

The Edinburgh Tram Inquiry
Witness Statement of Damian Sharp

My full name is Damian Sharp. I am aged 49, my date of birth being [REDACTED]
[REDACTED] My contact details are known to the Inquiry.

My current occupation is as a consultant within the water industry. In my role as Head of Public & Rural Transport Branch in the Scottish Executive, I reported to the Head of Transport Division 2, which was initially Bill McQueen and then Jamie Ross. Then as Head of Major Projects, initially I reported to Kenneth Hogg who was the Head of Transport Division 3, until Transport Scotland (TS) started operating in shadow form in the autumn of 2005. I then reported to Bill Reeve, the Head of Rail Delivery. I have provided organograms (**WED00000109**, **WED00000111** and **WED00000113**) which show who was working with me in these roles during the summer of 2003, 2004 and 2006 respectively.

My curriculum vitae is attached as an annex to this statement (**WED00000108**).

Statement:

Background

1. I recall that the Major Projects Team was a brand new team established in May 2003 following the Scottish Parliament elections, the creation of the new coalition, and the partnership agreement which included seven public transport commitments which involved major infrastructure. That team was set up in order to look after the Scottish Executive's interests in making sure those seven partnership agreement commitments were delivered. Initially, I was the Head of Major Projects team along with two project managers, one looking after the West of Scotland, Joe Ross, and another looking after the

East of Scotland, John Ramsay. There were also two technical advisers who were not Civil Servants and were contractors with particular expertise. They were David Prescott, formerly of ScotRail and various English rail operations particularly heavy rail, and John Bygate who had worked extensively in the railways and heavy rail since 1959. John Bygate had also been Chief Executive of the Sheffield tram and he had been the Managing Director at Docklands Light Railway. David Prescott and John Bygate provided technical expertise, as other people in the team were Civil Servants. Before John Ramsay joined the team Neil Cree held that post before he left the Scottish Executive for another job outside and John Ramsay took over in the late summer of 2003. The team started in that small way.

2. I recall that the structure of the Major Projects Team had five project managers by the summer of 2004, including a dedicated project manager for the Edinburgh trams and managers for Airdrie/Bathgate, Larkhall/Milngavie, Waverley Station upgrade, the Edinburgh and Glasgow Airport Rail Links, Borders railway and Stirling/Alloa/Kincardine railway. All the managers were Civil Servants recruited internally and worked for me. It took varying lengths of time for these project managers to be released from their existing posts following recruitment. The three technical advisers were David Prescott, John Bygate and Kenny Laird who was formerly of Railtrack. Kenny Laird was with one of the rail contractors and did not have any involvement in tram projects but he was part of the team because he had experience with a wide range of heavy rail projects. He also had expertise in heavy rail signalling which was relevant to a number of the projects.
3. In the summer of 2004, the Scottish Executive took on two sets of financial advisers on a contract basis. The financial advisers from KPMG were involved in light rail, and for heavy rail projects it was Ernst and Young who had no involvement in the tram project.
4. With the creation of Transport Scotland (TS) in 2005 a further expansion of the team was agreed with new project management and stakeholder engagement posts being created. A separate team of technical advisers was

created to provide advice across the Rail Delivery Directorate not just to the Major Projects Team. We had had a very flat structure rather than a multi-layered structure but as the team grew this was no longer appropriate. I now had three Deputy Heads of Major Projects – Jerry Morrissey, Matthew Spence and Steve Milligan. All were contractors but on a long-term basis with full time roles. There was nobody within the Civil Service who had the necessary skill set to fulfil those roles.

5. I recall that Fiona Spencer was the Head of Stakeholder Engagements for TS, which involved managing relationships with the Scottish Parliament, project promoters and dealing with members of the public. A number of these projects required houses and businesses to be bought. Fiona Spencer was responsible for oversight of that and for keeping consistency in how TS supported projects by purchasing houses, dissemination of information to people who were affected by house purchases and co-ordination of media.
6. A programme management team was created to look at individual projects and at the programme as a whole. Their remit was firstly to evaluate if the programme and timescales were credible for individual projects; secondly to look at whether the cost estimates were credible for individual projects and thirdly to identify opportunities to co-ordinate and risks of clashes among projects.
7. At an individual project level, the programme management team was there to assess if a well-documented methodology had been applied to each project in developing its project plan, timetable and cost estimates. At a programme level, with £2 billion of investment, there was a huge risk that the projects could end up falling over each other. For example, if project A had slippage and would not need as much money in a given financial year then we could use that funding usefully on another project. There were also physical interactions between the tram and Edinburgh Waverley project at Haymarket Station. Haymarket Railway station had a fifth platform that was built as part of the Edinburgh Waverley project so that while part of Waverley was closed, more trains could be run in and out of Haymarket. The fifth platform at

Haymarket physically bounded up against the tram alignment and there was a discussion about exactly where to draw the boundary between the tram and the Waverley Station project. TS had to coordinate and broker an agreement, making sure that people did not work on either side of the fence at the same time and that the timings of those works did not cause knock-on delays. The role of the programme management team was to work out where those risks were looking ahead and propose ways of managing those risks. There was another specific instance involving interaction between the signalling immunisation for the Airdrie/Bathgate rail project and the tram, which required advice on co-ordination from the programme management team.

8. Financial advisers for TS advised on financial risk, on possible contract structures, such as PPP or Regulatory Asset Base funding and what form of contract was taken. They were not there to do any detailed review of the specific contracts. They were there to advise on the procurement and risk management strategy and financing. The financial advisers were there to ask questions on where and how money was raised, not to investigate individual contracts and deciding whether or not they were fit for purpose.
9. I recall that one of the technical advisers, David Prescott, who worked for me was recruited as a civil servant and transferred to the directorate-wide Technical Advisory Team, headed by Ian Mylroi. As part of that team David Prescott looked after some of the smaller rail projects and gave technical advice to everybody within the Rail Delivery Directorate including the Major Projects Team.
10. Kenny Laird and John Bygate were not interested in being recruited as Civil Servants and left to go back to contracting, and because I had Civil Servants with technical skills, I was not allowed to retain John Bygate.
11. My role was to ensure that the partnership agreement commitments were delivered. However, not all of them could be delivered within one parliamentary term as these projects took a long time. Even if the Edinburgh tram project had been on time it would have likely taken nine or ten years from

concept to opening, which was from 2001 to 2010 being the earliest credible date. There was a lot of talk about the tram project opening being earlier than 2010 but TS never took it seriously that it would be delivered in 2008, which was City of Edinburgh Council's original concept. A project opening date of 2008 was not realistic, the earliest realistic date was 2010. In part my role was to work out what was realistic progress by March 2007 and how far did we have to go by March 2007 to still be on track to deliver the various projects on time. About 2005/06, Scottish Ministers asked for cost estimates and expected delivery dates for all projects. My job was to advise them what was realistic and oversee the promoters to make sure that progress was being made to co-ordinate the programme as a whole.

12. I note that March 2007 was significant as in April 2007 there was the pre-election period and then in May 2007 the Scottish Parliament and local elections. The end of March 2007 was the latest time at which Civil Servants could support Ministers in making public announcements and it was the end of the partnership agreement that was signed between Labour and Liberal Democrats in May 2003. I was responsible for seven commitments that were made and I had agreed with Ministers what constituted acceptable progress on each commitment.
13. By March 2007 I had worked with people outside the Government who were delivering those projects and provided funding as appropriate. I secured funding in the internal spending reviews and ensured that the Scottish Public Finance Manual rules were followed and that the projects when delivered would deliver their Business Cases. I advised Ministers on the likelihood of projects being delivered successfully and delivering the benefits set out in their Business Cases. Therefore I had a range of projects that I had to ensure were treated consistently yet with sufficient flexibility that reflected the different organisations and capabilities that were trying to deliver them. At Waverley Station the promoter Network Rail who have considerable railways experience and that was different from the Borders Railway which was being promoted by a local authority with no heavy rail expertise whatsoever. Therefore these projects required different handling and supervision.

14. I recall there was some pressure on reaching a decision on the tram project before March 2007 due to the upcoming elections, however that pressure was not primarily driven by the elections. What was under consideration at that point was the £60 million grant requested to undertake the utilities diversion programme. It would have been possible to have offered a smaller amount and deferred the rest of the funding decision until later but, since the grant conditions allowed termination of the grant at the Scottish Executive's discretion provided a period of notice was given, splitting the grant for utilities diversions would not have given any benefit.
15. The principal driver for a decision on the utilities diversions grant in early 2007 was the overall tram procurement timetable. The plan was for the main contract to start later in 2007 and if the utilities contractor had not got on with enough of the utility diversions then the main contract would not be able to be let and there would be a huge risk penalty. In 2007 my team's estimate was that a week's delay in the tram project was costing between a half and three-quarter million pounds.
16. I note that the people highlighted in blue in the organogram I have provided (**WED00000113**), all had some involvement with the tram project. The line of accountability was from me down to Matthew Spence, who was the Deputy Head within whose remit the tram project sat, then to John Ramsay, Project Manager, and Lorna Davis his assistant. Because they were going through Parliament and private Bills were required, Fiona Spencer and the private Bills team and the programme management team were involved. The programme management team were a contracted team from a combination of Cyril Sweett who are a UK-based cost and programme consultancy and Drees & Sommer who are a German-based programme management company who are expert consultants and planners on major projects. In the late 1990's and early 2000's Drees & Sommer were involved in major rail projects in Germany that were state of the art.
17. After the elections in May 2007 I had got the projects through Parliament and they had their respective Bills and main permissions that they needed to go

ahead. The procurement strategies that were going to be delivered were established. In the autumn of 2006 I could see that this would potentially be the case and I anticipated that TS were going to be in a more straightforward position of management of grant-funded construction, as opposed to managing a part political, part technical approvals process. What would be needed at that time was not a Civil Servant with people and stakeholder management skills but someone with on-site rail construction experience.

18. In the autumn of 2006 a year before I left TS, I went to see Malcolm Reed and told him what was required from my role in the future and that he should plan ahead for that. Therefore, I effectively gave a year's notice in autumn 2006 that I should not stay on as Head of Major Projects once we got through the election and moved into construction for all the major heavy and light rail projects, when the emphasis was on building rather than developing projects. I knew that I needed to find another job because once I had carried out the role I was there to do, somebody else would be better at the taking over the next part of my role. At that time I did not see any roles within the Civil Service that appealed to me and I looked across the Scottish Executive. The job I was doing at TS was very unusual. Mostly in the Civil Service you were a long way from the actual delivery of the policies you were trying to implement and there were roles in the Scottish Executive where success was to publish a strategy and as an organisation, the Scottish Executive did not always take sufficient account of whether that strategy was deliverable or not. In such roles there was also normally a significant time lag between strategy creation and being able to see whether the strategy bore fruit or not. In contrast, in my role at TS I could see reasonably immediately whether what I was doing was making a difference or not.
19. The Larkhall/Milngavie railway was the first of my projects to be delivered and had higher passenger numbers than forecast. Within a year of it opening it was making a difference and it was connecting people in Larkhall with jobs in Glasgow which were otherwise not accessible to people who had to rely on public transport. When I looked at the infrastructure that was built out of that programme and the change that had made I loved seeing tangible outcomes. I

didn't want to go back to feeling that I was pushing a button now and eventually something happened, so I started to look for a role outside of TS. It was well known outside TS that I was going to be leaving and why. It was well known that I was not leaving in a huff and I asked John Swinney's Private Secretary to tell Mr Swinney that I would be leaving and that I wanted Mr Swinney to know that it was not because I had any problem with the SNP or with the decisions that they had taken about tram project and Edinburgh Airport Rail Link (EARL). I had decided long before the election that I was going to leave and it was the right thing for me to do.

20. In August 2007, I was head hunted by TIE. David Mackay from TIE invited me to dinner and said that TIE would like me to join the tram project as were impressed with my work for TS. We discussed broad salary expectations and at that point we agreed in principle that I would join TIE and then over the next couple of weeks the detail of the terms and conditions were agreed for my role with TIE. The details were sorted out with Willie Gallagher and with Colin McLaughlin who was TIE's HR Director at the time. I was Design and Consents Manager at TIE. In terms of the process to go from TS to TIE, the morning after the offer was made I spoke to Malcolm Reed and told him that I had been made an offer to work for TIE and that I was minded to accept. We needed to manage the fact that had I accountability for the tram project. Malcolm and I agreed in that meeting that I would write up the current position with the tram project for him and for Bill Reeve and I would have no further involvement with the tram project after that. Therefore for the last nine weeks that I was with TS, I dealt with other projects in the major projects portfolio doing a full handover of each project. I also did some work on the new Forth crossing which was being planned and that filled up the time I had left at TS. Technically I left on 16 October 2007 but in reality I left before that because the last week and a half I was on annual leave. I did not walk out of TS on a Friday then went to TIE on a Monday, there was a couple of weeks gap between.
21. While employed at TIE, I had the role of Design and Consents Manager from October 2007 to August 2011. My role involved overseeing all approvals

required for the construction of the tram project. This included all the detailed planning approvals such as those for all the tram stops and structures, in respect of the retaining wall at Murrayfield, bridges and underpasses; all of the roads design required roads approval acceptance by CEC as the Roads Authority. Fresh water connections were required to the tram depot and all of the surface water that drained from the depot and from the track to Scottish Water's sewerage network all required Scottish Water's consent. Although the principle of the tram network had been approved by the Scottish Parliament CEC's planning department were allowed to say that something was not sufficiently aesthetically pleasing or that it would not work or there was something technically wrong with it. Therefore the designer, SDS, had to get all of those permissions and I made sure that they had the design completed and had the permissions.

22. In terms of deciding my specific role, Willie Gallagher who was Executive Chairman of TIE at the time, decided to allocate me to sort out design and consents as that was what he was most worried about in autumn 2007. I was very familiar with the tram project and had been involved from the very beginning in March 2001. I was given design and consents because Willie Gallagher had assessed that within Government I had a record of solving very difficult problems and not giving up. I was familiar with the project and I was very familiar with the Parliamentary Bills and with the framework for those permissions. What I was good at doing was getting people in a room and explaining to me what the problems were and having an open conversation. I was used to dealing with very senior officials in Government and Local Government which was relevant to securing some of the decisions needed before approval could be granted. For instance, an early issue that I was involved in was tram stops and what paving should go on the platform and track surface. There was an impasse between the CEC planners and the designers on this issue. There was quite a lot of money at stake here and I spoke about the issue to Andrew Holmes, Director of City Development in CEC. I explained to him that what CEC planners were holding out for was going to cost CEC around half a million pounds for more expensive materials but the greater impact was an equivalent sum each week the decision was

delayed as the tram stop design was on the critical path for the construction programme. Andrew Holmes then made the final decision to opt for the more expensive paving rather than press the planners to accept the original design. There were lots of issues that were locked in that sort of discussion and between October 2007 and May 2008 I dealt with a lot of these big issues. In that period the atmosphere was of people wanting to solve the problems and being frustrated. I was able to understand the technical questions, even if I could not do the design myself, I understood enough about design to understand the language that people were using and through my experience read the drawings. In some more complicated cases people with specific technical expertise like Tony Glazebrook and David Crawley explained particular issues to me. With my experience at TS I was very technically literate in heavy and light rail matters although I would not say I was technically expert in any of them. If I needed to go beyond technical literacy into technical expertise, then the advisers were there to provide that expertise.

23. In my role with TIE, I first reported to Steven Bell who was then Director of Engineering and he reported to the Tram Project Director. Over time that changed particularly when the Infraco contract was let. At that point Steven Bell became Tram Project Director and we first had an interim Infraco Director, Jim McEwan, and later a permanent Infraco Director, Frank McFadden, to whom I reported. For some of the time Bob Bell was a Deputy Infraco Director to whom I reported. This contrasted with the situation when I was at TS reported where I often reported directly to the Chief Executive and to Scottish Ministers, including on financial matters. I had gone from that very senior position in TS to a much lower position organisationally at TIE, but as was often the case when you jump from the public to the private sector, despite going three or four levels in the organisation I got a 40% pay rise. My position in TIE was much less influential and accountable than it was at TS. Nobody reported to me directly but I had access to the technical expertise in David Crawley, Tony Glazebrook and their team.
24. I was also involved in the Gogar Interchange project. This was a change to the tram scope originally approved by the Scottish Executive so, although it

was part of the tram project, it was separate from the £500 million of funding for the tram project and it was separate from the original scope of the tram project. I was not involved in any other projects. I left TIE because I was made redundant because the design and consents were finished and there was no work left for me to do.

Working in the Civil Service

Role of Transport Group then Transport Scotland pre-2007 Election

25. I note that the document published by the Scottish Government in May 2003, *A Partnership for a Better Scotland: Partnership Agreement (WED00000160)*, covered the seven commitments I was dealing with in relation to the major projects programme that included the tram project. The Agreement stated "*We will ensure that our transport system meets the needs of business, transport users and the environment by ... investing in a tram network in Edinburgh*". That was the Scottish Executive commitment given in 2003 which was to be carried out between 2003 and 2007. It was not tightly defined but it said that they were going to allocate money towards the Edinburgh tram network. The Partnership Agreement in total contained 370 commitments because of all of the areas of the Scottish Executive, and I was responsible for seven. No Civil Servant had lead responsibility for more or indeed as many commitments as I.

26. The Scottish Government initially committed to invest in a tram network but the promoter of the tram network was CEC who were supposed to take the lead. CEC's track record on delivering major projects was poor and the confidence of companies who might have bid for the contracts that CEC were letting was exceedingly poor. In the run up to the tram project CEC had had to abort a number of major procurements including the City or Edinburgh Rapid Transit scheme and so TIE was established as a company wholly owned by CEC but with the flexibility to recruit both from within CEC and from the pool of people with experience in delivering large transport infrastructure projects. TIE was not set up just for the tram project and by 2003 it had three arms to it: the

congestion charge scheme, the tram project and EARL. The congestion charge scheme was wound up after the referendum in February 2005 and then EARL was cancelled leaving TIE just with the tram project. Originally TIE had been there to deal with public transport improvements in Edinburgh and it also dealt with a variety of other smaller projects as well from CEC.

27. Scottish Ministers were there to fund the development of the tram project in stages towards a state where it was fit to be delivered. I cannot speculate what Ministers might have considered the purpose of the tram project was to be beyond referring to their repeated public statements to Parliament and in news releases made to announce funding.

28. The Edinburgh tram project was part of a package and it was not going to solve congestion or difficult connections between the different parts of Edinburgh without doing some other projects as well. Once the congestion charge had fallen, the tram project was then the biggest contribution to tackling congestion in Edinburgh. In 2003 to 2005 we were still in talks with tie about defining the objectives of the tram network as a whole and each line within the network. All the west Edinburgh business community had said that traffic congestion in west Edinburgh was hampering their ability to recruit good staff. There were serious concerns about skills and staff shortages in west Edinburgh and the impact that had on the Scottish economy. Ministers were concerned about congestion in west Edinburgh and the impact that had on Scottish economic growth, at the Airport, at the Royal Bank of Scotland headquarters at Gogarburn, at Edinburgh Park and what was supposed to be phase 3 of Edinburgh Park, which had never been built, and another big site opposite the Royal Bank of Scotland headquarters which was allocated in planning terms for another major global company headquarters which had yet to be attracted. These issues were clearly articulated by Wendy Alexander in 2002 when she was responsible for transport as part of the Enterprise portfolio. Support for the tram network was also consistent with the airport strategy which forecast that Edinburgh Airport was going to triple its passenger numbers that was going to put a huge pressure on the roads network in that area.

29. The tram was not the only solution to the problem of transport to Edinburgh Park. The Airdrie/Bathgate railway project was a big part of the solution and before the railway opened if people who lived in Airdrie, Coatbridge and the surrounding parts of North Lanarkshire wanted to work at Edinburgh Park then their options were fundamentally to drive or not take a job there. The Airdrie/Bathgate railway provided that group of people with access to jobs near Edinburgh Park. The full proposed tram network would have provided people in Leith and Granton with access to those jobs also.

30. The objectives and delivery of the tram network were discussed within the Scottish Executive including the discussions that I was having in late 2002 and early 2003 with Adrian Colwell, who was one of the Labour special advisers and Iain Gray who was then the Transport Minister. The tram was about, in part, acknowledging that Edinburgh did not have a single focus of business activity any more. At that time Edinburgh had two principal areas of business activity, the city centre and west Edinburgh. West Edinburgh already rivalled, if not surpassed, central Edinburgh for contribution to Scotland's GDP. A tram network would recognise that it was already the case that west Edinburgh was important to Edinburgh, to the city region and nationally in terms of its contribution to GDP and transport congestion could be a constraint on that.

31. Looking at the longer term development of Edinburgh it was fair to say that in south-east, where the new Royal Infirmary was situated and the Edinburgh BioQuarter hub was being developed, could become a third area that would rival the other two in terms of GDP. In the longer term developments at Granton and around Ocean Terminal could create another major business hub within Edinburgh although in the short term there would be a greater need to connect people who lived in north Edinburgh with jobs that were being created elsewhere in the city. Edinburgh had an excellent bus service but continuing development of that service could only improve accessibility so far and the tram was a step change in the quality and reliability of that. Scottish Ministers were positive about the tram network lessening the economic impact of congestion and there was also a benefit in terms of regeneration in north

Edinburgh which Ministers were supportive of. Ministers were also supportive of regeneration in Alloa, Dumbarton and other parts of Scotland with similar employment and social inclusion issues and support for north Edinburgh needs to be seen in that wider context. Ministers were also supportive of the air quality benefits that a tram could bring but it was not the primary concern. Ministers were most concerned about the benefits that a tram network could have on economic growth in Edinburgh and Scotland.

32. Ministers were prepared to support the Edinburgh tram network because of its wider economic benefits. Had the tram only benefited Edinburgh and its residents then Ministers would not have been willing to invest large sums in the network.
33. The balance of funding between the Scottish Executive and CEC was determined through Ministers taking a view on how much CEC could afford to contribute without access to a congestion charging revenue scheme. CEC were challenged on how much they could provide in funding towards the tram project. That was done through a political process between Ministers themselves and senior politicians in the CEC, facilitated by pre-discussions between senior officials in CEC and senior officials in TS. The end result was the £545 million for the tram project which was not quite a 91% to 9% split.

Quarterly Review Meetings

34. The objective of the Quarterly Review meetings was for TS to take reasonable steps to assure itself that all projects were being managed without going through all the details. It was not a type of audit process, but it was a process that allowed for the persons responsible for delivering to ask questions. TS had to ask tough questions and look for sensible answers, and identify if there was anything we could do to help a project to deliver its objectives. It was all part of having an engagement with project promoters with a focus on delivery. It was also aiming to achieve results for a reasonable cost and deliver the benefits that they were supposed to deliver. The Quarterly Review process was also the opportunity for Bill Reeve, Head of Rail Delivery Directorate, who

was not in amongst the day-to-day discussion of projects, to ask questions that were helpful to the promoter and to me. That ensured that both the promoter and TS had a clearer perspective of the project. Over time as the Quarterly Reviews went on there were changes to the personnel and there were changes to the documentation and the agendas. It was a brand new process to reflect the unprecedented nature of the public transport programme.

35. The first item of business at each quarterly review meeting was to go through the actions of the previous meeting and what had happened with them. Every four weeks there was also a meeting between TS and the tram project manager, John Ramsay, and part of that was asking about progress on actions that were agreed at quarterly reviews. One of the reasons for the four-weekly meeting was so that promoters did not leave carrying out actions until just before the next quarterly review. That was an early weakness in the quarterly review process that was sorted by making sure that the minutes went out quickly and the actions agreed were followed up by the project manager for that project. The four-weekly meetings were then held to reinforce that progress was made on actions.
36. Broadly the Quarterly Review process achieved its objectives and allowed TS to understand across the portfolio where each project was and critically to understand how implementation of the projects fitted together. Initially project promoters were a bit defensive about the Quarterly Review process and saw it as an exercise by TS to ask them what they would have liked to have gone better and as something that they feared rather than welcomed although that view did change as they saw the value of being able to secure TS support for resolution of difficult issues. The Quarterly Review process succeeded up to a point and it achieved as much as could reasonably be expected.
37. I am aware of the minutes of the third Quarterly Panel Review of Major Projects held on 8 May 2006 (TRS00004679). Concern was expressed about the absence of a report and information on progress from TIE. I recall that there had been quite an acrimonious internal dispute within TIE between the

Tram Director and the Chief Executive of Lothian Buses over what the tram and the bus network should do and how they would work together. The long-running personality clash between the two came to a head and the Tram Project Director left which caused TIE delay in being able to assemble information and compile a report for TS. We were not happy but we understood why that had happened. There was concern at that stage if TS had received a report then would it have had everything contained that we required in it. The absence of a report reflected this change of senior personnel at TIE and teething troubles about TIE and TS communicating effectively rather than any deeper concern about TIE's performance.

38. It stated in action 2 from the Panel review meeting that a further meeting was required to review impact of indexation on the cost projections for the trams. Ken Davis who was on the programme team and Stewart McGarrity from TIE would have had that meeting. TS had problems getting TIE to understand exactly what it was we wanted and how to apply some of the rules that we wanted applied to how TIE presented their information. It would not have been fair to single out the tram in that situation. Network Rail had similar initial problems getting to grips with TS's reporting requirements in relation to the Waverley Station and the Airdrie/Bathgate Rail projects. All the promoters, and to an extent TS, were trying to present information consistently in a way that was useful but provided enough detail to give a true picture of what was going on yet not so much detail that it then swamped the important parts, took promoters too long to produce or encouraged TS to meddle in detail that we shouldn't. All along TS's role was to be strategic, to challenge in a friendly and constructive manner and not to try and do the work for TIE or other project promoters.
39. TS was challenging the people who were being funded to demonstrate that they were complying with the conditions and managing projects well. The Panel Review was a process to check on the progress made each quarter by projects, where TS was told what the big issues were and what had been done to solve them. The concept was to ask what each project was doing, what they were struggling at and were there any issues that required TS's

help. There were discussions at the Panel Review on the tram project and other projects about whether one project was in conflict with another and if TS could help in facilitating a discussion to resolve any issues. TIE would commonly request help with dealing with Network Rail because TS, as the funder of Network Rail in Scotland, had considerably more leverage than TIE did. TS's role was to make sure that the promoters were not just receiving funds and not making progress and were also not hiding any problems. The Panel Review was there to ask challenging questions but also offer support and help and it was used to inform Scottish Ministers of progress. It was used to inform the programme as a whole because some items that were discussed at the Panel Review were about interactions between projects, eg the tram project and the Airdrie/Bathgate Rail project. For subsequent Quarterly Panel Reviews TIE provided the required reports and information, although in some cases it required a bit of pressure.

40. The departure of the Tram Director was accepted as a valid reason for the non-production of the reports on that specific occasion, but it would not have been accepted a second time and the next four-weekly report was received. The review meetings were quarterly but they were based on a routine four-weekly report; TS did not want TIE to produce a special report for the quarterly review because that would have been producing more work. Every four weeks TIE gave a breakdown of their achievements and money spent in the previous period and projected spend in the next period so that they could request the appropriate funds from TS.
41. I note that in the minutes of the Panel Review meeting on 14 August 2006 (CEC01642261), it stated with regard to QRA and OB that *"This is currently in progress and will be delivered by the end of the month"*. There was an ongoing process over that summer between the programme team and TIE which was due to complete at the end of August. The ultimate output of that was referred to later on in the minutes, papers and advice I gave to Ministers about the QRA. It was wound up in the draft Final Business Case documentation, the first set of which came in autumn 2006. Later there was

discussion about advice from Dr Andy Park received on 13 November 2006, in which Dr Park had commented on the output to that process.

42. When TIE did not deliver an update to TS on OB and QRA in May 2006 there were follow-up meetings to track whether it would be delivered and it was work in progress until sometime in September/October 2006, when the information came in with the Final Business Case documentation from TIE. In that specific instance the action was tracked by meetings because of its importance but in the end there was not a separate standalone report because it was rolled into other information that had to be provided to TS anyway. In June 2006, due to the amount of work to be done, it was appropriate to roll the information on OB and QRA into the Final Business Case.

Procurement process

43. I am aware of an email from myself to John Howison dated 15 August 2006 (TRS00002689) in which I explained why there was a negative perception of UK Tram projects and CEC's ability as scheme promoter to deliver projects. I considered that they were fair perceptions. Attached to my email was a letter from Andie Harper to Bill Reeve dated 26 July 2006 (TRS00002690). My email was a minute from me to John Howison and it had gone to him because he was the delegated procurement authority for TS at that point, therefore he ultimately had a view on all the questions of procurement policy and he was kept informed. The attached letter from Andie Harper, who was then the Tram Project Director to Bill Reeve, stated "*It is a real risk that if we do not underwrite bidders bidding costs then we will have no bidders*". The risk arose partly from CEC's procurement record and partly from the history of UK tram projects; it was not just CEC that was the issue.
44. I recall that bidding for the infrastructure contract would have cost conservatively £3 to 5 million and bidders were willing to risk that in the event that the contract was awarded to another bidder. What bidders were unhappy about and what they were wanted reassurance on was that the project was

going to happen given the number of relevant projects that had been cancelled. The proposed Mersey tram project was cancelled after bids had been submitted. Similar cancellations had also happened for the CEC-promoted City of Edinburgh Rapid Transit (CERT) scheme and the Edinburgh congestion charging scheme. These were all projects that CEC had gone quite a long way with and had bidders before cancelling. In that situation any potential bidder would have thought that it was a lot of money to risk when there was a chance that nobody would win the contract and they would have gone and bid for another project.

45. At the time in July 2006, the London Olympics had been awarded a year previously and the organising committee was starting to finalise its procurement activity by inviting requests for tender. To gain bidders for the tram project TIE were competing in a civil engineering market that had other projects on offer for potential bidders. Therefore the concern was that bidders were not going to bid as they did not have confidence that CEC, given their track record, was sufficiently committed to see the tram project through to the end. The first direct consequence of that was that TS had to agree in the event of the tram project being cancelled that TIE could underwrite the bidders' costs. Had that happened there would have been a discussion between TS and CEC about who paid the abortive bidders' costs. However, ultimately, approval had to come from TS that TIE could underwrite bidders' abortive costs. That required me to ensure that John Howison was satisfied and John Howison had to ensure that colleagues in central procurement in Scottish Executive were also satisfied with that arrangement. That undertaking was given to bidders so in the end most of the contract was let. Therefore the losing bidder did not have any costs paid because there was a winning bidder. However, had the incoming administration implemented the SNP manifesto commitment to cancel the tram in May/June 2007 then both bidders would have been entitled to have their costs reimbursed at that point. In that situation where the Scottish Government had cancelled the scheme then the Scottish Government would undoubtedly have paid. If CEC had cancelled the tram project then there would have been a difficult discussion as to who paid bidders' costs.

46. Because TIE was the body who were responsible for the procurement, they were the one who had to offer the guarantee that the bidding costs would be reimbursed so they needed to know that they would have funds from the Scottish Executive to do that. The more serious situation that occurred was that there were only three bidders in the first place, one of whom dropped out which was Amec Spie. The bidders left were Bilfinger Berger (BB) partnered with Siemens and Bombardier partnered with Laing O'Rourke, the latter who promoted themselves as Tramlines. Those were the two final bidders who submitted bids for the infrastructure contract. Preferably it would have been better to have had three or four bids for the infrastructure contract but only two were received because of the competition in the general market place of civil engineering construction at the time, plus the upcoming Olympics, and the track record of UK tram schemes where several schemes had not gone ahead due to the Treasury's requirement for them to be PPP-funded. Also given the track record of CEC with other major projects being cancelled, it was hard work getting any bidders at all for the tram project and all the way throughout the procurement process that was an issue. Lack of faith in CEC was not the only problem that was being dealt with but it was a real problem and had TS not stepped in to underwrite the costs then I am confident there would have been no bids.
47. I recall that I sent an email to Malcolm Reed dated 30 August 2006 (**TRS00002720**), which considered the role of TS in the procurement exercise for the tram vehicles and infrastructure. TS did not participate directly in the selection of any contractor on any of the other rail projects: the Borders Railway, Airdrie/Bathgate, Waverley Station, Stirling/Alloa/Kincardine and the Glasgow and Edinburgh Airport Rail Links. The tram project was not the biggest, most expensive with greatest risk out of TS's projects at that time. That would be EARL which was bigger and more expensive in forecast costs at that point. TS had to ask itself if it had enough resource to provide procurement expert and did it have expertise that was not available to project promoters. For example, Network Rail had a great deal of expertise in procuring rail contracts and they had made their mistakes and learned from them.

48. Looking at the tram project TS considered whether TS could add to the expertise already present in TIE. Ian Mylroi of TS had some experience of procuring trams. TIE had, amongst others, David Powell who had bought and sold trams, worked for tram manufacturers and knew in detail what the specifications and issues were and what the commercial issues were in relation to running trams. TS would have added nothing to the procurement process in the way of expertise and Ian Mylroi would have had to devote substantial time to the procurement when he had other tasks. TS would have been another body involved and it would therefore have been less clear to everybody who was accountable for the decision. TIE were the procurement body under EU law. There was a risk that TS would have been perceived with having a right of veto or approval which would have been wholly inappropriate and not legal.
49. TIE was still recruiting its team for the Infraco procurement at that time. There was at first Andie Harper and then Matthew Crosse, who was involved with the procurement on Nottingham tram project. TIE were also recruiting other people with specific expertise such as Geoff Gilbert and Bob Dawson who had the commercial expertise for these contracts. Therefore TIE was building up its team and TS would not have given any additional value to that procurement decision. TS's role was not to pick the contractor but to look at whether the proposed process was good and, when applied in practice, what safeguards there were. TS's role was not to decide whether a tram from Siemens or Bombardier was better than one from CAF. We had to let TIE do their job and then check that the process was correct. Bill Reeve replied to my email above to say that TS needed to make sure that within TIE it was the people who had the knowledge who were making the recommendation and that the process for looking at that recommendation was solid. It was not Transport Scotland's responsibility or role to choose the individual contractor. CEC did not express any concern about the lack of active TS involvement in procurement. TIE were happy with the situation overall on balance and most people at TIE were glad because they did not want somebody looking over their shoulder.

50. I note that if TS was involved in the procurement process then there could have been a perception or possible challenge about who was the real decision-making body. The real decision-making body had to be TIE through their decision-making process. If TS was to participate in the selection process and provided nearly all of TIE's funds then the losing contractor could make the case that it was a flawed process. TS not being involved in a decision that they legally had no right to make gave the appropriate separation between TS's responsibilities for funding and governance and TIE's responsibilities for project procurement and delivery. The decision-making responsibility was TIE's, which was the procurement body under EU law. If those lines were blurred then it could give a lawyer the chance to try to claim that the procurement process was not as it should have been and I was concerned that that would be the case if TS had got involved. Had TS concluded that we had expertise that TIE did not have and should get involved, then we could have found ways to deal with that concern and I would have devoted the resource to do it, but it was an added complication that we did not need especially when TS involvement was not going to add value.
51. I cannot recall the exact sequence of appointments for TIE, however I recall that the TIE Board received advice at that time from Andie Harper, Tram Project Director, who had experience in rolling stock procurement. Also Geoff Gilbert and Bob Dawson were in TIE and both had commercial management experience in procuring large transport contracts, but not necessarily specifically trams. Their role was not the technical detail of the trams, but their role was to help procure large infrastructure contracts or large equipment contracts. Geoff Gilbert and Bob Dawson had been involved in lots of procurement for BAA at Heathrow Airport and had experience in commercial contracts. TIE also had David Powell who was an expert in trams, having previously worked for Bombardier and knew trams very well. TIE also had Andy Steele who had been involved giving technical advice and previously had been involved in light rail schemes, most notably in the Midlands but also elsewhere. TIE had a suite of people who understood the commercial and the technical aspects of a tram project and there was nothing that TIE were

lacking in that department. TIE also had detailed discussions about currency hedging, because as the trams were not built in the UK, the costs of the bidder were not in pounds however they were bidding in pounds. TIE had expert advice from David Powell as well as KPMG on pricing the risk of future exchange rates and had people who understood all the commercial and technical aspects of purchasing different types of trams. I was confident that TIE had their team in place for the tram vehicle procurement.

52. In August 2006 TIE were in the process of hiring a new permanent Tram Project Director as Andie Harper had taken on the role of interim project director since Ian Kendall left in May 2006 and had no wish to be considered for the role on a permanent basis. The permanent tram project director who was appointed was Matthew Crosse. TIE needed a project director who had been involved in the civil engineering contract of a tram infrastructure project. In August 2006 TIE had the core of its team for the infrastructure contract but were recruiting to reinforce that team. Some of the necessary technical expertise was there in Andy Steele and his colleagues from Turner and Townsend (T&T), who could assist with advice on technical and design matters such as whether bidders were offering a good signalling system. TIE were recruiting specifically more in terms of civil engineering management rather than the systems, which I was aware of as I had seen adverts for it in the press. TIE were not ready for Infracore in August 2006 because they had not finished filling their team but did they had the roles identified and the process in place to recruit and fill the teams.
53. I am aware of Bill Reeve's reply to my email on the procurement of tram vehicle and infrastructure contractors, dated 30 August 2006 (TRS00002719), in which he noted the reputational damage if the wrong decision was made. I recall the disastrous West Midlands tram project where they bought trams that effectively did not integrate with their infrastructure. I cannot recall the exact details, however they had a clash between their infrastructure and their vehicles. I agreed that if TIE bought trams that did not fit on the tracks or alterations had to be made to the infrastructure to fit the trams to any meaningful extent then that was not good. There can always be some tweaks required

once TIE had chosen a specific vehicle. What was called the developed kinematic envelope (DKE), varied from tram to tram as to how far it tilted when it went round corners and if it tilted what it might hit. There were always bits of integration like that to be dealt with and the interface between the wheel and the rail was standard engineering.

54. What happened in the Midlands was a bigger issue and was altogether difficult and expensive to resolve. If that happened with the Edinburgh tram project then it would have been disastrous. To minimise that risk, TS had to look at the criteria for selection for the trams, which we did and took account of the fact that it had to be able to fit with the infrastructure reasonably easily. That also took into account the expertise of those who applied the criteria and would make the recommendation, such as David Powell, Geoff Gilbert and Bob Dawson's commercial input and the advice from Andy Steele. It would have been legitimate for TS to express a view on the acceptability of any of the qualified bidders, which TIE could then agree or disagree with. If there had been a position that there were three good bidders and there was a bidder whose consistent track record was poor, then it would have been legitimate for TS to ask TIE why that bidder was a contender in the later stages. TIE set the criteria for bidders that they must reach a level of technical competence. In the Tramco which was the first instance, there were four bidders all of whom made trams regularly for systems all around the world that worked well and all of them were capable.
55. With Infraco TIE ended up with two consortia, where there was BB with Siemens, and Bombardier with Laing O'Rourke. Both parts of both consortia had built tram and heavy rail systems and had the expertise required. In relation to the Infraco contract. There was no question in my mind that BB were eminently capable of carrying out the contract and could do it right and without arguing contractually if they wanted to. In 2006, BB had an excellent track record at that point. TIE had applied a test of track record to their bidders and had a criterion for selection which was around track record and ability to deliver. Every bidder who was in the later stages of the competition had passed that threshold.

56. To comply with EU procurement law and to ensure fair competition TIE was at pains to shortlist and then select the preferred bidder based on detailed evaluation against the criteria that had been approved before the Invitation To Tender was issued. To prevent any political interference in bidder selection TIE followed the model TS had used in letting the ScotRail Franchise – namely that decision makers awarding the contract were told which companies were bidding but each company was given a code name. Only those undertaking the detailed evaluation and making the recommendation knew which company had which code name. In particular, this guarded against decision makers being influenced by the nationality of the company bidding.
57. For the tram procurement, the companies bidding were Spanish, German, Canadian and Korean so there was not a UK offering on the table, but there was on the Infracore where there was a German consortium and a British/Canadian consortium. TS and TIE discussed this issue and TS recommended the code name approach which TIE adopted. In the case of the tram vehicles the bidders were named after four characters in '*Bob the Builder*', however I cannot remember whether it was Scoop or Roley that was the recommended winner. The people who took the decision and endorsed the recommendation were satisfied that the process had been followed and that the detail had been looked into properly. However, the decision makers did not know until after they had awarded the tram building contract that they had chosen the Spanish tram builder CAF. Only the people who made the recommendation knew that and the step of anonymising the bids was taken to avoid actual or perceived political intervention in the decision.
58. In my email reply to Bill Reeve on 7 September 2006 (TRS00002732), I referred to the skill sets that TIE had and was urgently acquiring. It was more important to increase the chance of being successful than to have an artificial barrier from risk, not least because if something was to go badly wrong in the public sector it would always find its way back to the Scottish Executive in one form or another. Whether by having to find cash to bail somebody out or, even

if Ministers refused to provide additional funding, then the reality was that we would just get less of what we wanted for the funds provided.

59. In hindsight it remains questionable whether TS would have added value to the detailed evaluation of bidders. I believed that TS maximised the chance of success by setting clear criteria for the Evaluation Panel, confirming their competence and challenging their proposals constructively as part of the Tram Project Board and the design and procurement sub-groups. I agreed with Bill Reeve that it was more important to be successful than to separate TS from any possibility of risk but I disagreed with him about how we best maximised success.

60. There were other instances where that arose, with regard to the legal and constitutional role of Scottish Ministers and TS and what was and was not legitimate for a Civil Servant to do. Bill Reeve was more inclined to be interventionist, especially in technical matters, than I was. I was more focussed on the governance structure than direct intervention and that reflected our different backgrounds. I was a career Civil Servant at that point, trained in the ways of the civil service, very clear on the constitutional framework and the requirements of the Scottish Public Finance Manual. Bill Reeve had come from outside the civil service and did not have that background and what we had was a constructive tension. It challenged me to raise my game and focus and we agreed on the outcome of reducing the risk, maximising the chance of delivery and although there was no response to that email, Bill Reeve accepted that I was right. Bill Reeve had challenged me to think constructively and what we had was a better outcome. This exchange was typical of interactions with TS on the major projects and of interactions between me and TIE throughout that period. If I challenged issues constructively then I would usually get a better answer from TIE. Sometimes TIE would do what I suggested and sometimes they came back with good reasons why they would not. It was a process where people were not unthinkingly following a book or a process, but it was a process where people were trying hard to deal with difficult problems and achieve a better answer by having a debate and a discussion rather than just doing it by numbers.

Separation into Phase 1a and Phase 1b, indexation and funding allocation

61. I am aware of the email I received from Geoff Gilbert dated 21 November 2006 (CEC01797672), with the attachment dated 15 November 2006 (CEC01797673), which set out a revised process to award the Tramco and Infraco contracts. The primary reason for the revised process was that with the current state of the design the indicative price for Phase 1a and Phase 1b exceeded available funding.
62. Originally the procurement strategy was to contract to deliver phase 1a plus 1b as a single contract. Mr Gilbert now proposed letting a contract for phase 1a, with a separate priced option from bidders for phase 1b. Therefore TIE would enter into contract on the basis of delivering phase 1a at a price from the contractors that did not assume that phase 1b would be delivered. The concept was that once TIE was confident it could afford both Phase 1a and Phase 1b it would trigger the option for 1b.
63. At that time there were lots of discussion of savings that might be made through value engineering and these discussions continued throughout the procurement process and the early stages of the construction phase but the headline price was too high for phases 1a and 1b together to be affordable at that time.
64. A major factor in the bids not being as low as TIE had forecast had to do with the design delay. The design should have been more complete and more approvals secured by that time so that the Infraco bidders could have bid with less risk premium in their bids. Design delay was a major factor in delays to the procurement and delivery of the Infraco contract.
65. I recall that line 1a was prioritised because TIE could not afford all of phases 1a and 1b at that time. The BCR for the tram project was calculated over 50 or 60 years. However, if the tram project was to be carried out in phases then the long-term BCR did not reflect which part of the network delivered most benefit in the short-term and would best be delivered early. Patronage for Phase 1a would be well established from the start and would grow steadily. The good

forecasts for phase 1b depended on businesses, offices, housing and other developments that had yet to be built in Granton. Phase 1b brought more benefit but it brought limited benefit in the short-term when there was much less patronage. It was a sensible decision to phase the tram project if the long-term objective remained to deliver both phase 1a and phase 1b.

66. I recall that in an email to Bill Reeve dated 24 November 2006 (TRS00003127), I referred to an attempt to bounce TS and Scottish Ministers into contributing more to the tram project. I am also aware of Tom Aitchison's letter dated 23 November 2006 (TRS00003119). At that time, CEC had been promised £375 million index-linked, and if TS's forecasts were correct would have turned out to be between £450 and £500 million. There was always a question of stating a price in 2004 and by the time it was built it was inevitably more expensive because of inflation. Inflation in construction had little, if any, relationship with the Retail Price Index (RPI) or Consumer Price Index (CPI). Construction inflation tended to go very high and sometimes negative, whereas RPI and CPI were much more gradually changing. Scottish Ministers had stated that they would provide funding of £375 million index-linked, which was £450 to £500 million in cash, however that was not enough to include phase 1b so CEC was trying to get Ministers to commit that they would put more cash into the project in order to include phase 1b.
67. Scottish Ministers had decided that £375 million index-linked for at least phase 1a was an acceptable interpretation of the Partnership Agreement's commitment to investing in a tram network in Edinburgh. To change that interpretation would probably have required decision by the full Scottish Cabinet. Therefore even if Malcolm Reed had wanted to meet CEC's request he would have had firstly to get the Transport Minister's agreement, and, for a realistic prospect of success, support from the Finance Minister. The two Ministers would have had to take that to Cabinet, or the Transport Minister could have asked for a Cabinet discussion knowing that the Finance Minister did not agree in the hope that Cabinet would overrule the Finance Minister. The latter option was not likely but it was theoretically possible. TS could not at the last minute ask for extra funding or say that the project would not go

ahead. That was what I meant by trying to bounce Ministers. Promoters always wanted money and they were always wanting to apply pressure politically to get funds rather than go through the conventional process because they perceived that if they approached Ministers at the right moment politically, that it was an easier method than persuading the Civil Servants by providing all of the evidence. CEC were not the only people who were attempting to ask for money at short notice in the hope that they would receive it. To an extent, there was an element to which that was the way the world worked, where people would try that approach with Ministers. What happens next, largely was also how the world worked, which was that Ministers stated that there would be no more funds, and they were not promising any more funds than had already been promised, and certainly not six months before an election.

68. In terms of Tom Aitchison's letter no one was surprised or upset that he would ask for more funding but he was not going to receive any more. What the Scottish Ministers did to resist the request was they repeated what their commitment was in the tram project of £375 million index-linked and that it was CEC and TIE's responsibility to bring in at least phase 1a for that amount and if they could afford phase 1b as well with that funding, then that would be approved by Ministers.
69. I am referred to an email sent by Graeme Bissett dated 30 November 2006 (**CEC01820789**), with attached proposed drafts of letters (**CEC01820790**), (**CEC01820791**) and (**CEC01820792**), which suggested TS would commit further money for the full phase 1 network. I am also referred to an email from Bill Reeve to John Ramsay and others dated 12 December 2006 (**TRS00003210**), where Bill Reeve said such letters should be sent. A letter was sent by Tom Aitchison to David Mackay at TEL on 13 December 2006 letting TEL know that TS might up their funding (**TRS00003220**). Bill Reeve was acting inappropriately when he says that the letters should be sent. He was significantly exceeding any authority he had from Scottish Ministers and he was misleading TIE and CEC into believing that Ministers would review funding before the 2007 elections. It turned out the reason that these letters

were being sent in the first place was because Bill Reeve had led TIE senior officials to believe that the request would be welcome and if they made the request then TS might be able to secure funding to carry out phase 1b. Regardless of whether or not that would have been a good thing, Ministers had made a decision that there would be £375 million for the tram project and no more. It was inappropriate for a Civil Servant to be encouraging a promoter to ask for more money. Several times I had been in a situation where I had been asked by promoters how they would ask for more funds and I had advised that they would have to write to the Minister and set out why with an explanation and provide the evidence. That was perfectly legitimate because the promoter would be providing the evidence and the Ministers would consider the request. I had also been known to advise promoters that they needed to be aware of Ministers' announcements, that there was not spare cash lying about, therefore it would be a tough sell but they were welcome to try. Bill Reeve had gone beyond that and encouraged TIE to believe that they were pushing at an open door. He had proposed that TS could effectively semi-publicly support CEC's request for more money to Ministers as if TS were separate from the rest of the Scottish Executive. TS was in no sense separate, it was an executive agency of the Scottish Ministers. It was not a non-departmental public body, it was part of the Scottish Executive, branding it as TS was partly about creating a clear focus on delivery and it was partly about the personal accountability of the Chief Executive in accordance with TS's framework document and the rules governing executive agencies. However TS was still, fundamentally, part of the Scottish Executive and Ministers could directly instruct TS and TS had to do what it was instructed to do. TS could not act as if it was a separate entity and unfortunately in that instance Bill Reeve had done so. He had encouraged TIE to believe that they would receive a positive answer and that Malcolm Reed would respond to the request positively which was why there was a phone call.

70. Whilst CEC and TIE were attempting to bounce TS into providing more money, what the trail revealed was that Bill Reeve was at the very least aware of what was going to happen and was okay with that. Beyond that I believed he was encouraging that to happen, and that was not constitutionally

appropriate. That was why there was a difference of views about whether the letter should be sent. My position and Malcolm Reed's position was that Ministers had told us what they wanted. TS could only change and do something different if Ministers told us to and we could not publicly take a different position to Ministers. The advice said we did not support phase 1b because it was not affordable within the evidence provided. Later on 30 January 2007 I sent an email to Lorna Davis (TRS00003584) in which I explained for the record why the letters had not gone. I sent this email partly for the record and partly because there was an extent to which what Bill Reeve had done had put John Ramsay and Lorna Davis in a difficult position. Bill Reeve had told them to get the letters ready to be sent and tried to persuade Malcolm Reed to send them. They had received instruction from a senior official which they would naturally wish to follow but had had concerns about the nature of the instruction. TS was an executive agency and not in a position to say anything beyond that which the Minister for Transport had already said publicly. I had quoted the parts of the draft letter in my email to Lorna Davis where the letter went beyond that. The letter that TS were being asked to sign implied that there had been no decision taken about more funds when the Minister had already stated to Parliament that there would be no more money. TS would have sent a letter that contradicted the Minister without the Minister's express agreement: that would have been a significantly wrong thing to do. Therefore in that situation what we had was one member of the TS team who had broken the separation of roles about who was responsible for what and to whom they were accountable and had misled CEC and TIE.

71. The outcome of the discussion for more money for the full phase 1 network was that Ministers' position remained as stated in March 2006: £375 million was available in 2003 prices, which was index-linked, for at least construction of phase 1a. The Minister's position was that the tram at that point was in procurement. There was not a definite price and there was not a definite contract. The Minister's commitment was £375 million indexed which would turn out at a number expected to be between £450 million and £500 million. The final amount of £375 million could have been less than £450 million or it

could have been more £500 million depending on indexation, but that was a reasonable range and if it had gone outside that range then Ministers would still have been responsible for paying the difference. However, Ministers had said that that was what they would provide for phase 1a and if CEC could find enough money to fund its share of 1a and there was enough spare left over to build phase 1b, then that was fine.

72. In parallel with the requests for more funding and consideration of the business case discussions were also taking place - which were never concluded - with CEC about what would happen if, despite a forecast at the time of contract award of £545m or less, the outturn cost was over £545m for reasons other than higher than expected indexation. For example, in the event of the final project cost being £580 million, who would pay the £15 million extra? Ministers had made a commitment to £375 million but that was not a capped commitment at that stage, and before a final grant for such a large sum of money, which would not be made until the summer of 2007, there had to be an agreement about what happened if the cost overran. There were discussions about options for what happened if the cost overran, but these discussions were not concluded, no final agreement was reached and there was no cap at that stage.
73. A cap was one of the options considered that stated if the project overran beyond £545 million then it was entirely CEC's responsibility, however that would not have been consistent with other projects. There was a question, despite everybody's best intentions, of what happened if the money for phase 1a was not enough. Those discussions were programmed to resume and be concluded after the election and before a contract was awarded. Those discussions never took place because of the results of the election.
74. The letter that came from Tom Aitchison on 13 December 2006 (TRS00003220) stated that there was a price for phase 1a and 1b and that price was an indexed price expressed as an expected cash sum. At that point TS had not seen the detail of how that indexation had been calculated. TS had not seen the detail of the Infraco bids, it had not seen the detail of how

the risk had been allocated and then it had not seen how indexation had been applied to that programme. It would not have been possible to say at that time that the £592 million quoted by CEC at that time was calculated consistently with the £545 million that was calculated elsewhere in terms of the indexation as there was no evidence offered by TIE and CEC at that time. Therefore it was not safe to assume that it had been indexed and that the calculation with regard to OB had been done consistently. Nothing was done to resolve that particular issue about the status of the £592 million figure because there was no need to resolve it because TS were not increasing funding for the tram project anyway. In terms of application of indexation to phase 1a, Cyril Sweett sat with TIE and went through in detail what indexation they had applied and whether they were satisfied. There were detailed notes kept somewhere about Cyril Sweett's programme review.

Business Case for the Trams

75. I am aware of the advice from Andy Park on 13 November 2006 (TIE00002892) and (TIE00002893), in which he stated his concern that the Benefit Cost Ratio (BCR) for the tram project has been miscalculated. It was clear that what he had highlighted was a possible problem and not a definite problem. Dr Park had found what appeared to be an error in the calculation in the BCR and I was not qualified to argue with him whether it was an error or not, although I was able to understand what he was saying and how the BCR calculations worked. Essentially there was an argument here that factors that should appear on both sides of an equation only appeared on one side, and that was a technical mistake by TIE in doing their BCR, which was at that point work in progress. There was a table at the back of the document (TIE00002893), which showed that in Andy Park's view the likely BCR estimate for phase 1a was 0.63 and even the best case scenario appeared to be less than 1.
76. I was concerned because if Andy Park's recalculation was right then it showed that in terms of the benefits and costs that can be monetised, that the tram had more costs than benefits for phase 1a. It had to be borne in mind that

Andy Park was doing a late on adjustment to the calculation only and not going back to the original model and following it all the way through. It was not Dr Park's intention to recalculate the BCR for TIE definitively but instead to illustrate for TS and TIE the scale of the potential error.

77. Scottish Transport Appraisal Guidance (STAG) is clear that projects are to be judged against five criteria, only one and a half of which feature in the Transport Economic Efficiency (TEE) tables. Therefore a BCR of less than 1 is not an automatic indication that a project is not worthwhile; equally a BCR of greater than 1 does not mean a project is a good one. Projects cannot be boiled down to a single number for appraisal. However, a BCR of less than 1 is certainly cause for concern and indicates that the tram project would only be worth doing if there were other factors that cannot be monetised that would bring sufficient net benefits to justify the scheme.
78. When Andy Park's recalculations showed that TIE's calculations were badly wrong, that was a significant issue, and it did say that there was a possibility that the right thing to do was to say we should stop or we should only do the tram project if TIE could definitely afford phase 1b. The recalculations in Dr Park's paper suggest that the phased delivery of the tram project was potentially not good value for money. It was always TIE's and CEC's intention to deliver the full network of Phase 1a and Phase 1b followed by Phase 2 and/or the line to the new Edinburgh Royal Infirmary. Therefore Andy Park's recalculations were taken seriously and we had to look at them and understand whether what Andy had done was correct or what TIE had done was correct. There was a possibility that both were wrong and further work was needed by TIE to complete the calculations correctly.
79. TS's first action was that John Ramsay sent a note about those areas in the transport economic efficiency tables to TIE for them to consider. I then followed up with TIE, particularly Stewart McGarrity who was responsible for the final business case, and asked them what they were going to do in response to the challenge to their calculations by Andy Park. TS made it very clear that it was not acceptable for TIE to keep changing the figures until they

had a number that they liked. CEC, TIE and TS had guarded against this risk through the appointment by TIE of an independent auditor of the passenger and revenue forecasts. At this time I reiterated that TS wanted to see the Audit report as part of the Final Business Case and would rely on the Professional Indemnity of the people who did the modelling to provide unbiased results. That was not a new condition because all along TIE had a separate company auditing and carrying out the modelling of passenger numbers, revenue and other factors because the Business Case was so dependent on those calculations. Essentially TS had alerted TIE to a big problem and stressed that we wanted to know what the real answer was. TS wanted to see that TIE had calculated the BCR correctly but also that they had it independently audited so that we could believe that they had not just adjusted the model's assumptions until it gave numbers that suited TIE.

80. I am referred to the Panel Review of Major Projects on 24 November 2006 (CEC01358732), where it stated that *"in the DFBC documentation, there are a number of figures which have either been incorrectly quoted and correspondingly do not make sense or are results of more recent work which is not apparent from the overall documentation"*. One of the problems that was faced, driven a little by the election but more by the procurement timetable and the cost of delay, was the tight timescales in which the Draft Final Business Case (DFBC) had to be considered and, if appropriate, approved. Issues such as the one raised at the Panel Review arose partly because TIE did not have enough time to proof read the DFBC properly so there were areas of inconsistencies in it. Parts of the DFBC reported the results of earlier versions or calculations and other parts of it had updated calculations. The fact that the DFBC had been updated in some parts but it had not been updated in other areas was due to the fact that the work on the DFBC had been done too quickly. There was an element of less haste, more speed would have benefited the work carried out on the DFBC. TS appreciated the early sight of the DFBC so that we were able to offer helpful comments but TIE had to get the numbers consistent and we told them that. A second set of problems was that TIE were saying that the audit report was not complete and we confirmed that the audit report was necessary so that we could complete

the process. If TIE had not got the independent audit then they could not move forward with the process.

81. I recall that I was copied into advice received from Cyril Sweett dated 27 November 2006 (TRS00003141). The advice raised a number of issues involving cost, risk and time. It was for my professional advisers to advise me and that was what they were doing. It did not surprise me that Cyril Sweett had that view but it was not for me to agree or disagree with them. That was part of a whole process at the end of which included the advice to Scottish Ministers which had several technical annexes. Information from the Cyril Sweett report influenced those technical annexes. The second page, which was numbered 1 because there was no covering sheet, asked the question "Does this mean that no allowance for Optimism Bias is now included?". That question went back to TIE and I recall that TIE took the view that they had approached risk and contingency and because of the rigorous risk and contingency, if OB was added on top then it was double counting. That was possibly methodologically acceptable but was unusual and needed flagging. I did not know how risk and contingency had been calculated at that time because we did not have all of the information. I sent advice to Scottish Ministers which covered that matter, as in the draft Cabinet paper dated February 2007, (TRS00003840). In the draft paper it stated that "*Transport Scotland's view of costs is more cautious than tie's and their cost estimate for Phase 1a lies in the range £510-545m... It is therefore probable but not certain that phase 1a will be affordable without the need for additional funding from City of Edinburgh Council.*"
82. Preparing advice to Ministers including the draft Cabinet paper was a rigorous process of looking at information, receiving advice from different advisers and assembling it into a single coherent view that people had signed off on. When it came to discussions on the BCR with Andy Park, TS did not know how the contract sum was arrived at so we asked for further information. In the final update of the DFBC there was some information provided but I cannot recall the detail.

83. In my view, Quantified Risk Assessment (QRA) was a list of identified risks along with the probability that each of those risks would happen and the cost of each risk if it were to occur. There was a simple way of calculating the QRA which was to take each risk, multiply the assigned probability multiplied by the cost if it occurred and then add up the result for each risk to give a total QRA. This was not a very sophisticated way to do the QRA and not appropriate for major projects. Another option to calculate risk allowance was to undertake Monte Carlo analysis where the risks were simulated by running them through the model hundreds or thousands of times, and at the end of that it would have calculated the average risk, giving the probability as a percentage that an amount of money would be enough allowance for risks. For example, a probability of 90% that a certain amount of money was sufficient allowance for the risks. TIE carried out the more sophisticated approach although I cannot recall whether it was formally a Monte Carlo analysis or whether it was a variant of it that adopted the same principle. TIE carried out the statistical analysis which resulted in a probability analysis of the risks and allowance for them. The normal probability percentage for that type of analysis in Government was 50% or 80%. TIE had worked out a QRA where they calculated there was a 90% probability that the QRA would cover known risks.
84. On top of that quantified risk assessment, TIE had to allow for risks that they had not identified. These might be project risks that weren't on the risk register or wider developments that would impact on the project but over which the project had no control, such as the financial crash. It could have been argued that a change of Government and a new Minister coming in and attempting to cancel the scheme should have been included in the Quantified Risk Assessment but I do not know how that could be quantified. There were risks that were either unquantifiable or unforeseen and then there was the tendency of promoters to always believe that problems took less time and money to solve than they actually did. For example, with regard to value engineering, there was an assumption by TIE that it would be easy to achieve a saving of £3 million by changing the thickness of the concrete slab on which the track sat, therefore reducing the depth the road had to be dug. In reality that was horribly difficult to achieve, to the extent that getting the contractor to agree to

carry that out and give money back was even worse. There was a naïve belief that it would be an easy saving to achieve.

85. In my opinion, Optimism Bias (OB) was added to projects to deal with the fact that promoters would always assume that circumstances would be better than they were. Whereas, contingency allowance was a sum of money that was not allocated because of an awareness that when all the risks had been collated, there was bound to still be some unknown risks. There was an overlap between OB and contingency. OB in the first instance was solely to do with economic appraisal. For example, if a project was forecast to cost £100 million but from experience of other projects that had gone before it showed that the project would more likely cost £144 million, then the BCR should be calculated on the basis of a cost of £144 million to give a more realistic BCR. That was how TS dealt with OB when it first came in around 2003. At that point OB was not about real project budgets; it posed in economic appraisal terms the question whether a project was still worth doing if the optimistic scenarios that the promoters had put forward did not actually happen. Later on TS began to consider – as part of wider Scottish Executive practice – whether OB should actually be factored into budgets. The problem of factoring OB into budgets was if a project had been announced to be built for £400 million adding £100 million for OB, then bids from contractors would not come in much under £400 million, and therefore OB became a self-fulfilling prophecy. In fact, there was the risk that having announced a budget of £400m and secured bids consistent with that budget OB would still need to be added onto the £400m. Including OB in the project budget could mean that you would have to pay it twice!
86. The application of OB to project budgets was still under development in late 2006 when the Tram draft Final Business Case was being finalised. That was why at that point in time there was no clear guidance about how to deal with OB in the forecast costs of the tram project. There was only a view on how to deal with OB in terms of economic appraisal and even that guidance, at that point in time, was not fully developed. The guidance at that time was about how to work out what OB was at the start of a project and how that could be

mitigated as the project was developed and the guidance did not give any useful formula that could show if certain risk was eliminated then OB would be reduced by a certain amount.

87. I understand that since I left Government there has now been detailed guidance issued about how to apply OB to project budgets but the state of knowledge and the state of guidance at the time of the tram project was such that there was scope for a lot of different approaches which would produce significantly different answers. With the guidance that I had available to me at the time, what TIE did with OB was not wrong. It came down to being a judgement and being fair about what was in the draft Final Business Case and TIE's approach was fundamentally to make a high risk allowance that would cover 90% of known risk and include a contingency sum for OB. That approach is no longer recommended and with hindsight you could understand why but at that point in time it was a legitimate way of doing it.
88. With regard to MUDFA, TIE had had to estimate the quantum of diversions to be undertaken. As part of deriving their estimate they had done some trial digs but it would have been unduly disruptive to undertake a substantial programme of trial holes. The estimate was therefore mainly based on experience on other tram schemes. TIE made the conservative assumption that Edinburgh would be significantly more difficult to work in than other UK cities had been and included an allowance for the risk that their assumption had not been sufficiently conservative. That estimate was then included in the draft Final Business Case. I am confident that the estimate and assumptions were examined by Ken Davis of Cyril Sweett and by Lorna Davis and John Ramsay of TS and that they asked appropriate questions of TIE.
89. The quantum allowed for MUDFA is a particularly relevant example because that was one of the instances where the allowance proved to be insufficient despite TIE's calculation that it was 90% probable that there was enough money to carry out the utility diversions. The quantity of diversions required was higher than anybody could reasonably have forecast and what they found when they started digging in the streets of Edinburgh was a lot worse than on

any other tram scheme. It was a lot worse than anybody had reason to believe, from the records and from the relatively small number of trial holes that had been dug. It was a one of the kind of circumstance where an allowance had been made but the allowance turned out not to be adequate. Looking back, even with hindsight, I cannot see how anybody could have sensibly made a large enough risk allowance for what happened in the way of utility diversions and TIE was simply unlucky.

90. With regard to the advice received from Cyril Sweett dated 27 November 2006 (page 4, TRS00003141), what was being said about the P50 and P90 cost risk confidence figures was that expressing percentage uplifts gave a false impression, and that was true because it tended to confuse the OB and the QRA. OB was an across the board percentage uplift and these were calculated figures based on specific risks and the percentage value was not relevant. Nevertheless, the figure that came out was that 12% was a sensible amount here. What Cyril Sweett were legitimately stating was there was the risk that people may confuse the two separate issues of OB and QRA, and that could possibly be seen as a deliberately attempt to mislead or not.
91. I note that the advice received from Cyril Sweett dated 27 November 2006 (page 6, TRS00003141), stated that "*little float exists within the programme*". I agreed with that statement. There was not enough float in the DFBC programme for the end date to be credible. The DFBC programme also assumed that Ministers would approve the business case by end December 2006 when TS had already made it clear to TIE that no decision could be taken before the first quarter of 2007. I did not raise this specific issue with Ministers at that time because TS had already briefed Ministers that TIE were probably going to be six months behind the DFBC programme. That forecast delay was include in Mr Scott's announcement to the Parliament on the expected delivery dates and costs for all the major public transport projects.
92. One of the fundamental underlying problems of the tram project was the mentality that created the "*little float*": TIE would have been better to say that it was going to be six months later than they originally had said, and added six

months of float to their programme but TIE found that very difficult to do partly because of internal culture but mainly because of external factors. In terms of internal culture, TIE was staffed with people who were driven to succeed and who didn't accept that delay was inevitable: this determination to deliver was admirable but placed additional stress on the programme.

93. In terms of external factors, TIE would have had more chance of early delivery if they had set a more realistic target delivery date and tried to deliver early but felt this would have generated public criticism rather than been welcomed as a realistic approach. The perceived consequences of admitting that earlier estimates were wrong led to a dynamic where TIE persisted in removing float from the programme to a level that was not realistic. Although Ministers had already publicly backed a more realistic programme, it was very understandable for TIE to try to avoid giving opponents of the project the opportunity to say I told you so. For all the major projects, but especially for the tram, there were people with political motivations who were looking for evidence of delay to lay blame. In that atmosphere it was difficult for promoters to say that they had looked at a project and were still aiming for the initial delivery date but in all honesty they were more likely to deliver six months later. If then everyone agreed the delivery date would be six months later, the chances of overrunning and costing yet more were less. Sometimes it was better to be sensible, although it was not favourable, to accept the circumstances and have a realistic view of delivering.
94. That programme dynamic was an issue throughout the tram project and I am not certain how a more realistic discussion of delivery dates can be achieved. Ministers made an attempt in 2006 and early 2007 to tackle this issue but progress would require a similar attitude from opposition politicians and local and national media. That consensus will be difficult to achieve. If somehow promoters were operating with incentives to set a realistic programme and in an atmosphere where promoters did not feel it was the best option to take the float out of the programme, that would improve the chance of effective and efficient delivery but I do not think that it would be realistic to expect to operate in such a positive atmosphere. The atmosphere surrounding the tram project,

especially in the run up to local and national elections did not help TIE best manage issues like that. TIE could be criticised for not declaring the situation after the election, once it was clear what was happening but during the run up to the election TIE had fallen into a mentality in the tram project that it was much more desirable to reduce floats to unrealistic levels than it was to admit that delivery could be delayed.

95. I am aware of an email Andy Park sent to me dated 18 December 2006 (TRS00003240), in which he expressed concern regarding the BCR and referred to the Investment Decision Making Board (IDMB). Andy Park was a professional economist who had some concerns about the assumptions that were made by TIE. Dr Park was the professional economist and it was his job to raise the concerns, it was not my job to agree or disagree with them. My job was to take the concerns seriously and to put them with all the other evidence that we have collated. I took the concerns raised by Andy Park seriously and highlighted the sensitivity of the business case to TIE's assumption on the value of In Vehicle Time based on stated preference surveys. Dr Park was not saying that the assumption was wrong but he was saying if you made a slightly different assumption, then it had a big impact. So he had to highlight that and it was consistently highlighted in the IDM paper (TRS00003241), in the submission to Ministers and it was made very clear both in the paper and in the annex.
96. The IDMB was part of the financial accountability structure of projects and part of how TS complied with the requirements of the Scottish Public Finance Manual that were in force at that particular date. Now, over 10 years later, I understand that the Scottish Public Finance Manual gives different advice, but at that point every project had an Investment Decision Maker (IDM). That person would have been a senior Civil Servant and was accountable for the decision and on whose advice Scottish Ministers relied. There was also a project owner, or as they were referred to at that time a Senior Responsible Officer (SRO) for ensuring that while making that investment decision, the IDM had a fair, accurate and comprehensive picture of what was going on in the project. So in that situation Malcolm Reed was Chief Executive of TS and

was the IDM, and for the Edinburgh tram project I was the SRO. There was a differing line in accountability for finance than for day-to-day management, so in management terms Bill Reeve was my boss and he was responsible for approving my annual leave and doing my annual report, but I was accountable for the financial management of the project directly to Malcolm Reed who was the IDM. That meant that Bill Reeve could not tell me not to report to Malcolm Reed and while I would listen to Bill's advice ultimately it was my responsibility to decide what was reported to Dr Reed and how it was reported. Bill Reeve could suggest to me that it would be better describing something a certain way, but ultimately he could not tell me to do something a certain way. Bill Reeve could make an argument to me and it was my job to take his argument and everybody else's arguments and present them, and I was accountable to the IDM for whether I did that correctly or not.

97. The Scottish Public Finance Manual was geared for the expectation that a person seeking guidance was going to make one or two big financial decisions. It was not geared for the sort of business that TS was, funding eight or nine major public transport projects, a rail franchise, concessionary fares and a lot of major road projects. As Chief Executive of TS Malcolm Reed wanted strengthened support for him in his role as IDM. Together with Frances Duffy, who as Rail Policy Director did not have delivery responsibility for any of infrastructure Malcolm set up the IDMB to make sure that all those with a relevant interest were consulted and their voices heard. This ensured that an SRO was not just presenting a blinkered view of their project and was taking account of wider transport policy as well. The exchanges between Andy Park and myself were a normal part of preparing an IDMB paper and served to make sure that the IDMB had the best information available when considering the tram project.
98. The IDMB was part of the process of considering TIE's request for a further grant of £60 million. This represented a step change in the quantity of funding as the project geared to enter the construction phase. I had to explain the purpose of the request, the state of the business case, the proposed grant conditions (in general terms), the proposed advice to Ministers and make a

recommendation as to whether to make the grant or not. The role of the IDMB was to challenge my proposals to make sure that I had done what I was supposed to which was look at all the costs and benefits in a fair and comprehensive way. The IDMB members would also offer constructive advice based on their experience with other projects. The IDMB was one step in the rigorous process of receiving information from TIE, everyone looking at that individually, gathering all the views together into a comprehensive account that went to the IDM and Scottish Ministers. I found taking papers to IDMB to be a demanding but very useful process.

99. Malcolm Reed had both my recommendation and the view of the IDMB when he took the decision to sign the advice to Ministers on 20 December 2006.
100. I am aware of the paper to the IDMB dated in December 2006 (TRS00003219). The paper contained Annex B which was jointly written by me and Andy Park. When it became an annex to the submission to Ministers it was signed from both Rail Delivery Directorate and Statistics, Economics and Analytical Research. By signing Annex B jointly we were saying that the those responsible for delivering the Partnership Agreement commitment and those responsible for providing the professional advice on the Business Case, both agreed that the statement of the strengths and weaknesses of the Business Case were correct and was the best advice that they could give. I asked Andy Park to communicate directly with TIE about his concerns. After he did that he said he had seen what TIE had used to assess potential passengers' preferences and he now understood why TIE had weighted it so highly, and he agreed with TIE that this was reasonable. By February 2007, Andy Park was much reassured, but that was not yet the case when we wrote the original paper.
101. I am aware of an email Andy Park sent to me and John Ramsay on 7 December 2006 (TRS00003176), where he "tentatively" suggested that the project may be quite difficult to defend on economic grounds. He had not reached a conclusion that it was difficult to defend on economic grounds. It showed that he was not particularly looking forward to looking at the detail of

the project. It flagged to me that there was a risk if Andy scrutinised the detail that it may not stand up; that was an important step in the process and I would have wanted to know if the business case did not stack up. On 20 December 2006, Andy Park was satisfied with the wording of advice sent by Malcolm Reed to Scottish Ministers. I agreed that scrutinising it could have caused problems and if I had been in favour of the tram project at any price, then I would have tried to stop Andy Park looking into it, but I wasn't and I did not. Dr Park looked into it and, although some concerns remained, Dr Park agreed with the wording of the advice given.

102. It is important to remember that by the time the tram project was given the final go ahead with a commitment from the Scottish Government of £500 million it had a BCR of 1.6 and not of 1.1, because EARL had been cancelled and tram would not be competing with heavy rail for passengers travelling to and from Edinburgh Airport. This did not just include passengers from Edinburgh City Centre but also people who came in by train to Haymarket and could take the tram, or people who came in from Falkirk and Stirling and could transfer to the tram at Edinburgh Park; all those passengers would not use the tram if there was a fast, direct heavy rail link to Edinburgh Airport. The draft Final Business Case of December 2006 assumed that EARL would go ahead and EARL's cancellation meant much bigger patronage for the tram. By the time Ministers were taking a decision on releasing cash for the infrastructure contract, the BCR was comfortably above 1 and there was no doubt about the economic case for it. There was a fundamental change here when EARL was taken out of the equation.
103. I am aware of the paper which I prepared to the IDMB dated December 2006 (**TRS00003219**). In terms of the timescales, and in contrast to the separate attempts to secure additional commitments for Phase 1b, there was not any deliberate attempt to bounce Ministers in to making a decision on funding for utilities diversions. TIE were struggling to get the DFBC completed and had to respond to questions that TS had raised from Andy Park regarding BCR and TIE's calculations. The tight timescale was not ideal but it was for understandable reasons of trying to move the project along. Reference in

paragraph 5 to concerns over the assumptions made by TIE were as set out in Annex B, which I have mentioned earlier.

104. The DFBC was submitted twice to TS, it was first produced in November 2006 and again in February 2007, when the decision was taken on £60 million, with updated figures. After the November 2006 submission, TS fully considered the DFBC and made clear that because there was further information due, in particular from further analysis of the infrastructure bids, only a decision in principle was being looked at here in December. Cyril Sweett provided advice on the DFBC on 27 November 2006 and the DFBC would not be finalised until the update was completed. TS comments produced on the DFBC in March 2007 were based on the DFBC provided in February 2007. Momentum following the release of money for utilities diversions meant that the tram project could still be stopped but it would be much more difficult to say no.
105. Events that would have stopped TS or Scottish Ministers from providing funding to the project once the decision to proceed with utilities diversions had been made were either a massive increase in the forecast costs that made it unaffordable or a collapse of the business case for some other reason. TS were mindful of both possibilities when considering the DFBC and we were satisfied that these were not likely outcomes over the next few months. There would also have been a political price to pay for Ministers because up to that point there had been some physical activity on the tram project but with the utilities diversions people had seen the roads being dug up and the project had very visibly started. Those people who wanted the tram and had seen it starting to be built were going to be very unhappy if it was cancelled after beginning to dig the roads up.
106. I am aware that in the paper which I prepared to the IDMB dated December 2006 (page 13, TRS00003219), Annex C stated that "TIE have allocated an Optimism Bias uplift of 12% for Route 1a (£58m/£464m according to the most recent figures provided – section 9.12 of DFBC)". It then stated that 20% was more usual for tram projects. The 20% figure had been taken from the KPMG presentation on 4 December 2006 (TRS00003162). I note that in the adjacent

box 'Level & Mitigation' It stated that, Phase 1a would cost £500 million in total (which figure is taken from the DFBC). Without access to working papers used in preparing the IDMB paper, I cannot recall the explanation for the discrepancy between the two boxes: the £58m/£464m figure may be an error; the two figures may not be directly comparable after all (eg because there is a subsequent calculation of cost savings to apply after adding the £58m and £464m together).

107. I am aware that the DFBC submitted in November 2006 (**paragraphs 9.5 and 9.6, CEC01821403**) noted that in January 2006 the estimate for phase 1a of £484 million included a contingency for risk of 24% and that the risk allowance in the November 2006 cost estimate represented 12% of the underlying base cost estimates (paragraph 9.11). There is no inconsistency between these statements since they refer to two different cost estimates. Between January 2006 and November 2006, TIE had done a lot of work to develop the cost elements and had shifted some of the risk allowance into the core cost as individual risks were realised. This is normal practice and exactly what TS would expect from TIE.
108. It also noted that TIE had determined "*in consultation with Transport Scotland*", that "*no allowances for Optimism Bias are required in addition to the 12% risk allowance*". It was very clear that TS was not responsible for determining that no additional allowance was required for OB, it clearly stated that TIE had decided that after talking to TS. TS had not endorsed TIE's decision and TS did not tell TIE what to put in their business case. There were discussions about the approach to OB and risk and about what was included and not. TIE had decided the amount of risk allowance and that no additional allowance was required for OB in that DFBC, and amongst the factors they had taken account of was discussions with TS.
109. I recall that I sent an email on Infracore evaluation and revised cost estimate to Matthew Crosse dated 29 January 2007 (**CEC02082601**). I am aware of the minutes of the verification review meeting on 31 January 2007 (**TRS00003607**) at which I was present. I note that in reply TS received a

document titled "TIE response to TS queries", dated 8 February 2007 (ADS00017). I am not certain that I saw that document (ADS00017) but I believe that I did. That document noted that both Infraco bidders *"are protecting their risk position pending receipt of more detailed design information and completion of due diligence"*, that *"There is a nervousness on the part of both bidders in respect of the nature of the output, depth and delivery of buildable designs to programme by SDS"* and that *"To achieve this, SDS's performance and their performance in the perception of the bidders needs to improve and bidders need to undertake due diligence on the designs before award, or for the critical risk and price elements before coming to a final deal on the Infraco contract"*. I was aware of all these issues and all these concerns. I agreed that a crucial part of the procurement strategy was for the bidders to be able to see more design: the more design they saw then the less risk they would price leading to more competitive bids.

110. System Design Services (SDS) performance needed to improve as did the bidders' perception of their performance. There was a need for ongoing due diligence by the bidders which was expected and the prices being quoted at the time reflected that. The argument was that the prices should go down between that stage and contract close because the bidders will see more of the design. I agreed with the process and that the more design that could be shown, the better the price was going to be. SDS needed to produce the design faster and in hindsight what I did not realise when I was in TS was the extent to which it was overly simple to blame SDS for the design delay. I was not naïve and did not think that TIE could legitimately blame SDS for all the delay. However, the extent to which there was more going on than that was not apparent to TS. My view on those matters did not change in principle when I moved to TIE but my view on the detail of what might it take to get SDS to improve their performance did change when I went to TIE and had closer and more detailed access to SDS.
111. If TS had intervened in TIE's relationship with SDS then that would have undermined TIE's contractual position and it would have been more difficult for TIE to hold SDS to their contractual responsibilities. SDS were being

blamed for delay and they were being blamed at the Tram Project Board, but TS did not have direct access to SDS to hear whether there was another side to the story of their underperformance. I had heard TIE's view that they utterly blamed SDS but also that there was some work that TIE needed to do to help SDS where TIE could help resolve delay. When I moved to TIE I saw that the reality was that CEC and TIE also needed to change their approach to some issues and commit to decisions to allow SDS to improve its performance. It did not alter the fact that there were major failings in SDS's performance. Until I was within TIE, I did not get to the bottom of the extent to which SDS were the problem and the extent to which there were also other people contributing to the problem. If I'd had a direct conversation with Steve Reynolds from SDS while I was at TS it would have made me better informed, but it would have undermined TIE's contractual position and I was very mindful of that. I had taken the position that it was TIE's problem to manage the design contractor but had made it clear that TS would help if that would be helpful to TIE.

112. In terms of what would improve such a situation in the future, it might help if there was some way of providing a channel whereby the contractors and/or consultants could report to the funder on issues without them feeling that it gave them a weapon to use against their immediate client. I am not sure how practical that would be but not having a direct line of communication with the designer turned out to be a problem in the tram project. There were benefits in having a very clear distinction between TS as the funder and TIE as the client with each party having clear roles and accountability and it was considered those benefits outweighed the disadvantages.
113. TS had made plans to review the state of the tram project including the bids, the allowances for risk and the state of the design before financial close. However, those plans were never executed because by the time Bilfinger Berger, Siemens and CAF (BSC) had completed their due diligence there had been an election and the new administration proposed first to cancel the scheme outright and, when that was not deliverable, to support it solely by means of a capped grant of £500 million.

114. I recall that I sent an email to Bill Reeve and others dated 19 December 2006 (**KPM00000135**) about a note for Malcolm Reed to send to Tavish Scott. My email stated that *"The latest possible date for entering pre-digest is 29 January but that would require our paper to be non-controversial. I believe we need to enter pre-digest relatively early to ensure discussions with the Finance Minister in particular can be resolved in good time."* I have been asked by the Inquiry why the tram was not "non-controversial". No major project requiring large capital spend can be regarded as non-controversial. There are risks that need to be considered carefully and the business case needs to be scrutinised. It is inevitable that the Finance Minister would want to discuss the tram project with Mr Scott ahead of any Cabinet discussion so that there was sufficient time to cover all the necessary points.
115. I am aware that Andy Park sent me an email dated 16 February 2007 (**TRS00003681**) with concerns that he and others had not very much time in which to look at the analysis of the updated DFBC and consider it properly in the given time, due to TIE submitting material late. I note that Andy Park's email attached draft analysis of the DFBC (**TRS00003689**) and a paper to TS colleagues (**TRS00003690**). I asked Dr Park to turn the analysis around extremely rapidly because TIE were late in delivering the material. I similarly asked my programme management team and other members of my team to work extremely rapidly as I was too. We were all working so fast because TIE did not deliver their material on time. I was concerned about the impact in human terms on the people involved. I was not concerned that the analysis of the DFBC would be lacking because I had great confidence in Andy's professionalism and integrity, on that and on every other project: he did not let any project off lightly and rightly so. I did not like setting Andy Park such tight timescales, however I was not concerned that it was going to reduce the quality of what he gave me back.
116. I did not consider that the late delivery of material was an attempt by TIE or CEC to bounce Ministers into a decision without adequate time for consideration. The circumstances were that TIE were struggling to get through their workload. Had I seen any evidence of an attempt to bounce Ministers

into a decision I would have told TIE very strongly that this was unwise and that Ministers would not be bound by TIE's timetable if they did not have proper opportunity to review the business case. I would also have applied pressure on CEC through the Transport Minister to show TIE that they had to realise that they were running the risk of not having the analysis of the DFBC completed in line with their timetable. TIE was not deliberately leaving it late and it was a struggle to get all of the work done and completed. The DFBC was 170 pages of complex material that TIE needed to review and update. TS had asked a lot of awkward questions in November which TIE had to address in two months with Christmas intervening during that.

117. I recall that I sent an email to Tom MacDonald dated 19 February 2007 (TRS00003781) in which I had noted that TS had given significant warnings about the marginal nature of the DFBC. This refers to the advice given to Ministers following the December 2006 IDMB meeting discussed in para 114 above. In describing a business case as marginal or not it was never as simple as whether the BCR was above or below 1. The BCR is only part of the full appraisal required under the Scottish Transport Appraisal Guidance (STAG). There are projects with BCRs above 1 that I would advise against, for example because of environmental impacts, and others where the non-monetised benefits would make the overall appraisal positive despite a BCR below 1. In preparing this statement, I have been asked by Inquiry, whether consideration was given in late 2006/early 2007 to recommending that the business case for the tram project was not sufficiently robust. For all projects for which I was responsible I always gave clear advice on the business case and the likelihood of it being delivered. I gave clear advice in relation to a different project that the benefits set out in that project's business case were unlikely to be delivered. I would have given such advice in relation to the tram project had the evidence before me led me to the same conclusion. There was a debate about the benefits of the tram project and the conclusion of that debate was that TS should advise that the tram project should go ahead. At no point did TS consider that it was not the right decision because we went through a robust process to get to where we were.

118. I recall that I wrote the initial draft analysis of the updated DFBC around 16 February 2007 (TRS00003689). This analysis was signed off by Andy Park and myself and both of us contributed significantly to the text. The tracked changes made on it were made by Dr Park. The analysis document had been going backwards and forwards between Andy Park and me. I note that in paragraph 1 it stated that TIE had made a number of assumptions that were open to question. These were the same assumptions I mentioned earlier in paragraph 95. There was specific discussion of these concerns about TIE's analysis. At paragraph 16 through to 24 of the analysis it stated what the concerns about TIE's assumptions were. The job of that document was to give a fair analysis and summary of the business case. The analysis document described the issues and it tried to set them out so that they could be understood by intelligent lay people who had an understanding of transport appraisal issues. You did not have to be an expert to understand the analysis document whereas to understand the detail of the Business Case itself you did.
119. As for any transport project, there was no way of completing the DFBC without making assumptions. One of the key assumptions highlighted had to do with the value of in-vehicle time. There had been significant progress on understanding this issue between the December 2006 paper to the IDMB and this February 2007 analysis following further discussions with TIE. TIE had taken TS through the process of deriving the in-vehicle time values used in the DFBC. TIE had undertaken surveys where they showed people the inside of a tram and recorded their preferences compared to travel on buses. This was a robust process but the business case was still very dependent on whether the preferences stated in the survey would be borne out in practice.
120. TIE had to make assumptions and those assumptions rendered the conclusions less certain, but they did not invalidate the conclusions. If they had invalidated the conclusions I would have said so. I previously had a formal complaint made about me from a Minister when I had advised that the business case for a different project was not adequate. It was a project that the Minister politically supported and he was furious with me. The complaint

was not upheld. My track record therefore demonstrates that if I had been unhappy with the tram project business case I would have said so and not held back.

121. I note that in the initial draft analysis of the DFBC dated around 16 February 2007 (TRS00003689), there was reference in paragraphs 6, 7 and 8 to estimated savings. I am aware of the email I received from Nadia Savage dated 12 February 2007 (TRS00003662) with attached email from Geoff Gilbert dated 08 February 2007 (TRS00003663) which attached documents on Value Engineering Opportunities (TRS00003664) and Cost Savings (TRS00003665). I am also aware an email from Geoff Gilbert to Nadia Savage dated 09 February 2007 (TRS00003666) which attached a document on Infraco Evaluation and Revised Cost Estimates (TRS00003667). It would be unfair to categorise the documents on Value Engineering Opportunities and Cost Savings as wishful thinking. In hindsight, there were mistakes in them and it would be difficult to look back now and assess whether they were reasonable or unreasonable at the time. I had a conversation with Nadia Savage about the mistakes in the documents in February 2007. The document on Cost Savings (TRS00003665) was a paper which explained how TIE were going to achieve savings and there was a lot of talk at that time about value engineering savings. TIE undertook a value engineering exercise with the target of achieving £50 million worth of savings. This target was aspirational to challenge those involved to work really hard to identify savings. All involved understood that it was unlikely that TIE would achieve £50 million of savings but that setting a challenging target would make sure all credible savings were looked at. The Cost Savings document described the process and that process was perfectly reasonable. There was a sensible and logical process in the Value Engineering Opportunities exercise.
122. In the Value Engineering Opportunities spreadsheet (TRS00003664) there were 60 individual items that noted the probability of success, potential value and their status. For example, the first item was 'depot reorientation' which had a 50% chance of saving £1.375 million. That was a very sensible idea and it was carried out: the depot was reoriented and as a result less ground

had to be dug out. Whether that could then be converted successfully into commercial savings from the bidder was another question, because of the attitude to change once the Infraco was appointed and the issues TIE had with the interpretation of the contract. The depot reorientation was based on an engineering report from SDS and it was based on a sensible assessment of how much TIE could save and it stated that there was a 50% chance of making the saving, because additional design work would be required and the possibility that unforeseen works would be required as a result of the reorientation.

123. An example of a forecast turning out to be wrong was Track Bed Construction, item number 4 of the spreadsheet, where track slab thickness was to be reduced with structurally efficient members with an 80% chance of saving £3.64 million. That item took years to resolve and I doubt if TIE ever saved anything very much. In the end, it may have made Infraco some money because they might have ended up carrying out the work but not passing on all the savings. While I was at TS I was not aware of this but subsequently once I was in TIE I discovered that there were people saying that savings from Track Bed construction were unrealistic. Putting it in the 80% chance of achievement was wrong and it should at best been in the 50% chance of achievement. There was an element in the value engineering exercise of consistent pressure to assume the best and thus that exercise overstated the potential savings but it was not wishful thinking because the exercise was carried out through a proper process. On the Probability of Success margins on the right hand side of the spreadsheet, there were pressures to achieve savings as much as possible. I would have placed item 4 Track bed Construction at medium because that was the closest to the truth. There were problems with the exercise, especially in retrospect, however TS had no realistic way of knowing any of that because they were not involved in the exercise at the time to know that was the case.
124. I recall that I wrote a draft Cabinet Paper dated February 2007 (TRS00003840). Paragraph 2 referred to significant transfer of design and construction risk to the infrastructure contractor. The concept of the

infrastructure contract was that when the SDS contract was novated to the Infraco, Infraco knew the design that they were getting and it was then Infraco's problem to finish the design and build the system. This would transfer design and integration risk to Infraco and they would price for that risk. At that time, the exact figure that Infraco were going to charge for taking the design was not finalised but both TIE and Infraco were negotiating on the basis that Infraco would take responsibility for the design. The statement in that paragraph was correct in principle and was still correct in principle in May 2008 when the contract was signed. What happened later was that Infraco successfully challenged the risk transfer through the arbitration process. The contract did not actually do what it was supposed to and there was a big debate about that later and whose responsibility that was.

125. TEL was owned by CEC however it was structured as a private company and because of the rules of governing bus companies, it had to be a demonstrably arms-length company. Therefore whilst CEC owned TEL, CEC did not run it and could not tell TEL how to run itself. TEL therefore operated a fully commercial basis and patronage risk lay was transferred to that company. There was a residual risk to the public sector in relation to the dividends paid by TEL. Lothian Buses used to provide a dividend on its profits to its owner, CEC, and to a lesser extent the smaller local authorities in Lothian, which was used to subsidise other services. CEC agreed that for the first two years of the tram operating they would not take a dividend in case the patronage and revenue did not build up as rapidly as forecast. If patronage was slower to build TEL would remain a viable business but would not make as much profit. If TEL went bust then CEC would lose TEL as an asset and the continuing dividend.
126. The TEL Board were responsible for the value of the company's assets and for operating sustainably in the long term. The biggest risk to that would be if the forecast tram revenue could not be achieved. That was why TEL's Board had to sign to say that it was happy with the draft Final Business Case including the revenue forecasts, which was unique to the tram project. For other major projects the revenue forecasts were not signed off by the people

who would collect the revenue and suffer if the estimates were too high. On the tram project, TEL who would take that risk had signed off that they were happy with the revenue forecasts which gave greater confidence in the business case. Short of a catastrophic failure to achieve patronage figures, the consequences of not achieving the revenue in the business case would be that TEL would need to operate fewer buses on unprofitable routes and CEC would not receive a dividend for longer than two years.

127. I am aware that in the draft Cabinet Paper dated February 2007 (**paragraphs 8 and 14, TRS00003840**), it noted that the business case for the tram project was marginal and very sensitive to assumptions. No consideration was given to modelling specifically what different assumptions would be required for the BCR to equal 1. In particular, no assessment was done of the capital cost increase needed for a BCR of exactly 1. It would be a 10% rise in construction costs because the costs in the BCR included the discounted operating costs of the tram system for 50 or 60 years. Similarly, no assessment was done of exactly what value of in-vehicle time would produce a BCR of 1 if all else in the tram DFBC remained constant. The tram project did not have, nor did any other major project have, an assessment of what happened if an individual variable was changed so that the BCR went back to 1. Ministers did not require promoters to produce it and any attempt by TS to retrofit calculations would not have the same rigour as working with the original models.
128. I am aware that in the draft Cabinet Paper dated February 2007 (**TRS00003840**), the first bullet point of the conclusion was aspirational. The Edinburgh Tram was part of a Scottish Executive programme that committed the coalition to change the way Scotland works, to invest and make public transport better for business, for people, for the environment. Investing in the tram was an opportunity to show that the Scottish Executive were going to take a bold step. When I wrote the draft Cabinet paper, I used material I had taken from elsewhere and repeated. That was a paper written as if it was written by Tavish Scott as I wrote it as close as I could get to his own words.

129. I am aware that in the draft Cabinet Paper dated February 2007 (TRS00003840), the second bullet point in the conclusion referred to a requirement for further improvements in project governance from TIE and CEC. To a large extent they were not implemented because, by the time TS would come to work with CEC and TIE to put them in place, the new Scottish Government had stated that they did not want to intervene further in the tram project governance structure and practice and had it made it clear that appropriate governance arrangements would be entirely CEC's responsibility. I had some concern about that decision because TS had said that we knew there were problems but Ministers were going to leave it to CEC's discretion whether and how to deal with them.
130. I recall I sent an email to Malcolm Reed copying others dated 28 February 2007 (TRS00003935) which attached a draft letter (TRS00003937) from Malcolm Reed to Tom Aitchison. In that letter Malcolm communicated that Ministers had approved the advance of £60 million for MUDFA and they had made it clear that the BCR would have to be reassessed at the point at which the final price was received from Infraco. The signing and letting of the Infraco contract was scheduled in November 2007 and at that point we were now into February 2007. It was normal that there was a test that reviewed the final Infraco price, plus anything that had happened between February and November 2007 to ensure that the BCR had not deteriorated radically. TIE had had to pass one gateway so that it could have money to start the advance works. To pass the final gateway TIE had to show that the tram project had not worsened such that it would not have passed the previous gateway. In submitting the Final Business Case TIE would have to show the tram project was still in good shape. That process ensured that receiving the final amount of money depended on continued positive progress in line with the DFBC.
131. I had no reason to believe that the BCR would fall significantly because of the infrastructure negotiations. If TS did not provide money for the advance works and to get the utilities diversions underway then TIE might never be able to sign the infrastructure contract, because the infrastructure contract was relying on the diversions being done. The whole point of carrying out the

diversions in advance was to reduce the price of the infrastructure contract. In 2005 the procurement strategy that had been agreed said the best way to reduce that risk was to deal with the risks one at a time. Experience on other UK tram projects showed the benefits of dealing with utilities before constructing the infrastructure wherever possible. Inherent in the procurement strategy was a risk that utilities work would be undertaken but the project could not continue into constructions. That was much less of a risk than waiting for everything to happen together which would mean the project was almost inevitably going to fail.

132. At that time, between February and November 2007, TS would have funded £100 million towards the tram project and it would have been politically difficult if the re-assessment of BCR had been bad at that point. If it looked like the project was going to go badly wrong then there was the option not to throw good money after bad by not carrying on with the project. However, that was not the situation TIE were in at that point and all the substantial cost inflation happened after that point. I cannot recall any instance in which at such a late stage the BCR was found to be too low. TS did advance money in such circumstances in both roads and rail projects that had been carried out in the same staged manner with the risk of abortive expenditure. There were other projects that were cancelled that had a higher BCR than the tram, such as the Edinburgh Airport Rail Link (EARL), for which the BCR was above 2 at the time of cancellation but cancelling that project was a political decision.
133. I recall that I sent a letter to Andrew Holmes dated 19 March 2007 **(CEC01723916)** comprising the offer of grant of £60 million for utilities diversion, advance works and continuing development and procurement for phase 1a. Most of the conditions set out in the schedule to that letter **(CEC01723917)** were standard Transport Scotland and Scottish Executive grant conditions; paragraphs 16 to 19 were specific to the tram project. The conditions did not change after the 2007 election and the change in administration, until the later grant letter which offered the balance of £500 million. That was offered on very different terms and conditions that were

considerably less onerous than the terms and conditions in relation to the MUDFA and advance works grant.

134. I am aware of an email from John Ramsay copied to me on 29 January 2007 (TRS00003581) in which he expressed concern about possible commencement of MUDFA works for phase 1b. However, as far as I was aware no utilities diversions were undertaken on phase 1b.

Membership of the Tram Project Board and TIE Board

135. I am referred to the email sent by John Ramsay to Lucy Adamson at TS dated 2 November 2010 (TRS00011133) which described TS membership of the TPB and TIE Board. In relation to the TIE Board it was factually inaccurate. No Civil Servant who was serving in transport at the time was ever a member of the TIE Ltd Board. A check of the registered Directors for TIE Ltd (now renamed by CEC with a new purpose) demonstrates that I was never a Director of TIE Ltd. I was never a member of the TIE Ltd Board nor were John Martin, Jonathan Price, John Ewing, Kirsty Lewin, John Brownlie or Bill Reeve. Kenneth Hogg was a member of the TIE Board but not on the dates given in the email as by the time he joined the TIE Board he was working in health not transport. Kenneth Hogg was a member of the TIE Board as a non-executive Director, he was not there representing Scottish Ministers. It was true that on various occasions between 2004 and 2007, I attended the TIE Board but I was never a member, I had no voting rights and I had no fiduciary duty to the shareholders of TIE and nor did any other Scottish Executive Civil Servant. It is disappointing that TIE gave John Ramsay that information and that John forwarded it. Both TIE and John Ramsay should have known it was wrong. John Ramsay worked for me all throughout that period and although I did attend the TIE Board, I did not attend every meeting of the Board and was never a member of the Board. I sometimes attended the TPB when some relevant discussions took place. I certainly attended TPB meetings from 2004 to July 2007. TS became entitled to formal representation at the TPB from September 2005. There was a change in the structure of the TPB in about

2006, at which time Bill Reeve was nominally TS's representative at the TPB. In practice, on the majority of occasions, Bill Reeve did not go to TPB meetings and I went in his place. Technically Bill Reeve was the representative at the TPB and I was substituting for him.

136. The TPB was responsible for taking decisions on the tram project within written delegated authorities from CEC as part of a governance structure that was put in place progressively. The TPB was responsible for the progress of the tram project and ensuring that it was on track. The TPB had delegated authority from CEC that it could commit expenditure up to limits. There were limits for individual items and for cumulative expenditure. If the TPB wished to exceed any of those limits it had to seek approval from CEC.
137. The same process of delegated authorities applied to the Tram Project Director who had to seek TPB approval to exceed individual or cumulative expenditure limits set out by the TPB. Under that there were some individuals with further delegated financial authority.
138. The TPB had delegated authority from CEC to take certain decisions in relation to the tram project including the procurement decisions. Some of those decisions the TPB could take with full delegated authority and other decisions had to be ratified by CEC. The decision to whom to award the Tram vehicle and Infracore contracts and that the contracts could be awarded at all required CEC approval because the sums of money involved were beyond the delegated authority granted to the TPB.
139. The TIE Board was responsible for the activities of company as a whole, but in strict terms for the tram project itself the TIE Board had no decision-making powers and no delegated authority. One of my concerns about governance was that not enough people were clear that that was the case, including some members of the TIE Board who thought that they should be taking decisions that were properly for the TPB to take. The structure and respective roles of the TIE Board and the Tram Project Board were clear on paper and I had not realised that the confusion continued for at least some people in TIE in 2010.

The factually inaccurate information that was being provided to TS about what the governance structure used to be does concern me.

140. I recall that following the withdrawal of active TS participation, there was less impact on the work of the TIE Board. The impact on the TPB was the loss of a direct communication channel between the highest body responsible for the tram project and the funder. There was an instruction that TS could no longer talk to TIE as we had to communicate with CEC who then spoke to TIE. The TPB itself lost access to the expertise that Bill Reeve, Matthew Spence and I could bring and our knowledge of what was going on elsewhere. That would be important on matters such as signal immunisation and other aspects of the relationship with the Airdrie/Bathgate Rail Link, the Waverley Station redevelopment project and similar matters with other ongoing projects. The loss of that access to the expertise and knowledge was unhelpful to the TPB and TIE Board and there was a note from me in papers about some of those issues and what had to be done to resolve them.

Consequences of the May 2007 election result

141. The immediate effect of the change of Government following the May 2007 election was that Malcolm Reed, Bill Reeve and I were summoned to see John Swinney and talked about alternatives to the tram project and alternatives to EARL. At that meeting John Swinney said very explicitly that he did not want TS to give him any advice as to why the tram project and EARL were a good thing and should be done; that was not for debate. What he wanted was to know what the viable alternatives were that would achieve the projects' objectives at lower cost. We were told to undertake a rapid review of alternatives and provide advice on the viability, potential costs and benefits of alternatives. I went away and assembled teams to do that both in relation to alternatives to the tram project and to EARL.
142. In terms of impact on the tram project, we were told to tell TIE not to start any new work however work which had already started should continue. At that

time, there was some utility diversion work being carried out but no new work was started, essentially to try and not lose any more money if the project was eventually cancelled. That was done so as to not increase the abortive costs. However, that put the tram project team into a very difficult situation as individuals were then very uncertain about whether they still had jobs. It was not a pleasant time for anybody involved. In terms of TS's role, we were no longer going to be paying out the £60 million for utilities diversions at the rate we had done before.

143. I was involved to a limited extent in discussions with Ministers on how TS should proceed. There was some discussion about TS's past and potential future role in the tram project and Malcolm Reed gave advice to Ministers. There was no real discussion between officials and Ministers about the eventual announcement of a capped £500 million. Ministers took some advice on the practical consequences but they did not take advice on whether they should make a capped contribution, whether that was a good thing to do or not. They had decided that without reference to any Civil Servants. TS were told what to do and we implemented that decision.
144. I recall that I sent an email to Lorna Davis dated 23 May 2007 (TRS00004312) which attached a briefing note from Willie Gallagher (TRS00004313) supporting continuation of the Project following the May 2007 election. I had no input into the preparation of that document. It would have been grossly improper for me to do so and a clear breach of my duty to Ministers and if I had found out that any member of my team had done so then I would have instituted disciplinary proceedings. TIE were entirely within their rights to do that as that was their job to promote the project but the primary responsibility of all in TS was to the administration of the day. TS was not invited to comment and did not do so. TS did not offer any unsolicited advice on the document to anybody. In the covering email Willie Gallagher had said it was a factual description, however it was not, it was a lobbying note that presented the benefits of the tram and the costs of aborting it. It was an attempt to persuade decision-makers, especially in Parliament, that they should not stop the project. I did not particularly take a view at the time as to whether it was

accurate or not. I was not its audience and it was not within my professional remit to deal with it. I read it with interest and had it filed.

145. I recall that I replied to Lucy Adamson's email on 20 June 2007 (TRS00004463), in which she had attached an email from Lisa McDonald, Senior Communications Officer, Scottish Executive. John Swinney had stated that if TS's press office were asked about delay to the tram project that "*It is not true that we are delaying projects*". My email noted that CEC and TIE would be able to produce evidence that there had been delay in the tram project at that time due to uncertainty following the election. It was a fact that, on John Swinney's instruction, TS had instructed TIE not to start any new work funded from the grant when TIE would have started more utilities diversions between May and July 2007 and so there were two months when physical utilities diversion works that could have been going on were instructed not to go on. There was therefore evidence that the tram project was specifically delayed between May 2007 and the tram vote in the Scottish Parliament which was not until 27 June 2007. That delay was enormously significant to the programme due to the knock-on impact on other construction activities and the fact that the tram project programme had little float (as noted in para 142 above).
146. The purpose of my email was to alert Lucy Adamson to the evidence that existed that the line to take on delay was not correct so that she could alert Lisa McDonald to this before that line to take was used.
147. I recall that I provided Malcolm Reed with a draft of what became his dated 6 July 2007 (TRS00011311) to Ministers on options with regard to withdrawal from active participation on the TPB. The document was a submission from Malcolm Reed to the Cabinet Secretary for Finance and Sustainable Growth and most of those words were mine originally but Malcolm Reed adjusted the draft to reflect his different perspective as he had every right and responsibility to do.

148. I recall I sent an email to Michael Howell at TIE and others dated 19 September 2005 (TRS00001923) in which I stated that as the principal funder of the Edinburgh Tram Network, the Scottish Executive would participate fully in the TPB. That was the point at which TS became members as opposed to attending TPB. It was John Swinney's decision to change that arrangement after May 2007. In September 2005, there was the clear understanding within TS that whatever we said to TIE and CEC, TS would be at risk for a share of any cost over the expected £545m. It was not sustainable politically for Ministers nor would it be equitable in comparison to TS funding agreements for other projects. There was no other major roads or public transport project where TS had imposed a strict funding gap; instead we were working to ensure fair sharing of risk among the project beneficiaries. The Larkhall/Milngavie Railway was then in construction and was closest in terms of project delivery structure with Strathclyde Passenger Transport (SPT) contracting with Network Rail for delivery. This was a much smaller project of around £35 million but the principle of shared risk was reflected in an explicit agreement where the budget cost was £34.5 million and, if the costs exceeded that amount, the Scottish Executive would pay 80% of the overrun, SPT would pay 17%, and South Lanarkshire Council would pay 3%. That was set out in the grant award letter and, similarly, if the cost came in less then the savings would be shared on the same basis.
149. The expectation from September 2005 until May 2007 was that the same principles would be reflected in a deal between CEC and TS on the tram project whereby CEC and TS would share cost overruns in agreed proportion unless either party requested a change in scope where that party would bear the entire costs of the scope change. When it was decided that CEC was going to be responsible for all the cost overrun then in theory it was no longer necessary to monitor the project in the same way. The power of the TPB to take decisions that cost the Government money had theoretically gone when it came to July 2007 and the instruction from the Minister that TS were to scale back involvement and come off the TPB.

150. The Scottish Government's position was that CEC was responsible for everything on the tram project, therefore, TS did not need anybody at the TPB to monitor what was going on. Indeed having someone from TS there would have blurred the distinction in roles between the parties. TS could not say that they would not contribute to cost overrun if they took part in decisions which arguably contributed to that cost overrun. It would have allowed CEC to claim the tram project would have only cost £545 million if Bill Reeve or I had not insisted at the TPB on certain items that cost extra or on delaying decisions which led to delay costs and contending that TS should pay for the extra cost. Whether CEC were correct in their claims or not there would have been scope for long-running arguments that would distract CEC and TIE from their task of ensuring effective delivery. Ministers could have simply refused any request for additional funding but they would have weakened their position to do so if they had sent somebody who had the power to take decisions in the tram project. It would have exposed Ministers because they could not have power to take decisions and not accept any responsibility for those decisions and that was what could have happened. The most that Ministers could have done in that scenario was to send somebody to observe the TPB but not be part of the TPB. The role and responsibilities of Ministers in relation to public expenditure were set out in the Scottish Public Finance Manual, as in force at that time, and as updated from time to time.

151. There was a logic that said if TS's position was that we were supplying a sum of money and taking no further risk then we should not have any further involvement in the project other than checking that the funds were being spent with propriety, not even probing value for money as that was CEC's responsibility. I believe that John Swinney would probably make that case also but it was not my decision and it was not on the basis of my advice that John Swinney took that decision. TS were giving Ministers advice they had requested about how to withdraw from the project not whether to withdraw from the project.

152. I am referred to an email from the Cabinet Secretary to TS dated 11 July 2007 (TRS00011312) confirming that TS should "scale back" its direct involvement.

I was not involved in any discussions between Civil Servants and Ministers and I am not aware of there having been any discussions. In my opinion there was no need for discussion: John Swinney had received clear advice from TS and he acted on it. John Swinney did not have to take anything to Cabinet, he was at that point the Transport Minister and the Finance Minister so where there would previously have been a discussion between the two in the previous coalition, he was both. Ultimately it was the Scottish Parliament that decided that the risk of cost overrun lay with CEC and made it clear that responsibility for managing and delivering the tram project rested with the promoter. I am aware that there were political discussions between the SNP and members of the opposition to ensure that the motion that went through was going to be an acceptable compromise to the administration and the opposition. The Scottish Government knew that the Scottish Parliament would force it to continue with the tram project and so the terms of the motion were, effectively, pre-agreed. The option of continuing as TS were before was considered, but it was not consistent with the risk management principles that *"You should align your governance with the risk allocation"* not the other way round.

153. With regard to how it was expected that Ministers would protect their investment in the tram project following the decision to scale back involvement, it was effectively limited to the imposition of and adherence to limited grant conditions, along with reports and meetings to discuss the reports. I note that I had a meeting with Graeme Bissett on 2 August 2007 (TRS00004643), at which there was discussion about implementing that. The meeting was a discussion about how the governance would work and it was a confirmation of funding and how all of that would work. However, the meeting itself was not part of the normal four-weekly schedule. The meeting with Graeme Bissett was about how to make the decision in principle work in practice and the detail around that. TS resources at that time were concentrated on imposing light touch grant conditions and monitoring compliance with the conditions for the £500 million grant, much of which had not yet been spent.

154. I am aware that Bill Reeve had concerns about TS withdrawing from the governance arrangements, as in his email to Malcolm Reed and me dated 18 July 2007 (TRS00016189). TS were aware of the risk as was the Cabinet Secretary. It was John Swinney's job to decide if he should take that risk: he was ultimately responsible to Parliament and the electorate in a way that Civil Servants are not. I do not think that Bill Reeve agreed with my assessment on the risk that TS's involvement would bring of claims that TS had delayed or altered scope. I do not think that Bill Reeve understood that dynamic as he was new to working in Central Government and inexperienced in its relationship with local Government: you could not have power without responsibility. In the remainder of that email Bill Reeve suggested that a one-off transfer of funds might avoid the need to follow Scottish Public Finance Manual requirements which illustrated his lack of familiarity with the detail of those requirements. It is my understanding that the circumstances in which an accountable officer could seek a direction were governed at that time by the Public Finance and Accountability (Scotland) Act 2000. It is my understanding that the Minister's decision in relation to the tram project did not meet any of the criteria for a direction. What Bill Reeve was suggesting was perilously close to Malcolm Reed going back to the Minister and asking him to repeat himself because we did not like what he had asked TS to do, it was not appropriate to do that. It was down to Bill Reeve's misunderstanding of the structure and responsibilities and, particularly, of Malcolm Reed's role as the accountable officer about which Malcolm had had training and which I had a long period of time in the Civil Service, but Bill Reeve did not have that background. John Ramsay probably had the same misunderstanding as Bill Reeve and it was fair to say that there was a frustration here that TS were adding value to the tram project, were making a difference and then were no longer being allowed to do that. It was frustrating but it was not TS's decision to make. Some people were more driven by the frustration and others were just frustrated but carried on. That was the system in which TS worked and how Scotland was governed. John Ramsay was very frustrated and I understood that he had put in a huge amount of hard work and it was an unexpected rejection from the new Government to TS's previous efforts. I had seen and spoken to John Swinney and understood that he implied no

personal criticism of me. I also had the experience and perspective to understand that was just how the world was and that it was John Swinney's right to make that decision.

155. I am aware of an email sent to me from Damian Briody at TS dated 19 July 2007 (TRS00004553) which gave feedback from the Programme Review meeting on 17 July 2007. I note that there was criticism of the engagement of TIE personnel. I am familiar with Geoff Gilbert's approach to meetings – at that time from discussions between TS and TIE and subsequently from having worked in TIE itself. Being late for meetings without explanation was typical of Geoff Gilbert and it was part of his personal style that he thought that other people's time was not as important as his. That was how he was and a number of people spoke to him about that on a number of occasions. As far as I can tell from having spoken to people who worked with Mr Gilbert before he was at TIE, that was how he had always operated. He did not have great people skills, but he had great commercial and numerical skills. There was no effective remedy to him being late and if that had happened while TS were actively involved then I would have spoken with Geoff Gilbert's line manager to address the issue. I do not recall that happened on this occasion because we were less involved in the project. There was no ability for there to be any comeback or consequence and, effectively, there was nothing I could do about it.
156. I recall that I sent an email to Malcolm Reed and Bill Reeve dated 23 August 2007 (TRS00004742) which reported that I had made it clear to CEC that CEC's unambiguous ownership of the tram project meant that discussions involving TS should be with CEC and not TIE. The grant was going to CEC and the relationship was established that it was not TS passing money through CEC to TIE with CEC acting only as intermediary. My email reported my clear statement to CEC that TS would not do their work for them, nor give TIE guidance, support and challenge: that was CEC's role and they should carry it out. To an extent TIE wanted it that way because we were behind the motion to the Parliament.

157. The extent that approach helped Ministers to protect their investment was spelt out very clearly, that it was CEC's problem and that it was realistic for CEC think of every pound spent as their own. Therefore that approach did help protect investment by saying to CEC that unambiguously they were the only ones who were managing the risk in the tram project and that TS were not helping them. One could form a view as to how effective and strong a protection that was for the Ministers' investment because in formal terms, as opposed to desired behavioural change terms, there was no protection beyond the limited terms of the grant. It did result in blocking the flow of information regarding progress on the tram project from TIE to Ministers. It was difficult to state whether that was good or bad. There was good in that it made it clear to TIE to not come to TS for answers or ask them to force CEC to do something. It made it clear to TIE that they were going to have to tackle that relationship head on and if CEC was not making decisions then TIE would have to deal with them at the highest level. Where it was bad was that it made it difficult for TS to know whether the reports that were being provided represented the truth or not. When TIE was producing a four-weekly report before March 2007, TS would scrutinise the report and TIE would have to demonstrate progress and be challenged on the evidence. TIE would have to show their workings and those workings would be scrutinised hard, for example Andy Park's review of the DFBC. TIE was at that time subject to a level of scrutiny and challenge that later did not exist, so there was limited scope after July 2007 for TS to assess whether an accurate and fair picture was being presented to them or progress with the tram project. TS were entirely relying on CEC to have worked that out for them and it was a situation which I know that John Ramsay was uncomfortable with.

158. Looking outside CEC and TIE, the principal impact of Ministers' position was that it gave comfort to BB and Siemens, but especially BB, that if they made a fuss and caused trouble and decided to exploit the contract for every penny they could, then there would be no political comeback from the Scottish Government. BB perceived that Ministers would not put pressure on BB and Siemens to act reasonably, to carry on with work to deliver and try to collect the money afterwards. I know that BB were a very large organisation and TIE

was a relatively small organisation. For the commercial fight to be a fair fight TIE needed to know that local and national politicians stood firmly behind them and would use their influence with BB when that was helpful including the knowledge that there would be consequences beyond the project itself if they attempted to use undue commercial pressure (eg by closing Princes Street and refusing to work). Ministers' position said to BB that nobody in the Scottish Government would be upset if they acted awkwardly. It was a significant factor in BB's behaviour after contract award. There were some other factors which also drove BB to behave in that way. The knowledge that the Government was not backing a project that they were funding put BB in a very strong position as the contractor and they took full advantage.

Working in TIE

Role and qualifications

159. My role at TIE was Design and Consents Manager. I was responsible for ensuring that all necessary planning and technical consents for the tram construction were obtained. It was SDS's responsibility to obtain those consents but TIE needed to manage that process and in some cases had to play an active part in securing the consent. My value to TIE was not so much in the fact that I had been part of TS – although I was able to share some insight into how TS worked – but rather that I was persistent and solved difficult problems. In dealing with the design consents it was clear that most problems had to do with differing perspectives of organisations and/or individuals rather than technical issues. In my experience of major public transport projects this is typical: the number of genuinely complex technical issues is usually quite small and most issues arise because individuals and organisations either don't get along or have different objectives. Sometimes there were genuine technical questions on the tram project but I would have been surprised if we had got into double figures on genuine technical questions where it was not straightforward to find a technically viable solution. Mostly the work I was doing was about how to get people to talk to each other constructively, working to improve difficult relationships and finding ways to

resolve the different objectives of those involved in the consents process. The role required technical literacy but did not require technical expertise. Where questions arose that required technical expertise I had access to suitable subject experts either in TIE or through the TSS contract.

160. I am referred to the Report on Phase 1a/1b Separation prepared by PB in December 2007 (CEC00309294) which named myself as contract representative for the work to be undertaken by PB. I recall that I sent a letter to PB dated 6 February 2008 (CEC00309293) which was relevant to the previous document on the separation of phase 1a and 1b. From my previous experience I had the ability to manage technical experts and manage contracts. I did not bring specific technical expertise to the role but I was the point of contact with PB and all correspondence had to go through me.
161. I recall that Graeme Barclay sent Susan Clark and me an email dated 13 March 2008 (CEC01454238) which was entitled the Gogar Sewer Options Report. It was a technical matter requiring Graeme Barclay's input on engineering matters. I was relying on input from technical experts in the team to address these issues.
162. I recall that I attended meetings concerning the MUDFA utility diversion work, as shown in the minutes of the TIE/Carillion Weekly Progress meeting on 21 March 2009 (CEC00948601). I attended some meetings and my role was to manage the contractor to sort any design issues.

21 March
2009 should
be 21 May
2009

Main issues facing the tram project

163. Following my move from TS to TIE in October 2007, my perception of the tram project and how it was being executed changed a bit inevitably because I was then viewing a new level of detail and I was receiving a first-hand view. However, some of my views remained the same. I remained convinced that TIE had a lot of good, determined people who had lots of skills that were necessary to get the tram project completed. It became more apparent to me that TIE had had some weaker people which in some cases were found to

have been wanting. One of the positives of TIE as an organisation as opposed to a public sector organisation was that if somebody was not up to the job then they were let go relatively quickly. I had worked in the public sector so I knew what it was like to get rid of people who were not doing anything wrong in disciplinary terms but were just not good enough in their job, and how painful that can be. One of TIE's strengths was that people who were not good enough at their job did not have their contracts renewed. TIE's staff had not been uniformly excellent and that was not surprising when TIE had over 100 staff. Fundamentally my view of the tram project did not change.

164. The area where I developed the most nuanced understanding was in relation to the design contract, how that had been managed and where delay was attributable between SDS and other people in relation to the design production. That was one of the areas where greater insight convinced me that I had not been told the whole truth when I was at TS. I do not feel that was in relation to any deliberate attempt to mislead me, but that people did not understand the situation in depth and were therefore telling me what they thought was the truth. When I dug deeper it was more complicated than they had realised. It was my opinion that TIE overall performed well given that it was a young organisation which was carrying out a difficult task.

Managing the Infraco contract

165. In terms of TIE's performance in managing the Infraco contract there were two sets of mistakes that TIE made that were difficult to recover from and, ultimately, they never recovered from: TIE was not fully prepared to administer the Infraco contract from the start and TIE did not manage the contractual correspondence well.
166. TIE planned for a rigorous process of getting ready to administer the Infraco contract, whereby everybody who worked in TIE would understand how the Infraco contract worked. There were some workshops on that but it was nothing compared to how prepared BSC was. BSC had been through every loophole they could find in the Infraco contract in advance. BSC were not

finding the loopholes as they went, they were ready to work the Infraco contract from the start and it was an unequal contest from the start. TIE had tried to prepare its staff for the Infraco contract start but had not done so adequately or successfully. This was partly a product of TIE not expecting BSC to take such a commercially aggressive stance to the contract and partly a product of the "little float" mentality referred to in paragraph 145. TIE were pressing ahead to get construction underway to maintain the programme and contain delay costs. This did not leave adequate time to prepare for the contract starting and all staff who would be involved in administering the contract had heavy workloads resolving design and/or construction management issues.

167. In contrast, once they were preferred bidder BSC had one team negotiating the contract and they had a separate team who were preparing to administer the contract. When BSC mobilised for the contract they had a full commercial team from the start and gradually built up their delivery team. TIE did not have the luxury of enough people to have had a whole team that only negotiated the contract and a team to deliver the contract. Therefore, the TIE team who were busy negotiating were not able to train everybody at the same time, so the short period between agreeing the contract and getting work started was all the time there was for training and so TIE staff were less prepared than BSC from the start.

168. The other area of weakness for TIE was the handling of contractual correspondence which was inefficient. With regard to various Infraco Notices of TIE Change (INTCs), TIE delayed replying to correspondence for far too long. Every letter had to be checked by senior managers in great levels of detail and TIE did not empower its project managers to deal with correspondence. In particular, there was no effective triage of letters into those which were establishing crucial principles and those which were routine or factual.

169. There was a large build-up of correspondence which was considered initially at a weekly and then a twice weekly meeting but at no point did that process enable TIE to send more substantive responses out than it got in. The

answers that went out in reply were generally robust and good but sometimes it would have been better to have answered 50 letters and had one of them being wrong than answering ten letters that were all correct. Dealing with very large quantities of correspondence was something that the Civil Service did well and I was experienced in dealing with this type of process. The letters to TIE were all standard in format but contained individual claims that TIE was liable for delay and/or cost and each claim needed to be considered on its merits. Nevertheless there were themes within the INTCs and standard paragraphs could have been written that would have speeded up TIE's responses. Instead project managers were expected to produce individual drafts without sufficient guidance from TIE senior management of what was expected. One of my frustrations with TIE was that I offered to create a process where TIE would do that triage but my expertise was not taken up and TIE suffered more.

170. I recall that at the time I joined TIE, my views on the main problems facing the tram project were a limited pool of bidders for the Infraco contract meaning that TIE could exert only limited pressure on price, delays with the design to some extent and public opposition from some people who felt emboldened to be as oppositional and confrontational as they liked given the Scottish Government's stance on the tram project. The Government stance gave great comfort to the people who did not like the tram and they continued to object. That resulted in ongoing media and stakeholder pressure on the tram project.
171. Not a lot could be done about the limited pressure on bidders that had not already been done and TIE were dealing with that as best they could. Delayed design was what I had been brought in by TIE to try to resolve by getting to the root cause, establishing what was going on and resolving the issues.

Public engagement

172. TIE continued to present the long-term benefits of the tram project and engage positively with people. As part of that process I remember spending some days in the tram mock up that was on Princes Street at that time and

then down in Leith. People from TIE took turns being there and met the public and explained what the tram would be like. The reactions of people we met were varied. We took some abuse from vocal opponents of the scheme. Those members of the public who had arrived unconvinced by the tram scheme tended to go away supportive after having seen the tram and how the scheme would work. Some of the people who had been initially opposed to the tram project were then positive about it after being to the mock up and were turned around, at least for the duration that they were there. Others felt better for having let off steam for having found a human face to shout at as opposed to a big amorphous project and they felt better for having been allowed to express their opinion and that somebody explained, listened and interacted with them even if they did not agree with them.

173. There was an increase in the public engagement after I got to TIE and that was good. That improved engagement was overdue because a critical error had been made very early in the Bill process which was indicative also of a wider problem that TIE had back in about 2004. When the Bills were submitted to the Scottish Parliament by TIE people could object in principle or in detail. Some objectors were clearly directly affected by the scheme but for a lot of objections it was questionable whether the objectors were affected directly by the tram project and thus whether they had locus to object. There were also objections that were based on rumour or on what people thought was proposed rather than what was actually in the Bills. People were understandably concerned so they voiced their concern and the Scottish Parliament gave them the opportunity to do so and it was for the Parliament to decide how to handle the objections. TIE acted on the advice of English Parliamentary agents and wrote back to objectors with questionable locus to tell them that their objection wasn't valid because they had no grounds to object. Although this was probably legally accurate it was very unwise of TIE. It upset those objectors badly and TIE lost the opportunity to resolve objections constructively, transforming some of these objectors into passionate and vigorous opponents of the scheme.

174. Writing to the objectors also very much upset the Scottish Parliament which saw this as usurping its role in deciding whether to reject objections and determine whether TIE had put adequate measures in place to resolve objections. Within the Parliament it particularly upset the members of the committees established to examine the Bills for the tram project. The committee members wanted to complete their duties with the minimum of fuss and it is fair to say that they all had other important work to do for their party or for their constituents but they were not getting to do because they were having to spend time looking into the tram project. Now the committees were faced with a lot of very angry members of the public. It was not any of TIE's business to send out letters to those people who had objected, it was the committees' business to decide whether they had locus to object and, if not, to let those people down gently by writing back and explaining why their objection would not be considered further.

175. TIE had put themselves into a difficult position with the Scottish Parliament and with public relations early on by being overly led by arrogant Parliamentary Agents who only considered legal issues not the wider need to gather support and deal with worried individuals sympathetically. By the time I started at TIE, there was no such thinking in TIE and there had not been for some time but TIE never quite overcame that legacy. TIE had wound the public up and there was no undoing that so that was one of the biggest challenges. There was a constant atmosphere of feeling as though TIE was under siege, of feeling undervalued where people did not like you and did not want you to be doing what you were doing. When TIE got into the contractual problems and were under pressure from the contractor then that combined with the external media and political opposition to produce an unpleasant environment in which to try to carry out positive work.

Design delay

176. With regard to the delays experienced in producing detailed design and in obtaining approvals and consents, on moving to TIE I had inherited a situation that turned out to be not as simple as SDS underperforming. There was a

definite element of persistent underperformance by SDS who would promise to produce work and that would not arrive. SDS were responsible for some of the delay but there were other ongoing reasons for delay.

177. The decision not to proceed with detailed design for phase 1b destabilised SDS itself quite a lot. SDS was made up of a consultant Parsons Brinkerhoff (PB) together with a sub-consultant Halcrow. Originally the design was allocated between the two bodies, about 60/40 split between PB and Halcrow, but crucially PB were responsible for the whole of phase 1b design. So when the decision was taken not to do the detailed design for phase 1b, PB were in danger of losing a lot of work and profit from their contract. So at that point PB took a lot of the design back from Halcrow. Contractually PB were entitled to do that but it left a detrimental atmosphere between PB and Halcrow, who were never very cooperative afterwards. I had dealt with Halcrow a lot on heavy rail projects and they were as good as anybody else and certainly did not come with the unpleasant, grumpy and difficult attitude they showed on the tram project. In no other situation which I encountered Halcrow had they been let down by their client, who at that time was PB. Halcrow had expected to make a certain level of profit and for reasons that were not of their fault they suddenly had a lot of work taken away from them. Halcrow were never motivated or helpful again but PB were not in a position to say to Halcrow that Halcrow were making PB look bad and Halcrow had to step up and deliver. Halcrow's view would have been that if it made PB look bad then that served them right. The people at Halcrow who were involved in the tram project and had been personally involved in the retrieval of work by PB were bitter, uncooperative and unhelpful; not the senior Directors who were outside the tram project itself. That was a problem of which I was not aware until I got to TIE. That was one of the causes of delay where the sub-consultant was not motivated to deliver any work particularly rapidly and was motivated to try to find grounds for change claims.

178. I am aware that there was a problem to do with my predecessor, Ailsa McGregor, who had managed the SDS contract and had taken a hard line that everything was SDS's fault. She had shouted at them rudely in front of other

people and berated them that delays were their fault. Ailsa McGregor's contract was not renewed with TIE. I would talk to SDS and listen to them and they would explain why something was wrong or late. I did not always agree with SDS but felt that I gave them a fair hearing. When I started at TIE, SDS did not feel it mattered whether they were good, bad or indifferent because it did not matter whether it was their fault or somebody else's fault but Ailsa McGregor would shout at them to do the work right. One lesson that TIE learned from the SDS contract was that shouting at a designer to design better did not work, but that was the approach that I had inherited.

179. There were problems with unreasonable expectations from some CEC planners who wanted some work done that was personal preference rather than agreed CEC policy, such as asking for something to be a certain colour. CEC had published a Tram Design Manual to give guidance to the designer on what would be acceptable in planning terms. The manual stated what colour certain items had to be and what was allowed.
180. There were also other problems due to a lack of acknowledgement and awareness of the other party's objectives. For example, there was an extent to which it was legally correct that if CEC wanted to hold out for York stone slabs instead of nice looking concrete, then they could but it would cost more money. That was an issue that could not be resolved at the level of SDS and the individual planner looking at the prior approval drawings because the designer was under an obligation to design something that was economical and fit for purpose. CEC planners and SDS had incompatible objectives and when I joined TIE there was no effective escalation forum where aesthetic and cost considerations could be looked at together and an overall value judgement made on the materials to be used.
181. There were also problems where planners were asking for additional design features or they wanted wider problems solved or for the tram design to form part of a wider streetscape when the designer was not working on the rest of the streetscape. Other times what the planners were asking for was eminently reasonable and sensible and the design should have met their requirements. People were trying to sort those problems out but were not getting anywhere.

and I was recruited to break that logjam. I had some success in doing that; partly through the Approvals Taskforce which was initially representatives from TIE, CEC Planning Department, CEC Roads Department and representatives from the designer. After the Infraco contract was signed then Infraco joined the Approvals Taskforce. Infraco were invited from contract award but it took them some months to appear. The purpose of that taskforce was to get everybody together and resolve the issues if possible. If the issue needed to be escalated to get a resolution then there was a more senior forum which met shortly after the taskforce.

182. The taskforce also dealt with ensuring that design was submitted and approved to agreed timescales. CEC had allocated additional staff but needed to know what design would arrive when to manage the workload. CEC were understandably wary because previous design packages had been submitted late and/or incomplete. The designers were to commit to deliver on a particular day with all of the documents to the right standard. If the designers failed to deliver then I would not hold CEC to responding to the application within the agreed timescale. This process allowed all parties to be clear at any given point, on any issue, who had work still to do and who was responsible for resolving issues. I did not put up with everybody blaming everybody else. Sometimes if a decision could not be made within the Approvals Taskforce, I would take the information and go to the person who was able to take that decision and get them to decide.
183. When I started at TIE, SDS had two large contractual claims outstanding. One had been agreed by TIE for settlement but TIE refused to sign and pay because they were holding it over SDS as incentive to agree the second claim. That was no way to behave if TIE wanted SDS to work with them cooperatively. That was done with good intent by TIE to try to get SDS to perform better but it was counterproductive so I made sure that claim was paid. The second claim was approximately £1 million, where I went to SDS and I assessed the evidence of their claim together with the commercial adviser and we came to a settlement. Settling those two claims and paying SDS did improve the willingness of SDS to resolve outstanding design issues.

The combination of the Approvals Taskforce, looking at the commercial claims and escalating decisions which had to be taken at a higher level reduced design delay between October 2007 and May 2008 by a third. There were still a lot of issues that I could not resolve, such as problems with SDS underperformance and there were still issues where it was difficult to get people to take the necessary decisions in order to move the tram project forward.

Utilities works

184. In general the utilities works suffered three issues that caused delay. Firstly, sometimes utility works could not be designed because the full tram design was not finished. For example, it could not be established where a retaining wall was to go and thus whether a sewer should be moved, so there were some areas where the utilities works were held up from being implemented by a lack of original design. That delayed the work from taking place but I doubt that had any impact on the cost of the diversions.
185. Secondly, there were problems with receiving the design of the diversions themselves. Sometimes that was non-production by SDS and sometimes that arose from people in TIE having given confusing instructions or contradictory instructions to SDS. That either caused delay or gave SDS an excuse to be delayed.
186. Finally, the biggest single problem with the utilities diversions was that there were a lot more utilities under the roads to divert than anybody expected. For example, when roads were dug up there were gas mains and sewers that were not on any of Scottish Gas's or Scottish Water's drawings. The records kept of what was underneath the ground in Edinburgh were very out of date. Many sewers in Edinburgh were laid more than 100 years ago and Edinburgh is a very old city where lots of cellars were found that nobody knew were there. For example, there was a tall building in Edinburgh city centre where there was a cellar that came out under the street but that cellar could not be accessed from the building. When the building was bought it would not have been realised that there was a cellar that originally went with the building that

was still there but was walled off. However, the problem was that when it was dug into from above, it would have to be worked out whether it belonged to anybody before it would be filled with concrete.

187. There were also air raid shelters, parts of the original pulley-driven tram system in Edinburgh and there underground bothies for workers that were not on historical records. Some of these structures were enormous, for example, there was an underground void at Haymarket that was very large and was not on any maps. There were arguments about whether SDS should have found that void and taken account of it in the design because there was a manhole leading to it. However, the situation was not clear cut because if the manhole was lifted then all that could be seen was small antechambers. To discover that there was a larger area would have required SDS to investigate further underground.
188. The discovery of unmapped gas mains, water pipes, sewers and electricity cables happened in any tram project but the extent to which it happened in Edinburgh was worse by some margin than any other UK tram project. The utilities diversion costs had been baselined from the worst underground situation encountered on a UK tram project to that date and an additional allowance had been made on top of that because of the age of Edinburgh. The extra cost that was added was nowhere near enough to cover the total cost of the utilities diversion works. There was no way that anybody could have foreseen the extent of the problems because to find those issues the roads had to first be dug up. Some non-invasive survey work had been done by ground penetrating radar but what was found when the roads were excavated was a nasty shock for everyone.

Award of SDS contract

189. I am referred to a letter dated 6 September 2005 (CEC00537087) from Michael Howell, signed on his behalf by Ian Kendall, appointing PB to provide SDS. That predated my appointment to TIE. I did not have any input into the decision to appoint PB whilst working in the Scottish Executive. At that time

TS was operating in shadow form and since TS was an executive agency of the Scottish Executive that decision was not with us. TS was not a completely new body, it was a continuation of a previous body and a different administrative set-up.

190. PB were a world-renowned systems designer and consultants in the heavy, light rail and roads environments. Following mergers with other consultancies they are no longer called PB but they were at the time one of the leading transport consultancies and had done similar work around the world. As a company there was no question that they had the capability to do the work. The tendering process followed the standard under the European Union guidelines due to the size of the contract and the restricted process was used where bidders had to be pre-qualified before tender submission. TIE took references from previous work and PB had to show what previous work they had done that was relevant before being appointed. I do not know any of the detail of the checks that TIE undertook. Ian Kendall was involved in letting the contract to PB. I am not sure who else was involved in the letting of that contract or who TIE's commercial lead was at that particular time. Michael Howell was Chief Executive of TIE at the time: he would not have done the detailed checks but he would know who did.
191. I am aware that PB entered into a sub-contract with Halcrow and I was sent an unsigned copy of that by PB on 11 December 2007 (CEC01547205). In principle, I had no concerns about the decision to sub-contract as long as it was to a competent engineering company which Halcrow were. It was not unusual or unreasonable to expect PB to sub-contract for some of the work. The reason PB sub-contracted was because there was a huge quantity of work required to design the tram network which was all of phase 1a and all of phase 1b at that time. Initially it was a £23.5 million contract. The decision to sub-contract in itself did not cause problems. What caused problems was the issue I discussed in paragraph 177, which was when phase 1b of the detailed design was taken away. PB unilaterally changed the amount of work that was sub-contracted to Halcrow, and took a lot of work and thus profit from Halcrow and that left a difficult atmosphere. Halcrow then were not cooperative with PB

after that and they were not motivated to perform well after that. I would say that Halcrow, ultimately, produced good quality designs. Halcrow produced good quality work but they significantly reduced their team and therefore did not produce the work particularly quickly. Halcrow were not in any mood to engage with any changes to design and they were motivated to try and claim as much change for design as they possibly could from PB. The decision of how PB managed the sub-contract had a big impact on the tram project and that was about PB's management. In other circumstances the sub-contract would have produced a better result than PB doing the work on their own.

192. In general terms, I would have viewed PB and Halcrow as on a level with each other. Along with others like Scott Wilson and Jacobs, who were major engineering contractors, these companies were all in an elite group of companies of transport consultants at that time. There has been a lot of consolidation in the industry since then so the structure would currently be different. As with any consultancy it was a case of which individuals were allocated from those companies. All those companies had people who were elite designers, people who were good designers and people who were mediocre designers, and every company had that and it was a question of who was assigned to your contract. In Halcrow's case they could have fielded truly excellent designers and some of those involved were of that standard but they were not motivated to field their top team after the sub-contractor change to their scope of work which was entirely an commercial decision. If I were in Halcrow's position I would have deployed my top team on a more lucrative contract now that my scope had been reduce significantly. That would be rational and reasonable to do but there were consequences for the tram project and PB should have handled the change to the scope of work better. It had a negative effect on the tram project because Halcrow was doing a lot of the on-street roads design. Ultimately after that change, it delayed parts of the design in relation to phase 1a very significantly.

Novation of SDS contract from TIE to Infraco

193. I recall that when I joined TIE, the strategy was that the detailed design would be approved and finished at about the time we were ready to let the infrastructure contract. The infrastructure contract would have had a complete design to build and the only approvals still required would be for temporary works and any changes Infraco wanted to build the project more economically. That strategy would transfer risk to the Infraco as the Infraco would have seen all the design and could be held to have priced to build the design. Therefore it should have been largely a fixed price contract. No civil engineering contract of that size was a fixed price contract as there were always provisional sums in them to deal with specified items that could not be priced in detail at that stage, for example because excavation would be required to determine the extent of works required. Provisional sums are not binding but allow like for like comparison of bids.
194. The strategy was that 90% or more of the Infraco contract price was supposed to be fixed. By the time I started at TIE it was clear that the strategy would not be delivered in full because the design was not going to be completed on time. Therefore the strategy was then to get the design as far as possible towards completion to reduce the risk as far as possible. The infrastructure provider was to price the remaining risk and accept the risk under a concept called Normal Design Development, which was crucial. The designers gave a partial design and the infrastructure contractor gave a fixed price to complete the remaining design and build it and the contractor only received more money if in completing the design it had changed significantly. This was at the core of TIE's problems with the Infraco contract because the infrastructure contractor argued successfully that any change was a change, not just significant changes.
195. I recall by the time I started at TIE in October 2007, that the Infraco contract was to be awarded in January 2008. My view was that the timetable was possible but unlikely. TIE was deliberately setting demanding targets so that if there was delay then good progress would still be made. Setting realistic

targets still ran the risk of delay so TIE was saying January and viewing February as an acceptable fall-back. The timetable almost worked but it still dragged on a bit beyond the target for completion, in the end predominantly for discussions about design.

196. My understanding of novation was that it is a legal process where a client transfers a contract with a supplier to another party, so the third party becomes the client of that contract as if they had been the client from the first day that the contract was signed. Everything that the first client had done was binding on the second client and all the obligations of the consultant to the first client were now binding on the consultant to the second client. So in the case of the novation of the SDS contract to Infraco, it was as if BSC had been SDS's client from the first date of the SDS contract in 2005. That was not the first novation I had seen and it was not an unusual contractual mechanism.
197. I recall that I prepared a draft paper on the detail of how to novate the SDS contract to Infraco dated 7 November 2007 (CEC01480893) and covering email (CEC01480892). That paper was finalised and discussed with Willie Gallagher. The recommendation was accepted and the actions set out in the last paragraph were taken. The paper was not about whether to novate but about confirming the timing of novation. Novation was a strategy that predated the letting of the SDS contract. There would be a final version of the paper in TIE's records.
198. I am aware of an email to me and others from Andy Steel in TSS dated 3 December 2007 (CEC01480075) regarding the 29 November 2007 version of the Novation Plan. Andy Steel did not have a role in the novation as his role was to provide technical expertise and commentary. He was asked to give his view on the technical aspects of novation and he did where he was able to do so. There were a number of comments where Andy had asked for "*others to comment*". Andy Steel was commenting on whether what was set out was technically feasible to deliver. There were various concerns from Andy Steel and he was the technical expert. It was not for me to agree or disagree with his concern but to hear his advice and, in that case, for Geoff Gilbert to hear

his advice. Between that time in November 2007 and novation in May 2008, there was continuing discussion about how differences between design and the Infraco proposals should be handled in the Infraco contract. Ultimately, the outcome of all the discussion was the notorious normal design development clause of the actual Infraco contract. That clause was intended to deal with these issues that Andy Steel had raised.

199. There were three items to consider – the Employer's Requirements, the SDS Design and the Infraco proposals. The Employer's Requirements was what TIE had asked to be delivered by the Infraco. The SDS design was supposed to have delivered the Employer's Requirements and the Infraco was allowed to propose to deliver differently as long as the same outcomes were achieved. Inevitably the designer's design and what Infraco wanted to build would be different. The process was ongoing to work out whether some of the proposals from Infraco were acceptable and how to finish up with one design which was then going to be built on the ground. Ultimately by novating SDS to Infraco design alignment became Infraco's problem and the contract should have led to Infraco managing design completion. All of that was taken into account in the actual contract wording for the design going forwards and it was highlighted that there were practical risks about what had to be achieved.

200. I recall that Andy Steel's views were taken seriously and although he did not have a role in the novation he had been asked for his technical opinion. What Geoff Gilbert had set out was what ideally would happen. However, Andy Steel had commented that it was not technically achievable. The issues that Andy Steel raised, and not for the first time, were taken into account and dealt with in the contract awards so they were taken seriously. Although I was not present for much of the contract negotiations, I understood that a large amount of the contract negotiations were taken up with how to deal with the design not being complete and also the fact that the Infraco would not necessarily want to build exactly what had been designed. There were arguments that sometimes the design was overly specified for what was actually needed and the Infraco took the view that they could build something cheaper than what was designed and would still work perfectly well.

201. I am referred to a draft document prepared by PB dated 14 January 2008 (CEC01484338) entitled "SDS Contract Novation Planning". I did not have any involvement in the preparation of the document. With regard to the Executive Summary I agreed with SDS that the deliverables from the SDS contract would not be complete before novation and nobody at that time thought that they would be. What PB were referring to was the fact that it was the original intention that the deliverables should be complete before the award of the Infraco contract and that was the original intention. The paper stated that everything was not as originally intended and considered what was now going to be done about it.
202. That the design was not complete caused additional difficulty with the negotiations. Ultimately, because the normal design development part of the contract did not hold up as TIE believed it would, it caused enormous trouble to the tram project. That was not foreseeable at the time. What was foreseeable at the time was that TIE were not in an ideal position but we could not keep delaying the award of the Infraco contract. TIE needed to get going because it was costing money every week we delayed getting the Infraco on site. We needed to do work and so the contract had to take account of that reality. It meant that there was additional risk and it was believed that through the normal design development clause the additional risk would only arise if something significant changed in the design, and that would be TIE's problem and cost. In particular if CEC changed their mind or imposed unexpected planning conditions then TIE would be due to pay Infraco extra money. There was a risk that any change would cost TIE money but it was believed that the normal design development clause provided the protection against the incomplete design. It was not foreseeable that the legal drafting would not stand up to BSC's challenge and that TIE adjudications would fail so badly over interpretation of the legal drafting. The failure of the normal design development clause to hold up was a major cause of delay and cost overrun. The root cause of that was the failure of the contract and the contract not doing what the lawyers said it would do, not the design delay.

203. I recall that there were discussions between TIE and PB and the outcome of the discussions was that TIE was not willing to delay novation. TIE was not willing to accept the risk of all design change from the date of the documents on which the contract was based, which was some months before the actual date of award. All design changed from then to Issued For Construction (IFC) drawings would have been TIE's problem if novation did not happen. In the end, because of the contract failure, that was exactly what happened but it would have been absolutely certain if SDS was not novated that cost overrun and delay would occur. It would have then been entirely TIE's responsibility and the Infraco would have taken no part in managing the design.

Infraco claims for delay

204. I recall that I sent an email to Michael Paterson dated 26 May 2010 (CEC00408917). I am also aware of a letter from TIE to Bilfinger dated 15 September 2008 (CEC00408918) about Scottish Water consents. Fundamentally novation did not achieve the desired result because Infraco deployed little effort to manage SDS to the extent that they should. There were many cases that the Infraco should have rejected SDS changes. Infraco did not do that timeously and often not at all. If Infraco did then it was only after protracted delay. TIE tried to indirectly manage SDS because the Infraco would not, for example, as shown with Scottish Water consents. SDS had claimed that it was a change for them to get those consents. TIE demonstrated very clearly that it was not a change under their contract.

205. There was also the problem about who was responsible to help because it was not straightforward to get those consents from Scottish Water. Both TIE and the Infraco had duties to assist SDS in that instance and the claim was that TIE had not done what we were supposed to. However, TIE had honoured its obligation fully. As soon as information was made available to TIE and it was suggested that there was a problem that was TIE's, we investigated and demonstrated that there was no delay being caused by TIE and we made representations and pressed Scottish Water to consider the applications rapidly. However, the Infraco failed to deal with these issues at

all. BSC did not come to meetings, did not come to the Approvals Taskforce where practical steps to secure the consents were being discussed. BSC were invited but they did not show up and they did not engage with TIE on that issue at all. BSC were content to let it sit because they believed they could get away with not resolving it, and it was to their commercial benefit not to resolve it.

206. TIE were successful in demonstrating that SDS were not entitled to any additional money: we certainly did not pay Infraco any additional money so that Infraco could pay SDS for that particular work. Whether the Infraco and SDS struck a separate deal outwith the terms of the SDS contract was something that nobody in TIE could ever know, not least because it was specifically forbidden by the contract. Infraco themselves were able to claim for delay even though they contributed to the delay by failing to manage SDS and failing to assist in the resolution of those issues. TIE demonstrated clearly that it was Infraco's obligation and they should have done that. Infraco did not do that and TIE did not accept the validity of every claim for delay. Therefore TIE gathered evidence and attempted to enforce the contract. Infraco refused to accept TIE's position and, ultimately through the various adjudications, Infraco's strategy and tactics were successful.
207. In my view it was Infraco's strategy from the beginning not to devote resources to managing the design and to use the normal design development clause to justify delay and change requests. The most telling detail was when Infraco mobilised they had some of their technical people on site quickly, they gradually built up their technical team and their construction team, but they had their commercial team in full on the first day. There was no ramp up of Infraco's commercial team, they were there and ready. This order of mobilisation demonstrates a huge amount about Infraco's attitude to the contract from the start. That was not an unusual approach at the beginning of a contract but it showed how the contractor was approaching the contract. It was unusual when the contract contained commitments that they had signed up to that they would work in cooperation with TIE to resolve problems. It sent the message that the contractor did not intend to honour that commitment

from the contract and that they had no intention of cooperating and working together and that they had every intention of milking the contract for everything it was worth from the very start. That was disappointing but it was not particularly surprising. There was an element that it was not even particularly reprehensible although they had signed the contract that said that they would not do that.

208. It was frustrating and disappointing that when the contract was ultimately tested at adjudication, what TIE believed it would do did not hold up. If the contract had done what the lawyers had said it was intended to do then TIE would not have lost those adjudications. It was not at all clear to me whether that was because the lawyers wrote that part of the contract poorly or whether the lawyers advised TIE's negotiation team of the risks and TIE chose to take them. I was not present during discussions of the normal design development clause with lawyers in the run up to finalisation of the Infraco contract.
209. There was an extent to which I expected these early difficulties because of what I had seen Infraco line up in their commercial teams. TIE gathered evidence about resolving issues as to whether TIE or Infraco were responsible for delay and kept records. I expected some of the difficulties and expected Infraco to claim for every change they possibly could. I expected Infraco to take time to ramp up to mobilise and expected that there would be a few issues and that Infraco would not be able to get fully on top of the SDS contract on day one and that was not surprising. There was likely to be a period of mobilisation but I did not expect that Infraco would take the prolonged attitude of not managing SDS and of acting as a post box for all of SDS's exchanges. I also did not expect Infraco, instead of managing SDS and applying that prior level of scrutiny to all claim changes from SDS that they were obliged to under the contract, to just send everything to TIE and sit back and say that it was TIE's problem. That occupied TIE's time and also, ultimately, Infraco received additional money for the delay. TIE also repeatedly reminded Infraco of their obligations in the contract in writing as we had to but they did not wish to honour those obligations because they did not agree that those were their obligations, and they were able to hold that

position successfully with adjudication. The amount of changes under Infraco that came through ultimately slowed down the work that TIE as a company were trying to do in a positive manner.

Utilities design

210. I am aware of the minutes of the TIE/Carillion progress meeting on 11 March 2009 (CEC00956775) which I attended. I am aware of an email from myself to Jim McEwan dated 25 February 2009 (CEC00956009) with an attached document (CEC00956010) on MUDFA design programme analysis and also the minutes of the TIE/Carillion progress meeting on 4 March 2009 (CEC00956332). At the meeting on the 11 March 2009 we talked about SDS resources that were part of the directly managed contract so that was not novated to the Infraco. There were issues about whether SDS was deploying enough people to do the utilities design and that was raised with SDS with Jason Chandler and with Steve Reynolds. The point that SDS made in response was that TIE was not providing information when they said they would and that SDS could not programme additional resource until TIE had given information consistently. There was some truth in that and it was also a bit of cover for SDS and they used it as an excuse that people from TIE were not consistent about what the priorities were. There was an email later from Jim McEwan to Graeme Barclay that said that no one was to ask SDS for new or amended except me because Jim McEwan and I both thought that SDS were using that as an excuse. Part of TIE's strategy with SDS all along had been to take away the excuses for non-performance because then it would be clearly in their domain. Sometimes TIE would take away all of SDS's excuses and they performed and other times they did not but then at least it was clear that they were responsible.
211. It genuinely did not help SDS if people were asking them to do different work at different times and not giving consistent instructions and there was a phase with the MUDFA design where people within TIE were not sufficiently joined up. However, SDS had a means of dealing with that, which was to come to me and say that they had been asked to do a number of tasks and if I could

tell them which one to do first after consulting colleagues. SDS had an avenue to manage that process better themselves but did not make sufficient use of it. This is why I believe that mainly it was an excuse on their part but it was also, to a limited extent, a genuine cause of the problem. SDS did not have enough staff so, ultimately, Jim McEwan and I had a robust meeting with Steve Reynolds and Jason Chandler after which they started to deploy more resource and after which TIE then gave more consistent instructions and everything came through me. There was some improvement in SDS's performance at that point but not complete improvement. There was a discussion of that detail in my email to Jim McEwan and its attachment of 25 February. What could be seen was that SDS did some tasks better than they forecast and on other tasks they had been delayed because of external information, in that case from British Telecom (BT), and in other tasks one was delayed by six weeks by the failure of SDS to respond to a letter that TIE had sent. One of the delayed tasks was clearly one that they had failed and that cost six weeks delay. Other delays were caused by factors that were not within SDS's control.

212. All the scrutiny of the utilities design programme was to get to the bottom of the situation of why the delays were happening by taking away excuses from TIE and from SDS. The same approach was taken to the planning and design generally and that had produced improvements but not solved the problems. The situation was still poor and there were still performance problems from SDS. I would have expected SDS to be more proactive to try harder to help solve problems but it was clear that they were wanting TIE to resolve issues for them. By establishing what was causing the issue and whether that was on the client's side we could establish clear accountability for progress. In some cases what the TIE team had to do was put additional pressure on the utility companies to respond faster because it was costing TIE significant money. Those discussions were had with BT, Verizon, Scottish Gas and Scottish Water but I was not involved in relation to the utilities diversion work. My only involvement was with Scottish Water for the permanent design. Eventually, I could demonstrate that SDS were not deploying enough resource and then they brought in a couple of additional designers and that helped.

213. Halcrow were PB sub-contractors doing much of the utilities diversion design and some of the permanent design. It was for PB to manage Halcrow. Halcrow were not likely to respond well to any attempts from PB to resolve those issues because Halcrow were feeling very sore commercially from the removal of permanent design work from them by PB. TIE pushed PB to deal with Halcrow but we had to be realistic about what effect that was likely to have. All PB or TIE could have offered Halcrow was money and that would have rewarded bad behaviour and set a dangerous precedent. TIE also pressed Halcrow directly and I raised the issue to the highest level I could in Halcrow and told them that I would get TIE staff to deal with TIE's issues but I needed Halcrow staff to step up and deal with their work. That worked to an extent but it was clear that Halcrow were reluctant. Ultimately the design was finished but it was a painful process and it was a lot more painful than it needed to be for a variety of reasons including Halcrow. There were no liquidated damages in the SDS contract to penalise PB that were applicable to this situation. It did hurt PB that Halcrow were not completing the work and they were not getting paid. The situation was that PB had staff costs involved that they were not getting any extra for so it did hurt them but it did not hurt them enough to overcome the problems they had with Halcrow.

Design Audit

214. I am referred to the report of the Design Audit conducted in January and February 2010 (**CEC00338516**). I note that the tracked changes show that was originally described as a design change audit but, in fact, the contractual term was a design audit. I saw the report but was not involved in the design audit itself. Design audits were about whether the design was buildable and appropriate. TIE's involvement in the design audit was led by Bob Bell. By that point I was not managing the designer because it was Infraco's job to manage SDS. I was not involved in any of the design audits in any way. Bob Bell would have initiated the audit and selected the individuals involved.

Reasons for SDS design delay

215. I have been asked how I would describe the manner in which the SDS contract was executed; what the key difficulties were, how they arose and what I did to assist in their resolution; whether the difficulties were expected in terms of nature and/or quantity; what had been done to mitigate against difficulties. In responding to these questions, I refer to a paper I wrote in August 2008 (CEC01095155) offering my personal observations and entitled "*Lessons Learned from SDS Contract*". That paper was from me to Frank McFadden who had asked for my views on what we could learn from the SDS contract with a view to managing the Infraco contract more successfully. Frank McFadden had come in as the Infraco Director at that time and had not been there long. The paper focuses on things that TIE could influence and could do more effectively in relation to the Infraco contract.
216. The paper was of wider relevance to the tram project as a whole and it was not intended to be for the record on what was right and wrong with the SDS contract. The paper was intended to be used to inform how TIE would behave with BSC so that we would not repeat the mistakes to the same extent and we would repeat the good practice that we had done with SDS. I primarily drew on my experience of the fact that I had managed the SDS contract for several months but I also drew on having looked at the records and information that was there and I compared that with other relationships I had managed before. Working with SDS was not the first time I had dealt with a difficult relationship between two organisations who did not entirely trust each other and yet they needed to work together. I drew comparisons for the work I had done to get from a difficult and poor relationship with Network Rail to a much better relationship when I was at TS. The successful work I had done with Network Rail in relation to building relationships and understanding each other's point of view and recognising each other's real financial position had improved the situation significantly with TS and I drew on that experience. I also drew on my experience from other contracts and working in TS, so I was not just experienced with the SDS contract in isolation.

217. The paper was not intended for wide-scale dissemination within TIE, and I believe that no one else at my level saw it. I believe that Frank McFadden discussed parts of the paper, if not the whole, with Susan Clark and Steven Bell as they discussed how they were trying to work positively with BSC. There was a real attempt from TIE to engage with BSC from the start to work together to forge positive relationships which did not go well but not due to lack of effort on TIE's part.
218. The paper argued that the problems with the SDS contract arose from multiple causes which is particularly important because up to that time a lot of TIE senior management time had been devoted to trying to find the "one cause" to fix design delay and quality. Improvements in design performance began when individuals in TIE and SDS recognised that issues were not black and white and multiple issues needed to be addressed to complete the design. As I described it within the paper:

"At various times different people in SDS, tie and CEC have all been gully of being convinced that there is only one way to do things – "my way". From observation this has typically come from people who frame the problem narrowly to fit how they understand the world – but there are few narrow problems with a project as complex as the tram.

"In the face of the complexity and enormity of the tram project people in leadership positions cannot afford to take a simplistic view of problems. The result of this has been people turning the handle on the sausage machine without understanding. This works on aspects of the project that are going well but flounders completely in the face of some of the difficult problems – and the typical result has been adversarial behaviour."

219. I gave a list of issues that had all contributed to design delay that included a flawed and unrealistic SDS contract; poor initial SDS contract management; tie contract management practices; adversarial behaviour and a lack of mutually supportive relationships; CEC's behaviour as planning authority and

ultimate client; a "do it my way" mentality from some individuals; and a failure to nail issues down completely. The paper refers to other issues but these are the most significant. Some of these issues were apparent to me before I joined TIE and others only became apparent to me as I worked on the detail of the tram project.

220. My approach to the design and consents manager role was to identify both individual issues that needed to be resolved but more importantly to identify and work with others to address the underlying problems. In tackling the underlying issues I worked with TIE senior management, technical experts, key members of the SDS team and officials from the CEC Roads and Planning departments to try to change how people were behaving. I paid particular attention to building more positive relationships with and among the parties to the design process. As I note in the paper "*Projects are fundamentally a people business but that regularly gets forgotten in technical detail.*"
221. One of the lessons TIE learned from the SDS contract was that it was ineffective and counterproductive to transfer responsibility for things that TIE would be better placed to manage. The SDS contract made the designer responsible for things that were legally impossible to deliver (such as Traffic Regulation Orders which have to be promoted by a Roads Authority) and others that were practically impossible without significant support. The approach to the remaining consents was amended in the Infraco contract to strike a better balance between Infraco securing consents and TIE providing practical support to assist the process.
222. Nobody could have expected that SDS would do such a poor job of getting the project going. It was not normal and TIE did not expect that PB, a well renowned company, would field somebody that performed so poorly. I had previously noted the comments made by Matthew Crosse about SDS in my email to Bill Reeve dated 17 January 2007 (page 2, TRS00003538). I am aware of PB's good reputation worldwide and I know of some of the work that they had done previously. I agreed with Matthew Crosse that PB were a good

company so the question at that time was why was PB not performing as well as they had done elsewhere. I cannot remember who the project manager was for SDS as he had left before I started, but I could see that SDS did not have a proper project plan until Jason Chandler came in as project manager, which was some months into the contract. It was unbelievable that SDS were so disorganised. Nobody could have expected that PB's standard project processes for getting a project started would fail so badly and, clearly, nobody in PB's senior management expected it because they would have taken action to stop it. I do not know whether that individual was fundamentally incapable of being a Project Manager for the Edinburgh tram project or for whatever reason, performed poorly on the project, but otherwise performed well. Whichever it was, PB's senior management clearly did not expect that it would be the case because they either would not have appointed him or they would have intervened a lot sooner.

223. SDS had got off to a bad start with their management of the contract and the design. PB had realised this and replaced the Project Manager with someone able to bring proper discipline and organisation to the SDS work practices. However, that was not sufficient to recover from the bad start and arguably meant that some dysfunctional relationships, for example with the CEC planning and roads teams, became codified and entrenched. It wasn't until January 2007 that PB brought in a senior director, Steve Reynolds, who was able to give the transformational leadership that would start to improve SDS's performance to closer to the levels that TIE could expect. By that time the design programme was seriously in delay. This is also another instance where TIE's "little float" approach caused issues. TIE rightly pressed SDS to recover time lost through the poor start to the contract but persisted with that approach long after it was apparent that recovery was not possible and indeed long after it was apparent that unrealistic insistence on not agreeing a new baseline programme was contributing to delay rather than reducing it.
224. Once a new baseline programme was agreed SDS continued to fail to deliver many design packages on time but it became more apparent, deliverable by deliverable, where the causes of delay lay.

225. SDS got off to a very bad start and never properly recovered. TIE pressed SDS to recover but did not recognise the full range of things that were necessary to improve SDS performance and did not add time to the programme to allow a realistic prospect of delivery. This situation only started to improve meaningfully when David Crawley of TIE and Steve Reynolds of SDS started to address the underlying problems and attempted to agree a realistic programme. I built on that by building better relationships with SDS and between SDS and CEC and by bringing all parties together in the approval taskforce. That reduced design delay by a third between October 2007 and May 2008 but other factors meant that design slippage did continue.
226. I inherited a situation where TIE had not always kept complete records, issued relevant contractual notices or processed applications for payment promptly. TIE had also not forced SDS to complete change paperwork in every instance so things that had been agreed were still causing issues because of paperwork problems. David Crawley and I undertook an exercise to close off all outstanding change paperwork which prevented further problems of this sort.
227. My appointment as TIE's representative for the SDS contract also brought an unambiguous focus to TIE's management of SDS and everyone in TIE and SDS was clear that instructions and change requests were only valid if they had come from me.
228. SDS's failure to deliver, TIE's failure to recognise or acknowledge that some aspects of delay were not SDS's fault and both parties' failure to complete necessary change documentation promptly combined to produce a very adversarial relationship between SDS and TIE. At its worst it had deteriorated into TIE shouting at SDS to deliver better and faster which was completely ineffective. When I arrived in TIE there were some positive individual relationships between people dealing with technical issues but David Crawley and I needed to spend a lot of time building bridges with Steve Reynolds and Jason Chandler to try to overcome the mutual suspicion and focus on issues that had to be resolved to get the design completed and approved.

229. In the period up to late 2007 CEC did not take ownership of the tram project and instead outsourced ownership to TIE. This was apparent to everyone involved in the tram project and it was notable that CEC itself only gave evidence to the Scottish Parliament tram bill committees at the insistence of the committees. Organisationally, CEC did not recognise that they needed to do more than just provide governance and oversight for TIE – they needed actively to champion the project and to make sure that all CEC staff understood the importance of the tram. Too often smaller CEC projects were allowed to hold up tram design. It was right that CEC should want the tram to fit into the bigger regeneration plans that CEC had and thus avoid unnecessary work for the smaller projects. But no account was taken that the cost of delay on the tram far outweighed the additional cost to other projects. This tends to happen on all large projects but the extent to which it happened on the tram project was very unusual.
230. For example, CEC repeatedly could not decide what alignment they wanted at Picardy Place and what the traffic management was to be. CEC wanted the tram to allow for a hotel in the middle of Picardy Place but delayed taking a final decision on the extent to which the tram should accommodate a hotel for many months including indecision about what shape the island in the centre of Picardy Place should be. CEC were also questioning what utilities should be diverted for the hotel. CEC needed to decide on an option and if it turned out that was wrong then they would have to spend an extra few hundred thousand pounds to fix it. An early decision would have meant that CEC had made the best decision at the time and the alternative was risking millions of pounds on the tram project. Yet CEC kept re-opening the alignment at Picardy Place.
231. CEC's problem was often the failure to make decisions that allowed tram scope and design choices to be finalised. The cost of that delay was often significant and had consequential impacts on other design completion. This provided SDS and later Infracore with excellent justification for delay claims.
232. For the period from the SDS contract being signed in September 2005 until late 2007 CEC Planning was not consistent in its approach to the tram design

and often problems arose from the individual preference of particular planners or from the desire of planners to ask for levels of aesthetic design that were not proportionate to the setting of the tram – particularly outside the World Heritage Site area. Not all CEC planners behaved this way but far too many did.

233. For example, there was an attempt by CEC to bring up the issue of not having any tram stop shelters long after it had been concluded that there had to be shelters. If the design principles were not frozen then it cost a lot of money to keep those issues open and it prevented work being completed. All the time my focus with SDS was on what were the issues that were preventing completion to solve the issue. That only worked if it was a list that got shorter over time. It would not work if more issues were being added to the list that that were not genuinely new issues.
234. This improved with the creation of the approvals task force and clearer direction from CEC senior management to planners considering the prior approval applications. However, by this time a large amount of delay had been caused and SDS had lost confidence in the fairness of the prior approvals process.
235. In short CEC never behaved as though the tram project would be the biggest project that Edinburgh would see in 50 years. In my view CEC's failure to decide what the tram was for and then make that stick was the biggest single cause of deadlines being missed and cost increase on the project up to the point of Infraco contract award and the consequences continued to be felt throughout the Infraco contract even after CEC finalised its position on all issues.
236. In my first few months at TIE the most striking thing about getting to grips with the detail of the tram project was the very large number of issues that either never got closed out or were allowed to come back once they had allegedly been closed. This was a characteristic of all the organisations involved in the project. It was particularly frustrating to discover that in many cases everyone had agreed what the right answer was but no one had completed the

necessary project documentation to give effect to that agreement. At best that left scope for confusion and at worst allowed people to change their position and deny that they ever agreed to the earlier position.

237. In attempting to resolve these issues I took advantage of my personal experience of previously being involved with a lot of the major rail projects and that helped both in terms of having the right contacts in Network Rail and having seen how similar issues were managed. Having that previous experience was helpful to me to an extent where there were similar fundamental problems. I had also, whilst at TS, been to and talked to the teams responsible for every tram project in the UK and in Dublin so I had done my research on what sort of issues that could be encountered during the design and construction of a tram project. I did not specifically focus on design at that time because I did not know that I would leave TS for the position of design and consents manager inside at TIE. I had been to all the UK tram schemes and Dublin and had gathered as much information as I could. It meant that I was technically literate in the issues that were likely to arise and assess whether there were issues that were not on the list that should be. It helped me prioritise what issues were likely to be most important and I drew on that previous experience. That all helped dealing with a lot of the design problems but there was still SDS and their poor performance, CEC being undecided about some key issues and the legacy of the PB and Halcrow fallout from the claw back by PB from Halcrow. Those were not issues that I could resolve because although I could see what had happened, I had little or no ability to influence those cases. I made people in CEC aware that if they didn't make a decision and stick to it, that it would cost the tram project a certain amount but if they did not heed that then there was nothing I could do.
238. With regard to TIE's contract management practices when Frank McFadden had responsibility for managing the Infraco contract, TIE had proper records and documents were all logged as they came in. There was a discipline and a proper process for document control and that was a lot better from the point of view of the record keeping. Some issues continued such as the failure to close issues completely and, ultimately, the lack of mutually supported

relationships also continued but there was a determined attempt to avoid that with BSC. Because of the contractual course that BSC had decided to go down that effort was in vain.

239. TIE was not able to enforce all the SDS contract terms; some of those terms were not reasonable and not deliverable. If SDS had challenged those terms in court, I was confident that SDS would have been able to have those particular contract terms struck down. From those administering the contract there was a realism that said that TIE had asked SDS to do some work which they literally could not do. SDS were responsible for achieving TROs and only the local authority could do that and apply for a TRO, therefore TIE could not enforce the contract terms in full. There were other matters such as third party negotiations that TIE could have enforced the contract terms on but that would have produced a very bad result for TIE. It would not have been appropriate for TIE to leave all negotiations with third parties to SDS alone and TIE had to be involved in dealing with third parties, such as Forth Ports. It was not an unwillingness to enforce the contract but a recognition within TIE that what it said in the SDS contract was not deliverable. Maybe SDS should also have screened and refused to sign the contract without changes in the terms but SDS were bidding for a very big contract up against competition and I suppose no bidder wanted to be the one that said that they were not willing to sign up to the terms and conditions of the contract and were going to turn down a £23 million contract as a result. SDS would have had the view that they were going to sign but were then going to argue later that the terms were not fair and that they were not enforceable. TIE was willing to enforce the SDS contract terms to the extent that they were enforceable and at times, TIE was overly willing to try to enforce the terms. There was very harsh and narrow contract management practice immediately before I became the SDS contract manager where there were attempts to enforce the terms of the SDS contract, regardless of whether it was reasonable behaviour to do so. It was TIE who had let a contract in which they had not thought through the implications fully in that contract

240. I am aware of a chart comparing SDS deliverables for period 10 in 2007 (CEC01483373). In order to deliver the SDS scope SDS ultimately split the design into 343 deliverables ranging from quite small, such as half a dozen drawings, to larger ones which would have hundreds of drawings coordinated. That was the number of deliverables and unless there was a contract change, the number of deliverables would not change. One of the issues had been to stop changing the number of deliverables as that obscured just how much progress was being made or not. We had arrived at the point where there were 343 deliverables and SDS had a programme that stated when each deliverable was supposed to be submitted to TIE so they could track how many should have been made over time. On the chart, the top purple line showed how many deliverables there should be of the 343 on any given day according to version 17 of the SDS programme. The blue line underneath showed the actual number delivered. There was a gap between what should have been delivered and what had been delivered: that was what the two lines showed. The bars broke down how many cumulative deliverables should be delivered in that period. By 14 December 2007 there should have been four, by 21 December 2007 there should have been eight, by 4 January 2008 there should have been nine and that was shown in the purple bars. The blue bars showed how many cumulatively had been received, which was two by 14 December 2007, the day on which on the chart was produced.
241. The chart showed that there was a cause for concern that SDS were behind on version 17 of the programme before the start of the 4-week period in question and that there had been further slippage during the period. What the chart does not immediately show was whether version 17 of the programme was the current version of the programme on that day or whether it was a previously agreed baseline. Together with the Approvals Taskforce, where appropriate, I worked out what the issues were, logged the issues, got SDS to commit to deliverable dates, got SDS to tell me why they had not delivered on given days and made sure that I dealt with all of the issues that were not within SDS's control that were delaying them. Part of that was putting pressure on SDS to raise their game because they needed to.

242. I am aware of the report to CEC's Internal Planning Group (IPG) on 15 November 2007 (**paragraph 3.3, CEC01398241**) although I did not see it at the time. I am aware that there was a lack of coordinated design. SDS were following a normal design process of designing then working out any co-ordination issues; for example, if overhead line poles and the traffic poles went together or had they accidentally put an overhead line pole in front of a set of traffic lights so that drivers could not see them? Whether all the individual parts of the design fitted together was dealt with in the co-ordination. The design co-ordination was delayed because individual design deliverables were delayed.
243. The lack of design co-ordination was a major concern because the likelihood was that some of the design was going to have to be re-worked when that co-ordination was done, and SDS had left that co-ordination later than usual. It was normal to have two attempts at the co-ordination, an initial attempt and then a final attempt which was the one that would stick but SDS was doing all co-ordination at the end. It was a matter of great concern that SDS had delivered over 200 design deliverables but not delivered any coordinated design. Therefore TIE could not be confident that anything that had been delivered in the individual detail was actually going to be correct. Much of the design would be correct but which parts would have to be changed were not clear. Coordinating the design was within SDS's gift, they had to get on with that and that was one of the areas where TIE were putting pressure on SDS to raise their game. Again TIE had to make sure that SDS were not able to say that they could not co-ordinate that design because they could not finish it due to not being told what was wanted or decisions had not been made.
244. I am referred to an email from Tony Glazebrook to Steven Bell dated 30 November 2007 (**CEC01500320**) which advised him of certain critical issues. Part of the process of resolving whether design was progressing was holding a weekly critical issues meeting attended by SDS, CEC, TIE, technical persons and me where we would go through a list of the critical issues that were holding up design completion. The critical issues had a priority and every issue had somebody who was responsible for resolving it and would have to

report on progress made at the following weekly meeting. That weekly meeting with everyone was part of the process of what TIE were doing about resolving issues.

245. In terms of confusion about who did what, the language that Tony Glazebrook used and the way he described it was overstated to attract Steven Bell's attention. However, it was true that people were not always clear about who did what. If an issue came up because someone in the senior TIE team had identified it, they would tell somebody about it and tell them to do something to resolve it. That person would then tell somebody else about it and ask them to do something to resolve it. That was not helpful behaviour because only one person should be told to resolve any issue. That was the behaviour that Tony Glazebrook was stating that was unhelpful. To resolve that Steven Bell finalised a chart and that was briefed out over the next two-week period, which to a large extent stopped that behaviour. There was greater clarity about who was responsible for certain work and there was definite clarity within Tony Glazebrook's team but people outside their team weren't so clear.
246. The other issue that Tony raised was that information was being given directly to TIE's procurement team by SDS without a copy coming through TIE document control. SDS were asked to stop unless they also gave TIE a copy to formally to enter into the document control system. TIE appreciated that SDS were trying to be helpful and do the work quickly but they had to do it through the system otherwise procedures would unravel.
247. I am aware of an email from Susan Clark to me dated 4 December 2007 (CEC01480044) that listed the SDS design issues identified by BBS that in its view were constraining the programme. That was a long list from BBS which was in part tactical and in part true. That was in December 2007 and BBS were not working at that point. BBS were saying that if they signed the contract then they could not start work in all the areas listed because the design was not complete. It was true that these designs were not complete but there was no way that BBS could start work on all that was listed at once. It was an early list from BBS which they wanted to discuss with SDS. If there

was prioritisation to be done about what parts of design had to be finished and coordinated and ready to be issued for construction first then the list was the Infracore wish list. Eventually the Infracore programme would reflect that list to an extent. In practice all that I could do was to make SDS aware of the list and tell them that if they had a choice about completing a package that was on the list or a package that was not then they were to choose the package on the list. SDS had complete the packages that were on the list but still had to do all of the packages anyway. I had that discussion about the programme and whether it could be done.

248. I am aware of my email to Susan Clark dated 17 December 2007 (CEC01483284) which made reference to SDS performance. The words '*SDS underperformance*' appeared in my email but I had not stated that there was SDS underperformance. I had said that Duncan Fraser of CEC had highlighted a real risk that SDS underperformance would delay the programme. At that point there was a risk that SDS would not perform as well as they should in presenting the roads programme. In December 2017 CEC were very worried about the unknown because they did not know what they were getting and whether it was going to be good, bad or indifferent. When CEC finally received a package for phase 1b which was Leith Walk then they had different concerns because they had actually received something concrete to base their concerns on. It was not about the programme, it was all about when CEC had something to look at and the delay was affecting the relationship with CEC because they were very nervous. The longer CEC were waiting the more nervous and less tolerant they were of what was given to them and they pulled it apart in huge detail when they received it.
249. I agreed with Duncan Fraser that there was a risk – which was in fact realised – and that risk was accounted for in the risk register. Mark Hamill, TIE's risk manager, calculated the QRA and that included the issues raised by Duncan Fraser, such as SDS not meeting the timetable that they were supposed to and not producing drawings when they were supposed to. At the time of Mrs Clark's email CEC were not contributing to any difficulties with the roads design other than at Picardy Place (see paragraph 230). At that point the

responsibility was firmly with SDS. Once GEC had received the roads design packages the volume of their comments contributed to design delay. Many of these comments were justified but not all and the sheer volume and detail was difficult for SDS to resolve.

250. My email followed one from Geoff Gilbert to Duncan Fraser at CEC on 14 December 2007 (**CEC01397774**) which referred to a presentation by TIE the previous day and responded to certain questions about the Quantified Risk Allowance (QRA). One of Duncan Fraser's issues was the extent to which the scope of the tram project was fixed. At that point most of the scope was fixed to preliminary design level and scope was not fixed at detailed design level. The contract attempted to deal with that and by including normal design development, from preliminary design to detailed design, in the price. No extra money for changes should arise from that – neither from carrying out the design work nor for building the final design. There were areas where the scope was not fixed in December 2007. I had just confirmed the scope for Picardy Place but it turned out that that was not successful as that was reopened again after December 2007 when I had secured agreement to a set of drawings from CEC. There were issues that came up after December 2007, for instance, the issue about having concrete or having stone flagstones on tram stops in the World Heritage Site. Geoff Gilbert's position was overly bullish about what the likelihood of preventing further scope creep.
251. I am referred to a document entitled "*Contract Package Completion Status*" dated 7 January 2008 (**CEC01429575**). I had not seen that document before. The document was highlighting what schedules to the contract there needed to be and the extent to which they were drafted and agreed. In the document there was a reference in Schedule 16 that covered the programme, where it stated that it "*Needs to contain the Tramco programme and SDS programme for delivery of remaining designs*". Schedule 16 would contain an agreed version of the SDS design programme (as well as other programmes for infrastructure and tram vehicle construction) and that would be the baseline against which to judge whether further design delay had taken place.

Schedule 16 was about a baseline not about concerns over whether the design was progressing to plan.

252. Both TIE and BBS had concerns about whether the SDS design would be completed to programme and both TIE and BBS were looking to manage the fact that the design was not going to be complete at the point the SDS contract was novated to Infracore. The contractual provisions for dealing with the completion of design after Infracore contract award and the possibility of further design delay were reflected in the main body of the contract not in the schedules referred to in document **CEC01429575**. There were two parallel workstreams going on at that time: one was all the activities I had described that supported design completion and progress and the second was to do with the main contract itself in the negotiations where everybody was very aware of the situation with the design and the main contract itself reflected that. At that time everybody was concerned that the original concept of design being complete before Infracore contract was signed was not going to be met.
253. I am aware of an email from Tony Glazebrook to colleagues in TIE and Transdev (**CEC01485239**) and attached letter from Alan Dolan of PB to me dated 18 January 2008 (**CEC01485240**) which suggested that SDS were prevented from progressing the depot design due to insufficient information being supplied to them. It was a common claim from SDS that they were being held up by lack of information. In some instances that claim would be justified, in others that claim was an excuse and TIE would rebut it. It was certainly a common dynamic that SDS would claim that they could not do any work because TIE had not given information.
254. In that particular instance I am sure that it was being used as a cover for other issues. SDS were wanting a level of technical information that they knew did not exist so Alan Dolan was clearly putting up a front by saying that SDS could not finish because TIE had not provided SDS with all the information. That was information that would not have existed at that time. For example, SDS wanted to know exactly which jack was going to be used for the trams. Siemens or CAF had not yet specified it and they had not decided on which

one but SDS knew what types of tram jack there were on the market and could have designed a big enough hole that would have fitted any of the available options. Whilst it was strictly true that SDS did not have absolutely detailed information, SDS were competent designers and they could have in most instances designed something that would have fitted any available option. Once a decision had been made on the options available then the design could be changed slightly. SDS could have designed to fit any of the available options that might have sensibly been bought but instead they were looking to make an excuse for why they had not delivered the design. SDS could have presented genuine choices however they kept the design at a very general level to try and cover themselves. To address the issue, TIE went back to SDS and told them that they could design for the generic equipment and once the Infracore or Tramco had chosen specific equipment, then SDS would accept that and there may be a need to adjust the design slightly as a result. TIE did not accept SDS's argument here.

255. I recall that I sent an email to Jason Chandler dated 29 January 2008 (PBH00016312) in which I stated that there were only a small number of design deliverables behind the number forecast in version 17 but there was a concern as to whether those deliverables had been, and were being, packaged up into the agreed batches for technical approval. Therefore, I was asking Jason Chandler to what extent the roads design packages referred to had been submitted to CEC for approval. I gave the dates from the programme and had asked if they had supplied all the information required on the data specified. Because that information was supplied directly to CEC it was not supplied to TIE and what my email was intended to do was to work out from PB when they had delivered or were delivering the information. At that time I was sure that none of those packages had been delivered but I needed SDS confirmation of the situation together with their list of outstanding issues for TIE and/or CEC to resolve.
256. I knew that the roads and drainage for sections 3b and 3c worked but that was not a major concern as they formed part of Phase 1b. I am sure that sections 1b and 1d were late and weren't complete. That caused problems for CEC in

terms of being able to get through all the approvals as the resource they had ready to review the design was not being used efficiently and, when those sections were submitted, they were not complete and were not in the level of detail that was expected. The fact that the packages were incomplete resulted in hundreds of detailed comments on design from CEC. Up to the point of receiving the packages, CEC did not contribute to delay. Many of the hundreds of detailed comments that CEC sent back were justified and needed to be addressed; some were true but could have been viewed as overly picky and others were about individual preference in terms of how elements of the design should work. SDS was obliged to design to be consistent with the version of the Design Manual for Roads and Bridges and to CEC's stated policies, both as in force at the time. CEC was entitled to make any comment about whether consistency had been achieved and SDS was obliged to deal with those. CEC also added additional comments, some of which were positive and good design suggestions. However, that was not their role and annoyed SDS: CEC was not there to help design, they were there to say whether or not it passed the test. CEC contributed to delay by giving back a huge list of unprioritised comments, some of which, arguably, they should not have made and that did not help the process. SDS used the preferential comments on the list as a distraction from the substantive issues that they should have addressed before submitting the roads design for approval.

257. I understood, in part, why the huge number of comments were produced. Partly this was because of the nature of some of people carrying out the detailed review who were very thorough and precise and they wanted the design exactly right and exactly like they would do it. Partly it was because there were serious omissions from the design or the supporting information: CEC felt that they had been handed a huge pile of drawings without enough coordinated information. CEC would have been better placed to rise above the detail and identify what were going to be a number of generic issues and once SDS solved them and applied it to all of the design, then they would have cleared 80% to 90% of the issues. But CEC did not do that, they left the designer to try to find the themes in the comments and that was not helpful.

258. The issues were not resolved until, ultimately, TIE was able to get BSC, SDS and CEC together and made them go through the issues that were holding up completion of the design. My recollection of the list of comments is that up to 10% maybe should not have been made and another 10% to 20% were perhaps overly picky. At least two-thirds of the comments that CEC had made were fair and, frankly, most of those comments should not have been necessary because the design should have been right the first time. Whilst CEC contributed to the issues here, they were not the primary problem. The primary problem was the failure to get the design right by the designers and to co-ordinate the design. An example of lack of co-ordination was that when the design for phase 1b was submitted it had overhead line poles that obscured traffic signals in an allegedly coordinated design. That was not good enough, SDS should not have made those errors and they should not have relied on CEC to spot those errors and fix them.

259. I am aware of Steve Reynolds' email to me dated 25 February 2008 (PBH00016981) in which he complained about the tone of correspondence received from Matthew Crosse suggesting a degree of "panic" on TIE's part. I agreed that the comments he made about expectations of SDS were fair and reasonable, however I did not accept the comment about "panic" from Steve Reynolds. I did not think there was panic on TIE's part at that point. At that point there was huge pressure on TIE to get through huge quantities of information in a short period of time and to have the Infracore contract awarded, and at that time there was an attempt to do that. The question that Steve Reynolds legitimately raised was whether the deadlines that TIE was attempting to work to on 22 and 25 February 2008 were achievable. Steve Reynolds was gently pointing out that SDS had no obligation to make their staff work weekends because TIE had supplied documentation late, and to whom BBS as bidder had provided documentation after the deadline. Steve Reynolds made the reasonable point that he did not have to get his staff to make up for BBS's lateness and TIE should not assume that would be the case.

260. The tone of the exchange was indicative of a breakdown of communication. I had got to know Steve Reynolds well at the time and he was a reasonable and helpful person. If Matthew Crosse had, before sending his email, phoned Steve Reynolds and explained that they had sent the information late and that they were under pressure and would appreciate if Steve Reynolds helped them, then Steve would have sent an email of a rather different tone. Steve Reynolds would still have registered that he had concerns about the timescales and whether they were achievable. With everybody under huge pressure the temptation was not to spend the ten minutes before sending something to phone. I understood why Matthew Crosse did not phone and looking back Matthew Crosse may also agree that he could have saved himself some grief and used ten minutes to phone which would have been well spent. In that specific instance it was not about SDS not delivering because there was no work for SDS to deliver. Against the background of SDS previously not having delivered it was not helpful to prejudge them that they needed to do the work, turn up at meetings at certain times and work weekends. That tone was influenced by previous non-delivery but it was not a helpful way to address the problem.

261. I am referred to a letter that I received from Alan Dolan of PB dated 10 April 2008 (TIE00432600) in which he expressed concern about a requirement that SDS should provide a Final Assured Design Package earlier than SDS appeared to have expected. I have limited recollection of the specifics of that issue. There was a problem with communication but the underlying problem here was as Alan Dolan stated that TIE wanted the work earlier than SDS were ready to deliver. SDS at that point were already late with the Final Assured Design Package so it was no good for them to say that TIE wanted it earlier than agreed. TIE was putting pressure on SDS to deliver earlier than SDS's forecast at that time, bearing in mind that the date that TIE was putting pressure on was late from Version 17 of the programme. There was an element of Alan Dolan assuming that TIE were satisfied with the revised dates and that was the issue here. TIE had not agreed any extension to the SDS programme at that point and what TIE wanted was some of the work before the date that SDS had forecast, so there was some tension here. I cannot

remember the details of how that issue was resolved or not. That was a generic issue in that there was a discussion often that related to TIE wanting work before SDS were ready but after the date on which SDS had been due to deliver it. That tension was continuing and that was just one example of that.

SDS progress following novation

262. Following Infraco contract close and novation of the SDS contract in May 2008, I was no longer responsible for the SDS contract and I was no longer the SDS contract representative. TIE was no longer the client and I no longer instructed SDS to do any work, except for the small amount of work that was in the retained scope that was not novated to BSC primarily around utilities diversion design. As design and consents manager it was my job to take the lead on meeting TIE's contractual obligations to assist and support the Infraco in achieving consents. In relation to the Infraco contract itself, I was assessing all the Infraco Notices of TIE Change (INTCs) relating to design that arose during that. Essentially, there were changes to the design where BSC had to pay their designer more and therefore were asking TIE to pay BSC more. I was responsible for assessing all of those and providing draft replies.
263. After SDS novation, May 2008, there was a continuation of the difficulties experienced before novation in completing detailed design, and in obtaining all necessary approvals and consents. There were also new issues one of which was that BSC was showing no urgency in terms of achieving the consents. With regard to the issues with getting consents from Scottish Water, that was typical of everything that was going on before. Then there was BSC not progressing it with any urgency and not honouring their contractual obligation in relation to managing the designer and giving them the assistance they needed.
264. I recall an email that Andy Steel sent to me dated 14 October 2008 (CEC01126247) reporting on progress. The email implied in that specific instance that SDS was not making as much progress as they should with the

design for the footings of the overhead line and where poles could be combined with lighting as it should. Andy Steel raised that with me and that was off the back of Siemens having got their plan together and they knew what they needed approval for. Andy Steel was telling me that it was all very well for Siemens to have done their part however SDS, he had informally checked, had not made the progress they needed to support. We had that informal evidence but we did not have that contractually and formally with BSC. TIE then asked BSC questions in accordance with the contract about whether they had their designs done and if they were on track.

265. I am referred to a letter from SDS to Tony Glazebrook at TIE dated 21 January 2009 (**CEC00989463**) which concerned the design of the A8 underpass at Gogar. The safety verification regime for the Edinburgh tram project was the same as for other UK tram networks at that time. The designer and the constructor certified that they had designed and built the tram network safely and it was their responsibility to do that. The operator would ultimately state, when they agreed to take over responsibility for the network from the infrastructure operator, that they were satisfied that it was safe to operate. That was all in what was called the Safety Case which had to be built up incrementally.
266. There was an Independent Competent Person (ICP) who checked that the process was being carried out properly. The ICP did not look at every piece of detail but looked at the highest risk issues and asked questions and requested evidence that showed that the tram network had been designed safely or, if the tram network had been changed, evidence to show that when it was built that it was still safe. The Independent Competent Person was John Dolan and he had picked the A8 underpass as one of the areas where there was reduced line of sight and a significant risk of a pedestrian being run over by a tram.
267. Two issues were being discussed. The first issue was whether it was necessary to provide signalling at the underpass. The signalling was not about pedestrian safety but was because the tram went through the underpass and

turned a corner and whether it was theoretically possible that a second tram going the same way would bump into the back of the first one, and whether signals were required to prevent that. John Dolan was looking for reassurance that that risk had been sufficiently dealt with in terms of the tram safety verification and whether there was evidence to back up a decision. The letter from SDS was itself a routine piece of correspondence and showed that there was not a contractual dispute going on and TIE was only asking to for the evidence for the independent competent person. It was up to SDS to justify that they should not have signals and set out the steps in the process that came to that conclusion.

268. The second issue was whether the underpass should be lit or not and there were arguments either way. If the underpass was lit, then would it be easier for a tram driver to see a pedestrian who was there, even though they should not be. However, if the underpass was lit then it made it more likely that a pedestrian would actually go through the underpass as opposed to crossing the road as they were supposed to. The argument that prevailed was that there was enough light from the tram that the driver could see people even without lighting the underpass while lighting the underpass would have made it more likely that people would trespass and could be run over and it was safer not to light up the underpass.
269. These were issues where SDS had to produce the evidence so that correspondence was part of that trail of providing evidence about mitigating the biggest risks to the public's safety. It was not so much TIE's concern and it was part of the process of requesting the evidence for what SDS had chosen and SDS was doing that. There were historical arguments about whether SDS had designed properly that had been ongoing throughout the contract and whether they had presented information fully. The past history with SDS was being discussed and whether TIE had received the fully coordinated completed package with all of the evidence.

Retained utilities scope

270. Following the award of the Infraco contract SDS continued to work directly for TIE on utilities diversion designs. I am referred to an email chain relating to the Haymarket realignment ending with an email from Jim McEwan to Steven Bell dated 4 November 2008 (**CEC01159778**). The email from Jim McEwan to Steve Reynolds raised the issue that SDS would often lay the blame with others, including in writing, for delay in the design work. SDS's position was not based on fact and that was a common frustration of Jim McEwan and me. I could not accept any explanations from SDS at face value, I would always check and in many cases I would find that their position was not supported. In that instance SDS had said why work had not started and they had said something which was not true. Essentially, Jim McEwan raised that with Steve Reynolds, who was the most senior person in PB that TIE were dealing with. The issue had been escalated to say to Steve Reynolds that his staff had not done the work and did not tell the truth and TIE expected him to do something about it. These issues were being raised at the highest level of SDS and that was when SDS were working directly for TIE under the retained scope of work.
271. I recall that I sent an email to Graeme Barclay dated 22 October 2008 (**CEC01120508**) in which I referred to chasing updates on the various items of outstanding SDS design. It was a continuing issue to manage the SDS design to align with the MUDFA diversions programme. In that email I was asking Graeme Barclay if he agreed with me that the order of priority for the work was as I had set out before confirming that to SDS and telling them that only if an item was stalled or completed could they get on with the next item. The approach that was taken was to tell SDS that these were the priorities, TIE had signed off on them, SDS had to work to them and TIE would not change them for some weeks at least. That was largely successful but it took some effort to get to that point.
272. I am aware that Jim McEwan sent an email copied to me dated 18 December 2008 (**TIE00017090**), that concerned failure by SDS to deliver and proposed

that all change requests should be funnelled through me. Following this email there was an improvement and that allowed it to be clear where delay was caused by SDS not delivering and by SDS genuinely not having necessary information from the statutory undertakers. That removed the third possibility for delay which had been there previously that TIE had messed with the priorities and had asked for work and that had had a knock-on impact. By taking away that third reason it meant that everything was either due to issues regarding information from the statutory undertakers or it was due to SDS not performing. SDS's performance did improve in relation to the utilities design because of that. There were still some issues with SDS just not getting the work done. If there were no excuses left for SDS then there was nowhere to hide and it was either their underperformance or there was a legitimate problem outwith their control. SDS could always tell TIE about any problems and TIE would try to help SDS.

273. The team that was dealing with utilities diversions was a separate team from the teams that were doing all the permanent design and who were now working for BSC. At that time I had concerns about whether all the utilities design teams were adequately resourced. For example, the Mound on Princes Street was a big heavily trafficked junction, underneath which was a very large high pressure gas main. That was one of the biggest gas mains in Edinburgh and it was very old and needed to be protected as the street was dug up for laying the rails. There was a complex technical solution on how to safely protect that gas main from the tram works going above it because the gas main could not be moved. There was a lot of debate about how to protect the gas main with concrete and build a box around it which meant that when the tram track was laid above then there was no risk of the weight of the tram breaking the gas main and causing a safety issue. That was a big complicated issue for Scottish Gas Networks (SGN) and TIE and was further complicated by the fact that the main was old and had to be replaced. There were several options of dealing with the gas main but it was crucial that it was done correctly because it was a high pressure gas main and a great risk if it was done incorrectly. I recall that TIE and SDS had agreed what proposal they would approach SGN with. Having had some informal discussion with SGN,

which was cautiously positive, no commitment was given by SGN. That initial design then went to other people in SGN who looked at it and said that they were not prepared to accept it due to the risk. I cannot remember the detail of the proposal that went to SGN that they did not like. SDS and TIE had to then agree something different. Without access to the drawings my recollection was that the gas main had to be bypassed and replaced and the bypass removed afterwards.

274. I am aware of an email from Jim McEwan to me dated 4 March 2009 **(TIE00017162)** in which he complained about little or no delivery of designs from SDS. That was another example of SDS producing some design but it was still difficult to get them to produce all their work.
275. I recall that I sent an email to Graeme Barclay dated 30 April 2009 **(TIE00260460)** concerning incomplete delivery by SDS. This was a particular issue in Section 1C2 (which included Picardy Place) and was not typical of issues elsewhere in the utilities design. There was no reference to the possibility of diverted utilities clashing with the final permanent design, therefore the completed design may have needed utilities that had already been diverted to be diverted again. The utilities had been diverted on the basis of an earlier design with one Developed Kinematic Envelope (DKE). If the track was moved or the speed of the tram changed, then the zone in which there should be no utilities changed. This was happening at Picardy Place so it was possible that the utilities which had been moved now fell too close to the revised DKE.
276. This problem did not reflect a lack of co-ordination between contractors and TIE. SDS would be aware of the location of diverted utilities, but that did not necessarily mean that SDS would not have to change the design to reflect CEC's new requirements such that those diverted utilities would require to be moved again. Graeme Barclay's point was that SDS should have highlighted if there were any conflicts with the utilities that had already been diverted and they had not highlighted that and this was a fair comment. It would not have been correct for SDS to design to avoid those diverted utilities at any cost.

SDS had to get the alignment correct and, if reasonably practical, adjust the alignment to avoid the utilities. At Picardy Place that was not possible. The root cause of that particular problem was CEC not having made its mind up about what it wanted to do at Picardy Place. Therefore the utilities at Picardy Place were diverted on the basis of an earlier version of the track alignment and the changes to the Picardy Place layout that CEC wanted meant that the track alignment moved which caused a possible conflict. The conflict was not caused by any poor behaviour or lack of knowledge by SDS, however what was not correct or acceptable from SDS was that they had not highlighted whether or not there were any conflicts caused by the change of alignment. That was not a common issue because in most of the utilities diversions that took place, when the track alignment moved, it did not move enough to cause conflicts.

277. The other place where a significant conflict may have happened was outside Edinburgh Playhouse but that was a different issue about Scottish Water not having correct information about where their sewers were. Scottish Water records put the sewers on one side of the street when they were on the other side of the street. When the track alignment was originally moved, TIE thought it would conflict with the sewers. The tram project was lucky because where the sewers were conflicted with the original track alignment and when the alignment was changed it moved away from the sewers and there was no conflict. There was also a conflict at Haymarket to a lesser extent than at Picardy Place where the track alignment changed meaningfully for the tram project.

Traffic regulation orders

278. I am referred to a briefing note prepared by Keith Rimmer dated 25 March 2009 (CEC00903213) which concerned a dispute involving SDS and TIE in relation to Traffic Regulation Orders (TRO) design. I was not a member of the TRO Working Group. My involvement was limited to having sufficient knowledge about what was going on to deal with contractual correspondence with BSC and to ensure that I was taking a consistent line with BSC with that

taken by Keith Rimmer and Alistair Sim, who were pressing them in terms of the TRO Working Group. Keith Rimmer and Alistair Sim had the main involvement with the TRO Working Group.

279. The nature of the difficulty was delivery of coordinated design on time which was the same issue in terms of roads design approval. The TROs process was a different process but it was the same failure to co-ordinate the design matters for roads approval as for TROs. Consistent drawings for both had to be produced otherwise there would be difficulty if a roads design was approved and there was something different on a Traffic Regulation Order; one of them would have to be changed. To assess if drawings were complete to that degree they were assessed by the professional judgement of TIE and CEC staff, who were Keith Rimmer, Alistair Sim, Alan Bowen and John Richards. There is reference in Keith Rimmer's note to "90% drawings". The people reviewing the drawings could not simply look at a drawing and say that one was 90% and another was 91%, it was not a precise number in that sense. It was a feeling of how close to being completed the drawing was, at 99% the drawing would be at a stage where it just needed final attention to detail, whereas at 90% the drawing would have had everything important correct but there would still have been some detail missing.
280. The delay that was being referred to in the briefing note prepared by Keith Rimmer dated 25 March 2009 (**CEC00903213**) meant that if the drawings weren't available then the Order could not be completed. There was a question of whether the TROs were on the critical path of the project as a whole and there was the possibility that they were. If the TROs were on the critical path of the project then any delay was a day-for-day delay on the project so that was why it could have been very significant. In the end I cannot recall whether the TROs ended up on the critical path or not but there was certainly a significant issue here. Ultimately, given that much of the area covered by the TROs, such as the whole of Leith Walk and north Edinburgh, were not built then the delay of a TRO was not so significant. However it was significant all the way down Princes Street and through Haymarket.

Design Assurance Statements

281. I am referred to an email by Tony Glazebrook dated 30 April 2009 (TIE00037854) which noted that SDS had failed to provide Design Assurance Statements (DAS) in the agreed form. The DAS were supposed to demonstrate that the design delivered the Employer's Requirements (ER), operated correctly and safely as required and provided all the evidence that backed that up. Earlier versions of DAS had been inadequate and contained a lot of information with no co-ordinated statements. When SDS produced the DAS I expected that they would be just the same, that there would be lists and lists of documents and pages and absolutely no evidence of how the well-known litany of hazards and top risks had been mitigated.
282. I agreed with Tony Glazebrook that the previous versions of the DAS had been inadequate and had just been lists of documents with the implication that TIE should read through and find the evidence themselves which was wholly unacceptable. I cannot remember whether Tony Glazebrook was disappointed after receiving this first batch of revised DAS in 2009 and whether there was any improvement in those. I was not particularly involved with DAS as they were under Tony Glazebrook and David Crawley and the DAS was a technical process, not a contractual process, and required detailed engineering knowledge that I did not have. BSC's and SDS's failure to provide the DAS in the agreed form led to delay in finalising the design because the design could not be considered finished until the DAS was done.
283. Where relevant, if there were on-street works in the section for that DAS, it would delay the formal granting of roads technical approval because it was also necessary for the roads technical approval to demonstrate that all the work was safe. CEC should not have to wade through all documents and work out for themselves whether it was safe or not. CEC had overlapping but not identical remit when it came to considering safety: CEC was concerned with the safety of the tram system everywhere that it interacted with roads and footways and also in the consequential changes to traffic where there were possible accidents that did not involve the tram itself, for example, if there

were an increased risk of two motor vehicles colliding due to changes in the road layout to accommodate the tram infrastructure.

Lindsay Road utilities diversions

284. I recall that I sent an email to Bob Bell dated 22 June 2009 (TIE00362657) in which I commented on contractual and practical work arrangements in relation to utilities diversions design at Lindsay Road. There was no issue in dispute at that time although I was sure that it was going to become one. What was being discussed here was clarification as to who was responsible for what work and how TIE were going to deliver that bit of work. Lindsay Road, in north Edinburgh, was where a lot of new housing had gone up in what was the old Leith Docks. There was a part of the road that had an upward and downward slope before reaching the turning for Ocean Terminal and Victoria Quay. The road required to be lowered because of revised junction layouts even though the tram track was not being laid on this particular street and the question was if the road was going to have to be lowered and the utilities diverted then whose job was it to design those utilities diversions and also to carry the physical works out.
285. I set the contractual position out in my email because there was some confusion about what was being discussed and particularly with Bob Bell when he said that he did not agree with me. Because I had not previously explained it clearly Bob Bell had wrongly assumed that all the utility diversions in this area were under MUDFA, but that was not the case. I outlined how the SDS, MUDFA and Infraco contracts worked together to mean that the work required to the road was not part of MUDFA. The design for utilities diversion always been SDS's responsibility and that responsibility passed to Infraco, so Infraco had to be reminded that it was their job to have the design of the utilities diversions carried out. I cannot remember whether TIE stated the contractual position and if BSC disputed that they were liable. Under Clause 19 of the Infraco contract TIE was under an obligation to assist BSC to secure the consent of the statutory undertakers to the diversion design at Lindsay Road. TIE was being helpful to the Infraco at that time. Normally support with

consents was given by TIE's Infraco team – often by me – but in this instance TIE's MUDFA team was speaking to the statutory undertakers whose utilities would have had to be diverted because that team knew them already and had good relationships. Also it was going to be quicker to get the design completed for Infraco if TIE helped but that did not alter the fact that Infraco was responsible for managing SDS to have the design done. That was why there was a difference between what was going on in practice and the contractual arrangements.

Design changes

286. I recall that I sent a letter to Steve Reynolds of PB dated 19 November 2007 (CEC00196518) which concerned who was liable to pay the fees to obtain statutory consents. SDS had asked for more money to pay the fees for improvements and I wrote back to tell them to look back to the contract. That confirmed that SDS were not entitled to any more money. SDS had received a sum of money that covered all their fees and it was not a provisional sum and the rest was their risk. Either someone in SDS had forgotten and wasn't aware that they were due to pay the fees or SDS had thought that they would ask and the worst that could happen was that TIE would work out that TIE were not liable and refuse to give more money. There was no confusion in the matter and it was an attempt by SDS to get more money from TIE.
287. I recall that I sent an email to Bob Bell dated 22 December 2009 (TIE00727821) which attached a draft letter from Steven Bell to Martin Foerder (TIE00727822). The draft letter showed that there were six specific Infraco Notices of TIE Change (INTC) and the whole issue of pedestrian guard rail which covered several INTCs. It could not be resolved whether it was a change and if so how much TIE was due to pay Infraco without further information from Halcrow. Halcrow was not providing that information and Infraco was not making Halcrow provide the information. The letter gave some illustration of some of the issues that Halcrow's non-engagement caused and there were large sums of money attached to some of those issues.

288. I am referred to a paper dated 23 September 2010 concerning Design Contract Management (**TIE00375289**). The paper was not prepared for the workshop but was Colin Matlock's note of the meeting of the output and what was discussed from the workshop. I would struggle to talk through that paper although I was at that workshop. I do not remember drawing charts such as that at any time nor do I understand the pictures after such an interval. There was some information that I could extract however the entirety of the note was Colin Matlock's and does not make sense to me. I do not remember seeing the paper after the meeting. Although I was present at the meeting I only have a vague recollection of it because I went to hundreds of meetings seven years ago.
289. There were some key pieces of information that were worth noting from the paper. On page 3, the limited amount of time and cost control that was being exercised was noted. Another theme was that design could be changed by Infracore and TIE did not see that until after it had been constructed in some cases. These changes would not have been a significant issue if the normal design development clause had held because that was normal design development. TIE did not need to see minor design changes as they came along because it did not matter as long as the Employer's Requirements were delivered and the works were in accordance with all necessary approvals and consents.
290. The fact that the normal design development clause did not hold was an issue. The bullet points were the result of a brainstorming session and had not been evaluated fully. The paper was not a coherently organised description of the design process and improvements in the design process. There was a list of work that could be done without any consideration as to whether it was good to do or not, therefore somebody had to take that and do further work with it to make it useful. It was a step in a process but not the end of a process. I do not know what happened to the paper after that.
291. I recall that I sent an email to Susan Clark dated 19 October 2010 (**CEC00135898**) which indicated that CEC officials were aware that CEC

would be liable for costs in excess of £545 million. TIE had had to put a clear process in place where CEC officials had not just to request changes from me but also go through the correct change management process to authorise the additional costs. I could notify people to be ready because I had been given early warning of changes but I could not sign off and issue the formal paperwork to Infracore agreeing that TIE would pay more money without completed change documentation. CEC had to go through the proper process and then when I get received proper notice of changes then I could agree to pay more money. It was excellent telling me early so I could be prepared and had people ready so that there was no delay. There was a period of time in the first half of 2010 where that process was not being followed and that was why there was that discussion here and that was sorted and CEC then always followed the correct process, at least in relation to design.

292. I am aware of an email exchange between myself, Andy Conway and David Carnegie dated 13 and 14 February 2008 (**CEC01487329**) which was about change requested by CEC. Up to that time CEC had been asking for changes and not always completing the full change process. There was a breakdown in communication that resulted in work not being constructed and it was correct that the work should not have been instructed. I had to reiterate the importance that Andy Conway follow the correct process and complete the paperwork otherwise he would not get what he wanted. The impact was a delay in the instruction on particular areas of work, which in the big picture of the other delays that were going on, did not cause a critical path delay. It was a bit problematic but it was resolved without too much discomfort to the tram project.
293. I am referred to an email exchange in November 2010 (**CEC00158444**) concerning an issue with the Lindsay Road retaining wall. SDS had produced inconsistent drawings and one of its set of drawings was wrong and there was a question of how much extra TIE was due to pay BSC. I agreed that TIE should have resisted paying for the drawings being redone because SDS should have got them right and the cost of fixing that error was SDS's problem.

294. In terms of the costs of the actual works it was likely that BSC had priced on the basis of an earlier drawing and would be due the difference in materials from brick to York stone. However, I was recommending that TIE ask BSC why they had not noticed the drawing was wrong until then as they had had the drawing for a long time. I was also recommending that TIE ask BSC to show evidence that they had told TIE as soon as they were aware of the issue, and as they were obliged to. TIE had to argue every point because BSC would argue every point back and there was no prospect of settling matters on an amicable basis. It had all to be gone through in great detail and to an extent TIE were going to make arguments that we may have lost. TIE had to make those arguments because otherwise TIE were giving up and that would have cost TIE badly, even if TIE lost some of the arguments.
295. Under the Infraco contract TIE had an obligation to agree and settle changes quickly but BSC had obligations to mitigate delay and additional costs and, in TIE's view, BSC was not honouring its obligations. Therefore TIE was resisting changes wherever they could justify resisting them and if BSC had not given enough evidence then TIE would try to make them give the evidence. Where that evidence pointed clearly that TIE was responsible then TIE would acknowledge that. The situation between TIE and BSC at that time was very difficult commercially and there was no willingness in TIE at that time to concede anything without full evidence. TIE that had learnt lessons from the period of refusing to deal with SDS and any of their legitimate claims because they had not been performing, and TIE had learnt that that was not an appropriate way to deal with matters. Where TIE were responsible we had to admit that. The relationship had become such that every single little point had to be argued because if TIE did not then the cumulative effect would have been bad. It was indicative of a project that was mired in dispute rather than attempting to get anything built.
296. I recall that I sent an email to Simon Nesbitt dated 10 December 2009 (CEC00533622) in which I was concerned about the resources available at CEC. The agreement was that SDS would present the design for approval in stages and that CEC had enough resource available to process the approvals

within the agreed timescales. That relied on SDS giving CEC the work that they said they would to an appropriate standard by the time they had agreed. What was going on here was a reiteration of that and Simon Nesbitt was trying to position that and by saying that CEC had said that they might not be able to do that as there was a risk. I was stating that there was a risk but only if CEC's designer did not perform as agreed. Therefore there was a risk but the cause would have been CEC's. Simon Nesbitt was trying to establish grounds for a claim later on and I was replying and not allowing him to do that.

Conclusion of the Infraco contract (late 2007 to May 2008)

297. I understood that between 17 and 20 December 2007 discussions took place in Wiesbaden, Germany, between representatives of BBS and TIE to discuss the early contractual issues and come back with a clear agreement. I did not have any understanding about what that meant to the contract price. I was not told whether there had to be changes in the contract price or not. My understanding was that it remained the case that it was BBS's responsibility to achieve the consents on time and they were liable for that; also that the position remained that the normal design development clause applied. TIE staff received a briefing in the first week in January 2008 from Steven Bell when he returned. I was never taken through any detailed discussion of the Wiesbaden agreement. I had not ever seen any written Wiesbaden agreement, presumably there was an actual agreement that was signed or an exchange of letters. I certainly never saw a signed agreement and I do not recall seeing an exchange of letters. I was not privy to the detail and was never shown it.
298. I am referred to the Design Due Diligence Summary Report produced by BBS on 18 February 2008 (**DLA00006338**), which was based on design information received by BBS by 14 December 2007. I knew that the report existed but I did not see it and I was not aware of its contents. The report made assertions on which, although I did not see at the time, I am able to comment now. For instance, more than 40% of the detailed design had not been issued by 14 December 2007 was a factually accurate statement. My

understanding as to how BBS could fix their price in that situation was that they had a design and they were competent builders who had people who could look at that design and work out what was missing from the design and make a reasonable allowance for that.

299. It was worth turning to a classic example of the issues that incomplete design caused. BSC made claims for the difference between the so-called Base Date Design Information (BDDI) and the Issued for Construction drawings. For example, there was no shell grip on roads shown on any of the BDDI and BSC argued that every area of shell grip that was on the final designs was extra and should be paid for. Shell grip on the road was the area before a traffic light where the road would become extra sticky and rough and thus better for braking. My argument was that BSC should have included that in the pricing because they were competent people who built roads and would have known that shell grip was missing from the BDDI. Also no competent road builder was going to design and build a pedestrian crossing without shell grip. It was not compliant with Design Manual for Roads and Bridges therefore TIE had made an allowance for a sensible amount. In the end the final approved roads drawings had a lot of extra shell grip on them. For some reason CEC wanted twice as much as shell grip as the Design Manual for Roads and Bridges stated. Then there was an argument about the extra shell grip being an extra cost. BSC knew that when building roads what they had to include and that should have been the case on every issue. Shell grip was one of the stark examples where that did not happen.
300. I am aware of the SDS Project Managers Report for March 2008 (CEC01526381) which noted key issues and concerns. I am also aware of further SDS progress reports (CEC01523027), (CEC01293923) and (CEC01365690). The construction programme was based on version 22 of the SDS programme. There were clashes between the design programme and the construction programme at that time and that was going to cause issues because BSC were going to take a stand and say that they could not build because they did not have the design.

301. In some cases there was not a complete IFC package. One of the early structures to be built was a bridge over Russell Road for which the design was not complete but there was enough design complete that the build could be started. There was enough design information to start digging the foundations for the bridge as the depth was known and some of the piles for the reinforced concrete could be started too. What could not be done at the time was to complete everything for the bridge. The incomplete design meant that BSC could start work but could only do so much work before the design was completed. There was a discussion that BSC would do that and would start work without a completed set of IFC drawings. Once BSC had done the work from the design information then they were going to have to stop. That was inefficient but the principle was agreed that BSC would do that and from what I recall that happened. Then there were to be detailed discussions about exactly what that meant, which drawings were involved and when that work would be started.
302. TIE were having a daily meeting with BSC and SDS to make sure that the critical items, such as the drawings, were completed and nothing delayed that other than SDS carrying out the work. With regard to changes due to alignment with BBS offer and SDS design, there was a question about BBS saying that they were going to do something different to what SDS had designed. Particularly BBS wanted to build some of the structures differently because they considered that what was designed had been over-engineered and did not need such complicated and expensive structures. Also there was a section where BBS considered that what SDS had designed could not actually be built. There was one area between Haymarket Station and Murrayfield Stadium where BBS considered it was a very narrow working space and that they could not build what SDS wanted them to build. There was a discussion of who was going to pay for the changes required but there had to be confirmation of what changes to the SDS design were required. I was involved in discussions to agree the principles but those discussions were led by TIE's programme team. I was present because I knew that there was an impact on the design contract; I was involved but not leading those discussions. I cannot recall whether the meeting was held in the week

beginning 3 March 2008 or if it was delayed to the following week. I cannot recall whether Susan Clark was present but because she was in charge of the programme team it is likely that she would have been present because the meeting was important. I cannot recall who was present from BSC at the meeting. I recall that Jason Chandler from SDS was also present at the meeting.

303. I am aware of a progress report provided to the TPB on 12 March 2008 **(CEC01246825)**. TIE had problems where the IFC drawings were not ready to support the construction programme. Discussions were ongoing about the extent to which it was reasonable for BSC to start work on the drawings that they had which they could start but not finish, rather than waiting until they have all the drawings before starting. Pressure was also being put onto BSC to get the drawings to CEC to get them approved. TIE was leaning on CEC to make sure that they had enough resource to approve them, not just within the eight week timescale, but as soon as it could possibly be achieved. TIE made it clear to CEC why there was urgency and that they should go as fast as was reasonably possible. CEC had to do a proper job of approval and could not just say that everything was acceptable. CEC had to review the proposals properly but they had to be aware that they could not take their time because it was costing money if they did. There was a process of trying to mitigate the problem by having BSC start construction and get as far as they could without a finalised design. Also there was a process to have BSC lean on SDS to finalise the design and put pressure on CEC to make sure that they were aware of the consequence of not going as fast as they reasonably could.
304. I am aware that David Leslie, the Development Management Manager in Planning at CEC sent a letter to Willie Gallagher on 31 March 2008 **(CEC01493318)**. I also note that Duncan Fraser sent a letter to Willie Gallagher on 3 April 2008 **(CEC01493639)** setting out similar concerns by the Transport Department relating to Technical Approvals and Quality Control Issues. Setting aside the tone of David Leslie's letter, he was trying to say that seeking to blame CEC was not helpful in terms of the issue. TIE was fully aware of the issues and there was a sense in which David Leslie was not

telling Willie Gallagher or me anything that we did not already know and that we were not already dealing with. The fact that the letter was sent provoked Duncan Fraser to do the same and tells TIE that it was CEC setting out their position for the record.

305. There was a need for SDS to provide the prior approval applications that they said they were going to, up to the quality that they had said and at the time promised. If SDS did not provide the prior approval applications then CEC refused to guarantee that it would process them within eight weeks. Everything considered, SDS did deliver on time, to a good quality and there were some differences of views on the drawings and SDS had to go back and do some more detail on some of them. For nearly all applications the prior approvals went through within the eight weeks relatively straightforwardly with only a few small changes. In terms of difficulties that could arise after Financial Close, my understanding at that time was if getting prior approval or getting roads technical approval led to a substantive change in the design then that was not normal design development. If that was the case then BSC were going to be entitled to claim for the difference in costs and implementing the design and also in design delay caused by BSC having to change the design and TIE would have to meet that cost. If there were small changes which were normal design development then BSC just had to accept that. The judgement that had to be made was how much money was to be allowed for CEC planners changing their mind or forcing a change in the design and also with regard to the roads. There was extensive discussions in TIE about what was allowed within the terms of normal design development. The discussions covered what should be done to reduce the risk in the first place, how TIE could make sure that what went to the planners was satisfactory, how to allow for the fact that there were going to be more issues and whether TIE dealt with them. The discussions concluded that there would be a very traceable process that allowed CEC to know the cost of a change that BSC would claim from CEC before CEC finalised their decision on the change. That process had been put in place before Susan Clark asked whether Andy Conway was aware that CEC were going to have to pay for the particular change (see para 291 above) and they had to fill in the change forms at that time. That process

was put in place but there was a period where it was not being implemented because everybody was so busy.

306. I am aware that the Infracore contract close took place on 14 and 15 May 2008 which included Pricing Schedule 4 (USB00000032). After an agreement was reached between BSC and TIE, I understood that BSC bore the liability for incomplete design; that BSC had priced for the fact that the design was incomplete and for outstanding statutory approvals and consents; that BSC had priced for misalignment and that TIE were only liable where the changes went beyond the normal design development, which was defined in the contract. That required to be followed through to agree the BDDI so that it could be determined if the final design had changed. The Notified Departures arose where there were changes that were not part of the normal design development. There was an exception to that in Schedule 4, where there was no BDDI for a structure at all. In Schedule 4 – Appendix B, page 40, there was a list of provisional sums, however those provisional sums were for changes where people had agreed at the time that there was not enough BDDI information to price from. Some of those provisional sums were extra overs because there was some design that was going to change so there was a sum allowed for the fact that the design was going to change. There were 13 defined provisional sums and there were another nine undefined provisional sums which were much less than those. There was an allowance for minor utility diversions and archaeology and but they were not based on any design at all. So there was an expectation that there would be a limited number of changes which Infracore could not have priced because there was an area where there was no BDDI.
307. Whether any given misalignment was TIE's liability depended on why there was misalignment. Arguably if SDS had not designed something that was in accordance with the Employer's Requirements then that risk had to go to BSC. If what BSC wanted to build did not align with the Employer's Requirements as BSC's risk. My understanding was that if BSC wanted to build a thinner cheaper wall then it was their problem to have that approved,

and if they could not get that approved for good technical reasons, then that was their problem and their risk.

308. I recall that I saw a copy of Pricing Schedule 4 (USB00000032), after contract close, however I did not see it while it was under discussion. I did not see Schedule 4 for some time after the contract award and it was only when TIE were trying to value changes that I saw it. Schedule 4 was available because the whole contract was published on the intranet to most people in TIE some weeks after the contract was signed but I only accessed it as and when I required. Most of Schedule 4 was concerned with how much did it cost to construct the design, which was not an area that I had any expertise, therefore I did not have any general views on Schedule 4.
309. I recall that Schedule 4 included certain Pricing Assumptions, which were a standard part of any contract of any size. When I do contracts presently for my current company, I will tell my client the price and the assumptions I have made, and if those assumptions were not right then either the price or the time was going to have to change. Therefore a particularly big contract such as the Infraco contract was bound to have pricing assumptions and if there were changes from those assumptions then TIE and BSC were obliged to deal with the change. From the Infraco point of view they were concerned about when those assumptions did not hold.
310. My understanding of Pricing Assumption 3.4.1 was that the given design would not change, normal design development was going from preliminary design to final design. The BDDI was partly preliminary design and partly detailed design. Going from the preliminary design to the construction design, if the design principle was changed then that was not "normal design development" and TIE would have been liable. If the shape, form or outline specification was changed then TIE would have been liable. For example, if a bridge with two arches changed and became a bridge with three arches, then the difference in cost was TIE's problem.

311. I recall that BSC argued, for example, that a retaining wall that was 9.7 metres was a different shape from a retaining wall that was originally designed to stand 9.6 metres. I would disagree with that and my view was that if it was the same basic shape and it happened to be slightly different in size that did not mean it was a different shape. If the radius of curvature was 1220 metres as opposed 1200 metres that was not a change in shape in my view but BSC argued that it was. BSC argued that if there was any change in dimensions or materials from what it showed in the BDDI then that was a change and that was clearly not what was intended by the contract. Whether the wording was sufficiently hard and defined was a good question. If I were ever going to rely on normal design development and pass the costs onto the contractor, I would want very explicit definition of what normal design was and not leave the definition of form and shape so open to interpretation. I believed that BSC knew what TIE's interpretation of form and shape was in relation to changes but BSC thought that they could and did argue that it did not mean that commercially and legally. I was deeply disappointed that the adjudications found in favour of BSC for the interpretation of changes to normal design development because I did not believe that there was ever any doubt in BSC's mind as to what that phrase meant to TIE and what it was intended to mean at the time at which BSC signed the Infraco contract. I believe that BSC used the fact that there was some possible ambiguity in that phrasing to argue that it meant something that it did not and they were able to do so successfully, which was traumatic for the tram project.

312. In respect of design related Notified Departures, I was expecting BSC to submit a notified departure for the fact that SDS had not kept to version 22 of their schedule which was the baseline included in the Infraco contract. There was an expectation that there would be a small number of notified departures almost immediately after the Infraco contract was signed. For example on 25 November 2007, the final alignment for Picardy Place had not been agreed. Therefore I expected a design-related notified departure because there had been a discussion with CEC in December 2007 that had not concluded what Picardy Place should be like which was not shown on the BDDI. TIE were expecting a small number of those design-related notified

departures and those were in the provisional sums as the extra over for the London Road junction, for Picardy Place and for York Place. It was expected that there would be a small number of those going forward because of genuine significant changes in design and structure but the number of notified departures intimated was a lot more than expected and not consistent with the intent of the definition of normal design development.

313. I note that the BDDI was defined in Schedule 4 (**paragraph 2.3, USB00000032**), as meaning "*the design information drawings issued to Infraco up to and including 25th November 2007 listed in Appendix H*". I was not entirely aware of why Appendix H did not contain a list of drawings as it should. Appendix H should have had a list of specific drawings with version numbers so that there was no argument about what BDDI was and it was a failing of whoever assembled that part of the contract that it did not. That could only have been a TIE failure and I am not clear why there was a TIE failure there. It did cause a problem because there were arguments about what was in the BDDI. TIE did not have initially a good record of what drawings Infraco had at the time on 25 November 2007. As I mentioned earlier, SDS had provided the procurement team with drawings directly and had not gone through proper document control. The confusion over BDDI was a consequence of some drawings being given to the procurement team and therefore given to BSC as a bidder without them going through document control and there was no proper record of them. However, when the BDDI was sent to BSC it was done by file transfer protocol server to server, so there were server records for which files were supplied. It was then possible, from those server records, to reconstruct what the BDDI contained but it caused a lot of argument before that was done. It took a lot of work to establish what the BDDI contained and that was unnecessary work because proper document control discipline had been followed during the bidding process. It illustrated that it was tempting to just carry on with the work because it was running tight against the deadline and not following proper document control did not seem harmful. Unfortunately people did not foresee the consequences of what they were doing and that failure was painful for TIE later, in that it caused unnecessary work.

314. The BDDI was fixed with reference to 25 November 2007, rather than a later date, because that was the design on which BSC did its due diligence exercise. TIE didn't give BSC more information and make them do the due diligence exercise again to reflect that in the prices because it would have taken time and caused further delay. Everyone, including BBS, thought that we would be signing the Infracore contract imminently at that time. In that context, TIE did not want to be delaying matters and asking to redo the due diligence exercise. However, the time it took to sign the Infracore contract added up to four months, so perhaps it would have been possible to ask BSC to redo the due diligence, but at no point did TIE think that contract signature was going to take months.

The dispute (events after May 2008)

315. I am aware that a dispute arose between TIE and BSC in relation to the interpretation of the Infracore contract including, in particular, the pricing provisions in Schedule 4 and the change provisions in clause 80. There were claims from BSC in relation to a variety of matters and not only about whether the design had changed or whether it was late such as claims for unforeseen ground conditions or allowances for weather. I dealt with all of the INTCs to do with design to do with failure to complete the design and failure to get design consents. I did not deal with any INTCs that were to do with any changes in form and shape as those were dealt with by the commercial team. I was asked for my opinion and interpretation of the agreement and whether something was normal design development or not. I was not asked about whether some change was consistent with TIE's interpretation of normal design development.

316. I did not play any part in the resolution that happened between TIE and BSC. I was not involved in the mediations or anything from them, all I did was provide factual briefing to TIE senior management. I am aware that there were 738 INTCs that were intimated by BSC between contract close in May 2008 and the Mar Hall mediation in March 2011. What was unusual was the cumulative value because there could reasonably be 738 smaller changes on an

infrastructure contract of that scale that could add up to a few million. It was the scale more than the number of INTCs which was greater than what would be reasonably expected on a contract of that size.

317. Most INTCs could be grouped together into common themes although there were some odd ones that did not fit in any of the groups. For example, one of the groups was related to delayed construction due to the design being late. Another group was if the design had changed under the pricing assumptions 3.4.1, which was then not normal design development, so what BSC were being asked to build was not what they had priced to build. A third group was that the change of design was because the approval body, CEC, had asked for it. Those were the three biggest groups of INTCs. There were then various other matters to do with third parties who would not grant access to land at the time wanted or that Network Rail would not let BSC do the work at that particular time and there was a group of INTCs around that which I was not particularly involved in.
318. I had little sympathy for the validity of the BDDI changes from normal design development except in a few cases such as the Lindsay Road retaining wall where the finish changed from brick to sandstone. The difference in materials was something that TIE had to pay for. There were instances where I would have said that it went beyond the intent and TIE's understanding of normal design development but most of what was being claimed as not being normal design development was actually normal design development. If BSC had priced as they were supposed to then the change would have been included in the price. What was particularly galling was that BSC probably did price that way and were, effectively, wanting paid twice for the same work. Therefore I did not believe that the BDDI changes from normal design development were valid.
319. There were a number of programme issues that would have been valid had BSC managed SDS properly. If BSC had tried at least as hard as TIE did to manage SDS and did not succeed in preventing delay then they would have been justified in claiming for delay. Although TIE tried hard to manage SDS, we also did not succeed in preventing delay. However, I do not believe that at

any time BSC managed SDS with the same degree of diligence and determination and support that TIE did while I had managed the SDS contract. Overall there was some validity to the design delay claims but not at the scale that BSC were doing; they were trying to get every penny there was out of the Infracore contract.

320. In my view it was good that there was a clear outcome to the mediation discussions which took place at Mar Hall in March 2011 to resolve the dispute between TIE and BSC. There had to be a resolution so that the tram project could continue but the mediation finalised that what would be built would not be as much as there should have been. The mediation was the final acceptance in the contractual dispute between TIE and BSC that had carried on since May 2008. BSC had pursued a successful strategy and had been paid far more than might have been expected and had delivered less for that money, and all of TIE's efforts had been in vain.
321. I am aware that a Settlement Agreement was signed in September 2011 between TIE and BSC. I played no part in the negotiation of the Settlement Agreement. The Settlement Agreement just implemented the Mar Hall mediation and by the time it was actually signed I was no longer working in TIE.

Project Management, Governance and Relations between TIE and CEC and other parties

322. I had some concerns in relation to the performance of TIE, as an organisation and in relation to some individuals. TIE was a new organisation in 2002 and as a company there were teething issues with it because it was a young organisation and it had to learn fast. There were some big opportunities and benefits from TIE being a young organisation that was not set in its ways. Overall those benefits, throughout TIE's existence, outweighed the problems that came from being a young organisation but problems.

323. There was a question of whether Michael Howell, the original TIE Chief Executive, stayed slightly too long. Michael Howell was great for getting an organisation going and getting it sorted and moving it forwards. Once that organisation was in a steady state and was up and running then it could be argued that Michael Howell might have stepped away from TIE and created some other new organisation because that was what he was very good at. If Michael Howell had left slightly earlier it would have been better for TIE but that was a minor issue and I am not criticising Michael Howell. TIE's Board had to recognise when someone had made their best contribution and had a grown-up conversation with that individual about when the transition should be made to a new management team. The same situation arose with the original Tram Director, Alex Macaulay. There were times when I was at TS when I had said to TIE senior managers and board members that the time was coming to change from one type of leader to somebody with a different skillset, because the project was reaching a new phase. So there were times when I was concerned about whether that was going to happen or not and there were times when I had to communicate that. Generally people made way as appropriate when it was time for a change of leadership.
324. I recall that there was an instance in early 2006 where there was a terminal falling out between Ian Kendall as Tram Project Director and Neil Renilson as Chief Executive of Lothian Buses, which made Ian Kendall's position unsustainable. In the run up to Ian Kendall leaving and immediately afterwards, that fallout definitely had an impact on TIE's performance. It was clear that Ian Kendall and Neil Renilson could not work together successfully. They had a clash of personalities in the way they worked and were unable to find a way through that, which had an impact that was only resolved when Ian Kendall left. It was clear to the TIE Board that the only way that fallout would have been resolved was if one of them stepped away from the tram project.
325. Overall TIE's senior team did a very good job of growing an organisation from scratch to have had the capability to let and manage the contract. There were individual decisions that people made that I disagreed with but that was very easy with hindsight. Even when I disagreed with some of the decisions that

people made, I would not extend that to personal criticism of them and suggest that they performed poorly as a result. However there were specific instances where a transition of one skillset to another was required.

326. I recall that in 2005, there were times where the roles and responsibilities of each of the bodies involved in the management and governance of the project was not sufficiently clear to individuals working on the project. At that time there was a discussion about the new roles and definition of what the Tram Project Board was for and who was on that board. At that time there was a lack of clarity and people were somewhat confused. As the tram project grew it pushed the boundaries of the existing framework and that had to be reviewed to check it was still fit for purpose and make changes as necessary. The problem was not whether the roles were clear, it was whether people were always acting in accordance with their roles.
327. The corporate body that I would level that criticism at most was CEC. CEC had passed the detail of the delivery onto TIE because it was not well suited to the actual delivery of the tram project itself. Then CEC acted as though they had no responsibility and no accountability anymore and that it was TIE's problem thereafter and that behaviour was wrong. However, not all CEC officials and politicians were like that. It was telling that the leader of CEC and senior officials had to be summoned by the Scottish Parliament and made to give evidence in support of the Tram Bills. CEC tried to avoid appearing before the Parliament in support of the tram project. Parliament was understandably very irritated that they had to ask CEC to come and that they had not volunteered. It sent a telling message that said that CEC wanted the tram project but not if it was going to cause discomfort to them. CEC at no time, had throughout its organisation taken seriously that it was accountable for everything it did on the tram project. Nor did CEC take seriously that the tram project was their project and was more important than anything else that they were going to do and that they should be more involved. There were many people within CEC where that would not be a fair description of their individual contribution to the project. However, culturally as an organisation CEC did not organise itself to back the tram project until it was far too late, if at all, to

accept the responsibility for its actions which impacted on the tram project plan. From 2001, I always considered that CEC was the body or organisation ultimately responsible for ensuring that the tram project was delivered on time and within budget. However, CEC did not act as if that was the case.

328. In my view, the relationship between TIE and CEC was fraught in some ways. CEC acted as if they could leave all responsibility for the tram project with TIE which was part of the bad relationship between them. There was resentment with some people in the CEC that they were not allowed to be the client of the tram project. CEC disagreed with the narrative that I put forward about the failure of the busway, the failure to implement congestion charging, failure to let the contract for the western peripheral road. As individuals staff at CEC may be correct and have done all they reasonably could but as an organisation CEC had not delivered. There was a lot of resentment from those who were left behind in CEC about how much some of the people in TIE were earning and that did cause ongoing problems. Some of them got over that and reacted well and others continued to be unhappy for a long time and were not sad to see TIE struggle.
329. I recall that there was initial deep suspicion from TIE of the motives of TS, which was the Scottish Executive before TS was created. There was a big cultural difference between the way in which Civil Servants spoke and the concerns they had and people who were used to delivering the work. It was not natural for those two cultures to go well together. The creation of TS moved the Civil Servants more towards TIE in terms of attitude and focus on delivery. There was initially quite a lot of suspicion from TIE, that coming from TS my involvement was not to get the work delivered but that I was there to string the project along and then kill it off. It took work to overcome that view from TIE and I spent a lot of time both in meetings and socially with TIE people to get them to accept that I was upfront with them. TIE people also saw that I was trying to help TIE navigate the difficult political and administrative set of challenges and governance that had to be done and what I was doing was in the best interests of the tram project. We had the same objectives and it took time to build my relationship with TIE people but I built

that relationship very successfully. It was a testament to the fact that I built that relationship that when I was going to leave TS that TIE they were keen to have me work for them.

330. The relationship between TIE and Infraco was difficult from the start despite TIE's best efforts. There were lots of good individual relationships between individuals in TIE and individuals in Infraco. Simon Nesbitt, who was my opposite number in Infraco, was a good person who I got on well with and on a personal level, but he took positions that aligned with BSC's corporate position. Simon Nesbitt and I were a long way away from agreeing on a lot of issues but it was done in a way with Simon Nesbitt and Baltazar Ochoa, who was the commercial person for Bilfinger, where there was mutual respect and regard for each other. What was terminal to better personal relationships between TIE and TS being more widespread in the tram project was that BSC refused to work without settlement of claims first. BSC could have said that they were going to start building on the tram project, instead of being focussed on wanting the claim settled, and not let the commercial fight stop the work, which was what TIE wanted. There could have been an amicable settlement in that situation between TIE and BSC, but BSC refused to work for commercial reasons which meant that they had used up all their goodwill from TIE. Once BSC had made the decision that they would not work until they had won their claims, people in both TIE and BSC still had goodwill with each other at a personal level but none at an organisational level.
331. In my view, TIE did not ever attempt to deliberately mislead TS or deliberately attempt to mislead CEC. There was information that TIE should have shared more explicitly than they did, however that was a tough call and in my view there was not any deliberate pattern of deceit by TIE. There was a tension between TIE and TS where TIE asked why TS wanted a level of detail when they were not supposed to. There were questions asked of TIE that probably should not have been asked, both by TS and by CEC, which probed into levels of detail that they should have stayed out of. There were some instances where TS were not kept fully informed, such as when I discovered that matters with SDS were worse than I had believed before I moved from TS

to work at TIE. In my view, TIE did not deliberately mislead me when I was at TS about SDS, but TIE did not always have a strong enough understanding of the underlying causes of some of their problems. Therefore, TIE were not able to report as thoroughly to TS as they should have.

332. Any failure to engage from CEC officials was about personality differences. Some more junior CEC officials were resentful of what people in TIE were being paid but they were not deliberately obstructive and awkward. The concern was greater at the top of the organisation. I recall that in 2005, I along with Kenneth Hogg and John Ewing met with Tom Aitchison to tell him that the tram project was the biggest thing that was going to happen in Edinburgh in 50 years. I told Tom Aitchison that I needed him to deliver that message because not all of CEC's people were acting as though that was not the case. At that time it was the run up to the first announcement in 2006 that indexation was going to happen in March 2006. There were a lot of people in CEC until quite late on in the tram project who wanted to criticise and make comments and be difficult about approvals without regard to the consequences. It took continuing pressure from senior officials in CEC to get some of those people in CEC to accept that the issues were important and had to be dealt with for the good of the tram project.
333. When I joined TIE in 2007, in terms of the people in CEC who were actually doing the reviewing of applications for approvals, there was no sense of settling for what was good for the tram project as opposed to what they wanted, and it took time to get that to happen. Some people in CEC moved quicker in the reviewing of applications for approvals than others in that respect. SDS did not help because they did not always respond well to comments from CEC.
334. I recall that I prepared a paper dated 12 May 2006 (**paragraphs 9-14, TRS00002527**) in which I made comments on CEC's commitment to the tram project. It was a key issue whether CEC supported and believed in the tram project. At that time, CEC had put little money into the tram project but had been content for Scottish Ministers to make the vast majority of the funding,

which was more than the 91% to 9% split of funding coming from TS up to that point. CEC had in the run up to that paper not been willing to say how much money they had found to contribute. In January 2006, CEC finally stated that they would contribute £45 million. CEC's contribution was going to be funded predominantly by developer contributions. Their position was that they would contribute the money, but maybe not until later, because they would only contribute the money once they had got the developers to contribute. My view and that of Scottish Ministers at that time was that that position was not acceptable. CEC could have borrowed the money until the developer contributions came in. CEC should not expect to be able to borrow the money interest free from TS.

335. The phased delivery strategy was the first time that CEC accepted the reality that it could not have everything it wanted in one go. CEC then accepted that it may have to receive the funding for the tram project in phases. What CEC wanted was more than the Scottish Government would buy for it and therefore CEC was beginning to say that they would prioritise the work in phases and that was concerning. I also had concerns (paragraph 14 of the paper) about CEC aligning various departments to support the tram as far as possible without falling foul of its other statutory duties. There was also a big concern that what the CEC planners or the roads people would insist on was excessively more than required for the tram project. TS continued to keep the pressure on at senior levels in CEC. Had the original deal that was agreed in principle between TS and CEC been concluded, which it never was, then there would have been conditions in the grant that forced CEC to take a much bigger share, possibly 100%, of the changes that CEC instigated to the tram project. CEC would have had to pay for where their preference increased the cost of the project. However, that agreement between TS and CEC was never concluded because of the change when the SNP administration came into power.
336. TS had insisted in the agreement in principle that CEC were not going to get to buy extra nice streetscape or anything else at nine pence in the pound with the Scottish Government putting in the other ninety-one pence. CEC were

going to have to find that money themselves and that had been made clear to them by TS. At one point there was real ambition by CEC to transform all of paving in central Edinburgh and CEC wanted to use the tram project as a catalyst to do that. Also CEC had a plan to change the paving slabs all around St Andrew Square and the message that had already gone to them from TS and reiterated was that CEC could do that if they wanted at the same time as the tram project but they would not get any money for that from the tram project. The tram project was not going to cross-subsidise other CEC projects, and if CEC tried to change the tram project in order to do that then it would have been at their expense. That message was being conveyed politically by the Transport Minister to the Leader of the Council and to CEC's Chief Executive of how matters needed to stand if CEC wanted the tram project to go ahead. That continuing consistent message was going on in response to TS's concerns. CEC did gradually demonstrate greater commitment to the tram project but they never were brought to show the level of commitment that I wanted. TS and Scottish Ministers lost all ability to influence that when they committed to giving £500 million and no more. That was intended to force CEC to take responsibility for the tram project, which they did only to a limited extent.

337. I recall that I prepared a briefing note around 23 May 2006 (TRS00010569) in which I commented on the ability of TIE to deliver the tram project. That was part of a wider briefing pack to be used in meetings with CEC. The briefing note consisted of bullet point speaking notes. I had not written anything such as that that was a fully completed paper. I was not recommending anything to anybody, it was a briefing note. That briefing note was probably for briefing either Malcolm Reed or more probably for the Minister, and that briefing note has been extracted from that briefing pack. It may be that only that one page was relevant to the tram and filed in the tram file and the rest of it was filed elsewhere. The briefing note was about TIE having a full team for Tramco and needing to recruit more, and more experienced, people for the Infraco team.
338. The tone of the briefing is such that it must have been for a private meeting with CEC because it included the phrase "*the biggest barrier to effective*

delivery was performance of City of Edinburgh Council". Those were messages that had to be conveyed in private because if they were said publicly that would have created huge harm rather than the good that TS was attempting to achieve. The message to CEC was that they had to have clear, effective decision-making in progress and a more active role in the tram project. That was a message that TS had conveyed to Tom Altchison previously. CEC's performance and engagement improved and was continuing to improve; there was better governance in place; there was better engagement but it never reached the level that they needed. Ministers gave away TS's ability to continue to influence the tram project when they wanted to cancel it.

339. I recall that I sent an email to Bill Reeve dated 1 March 2007 (TRS00003960) which referred to systems failures by TS and TIE. The comment about system failures was not a big issue and it was a cheap opportunity to tackle those issues. That was a specific instance where the governance process of the project was not followed and TS, specifically Bill Reeve, had an opportunity to have stopped that but he did not realise that he should have. Bill Reeve did not realise that the issue had been raised and decided at the TPB the week before, which I attended. If Bill Reeve had known that, then he would have said so when it was raised again at the TIE Board. If I had done a note of the TPB as normal, then Bill Reeve would have been aware, but I did not get to doing the note because I was busy with other work. Bill Reeve then did not communicate back to TS that the matter had been raised at the TIE Board, so everyone else in TS thought that the decision taken at the TPB was still the position when Bill in fact knew that that was not the case. Bill Reeve was likely also too busy, as was easy when you were trying to get a large amount of work done, to complete. Bill Reeve and I should both have been more diligent about at least writing a short note so that we did not leave each other exposed in that way again, and we agreed that we would do that.
340. The tram project system failures were more serious. TIE had an obligation to notify TS before any public statement and they did not do so, and TS were very unhappy about that because it put TS in a very bad position. TS could

not support TIE publicly if TS did not know what TIE were going to say. Much more significant was that the issue should never have been considered by the TIE Board. The TIE Board should not have accepted that issue and should have refused to take a decision as it was outwith the remit of the TIE Board. The TIE Board had clearly not grasped at that time that it was not responsible for any detailed questions and it did not have any decision-making powers on the tram project. TS had to reiterate that to the TIE Board and remind them of their role in the governance. There was a written agreement about how the governance worked and the TIE Board had to follow that. I had a direct and clear conversation with Willie Gallagher after that and told him that I understood that a mistake has occurred and I expected that the mistake would never occur again. Willie Gallagher acknowledged that a mistake had occurred and that it would not happen again. These issues had to be fixed because it could have happened with a much bigger and more significant issue which would have caused bigger problems rather than a some minor fuss and concern in the media. There was never a failure of TIE to report back to TS on significant issues again.

341. I am aware of Jerry Morrissey's letter to Matthew Crosse dated 7 June 2007 (**CEC01519310**) which was for meeting on 13 August 2007 of the Edinburgh Tram Project Quarterly Panel Review. I attended panel review meetings and they were certainly more than a box ticking exercise. I would not have taken three days of my time every quarter sitting in those meetings to waste time.

342. I am referred to an email sent by Kevin Murray in TS to Bob Bell dated 8 February 2010 (**CEC00536270**) which alleged that TIE had not provided sufficient notice or complete information to TS that we would need them to take decisions. That was a one off and Kevin Murray was saying that if he'd known about matters sooner then that information could have been reviewed earlier. It was not Bob Bell's style to withhold information where it could have been sent. There may have been a difference of expectation as to how quickly TS could respond to questions. The email showed that there had been a discussion between Bob Bell and Kevin Murray rather than me. I am not clear how long it took TS to respond to this matter.

343. In my view, TIE and TS no longer worked together effectively after the debate on the tram project in the Scottish Parliament in June 2007 because Ministers scaled back TS's involvement except for the Gogar intermodal station. TS received their four-weekly reports and they discussed the four-weekly reports. TIE were frustrated that John Ramsay kept trying to go beyond the terms of what he was supposed to cover in the discussion in the four-weekly reports. He kept trying to be involved when the terms of engagement were clearly set but TIE felt that John Ramsay was always trying to push the boundaries of that. I was never in such a meeting and cannot comment as to whether that was true or not. That relationship was a bit strained. The Gogar intermodal station project was something completely different. That was a change to the tram project that Scottish Ministers wanted and was outwith the original scope of phase 1a. It was agreed that it would be an entirely additional cost to be borne entirely by Ministers in addition to the £500 million grant and was in no way relevant to the final cost. In relation to the email, Kevin Murray was TS's project manager and at that time they were discussing the design of the Gogar intermodal station, which TS were funding and that TIE had to pay BSC for. Everything here related solely to that further intervention and did not have wider relevance to the tram project.

344. I am referred to emails dated 11 June 2010 (CEC00336394) in which CEC Legal suggested that had they been involved in the negotiations of the Infraco contract then there wouldn't have been any difficulties experienced. I had never seen these emails before and I was amused at the content. It was a blatant attempt by CEC Legal to recreate history and change it in their favour. CEC Legal's view was offered with the benefit of hindsight and was also not true. As Andrew Fitchie stated in his email there were many communications between him and Gill Lindsay during 2007 and 2008 which contradicted the position that CEC Legal were not involved. I had limited knowledge of the matter as I was party to only some of those discussions. However, I was present at meetings to do with the areas of the contract I was involved in and there were CEC lawyers also present at some of those meetings. CEC lawyers had sight of what was going on and where. CEC lawyers were frankly not experts in that sort of commercial contract and there is no reason why

they should be. Gill Lindsay from CEC Legal and Colin Mackenzie were present and had as much visibility as they wanted. They were not present at every meeting and there was an element that they would not have added value being present at every meeting. They were present at some of the meetings and had access and could have queried anything they wanted at the time. Suggesting that they were left out of the process was not true and was them offering with hindsight a version of events which was not supported by contemporary notes.

345. There were deep and important questions to be asked of Andrew Fitchie as to why the contract did not do what TIE believed it would do because he was the architect of the contract. It was certainly not fair to suggest to Andrew Fitchie that if only he had CEC lawyers involved that his problems would have been avoided. CEC Legal were not present at all meetings and they would not have had the commercial expertise. It was a deep legal question and I am not a lawyer but CEC lawyers had every opportunity that they wanted to be informed.

Edinburgh Gateway

346. I recall that I received an email from Gregor Roberts dated 8 June 2009 (CEC00936141) which suggested that I was to be the project manager for the Edinburgh Gateway and it records that it was being fully funded by TS. At that time I was working for TIE and I was inheriting something that I had started in whilst at TS in 2007. When Edinburgh Airport Rail Link was cancelled, Scottish Ministers said instead of an airport heavy rail link they wanted to have a tram/heavy rail interchange. There was already an interchange between trains coming from Glasgow at Haymarket, and there was also an interchange of trains coming from Bathgate, Stirling and Dunblane at Edinburgh Park. There was no good interchange for trains that were going to go over the Forth Bridge. My advice to Scottish Ministers had been an option to replace EARL by building a new tram stop and produce an interchange on the Fife line at Gogar and that would take the place of EARL. At that time I also advised Ministers that they could end up with the world's most expensive tram stop

doing that because, although the tram stop itself was not particularly expensive, it would have caused disruption to the tram project.

347. Going forward two years to 2009, I was in TIE and TS then said that they wanted to do the Gogar intermodal station project and would like TIE to design and secure all the approvals for a tram stop at that location. I was then responsible for managing the design and agreeing the contract change to get BSC to do the work. I was also responsible to manage BSC to produce the design for the Gogar intermodal station project, also known as the Edinburgh Gateway and the Gogar Interchange.
348. I recall that I received an email from Alan Coyle dated 6 October 2010 (CEC00022669) which attached a draft offer of grant letter (CEC00022671) for the sum of £8 million associated with the Edinburgh Gateway project and schedule (CEC00022670). It was hard to say exactly how much difficulty and delay it caused TIE. When TIE was in dispute with BSC about the scope of works that TIE wanted and whether BSC were entitled to more money for that work, the last thing TIE wanted to say was that there was another change to the scope that we would like BSC to do. TIE was already in dispute with BSC but it had not yet reached the hideous levels that it did in late 2010.
349. At that time, TIE were then to tell BSC that here was something that would cause further delay, change the scope and give BSC any number of excuses to blame TIE for all sorts of problems. That risk existed and was bad news if TIE was to change the scope of the tram project which was being constructed at that time. It was not as extensive a change to the scope of a project under construction as was the case of the Holyrood Parliament building. One of the lessons of the construction of the Holyrood Parliament was that once building had started it was a bad idea to change the scope of what was being built. That was precisely what TS had instructed TIE, first to design and then to change what they were already building. There had already been work done on the site at Gogar, and the tram depot was already being built nearby. If it all worked out then TIE were going to change the earth works that were required very significantly by building a large new retaining wall and changing

the track alignment. The track had not been laid but TIE were going to have to change the earthworks that had already been done on site. It contributed to an extent but it was not the underlying cause of delay and difficulty, it was not the excuse on which BSC hung all of its difference in the interpretation of the contract, but it made the situation more complicated in what was an already difficult situation. Quantifying exactly how bad that was, it was certainly no more than 10% of the difficulty that was being experienced, but it was not helpful at all.

350. I recall that I received an email sent by Julie Smith dated 15 July 2010 (CEC00341540) which contained an extract from Stephen Bell's report to TS in which it was estimated that the Gogar Interchange, or Edinburgh Gateway project, could delay the tram project by 6 months. To clarify, the email was not sent by Julie Smith on behalf of Mandy Haeburn-Little and Susan Clark. It was some information I had asked Julie Smith for and she had sent it to me. Julie used to be Steven Bell's Personal Assistant and knew where the information was. If the email was on anybody's behalf then it was on Steven Bell's behalf, but it was in reply to me requesting that I needed to know what Steven Bell had said in his Project Director report. I needed to know what he had said to TS about the Gogar Interchange and the reply from Julie Smith contained what he had said. I wrote part of that and Steven Bell had understandably added to that before sending it off, so I wanted to know what he had done to what I had written and why. The problems were as set out in that email and were explained to TS and that it could cause six months' delay. The Gogar Interchange had not been completed by the time I left TIE because it was explicitly excluded from Mar Hall, so no instruction was ever given to construct it. I note that the Edinburgh Gateway rail station is now open. It may have been transferred to the Edinburgh to Glasgow Rail project and done as part of that, which would have made sense.

ACUTUS Report

351. I recall that I and others in TIE were sent an email from Tom Hickman dated 24 May 2010 (CEC00339084) which attached an ACUTUS draft report

(CEC00339085). I had no involvement in commissioning the report. The ACUTUS Report was about what was causing delay in the programme including the design delay. It considered whether Infraco actually had all the equipment and the staff available to do the work that was required and whether the design had been met or was Infraco just not ready. It was an attempt to attribute responsibility for everything that was in delay right across the board. If something was delayed 100 days then it looked at how many of those 100 days were TIE's fault and how many of those days were BSC's fault. "Fault" was interpreted as liability under the programme delay provisions of the Infraco contract. There were factors that were nobody's "fault" that caused delay but that somebody was liable for was under the contract. I was not involved in commissioning the report but I provided a great deal of material in preparation of the report.

352. I spent a lot of time with Tom Hickman and with the members of the ACUTUS team going through a sequence of events that questioned, for example, when the Murrayfield retaining wall was built and when should it have been built and compared the date to what it showed in Version 22 of the programme. The report also looked at matters such as the date the IFC was issued, how many days late that was and what Infraco could have done if they had wanted to minimise the impact of that delay. The report also showed if there was advance work that Infraco could have done that they had not. So even if the IFC had been released on time, Infraco was not waiting without work to do because Infraco was liable for half of that delay. All of the people to whom the email was addressed were involved to an extent in the report: Malcolm Butchert, Allstair Dickinson, Phil Dobbin, David Burns, Tom Cottar and Andrew Scott were all construction management project managers and Colin Neill was the boss of most of those people. They commented on whether Infraco had the equipment and the staff to do the work, applied for the temporary works consents required, submitted a Health and Safety Method Statement and other matters that would have allowed the construction if there had been a relevant design. They were doing that section by section, and I was not involved in all of that: my role was to contribute in relation to the design across the whole of the route not just in individual sections. Fiona

Dunn was one of TIE's commercial managers and was involved from a commercial point of view of what Infraco's obligations were.

353. The background to the decision to commission the ACUTUS report was that TIE was attempting to resolve the dispute. There were a lot of versions of the programme and TIE knew who was responsible for some of the delay but we wanted to be able to discuss from an informed position as to how much TIE would definitely be responsible for. TIE wanted to know how unequivocal it was that it was BSC's fault and how much of it was genuinely disputable. Often there was concurrent delay, for instance, if TIE and BSC had both not done something at the same time then there was a question of who was liable for that delay. There was a dispute there as to how much of it was TIE's liability, or due to the design, Infraco not being ready to construct and how much of that was disputable.
354. The ACUTUS report was commissioned by the TIE senior team, I believe that the person most responsible for that was Susan Clark because she was the member of the TIE senior leadership team who was responsible for the programme. I do not know why specifically Robert Burt and John Hughes were selected as opposed to other people who did the same work that ACUTUS did. They were suitable people to do that because they worked on construction contracts for a living all of the time. Where there was dispute over delay and they would go through the evidence and they took a forensic approach. They were either often employed by one party or the other, or sometimes they were employed by the mediator, to go through the evidence and say where the delay could be attributed by percentages. That was what they did for a living and they had expertise in doing that because they had worked on so many construction contracts.
355. The conclusions that were taken from the ACUTUS report were that a proportion of the delay was TIE's liability, a proportion was Infraco's liability and a proportion of the delay was disputable. The numbers of those proportions were in the ACUTUS report. It was broken down structure by structure because it mattered in terms of the construction sequence and what

construction was supposed to have taken place. The report was used to inform TIE's position in the dispute because they were trying to work out if they could reach a reasonable settlement and what that would be. The ACUTUS report was prepared for TIE in contemplation of a commercial settlement and all litigation with Infracore and SDS, therefore it would not have been appropriate to let Infracore and SDS know TIE was doing that exercise. The report was interesting but it did not assist in the progress of the tram project. Although the ACUTUS report was a well-intentioned attempt at resolving the dispute, ultimately, the deal concluded at Mar Hall superseded everything else.

Conclusion

356. Since the Edinburgh tram project I have not been involved in any major infrastructure projects. Having the Edinburgh tram project on my CV was a major barrier to getting jobs in transport infrastructure. I had to change industry as a result of working on the Edinburgh tram project. I am currently involved in the water industry in which all the same human issues arise. If people wanted to resolve problems then they had to get together and get rid of the excuses. Those people had to talk and work towards a solution or find out who did have a solution. All of that was the same across all the projects I have been involved in before and since the tram project.
357. The crucial difference with the tram project was the attitude of the contractor compared to all other infrastructure projects that I had been involved in. For the dispute about the contract to end up in mediation then something had already gone badly wrong. Even if TIE had ultimately managed to force BSC to deliver the whole network of the tram project and only gave as much money as TIE thought was reasonable and fair the project would already have been significantly late and the tram has had to work hard to overcome the legacy of its construction disputes.
358. The contractor's attitude was influenced by Scottish Ministers' withdrawal from the tram project. Part of TIE's and TS's original strategy was for contractors to

know that behaving well as contractor would put them in a good position when it came to award the next round of contracts. Contractors knew that there would be consequences in those next round of contracts if the word got out that they were difficult and awkward and managed the contract for as much money as possible. The change to that strategy gave Infraco the perception that they could be difficult commercially and refuse to start and progress construction with impunity and they were proved right.

359. A crucial part of TIE's and TS's strategy was that they were not just relying on enforcing the contract but were relying on contractors being willing to see the big picture and committing to the long term. The Edinburgh tram project was different in that it had a contractor that did not behave well and that was BB, less so Siemens and certainly not CAF.
360. Not long after the Infraco contract was awarded, BB took the decision to pull out of the UK market. They were no longer going to operate in the UK so they were not concerned any more about the impact on their reputation in relation to future contracts. BB were not going to bid for any future contracts in the UK so they may as well pocket as much money as they possibly could on the tram project. Nobody expected that that would happen. BB's commercial attitude was also influenced by a tunnel collapse on a project that BB were doing in Cologne, Germany. Two people were killed when the ground under the Cologne archive suffered a sudden collapse. That was part of what drove BB's withdrawal from the UK market and why their top management in Germany was not particularly concerned with the tram project. BB then had a major financial liability to meet in terms of the tunnel that had collapsed in Cologne because eventually it might be proven to be BB's fault. There was no doubt that BB had to go through lengthy litigation, but BB knew that they were going to have to find a lot of money to pay for their liability for the collapse of the tunnel and the Cologne archive. BB suddenly had very different priorities as an organisation and the change in their contract behaviour reflected that. That was one difference about the tram project compared to any other.

361. In my view TIE and the tram project had some very positive attributes that were different from other projects, such as TIE being a young and passionate organisation. TIE had its difficulties but was a very different organisation to deal with when I was at TS than Network Rail. Network Rail was a giant organisation with huge corporate policies therefore not a very agile organisation. With Network Rail it took a long time to get anybody to agree to change anything and would be a long and difficult process. It was refreshing to be dealing with an organisation such as TIE that could change course if it had to rapidly, in that it could agree or disagree on issues and people took decisions quickly because of that. TIE would never say that they wouldn't do something a certain way, which was not the case with all large organisations including the Scottish Government. Sometimes that rigid attitude was for a good reason and sometimes it was because an organisation was not used to working any other way. TIE was an organisation that was determined, focussed, responsive and did not have to be concerned with what was going on in England as Network Rail did. Also TIE wanted to work and wanted to learn. The tram was an excellent project and it would have been an even better if the tram network had reached all the way Leith as it was supposed to have done. Everybody involved in TIE took that personally and it galled me enormously and left me feeling deeply frustrated. Everybody in TIE invested a lot of time and I personally invested 11 years in trying to achieve the full scope of the originally planned tram network.
362. With regard to the Inquiry's Terms of Reference, my views as to why the tram project incurred problems started with the failure of CEC to make a decision and stick to it that it was a major contributor to the tram project. Another was that the Infraco contract failed to be enforceable in the way that TIE believed it was going to be, in particular, TIE completely lost the dispute with BBS on normal design development, which then contributed both to the delay and cost of the tram project. Because of the increased costs, that had an impact on why the tram project delivered significantly less through reduction in scope. Ultimately, the tram project cost considerably more and there were delays because the Infraco contract was not enforceable as TIE believed. The reason for the Infraco contract failure was not at all clear to me because I was not

sufficiently involved and I question whether that was a failing of DLA and whether they wrote the contract correctly or whether DLA were instructed to write the contract having advised senior people in TIE that there was a risk that it could go wrong and were told to go ahead anyway. One of those two scenarios must prevail. Either DLA got it wrong or DLA advised about the risk and senior people in TIE decided to take that risk. I have seen no papers and was in no meetings that would let me know the answer to those questions, but I cannot see how one of those two scenarios did not apply to the Infraco contract.

363. The failures in the tram project could have been avoided from the start and throughout and CEC politicians needed to set the lead. CEC failed to set the lead in terms of the congestion charge where they engineered a referendum to allow them a way out of an unpopular policy. CEC had started to do something difficult and unpopular with the congestion charging scheme and had decided to distance themselves from that scheme. Likewise, CEC's politicians never tried hard to send the message to the people of Edinburgh that they believed in the tram project. CEC's politicians were seriously culpable in that respect. That attitude was then reflected in the behaviour of many of CEC's officials. Whilst some CEC officials tried hard and did well, there was no leadership from the top of CEC and the politicians and the officials who tried to act honourably did well but were not given sufficient direction and clarity.
364. I do not know the cause of the Infraco contractual problems. Had TS been involved in the Infraco contract then an independent review of the contract structure by a different lawyer from a different firm would have been required before the Infraco contract was signed. That review would also have questioned whether the contract was likely to achieve the outcomes that were set and at that point the answer to that question would have been known. One can never know for certain how an adjudication will turn out until it is tested but TIE would have had an additional expert view. The fact that Scottish Ministers had stepped away from the tram project meant that TS was unable to insist on a review. CEC did not insist on a review, and CEC lawyers rather

than saying that if they had been involved in the Infraco contract then there would not have been any problems, should have said that they wanted an independent review. There would have been problems and resistance to that because TIE did not want to delay the signing of the Infraco contract. An independent review was on my checklist of what had to happen before a contract could be signed and would be carried out in other major projects where contracts were reviewed to check that they were going to do what they said. In the case of Network Rail, they were answerable to the rail regulator, and therefore it was not necessary to enforce that directly because there was an existing framework on which Network Rail could rely. An independent review of the Infraco contract should have happened and should always happen on a major project where there was reliance on the contract to deliver. An organisation such as CEC should not have taken their in-house lawyer's word for it and should always have an independent view carried out. In my view, had an independent review of the Infraco contract been carried out then it would very probably have answered the question of whether the Infraco contract was wrong in the first place, or whether the adjudicator's findings were stranger than expected. It was possible that the adjudicator could have been unduly swayed and made a poor decision but I had no evidence that that was the case. It seemed more likely true that the Infraco contract failed to do what it was supposed to do.

365. The terms of the Scottish Parliament's decision in 2007 called on the Scottish Government to proceed with the Edinburgh tram project within the budget limit set by the previous administration. The Parliament did not bind the Government with the terms, so whilst the Parliament had set out what the Government should do, the Government still had a choice whether to follow that. The Government could still have acknowledged the terms and chosen not to follow them. In particular, the second part of that motion called on the Scottish Government to continue to progress of the EARL project by resolving the governance issues and reporting back in the September 2007. The Government later decided that they did not care about resolving the governance issues and cancelled the EARL project. Scottish Ministers did not have to step back from the tram project or they could have cancelled it but

there would have been other political consequences for that. In the end Ministers went with what Parliament had decided and kept the tram project but decided to cancel the EARL project as a political compromise that was made.

366. I recall that there were projects carried out simultaneously across Scotland that contained various degrees of risk with the aim of benefitting Scotland and its society. It was unrealistic and foolish to expect that everything would go as planned for every project. There was discussion about risk in the tram project being worked out as P90 risk, it was 90% likely that the funds would be enough to complete the project. There was therefore a 10% chance that there would not be enough money to complete the project. When there were a lot of projects being run together, it could not be thought that every project would turn out the right side of a P90 risk. The nature of probability was that some of the projects would likely have issues and sometimes that would be because people had carried out work badly and incompetently, sometimes that would be unlucky and sometimes that would be a mixture of the two.
367. There was a culture at TIE in which people felt under pressure, under siege and that there would be an inquisition if work started going badly, which was the case for the tram project and at TIE before I arrived there. For the four years following my arrival at TIE, there was consistent hounding of TIE by politicians, journalists, the Edinburgh Evening News and people looking to cause trouble and find problems and celebrate the fact that there were issues. That did not encourage anybody at TIE to deliver well and encouraged people to try and protect their own back. The perception amongst people in TIE was that if they took a risk and that failed, then they may have to explain that decision before an inquiry and be made to justify that decision and be judged with the benefit of hindsight.
368. Allowing that atmosphere to be repeated on other projects will not attract the most talented people to come and work on projects in Scotland. People who were working on the tram project also worked worldwide. I know that because some of them cannot be compelled to come back and give evidence at the Inquiry because they are now in places like Abu Dhabi or Dubai. Some of the

people who previously worked on the Edinburgh tram project could choose to go wherever they wanted in the world, where they would be rewarded and able to work in a less hostile atmosphere. They would also be attracted elsewhere because of a more realistic understanding of the likelihood and possibility of failure and what actions should be taken in such circumstances, and as a result a project would be less likely to fail.

369. In my view, Scotland should hold an attitude about rewarding people who take risk and succeed but also understand that there cannot be an inquisition every time that those people do not succeed. There should have been a balanced view taken on the tram project where people deserved criticism for some of the decisions that they made and praise for other decisions. That was fair but I felt when working on the tram project that TIE was only receiving criticism, and that if TIE did manage to resolve a problem that the response it would receive from critics was that it should not have experienced that problem in the first place. That did not encourage people at TIE to want to work on a project such as the Edinburgh trams and Scotland is the poorer, as a country, if that attitude prevails.

370. With regard to the tram project, I did not do a bad job but afterwards I could not get another job within transport, even though I was skilled and had relevant experience. I did not even receive invitations to interview for job applications and I am certain that was because my previous job had been with the tram project. I then had to change industry and take a large pay cut. That was the impact that the tram project had on me personally and I have paid a hefty price for my belief in the tram project and joining TIE.

371. I confirm that the facts to which I attest in this witness statement, consisting of this and the preceding 159 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 signature.... 

Date of signing..... 8/7/2017