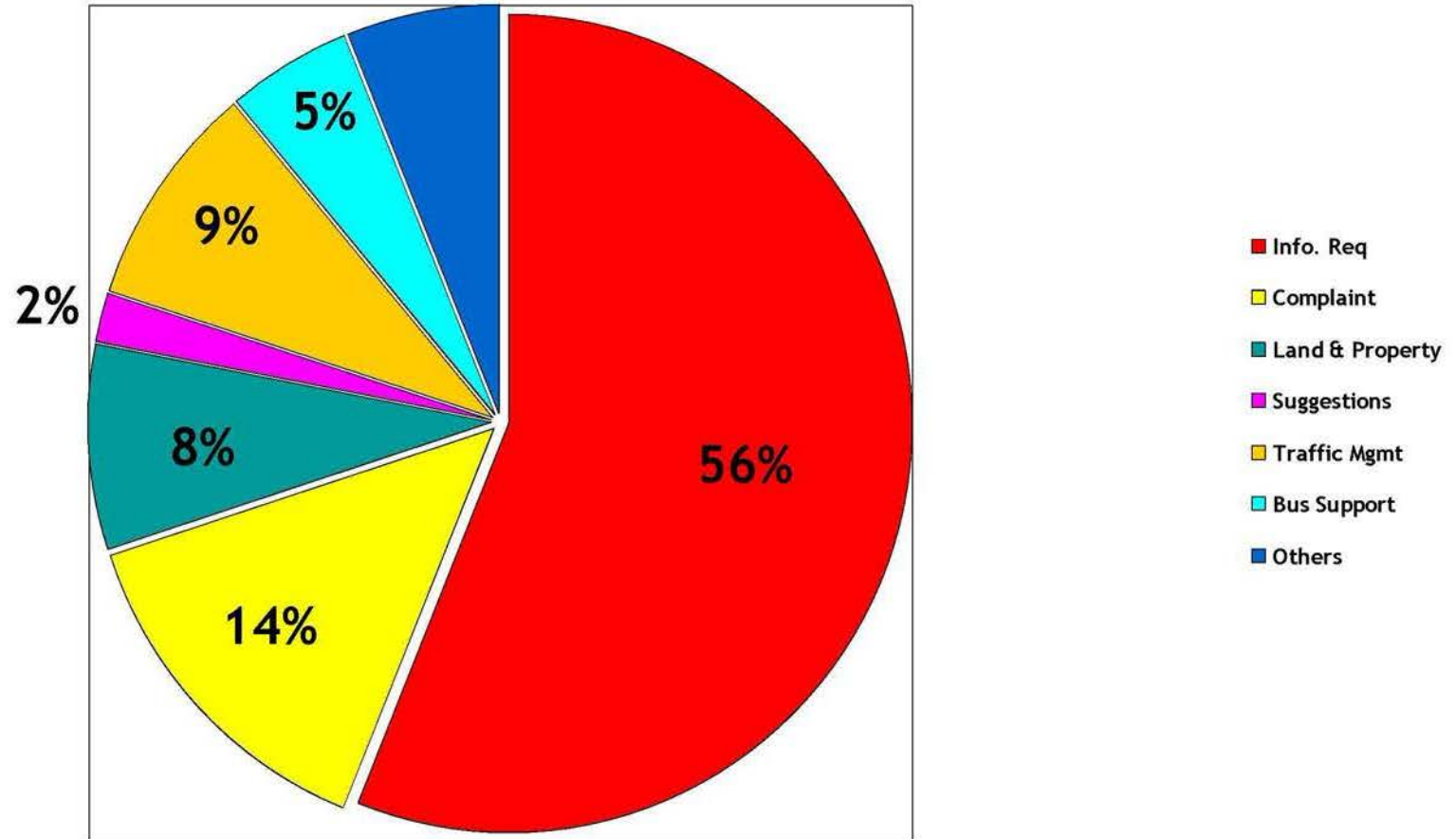
Enquiries by Contact Type period ended 02/03/08



Enquiries by Contact Reason period ended 02/03/08



Enquiries by Contact Reason – Sept '07- Mar'08



Analysis of Complaints- period ended 02/03/08 (1)

No.	Date	Complaint Description	Resolution
1	04/02/2008	Complaint re. cracks in plaster of hairdressing salon	Being handled by insurers
2	04/02/2008	Further info re. cracks in plaster of salon	Being handled by insurers
3	04/02/2008	Complaint re. mess in front of shop	Resolved by Tram Construction Adviser
4	04/02/08	Burst Tyre	Being handled by insurers
5	04/02/2008	Burst Tyre (same as 4 above)	Being handled by insurers
6	04/02/2008	Complaint re. congestion and opposing trams	Explanation given re. business case rationale
7	05/02/2008	Unhappy with quality of work in Constitution St. area	Explanation given, final reinstatement will restore cobbles
8	06/02/2008	Complaint about Roseburn Corridor and Trams in general	Explanation given re. cycling and pedestrian provision along the Roseburn corridor.
9	04/02/2008	Noisy stank cover near Pilrig Street	Not MUDFA installation
10	04/02/2008	Problems re. deliveries outside his shop.	Tram Construction Adviser arranged for some additional space to be made available but limited due to proximity to works
11	12/02/2008	AMIS vehicles parking on Gogarburn footpath	Contractors advised footpaths must be left clear from all obstructions
12	13/02/2008	Follow up to burst tyre complaint (see 4 and 5 above)	Insurers require more evidence from complainant
13	14/02/2008	Shortage of Tram stops in Princes Street area	Explanation given re. rationale
14	15/02/08	Diversions through Great Stuart Street	Explanation given
15	12/02/08	AMIS vehicles parking on Gogarburn footpath (see 11)	Contractors advised

Analysis of Complaints- period ended 02/03/08 (2)

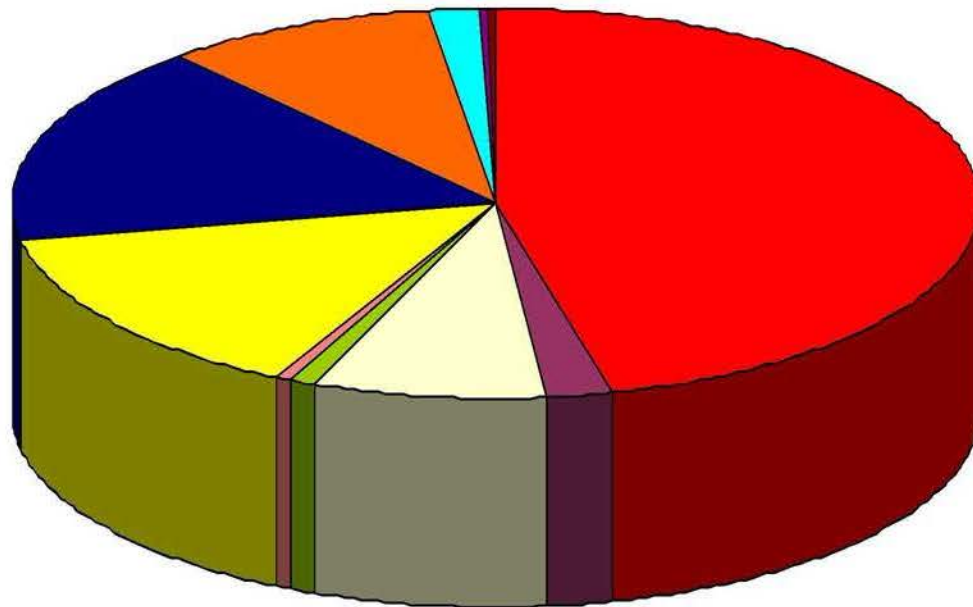
No.	Date	Complaint Description	Resolution
16	13/02/08	Complaining about noise / dust due to works on Hope St	T.C.A. visit and apology given. Very short duration work related to white lining
17	13/02/08	Blocked access- Steads Place	T.C.A. visit, fencing wrongly installed, situation remedied
18	21/02/08	Trams a waste of money which should be spent on other things	Business Case rationale given
19	19/02/08	Complaining of noise/smoke from works outside his shop in North St. Andrews St.	Site supervisor explained work method, no practical alternative to work impact
20	19/02/08	Customers mother tripped on bollard in Semple Street	Confirmed not MUDFA site
21	25/02/08	Queuing traffic in Leith Walk	Explained traffic management and contra flow arrangements
22	26/02/08	No left turn Charlotte St. / St. Colme St.	Advised arrangements being made to incorporate LH turn
23	25/02/08	Crack in bathroom wall	Being progressed as part of dilapidations schedule
24	27/02/08	Cust says no notification pack received	Apology given.
25	25/02/08	Complaining re. loss of business	Confirmed duration of works

Stakeholder Engagement Activity – Cumulative to 2/3/08



Stakeholder Engagement Analysis – Cumulative to 2/03/08

Stakeholder Engagement Summary



- Consultation
- Design
- Diversion Work
- General Tram Enquiry
- Infraco
- Parking & Loading
- Small Business Support
- Street Furniture
- Traffic Management
- Trial Holes
- TRO's
- Enabling work
- Dilapidation Survey
- Complaints



MUDFA Sub-Committee Meeting

APPENDIX 5

Risk Register

Mudfa Risk Register P12

ARM Risk ID	Risk Description			Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
	Cause	Event	Effect								
139	Utilities diversion outline specification only from plans	Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated	G Barclay	High - 25.00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	31-Mar-08	A Hill
164	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; asbestos found in excavation for utilities diversion; unknown cellars and basements intrude into works area; other physical obstructions; other contaminated land	Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work.	Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	I Clark	High - 25.00		Carry out GPR Adien survey	Complete	Complete	31-Oct-07	J Casserly
							Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	Complete	Complete	23-Nov-07	J McAloon
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities and inform designer	On Programme	On Programme	31-Mar-08	A Hill
342	Tram alignment at A8 crossing at Gogar coincides with 1500mm sewer	1500mm sewer required to be diverted	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		Confirm if diversion required	N/A	On Programme	8-Mar-08	G Barclay
							Confirmation of BT requirements to tie	Complete	Complete	15-Oct-07	I Clark

ARM Risk ID	Risk Description			Risk Owner	Significance	Black Flag	Treatment Strategy	Previous Status	Current Status	Due Date	Action Owner
	Cause	Event	Effect								
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		<p>Liase with Scottish Power to agree and approve method of crossing tunnel</p> <p>Scottish Power to establish exact location of tunnel</p> <p>SDS to try and ensure tram alignment footprint is outwith Scottish Power alignment - confirmation via thumbnails due 16th November</p> <p>tie to undertake engineering feasibility study</p>	N/A	<p>Undefined</p> <p>Complete</p> <p>Complete</p> <p>Complete</p>	<p>31-Mar-08</p> <p>2-Apr-07</p> <p>28-Dec-07</p> <p>2-Apr-07</p>	<p>M Blake</p> <p>M Blake</p> <p>T Glazebrook</p> <p>J Casserly</p>
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		<p>SDS to obtain consent for design in accordance with programme requirements - Scottish Water and all Telecoms</p> <p>SDS to obtain consent for design in accordance with programme requirements - SGN and Scottisk Power</p>	On Programme	On Programme	30-Apr-08	I Clark
926	Complexity of traffic management proposals require additional approvals (relating mainly to city centre)	Approvals for traffic management proposals are not approved or take so long to approve that work cannot commence in line with the programme	Delay to project.	G Barclay	High - 18.00		Review traffic management requirements for rev 6 programme and the alignment of these requirements with programme start dates	On Programme	On Programme	1-Apr-08	K Rimmer