

Transport Edinburgh Trams for Edinburgh Lothian Buses

MUDFA Sub Committee Report Papers For Meeting 4th July 2007

Distribution

Willie Gallagher Matthew Crosse Susan Clark Graeme Barclay Suzanne Waugh Mike Connelly Steven Bell Stewart MCgarrity
Tom Condie
Miriam Thorne
Keith Rimmer
Andy Malkin
Alan Dolan
Tom Clark

Lorna Davis John Ramsay Duncan Fraser Bill Campbell



Agenda

Sub-Committee Meeting

to be held at MUDFA Project Office, Leith

on Wednesday 4 July 2007 at 2pm

- 1. Actions from previous minutes.
- 2. Construction Director's Report
 - Executive Summary
 - Safety
 - Progress (period)
 - Programme (next period)
 - Commercial
 - Risk
 - Traffic Management
 - Communications
- 3. State of the Nation Presentation
- **4.** AOB



MUDFA Sub-Committee Meeting

AGENDA ITEM NO 1

Actions from Previous Minutes

tie Limited

Minutes of Sub-Committee Board Meeting

Date: 6 June 2007

Time: 14.00

Venue: Board Room, Verity House

In attendance	Willie Gallagher Matthew Crosse Susan Clark Graeme Barclay Suzanne Waugh Steve Gorry Andy Malkin Keith Rimmer Tom Clark Bill Campbell Duncan Fraser Shaun Wallace	WG MC SC GB SW SG AM KR TCL BC DF SW
Apologies	Lorna Davis Alan Dolan Miriam Thorne Tom Condie Steven Bell	LD AD MT TC SB
Circulation	As above MUDFA Team	

1.0	ACTIONS	ACTION BY	DATE DUE
1.1	[1.2] Wide Area Signage scope of costs. Will be completed once AMIS programme finalised. Information should be with AM this week then forwarded to tie .	АМ	04.07.07
1.2	[1.3] VE Workshop – To be scheduled in the next couple of days	GB	04.07.07
1.3	[1.9] Constitution Street – works outside that street – will be done in two phases. Can we look at putting utilities into different ground and not back into the street? Ongoing.	АМ	04.07.07

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1.4	[1.10] Mabey Bridges – Look at normal solution of keeping traffic moving in key hotspots along the route. AMIS have a full schedule and this will be finalised with costs, optimised and put to the Traffic Management Panel. This to be presented within the next two to three weeks.	АМ	04.07.07
1.5	[1.18] Incident Management Protocol has been agreed internally. Copies of incident cards to be distributed to Transport Scotland.	тс	04.07.07
1.6	Trial (trench reinstatement) to be looked at during next meeting. Meeting to be arranged prior to that with GB and DF.	GB/DF	COMPLETE
1.7	Traffic Management. Development works in the area of Westfield Road/Stephenson Road junction) are a potential problem as they could clash with MUDFA works. More information on this to be obtained.	DF	04.07.07
1.8	If tram is given the go ahead then what areas would be ready to go into? What long lead items would we need to order? How does this compare against the original programme (revision 5). GB to send this information to SC.	GB	COMPLETE
1.9	A paper is to be prepared to go the Tram Project Board explaining how we have looked at ways of optimising the works, assuming we start work at the beginning of July 2007.	GB	COMPLETE
2.0	Next Meeting to be held Wednesday 4 July 2007 at 2pm at Kingdom Brunel Room, Citypoint		



MUDFA Sub-Committee Meeting

AGENDA ITEM NO 2

Construction Director's Report

Edinburgh TRAM Project

Paper to : Utility Sub-Committee

Subject : Construction Director's Report

Date : 4 July 2007

Executive Summary

 One no. incident in the period involving a telecom cable strike.(refer to Safety report)

- Confirmation to proceed with MUDFA works received 27/6/07 following Parliamentary debate.
- Works ready to commence section 1A, Casino Square to Victoria Bridge, 9th July 2007.
- Advanced works at Gogar progressing well approximately 4 days ahead of programme.
- Ingliston Park' & 'Ride tenders received and award of contract to be issued within the week.
- Note of Concern release of design IFC drawings a major concern in maintaining continuity of work and impacting significantly on the programme dates.
- Meeting held 26/6/07 SDS/tie to discuss design outputs (quality and timescales) and resources (competency and quantity).

1.0 Safety

- 1.1 There was one specific incident that occurred during the reporting period. The incident was related to a telecommunications cable being fractured owing to excavation works at Gogarburn. A formal report is being compiled by AMIS. The previous incident regarding the farmer not being able to access his land at Gogarburn due to a gate being locked has been actioned.
- 1.2 An audit to determine any deficiencies for the MUDFA Utility Diversion Trial Works at Casino Square in Leith was undertaken as planned. The audit findings indicated that improvement was needed by both AMIS and tie. There were 6 and 7 non-conformances raised respectively.
- 1.3 The revised AMIS MUDFA Business Management System documentation is due to be issued on 23rd June 2007.
- 1.4 No new NCR's were raised except those raised during the audits.
- 1.5 Archaeological Specification of Works has been agreed for both lines 1 and 2. However CEC archaeologist John Lawson has requested that a further Archaeological Specification of works is produced to address the issue of existing structures and monuments rather than charted/uncharted

- archaeological remains. SDS are preparing this and are in liaison with John Lawson to finalise the report.
- 1.6 There is an issue regarding proposed works associated with site IAWSI004/001 (Ocean Drive) in that the proposed utilities diversion may impact upon the scheduled area of the Victoria Bridge Scheduled Ancient Monument. Steve Harding has discussed this issue with James Tunnicliffe, and will investigate the consents process further. It is not considered to be an immediate showstopper at present, but will require serious consideration for future works in this area.
- 1.7 On-going discussions are taking place between Graeme Strachan (AMIS) and the City of Edinburgh Council EHO, with respect to construction noise and the possibility of a relaxation of the noise limits contained within the Code of Construction Practice for certain work sites.

2.0 Progress Period

2.1 Summary Progress

- 2.1.1 RATs 1A/1 and 1A/2 aborted due to Tram realignment. This will require redesign. Programme implications being assessed.
- 2.1.2 Section 1A Casino Sq to Victoria Bridge prepared and ready to commence on the 9th July.
- 2.1.3 All relevant documentation and notices in place. Stake holder packs and resident letters issued.
- 2.1.4 AMIS resourced up to commence as planned.
- 2.1.5 Section 1B Croall Place to Iona Street to commence on 6th August documentation in progress. Awaiting IFC drawings. (due 29/6/07)
- 2.1.6 Section 5A Russell Road to Murrayfield West to commence on 20th
 August documentation in progress. Awaiting IFC drawings (due 29/6/07)
- 2.1.7 Gogar Advanced Earthworks progressing well, despite Royal highland Show and inclement weather in the period. (86,000m3 excavated to date – 4 days ahead of programme)
- 2.1.8 Exclusion fence erected around Scottish Water twin 600 diameter water main.

2.2 AMIS

- 2.2.2 The AMIS MUDFA Accident Frequency Rate (AFR) remains at zero and within the reporting period a knee injury incident was reported at Gogar Depot on Saturday 16th June 2007 (Concrete pouring to mains water protection slab).
- 2.2.3 **tie** Limited and Stakeholder Imposed Programme currently under review at Revision 05 through 06 due to the lack of availability of Issued for

- Construction (IFC) utility design drawings and Bill of Materials (BOM's) to meet the requirements of the eight week work ordering process. At the monthly cut-off period a short fall of 311 No. IFC utility drawings were reported against Revision 05 (Note: 1,245 No. single and 145 No. composite utility drawings against Schedule 8 contract programme).
- 2.2.4 AMIS MUDFA continues to forward gas and water Thumbnail Utility Design Sketches (TUDS - Designability) complete with Bill of Materials (BOM's) for review and consideration by SDS Provider. The planned requirements of the design tracker have been met but a number of drawings are out of sequence. This is currently being addressed.
- 2.2.5 AMIS MUDFA work orders for RATS 1A/1 Rev 02 utility diversion services for work sites 1AWSI005/001, 1AWSI005/002 & 1AWSI006/001 (1st Phase Ocean Terminal frontage) were completed and have been cancelled due to track re-alignment by SDS Provider.
- 2.2.6 The AMIS MUDFA team are currently preparing work orders for 1AWSI003/001, 1AWSI003/002, 1AWSI004/001 & 1AWSI004/002 (2nd Phase, Ocean Drive) and will commence potential contaminated land trials on Monday 2nd July 2007 followed by the first of the Construction Services works on Monday 9th July 2007.
- 2.2.7 AMIS MUDFA are organised and await permission to carry out letter drops to approximately 220 No. apartments and businesses at Ocean Drive and north Constitution Street.
- 2.2.8 Traffic Management plans completed for Section 1A and draft Traffic Management Plans have been completed and issued in draft form for Section 1B to the Traffic Management Review Panel (TMRP).
- 2.2.9 Site fencing and netting will be used for specific sites throughout Edinburgh city centre to curtail wind blown dust from the public and to ensure good aesthetic site appearance. Edinburgh Tram graphics will be used following joint review and agreement with the Communications team.
- 2.2.10 AMIS MUDFA proposes co-location of SUC's, tie Limited, SDS Provider and AMIS MUDFA utility specialists to focus jointly on technical and operational issues, assessment and immediate resolution of key design issues and validation of cost mitigation proposals.
- 2.2.11 AMIS MUDFA still remain concerned in relation to the planned availability of detailed designs at IFC issue and Bills of Materials (BOM's) to support work order production and purchasing of materials in advance of operations. In addition, AMIS MUDFA are currently considering subcontract labour to compensate for the availability of AMIS direct labour being diverted to other projects as a result of the delayed start to the MUDFA Construction Services works.
- 2.2.12 tie Limited and AMIS MUDFA held a commercial review meeting on Friday 15th June 2007 and have agreed in principle a way ahead to safeguard the MUDFA project in commercial and contractual terms.
- 2.2.13 AMIS MUDFA cumulative payment applications to date total £2,693,346.25 with an actual certified value of £2,456,411.40 (£236,934.85 at variance).

3.0 Design

- 3.1 During the period SDS has submitted four further sections of utility design work to the Statutory Utility Companies (SUC's). The Sections delivered are as follows;
 - Section 5A on 1st June 2007
 - Section 5B on 22nd June 2007
 - Section 6 on 1st June 2007
 - Section 1B on 8th June 2007

All sections awaiting SUC Approval.

- 3.2 Following the issue of the revised MUDFA Construction Programme Version 5 and the issue to SDS of the commencement of the scheduled buildability documentation from the MUDFA Contractor the SDS Utility Design Team have engaged with the SUC's in order to gain approvals on the basis of the MUDFA worksite breakdown structure. Response has been relatively good but shortfalls of response information and/or acceptance from the SUC's now threaten the IFC Deliverables programme.
- 3.3 Re-work for the SW drawings to Section 1B (and the re-coordination of composite drawings for all SUC's) was carried out during this period. The quality of drawings sent to SW has been enhanced and additional quality checks to align with the C4 Schedules have been incorporated into the drawing production.
- 3.4 IFC drawings for the first three plates for Section 1A (first MUDFA work section) were delivered to **tie** on 25th June 2007.
- 3.5 SDS has diverted design manpower resource onto the first five sections of MUDFA construction activities (following priority instruction from tie) in order to support the MUDFA Construction Programme. The design deliverables have been broken down into smaller design sections to interface with the construction sequencing of MUDFA worksites. The programme provided was accepted by the tie delivery team but the costing for this proposal was rejected by tie on 18th June 2007. SDS were requested to respond with a change estimate for the first five MUDFA worksites (to get MUDFA in the ground) and then fall back on to the original SDS 13 Major Section Utility Programme. SDS are reviewing this proposal now and providing new cost estimate.
- 3.6 MUDFA buildability and thumbnail provision has been reduced to SW provision only during this period. SW thumbnails are awaited for Section 5B.
- 3.7 Strategy meetings with SP and SGN have been executed for work outside the LOD for Constitution Street. A combined strategy for utility work outside the LOD in the Constitution Street vicinity is to be provided to tie following meeting with SW in the next period. A tie strategy for execution of this work is required. It has been suggested by MUDFA (under framework) be the vehicle or execution by each utility themselves.

4.0 Programme (Next Period)

4.1 Design & Approvals

4.1.1 Thumbnail Sketches

AMIS continue to prepare thumbnail sketches for water services in line with SDS programme requirements (see attached progress histogram AMIS Thumbnail Sketch Preparation – Planned –v- Actual). Of the four sketches AMIS are currently showing as being behind programme; 3 are for section 1C2, which has yet to be issued by SDS, and the other is for section 1A2 sheet 21 (Constitution Street) which may require review of design due to works outside of LOD.

4.1.2 Section 1A1 – sheets 13, 14 & 15 - Tower Street to Tower Place Bridge - Worksites commence 09th July 2007 SUC Approvals have been given for all services excluding Foul Water, which is awaiting final report from manhole surveys. SDS issued IFC drawings to tie for review on 25th June 2007 (planned 01st June 2007). This review will be undertaken jointly with AMIS.

4.1.3 Section 1B – sheets 27-31 – McDonald Road to Iona Street – Worksites commence 06th August 2007

All utility drawings are currently with SUC's for approval, excluding Foul Water, which cannot be finalised until manhole / CCTV surveys have been undertaken. These have been delayed due to the hold on nightshift working and current political sensitivities.

To date written design approval has been provided by Scottish Power and Cable & Wireless.

IFC drawings were planned to be issued on 29th June 2007.

Current estimate from SDS is IFC drawings will be issued to tie for review on 4th July 2007.

4.1.4 Section 06 – sheets 01, 02 – Gogar Depot – Worksite commence 20th August 2007

Drawings have been issued to SUC's for approval.

To date written design approval has been provided by BT Openreach and Virgin Media.

Scottish Water reviewed the design for 800mm twin main and expressed concern about the lack of detail within the design submission.

4.1.5 Scottish Water also requested that the Construction Method statement be made available prior to any design sign-off. Planned issue of IFC drawings is 29th June 2007, this currently looks highly unlikely.

4.1.6 Section 5A – sheets 01, 02 & 03 – Russell Road to Murrayfield – Worksites commence 20th August 2007 Drawings have been with SUC's for initial review / comment since 10th April 2007.

4.1.7 To date written design approval has been forthcoming from Scottish Power. Verbal design approval has been given by Virgin Media. Outstanding design approvals are; Scottish Water (Clean & Foul), Scottish Gas Networks and Cable & Wireless. Updated designs for Clean Water including AMIS thumbnail details have still to be issued to Scottish Water for approval by SDS. Planned date for issue of IFC drawings is 29th June 2007, this currently looks highly unlikely.

- 4.1.8 Attached S-Curves indicate design progress against SDS planned design delivery dates which support AMIS Construction Programme Revision 05. It should be noted that; utility design of Section 1A1 sheets 01–12 is on hold until alignment issues are resolved with Forth Ports, Section 1C2 & Section 1D have not been issued to AMIS for build-ability alignment issues still outstanding, Section 07B Edinburgh Airport awaits conclusion of design interface with EARL.
- 4.1.9 See Appendix 1 Design Tracker Pack

5.0 Commercial

- 5.1 Proposals to resolve the shortcomings and omissions in the MUDFA contract documentation have been agreed in principle and require to be reexecuted the timing and co-ordination to be agreed with AMIS.
- 5.2 Proposals for a negotiated commercial and contractual resolution to the delays in release of design are ongoing with AMIS.
- 5.3 A proposal for incentivisation of the works orders and preliminaries has been discussed and agreed in principle with AMIS. A detailed formal legal proposal reflecting the agreed principles for the preliminaries will be issued to AMIS in period 4 for formal acceptance. A number of scenarios related to the incentivisation proposal are being discussed to define the process and ensure the parties are in agreement on the understanding and operation of the proposal this process will be completed in period 4 with a view to have a formal legal agreement in place during period 5.
- 5.4 Change orders and change notices are being issued to cater for contract additions (copy of master schedule attached).
- 5.5 Tender packages have been returned by the selected pre-qualified tenders for the Ingliston Park and Ride extension - AMIS decided not to submit a tender for these works. The returned tenders have been reviewed and following a meeting to discuss their submission R J McLeod (Contractors) Ltd is the preferred option. No award has been made in light of the current uncertainty related to the project and we are in contact with R J McLeod to keep them abreast of the situation. In light of the above the temporary car park will not commence until sometime in July 2007 and will therefore be approx 9 weeks late in completing, however the main TRAM works have also been delayed and the temporary car park should be completed prior to any works which may disrupt the traffic as previously envisaged. We currently await issue of design/specification for the street lighting element of the works. A provisional sum allowance of £22k, advised by the designers, has been made in the tender package. The works are required to commence in July 2007 however the street lighting element of the works maybe delayed.

- 5.6 Weekly commercial meetings are taking place between tie and AMIS.
- 5.7 A training session for tie site personnel on the use of the ARM risk software was held in the period, but additional 'hands on' training is required. The majority of the MUDFA site team have yet to gain access to ARM and this issue & licenses are being pursued to resolve.
- An initial meeting to review the project risk and management of the tie/AMIS MUDFA project risks was held and subsequent meetings are planned to establish and agree joint risk owners and mitigation plans.
- The delay in the period awaiting instructions to proceed have delayed the construction works by another 4 weeks in the period with a resultant additional project cost of circa £365k in addition to the previous delays and associated costs. A full review of the delays and associated costs to date will be carried out once the instruction to commence construction is received and a revised programme Revision 6 is produced.

6.0 Risk

6.1 See Appendix 2 – Risk Register

7.0 Traffic Management

- 7.1 It is anticipated that the proposed Traffic Management (TM) for Leith Walk will be issued to **tie** by AMIS on 2nd July 2007. The Traffic Consultants employed by **tie**, to improve the TM and Communications provision, undertook an on site survey of Leith Walk on the 18th of June to convey their knowledge of the TM and Communications issues. AMIS and the City of Edinburgh Council were in attendance.
- 7.2 The TM Review Panel (TMRP) are currently sitting on a weekly basis at the MUDFA office in Leith. This allows the table top meeting following the TMRP to progress to site as required.
- 7.3 The Wider Area Signage required will be assessed in conjunction with the Work Sites under construction in terms of the AMIS MUDFA programme, Version 5+. The Wider Area Signage for Leith Walk has been prepared and is currently under review by tie prior to issue to AMIS to action. The recommended Wider Area Signage for Leith Walk will be issued to AMIS in the week starting the 25th of June.
- 7.4 The works are currently ongoing on the CCTV surveys required throughout the length of the tramline. To date there has been the requirement for Traffic Management to undertake this task in Section 1A(1), 1A(2), 1B, 5A, 5C and 6. The Traffic Management proposals to undertake these works have been assessed and accepted by the TMRP as appropriate
- 7.5 The proposed night works in Section 1B, Leith Walk, at the junctions between Leith Walk and Constitution Street / Duke Street / Great Junction Street & McDonald Road / Brunswick Road, have been delayed until the political decision has been made regarding the continuation of the Tram project.

7.6 A **tie** communications representative who is responsible for the public's interests attends the TMRP. This has allowed the communications issue to progress and the required information is now available to allow the Stakeholders to fulfil their obligations.

8.0 Communications & Stakeholder

8.1 Media

Tram continues to be the hot topic across the print and broadcast media, with speculation on the future of the project. Much support has been received from within the business sector and local politicians.

8.2 Site works

Work at Gogar Depot continues with no coverage this month. Hoardings are being designed for this site; and will be produced once clarity is received on the future of the project.

8.3 Incident Response

Communications and Stakeholder staff have been on call 24/7 since the start of the MUDFA works.

8.4 Customer Interaction Cycle

Following last months comment, we have now received proofs of the 8 week newsletter from AMIS. Changes are being fed back to AMIS and we will work with them to finalise any changes needed prior to sending for approval.

8.5 Packs for the 1a site starting 9 July are ready for issue following a decision on the future of the project.

8.6 Site information

We still await feedback from AMIS on the use of debris netting at each site, although we note it is currently being used at Gogar. Designs are being pulled together for use at appropriate sites.

8.7 Launch of programme and customer support following elections
Following approval of the MUDFA programme and clarity on the future of the
project it will be necessary to launch both the MUDFA programme and the
customer support and communication initiatives surrounding the project. It is
expected that the work for the first 3 sites (1a, 1b and 5a) will be included in
our post debate response although these sites are still subject to design
output being ready.

8.8 Helpline and stakeholder meetings

A maximum of 5 calls a week are being received and responded to at the moment. Processes are in place should this workload rise following decisions at Parliament.

8.8.1 Four frontager meetings have been held in the city centre and Leith areas since 18th June. Turnout at the frontager meetings has been low and focussed on feedback on the Preliminary Design.

- **8.8.2** Two frontager meetings are to be held on 26 and 28 June in the Leith and Haymarket areas. A minimal approach will be taken to these events, again with feedback and questions focusing on the Preliminary Design.
- **8.8.3** No concerns or questions have been raised by the public, to date, on the need or timing of these meetings.
- 8.8.4 Following an invite from Corstorphine Community Council the stakeholder steam attended their recent meeting to discuss trams. A lively discussion was had; Phil Wheeler attended with the team to discuss the political aspect of the project.

9.0 Recommendations

DPD is requested to:

- Note the contents of this paper
- Note the challenges and workload involved in ensuring delivery of the MUDFA Programme and associated works and the actions being taken to mitigate costs and delays.

Proposed Graeme Barclay Date 1 July 2007

Construction Director MUDFA

Recommended Matthew Crosse Date 1 July 2007

Project Director



MUDFA Sub-Committee Meeting

APPENDIX 1

Design Tracker Pack





















MUDFA Design Progress Tra

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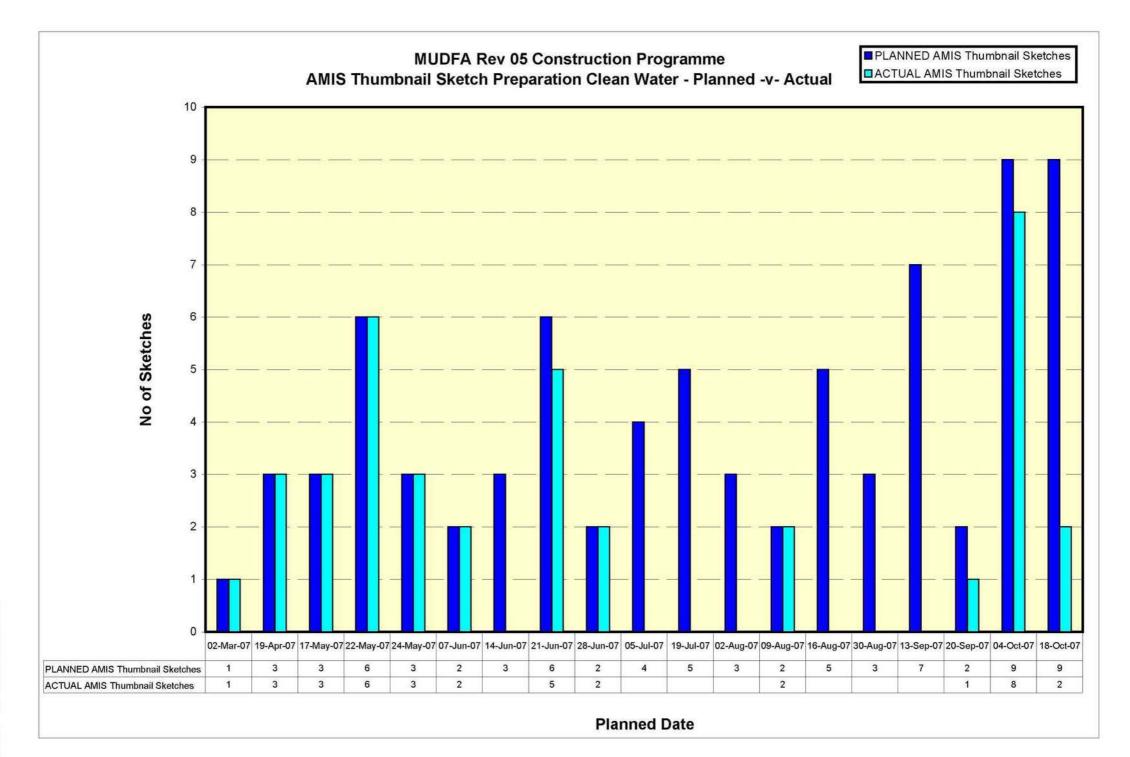
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MUDFA Worksites

Section	Sub- Section	Work Site Reference	Worksite Location From	Worksite Location To	Plate No's	AMIS Rev 05 Construction Start Dates
1	1A1	1AWSI003/000	Casino Square	Casino Square	15	02-Apr-07
1	1A1	1AWSI005/000	Ocean Terminal Advance Works	Ocean Terminal Advance Works	6,7,8	28-May-07
1	1A1	1AWSI003/001	Tower Street	Tower Wharf	15	02-Jul-07
1	1A1	1AWSI003/002	Tower Wharf	Tower Place Roundabout	13,14,15	02-Jul-07
1	1A1	1AWSI004/001	Tower Place Roundabout	Commercial Wharf	13	02-Jul-07
1	1B	1BWSI001/001	Croall Place	Croall Place	31	06-Aug-07
1	1B	1BWSI001/002	Croall Place	Pilrig Place	29,30,31	13-Aug-07
5	5A	5WS1009/001	Murrayfield Tram Stop	Roseburn Rail Junction	1,2	20-Aug-07
5	5A	5WS1009/002	Roseburn Rail Junction	Russell Road	1	20-Aug-07
6	6A 6A	6WSI001/001/WP1 6WSI001/002/WP1	Gogarburn Tram Depot Gogarburn Tram Depot	Gogarburn Tram Depot Gogarburn Tram Depot	1,2	20-Aug-07 20-Aug-07
6	6A	6WSI001/002/WP2	Gogarburn Tram Depot	Gogarburn Tram Depot Gogarburn Tram Depot	1,2	20-Aug-07 20-Aug-07
5	5A	5WS1008/002	Roseburn Street	Murrayfield Tram Stop	2,3	27-Aug-07
1	1A1	1AWSI002/005	Constitution Street	Elbe Street	nop	10-Sep-07
1	1A1	1AWSI002/003	Commercial Wharf	Pennies Isle Bridge RHS	11,12	10-Sep-07
1	1A1	1AWSI005/001	Pennies Isle Bridge RHS	Ocean Terminal RHS	9,10,11	01-Oct-07
7	7B	7BWSI001/002	Edinburgh Airport Terminal	Gogar Bridge Road (North)	8	01-Oct-07
7	7B	7BWSI001/004	Edinburgh Hilton Hotel	Gogar Mains Opening	7	01-Oct-07
5	5C	5WSI001/001	Gogarburn Tram Stop	Gogarburn A8 Roundabout	24,25,26	15-Oct-07
5	5B	5WS1005/001	Edinburgh Park Train Stop	South Gyle Access Tram Stop	16,17,18	15-Oct-07
5	5B	5WS1006/002	Forrester High School (West)	Saughton Road North Tram Stop	11,12,13,14	15-Oct-07
6	6A	6WSI001/001/WP2	Gogarburn Tram Depot	Gogarburn Tram Depot	1,2	15-Oct-07
7	7B	7BWSI001/003	Gogar Bridge Road (North)	Edinburgh Hilton Hotel	8	15-Oct-07
1	1B	1BWSI001/003	Pilrig Place	Iona Street	28,29	22-Oct-07
5	5B	5WS1007/001	Saughton Road North Tram Stop	Carrick Knowe Avenue	9,10,11	22-Oct-07
1	1B	1BWSI001/004	Iona Street	Balfour Place	26,27,28	29-Oct-07
1	1C2 5B	1CWSI002/002	South St. David Street	South St. Andrew Street (Low End)	42,43,44	29-Oct-07 29-Oct-07
5	5A	5WS1007/002 5WS1008/001	Carrick Knowe Avenue Balgreen Road Tram Stop	Balgreen Road Tram Stop Roseburn Street	6,7,8,9 3,4,5,6	29-Oct-07
1	1A2	1AWSI001/001	Duke Street Junction	Duke Street Junction	21,22	05-Nov-07
1	1A2	1AWSI001/003	Laurie Andrews Street	Coatfield Lane	18,19	05-Nov-07
1	1A2	1AWSI001/002	Duke Street Junction	Laurie Andrews Street	20,21	12-Nov-07
1	1C2	1CWSI002/001	The Mound	South St. Davids Street	44	19-Nov-07
2	2	2WSI001/003	Easter Dalry Road	Haymarket Train Station	1	26-Nov-07
5	5B	5WSI004/001	Edinburgh Park Tram Stop	Edinburgh Park Train Stop	18,19,20	03-Dec-07
1	1A2	1AWSI001/004	Coatfield Lane	Constitution Street South	18	10-Dec-07
5	5C	5WSI003/001	The Gyle Tram Stop	Edinburgh Park Tram Stop	20,21,22,23	10-Dec-07
1	1D	1DWSI004/001	Lothian Road Junction	Lothian Road Junction	50	04-Jan-08
1	1C2	1CWSI001/001	The Mound	The Mound	44,45,46	07-Jan-08
5	5C	5WSI001/002/Verizon	Gogarburn A8 Roundabout	The Gyle Tram Stop	23,24,25	07-Jan-08
5	5B	5WS1006/001	South Gyle Access Tram Stop	Forrester High School (West)	14,15,16	07-Jan-08
5	5C	5WSI007/002/Verizon	Gogarburn A8 Roundabout	The Gyle Tram Stop	23,24,25	14-Jan-08
7	7B	7BWSI001/001/WP1	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	14-Jan-08
7	7B	7BWSI001/001/WP2	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	14-Jan-08
1	1B	1BWSI002/001	Balfour Place	Orchardfield Road	26	21-Jan-08
5	5C	5WSI008/001/Verizon	The Gyle Tram Stop	Edinburgh Park Tram Stop	20,21,22,23	21-Jan-08
		Scottish Power 2*132kV	Cutins Road	Cutins Road	???	21-Jan-08
		Scottish Power 2*132kV	The Gyle Tram Stop	Edinburgh Park Tram Stop	333	21-Jan-08
1	1B	1BWSI002/002	Orchardfield Road	Springfield Street	25,26	28-Jan-08
1	1A2	1AWSI002/002	Queen Charlotte Street	Baltic Street Junction	17	04-Feb-08
1	1A1	1AWSI005/002	Ocean Terminal RHS	Ocean Terminal LHS	7,8,9	04-Feb-08
1	1A1 1D	1AWSI006/001 1DWSI005/003	Ocean Terminal LHS Castle Street	Britannia Yacht Road South Lane	6,7 47	04-Feb-08 04-Feb-08
1	1A2	1AWSI002/001	Constitution Street South	Queen Charlotte Street	17,18	11-Feb-08
1	1D	1DWSI005/002	South Charlotte Street East	Castle Street	48	11-Feb-08
1	1D	1DWSI003/002	Lothian Road Junction	South Charlotte Street West	49	18-Feb-08
1	1D	1DWSI005/001	South Charlotte Street Junction	South Charlotte Street Junction	49	18-Feb-08
1	1B	1BWSI003/001	Springfield Street	Stead's Place	24,25	03-Mar-08
2	2	2WSI001/001	Roseburn Sub-Station	Dalry Terrace	2,3	03-Mar-08
2	2	2WSI001/002	Dalry Terrace	Easter Dalry Road	1,2	03-Mar-08
1	1B	1BWSI003/002	Stead's Place	Jane Street	24	10-Mar-08
1	1D	1DWSI003/002	Shandwick Place East End	Princes Street West End	50,51	10-Mar-08
5	5C	5WSI002/001	Gogarburn A8 Roundabout	The Gyle Tram Stop	23,24	10-Mar-08
7	7A	7AWSE003/002	Gogar Mains Farm Road	Gogarburn Tram Stop	1,2,3	10-Mar-08
7	7A	7AWSE003/001	Gogar Mains Farm Road	Gogar Mains Farm Road	3	17-Mar-08
1	1A2	1AWSI002/003	Leith Assembly Rooms	Maritime Street Junction	16,17	24-Mar-08
7	7A	7AWSI002/001	Gogar Mains Opening	Ingliston Park & Ride	6,7	24-Mar-08
7	7A	7AWSI002/003	Gogarstone Road	Gogar Mains	5	24-Mar-08
7	7B	7BWSI001/001/WP6	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	24-Mar-08
1 7	1C2	1CWSI002/003	South St. Andrew Street (Low End)	South St. Andrew St (Top End)	42	31-Mar-08
7. 7	7A	7AWSI002/004	Gogar Mains	Gogar Mains Farm Road	3,4,5	31-Mar-08
7	7B	7BWSI001/001/WP3	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	31-Mar-08
1	1A2	1AWSI002/004	Maritime Street Junction	Tower Street	16	07-Apr-08
1	1A1	1AWSI006/002 1AWSI007/001	Britannia Yacht Road	North Leith Sands	5,6	07-Apr-08
		I AVVSIUU//UUT	North Leith Sands	Anchor Fields	3,4,5	07-Apr-08
1	1A1 1B	1BWSI003/004	Manor Gordon Street	Crown Place	22,23	07-Apr-08

MUDFA Worksites

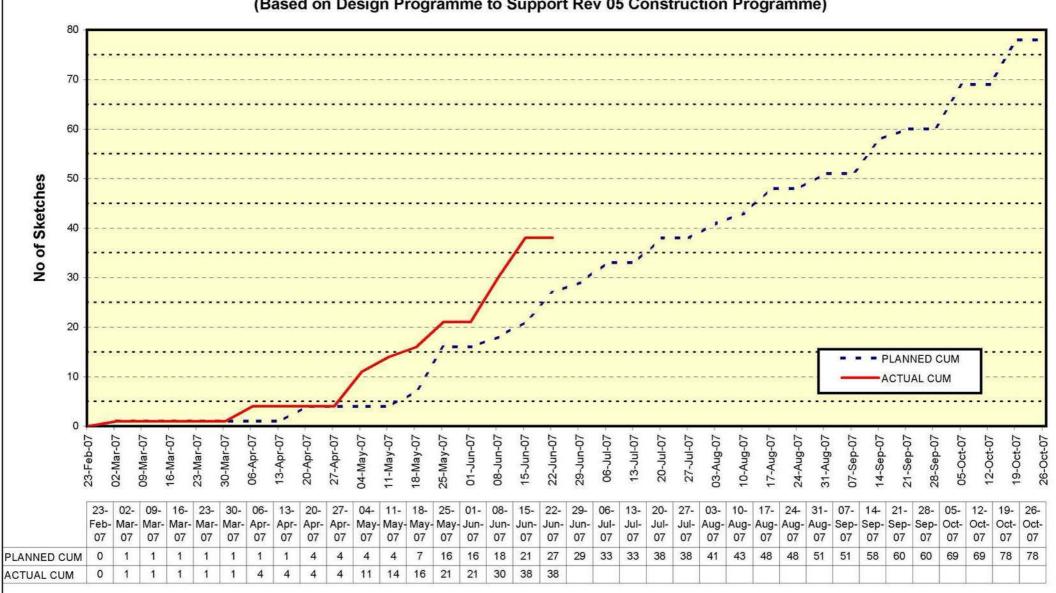
Section	Sub- Section	Work Site Reference	Worksite Location From	Worksite Location To	Plate No's	AMIS Rev 05 Construction Start Dates
1	1D	1CWSI008/001	Gayfield Street North	Brunswick Street	32,33	07-Apr-08
7	7B	7BWSI001/001/WP7	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	07-Apr-08
1	1B	1BWSI003/003	Jane Street	Manor Gordon Street	23	21-Apr-08
1	1C2	1CWSI003/001	South St. Andrew St (Top End)	St. Andrew Square Central	41	21-Apr-08
Section Section Work Site Reference		1BWSI003/005	Crown Place	Duke Street Junction	22	28-Apr-08
	1C2	1CWSI003/002	St. Andrew Square Central	St. Andrew Square Central	40	05-May-08
1	1A1	1AWSI008/001	Hawthornvale	Newhaven Roundabout	1,2	26-May-08
	100000000000000000000000000000000000000	1CWSI002/004	South St. Andrews Street (Closed)	South St. Andrew Street (Closed)	41,42	26-May-08
		1CWSI003/003	St. Andrew Square Central	North St. Andrew Street	39,40	09-Jun-08
Section Section Work Site Ref 1 1D 1CWSI008/78WSI001/00 7 7B 7BWSI001/00 1 1B 1BWSI003/1 1 1C2 1CWSI003/1 1 1B 1BWSI003/1 1 1C2 1CWSI003/1 1 1A1 1AWSI008/1 1 1C2 1CWSI003/1 1 1C2 1CWSI003/1 1 1C1 1CWSI006/1 1 1C1 1CWSI005/1 1 1A1 1AWSI007/1 1 1D 1DWSI003/1		1CWSI006/001	Union Street	Gayfield Street South	34,35	09-Jun-08
	100000000000000000000000000000000000000	1CWSI005/001	Picardy Place	Union Street	35,36	16-Jun-08
700	EL UNCHRISH I	1AWSI007/002	Anchor Fields	Lindsay Road Junction	3	23-Jun-08
		1DWSI003/001	Canning Street	Stafford Street	51,52	23-Jun-08
1	1C2	1CWSI003/004	North St. Andrew Street	York Place West End	39	30-Jun-08
1	1A1	1AWSI007/003	Lindsay Road Junction	Hawthornvale	2,3	02-Jul-08
1	1D	1DWSI002/001	West Maitland Street	Canning Street	52,53	07-Jul-08
1	1C1	1CWSI004/004	Broughton Street Junction	Picardy Place	36,37	21-Jul-08
1	1D	1DWSI001/005	Manor Place Junction	Manor Place Junction	53,54	21-Jul-08
1	1C1	1CWSI004/003	Broughton Street	Broughton Street Junction	36,37	28-Jul-08
3	3A	3AV/SI001/001	Roseburn Sub-Station	Water of Leith Bridge	1,2,3,4,5	18-Aug-08
3	3A	3AV/SI002/001	Water of Leith Bridge	Water of Leith Bridge	5,6	25-Aug-08
3	3A	3AV/SI002/002	Water of Leith Bridge	Ravelston Dykes Tram Stop	6,7,8,9	01-Sep-08
1	1C2	1CWSI004/001	York Place West End	Elder Street East	38,39	08-Sep-08
1	1C2	1CWSI004/002	Elder Street East	Broughton Street	37,38	08-Sep-08
1	1D	1DWSI001/004	Palmerston Place	Torpichen Street	54	15-Sep-08
3	3A	3AWSI003/001	Upper Colt Bridge	Craigleith Drive	9,10,11	15-Sep-08
3	1D	1DWSI001/003	Grosvener Street	Palmerston Place	54,55	29-Sep-08
	3A	3AWSI003/002	Craigleith Drive	Blinkbonny Road Blinkbonny Crescent Bridge	12,13,14	29-Sep-08
3	3A 1D	3AWSI003/003/WP1 1DWSI001/002	Blinkbonny Crescent Bridge Dalry Road Junction	Grosvener Street	14 55,56	06-Oct-08 13-Oct-08
3	3A	3AWSI003/003/WP2	Queensferry Road	Queensferry Road	15	13-Oct-08
3	3A	3AWSI003/004	Queensferry Road North Side	Craigleith Tram Stop	15,16	20-Oct-08
1	1D	1DWSI003/004	Haymarket Station	Dalry Road Junction	56	27-Oct-08
3	3A	3AWSI004/001	Craigleith Tram Stop	Groathill Road	16,17,18	27-Oct-08
3	3A	3AWSI004/001	Groathill Road	Telford Way South Side	18,19,20	03-Nov-08
3	3A	3AWSI004/002	Telford Way South Side	Telford Way Tram Stop	20,21	10-Nov-08
3	3A	3AWSI005/001	Telford Way Tram Stop	Wt'n General Hosp.Tram Stop	21,22,23,24	17-Nov-08
3	3A	3AWSI006/001	Wt'n General Hosp.Tram Stop	Crewe Toll Tram Stop	24,25,26,27	24-Nov-08
3	3B	3BWSI001/001	Crewe Toll Tram Stop	West Pilton Place	28,29,30,31	01-Dec-08
3	3C	3BWSI002/002	Granton Road	Granton Road	37,38,39	01-Dec-08
3	3C	3BWSI002/003	Granton Road	Caroline Park Tram Stop	40	05-Jan-09
3	3B	3BWSI001/002/WP1	West Pilton Place	Wt. Granton Access Tram Stop	32,33,34,35	12-Jan-09
3	3B	3BWSI002/001	Wt. Granton Access Tram Stop	Granton Road	35,36,37	02-Feb-09
3	3C	3CWSI001/001	Caroline Park Tram Stop	Granton Waterfront Tram Stop	41,42,43,44	02-Mar-09
3	3C	3CWSI002/001	Granton Waterfront Tram Stop	Chestnut Street	44,45	16-Mar-09
3	3C	3CWSI002/002	Chestnut Street	West Harbour Road	45,46,47,48	23-Mar-09
3	3C	3CWSI002/003	West Harbour Road	Granton Square Tram Stop	48,49	06-Apr-09
7	7A	7AWSI002/002	Ingliston Park & Ride	Gogarstone Road	5,6	
7	7A	7AWSI004/001	Ingliston Car Park Phase 2	Ingliston Car Park Phase 2	6	
7	7B	7BWSI001/001/WP4	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	
7	7B	7BWSI001/001/WP5	Edinburgh Airport Terminal	Edinburgh Airport Terminal	9	
7	7B	7BWSI001/003 Bridge	Eastfield Bridge	Eastfield Bridge	8	
		Direct Labour	St. Andrew Square Central	St. Andrew Square Central	222	
		Scottish Power 275kV	Tunnel Crossing	Tunnel Crossing	???	
	1	Telecom Subcontractor	St. Andrew Square (North Side)	St. Andrew Square Central	???	







MUDFA Buildability Sketches Provided By AMIS Scottish Water

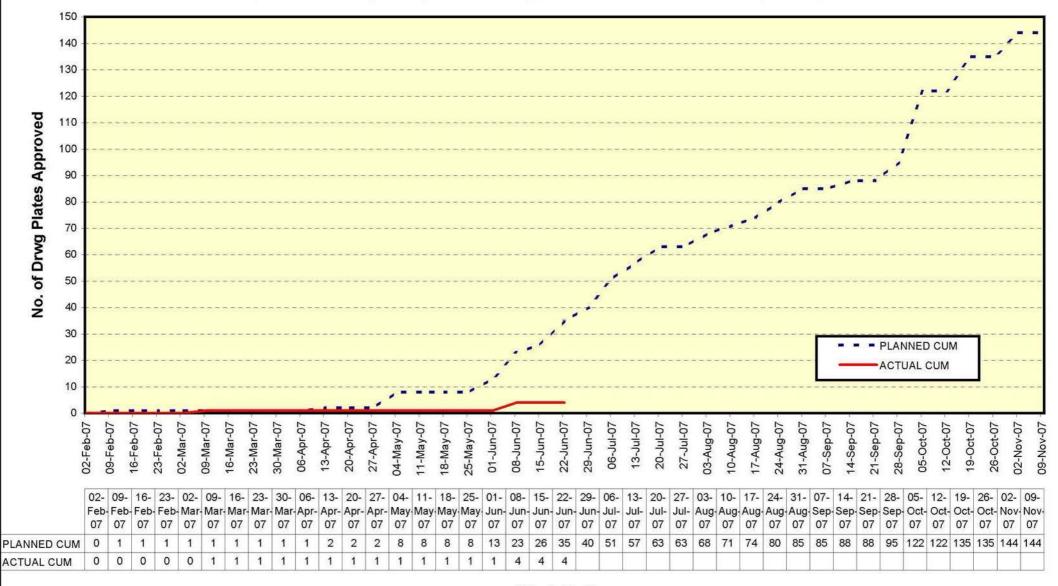






MUDFA SUC Approvals

Scotland Gas Networks

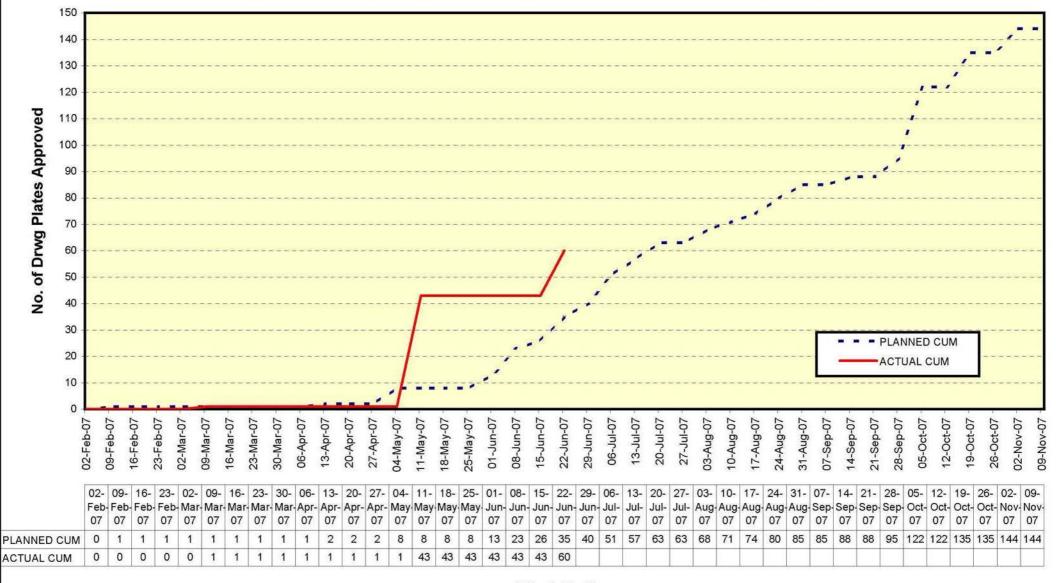


Week Ending





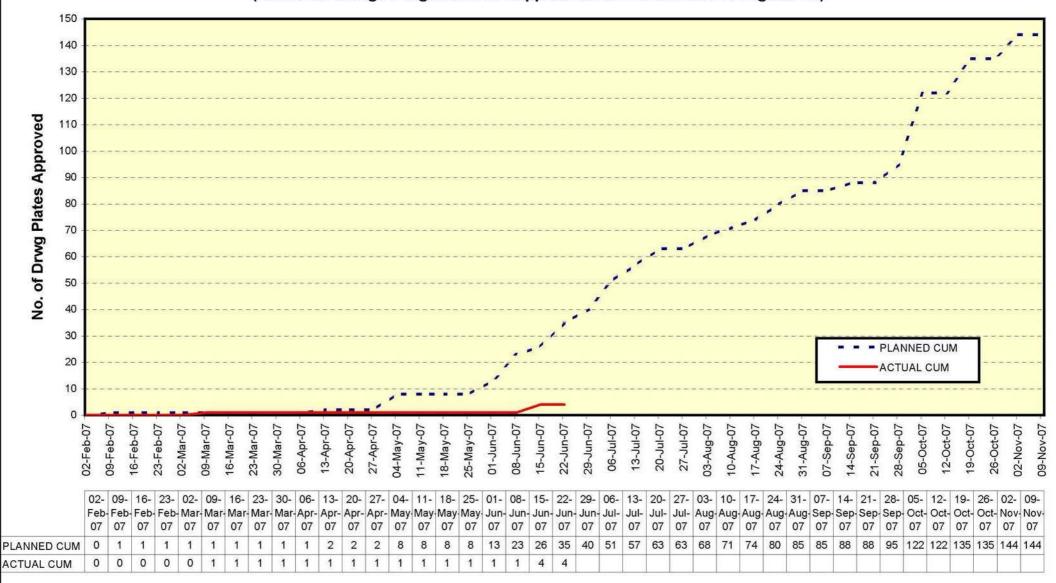
MUDFA SUC Approvals Scottish Power







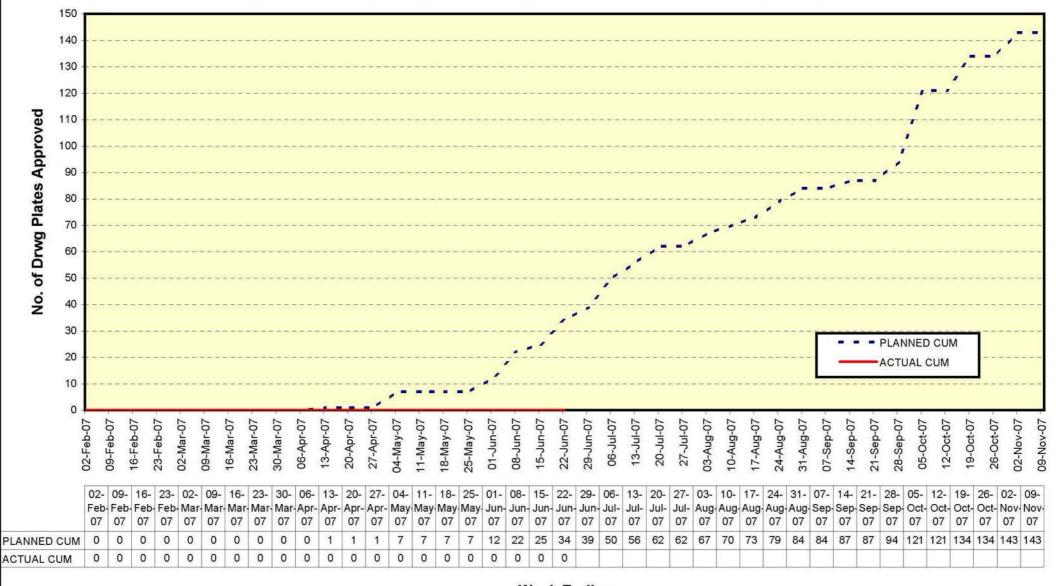
MUDFA SUC Approvals Scottish Water (Clean)





MUDFA SUC Approvals

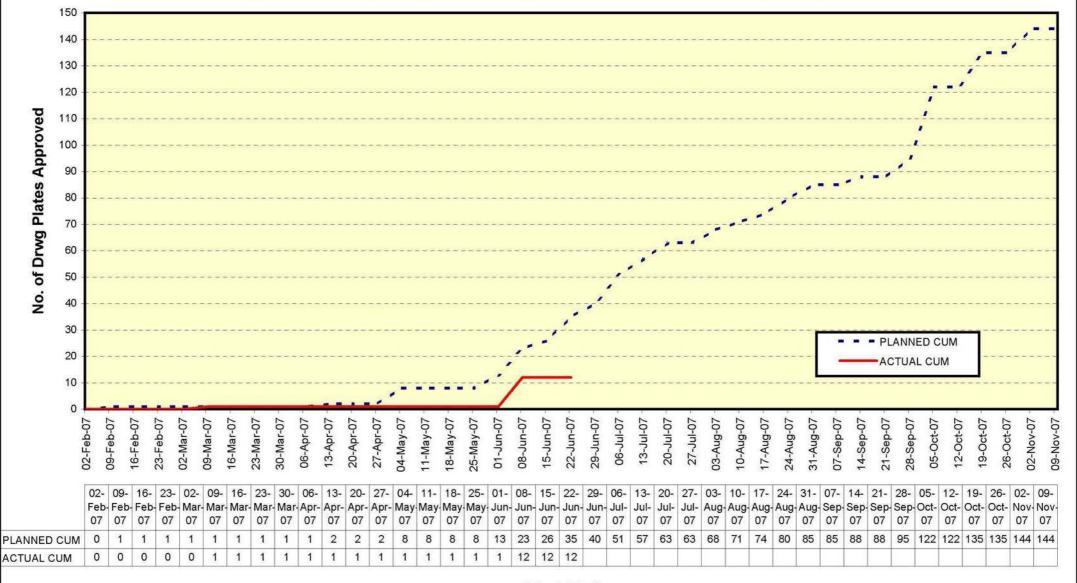
Scottish Water (Foul)





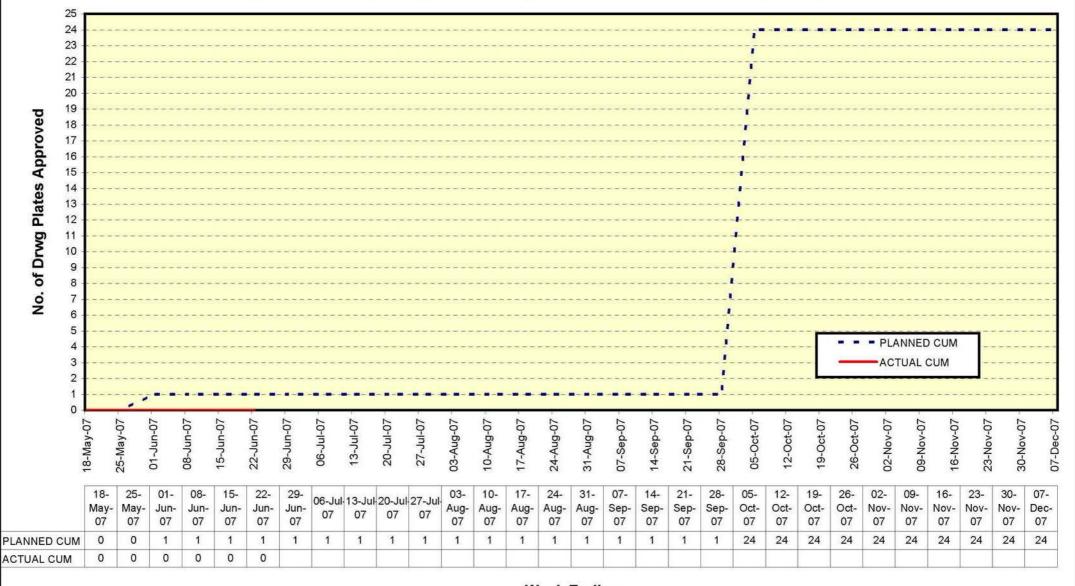


MUDFA SUC Approvals BT Openreach





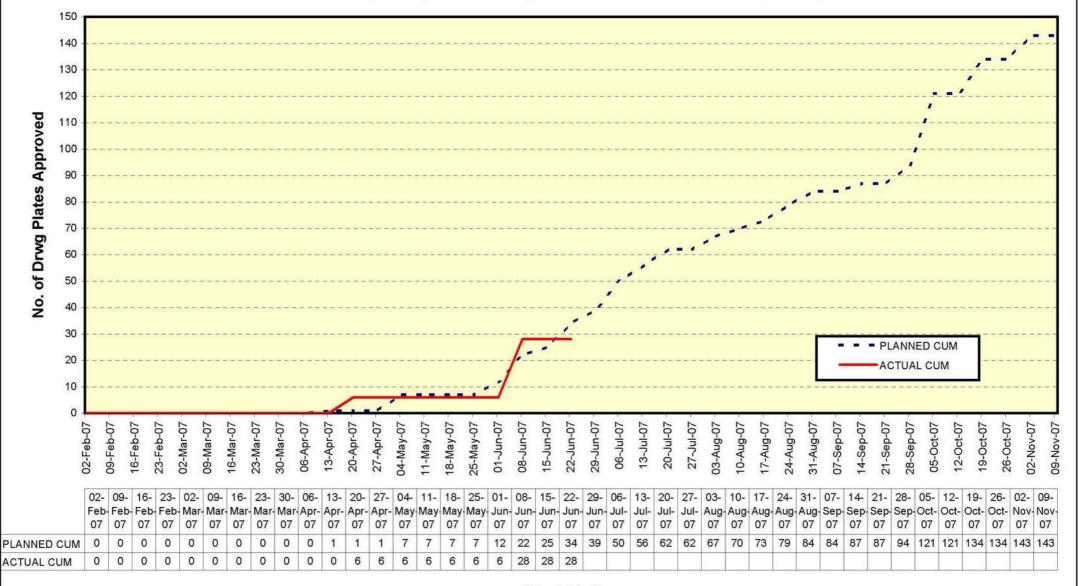
MUDFA SUC Approvals Verizon







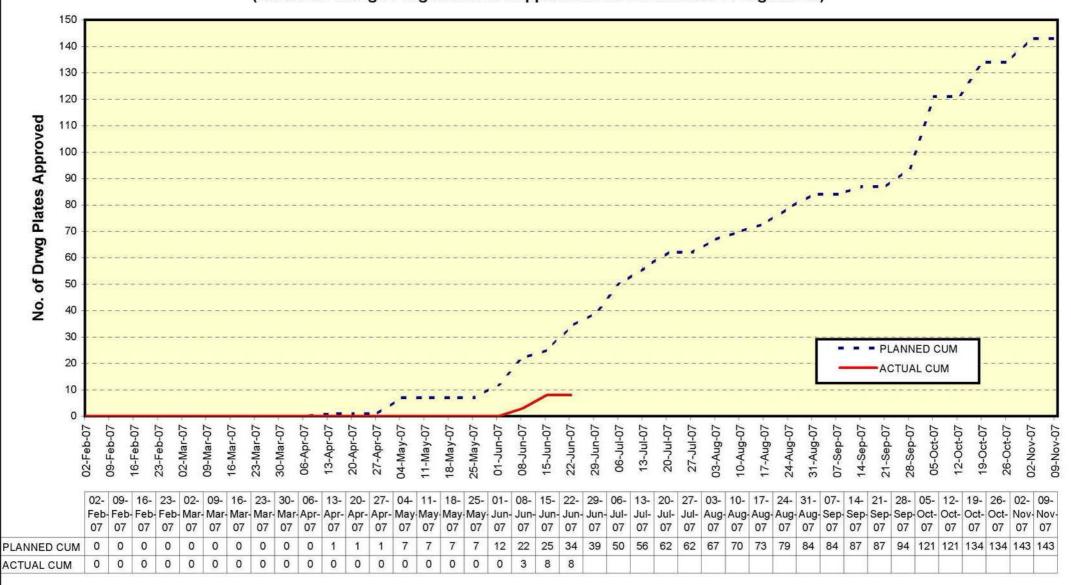
MUDFA SUC Approvals Virgin Media







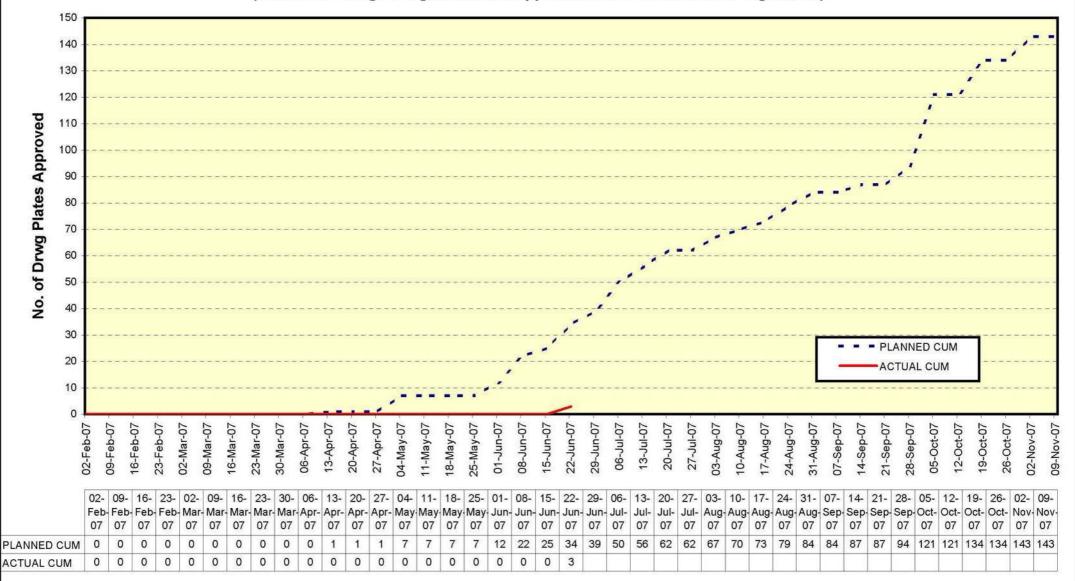
MUDFA SUC Approvals Cable and Wireless





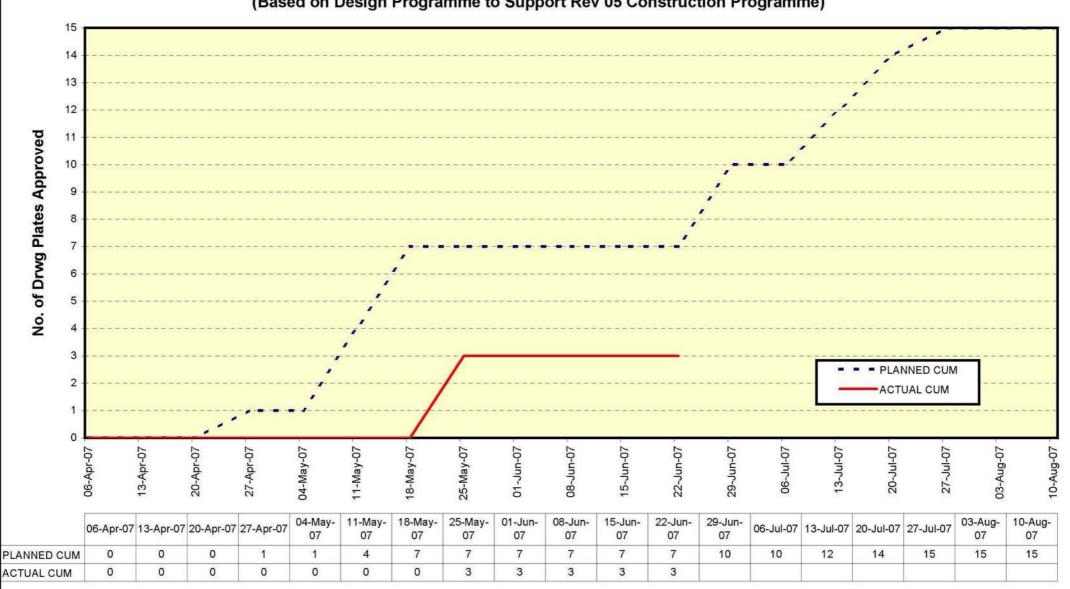


MUDFA SUC Approvals Thus



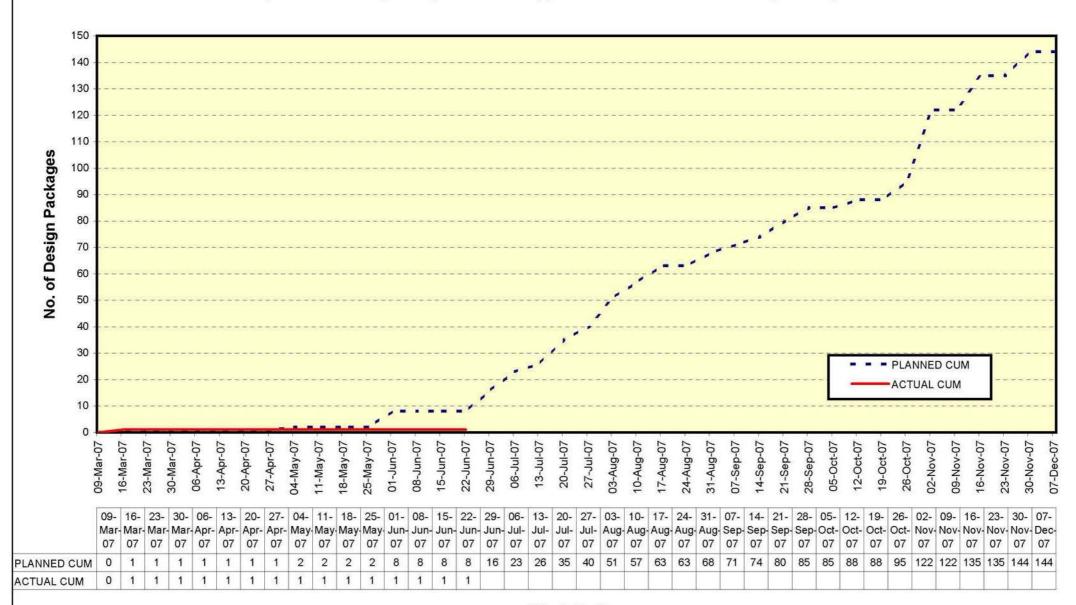


MUDFA **SUC Approvals Forth Ports**





MUDFA Issue of IFC Design Package for Construction (Based on Design Programme to Support Rev 05 Construction Programme)





MUDFA Sub-Committee Meeting

APPENDIX 2

Risk Register

ARM Risk		Risk Description		Risk Owner*	Signif-	Black Flag	Treatment Strategy	Treatm	ent Status	Date Due	Action Owner
ID	Cause	Event	Effect		icance			Previous	Current		
	Utilities diversion outline specification only from plans	PROJECT PRIMARY 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	led	None	Review design information and re- measure during design workshops with Utility Companies and MUDFA.	Bernind Programme	Behind Programme	30-Nov-06	Undefined
	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		Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	G Barclay	ii.	None	Develop PC Sums into quantified estimates.	Behind Programms	Behind Programme	30-Nov-06	Undefined
							In conjunction with MUDFA, undertake trial excavations to confirm locations of Utilities	On Programme	On Programme	31-May-07	A Hill
	RISKS 139 and 164 HAVE SAME TREATMENT PLAN						Identify increase in services diversions. MUDFA to resource/re-programme to meet required timescales.	On Programme	On Programme	31-Aug-07	G Barclay
		50		Undefined	24	None	Scottish Power to establish exact location of tunnel	Complete	Complete	02-Apr-07	Undefined
							Scottish Power to undertake engineering feasibility study	Behind Programme	Active	02-Apr-07	Undefined
							Solution to be engineered - ACTION PLAN TO BE DEVELOPED ON COMPLETION OF FEASIBILITY	Pending	Pending	03-Mar-08	D Crawley
	Tram alignment at A8 crossing at Gogar co-incides BT data nests/cable (main coms link between Glasgow and Edinburgh)	A8 crossing tunnel requires special design or BT data nest/cables require to be moved	Capex cost to cover BT data nest/cable move; additional design costs; delay while works to undertake move are carried out; additional tunnelling costs.	Undefined	23	None	Agree design with BT and SDS	Behind Programme	Behind Programme	15-Mar-07	Undefined
							Investigate the design of underpass such that duct banks are avoided by passing underneath	On Programme	On Programme	31-Jul-07	D Crawley

RM Risk		Risk Description		Risk Owner*	Signif-	Black Flag	Treatment Strategy	Treatm	ent Status	Date Due	Action Owne
)	Cause	Event	Effect		icance	1.0 5 1.0 1.0 5 2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1		Previous	Current		
							Ensure adequate protection of cables will be provided during construction	Pending	Pending	31-Oct-07	Undefined
							Undertake diversion and include costs in base estimate	Pending	Pending	30-Sep-08	G Barclay
6	Major single safety incident during construction	DETAIL RISK Safety incident during MUDFA Gas/Scottish Power Diversions	Delay (potentially critical) due to HSE investigation and rework. PR risk to tie and stakeholders.	G Barclay	22	None	Specific Gas/Scottish Power action plan to be developed by incoming PM - See also summary risk actions	Pending	Pending	29-Jun-07	G Barclay
3	Major single safety incident during construction	SUMMARY RISK Safety incident during MUDFA Utilities Diversions	Delay (potentially critical) due to HSE investigation and rework. PR risk to tie and stakeholders.	G Barclay	3 **	None	Site Supervisors to be appointed by tie	Complete	Complete	28-Feb-07	S Clark
							Develop and Implement Incident Management Processes	Complete	Complete	27-Apr-07	T Condie
							All Site Staff to get CSCS	On Programme	Active	30-Apr-08	P Douglas
							Safety Induction to be carried out for all site staff	On Programme	Active	31-Dec-10	T Condie
							Site Safety Audits and Management Tours to be carried out	On Programme	Active	31-Dec-10	P Douglas
23	Tram crosses high voltage transmission cables in 4 areas (Leith Walk - 275kV; 2 times bridge abutment - 132kV; 275kV at Edinburgh Park)	Underground electricity transmission cables are encountered and damaged during MUDFA diversions	Potential to cause damage and consequent accident during work, Scottish Power delay works if cable struck, Significant injury (potential for multiple deaths) caused to workforce; Delay in project section.	Undefined	21	None	Ensure AMIS understand and agree with construction requirements near to cables.	Complete	Complete	30-Apr-07	Undefined
							Ensure method statements refer to and deal with very high voltage cables adequately	Complete	Complete	30-Apr-07	J Sneddon
							Ensure AMIS follow relevant safety procedures and method statements during construction	Pending	30-Sep-08	P Douglas	P Douglas
	Design constraints e.g. presence o other utilities, proximity of LoD boundary, diversion technical requirements etc.	Design requires that Utilities are diverted outside of LoD	Additional design; additional land purchase required and consequent contact with landowners; design may result in increased work quantities due to extent of diversions; potential increased duration of works.		19	None	SDS to aim to design diversions within LoD	On Programme	On Programme	29-Jun-07	D Crawley
							SDS to undertake design checks to ensure diversion in LoD	On Programme	On Programme	29-Jun-07	D Crawley
							GIS used to identify diversions outwith LoDs and respective landowners	On Programme	On Programme	31-Aug-07	E Cropley

ARM Risk		Risk Description		Risk Owner*	Signif-	Black Flag	Treatment Strategy	Treatn	nent Status	Date Due	Action Owner
ID	Cause	Event	Effect		icance			Previous	Current		
							AMIS to seek to divert under Statutory Utility powers where outwith LoD	Pending	Pending	28-Dec-07	G Barclay
	Contractors do not understand 3rd party obligations; construction methodology cause adverse impact and cost to 3rd parties; 3rd parties were not expecting construction to have an impact on them; Code of Construction Practice found to be inadequate; vibration and noise claims; claims as a result of proximity to buildings physical damage from plant.	Significant number/magnitude of claims from 3rd parties received as a result of Utility Diversion activity		G Barclay	10	None	Appoint Site Inspectors	Complete	Complete	28-Feb-07	P Douglas
							Agree Site Checks	Complete	Complete	28-Feb-07	P Douglas
							Implement comms cycle and dedicated phone link	On Programme	On Programme	31-Mar-07	S Waugh
,							Ensure MUDFA contractors understand 3rd party obligations	On Programme	On Programme	30-Apr-07	G Barclay
							Develop and implement 3rd Party Management system to deal with impacts	On Programme	On Programme	30-Apr-07	M Connelly
							Implement Site Check documentation system	On Programme	On Programme	30-Apr-07	P Douglas
							Ensure dilapidation surveys undertaken by SDS are suitable fo expected work	On r Programme	On Programme	30-Apr-07	G Barclay
							Audit performance against obligations	On Programme	On Programme	30-Sep-08	P Douglas
							Agree site specfic hours of operation	On Programme	On Programme	30-Sep-08	P Douglas
	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	D Crawley	18	None	PLAN NOT AVAILABLE ON ARM				