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Introduction

1.

- (1) We note your CV at **CAR00002026**. Is there anything further you wish to add in relation to your main qualifications and vocational experience?

My qualifications, employment record and experience are all accurate.

- (2) For completeness, prior to the Edinburgh Tram Project, what was your experience in major infrastructure and transport projects? What was your experience in diverting utilities, including diverting utilities in cities?

During my career I have been involved in a number of capital infrastructure and utility related projects, but not specifically in relation to city centre rail transportation.

During the course of my work in the oil and gas and defence sectors I have been involved in diverting a wide range of utilities, including critical control cables, high speed fibre optic links and high pressure gas systems.

- (3) Between what dates were you employed by AMIS/Carillion?

I was hired by AMIS on a 22 month term contract. I commenced working on MUDFA in November 2006 and resigned in April 2008 (18 months). Carillion acquired AMIS in February/March 2008 and advised me there was no long term employment prospects so I decided to move on.

- (4) What was your job title?

AMIS Project Director

- (5) What were your main duties and responsibilities in relation to the Edinburgh Tram Project?

Assigned as the single point of contact for AMIS reporting to TIE MUDFA

Project Manager. During the course of the project I was responsible for the following duties :

- Operational safety and public interfaces
- Liaison with city stakeholders impacted by the utility works
- Traffic management planning and coordination
- Coordinating resources and materials from AMIS
- Administration of work orders and change control
- Overseeing the progress of the utility works
- Road reinstatement following works completion
- Completion of as-built data and records for SUC's and Infracore

(6) Who did you report to and who reported to you?

Alfred McAlpine Infrastructure Services (AMIS) – Corporate Reporting

Within AMIS I reported to Alan Robertson (Managing Director, Alfred McAlpine) on overall contract performance based in Manchester. In relation to operational and resource requirements I maintained regular communication with Steve Cocliff (Director of Operations); and Steve Hudson (Commercial Director) on all commercial and contractual matters in conjunction with Keith Gourlay (AMIS MUDFA Commercial Manager). In the first month of joining AMIS I was in regular contact with Graham Gould (AMIS Utility Consultant) who had been the technical bid manager to win the MUDFA contract for AMIS. Graham Gould was a contractor to AMIS.

Edinburgh Tram – TIE Project

Alistair Slessor (TIE MUDFA Project Manager).

During the early pre-construction services period (November 2006 to February 2007), Alistair was not readily accessible to assist in the defining and agreement of operational and works interface requirements with specific focus on work order planning and control. Consequently this required me to establish contact directly with Alan Hall (Halcrow Consultants) who was leading a small team coordinating the interface with the various Statutory Utility Company's (SUC).

Susan Clark (TIE Director).

With the lack of support being provided by the TIE MUDFA Project Manager during the initial stages of pre-construction services; and with Alan Hall / Halcrow having no direct contract responsibility with AMIS, I escalated a number of concerns to AMIS corporate management, and simultaneously gained access to Susan Clark, TIE Director to seek support and resolution on many project related issues. This was done initially through preparing and presenting monthly report to highlight progress concerns, interface issues, emerging risks, and to propose

potential solutions in order to improve communication, control and coordination across the MUDFA project.

It was always the plan and intention of AMIS MUDFA to progress the MUDFA utility works in a proficient manner and with high levels of support given the challenges of city working.

Graeme Barclay (TIE MUDFA Project Director).

Appointed as the single point of contact for all MUDFA works (I cannot recall the actual dates). Graeme built a new project team circa 8 to 10 people based in the AMIS MUDFA offices at Ocean Terminal.

Steven Bell (TIE Director) – Concurrent reporting.

AMIS corporate management (specifically Steve Hudson) in recognising the various MUDFA challenges engaged in building and developing a relationship with Stephen Bell in order to improve communication and to share concerns.

AMIS MUDFA – Project Management Team

Following contract award and during the initial stages the project team was supported by a number of managers from AMIS Corporate with Graham Gould concluding the negotiations and leading during the transition phase.

In the pre-construction phase I appointed a number of responsible managers to carry out the following roles :

- Operational health, safety and environment – Graeme Strachan
- Planning & Coordination Manager – Roddy Aves
- Operations Manager – Mike Burne (AMIS Corporate assignment) followed by Gil Clelland
- Commercial Manager – Keith Gourlay
- Communications Manager – Christine Turpie

Approximately how many individuals were in the AMIS/Carillion team for the tram project? How was the team structured (see e.g. organigram for the PCS phase, CAR00000822)?

During the pre-construction phase the team size was initially 4-5 senior managers focused on project mobilisation, detailed work order planning, trial holes and stakeholder intervention. This team was tasked to consolidate the work orders utilising the SDS drawings and city street information, and to secure TIE/Authority approvals in order to commence and advance the MUDFA works.

During the second part of the pre-construction phase the project team relocated to Ocean Terminal, and concurrently the project team size was

increased by the introduction of the MUDFA Operations Team comprising 6 site managers. This included the representatives from Doocey North East (the nominated Telecommunications subcontractor) bringing the project management team to 10-12 people covering all roles and disciplines.

During the MUDFA utility works when working at multiple locations the overall team size grew to approximately 60-80 people which included the traffic management crew.

Approximately how many sub-contractors were employed by AMIS/Carillion? What was their primary role?

The original plan was to use one subcontractor to carry out all the Telecommunication related utility diversions, and to build any new telecom chambers required. The company appointed during the bid stage was Doocey North East, who were selected by AMIS as specialists in telecom chamber work, and a company who held the necessary approvals to carry out work for each of the six different telecommunication service providers. This was pre-notified and agreed during the bid stage.

- (7) What was the approximate split between AMIS/Carillion employees and sub-contractors? Slides for an AMIS presentation to TIE on 3 October 2006 indicated an 80/20 split. Was that split achieved (and, if not, why not)?

For a substantial part of project execution the 80% AMIS [Gas, Water (clean), Water (foul), Electricity] and 20% Subcontract (Telecommunications) was maintained in accordance with the original bid and project plan.

The slower than anticipated progress associated with the late release of SDS drawings and associated technical information resulted in AMIS experiencing conflicts in term of demands to resource other projects and Clients. This was the subject of many senior level discussions, and the compromise was to retain AMIS utility staff on MUDFA, agreement to phased release AMIS MUDFA resources with AMIS Corporate approval to augment the MUDFA resources using a number of smaller local utility companies. At all times AMIS retained site management responsibility for health and safety, utility workmanship standards and completion of the works.

I recognised very early the importance of effective traffic management (TM) services in the city centre and elected to substitute the AMIS TM services on the basis that they were based in Manchester, and were already committed to servicing the entire portfolio of AMIS infrastructure works across the UK. With the primary concern of AMIS TM availability in Edinburgh to satisfy the changes and dynamics of the project, I sought AMIS Corporate approval to tender the TM services and select a qualified and competent service provider in Scotland. After a comprehensive tendering process Class One TM Services were awarded the contract.

MUDFA - General

The MUDFA contract was entered into between TIE and Alfred McAlpine Infrastructure Services Ltd (AMIS) in October 2006 (CAR00000300). We understand that AMIS were acquired by Carillion plc in February 2008. It would be helpful if you could give an overview of the matters in this section.

2. In relation to the utilities design:

(1) Which organisation was responsible for producing the utilities design?

SDS/Parsons Brinckerhoff were responsible for producing the full scope, technical definition and range of utility service drawings to support the work ordering process for the AMIS MUDFA works. This was to include all technical details resulting from each SUC interaction on asset condition, physical location and actual in-service status (SUC's included gas, clean water, foul water, power cables, street lighting, traffic light sensors, and 6 telecommunication providers), sub-terrain utility clash checking, and design considerations in relation to tram-track foundations with AMIS's involvement being limited to constructability analysis only.

The TIE Project Manager, MUDFA utilising Halcrow Consultants (Alan Hall and team) acted as the key interface between SDS and each Statutory Utility Company (SUC), which was identified by AMIS as a key risk since the interface held the potential to dilute SDS design responsibility to deliver the pre-requisite utility definition and detail to support construction. This was pointed out at to Susan Clark at the monthly progress meetings during the pre-construction phase. Furthermore, TIE held responsibility for securing all authority approvals in terms of legal consents and advising each stakeholder on the extent of the works in each area which required a level of design detail to support each of the discussions.

(2) Which body or organisation was responsible for ensuring that the requirements of the various interested parties (including e.g. the statutory utility companies, Forth Ports plc, the British Airports Authority, Network Rail and the City of Edinburgh Council) were taken into account and reflected in the design?

TIE Project Manager, MUDFA (Alistair Slessor supported by Halcrow Consultants) was responsible for contacting, coordinating and managing the interface(s) and deliverables with the various authorities, agencies, companies, Edinburgh City Council departments and key city stakeholders; since TIE were the designated authority for delivering the Edinburgh Tram project, and acting in the capacity of programme and integration manager. As an incumbent part of the SDS design work, SDS were seeking input from the various interested parties in relation to business critical dependency on utility services and supplies, such that work around and alternate arrangements could be considered in the

design through consultation with the SUC's, which was an essential point and key risk pointed out by AMIS at the regular monthly progress meetings held in the pre-construction phase.

Furthermore and from an AMIS MUDFA perspective there were two areas in particular that were not effectively managed from the onset, which were again highlighted in the early AMIS MUDFA monthly reports. Firstly the volume and availability of approved utility drawings which required SUC approvals, and secondly the intricacy and inter-dependency of city centre traffic management and the consequential impact on the wider area road networks that was not adequately addressed with the various city stakeholders.

AMIS had to take the initiative to establish relationships with all the aforementioned entities in the interest of making progress, and this included building a positive relationship with Lothian Busses and all the other bus operators with charter obligations in Princes Street, the City Council departments in terms of managing the movement of taxi ranks, accommodating waste services, and impact on school crossings. As time moved on AMIS had to increase the level of participation in this area in order to support TIE, and extended its involvement into local community councils (Shandwick Place), retail community, commercial and residential interactions, shopping centres, commercial banks, etc all in order to provide planning information and explanation of the works and potential impact to ongoing business. The extent of involvement and participation in carrying out these activities was totally overlooked by the TIE Project Manager, MUDFA who believed it was a role being carried out by TIE Communications team (Mike Connelly).

AMIS conscious of the need to provide support to the retail, commercial and residential communities hired a number of people who became known as "The Tram Helpers". This team led by myself were asked to visit the retail community at 5am each morning to assist with deliveries in areas where the MUDFA works restricted access to premises. Eventually, TIE requested this team to be migrated over to work directly for TIE which was agreed since it was not the core works of AMIS MUDFA.

- (3) What procedure was followed in that regard? How was agreement reached? What input, if any, did AMIS/Carillion have into that process?

The responsibility of AMIS was to review the SDS Approved for Design (AFD) utility drawings and to provide input to the design in terms of 1) Constructability, 2) Buildability, 3) Understanding safe isolation of services and workaround requirements for customers, 4) Testing of the services and returning to sustainable service, 4) Listing of materials for AMIS purchasing purposes, and 5) Assessing the extent of work to be carried out in a specific location to determine resources, overall works duration and traffic management requirements.

- (4) In general, to what extent was the MUDFA design dependent on the civil engineering design for the tram project and vice versa? To what extent did delay

or changes to the civil engineering design cause delay or changes to the MUDFA design?

AMIS / MUDFA needed to understand the physical track line and depth of burial-cover required along the route in order to assess the impact on each utility service beneath the road, and how each service would be diverted or slewed down deeper to provide the required tram-track foundation clearance. In the case of water and gas pipes, power cables and street lighting these services often needed to be increased in length to accommodate the services being set down deeper, and this often resulted in increased excavations in terms of linear length to gain access to connection points, utility joints, pip collars to be installed, or connections made into local chambers as required by the relevant SUC. In the case of the telecom works split ducting was used where the physical length of the cable would accommodate slewing without compromising the integrity of the service. The SUC's in reaching agreement on the various diversions tended to request a degree of betterment which resulted in additional work and increased cost.

In terms of physical track line this changed on several occasions and consequently impacted on the MUDFA works sequence and opportunity to commence the physical works. The initial trial hole and proving of the work order planning process planned at Ocean terminal was initially delayed due to the parliamentary election, and then further delayed as a result of the track line position being subject to several changes, and the fact that TIE Project Manager, MUDFA had not secured legal consent at the appropriate time (Malcolm Butchard, Forth Ports Estate Manager). In the end the trial hole was not carried out.

The civil engineering design concentrates predominately on track design, carriage dynamic kinetic envelope (DKE), building swept path analysis, optimising the route relative to the existing road levels and camber, and concentrates mainly on the integrity of the existing bridges requiring strengthening works to accommodate tram weight and dynamic movement. The civil engineering design seldom considers in detail, or appreciates the full extent of the underground utilities and services, or the variable ground conditions that existed along the route.

In short, the civil engineering designers view the utilities as single line diagrams, which were produced as a result of conducting overnight Asperio surveys as opposed to a carrying out detailed assessments of the in-service and as-built drawings, or even carrying out strip digging in critical areas. Finally there was no design consideration given by SDS to temporary works requirements associated with business critical services, such as the fibre optic cables on the A8 carriage way at South Gyle serving the RBS bank at Gogarburn, or the fibre optics serving the National Air Traffic Control system at Edinburgh Airport.

AMIS MUDFA were significantly curtailed for a long period of time by the non-availability of utility drawings from SDS, which virtually eradicated the

benefits of carrying out the pre-construction services phase. Eventually when the first batch of drawings were released to AMIS they were at "Preliminary" status, and did not provide the level of design definition and details required to support work order planning and material purchasing. This resulted in the commencement of the main MUDFA construction works being delayed, compounded the overall programme since the long-stop date remained fixed, and led to out of sequence working based on drawing availability, which consequently required additional resources and service support, and increased cost.

3. In relation to utilities investigations:

- (1) Which organisation was responsible for instructing/undertaking the utilities investigations for the tram project?

Primarily SDS/Parsons Brinckerhoff with input and support from the respective SUC's.

- (2) In general, what investigations were undertaken (including by whom and when) to identify the utilities that would require to be diverted and replaced?

SDS/Parsons Brinckerhoff were responsible for carryout any investigation works where the provision of utility details were not forthcoming from the respective SUC's, or there were concerns over the track foundation and details, potential clashes or need to be better informed about ground conditions along the route. This was evidenced by the SDS utility schedule and where SDS/Parsons Brinckerhoff requested AMIS to price investigation works on their behalf (Alan Dolan).

SDS/Parsons Brinckerhoff used a specialist company to carry our ground penetrating radar scans (Asperio) of the proposed road and track route to acquisition utility related data to inform the SDS utility design work.

- (3) What use was made of trial holes and at what stage e.g. were trial holes dug before the utilities design was produced in order to inform the design and/or were trial holes dug after the utilities design was available but before the utilities diversion works took place?

The very first trial hole intended to be carried out at Ocean Terminal was never completed due to 1) Outcome of the parliamentary election, and 2) Non securing of legal consent from Forth Ports plc.

From recollection the limited trial holes that were carried out after the preliminary utility design drawings had been issued to AMIS. Trial holes were carried out but the majority of these were for the benefit of the main tram-track design.

- (4) Did the results of the investigations turn out to be reliable (and, if not, why not)?

The utility work carried out by AMIS MUDFA at the mid to lower part of Leith Walk proved to be challenging due to the sandy soil condition which

resulted in AMIS making a business case to use foam concrete prior to road reinstatement. This led to significant additional costs and resulted in prolonged activity which could major concerns amongst the retail community (The bedshop). The investigation works carried out by SDS specialist subcontractors provided variable results relating to ground conditions, stability and utility congestion.

- (5) Do you consider that any other investigations could or should have been carried out before the utilities diversion works took place?

There were a number of archaeological findings along the route namely at Gogarburn (Roma ruin) and Constitution Street (Plague pits) which should have been identified early in the scheme with strip digging carried out to explore the extent of the areas. Again this resulted in delays to the MUDFA works, which caused AMIS to redirect resources resulting in out of sequence working, delays and disruption, and increase in support service costs such as TM, material movements and logistics.

4. We understand that there was a Pre-Construction Services (PCS) phase under the MUDFA contract. By way of overview:

- (1) What was the purpose of the PCS phase? What was to be done during that phase? (see e.g. Appendix 2 of AMIS's Progress Report for October 2006, **CEC01836108**)

The project team were carrying out a series of activities in order to :

- Fully understand all the interactions, stakeholder dependencies and interface requirements to ensure the AMIS MUDFA organisation was aligned and fully engaged.
- Preparing a series of project specific procedures and documents to instil good management control, reporting protocols and to ensure emergency responses, etc were demonstrated and proven.
- Refining the works programme down to road sections and areas along the entire route to ensure adequately details was provided for the earlier works, and that the design outputs were aligned to support production.
- Ensuring the work order and approvals process was correctly structured and acceptable to TIE, including the change control process to avoid any conflicts.
- To detail the resource profiles for AMIS Corporate notification, including procuring and shipping of materials, fittings and consumables.

- (2) What was done during that phase?

The majority of the works planning, TM arrangements, procedure preparation, setting up of the site offices and material control compounds, assigning of management resources, etc were all completed during the pre-construction phase, and well established ready to embarking upon the main construction works. At this stage AMIS MUDFA were already

establishing and building relationships with Forth Ports (Malcolm Butchard), Lothian Buses (John White), etc.

(3) What, if any, difficulties were experienced during the PCS phase?

The principle difficulty for AMIS MUDFA during the pre-construction phase was the late availability of the SDS/Parson Brinckerhoff utility designs/drawing outputs as reported to all key stakeholders within TIE. Not only were the SDS design late, but they did not contain the necessary details to allow AMIS MUDFA to comprehend the scope of diversion works required, and this curtailed AMIS MUDFA from planning and purchasing the materials and fitting to support actual works commencements.

This is evidenced by the AMIS MUDFA team producing "Technical Utility Review Diagrams" which were passed to TIE to forward SDS/Parsons Brinckerhoff as examples of the required utility detail for construction. AMIS used the words "Diagram" deliberately to avoid the word "Design", such that SDS/Parsons Brinckerhoff would not attempt to novate their responsibilities in anyway.

The other difficulties experienced during the pre-construction phase relate to the complexities of TIE which were openly shared in monthly reports and in good faith, in an attempt by AMIS MUDFA to refine and improve the interactions to something more workable for the longer-term. This was raised on several occasions with Susan Clark, but nothing was corrected, changed or resolved. In the early part of 2007 Alistair Slessor's presence on the project was unknown, and TIE had not duly notified AMIS that he had departed from his role as TIE Project Manager, MUDFA.

(4) What was the originally anticipated duration of the PCS phase? (see e.g. (i) a document produced by Carillion in September 2009, **CEC00790177**, which noted, page 1, that the PCS phase was to run between October 2006 and March 2007)

I joined AMIS in November 2006 and at that time the pre-construction period was envisaged to finish at the end of March 2007.

(5) Was the PCS phase completed (and, if so, when) (see, for example, your letter dated 3 August 2007 (**CEC01702507**) which referred (page 2) to a "break down" of the PCS phase)?

The work completed during the pre-construction phase proved beneficial in many ways, but the requirements relating to the utility specific design work was not conclusive, and was not completed with a definitive ending to the PCS phase. In this regard AMIS believed that the rates and prices structure offered in the bid phase had been compromised.

(6) Did any difficulties experienced during the PCS phase affect the Construction Services phase?

Not all access to land and owner consents had been secured at the end of the PCS phase by TIE. This limited planned access and the non-availability of approved for construction utility drawings by SDS/Parsons Brinckerhoff resulted in delay, disrupted and dislocated working by AMIS MUDFA leading to escalated cost. Furthermore the extent of physical change compared to the preliminary design drawings proved to be excessive in many cases making it difficult to identify and track changes to the rates and prices, and had AFC drawings been available during the PCS phase then an informed decision could have been made as opposed to dealing with the issues during the main construction phase.

5. We understand that the utilities diversion works were due to commence in April 2007 (which was changed to July 2007) and were due to be completed by the end of 2008 (i.e. before the commencement of the infrastructure works) but that difficulties and delays were encountered.

By way of overview:

(1) What were the main difficulties and delays encountered in carrying out the utilities works?

- Out of sequence release of utility drawings resulted in changes to the consolidate works programme and led to conflict with restricted embargo dates imposed by Edinburgh city major events (Resulted in major delays).
- The scale and complexity of the inner city traffic and impact on the wider area road network had not been adequately modelled which resulted in late agreement of road closures.
- Inadequate road closure notifications and late communication of work plans by TIE Communications team resulted in local retailers and communities restriction work progress.
- Not all key authorities along the track route has consented and granted permission to carry out the utility works which halter progress.
- Archaeology investigations had not been carried out sufficiently in advance of the main construction works resulting in delays, namely Constitution Street and Gogarburn depot area.

(2) What were the main reasons for these difficulties and delays?

The main root causes emanate from excessive contractual interfaces with different parties to the project holding different work scope responsibilities, misaligned programmes with constant changing priorities and imposed change, and TIE programme management being limited in their ability to make the necessary changes without incurring cost increases.

(3) What steps were taken (by whom and when) to address these difficulties?

AMIS openly highlighted early in the PCS phase a number of major risks and concerns and actively encouraged TIE to engage in resolution of issues but this was never actively embraced with a view to making

progress.

AMIS MUDFA offered support to TIE and SDS/Parsons Brinckerhoff to assist in the production of technical utility review drawings.

AMIS MUDFA recruited a number of Tram Helpers to assist the retail community with early morning deliveries where TM restrictions were in place.

AMIS MUDFA attended various city centre retail and local community councils to inform and provide information on behalf of TIE.

AMIS assumed overall responsibility for masterminding the city centre traffic remedies as evidence by total closure of Shandwick Place for 16 weeks, Haymarket,

AMIS undertook the bulk earthworks removal at Gogarburn Depot to advance the overall works and to remedy a pre-Infraco issue that was being dealt with by TIE.

AMIS acted as the single source of control supporting Lothian Buses (John White) and other bus operators to ensure chartered operations and licence conditions were not breached in anyway.

AMIS contemplated a transition plan with phased utility completion in conjunction with Infraco in order to negate project delays and to cap cost escalation.

(4) Were these steps successful (and, if not, why not)?

AMIS MUDFA team with best endeavour tried to find remedies and solutions to support the progression of the MUDFA works. A large number of the steps taken proved successful, which were done on behalf of TIE or services eventually novated over to TIE as means of assistance (I.e. Tram Helpers).

(5) When were the utility diversion works completed (or, at least, substantially completed)?

I resigned from AMIS/Carillion in April 2018 for the aforementioned reasons and the main utility construction works had not completed at that time.

6. In relation to AMIS/Carillion:

(1) What were your views on the performance of AMIS/Carillion in carrying out the MUDFA works?

During the pre-construction services period AMIS were very pro-active and resolute in approach dealing with many direct and indirect issues. The non-availability of approved utility drawing from SDS/Parsons Brinckerhoff significantly disrupted the successful operation and workings of AMIS MUDFA, and it became a struggle to maintain effective control of all the arrangements as the consolidated programme destabilised and many external factors influenced productivity and outcome. Within AMIS/Carillion the call and availability of resources became challenging due to programme delay where the same staff and AMIS resources were

being called upon to support other works and clients.

Overall the AMIS MUDFA team endeavoured to do the best for the Edinburgh Tram project and contributed positively in many ways amongst a challenging project that became more complex as time progressed, and with significant risks being materialised as long-stop dates and Infracore start dates forced results and action.

(2) Did you have any concerns, at any stage, in relation to the performance of AMIS/Carillion and/or the performance of any senior personnel of AMIS/Carillion?

My main concerns were openly highlighted in the early monthly reports where I was always objective, honest and realistic about the various risks foreseen, and my approach was to gain support and recognition in relation to addressing and resolving issues for the benefit of the overall project.

In relation to senior Carillion staff I had concerns for David Smith who was my nominated replacement as Project Director in March 2008, who appeared to me as being very laid back in style and I was worried that he would not be able to deal with the TIE MUDFA project management team.

(3) What were your views on the following criticisms made by TIE of AMIS/Carillion, namely:

- Insufficient resources and personnel were deployed. Adequate resources were available and deployed throughout 2007.
- Too much use was made of sub-contractors. I can understand this in relation to the employment of utility labour, but as stated previous AMIS always retained works control and only used labour in the form of resource augmentation.
- There was insufficient supervision. At times this became stretched when the utility diversion works demanded on-site control, and emerging issues and extent of change needed to be dealt with involving other team members based at the project offices.
- The quality of some works was poor. The condition of the SUC apparatus inherited by AMIS MUDFA as part of the utility diversion works was very poor in many instances. One particular situation related to the telecommunication chambers and ducting uncovered in St Andrews square which had been incorrectly installed in the first instance, and duplicated by AMIS's subcontractor which resulted in a further rework situation and major disruption to the square.
- There was poor record keeping and insufficient documentation was produced in support of claims for payment and additional sums. I would not sign or approve claims unless they were presented correctly and with clear substantiation.

- The hourly rates agreed by AMIS were too low and resulted in AMIS losing money (see e.g. the views of Thomas Caldwell, QS, TIE, as set out in an e-mail dated 3 March 2009, CEC00956217). The diversion works that resulted in reality were significantly different to those contemplated in the bid documentation. The rates and prices were based on AMIS productivity norms, but the extent of change encountered and external factors leading to reduced productivity certainly impacted on the throughput and productivity being delivered by the various teams.

3 March 2009
should be
5 March 2009

7. In relation to TIE:

(1) What were your views on TIE's management of the MUDFA contract and works?

During the pre-construction services phase the TIE MUDFA project team were disengaged and did not take ownership of issues and responsibilities in dealing with the many interfaces needing to be managed in order to ensure design deliverables were transferred to TIE and AMIS MUDFA to complete work orders in line with the agreed programme. Any risks and issues that were escalated were not addressed to the satisfaction of AMIS MUDFA, and there was an underestimation of the work involved in coordination all the stakeholders to secure consents and approvals to allow the works to proceed.

In mid-2007 the TIE MUDFA team was refreshed with the introduction of Graeme Barclay (TIE Project Director) who increased the TIE MUDFA team to circa 15-18 people. The project team dynamics then changed significantly with a more dominant Client/Contractor relationship being introduced which was welcomed by AMIS MUDFA. However, the TIE MUDFA project team collectively and progressively recognised the situation surrounding the lateness of SDS design drawings and works information, and became consumed by the extensive level of stakeholder engagement, traffic management issues and the looming Infracore works to make a positive step-change in performance to assist AMIS MUDFA.

(2) What were your views on TIE's senior personnel?

On several occasions I looked to the senior managers of TIE for assistance and support to resolve many issues. Susan Clark attended a number of TIE/AMIS monthly meetings once it became apparent that Alistair Slessor had withdrawn from the project, but nothing was addressed or resolved to make any significant step-change in progress, performance and/or output.

At a higher point of escalation Steven Bell appeared to engage only with the AMIS Executives and did not actively engage with the wider TIE/AMIS MUDFA team. Resolution of commercial matters and any agreement to major claims was conducted between Steven Bell and Steve Hudson (AMIS Commercial Director).

Graeme Barclay (TIE Project Director, MUDFA) had a tendency to deal with matters in an abrupt and direct way which did not suit everyone in the AMIS MUDFA team, and resulted in people choosing to become distant and withdrawn at times. On a personal level I could relate to the challenges that Graeme had inherited, and whilst I tried to share empathy for the situation and provide support, I often found myself becoming frustrated at the dictatorial behaviour and insistence on what he wanted without giving due regard to the SDS design obligations, contract, constructability and work order requirements, as opposed to managing the arrangements and obligations of our respective teams. This resulted in a situation where Keith Gourlay (AMIS Commercial Manager) and I had to manage our concerns and AMIS risk through excessive correspondence in order to protect and hold the position of AMIS, but the change in project dynamics became significant, suppressing the willingness to collaborate and maintain trust as time progressed.

8. An e-mail exchange in May 2008 noted problems in the working relationship between TIE and AMIS (CEC01301877).

(1) Were there problems in the working relationship between TIE and AMIS? If so, what were the problems and when and why had they arisen?

The email referred to above was issued after I had already chosen to leave AMIS/Carillion. However, and in terms of the inter-relationship there was a progressive building up of tension and issues between TIE and AMIS over a number of months. There was often talk and reference made to effective team working, but as pointed out previously the leadership style had changed significantly to a point where the relationship became alienated and the initial high levels of collaboration had diminished.

(2) Were the problems ever resolved?

The issues were never resolved during my time on the project despite making attempts to improve the situation, but the project team leaders were experienced and mature enough to accept the situation and to concentrate efforts on progressing the works.

(3) Did any difficulties in the working relationship cause delay or increased cost?

This is difficult to quantify or identify any specific reference points. However a positive and supportive culture on a project goes a long way to soliciting good will, contributing to progressing matters, and resolving issues timeously in order to make a positive contribution to the overall objectives of the project.

9. In relation to reporting, we understand that AMIS produced Monthly Progress Reports between October 2006 and November 2007 (see e.g. the report for November 2007, CEC01523817) and that TIE produced monthly MUDFA Contract Review Reports between December 2007 and February 2010 (see e.g. the report for

December 2007, CEC01452199).

- (1) Are we correct in our understanding that AMIS produced monthly MUDFA progress reports until around November 2007, after which TIE produced monthly progress reports?

The understanding above is correct. I produced the AMIS monthly reports to TIE each month following input from my direct reports and following our internal progress review meeting.

- (2) If so, why did AMIS stop producing such reports at the end of 2007 and why did TIE then take on that responsibility?

Graeme Barclay (TIE Project Director, MUDFA) advised AMIS that TIE MUDFA would produce the monthly reports going forward and would use the TIE Project Planner to prepare progress information. AMIS MUDFA accepted the request for ownership and transfer in responsibility, albeit AMIS MUDFA continued to report internally and continued to carry out the physical works.

In the following sections we look in more detail at particular events between 2006 and 2008. Please, of course, feel free to refer back to your previous answers if you consider that you have already dealt with these matters in your response to the above questions.

Events in 2006

10. In response to a Tender Query dated 8 May 2006 by AMIS, TIE indicated that it was anticipated that Detailed Utility Design would be complete between 25 April and 21 July 2006 and that Issued for Construction Designs would be available between 13 September and 21 December 2006 (see your letter dated 23 August 2007, CEC01702113, which attached a copy of the Tender Query).

These dates were, apparently, predicated on an anticipated MUDFA Contract award date of 1 June 2006 and an anticipated construction start date of January 2007.

- (1) What was your involvement, if any, in the tendering phase of the MUDFA contract?

I was not involved in the AMIS MUDFA tendering process and only joined AMIS in November 2006. Graham Gould was the dedicated bid manager who was a retained utility consultant to AMIS.

- (2) Do you have any comments on the matters noted above, including whether you considered the main programme dates to be realistic and achievable?

Based on the information provided in the tender and given the fact that AMIS were a reputable and competent contractor the programme would have been credible, and would have been reviewed as part of the internal

governance and bid review process.

11. The MUDFA contract (**CAR00000300**) was entered into in October 2006.

We understand that, at that time, it was anticipated that the MUDFA construction start date would be 4 April 2007.

(1) What was your involvement, if any, in the negotiation and conclusion of the MUDFA contract?

I was not involved in the presentation or final negotiation of the AMIS MUDFA contract. The discussions and negotiations would have been led by Graham Gould, and would have been agreed and approved by Steve Hudson (AMIS Commercial Director) and Alan Robertson (AMIS Managing Director).

(2) Do you have any comments on events around this time, including whether you considered the main programme dates to be realistic and achievable?

As per 10 (2) previously.

12. An undated AMIS document (apparently from late 2006), "MUDFA/AMIS Management Update & Situation Report" (**CAR00000002**) listed a number of Key Facts, including that:

- SDS design was currently only provisional.
- Detailed Design would not be available on 22 December 2006 as per the Pre-Construction Services programme.
- TIE Project Management team are misaligned, not focused on common delivery and possess little sense of urgency.
- AMIS will need to take the initiative and drive the SDS Utility Design process through buildability analysis and to help "Left Shift" and hold programme.
- TIE will actively encourage AMIS to participate in Infracore utility works to help disguise poor SDS performance and late delivery of design.
- SDS Detailed Design solution will comprise Section phase release commencing Mid-January 2007 through to August 2007. This will result in extended construction programme.
- AMIS will most likely commence work in central Princes Street and Granton Square to Craighleith.

(1) Who was the author of this document?

I was the author of this update and situation report. This report was used as the monthly updates to both AMIS and TIE MUDFA, and aimed at highlighting key issues requiring support, assistance and resolution in order to maintain project deliverability.

(2) Do you have any comments on the points noted above?

- SDS design was currently only provisional. The primary concern here was the lateness of approved for construction (AFC) drawings, the lack of technical detail to allow AMIS to work order and procure materials, and the SDS drawing output sequence did not align with the intended works programme.
- Detailed Design would not be available on 22 December 2006 as per the Pre-Construction Services programme. This represented a late surprise to AMIS MUDFA having already mobilised for PCS, and AMIS highlighted this major risk to TIE MUDFA in relation to major programme risk and increased cost.
- TIE Project Management team are misaligned, not focused on common delivery and possess little sense of urgency. Alistair Slessor whilst being very supportive of AMIS was seldom available to attend meetings, and was not coordinating or managing any of the TIE utility team work (Halcrow consultants), or the interface with SDS to secure design deliverables and outputs.
- AMIS will need to take the initiative and drive the SDS Utility Design process through buildability analysis and to help “Left Shift” and hold programme. It became apparent to AMIS MUDFA that the first issue of SDS utility drawings were simply road plates with different coloured lines indicating the different utility services with no technical definition and/or detail.
- TIE will actively encourage AMIS to participate in Infracore utility works to help disguise poor SDS performance and late delivery of design. AMIS MUDFA given the inevitable lateness of SDS AFC utility drawings could foresee a situation where there would be a need to complete utility works ahead of Infracore, and then continue to work on MUDFA in a phased and parallel manner to complete the works in an effective and controlled manner.
- SDS Detailed Design solution will comprise Section phase release commencing Mid-January 2007 through to August 2007. This will result in extended construction programme. AMIS MUDFA were seriously concerned regarding the late release of SDS utility design drawings, and needed to escalate this fact to the senior management of TIE which was done and included a number of meeting involving Alan Robertson, Steve Hudson and Willie Gallagher.

- AMIS will most likely commence work in central Princes Street and Granton Square to Craighleith. At this stage the consolidated programme was going to be compromised on the basis of having to commence the MUDFA works where possible as opposed to the intended and agreed plan. This inevitably was going to result in out of sequence working, introduction of multiple site working at different city wide locations which would lead to increased supervision, preliminaries and costs.

Events in 2007

13. AMIS's monthly report for February 2007 (**CEC01835674**) stated (p.5, para 4.1) *"The current construction programme is not supported by IFC/AFC Utility design drawings and AMIS MUDFA are now seeking work around solutions on Sections 5B [Balgreen Road to Edinburgh Park], 5C [Edinburgh Park to Gogarburn] and alternative construction works at Ingliston Park/Ride and Gogarburn Depot"*.

(1) What was your understanding of, and views on, these matters?

It was clearly apparent that the SDS utility design drawings were going to be significantly late to support the MUDFA programme, and with AMIS MUDFA having already mobilised the project management team at Ocean Terminal I looked at the large water main diversion at Gogarburn Depot as an opportunity to carry out the bulk earthworks to de-risk the Infracore works, and for AMIS to demonstrate added-value since the MUDFA works were likely to be delayed, and I was very conscious that AMIS were working on a public funded project that had been subject to a great deal of scrutiny during the elections. The bulk earthworks and new 600mm dia. water main diversion was completed successfully utilising AMIS MUDFA resources and expertise that otherwise would have been sitting underutilised.

14. By letter dated 7 February 2007 (**CEC01831536**) you gave TIE an updated Anticipated Final Account. In your letter you noted (page 3) that a total of 24,662 linear metres of diversions had been anticipated at the tender stage. The anticipated total was now 38,967 linear metres.

(1) How and by whom had the anticipated quantity of diversions been calculated at the tender stage?

I am sorry but I do not know the answer to this question. Reference to Steve Hudson (AMIS Commercial Director) may be the best source on information on this particular subject.

(2) Why had it increased?

I recall a situation where there been a drawing scaling mistake in the very early drawing assessments that resulting in the linear length of utilities being incorrect and under reported. A subsequent evaluation was carried out confirming that the estimated linear length to be in the region of

39kms. AMIS having identified this immediately and openly advised TIE.

(3) Did it increase again (and, if so, why)?

From recollection the utility lengths increased further as the level of definition and detail became apparent from the details provided by SDS, and as a result of carrying out the physical utility diversions in the streets as and when underground obstacles required localised re-routing and/or to avoid utility clashes.

15. By letter dated 19 February 2007 (**CEC01835707**) you noted that approval of the TIE and Stakeholder Imposed Programme Revision 03 was granted by default on 26 January 2007 and that, as a consequence, the lead in times set out in the Programme constituted both a baseline and a contractual entitlement, against which Change Control would be measured.

(1) What was your understanding, around that time, of whether the works would be completed within the timescale set out in Programme 03?

At this stage and from recollection, AMIS were in a position where the MUDFA works programme was having to be developed with the need to accommodate other stakeholders as opposed to be allowed to work in a systematic and efficient manner as intended in the bid. At that time the scheduling work being carried out had to take into account the following typical considerations:

- Edinburgh City embargo dates as prescribed in the contract which was accepted.
- Work locations were determined on the basis of where SDS utility design AFC drawings would be available as opposed to sequential working by AMIS MUDFA which was an ongoing concern and issue and planned within the original bid that was accepted by TIE.
- A number of track sections/areas where SDS tram design activity had been placed on hold resulted in restrictive working for AMIS MUDFA whilst key decisions were being made and agreed with TIE.
- City traffic issues were starting to become clearer with a number of stakeholders stating works should not commence until all impacts are fully appraised.

The purpose of AMIS using the term "TIE and Stakeholder Imposed" programme was to highlight the significant disruption and constraint that had been imposed on the AMIS MUDFA programme and how difficult it would be to control cost and productivity working on sporadic basis.

(2) To what extent was that discussed with TIE?

The concerns of AMIS were shared by the AMIS project team with Susan

Clark (TIE Director) at the monthly progress meeting and other meetings at City Point, Haymarket. The same concerns were shared internally with AMIS Executives at monthly reviews. Alan Robertson (AMIS Managing Director) engaged with TIE senior management (Steve Bell and Willie Gallagher) on these issues and concerns.

16. By letter dated 19 February 2007 (**CAR00000910**) you sent Alasdair Slessor, MUDFA Project Manager, TIE a "MUDFA Report and Recommendation to Manage the 'Transition Gateway' from MUDFA Pre-Construction Services to Construction Services".

You stated that it was imperative to convene an Extraordinary MUDFA Board Meeting to discuss and resolve a number of key issues and that without mutual appreciation and understanding of these issues at senior management level *"the current contract position may well degrade and become untenable"*.

By letter dated 7 March 2007 (**CAR00000917**), you sent Susan Clark, TIE, MUDFA Schedule 1 Deliverables, while noting that, *"As you are aware a number of the enclosed deliverables remain as a work in progress and AMIS will continue to enhance these documents as part of the construction implementation process"*.

We understand that at a meeting between TIE and AMIS on 15 March 2007 the parties agreed that, as a consequence of late designs and associated data, a phased transition would take place rather than the distinct completion of the PCS phase and commencement of the Construction Services phase (which was noted to *"provide the opportunity to complete PCS in parallel with CS as design detail and definition are made available"* – see para 3 of the draft Commercial Proposals for Construction Services following Pre-Construction Services Delays, **CEC01630357**).

An internal TIE e-mail dated 22 March 2007 from Geoff Gilbert, Project Commercial Director, TIE (**TIE00070136**) attached a Note on Improvements to MUDFA Working Arrangements (**TIE00070137**). While AMIS had expressed a desire for wholesale change, Mr Gilbert did not consider that to be necessary.

A presentation on "MUDFA Commercial Arrangements" made to the Tram Project Board on 19 April 2007 (**TIE00087959**) noted that completion of the Pre-Construction Phase was "not realistic" (slide 5) and a different approach to the MUDFA works were proposed.

(1) What was your awareness and understanding of these matters?

In relation to the pre-construction services element it was becoming virtually impossible to complete the PCS scope as intended without the necessary drawings and other information needed to complete the AMIS PCS deliverables (i.e. SDS drawings, SUC information, wayleaves, archaeological information, habitat information, TM/TTRO agreements, etc). At this time the lack of information and input not being provided to AMIS was significantly impacting AMIS's ability to perform and complete PCS deliverables, and given the extreme level of imposed constraint and restrictions being imposed by other stakeholders on the project it placed

the AMIS project team in a position where we had to spend the majority of AMIS's time in discovery and investigation mode. The TIE Project Manager, MUDFA (Alistair Slessor) and Susan Clark (TIE Director) provided very little support in terms of addressing or resolving any of the interface issues, and did not consider or appreciate the potential long-term contract issues for MUDFA.

I proposed as AMIS MUDFA to adopt a phased approach to the completion of PCS services in an attempt to support TIE in managing and prioritising the work sequence and complex interface with SDS/Parson Brinckerhoff . This was never considered or embraced as a structured way to manage all entities through a challenging process, and it became evident at various meetings discussions that TIE did not wish to change any of the working arrangements.

I was not aware of the internal TIE discussions, presentations, etc referenced above in the pre-amble, but having now read the information it openly confirms and acknowledges the very points that AMIS were highlighting to be resolved for the overall benefit of delivering the Tram project.

Note – Reference to TIE00087959 above is actually TIE00087958 in the download.

- (2) What was the current contract position and why was it at risk of becoming, in your view, untenable?

Successful completion of pre-construction services (PCS) was a precursor to the main construction works. The outputs and approved status of documentation resulting from the PCS phase provided AMIS MUDFA with all the pre-requisite information and details needed to support the main construction works (mandatory requirement), and provided a level of protection and comfort should the main construction works be challenged or stopped at any stage by any SUC/Stakeholder or for any reason.

The contractual undertaking was straightforward. AMIS MUDFA were obligated to complete the PCS phase and to deliver a set a pre-agreed deliverables and providing input to the utility designs being carried out by SDS, and with TIE MUDFA acting as the interface project manager and holding responsibility to provide all other work order information and details from other relevant stakeholders to the Edinburgh Tram project. Following satisfactory completion of the PCS phase then AMIS MUDFA would move on to commence the main construction works in accordance with the agreed sections.

- (3) Was completion of the PCS phase unrealistic and, if so, why?

For AMIS MUDFA completion of the pre-construction phase was very achievable had all the pre-requisite information been provided by SDS and TIE as per the timetables advised pre and post bid, and AMIS

devoted a great deal of effort during the PCS phase to make it a success for the main construction works.

- (4) Was the PCS phase completed in parallel with the Construction Services phase? If so, did that cause any problems or difficulties?

From recollection the PCS phase was prolonged resulting in AMIS MUDFA commencing the main construction works in parallel. The main problems related to the TTRO, and where key stakeholders within Edinburgh City had not been adequately appraised or informed of the MUDFA works. In addition, I recall legal consents had not been agreed with Forth Ports plc resulting in emergency meetings. These events would not have presented issues had the PCS phase been completed in accordance with the original plan.

- (5) What was the different approach to the MUDFA works that was proposed? Was that different approach adopted?

AMIS MUDFA proposed a phased approach whereas a significant section of the tram track would be frozen, SDS/Parsons Brinckerhoff would finalise the track position and complete the SDS utility design drawings for that area, and AMIS MUDFA would complete the physical works. The project would progress on that basis stage by stage and any incomplete MUDFA works at the end of the MUDFA programme would be migrated over and be completed in parallel with the Infracore early works. This was proposed on the basis that it provided AMIS MUDFA with an unconstrained and productive work area, it helped consolidate the design efforts by SDS, and it assisted TIE in coordinating all the other stakeholders on a prioritisation basis.

There was no interest in adopting the alternate approach and TIE management wished to continue with the existing arrangements.

17. AMIS' Monthly Progress Report for March 2007 (**CAR00000237**) noted ongoing delays with design but also noted that AMIS had concentrated on the completion and close out of the PCS phase and that only one PCS deliverable was outstanding (Executive Summary and section 8).

- (1) Was what was stated in that report consistent with the problems noted above in relation to the PCS phase (including the comment that the PCS phase was undeliverable)?

Yes the ongoing delay to releasing the SDS utility design drawings was and continued to be a major concern. The main points to note and comprehend at this point from a PCS perspective include the following :

- SDS approved for design (AFD) drawings did not necessarily constitute a design that could be built in the streets, nor did it represent an acceptance or approval by the respective SUC.

- AMIS MUDFA were not afforded the opportunity to provide buildability analysis as per the MUDFA contractual undertaking.
- SDS utility drawings were not updated and issued at "Approved for Construction" status, nor did they include the pre-requisite SUC requirements relating to safe service isolation, nor did they provide sufficient detail to allow AMIS MUDFA to carry out a material take-off exercise in order to procure materials in a proficient manner in order to gain economies of scale, and
- Non availability of SDS utility designs withheld the opportunity for AMIS MUDFA to carry out the "Value Engineering" exercise required under the PCS phase, which would have returned commercial benefits to TIE.

AMIS MUDFA completed all the deliverables with the exception of the "Buildability Report" which could not be completed having not received the full complement of SDS utility design drawings and associated information. AMIS MUDFA went the extra mile to complete all the deliverables by sourcing information that was actually the obligations of others on the project. AMIS MUDFA was totally committed to completing their obligations under the MUDFA contract to ensure a fully complaint and complete PCS phase.

18. By letter dated 18 April 2007 (**CEC01634872**) Graeme Barclay, MUDFA Construction Director, TIE wrote to you attaching Bill of Quantities pages that were missing from the MUDFA agreement.

(1) What was your understanding as to why the Bill of Quantities pages appear to have been missing from the MUDFA contract (see e.g. the MUDFA contract, **CAR00000300**, Schedule 4)? (see also your letter dated 7 February 2007, **CEC01816612**)

I never understood as to why these pages had been omitted.

(2) Did that cause any problems?

(3) How was the matter resolved?

AMIS MUDFA added the quantities in the Anticipated Final Account and issued the document to TIE.

(4) Incidentally, Schedule 8 of the MUDFA contract, Programme, also appears to have been missing. Do you have any comments on that?

Keith Gourlay (AMIS Commercial Manager) and I undertook a full review of all contract document and agreement that had been completed at the final bid stage. Again I do not understand why the programme had been omitted.

19. In a letter dated 26 April 2007 to Alan Dolan, SDS, (**CEC01691204**) Graeme

Barclay, TIE, noted that TIE were greatly concerned about the delay to the initiation of the utility diversion work programme and, with that in mind, had decided to implement the AMIS proposal of a Risk and Trade off programme and intended to begin the programme in section 1 (i.e. Newhaven – Leith – Leith Walk – Princes Street – Haymarket).

In his reply dated 1 May 2007 (**CEC01664017**) Mr Dolan stated, *“It is unfortunate that the MUDFA Construction Implementation Programme starts in the one area where tie have placed the SDS Infrastructure Design on stop”*.

(1) What was your understanding of, and views on, these matters?

AMIS MUDFA was constantly seeking to find ways to progress the physical works and continually set about trying to find and propose methods to move thing forward. The risk and trade off approach was yet another proposal to TIE which recognised that a completed work area may require potential rework, but this would be cheaper that a whole section delay to programme.

This initiative again required the full support of SDS/Parson Brinckerhoff , but again TIE as the overall programme and interface manager struggled to coordinate the various contractors and hold true to a consolidate programme that had fully considered all design events and constraints.

(2) What was the “Risk and Trade off” programme? Why was it necessary?

The risk and trade off approach was another AMIS MUDFA proposal to TIE that was aimed at making significant progress, but recognised that on occasions there would be a need to carry out rework. If the cost of the MUDFA works in an area was say £300k, and following SUC feedback rework was required costing say £30k, then the overall cost of £330k would still be cheaper than wholesale programme delay, and the additional £30k could have been drawn down from the risk and contingency provision once approved by TIE.

The reason this was necessary and proposed was to help make significant headway on the MUDFA works. AMIS MUDFA at that time could see the programme and work opportunity slipping away and resulting in project holds through the lack of effective interface management.

(3) Are you aware why had TIE instructed a design hold in section 1?

I was not aware of the design hold detail. AMIS MUDFA was never asked to attend, or participate in SDS design review meetings. Alan Dolan was asked to attend MUDFA meetings to provide update on the release of SDS utility drawings.

20. By e-mail dated 14 June 2007 (**CEC01630356**) John Casserly, TIE, attached a revised version of a proposed agreement between TIE and AMIS, “Commercial

Proposals for Construction Services following Pre-Construction Services Delays” (CEC01630357).

(1) What was the purpose of that agreement? Why was it necessary?

TIE at this point acknowledged, accepted and confirmed as programme and interface manager that the late and incomplete release of SDS utility design drawings had resulted in AMIS not being able to complete the pre-construction services in full, and had been restricted from gaining any value engineering benefit that could have been realised during PCS, and that the overall situation not of AMIS MUDFA's own making had resulted in the necessity for TIE to accept and agree that the main construction works were subject to delayed commencement.

(2) Did it cause you any concerns that the MUDFA contract (and programme) required to be amended relatively soon after it was entered into?

It was understood and accepted during the PCS phase that the main construction works programme would be subject to an element of change in a similar manner to any other complex project. This is normal and usually well controlled and predicated on the fact all drawing, information and project support would be forthcoming to allow the programme to be delivered with a high degree of confidence.

Throughout the PCS phase AMIS MUDFA were carrying out scenario planning exercises and had to contemplate the likelihood that the SDS utility design drawings would be late in part or in full, which is what triggered to the need to appraise all key personnel to the contract and to enter into commercial dialogue as outlined above.

21. In a letter dated 19 June 2007, Construction Services – Delay and Disruption (CEC01636547), you advised that AMIS had suffered losses of about £530,000 due to the delay in the commencement of sustainable and productive Construction Services. You noted that *“the approved Pre-Construction Services Programme, as contemplated under Clause 35, indicated a total of circa 325 IFC drawings and associated data being issued on 16 January 2007 (assessed as 25% of the overall total), complete with Bill of Materials, procurement Specifications, Conflict Registers and HAZID logs. This information, at the time of writing, and opening deliverable is now twenty two weeks behind schedule i.e. five months”*.

You considered that Revision 05 of the Programme was untenable.

(1) It would be helpful if you could explain your understanding of, and views on, these matters?

Programme Revision 05 was untenable in my view on the basis that it attempted to accommodate the delays and holds of SDS across the wider programme, and did not reflect a realistic position in relation to the release of SDS utility designs. In short it was the best programme for all as opposed to AMIS MUDFA. The bottom line is that nobody ever expected

the SDS utility drawings to be delivered 6 months late, or to be phase released to support a works programme of 21 months in duration. The very same drawings were expected to be SUC approved, and issued to AMIS MUDFA in September 2006 to support PCS and commencement of the main construction works in April 2007 as agreed during the tender and contract negotiations.

From an AMIS MUDFA Project Director's perspective this time was also proving to be extremely challenging. At the project level my ability to perform and deliver the MUDFA works was being significantly held back by the non-availability of SDS approved utility designs; I was actively engaged in managing a large number of city stakeholders who were all seeking detail and information that should have been provided by TIE; I faced the daily challenges of maintaining the enthusiasm and motivation of my project team who were uncomfortable with the ongoing delays, I faced constant commercial challenge from my own sub-contractors; and above all that and unknown to myself, AMIS at corporate level were struggling to meet the agreed budget for the financial year and were keen to receive turnover and contribution back to the business before year end.

At this phase of the project AMIS MUDFA had exhausted and proposed a range of work-around ideas, proposals, innovations, etc to TIE MUDFA, which had all fallen short of consideration and acceptance. At this stage it was the intention of AMIS MUDFA to progress the physical works in the best way possible, but recognising the need to maintain a respectful relationship whilst safeguarding AMIS's commercial position since situations were emerging out with direct control of AMIS.

22. We understand that a delay occurred to the MUDFA works as a result of the Scottish Parliament election on 3 May 2007 (and the subsequent debate and vote on the tram project on 27 June 2007, which resulted in the Scottish Government deciding to continue with the project).

The record of a MUDFA meeting on 10 July 2007 (TIE00059760), for example, noted (item 4.1) a "3 month delay to site works in region of £1.5m".

(1) Why did the election delay the MUDFA works?

The initial MUDFA works required a trial hole (to check and improve the work ordering process), and follow on utility diversion works at Ocean Terminal to Casino Square. AMIS MUDFA arranged for these works to be carried out and then to continue into the main construction works. The TIE Project Manager, MUDFA formally notified AMIS not to proceed with the works until the Edinburgh Tram had been sanctioned. The imposed 3 month delay withdrew the opportunity for AMIS MUDFA to continue with the works resulting in loss of revenue, and a recovery entitlement to be considered.

(2) How much delay was caused?

I cannot recall the specific details, but do recall that the required Trial Hole to prove the process was never carried out.

(3) To what extent, if at all, did delay in utilities design also contribute to the delay around this time? To what extent, for example, was the three month delay to the site works noted in the above meeting note caused solely by the election and to what extent would a similar delay have occurred in any event due to other factors including, in particular, late design? See, for example, (i) TIE's Project Director's report to the Utilities Sub-Committee on 4 April 2007 (CEC01638569) which stated (page 9, paras 4.2 and 4.2) that AMIS had produced a draft Rev 04 Programme, showing the main MUDFA works starting on 2 July 2007, which was "3 months later than shown on Rev 03 and is driven by design and Work Order requirements", (ii) AMIS's Monthly Reports for April, May and June 2007 (TIE00261238), (CEC01664355) and (CEC01565583) which note some delay caused by the election but also problems with other matters including, in particular, outstanding IFC utilities design, and (iii) your letter dated 28 June 2007 (CEC01691617) which noted that only one IFC drawing had been issued and that the underlying delay was a minimum of six months. Putting matters another way, what utilities diversion works could and would have been undertaken in April, May and June 2007 if the election to the Scottish Parliament had not taken place?

The non-availability of SDS utility design drawings had a major and material impact on AMIS MUDFA commencing and performing the main construction works. Had the SDS design drawings been issued, SUC/AMIS MUDFA reviewed and approved in September 2006 as planned, and had been issued in the correct sequence to support working in Section 1, then it is estimated that AMIS MUDFA would have completed approximately 4 -5 kilometres (8-10%) of diversion works over the April to July 2007 period. To put this into context at the end of June 2007 only 1 SDS utility approved drawing had been released from approximately 1,350 drawings expected/required by AMIS MUDFA, which was rejected and illustrates the extent of delay and detrimental impact on AMIS MUDFA ability to make progress.

23. We understand that the utilities diversion works commenced around July 2007.

(1) It would be helpful if you could explain, by way of overview, in which sections the works commenced and any problems that were experienced?

The early part of the MUDFA works took part in the mid to lower region of Leith Walk along to Casino Square. At the point the utilities were uncovered it became very apparent that the sub-soil was very sandy and in areas prone to water table issues. The operations team in dealing with the utilities recognised the need to consider the use of "Foam Concrete", which is more expensive than conventional ground reinstatement but holds the benefit of being able to reinstate quicker and provides more ground stability to support the road upon completion. In these sand prone areas

agreement was reached to use foam concrete and a business case was made by AMIS MUDFA.

When entering the upper region of Constitution Street AMIS MUDFA uncovered plague pits adjacent to the church grave yard which resulted in extensive investigation work by interested parties and consequent delays.

In the vicinity of Casino Square on land owned by Forth Ports plc the access rights and legal consent had not be secured by TIE in advance of the commencing the works which resulted in delays, and the work planned near Ocean Terminal was placed on hold as a result of SDS placing the track design on hold to agree the final routing.

24. By internal TIE e-mail dated 13 July 2007 (**TIE00006965**), Mr Casserly noted that TIE had been in discussion with AMIS over a period of time trying to agree the wording of two papers relating to (1) the transition period from the end of the PCS phase to the commencement of Construction (**TIE00006967**) and (2) new contract incentivisation proposals (**TIE00006966**).

(see also the "MUDFA Contractor Incentivisation Proposal" circulated in September 2007, **CEC01636808**).

(1) Why were agreements on these matters necessary? Is our understanding correct, for example, that any incentivisation provisions in the original MUDFA contract could no longer operate because of delays in the MUDFA works and the need for a revised programme?

This understanding is not quite correct in my view. Regarding point (1) above, the delays resulting from the non-availability of SDS approved utility design drawings during the PCS phase resulted in AMIS MUDFA not being able to conclude the PCS services in full, and prevented AMIS benefitting from the value engineering activities, programme refinement, AFC reporting, etc which led to the need to reach a new/revised agreement.

Secondly and regarding point (2), AMIS and TIE were equally keen to reinvigorate and maintain the need to constantly consider innovations, and to carry out value engineering exercises with a view to saving money for the overall benefit of the Tram project, and this required an subsequent agreement since the original contract opportunity had been lost.

(2) What were the effect of the delays and revised programme on any penalty provisions in the MUDFA contract for not completing the works on time i.e. did the delays to the MUDFA works and programme mean that any penalty provisions in the MUDFA contract re timescales no longer operated? Were new penalty provisions agreed?

Throughout the majority of the commercial related discussions in the early and summer months of 2007 there was a reluctance to move long-stop dates since the Infracore contract was been tendered with the same set

dates. I cannot account for the final agreements that were reached to Programme 07 since I had left at that stage.

25. In a letter dated 3 August 2007 (**CEC01702507**) you sought a variation of schedule 4 rates and prices. (see also e.g. your letter of 23 August 2007, **CEC01702113**).

(1) It would be helpful if you could explain, in general, the purpose of your letter and TIE's response?

At this stage AMIS MUDFA were experiencing two fundamental challenges both of which were out with the direct control of AMIS. Firstly the SDS utility design drawings and associated technical information was still not forthcoming despite the final drawings for construction being promised in December 2006 (i.e. 8 months previously), and secondly TIE MUDFA's ongoing failure to issue the prerequisite information to complete the work orders to support the work which required a period of 6 weeks to check and secure approvals.

The very lack of provision of key design and works information placed AMIS MUDFA in a position where we were, and expected to work at both technical and commercial risk which was not contemplated under the rates and prices included in Schedule 4. In summary AMIS MUDFA expected to close the road section, expose the utilities requiring diversion and complete the road reinstatement in a planned and approved manner complete with the ability to re-measure the works on a clear and quantifiable basis. What AMIS MUDFA were being expected to do was to carry out the works with virtually no, or very limited advanced information and to agree the costs on a measurable and estimated basis.

Due to the fact that TIE MUDFA could not control SDS/Parsons Brinckerhoff utility design outputs, nor obtain, finalise and approve the pre-requisite information required from various departments with TIE; the TIE MUDFA project team elected to report that there was no requirement to furnish AMIS MUDFA with any formal response.

26. In a letter dated 8 August 2007 (**CEC01697452**) you noted that Schedule 8 of MUDFA established the Construction Services duration as 59 weeks (i.e. covering the period between April 2007 and May 2008, with a further five weeks for snagging, demobilisation, and Final Account resolution etc), limited progress had been made due to *"the delay, disruption and dislocation to the Programme, compounded by late and prolonged project approval"*, that the Longstop Date of 30 September 2008 had been *"fundamentally compromised"* and that the ongoing delay and disruption was not due to factors under AMIS's control.

You noted that the current thinking, in relation to the development of Revision 06 of the programme was a nominal three to four month delay as a consequence of the delayed approval of the tram project by the newly elected administration.

See, also, your letter dated 8 August 2007 (**CEC01685864**) in relation to

Construction Services – Management Staff Resources.

- (1) Again, what, in general, was the purpose of these letters? What was TIE's response?

The purpose of this correspondence was again to highlight to TIE MUDFA that the long-stop date was in jeopardy as a result of a delayed start to the main construction works resulting directly from SDS not issuing the utility design drawings. At this stage the programme was being compressed and AMIS needed to share their concerns in order to 1) Safeguard AMIS's commercial position, and 2) To heighten the awareness at senior level that progress was not proceeding as expected for many reasons.

TIE MUDFA elected not to deal with the reality of the situation and believed the many issues could be resolved. There was a desire to manage and control any messages being relayed back to the TIE Executive given the political nature of the project, and the high profile of the Tram project within the City.

- (2) What was the reference to a "Longstop Date" of 30 September 2008?

The long-stop date is the contractual date at which point penalties and damages would be imposed by TIE should the MUDFA works not be completed by that date and it was proven that the delay was solely attributable to the poor performance of AMIS. It also incentivised AMIS to make good progress, and it was intended to ensure the works were complete to assist Infracore with a clean unconstrained start.

27. AMIS's Monthly Progress Report for August 2007 (CEC01683946) noted (in the Executive Summary) that *"In line with the last ten monthly reports the main AMIS concern still relates to the lack of IFC detailed utility design drawings (circa 285) ..."*.

A letter dated 27 August 2007 from you (CEC01704259) noted (top of page 4) that *"The delays are as a result of the late and inaccurate designs, the breakdown of Pre-Construction Services, insufficient detail to support planning and effective operations, together with ongoing concerns relative to the suitability, accuracy and viability of those IFC designs and design related information provided by tie Limited to date, as Employer, Project Sponsor and Project Manager"*.

- (1) It would be helpful if you could explain your understanding of these matters?

The MUDFA works contract was based on an programme, work ordering process to define and control the actual works to be performed, a re-measurable valuation of the completed works under formal change control to enable the works price to be determined and agreed using the rates and prices set out within the contract. This was straight forward, but the entire management and contractual process depended totally on the availability of correct and accurate information being made issued, checked and approved as a work order at least 6 weeks in advance of commencing the works.

The process dependency and expectations incumbent upon TIE MUDFA to provide this information, including the provision of SDS approved utility designs being issued by SDS/Parsons Brinckerhoff also under TIE control was never managed effectively, and more alarmingly for AMIS MUDFA the accuracy and detail of the information supplied fell well below the standard required to support safe and effective working in the streets.

These are the prime reasons why again AMIS MUDFA had to consistently issue correspondence in an attempt to improve the process and situation.

28. The minutes of the meeting of the Tram Project Board on 5 September 2007 (CEC01357124) noted: *"AH [Andrew Holmes] questioned when the more difficult sections for utility diversions would be tackled – SB [Steven Bell] confirmed that initial work would commence in October 07 with physical works starting in April 08"* (para 3.18).

5 September
2007 should be
26 September
2007

(1) What were the more difficult sections (and why were they more difficult)?

I am unsure what was actually discussed as the more difficult sections at this meeting, and AMIS MUDFA were never requested to attend or present at the monthly Tram Board meetings.

I am thinking that the expression more difficult sections would have been referring Edinburgh Airport where special considerations needed to be given to the NATS system, RBS operations where payroll fibre optic links were known and required special attention.

(2) What was meant by the "initial works" and the "physical works"?

The initial works term was often used in reference to 1) Carried out trial holes and strip digs, 2) Identifying the physical location of services isolations points, 3) Checking business reliance upon sustainable utility services, 4) Establishing the traffic management signs, etc.

(3) Did the fact that the "physical works" in the more difficult sections were not due to commence until April 2008 cause you any concerns?

Not at that stage since the whole programme was under constant consideration and joint review involving TIE MUDFA.

(4) Why were the more difficult sections not dealt with first?

The more difficult sections required a higher degree of design consideration by SDS, extensive detailed discussions with the technical authorities within each of the SUC's, and consultation with the business users before a detailed design solution could be presented. As consistently pointed out and highlighted in much of the contract correspondence the engineered solution and temporary works requirements were never completed in full or on time. This resulted in the

more difficult sections slipping in the schedule.

29. An e-mail dated 24 October 2007 from Brian McCall, Senior Engineer, TIE noted that trial holes were to be dug at Leith Walk, Shandwick Place and Duke Street and that various CCTV surveys were to be carried out (see also the Schedule of Future TM works, which gave further details of the MUDFA works, trial holes and CCTV surveys, **CEC01495740**).

(1) Had trial holes been dug (or CCTV investigations carried out) at these locations earlier? If not, why not?

I cannot recollect if these trial holes were solely for the purpose of MUDFA, or carried out to inform the Infracore design and works information.

30. By letter dated 31 October 2007, "Technical Specification of IFC Designs and Design Related Information" (**CEC01519704**), you raised a number of concerns relating to design.

(1) By way of overview, what were the main points you were making in your letter?

In addition to the reoccurring theme that the SDS utility designs were late, upon receipt of the SDS utility drawings it became very evident that the drawings totally lacked any specification, technical definition and/or detail essential to understanding the actual works required, and insufficient detail to allow AMIS MUDFA to actually procure the materials, fittings and consumables in advance of commencing work on site. In effect, AMIS MUDFA were being expected to design at-site, source materials a risk, perform the works with no cost control, and more importantly carry out the works with no HAZID/HAZOP information which heightened the risk and threat to both AMIS MUDFA operatives, residential and public safety. This was simply unacceptable to AMIS.

(2) What did you list certain 'hot spot' areas (i.e. Picardy Place, St Andrew's Square, The Mound, Princes Street/Lothian Road Junction, Haymarket Junction and South Gyle Shopping Centre junction)? Why were these areas 'hot spots'?

Picardy Place – This was highlighted for three main reasons 1) The Sherlock Homes monument base housed a "Time Capsule" and it was not confirmed that Scottish Ancient Monuments (SAM) had been consulted, 2) SDS were still considering and finalising the actual track alignment which was the subject of extended debate and several changes, and 3) Traffic Management issues had not been adequately addressed in relation to the buses, and St James centre had not been consulted.

St Andrew's Square – The Bank of Scotland has a bank of fibre optics that serve a number of payroll providers in Scotland, and any disruption to fibre optic services could have resulted in significant business loss and reputational damage to TIE and AMIS. There were ongoing discussions about the track alignment adjacent to Jenners, and the potential to change the road profile over the crown of St Andrews since there were concerns

about the power of the tram to climb the incline from a virtual standing start at Princes Street.

The Mound – The junction and specifically the road make up at The Mound proved to be shallow over a very old gas main. The gas main following investigation was identified as cast iron and the overall condition was a concern in relation to carrying out excavation works were the removal of firmly compacted soil could have relieved the lateral support from around the pipe leading to potential pipe cracking or fracture.

Princess Street/Lothian Road – This was a very busy junction with west end traffic approaching Princes Street from several roads. The concern was in relation to the traffic light controls and accommodating the charter timetables for the various bus service providers.

Haymarket Junction – There were several telecommunications and nodal points housing a complex and mass array of fibre optics serving the city centre from the west end. This involved several different telecommunication and service providers, and the slewing down and transition of cables needed to be carefully considered, in a particular sequent and the planning exercise needed to take into consideration the Haymarket traffic light system and under road sensors.

South Gyle – SDS were considering a tunnel to be bored through the A8 bridge embankment to gain access from South Gyle to the Gogar Depot. It was understood that a bank of fibre optic cables had been buried along the line of the bridge/road and the proposed tunnel may have cut through the utility services. The fibre optics were services the Royal Bank of Scotland at Gogarburn and any damage to the buried services could have resulted in significant business loss and reputational damage to TIE and AMIS.

For the above reasons these utility diversions were termed “Hot Spots” in order to highlight the importance and significance of any damage to these utilities in relation to ongoing business and TIE/AMIS reputations. Furthermore the term “Hot Spot” was aimed at highlighting the demand for a fully considered design and engineered solution by SDS, since the work in some cases needed temporary work design and extensive stakeholder consultation.

31. We understand that Revision 06 of the MUDFA Programme was adopted in October 2007 and showed a revised completion date of December 2008. It has been suggested that, at that time, approximately 83% of the IFC designs were still not available (see (i) your letter dated 30 November 2007, **CEC01520590**, and (ii) the “Road Map” document produced by Mr Kolon, Carillion, in September 2009, **CEC00790177**, page 1).

(1) Did that accord with your understanding of these matters around that time?

The timing and availability of SDS utility design drawings were a constant challenge for AMIS MUDFA. So much so that I instructed the AMIS MUDFA operations team to generate utility sketches which we then issued to TIE MUFA to forward issue to SDS to support and expedite the design development process.

There was no other contractor trying as hard as AMIS MUDFA to find ways to resolve issues in order to build the Edinburgh Tram.

- (2) Given the difficulties and delays that had been experienced, how confident were you around that time that the MUDFA works would be completed in accordance with the revised Programme?

At that time I was still confident that the MUDFA works could be completed at the end of 2008 providing the remaining SDS utility design drawings were forthcoming with the required level of detail, otherwise I would not have signed and issued the works programme.

32. AMIS's Monthly Progress Report for November 2007 (**CEC01523817**) contained an Appendix 2, Live Work Order Progress, which showed that only 8 work orders had been issued and noted that approximately 197 trial holes were planned or were underway.

- (1) Is it the case that the main MUDFA works being undertaken around that time (in particular, for the on-road sections) were trial holes rather than utilities diversions?

This is not the case as suggested above. Trial holes were being carried out across the entire length of the track route to provide information for different purposes. The reference to work sites and section areas means the actual MUDFA utility diversion works being carried out. Whilst in the work ordering report at summary level appears to show limited activity, within the work order itself there will have been a great deal of utility work being carried out on the ground.

- (2) Why had these trial holes not been undertaken earlier? Should they have?

A large portion of the trial holes required to inform the utility design works should have been carried out well before this stage.

33. We understand that an agreement was reached in December 2007 for a payment of £991,142.95 in relation to AMIS's claim for delay and disruption up to 30 September 2007 (and that the agreement was formally executed by means of a letter dated 9 April 2008 from Mr Barclay to you, **CEC00217639**).

We further understand that the sum included an incentivisation payment of £200,000 in relation to section 7 (Gogar to Edinburgh Airport) and that agreement was reached to reset the programme baseline (revision 06) showing a revised completion date of 30 November 2008.

- (1) Is our understanding of these matters correct?

Unfortunately your understanding is not totally correct. At this time the agreement was being formalised following TIE MUDFA's eventual acceptance that AMIS MUDFA had been constrained throughout the PCS

period as a result of not being issued with SDS utility design drawings at AFC status (originally planned for December 2006), which continued well into the main construction works phase.

- (2) Why was an incentivisation sum included in respect of section 7? Were there incentivisation sums or provisions in relation to the other sections?

AMIS MUDFA having already completed the bulk earthworks at Gogarburn depot and to support TIE expressed an interest in taking the opportunity to progress with the utility works down to Edinburgh Airport. At this stage SDS/Parson Brinckerhoff was again not in a position to support the design work, and AMIS MUDFA made an alternate proposed involving a different design contractor which realised significant budget savings for which AMIS MUDFA were awarded a contribution within the settlement agreement.

There was no incentivisation sums, or provisions provided for on any of the other sections. However, AMIS MUDFA also resolved the issues arising when the roman fort remains were detected at Gogar, which had not been identified during the archaeological surveys. No recompense or acknowledgement of AMIS's efforts were forthcoming.

- (3) How confident were you around that time that the works would be completed by 30 November 2008? Did your views in that regard change (and, if so, when and why)?

At that time I was still confident that the MUDFA works could be completed at the end of 2008.

Events in 2008

34. In a letter dated 9 January 2008 (CEC01530140) you wrote to Graeme Barclay in relation to Programme Rev 6 and listed a number of issues at pp 2-3.

- (1) It would be helpful if you could explain the purpose of your letter and TIE's response?

At this stage the TIE MUDFA Project Director (Graeme Barclay) had adopted a very firm and disregarding stance on many unresolved issues and became quite abrupt in his manner towards the AMIS MUDFA team. Graeme Barclay chose to ignore and overlook the previous and long-standing failings of both SDS/Parsons Brinckerhoff and TIE during PCS and early construction phase.

The workability of Programme Rev 06 depended extensively on inputs from many other sources, and TIE MUDFA's unwillingness to take ownership of the interface management and coordination responsibility presented a difficult situation for AMIS to manage, and it was of such significance that the letter was written to highlight the issues, and to advise of my intentions to escalate and consult with the senior

management teams in order to gain resolution.

- (2) To what extent, if at all, did the issues listed in your letter delay the commencement or completion of the MUDFA works?

This has been pointed out many times previously. The many issues we never owned, actively managed or resolved by the TIE MUDFA project team, and the poor performance of SDS/Parsons Brinckerhoff in relation to the release of AFC utility drawings placed AMIS MUDFA in a very high challenge and un-supported position that inevitably resulted in delay to the works. The point of the letter was again to highlight the key and essential issues requiring resolution and to place matters on a better footing.

35. TIE's Construction Director's Report for the meeting of the TIE's Utilities sub-committee on 13 February 2008 (**CEC01398499**) noted (page 10) under Action Plan, *"Review of output performance within the current 'live' sections over the prevailing periods has noted a reduction in target achievement. This is reflective of the congestion of services being uncovered within Leith Walk and latterly the city centre and the increasing output requirement to meet programme targets"*. The Key Issues/Blockers (page 15, para 4.0) included *"Design delays in issuance of IFC drawings. Trend beginning to show again"* (the minutes of the meeting are **CEC01453676**).

TIE's MUDFA Contract Review Report dated 1 February 2008 (**CEC01448120**), Appendix 3 - Performance Measures, contains a graph "MUDFA – Issue of IFC Design Packages for Construction" (page 16), which appears to show that of 140 IFC Design Packages that ought to have been issued by 30 November 2007, only approximately 60 had been issued.

- (1) What problems did congestion of services give rise to?

The lack of advanced and correct work ordering exposed AMIS MUDFA to carrying out the physical works with a high degree of uncertainty and unknowns until such point the utilities were uncovered. In many city centre areas the uncovered utilities proved to be very congested within the hole, and in some cases had been previously installed by other contractors not strictly in accordance with the SUC requirements in order to prevent the road surface being reinstated too high relative to the kerb lines (i.e. to avoid high cambers).

In this case AMIS MUDFA were then exposed to remedying the previous incorrect work in order to secure SUC approvals, and to carrying additional diversion works not identified by SDS which all resulted in an additional time and cost.

- (2) Was congestion of services experienced throughout the on-road section? Were certain areas particularly bad (and, if so, which areas)?

There were many areas that fell into the high congestion category. In particular I recall the exposing of BT ducting and chambers in St. Andrews

Square which had all been installed incorrectly prior to the arrival of AMIS MUDFA, and this required extensive road closures to remedy the situation.

- (3) Had congestion of services been adequately taken into account in drawing up the MUDFA programme and budget (and, if not, why not)?

The congestion of services was allowed for and a risk and contingency allowance had been included within the contract sum. In normal circumstances and based on AMIS's normal working this could have been adequate, but the concentration of services in the city centre proved to be excessive in quite a few areas (i.e. Haymarket, Shandwick Place, St Andrews Square, Leith Walk).

- (4) What were the main reasons for the continuing delays in utilities design around this time?

On reflection this is mainly attributable to two things, namely 1) SDS did not appear to have adequate resources dedicated to the MUDFA utility and services work, and experienced ongoing conflicts in terms of MUDFA or Infracore imposed priorities (This was evidenced by utility related design works being carried out in other offices and by sub-consultants, and 2) The utility design resources being used were not totally familiar with the nuances of multi-utilities, SUC specifications and the pre-requisite details required to provide and output the necessary technical details to service the utility constructor.

From the onset of the PCS phase, SDS never assigned the appropriate resources, time or commitment to service the MUDFA works as evidenced in many contract letters and reports.

36. In a letter dated 14 February 2008 (CEC01125420) you noted problems in relation to Withdrawal of Work Order Proposals (works were, apparently, proceeding on Confirmation of Verbal Instructions rather than Work Orders) and Changes (it being noted that in excess of 400 Change Orders were outstanding).

- (1) It would be helpful if you could explain your concerns as set out in your letter and the problems that caused?

The purpose of the very first MUDFA trial hole was to prove, verify and improve the work ordering process since the entire MUDFA contract depended upon the work order to plan, execute and value the physical works upon completion.

The total inability of TIE MUDFA and SDS to provide all the work ordering information to complement the deliverables prepared by AMIS resulted in the entire contract premise being exposed and unworkable. The TIE MUDFA Project Director again and by adopting a high handed approach overlooked the importance of the contract and work order process, and was prepared for AMIS MUDFA to continue with the works despite AMIS

incurring a higher risk profile, increased operational safety risk, and business exposure than was necessary or acceptable in any event.

37. In a letter dated 14 February 2008 (CEC01125420), you noted concerns in relation to Work Order Proposals (works were, apparently, proceeding on Confirmation of Verbal Instructions rather than Work Orders) and Changes (it being noted that in excess of 400 Change Orders were outstanding).

See also your letter dated 19 March 2008 (CEC01520380) in which you stated that the introduction of the CVI/Record Sheets was an AMIS initiative *“designed to ensure an appropriate level of control, Project and Risk management was maintained given the ongoing failure of tie Limited to manage the MUDFA works in accordance with the agreed terms and conditions; primarily Work Ordering under Clause 8 and Change under Clause 46”*.

(1) It would be helpful if you could explain these issues, why they had arisen and how they were resolved?

At the time of carrying out the utility diversion works many technical decisions were being made on site as and when utility services were being exposed, and it was proving very difficult to track and record the extent of change for many reasons. The intended plan of work was clear at the start, and changes that emerged during the works needed to be agreed and recorded, any site supervision decisions and/or changes needed to be recorded, and on a fair and equitable basis the commercial and cost implications needed to be agreed between AMIS MUDFA and TIE.

Without the introduction of the CVI/Record Sheet process it was inevitable that AMIS and TIE would end up with different valuations, with a potential for AMIS to overvalue, and TIE to undervalue the works at completion resulting in dispute. More importantly once the works had been completed and the road reinstated the ability to assess and agree the outcome would be virtually impossible other than using photographs and video.

This situation emerged as a direct result of TIE/SDS not complying with the contract obligation to prepare and agree work order in advance of the works, and required a complementary system to be put in place to manage commercial risk and exposure for the benefit of both parties.

38. By e-mail dated 19 February 2008 (CEC01457599) you raised concerns in relation to the management of multiple interfaces and stakeholders. You stated, *“the real question for senior management is who is responsible for the planning and coordination of the precursor activities to support the MUDFA works on Revision 06. AMIS MUDFA has no control, authority or jurisdiction over SDS provider, CEC, Faber Maunsell, Lothian Buses, SUC’s, Network Rail and other parties, and resolution on this particular and key issue would significantly help Carillion Utility Services on the utility specific diversion works and greatly improve our production outputs”*.

(1) What precursor activities were required to support the MUDFA works?

These are contained within Section 8 of the contract, but included deliverables such as wayleaves approvals, land consents, TM/TTRO's, commercial and residential notification of the works, CEC notifications to service providers (Waste, taxis, schools, etc), Emergency services notifications, SDS Design drawings, HAZID/HAZOP reports, etc Many activities.

(2) What were the difficulties in relation to managing multiple interfaces and stakeholders?

Maintaining adherence to the agreed schedule (Programme Rev 06) which was continually challenged as a result of changes imposed by SDS for many reasons, and TIE MUDFA's misconception that the precursor activities were the responsibility of others and not themselves as the Edinburgh Tram Authority.

(3) Which organisation was responsible for managing the multiple interfaces and stakeholders?

TIE MUDFA Project Management team.

39. By letter dated 3 March 2008 (**CEC01521318**) you expressed a number of concerns in relation to the MUDFA works and Revision 06 of the MUDFA Programme.

Graeme Barclay replied by letter dated 5 March 2008 (CEC01530317).

Mr Malkin, in turn, replied by letter dated 6 March 2008 (CEC01532028).

(1) What were the main points raised in these letters?

The TIE MUDFA project team were insistent on using the pre-enabling and pre-construction works contract provision one year after the completion of the PCS phase. This provision had been made to support the performance of any early works during PCS, and at the point the aforementioned works were being contemplated it was not the appropriate, or the correct vehicle to instruct the works during the main construction phase.

This had to be pointed out to the TIE MUDFA contract administrators hence the preparation of correspondence.

40. By letter dated 11 March 2008 (**CAR00003591**) Carillion set out certain concerns in relation to the suitability and integrity of the MUDFA Schedule Four Rates and Prices on the basis that ten items listed in the letter had not been administered, managed and/or completed in accordance with the MUDFA contract terms and conditions.

It was further noted that these items *“will, if not comprehensively and proactively managed by tie Limited, result in Revision 06 of the Programme being compromised, rendering it unsustainable in the immediate future”*.

(1) What was the purpose of that letter?

The purpose of the letter was to highlight the significant amount of change that had taken place over a considerable time period, and the inadequacy of the management arrangements being carried out by TIE MUDFA which had resulted in the agreed Schedule 4 Rates being compromised, and required to be further evaluated, revised and corrected to reflect the current situation.

(2) What were your views on the matters in that letter?

That TIE MUDFA was continuing to manage matters on terms suitable to themselves as opposed to addressing and detailing with matters appropriately under the contract. This had been a long standing issue that required resolution to the satisfaction of both parties.

(3) What were your views around that time in relation to whether Revision 06 of the MUDFA Programme would require to be revised? Did your views in that regard change at any time (and, if so, when and why)?

At this time I was aware that Programme Rev 06 was needing to be revised based on the progress achieved, extent of ongoing changes, late provision of design and design related information, and general situation the end date was looking more like March 2009.

41. By e-mail dated 11 March 2008 (**CEC01454004**) John Casserly, TIE, sent a draft covering letter for a “Settlement Agreement” (**CEC01454005**), “Appendix A – Principles of MUDFA Commercial Agreement” (**CEC01454008**), “Appendix B - MUDFA Contractor Incentivisation Proposal” (**CEC01454009**) and “notes and assumptions for Rev 06 Programme Appendix C” (**CEC01454006**).

The draft covering letter (**CEC01454005**) stated that Carillion were entitled to a settlement sum of £991,142 up to 30 September 2007 through being unable to meet their contractual obligations as a result of:

- Interpretation issue related to the application of PCS and progressing to Construction Services.
- Political delay to the commencement of the works.
- Delay in Issue for Construction (IFC) designs from tie/SDS provider.

The draft covering letter noted (page 2, last bullet point) that the existing incentivisation mechanism within the MUDFA agreement was inappropriate and that a revised incentivisation agreement had been reached which would be formally incorporated within the MUDFA contract as a replacement for the existing clause 48 mechanism.

(1) What was the "interpretation issue" relating to the application of PCS and progressing to Construction Services?

Please forgive me but I am struggling to remember the specifics on this subject matter. I think the main issues here related to the misunderstanding of responsibilities and obligations during PCS phase. I believe Keith Gourlay may be better able to assist with this line of enquiry.

(2) Broadly, to what extent did each of the three factors noted in the bullet points above cause or contribute to the delay and difficulties up to 30 September 2007 e.g. were all three factors of equal importance or did one or more have a greater effect?

- Interpretation Issues ~ 15%
- Political Delay ~ 15%
- Delay to Drawings ~ 70% This caused major delays to the overall MUDFA works.

42. TIE's Construction Director's Report for the meeting of TIE's Utilities sub-committee on 12 March 2008 (**CEC01453676**) noted, under Overall Performance to Date, that a total of 7805 metres (against a planned 9754 metres had been undertaken), including 44 chambers (out of 79 planned chambers).

In relation to Section 1B, progress in the period was less than anticipated.

The Action Plan noted that *"Overall progress in period had identified a reduction in outputs, due to increasing workload and number of live sections"* and that *"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%"*.

Under Programme (para 2.2) it was noted *"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"*. Similar Key Issues/Blockers as before were noted (with the addition of a 1500 mm sewer under the proposed A8 underpass) (the minutes are **CEC01456730**).

(1) Did that accord with your general understanding at that time? Do you have any further comments?

Other than stating that utility congestion and emerging works constantly presented productivity challenges I have nothing more to add.

43. By letter dated 19 March 2008 (**CEC01526804**) TIE sought to instruct certain MUDFA works.

In your reply dated 28 March 2008 (**CEC01533381**) you noted that the purported instruction did not comply with the requirements of the contract and stated that *"This level of ambiguity, confusion and consistent change frustrates the ability of AMIS*

MUDFA to manage and discharge their obligations under the MUDFA terms and conditions, in accordance with the set provisions”.

(1) Again, what was the main point(s) you were making?

The TIE Project Director, MUDFA consistently elected to carry out his actions and to exert his authority in a customary manner as opposed to recognising and complying with the measures and provisions under the contract. In the unlikely event that AMIS MUDFA had proceeded in accordance with an unofficial instruction, and had an accident or indeed a fatality occurred during the course of the works, then TIE and/or AMIS could well have been pursued and held liable for working out with the boundaries and premise of the contract. It is for this reason and many others that the non-compliant instruction had to be raised with the TIE Project Director, MUDFA.

44. An e-mail dated 1 April 2008 from Graeme Barclay, TIE (CEC01456006) included a draft summary for reporting purposes and noted slippage in the MUDFA Rev 06 Programme.

Mr Barclay stated, “Works are now progressing on 6no front, these being Constitution (enabling), Leith Walk (Foot of the Walk to McDonald Rd), St Andrew square (East side), Princes St, Shandwick Place and Gyle ... Progression of the works has not been in line with the rev 06 programme, but a significant reduction in previous slippage has been achieved in this period ... However, proposed recovery programme demands an increasing output, in excess of current requirements of rev 06. This still needs to be addressed by AMIS and action plan to identify contingency measures requires further review by MUDFA team. Sections of concern are at Foot of Walk and St Andrews square, where outputs are noticeably below other areas and programme needs ... [a deficiency of personnel was noted] ... Discussions with AMIS ongoing to develop recovery programme as a matter of urgency. Continual review of resource demands essential as increasing number of work fronts commence ... Overall programme slippage is 4 weeks from current rev 06 completion date”.

(1) Did that accord with your general understanding at the time? Do you have any further comments?

Other than stating that utility congestion and emerging works constantly presented productivity challenges. At St Andrews Square the extent and critical nature of the fibre optics servicing the RBS presented significant challenges in relation to the amount of temporary support work required to ensure business critical systems were not damaged in any way. This was a complex and critical area which took time to assess, plan and carry out the works with due care and diligence which resulted in some delay.

45. A letter dated 9 April 2008 from Mr Barclay to you (CEC00217639) noted that an agreement had been reached to settle AMIS' claim for delay and disruption up to 30 September 2007 at £991,142.95.

The letter included Appendix A – Principles of MUDFA Commercial Agreement, Appendix B – MUDFA Contractor Incentivisation Proposal and Appendix C – Programme Rev 06 Final Notes and Assumptions.

- (1) Is our understanding of matters as set out above correct? Do you have any comments on the agreement or the matters in the appendices?

The final presentation of the agreements summarised and consolidated a series of commercial discussions and agreements.

- (2) Appendix C, Notes/Assumptions to Programme Rev 06 Final, item 8, stated that the construction duration had been derived from an estimated total of 35,365 linear metres of utilities diversions. How and by whom had that estimate been arrived at? How confident were you that it was accurate?

The AMIS planning department coordinated the ongoing assessment of utility meterage as and when SDS utility design drawings were issued to AMIS MUDFA. The SDS utility drawings were then issued to the Construction team for detailed assessment in order to review and define the specific utility diversion works required, and to make an assessment in terms of materials, labour, etc. The output of this operational review confirmed the utility meterage which was then used to progressively update the master sheet. The site planning and QS teams shared copies of the master sheet, which was used in the planning and progress effort, and used in the progressive updating of the Anticipated Final Account (AFC) report. This was not an easy task to manage and required constant review and amendment, but the out-turn accuracy improved at each issue from knowledge and site experience.

46. TIE's Construction Director's Report for the meeting of TIE's Utilities sub-committee on 9 April 2008 (CEC01456414) noted, under Overall Performance to Date, that a total of 10081 metres (against a planned 12112 metres had been undertaken), including 54 chambers (out of 104 planned chambers).

It was noted (page 2) that *"there has been no recovery of the previously reported slippage"*.

Cumulatively, the existing effect was a delay of circa 6 weeks on the affected sections.

The root causes were in 4 main categories: greater congestion of existing utilities than anticipated (principally affecting Scottish Water diversions); increased temporary diversion provision; slower than estimated chamber construction for BT chambers; and incomplete supply of supervisory and operative resource to meet the full demands of the Revision 06 programme and the enabling works (AMIS addressing). *"The summary impact on the REV 06 Programme critical path suggests that 2 weeks delay is likely allowing for realistic implementation of the recovery plans to the MUDFA programme"*.

The Key Issues/Blockers were set out in para 7.0 (pp12-13) (the minutes of the

meeting are CEC01301007).

See also TIE's MUDFA Contract Review Report dated 24 April 2008 (CEC01293830) which (under Period Progress, page 2) stated that peak demand was within the months of May through July, that output demand indicated a required increase of 40% of the present average output of 64% and that *"This being achieved, completion date (excluding the Mound) will be maintained as mid December 2008"*.

The Contract Review Report also noted (para 1.1 Commercial, page 18) that a joint review had confirmed an anticipated increase measured quantity of 10,550m of utility diversions from the originally assessed measured works quantity.

(1) Did that accord with your general understanding of matters around that time?

The TIE MUDFA progress reports reflected the general progress position, but does not fully appreciate or fully comprehend the level of effort that is required to complete the utility diversion works. To take a linear line/dimension from a schematic drawing to provide a means of plan and progress measure prior to commencing the works, does not accurately reflect the actual works to be performed, and nor does it provide the desired level of work scope assessment and understanding of site specific complexities which will not be understood until such time the utility apparatus has been exposed in the road.

MUDFA progress and productivity was significantly curtailed by the greater than expected congestion of existing utilities resulting in the need to install temporary diversions in order to sustain business services and supplies, such that the as-laid utilities could be segregated, re-routed, and diverted to meet the tram track foundation clearances required. Whilst allowances were made in the planning work for emerging situation the congestion of services were often greater than predicted.

(2) What were the main elements of the recovery plan for the utilities works?

At this part of the programme a number of performance initiatives being considered and constantly reviewed. There were plans to increase resources, but this proved to be challenging since AMIS resources had, and were being deployed elsewhere to support other projects within the AMIS/Carillion portfolio. In view of the lighter nights AMIS looked to split shifts and extending the working day to increase outputs, and to take advantage of the fact that site support was already available. AMIS looked to increase the size of work site areas and to increase the extent of road closures to create higher volumes, but this did not get the necessary support. AMIS looked at kitting materials, fittings and materials at Ocean Terminal to improve the logistics support, including the provision of a series of city centre workshops to support on-site modifications and adaptations.

In one extreme, and resulting from a productivity workshop, AMIS considered a business case to install mobile Bailey Bridge sections above

the road to support the daily traffic movements and to minimise traffic disruption in an attempt to allow MUDFA to work beneath the bridge sections in an unrestricted manner to increase productive and output. AMIS had already intimated to TIE during the PCS phase that there could be benefits in carrying out the utility diversions immediately in advance of the Infracore works once a road section had been closed, which resulted from the AMIS TM discussions initially, and was the inherent thinking when Shandwick Place road closure was considered where it was known that the extent of utility diversions were going to be challenging.

Whilst many improvements and initiatives were considered and implemented in part and in full, the extent of utility work and degree of utility congestion proved to be greater than anticipated. Fundamentally at the time of carrying out the construction works the utility diversions had to be completed in order to maintain sustainable service to all end users, and to accomplish the tram track foundation clearance being the sole purpose of the MUDFA contract. Despite political and time pressure being the prime discussion point, AMIS were not prepared to cut short in anyway its utility obligations despite the many complexities, and were never prepared to compromise the safety of AMIS employees, AMIS sub-contractor employees or the general public.

With the benefit of hindsight, and in accordance with the many discussions and debates held between TIE and AMIS during the period November 2006 to April 2008, the progress situation would have been very different with possibly the MUDFA works complete had the SDS utility AFC approved design drawings been issued to AMIS in December 2006 as planned and agreed at the contract award stage.

- (3) Are you aware how, and by whom, a two weeks delay in the MUDFA programme had been arrived at?

The two week reported delay will have resulted from a combination of different site issues, complexities and working restrictions.

- (4) To what extent was that two weeks delay dependent on the recovery plan for the MUDFA works being successful?

The two weeks delay may have been acceptable since the particular work activities may not have been on the programme critical path. The progress would have been monitored and the works progressed accordingly, but the main management effort would have been devoted to progressing the critical activities.

- (5) How confident were you, and others in Carillion, around this time that the utilities diversion works would be completed in accordance with the revised programme?

The level of confidence in the programme at that time was decreasing as a result of understanding the increasing complexities of the inner city work, and the dependence on supporting organisations to provide the pre-

requisite details to support the works.

- (6) With the benefit of hindsight, do you consider that any belief around this time that the works would be completed in accordance with the revised programme (i.e. by the end of 2008) was reasonable given (i) the delays and difficulties experienced to date, (ii) the fact there had been no recovery of the previously reported slippage, (iii) the recognition that an increase in the anticipated measured quantities of utilities diversions would be required, (iv) the fact that utility diversions in the more difficult sections had only just begun or were just about to begin, and (v) the success of the proposed recovery plan was unknown)?

The general understanding based on the ongoing challenges and uncertainties that AMIS were facing with and having to manage that completion would be more realistically March 2009.

47. In a letter dated 14 April 2008 (**CEC01520586**) you noted a number of problems (34 in total).

You stated (bottom of page 1) that these matters would increase the costs of the MUDFA works and that only a provisional assessment could be provided at that time, given that *"the events and circumstances are known in a limited area and their impact on the balance of the Works is not known or readily identifiable"*.

- (1) Again, what were the main points you were making in that letter?

AMIS were highlighting to TIE MUDFA that there had been a high degree of tolerance during the course of the works where many issues under the control of TIE MUDFA, SDS and others had not been managed or controlled effectively, which had resulted in AMIS having to accommodate additional work, and consequently costs that needed to be considered and recovered.

This issue was symptomatic of the ongoing failure to administer an effective work ordering process as required under the contract requirements, where the required level of definition and detail would have been fully understood by all parties and acted upon accordingly to a point where all changes would have been accounted for correctly and subsequently agreed without any dispute.

This letter was issued to summarise the many issues that needed to be reviewed and considered such that AMIS were permitted to recover monies and entitlements for which costs had already been incurred as a direct result of external influences, and progressive requests for change.

48. TIE's Construction Director's Report for the meeting of TIE's Utilities sub-committee on 7 May 2008 (**CEC01300994**) noted, under Overall Performance to Date, that a total of 12421 metres (against a planned 16051 metres had been undertaken), including 65 chambers (out of 120 planned chambers). Under Period Progress it was noted (page 2) that there was a downturn in output from the previous period i.e. 70% achieved in this period and 77% achieved in total to date. The

cumulative effect on the sections was approximately 7 weeks. The overall effect on the critical path remained at 2 weeks, *“but implementation of revised recovery programme actions required urgently”*. The key areas of delay were as before and additional demands/constraints imposed by Traffic Management. It was noted (page 3) that elements of the city centre works (the Mound area) would extend into the first quarter of 2009 (the minutes of the meeting are **CEC01302139**).

- (1) Did that accord with your general understanding at that time? Do you have any further comments?

I believe my response to Question 46, sub-point (6) previously provides a consistent and general understanding of the progress situation at that time. For the record I had resigned from Carillion and left the project at this particular point in time for the reasons stated in question 55, sub-point (1) below.

49. Infraco contract close between TIE and the Bilfinger Siemens Consortium took place on 14 and 15 May 2008, as part of which a number of contracts were signed.

What was your understanding of the following matters at that time:

- (1) When the utilities diversions would be completed?

Around March 2009 as reported previously.

For the record and information purposes, AMIS MUDFA were never asked to meet with the TIE Project Manager (Infraco), or TIE senior management at any time, and were not requested to attend any pre-contract meetings involving any of the potential Infraco contractors in order to outline or explain the overall status and progress of the MUDFA works.

- (2) Whether the utilities diversions would be completed before the infrastructure works commenced?

AMIS MUDFA was not involved in any of the Infraco discussions, nor had sight of the Infraco programmes either on an informal or formal basis, and relied upon TIE to manage the interface and impart any relevant communication.

- (3) To what extent were the above matters discussed with TIE prior to Infraco contract close?

Prior to me leaving the project in late April 2008, I had never been called to attend a TIE Infraco related meeting where interfaces, programmes, priorities, etc were to be the subject of discussion to improve understanding, and to appoint subsequent action.

50. TIE's Construction Director's Report for the meeting of TIE's Utilities sub-committee on 4 June 2008 (**CEC01302139**) noted under Overall Performance to

Date, that a total of 15288 metres (against a planned 24322 metres had been undertaken), including 86 chambers (out of 140 planned chambers). Under Period Progress it was noted that there had been improvements in Leith Walk (Foot) and Shandwick Place where outputs were circa 80%, but that remaining sections indicated similar outputs as before, at circa 65%. Overall progress in the period was 56% of planned progress. Cumulative progress was 6 weeks behind, and 2 weeks against the critical path.

- (1) What was your awareness of, and views on, these matters? Did what is noted above accord with your general understanding at the time?

I had left Carillion / AMIS MUDFA project 6 weeks prior to this report being issued.

51. An e-mail dated 19 June 2008 (**TIE00141448**) from Roddy Aves, Carillion, noted his concerns that TIE were expecting Carillion to commence the enabling works in many locations next week but TIE had not issued the necessary paperwork to allow that to happen.

An e-mail dated 25 June 2008 from Steve Hudson, Commercial Director, Carillion (**CEC01346377**) noted that the draft of Rev 07 of the Programme, *"has moved from the draft a few weeks ago due to late receipt of Enabling works details and then the growth in scope shown therein. This results in a further programme slippage in certain key areas, namely, Haymarket"*.

- (1) What Enabling works still required to be carried out and where around that time? Why had these works not been carried out earlier?

These particular events took place after I had left Carillion / AMIS MUDFA and it would not be correct or honest for me to make any comment.

- (2) Did TIE delay in providing Carillion with necessary paperwork in relation to the Enabling Works (and, if so, why)?

From previous experience and as documented in numerous contract correspondence, TIE MUDFA seldom provided any of the precursor information required within the work orders, and were not able to extract and provide the necessary design and technical information from SDS/Parsons Brinckerhoff to provide the technical definition and detail needed.

- (3) Did any delay in carrying out the Enabling Works delay the carrying out and/or completion of the MUDFA works?

From recollection this happened on many occasions during the course of the works.

52. E-mails between Steven Bell and Steve Hudson in June 2008 noted discussions in relation to a MUDFA Rev 07 Programme. Mr Hudson's e-mail dated 25 June 2008 (**CEC01346377**) noted that there were a number of programme risks remaining,

including "delay in drawing issue, growth in work scope and TM restrictions".

An e-mail dated 30 June 2008 from Keith Gourlay, Carillion, noted certain MUDFA Commercial Issues/Concerns (CEC01291405).

An e-mail dated 6 July 2008 from Steve Hudson (CEC01342171) noted "Overall I maintain my view that MUDFA continues to operate under a lastminute.com ethos".

(1) What was your awareness of, and views on, these matters?

These particular events and correspondence took place after I had left Carillion in April 2008. However and upon reviewing the reference information the same reoccurring theme appears MUDFA performance depended on information and technical details provided by others, which was out with the direct control of AMIS/Carillion.

53. TIE's MUDFA Contract Review Report for period 6 (18.8.08 to 14.9.08) (CEC01068356) contained an Appendix 3, Performance Measures (page 32) which noted delay in completing the planned metrage in the various sections.

The Tram Project Board met on 24 September 2008. The minutes (CEC01210242 at page 5) noted that there were issues around management direction and control from Carillion but significant improvement following an internal audit. Slippage on the MUDFA programme from Rev 06 to Rev 07 was currently 4 months (page 6).

Slides for the meeting (CEC01155850) noted, under MUDFA, that "Overall, programme is now predicting an end date of March 2009 with potential impacts on INFRACO particularly if BT overlaps are difficult to address" (page 4).

Factors contributing to programme slippage included Design Change V26-V31, Mobilisation and Delivery Infraco, Design/Progress/Change V31-35 and MUDFA potential overlaps/conflicts (page 10).

(1) By way of overview, what utilities diversion works (and in which sections) were being undertaken around this time?

These discussions and events took place well after I had left Carillion in April 2008.

(2) What were the main reasons for the slow progress?

These discussions and events took place well after I had left Carillion in April 2008.

(3) To what extent could and should these difficulties have been foreseen?

These discussions and events took place well after I had left Carillion in April 2008.

(4) Were there issues around management direction and control from Carillion?

These discussions and events took place well after I had left Carillion in April 2008.

54. An e-mail dated 25 November 2008 from Steve Hudson, Carillion (CEC01162082) noted that significant delays to programme continued to be experienced as a consequence of:

- Delays in design issue.
- TM and Stakeholder restrictions.
- Growth and change in work scope.
- Delay in TQ resolution.
- Inadequate tie leadership and project management.

Mr Hudson further noted that Carillion had made changes to their team to improve delivery.

(1) What were your views on these matters?

These discussions and events took place well after I had left Carillion in April 2008.

(2) What changes were made to the Carillion team around this time?

These discussions and events took place well after I had left Carillion in April 2008.

55. We understand that you left Carillion in 2008.

(1) For completeness, please confirm when and why you left Carillion?

I completed my duties and handed over to Mr. David Smith (Carillion Director) before the end of April 2008.

Reasons for leaving: 1) I was hired by AMIS on a fixed 22 months contract, 2) At the point Carillion acquisitioned AMIS I was advised that I would not be required after MUDFA, 3) I had already completed 18 months on the Edinburgh Tram project, overcome many technical challenges, and had become tired of the TIE MUDFA relationship, and 4) I had received an offer to join another contractor which presented a long-term opportunity for my family.

(2) What was your understanding when you left Carillion of:

- the extent to which the utilities diversion works were complete

Approximately 50-60%

- the works (and in which sections) that were outstanding

Haymarket, Dalry, Network Rail and

- within approximately what timescale any outstanding utilities works would be completed (e.g. in months or years)?

March 2009 given the lateness in SDS design information, number of changes, utility complexities and progress status.

Final Thoughts

56. By way of final thoughts:

- (1) How did your experience of the Edinburgh Tram Project compare with other projects you have worked on (both previously and subsequently)?

The Edinburgh Tram project was extremely challenging from the onset, and probably the most challenging project in my career. Having delivered many projects successfully in the past, the unique differentiator on the Edinburgh Tram project was the stakeholder challenges and inner city traffic management planning which were recognised and understood at the start.

The different contracts and management structures in my view compared to my previous experiences did not naturally align, encourage good communication, or promote effective project team working in order to accomplish the same goals. This resulted in TIE as the project Authority taking on the role of Project Sponsor, Employer, Programme Manager and System Integrator, which is an extremely challenging contractual responsibility, and a role that requires a suite of sophisticated systems, procedures, project controls, technical skill, proven project management competency and the alike to plan, coordinate and control the many interfaces required to manage a baseline programme to deliver the project scope with consistency, and a high level of confidence in outcome.

In looking back the MUDFA project demanded an incredible amount of effort, extensive working hours and a constant push to get people aligned and focused on delivery, and to contribute to ideas, innovations and step-changes in performance . I am very proud of building a team that was committed to getting get things done, finding ways to resolve operational issues, and felt that we accomplished a great deal despite the lack of support given from many others on the project.

- (2) Do you have any comments, with the benefit of hindsight, on how the MUDFA difficulties and delays might have been avoided or reduced or on how the MUDFA contract and works could have been better managed?

In my previous responses I have highlighted and emphasised a number of solutions that were offered to TIE MUDFA in order to improve the working arrangements, and to complete the MUDFA works more efficiently and on

time.

In my view and with the benefit of hindsight, TIE as the Authority and acting as the programme management and system integration organisation did not hold the pre-requisite systems, procedures, skills, competency and experience required to deliver a project of this scale and complexity compared to world class organisations such as Bechtel, KBR Halliburton, etc. The manner in which the MUDFA contract was planned and structured presented TIE MUDFA with a high challenge scenario, and they were unable to manage the SDS utility design activities in order to prepare work orders and to support AMIS MUDFA operations.

In terms of difficulties and avoiding delays, TIE Project Manager, MUDFA never addressed the many issues openly shared by AMIS during the early stages of the pre-construction services phase. Had the many issues been resolved in full or in part, then the overall out-turn would have been very different albeit with some difficulties and challenges, but positive in terms delivery and controlling of costs. The structure of the contracting arrangements led to a defragmentation of the overall baseline programme, and with the passage of time proved to be virtually impossible to correct, or recover leading to increased cost, delay and reputational damage.

In the future, MUDFA utility works should be carried out as pre-construction Infracore works where larger sections of the road are sterilised, and the utility works are completed in packages ahead of the civil foundation works. The pressure of the follow on works would incentivise the utility works contractor, and the public would accept the road lock out situations and slightly longer programme duration, since they would benefit for the overall cost out-turn being controlled.

- (3) Are there any final comments you would like to make that fall within the Inquiry's Terms of Reference and which have not already been covered in your answers to the above questions?

I would like to place on record that the specific details happened a long time ago and I have been involved in many projects since 2006-8, and I have struggled to recollect some of the eventualities. I have dutifully completed the questions to the best of my ability and have reviewed all of the project information referenced in the above questions.

I trust my responses are helpful, add benefit to the enquiry and ongoing proceedings, and assist in some way to improving the delivery of large infrastructure projects in the future.

I confirm that the facts to which I attest in the answers contained within this document, consisting of this and the preceding ~~52~~ pages are within my direct knowledge and are true. Where they are based on information provided to me by others, I confirm that they are true to the best of my knowledge, information and belief.



WITNESS

DATE16th June 2017.....