DARLINGTON EASTERN TRANSPORT CORRIDOR

Technical Review of the Scheme for Darlington Borough Council

9th April 2008

Report by EC Harris LLP

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CONTENTS

1 INTRODUCTION

1.1 INSTRUCTIONS

1.1.1 This Report has been prepared in response to the instructions given by Darlington Borough Council and detailed within EC Harris LLP's (EC Harris) proposal of 16th November 2007.

1.1.2 This Report describes the findings from a technical review of the Darlington Eastern Transport Corridor (the Scheme) in accordance with the investigations described in our proposal to the extent possible based upon the information provided.

1.1.3 These investigations have been suggested by Darlington Borough Council and represent known elements of the scheme that could be difficult to resolve and /or represent financial or other risks to the Council.

1.1.4 We emphasise that this Report has been prepared solely for Darlington Borough Council and it is requested that the Council discusses the matters reviewed in this Report with EC Harris prior to it being disclosed to any other parties.

1.1.5 We understand that the intention of this report is to advise on whether there is any opportunity to reduce or limit the final outturn cost of the scheme or recover any monies in excess of the budget originally allocated to the project by Darlington Borough Council. The investigations undertaken were based upon a specific list of items provided by Darlington Borough Council that comprised known potential reasons for increased costs on the Scheme.

1.1.6 The Council requested that EC Harris reviews the reasons why there was an alteration to the road levels along a short section of the project, which has been the subject of complaints by the nearby residents. The review undertaken by EC Harris revealed that planning law is at the heart of the issue and EC Harris is unable to provide the specialist legal advice that this aspect of the Scheme appears to require. Any conclusions made are necessarily restricted to a limited review of the documents provided for inspection. This is discussed in Section 2.

1.1.7 The Report is the result of the review of the documents and information provided by the Council and comments made are based upon the content of those documents. EC

Harris cannot be held responsible for any inaccuracies that may arise as a result of relevant documents or information not having been made available.

1.2 THE PARTIES

1.2.1 Employer: Development and Environment, Darlington Borough Council, Town Hall, Darlington DL1 5QT (hereinafter referred to as "the Council").

1.2.2 Project Designer: Darlington Borough Council, Town Hall, Darlington DL1 5QT (hereinafter referred to as the Design Team). We understand that Mr John Ray was Head of Service Highways and Engineering

1.2.3 Contractor: Birse Civils Limited, 3 Grimston Grange, Sherburn Road, Tadcaster, North Yorkshire, LS24 9BX (hereinafter referred to as "Birse" or the "Contractor")

1.2.4 Employers under the construction contract: Highways Agency, 8th Floor East, City House, New Station Street, Leeds, LS1 4UR and Darlington Borough Council, Town Hall, Darlington DL1 5QT

1.2.5 Highways Agency Designer: Faber Maunsell (previously Bullens consultants). Note that Council has staff on site that are employed to supervise the Highways Agency works, seconded from Faber Maunsell.

1.2.6 ECC Project Manager is provided by Capita Symonds, Finchale House, Belmont Business Park, Durham DH1 1TW. Capita Symonds is one of Darlington Borough Council's framework partners.

1.2.7 ECC Supervisor employed by Darlington Borough Council, Hopetown House, Brinkburn Road, Darlington DL3 6ED.

1.2.8 Planning Supervisor (CDM Co-ordinator): White Young Green, Progress House, Fudan Way, Teesdale, Stockton-on-Tees TS17 6EN.

1.2.9 The Government Office North East (GONE) is the statutory government body to which the Council reports in respect of the Scheme. GONE dealt with the Department of Transport (DfT) grant application for the Scheme.

1.2.10 The Local Planning Authority (LPA) is Darlington Borough Council.

1.3 SUMMARY BACKGROUND OF THE SCHEME

1.3.1 Darlington is an important regional shopping and commercial centre in the north-east of England. The intention to improve its infrastructure by the construction of the Eastern Transport Corridor, which provides a link from the A66 Bypass to the east of Darlington to Haughton Road, thereby bypassing Haughton village has been planned since 1990.

1.3.2 We understand that the Scheme almost reached construction on 1993-4 but was postponed due to lack of funding. In 2003-4 potential funding was available so the Council approved internal funding to undertake the advanced design works.

1.3.3 The design of the road was undertaken in two sections. The Highways Agency is responsible for the A66 trunk road east of Darlington. Therefore, it was necessary that the Council employed Highways Agency consultants to complete the design work that related to the Highways Agency land i.e. that within and adjacent to the carriageway of the A66. The second section was the carriageway works between the A66 and Haughton Road, within the Council's land. For design in these areas, the Council was responsible and staff employed within its own Highways and Engineering Services department completed the design work.

1.3.4 We understand that key members of the Council's staff were involved in the design of the Scheme. The Council's site team responsible for supervision of construction on site and administration of the construction contract is led by the contract's ECC Project Manager. He is supported by the contract's ECC Supervisor and others that undertake supervisory and quantity surveying roles

1.4 DOCUMENTS CONSIDERED

1.4.1 The relevant information for this Report was made available by the Council's design and site teams within the Council departments responsible for these works.

2 ROAD LEVELS AT COOMBE DRIVE

2.1 GENERAL

2.1.1 This section describes the results of EC Harris' investigations into the reason(s) why the road levels were altered in the area near to Coombe Drive. Our investigations revealed that the issues involved include elements of specialist planning law and EC Harris is unable to give any such specialist legal advice. We strongly recommend that the Council takes such specialist legal advice on the particular planning issues relating to the DETC if it considers that this is appropriate.

2.1.2 Accordingly, the scope of our investigations within this Report were a strictly limited examination of the documents provided.

2.1.3 We have been unable to follow the issue of the change in levels fully through the relevant correspondence with the residents and within the Council departments, since this is beyond the scope of this Report.

2.2 SCHEME PLANNING PERMISSION

2.2.1 Planning permission is required for all but very minor development and guidelines are issued by the Council in respect of whether developments are significant, what publicity will be expected of developers; what development does or does not require planning permission and various aspects of planning relating to breaches of planning control and enforcement.

2.2.2 This Scheme required planning permission and three separate planning permissions were raised. These are:

- 00/00508/FULE for the Scheme itself
- 05/00255/DC for a variation to planning permission 00/00508/FULE to provide new major/minor priority junction giving access to adjoining development land
- 04/00764/DC for a new signalised junction, access road and roundabout.

2.2.3 At the time of the planning application in 2000-2001, the permission was granted with conditions. The full detailed design had not been undertaken and this design work was actually undertaken 2004-2006. In the approvals process, planning applications are considered by the LPA and conditions or alterations may be required before a scheme is recommended for approval by the planning department and/or the

planning committee. The process includes for advertisement and provides the opportunity for objection by any interested parties.

2.2.4 The Scheme details have come under scrutiny as since construction has started residents have objected to what they perceive to be an alteration in the road levels on the Scheme.

2.2.5 In the event that a scheme is changed, then it may be necessary to revise the planning application or to make a further planning application. It appears that the decision as to whether the application must be revised is one the Local Planning Authority (LPA) should make (see 2.2.6 below).

2.2.6 In respect of Minor Amendments, the Council's website states:
Procedure *"These matters can be dealt with as a non material amendment, approval being given by letter. However, this power is used with caution and a formal submission for a variation will be required where the amendment would increase the size or alter the formal character of the proposed development significantly. Following receipt of such an application, all adjoining occupiers originally notified will be re-consulted"*.

2.2.7 We understand that the Council has received complaints over the alteration of the Scheme road levels at Coombe Drive and that a complaint has been escalated to the Local Authority Ombudsman.

2.3 PLANNING CONTROL

2.3.1 In the event that development is implemented differently to the planning permission given for the development, it may be that a breach of planning control occurs. This is indicated by the Council's own website information on planning:
"A breach can also occur when permission has been granted for specific development, but the works carried out do not conform to the agreed plans or specified conditions".

2.3.2 The Council also states on its website that:
"*When such breaches occur, the Council is obliged to consider whether action is justified and will take action if necessary. However, if breaches of planning control are not material ..... the Local Planning Authority may sometimes decide to take no*

action…Each case is treated on its merits and initially a solution will be sought by negotiation."

2.3.3 There seems to be agreement that the Scheme planning permission is different to the as-built Scheme in respect of carriageway levels in the Coombe Drive location. Planning permission for the Scheme was granted under application 00/00508/FULE. The drawing provided with the application stated the proposed centreline carriageway levels. These levels have been altered.

2.3.4 The actual carriageway levels in this vicinity have been set by the highway designer(s) that creates an embankment that can be seen from the houses in Coombe Drive. The residents have complained about the height of this embankment, which is at its maximum just over 2m high.

2.3.5 We understand that the residents have complained that there will be increased noise and that the as-built road levels will mean that road users will be above the adjacent ground levels and therefore their privacy may be compromised. From our interviews with the Council staff we believe that the privacy issue is apparently their main concern.

Reasons for the carriageway levels difference

2.3.6 From our discussions with the Scheme designer, it appears that the decision to raise the carriageway levels from those originally proposed was due to the land available for the Scheme.

2.3.7 We understand that the engineering team had the following design options in the Coombe Drive location; to alter the land available by obtaining more land; to construct substantial retaining walls; or to increase the road levels by constructing an embankment.

2.3.8 The preferred engineering option chosen was to increase the road levels by construction of the embankment. This would have been the cheapest option, since earthworks are cheaper than the construction of retaining walls. Any delay to the Scheme was also minimised.

Haughton Road Junction

2.3.9 Our investigations revealed that during design, the junction at Haughton Road was considered possibly to be a major change in planning respects and the available documentation suggests that appropriate procedures seem to have been applied to the alteration of this junction and we understand that the view taken by the planning department was that this did not represent a significant change.

2.3.10 Although we believe that it is unlikely that we have seen all the documents relating to the junction at Haughton Road, the documentation we have seen relating to this area demonstrates that the alteration was considered by the Scheme designers and planning department. However, it is recommended that the Council ensures that all the documents relating to this alteration are identified and amalgamated to demonstrate the processes followed.

Noise Attenuation

2.3.11 Condition 3 of the Scheme planning permission requires that

"Prior to the commencement of the development hereby approved or in such time as may be agreed in writing with the Local Planning Authority, precise details shall be submitted of the proposed means of enclosure (fencing) and bund profiles designed so as to minimise noise disturbance from motorised traffic to the nearest residential properties adjacent to the road corridor."

2.3.12 We understand from the Scheme's Project Manager that work is currently being undertaken to determine appropriate action in respect of noise attenuation and the subsequent discharge of this planning condition.

2.3.13 We recommend that the Council should ensure that it has the appropriate documentation to demonstrate the Council's actions in respect of its discharge of this planning condition.

2.4 ACTIONS TAKEN

2.4.1 We understand that the Council made some efforts to publicise the Scheme plans through organising public consultation events to demonstrate to the residents, what the Scheme would look like and the effects it would have upon them. We understand that this residents' liaison is still ongoing with a view to reaching some agreement over mitigation measures.

2.4.2 The meetings held prior to the start of the works were as follows:

Eastbourne Sports Complex	October 5th 2006	2.00pm -9.00pm
College Atrium	November 15th 2006	6.00pm-9.00pm
College Atrium	December 2nd 2006	9.00am -1.00pm

2.4.3 We understand that the Council suggested that it would be prepared to provide an embankment as a possible option to improve noise attenuation. Meetings have been held with the residents to discuss this option and it has been agreed with them that no embankment is required.

2.4.4 On site, on behalf of the Council, the Project Manager has commissioned a noise survey that has determined that the Scheme does not affect the residents sufficiently for there to be an obligation under the Noise Insulation Regulations in the Coombe Drive location.

2.5 RECOMMENDATIONS

2.5.1 We recommend that the Council identifies and collates all the information available in respect of decisions made and examines fully the timing of the internal and external correspondence on this issue of changes to the road levels since the Council may need all the records to demonstrate what actions it took throughout the design process and when those actions were taken.

2.5.2 We would recommend that in future the Council follows a specified procedure for dealing with such mattes and keeps full records of the decisions taken on its future developments to ensure that it can demonstrate that it has complied with the procedures it requires as part of the planning control process.

3 SCHEME BUDGETS

3.1 GENERAL

3.1.1 The Scheme has been within the Council's engineering and highways department for several years, since 1997. Various cost estimates and budgets have been prepared for the Scheme and the following explanation is provided to show what cost elements were included in the budget, whether the elements included were reasonable and the current situation

Cost Estimate in 2000

3.1.2 The first Scheme budget we have been able to consider is that prepared by the Council in 2000. The information we have examined was provided by the Council to and summarised the successive budgets prepared throughout the Scheme's history.

3.1.3 The cost estimate was based upon a construction cost calculated by reference to the average of global rates from two completed schemes, the Seaham Industrial Corridor completed by Durham County Council at £60/sqm and the Skelton/Brotton Bypass completed by Redcar & Cleveland Borough Council at£100/sqm.

3.1.4 A carriageway area of 38,075 square metres was used for this estimate, assuming that there would be minimal works required on the A66. The basic Scheme cost was therefore estimated to be £3,046,000 using £80/m2 as the average rate.

3.1.5 To this basic construction cost, additional amounts were added for the Arnold Road Tunnel strengthening (£100,000), ground improvement to the tip area (£100,000), treatment of excavated material for re-use (£250,000) and removal of surplus material (£150,000).

3.1.6 To this were added the Council's costs, which includes Land Acquisition, Public Utilities, Site Investigation, Materials testing during construction and Landscaping, together a total of £726,321. After the application of a contingency allowance of 10%, design and administration fees were allowed as 10% of the total and contract management included at 7% of construction costs.

3.1.7 The total estimated cost in 2000 was just under £5.5million.

Cost Estimate in mid-2002

3.1.8 The cost estimate for the Scheme was revised in 2002; to incorporate additional works and update the previous 2000 estimate.

3.1.9 The addition of 13,984 square metres of carriageway (£1,118,720) was added into the Scheme costs for work to be undertaken within Highways Agency carriageway areas on the A66. The provision of a pedestrian and cycle bridge over the A66 was also added at a construction cost of £300,000.

3.1.10 Further land acquisition, public utilities, site investigation, materials testing during construction costs were also added for the section of the Scheme in Highways Agency land. Most of these were based, as previously, as a percentage of construction costs.

3.1.11 Similarly, design and administration, contract management and contingencies were increased due to these allowances being based upon percentages of other costs.

3.1.12 This appears to be an appropriate method of updating the cost estimate at the time this was carried out. At the time, it seems that the development of a fully detailed design had not been carried out. Design had progressed by 2000/2001 to a stage where planning permission could be applied for, as some details were included within the planning application.

3.1.13 As a result of the addition of Highways Agency works within the A66 area, the total cost of the Scheme was estimated to be £7,304,794.

Cost Estimate at December 2002

3.1.14 The mid-2002 estimate was revised in December 2002 to incorporate a price increase of the carriageway to £130/m2, which was the Council's estimate of current rates. This increased the cost of the Scheme to £9.53M. Within this figure, the cost for the bridge over the A66 was £300,000.

Cost Estimate at January 2003

3.1.15 A further revision of the cost estimate in January 2003 altered the estimate to a carriageway rate of £125/m2 and allowed an increased cost for the A66 bridge of £500,000, making the total at January 2003 to £9.79M. It is noted that whilst the information provided to EC Harris gives this limited information, the differences

between the Scheme totals between December 2002 and January 2003 cannot be confined to these two alterations, since these would not account for the difference in total.

3.1.16 The increase between these and earlier cost estimates, unless there are significant changes to the scope of work, appears to be related to a substantial increase in the rates used to price the Scheme, of about 50%.

Cost Estimate at June 2004

3.1.17 The cost estimate prepared in June 2004, with the A66 bridge reverting to the December 2002 cost of £300,000, was £12.1M, which represented a substantial increase over the previous estimates. The basis of pricing was changed to using Spon's rates and Highways Agency rates current at the time based upon a bill of quantities produced for the Scheme. Spon's is a standard industry price book often used to calculate the cost of civil engineering schemes.

Cost Estimate at August 2005

3.1.18 The cost estimate prepared at August 2005 appears to be the estimate subsequently developed into the estimate for submission to the Department of Transport for the grant application and subsequently used for reporting the budget estimates to the Council.

3.1.19 By this time, the revisions to the Scheme included the increase in global area, the addition of the pedestrian/cycleway bridge over the A66, segregated left hand turn lanes to the new roundabout at the A66/DETC junction and at the existing Great Burdon roundabout, substantial widening/hatching works to provide safe traffic merging onto the new trunk road, which resulted in a revised and increased Scheme cost of £12,036,180 by August 2005.

3.1.20 The basic construction cost of the Scheme had risen to £9.4M with the previous percentage additions bringing the total cost up to approximately £12.1M.

Cost Estimate at February / March 2006

3.1.21 Further increases in costs of the Scheme between August 2005 to March 2006 included an allowance for inflation and additional utilities costs with minor increases to design, administration and the contingency sum as a result of these being calculated on percentages of other costs. The resulting cost estimate figure was

£12,465,359, the majority of the increase from earlier estimates being the allowance for inflation of £274,299.

3.1.22 This Scheme cost was submitted to the Department of Transport for conditional approval, which was granted in the sum of £12.040M on 12 May 2006 , the Council's agreement to the terms of the grant was confirmed by letter of 9th June 2006. Final approval from the Department of Transport was given in the sum of £12.040M on 18th December 2006.

Comments on estimates up to March 2006

3.1.23 In general terms, at 2000, when the initial Scheme budgets were established, the approach to pricing the Scheme taken is one that would generally be used i.e. using historical or price-book global rates with percentage additions. The estimate does include for known areas that would be over and above the basic carriageway costs. The percentage allowances are also typical of those that would have been allowed at initial estimate stage.

3.1.24 The percentage allowance made for design and administration at 10% is a reasonable additional percentage for this work. In our experience, an allowance of up to 12.5% would probably represent the usual maximum that would be allowed, unless it was known that the Scheme had specific abnormal design requirements.

3.1.25 The contingency allowance of 10% is also typical of percentage additions on construction costs at feasibility or early budget stage.

3.1.26 There appears to be no allowance for certain elements of costs within the Scheme budgets. These are costs that will be incurred but have apparently been omitted from the cost estimates. The Council will have to meet any costs associated with these elements. These include some external fees, the Highways Agency commuted sum, property insulation (noise) and an allowance for Land Compensation Act liabilities.

3.1.27 It is reasonable not to have included more specific items that were required for fees such as CDM Planning Supervisor (now CDM Co-ordinator) and archaeology fees at the time of the estimates that are relatively minor sums, since these could have been assumed to be included within the overall design fees percentage allowance. In fact, the total of the fees for design of the Scheme and these "additional" fees seem to be within the budget allowance, which is what would be expected.

3.1.28 It is less clear whether there should have been specific allowance made for noise considerations since the requirement for noise attenuation measures was a condition of the planning permission for the main scheme (granted in 2001). Therefore, it would have been reasonable to have specifically identified both the cost of any measures needed in the Scheme that would arise as a result of noise and the surveys necessary to establish what those measures would be.

3.1.29 EC Harris has been unable to identify when it was recognised that the presence of Great Crested Newts would affect the Scheme. It would have been prudent to allow some monies in the later estimates for the direct costs of dealing with the newts. It also seems that the newts were known about before the tendering process took place and by this time, although accurate allowances might be difficult to determine it would also have been prudent to have allowed some monies for risks associated with the timing of the Scheme. The Scheme programme needed to accommodate the process to gain the licence and undertake trapping works along with the interrelationship with the timing of available funding.

3.1.30 The newts' issue is discussed below in Section 6 but we understand that the approval of funding was required prior to the Council being able to progress the newt trapping works that were significant in the timing of the Scheme. The trapping works would also give rise to direct costs, whether or not they were carried out in advance or as part of the construction contract. In fact, the implication of the presence of newts has been far-reaching and affected the Scheme much further than originally anticipated.

3.1.31 We understand that an allowance for Land Compensation Act (LCA) claims was not specifically identified in the estimates and that these claims would always have been a potential cost to the Scheme, even though apparently these claims (for diminution in property value) cannot be made until one year after completion of the Scheme, thus making the costs difficult to assess in advance. It is possible that some proportion of this cost was included within the general land costs allowed but this is not clear and the general view of those interviewed by EC Harris appears to be that this was a cost that was omitted from the Scheme. Nevertheless, any valid claims under the LCA will have to be met by the Council.

3.1.32 The Highways Agency commuted sum is an allowance payable to the Highways Agency to account for future maintenance that will be required on the Highways

Agency areas in future as a result of this Scheme. Once the Highways Agency works had been included within the Scheme, then it would be necessary to have recognised that the commuted sum would become due. It is noted that originally, little, if any, works were required on Highways Agency land and this may be a factor in the omission. However, the Highways Agency work was included within the Scheme in 2002, so it should have been possible to establish that a commuted sum would increase the cost of the Scheme since that time.

3.1.33 The Council has no opportunity to reduce or mitigate the effects of this commuted sum cost, it is simply an additional cost to the Scheme outwith the control of the Council.

3.1.34 Some of these items that were omitted are significant sums of money and will contribute to the increased cost of the Scheme. As the costs were omitted, the DfT grant plus the original funds allocated by the Council does not include for them.

3.1.35 There are also other substantial cost increases, which are discussed more fully in Section 6. In particular, these include the increased costs Utilities costs (Statutory Bodies), for service diversions. The original allowance made within the 2000 budget was £150,000, which was increased to £200,000 in 2002. This was again increased in March 2006 to £328,000.

3.1.36 The actual cost of services diversions is anticipated to be a maximum of £1.2M, £900k more than the allowance made in the grant application to the DfT. The need for service diversions is determined by the Statutory Bodies i.e. when given details of the Scheme, the Statutory Body determines any necessary work required to its apparatus as a result of the Scheme. It is not clear how the pricing of the service diversions was carried out initially but the likelihood is that an allowance was made in anticipation of some number of service diversions being required. This would be typical of the preparation of budgets for engineering schemes unless the designers knew that abnormal diversions would be required.

3.1.37 Once the detailed design development has taken place, the actual requirements for service diversions can be more accurately established. However, Statutory Bodies charge for service diversions on the basis of any costs they incur and it can be difficult to establish the likely costs prior to reaching a stage where the Scheme design is committed to such an extent that the service diversion is unavoidable. It may

be foreseeable that certain service diversions would be expensive, so identifying those diversions and altering Scheme design may be possible but not certain, depending upon the design and the actual location of services, the latter being often inaccurate on plans provided by the Statutory Bodies. Therefore the requirement for and controlling the cost of the diversions can be difficult to manage.

3.1.38 The extent of the difference between the budget allowance of £328,000 and the currently estimated maximum cost of £1.2M for the diversions is very high. It is not clear whether the final cost incorporates more diversions than was anticipated in the earlier Scheme budgets, which could account for the increase or that the originally anticipated work as was actually more costly than expected.

3.1.39 The Council is liable to meet the additional costs from either the Scheme budget or other resources. Further investigation might reveal reasons why the difference is so great but would not alter the requirement for the Council to meet the final costs charged by the Statutory Bodies.

3.1.40 The management of the Statutory Bodies and associated costs are discussed in Sections 4 and 6.

3.1.41 The high risks of cost escalation due to service diversions and also the risks involved in managing the Statutory Bodies on site are well known but difficult to manage and control. It would have been reasonable, therefore, to be careful in estimating these costs to ensure that adequate monies were allowed. However, the extent of the difference between the estimates suggests that either additional service diversions were required; and/or that any estimates made or received were inaccurate; and/or possibly that acquiring estimates was left later than it should have been. In any event, the figures included within the grant application were much less than was required.

3.1.42 These omissions and any under-estimated allowances within the budgets have increased the Scheme costs significantly. If the omissions and increased utilities costs had been included at August 2005, then the Scheme budget would have been in the region of £14M, rather than the £12.5M put forward to the DfT.

3.2 COST BENEFIT

3.2.1 In common with many other construction projects funded through government departments, the DfT requires that any projects funded represent value for money. When schemes are submitted to the DfT, certain economic requirements have to be met in order to secure funding from the DfT. One of these is that the Scheme has a positive and/or sufficiently high cost-benefit ratio. The cost-benefit ratio is a measure that seeks to demonstrate that tangible benefits in terms of costs saved as a result of the project exceed the costs of the project.

3.2.2 In 2005, we understand that there were discussions with the Highways Agency over the cost-benefit of the scheme and it meeting the DfT economic requirements. In order for a scheme to be economically viable, it is necessary that the cost of the scheme will provide benefits to the public to a level specified by the DfT. Very broadly, a scheme that has a cost-benefit ratio of more than 1 (one) will provide more benefit to the community than it costs to construct. For schemes that the cost benefit ratio is less than 1 (one), the scheme costs more than the benefits it will provide. Depending upon the availability of funds and the current threshold levels, for approval it may be that a much higher ratio than 1 is required, since those with greater cost-benefit ratios provide better value for money and economic benefit.

3.2.3 EC Harris is not aware of the actual cost-benefit ratio required by the DfT nor have we examined the submissions that were made to the DfT in relation to the cost-benefit of the Scheme. It was necessary for the Council to do additional work on the traffic data supplied to the DfT to support the grant application.

3.2.4 DfT approval was granted in May 2006, two months later than the Council would have preferred for the anticipated programme. In order to achieve some of the Scheme expenditure during the 2006-7 financial year, the tender period had to be within the summer of 2006.

3.3 COST ESTIMATE AT MARCH 2006 (BUDGET APPROVAL) AND CURRENT ESTIMATES

3.3.1 The following table indicates how the Scheme costs were allocated to various cost elements and the differences between the Scheme budget at March 2006, at the time the Contract was let in November 2006 (the tender position) and at the present time. This can be used to compare the various cost elements allowed, although over the three budget estimates, it is difficult to properly compare on a like-for-like basis, primarily due to monies being allocated into a risk budget at November 2006.

(see table over)

COMPARISON OF SCHEME COSTS MARCH 2006- PRESENT

CONSTRUCTION COSTS	March 2006	November 2006	November 2007
Main works including utilities and contingency*	8,650,000	8,177,913	8,177,913
Street lighting	150,000		
Traffic signals	200,000		300,000
Arnold Road strengthening	100,000		
Pedestrian/Cycleway bridge (A66)	300,000		
Work for Utilities			
Compensation Event estimates			2,400,000
***these figures are not fully on a like-for-like basis*			
CLIENT COSTS			
Land acquisition including fees	200,000	124,000	214,000
Public utilities	328,000	1,200,000	1,200,000
Material testing	70,000		
External Fees			
E3 Ecology			10,000
PB Environment			2,000
Noise pre-work survey			2,000
Noise pre-work bund investigation			12,000
CDM Co-ordinator			5,000
Archaeology			25,000
DBC Internal Fees			
Planning fees			1,000
Site investigation	188,000		110,000
Miscellaneous			150,000
Design & prep (shown below)			
Property insulation/LCA/Noise Attenuation			600,000
Landscaping	200,000		
Site equipment			17,000
External Fees and Costs			
HA commuted sum		207,322	211,500
HA Design fees (shown below)			
Refundable costs		150,000	
Design Fees			
DESIGN & ADMIN 10%	1,048,460	1,075,000	
HA Design fees (see below)			285,589
Design & prep (see below)			630,000
Risk			
Noise insulation (*inc above in CE's at Nov 2007)*		25,000	
Design changes (*inc above in CE's at Nov 2007)*		20,000	
Unforeseen ground(*inc above in CE's at Nov 2007)*		120,000	
Traffic management *(part/possibly in CE's above at Nov 2007)*		75,000	
Tie-ins*(possibly/part in CE's above at Nov 2007)*		5,000	
Traffic signal design (*not in 2007 compensation events*)		2,000	
Utilities *(for additional costs above estimates?)*		400,000	
Environmental work (part in CE's at Nov 2007)		2,000	
Delayed start (*inc above in CE's at Nov 2007)*		300,000	
Delays during works (*inc above in CE's at Nov 2007)*		4,000	
CONTINGENCY (Non construction costs 10%)	98,600		
Contract Management 7%	658,000	630,000	630,000
Inflation	274,299		
TOTAL SCHEME COST	12,465,359	12,517,235	14,983,002

3.3.2 The design and administration costs of the Scheme are approximately to the budget, as are the contract management costs. There would still be some risks of cost escalation to the contract management fees, primarily relating to whether the Scheme is delayed on site, which would result in additional supervision and project management fees. Potential further risks to the Scheme costs are discussed in Section 6.

3.3.3 The allowance for the total construction related costs of £9.98M in the March 2006 estimate plus a part of the inflation allowance of £274k approximately compares to a November 2006 construction related costs of £10M plus a risk allowance of £926k.

3.3.4 A comparison across the three budgets is more difficult due to costs being allocated to different cost elements between the estimates. However, our discussions suggest that £469k of the £926k risk element in the November 2006 estimate, very roughly approximates to an equivalent figure of the compensation events of £2.4M in the November 2007 position, although the £2.4M also includes an allowance for the possibility of a pain-share liability. The November 2006 risk figure is not a direct comparison with the £2.4M compensation event sum because some of the risk factors may have been allowed for either construction contract or non-contract work.

3.3.5 A substantial proportion of the compensation events is related to delay claims (in excess of £1M). Whilst a risk allowance of only £304,000 was made in November 2006, this is most likely to have been for the increase in Statutory Bodies' direct costs rather than contract costs relating to Statutory Bodies. It is clear that all allowance for risk made at November 2006 has been exceeded during the construction phase, notwithstanding that the construction is not yet complete

3.3.6 Other substantial budget increases between November 2006 and November 2007 include the £300k additional cost for traffic signals, that were to be carried out by a different contractor independently of the tender scope of work; and a £600k allowance is made in the current budget figures for LCA claims and noise attenuation measures that were not included in earlier budgets.

Pre-tender estimate

3.3.7 It would be normal practice to undertake a pre-tender estimate once Scheme design was completed; usually this is done by more detailed pricing based on a bill of quantities. Bullen did undertake a pre-tender estimate that was based upon bills of quantities.

3.3.8 A pre-tender estimate has the advantage that the Scheme is no longer estimated on a global rates basis and it reflects the actual work involved in more detail. It also provides a means by which to assess the relative costs of the Scheme against the returned tenders. This is most beneficial if the tenderers also complete bills of quantities, which under the form of contract adopted does not happen (see Section 4).

3.3.9 One very great advantage of preparing a Bill of Quantities is that carried out properly, it can identify design and specification deficiencies because all the required information to construct a Scheme has to be available for measurement purposes and so an independent check is made to ensure all the details are within the documents. Any such deficiencies (and there is always a likelihood of some) can then be reflected by updated tender documents, as queries are resolved.

3.4 SCHEME FUNDING

3.4.1 The grant awarded by the Department of Transport for the Scheme is £12,040,000. Conditional approval of the Scheme was given in May 2006 and fully approved on 18th December 2006.

3.4.2 Full Approval for the Scheme was granted for the Darlington Eastern Transport Corridor by letter of 18th December 2006 for funding of £12.040M.

3.4.3 The conditions attached to the scheme funding were that the scheme:

- must be implemented in accordance with the scheme proposals conditionally approved
- that no additional funding was envisaged and cost increases should be met from the Council's own resources or third party contributions
- that the DfT was closely informed of progress and expenditure and monitoring forms were returned by the due dates

- a full evaluation of the scheme was to be carried out and this evaluation made available to the Department
- that the Government contribution to the scheme was advertised.

The Council was to provide written confirmation of its acceptance to these conditions and did so by its letter of 9th June 2006.

3.4.4 The DfT required by its email of 4th December 2006, replying to a letter of 24th November 2006; the tender price with the selected contractor, details of other costs on the contract and what exposure the Council had to cost overruns (both within the construction contract and elsewhere). The following advice was given by the Council by email of 4th December 2006.

Projected Cost of the Scheme	*£12,517,235*
Target Price (which may go up or down)	*£8,177,913*
Risk Allocation	*£953,000*
Statutory Undertakers estimates	*£1,200,000*
Highways Agency Commuted Sum	*£207,322*
Site Supervision	*£630,000*
Land	*£124,000*
Design Fees & Site Investigation	*£1,225,000 (NB this is made up of refundable costs of 150k plus 1075k design and admin)*

"The target price changes with compensation events as defined in the contract. Darlington Borough Council's exposure to cost overruns is capped at a maximum of 5% of the final target price. Under the "gain/pain share percentage", the contractor is incentivised to being costs in within the target price.

The risk allowance has an allowance for costs outside of the construction contract"

3.4.5 The above summary is that described in the Scheme information at November 2006, after the tenders had been received and reviewed.

3.4.6 The Council must meet the difference between the DfT and the approved Scheme budget plus any future actual increased costs of the Scheme, due to any reason. In theory, there is no opportunity for any further monies to be granted for the Scheme for the DfT. The approval letter states:

"*We expect you to make every effort to avoid cost increases on the project and should these prove to be unavoidable you should look to meet these from your own resources, or contributions from third parties.*"

3.4.7 The DfT grant is applicable to costs relating to the Scheme. The grant may be used for Scheme costs between conditional and full approval of the Scheme, once full approval has been granted. The costs that are eligible for funding are set out within the Department's Major Schemes Guidance. We have assumed that the Council is satisfied that all the costs that it plans to claim from the DfT are eligible to be included within that claim.

3.4.8 At November 2006, the Scheme budget cost estimate was £12.517M. The funding from parties towards the Scheme was therefore:

- DfT £12,040,00
- Darlington Borough Council £477,000
- **Total** **£12,517,000**

3.4.9 From the information we have investigated, the Council has actually authorised a higher internal expenditure for the Scheme and has also had a grant from another source. Therefore, at November 2006, the Scheme the following funds were available for the Scheme:

- DfT £12,040,000
- Darlington Borough Council £933,000
- Other £100,000
- **Total** **£13,073,000**

3.4.10 This is apparently the limit of available funding for the Scheme without further monies being approved and resourced by the Council. The information below at 3.4.14 demonstrates the current position regarding the budget needed to complete the Scheme. The current projected Scheme costs exceed the above available budget by a substantial margin.

3.4.11 There were queries in respect of the budget included within Cabinet Meeting Minutes of 10 October 2006:

Item 4 states:" that DfT have conditionally approved the sum of £12.04M for the scheme. Projected cost of the scheme is likely to be £12.5M

The £12.5M is made up briefly of:

Client Costs (land utilities, site investigation, materials, testing, landscaping)	*£1.7M*
Design and Administration	*£1.1M*
Construction Works	*£9.05M*
Contract Management	*£0.65M*
Total	*£12.5M*

Council's contribution of £460k, will be achieved by not claiming back some of the eligible capital funding already approved and spent in developing the scheme so far for items such and design/preparation and land acquisition.

No additional funding necessary in this report."

3.4.12 This statement regarding the Council funding indicates that the Scheme budget would be met by not claiming back monies already expended on the Scheme costs so that the remaining budget will be available. At the time the Council had already expended £1.2M (the Council should confirm whether these costs could in any event be recovered as part of the DfT grant).

3.4.13 The apparent discrepancy was raised by email from David Hall to John Ray 21/09/06 in which the reported total of £12.55M was queried on the basis that if costs to expend were £12.04M and £1.2M had already been expended, then Scheme costs were known to be greater than £13M.

3.4.14 The current position (as at November 2007) is as set out below. There may be slight differences between this and published figures as there is an alteration to the Council's internal costs and £40k of early stage design costs. In terms of recovery of these early design stage costs through the grant funding available, we suggest that the Council confirm that the costs are eligible for grant funding. There is a risk or contingency allowance in some items, in total amounting to £55,000. (see table over)

CURRENT BUDGET POSITION (AT NOVEMBER 2007)

CONSTRUCTION COSTS	Worst Case	Expected out-turn cost
Main works including street lighting, Arnold Road strengthening, A66 bridge, works for utilities, material testing, landscaping	8,177,913	8,177,913
Traffic signals	300,000	250,000
Compensation Event estimates (includes pain/gain share)	2,400,000	1,822,087
Value Engineering Savings		-300,000
CLIENT COSTS		
Land acquisition including fees	214,000	214,000
Public utilities	1,200,000	850,000
External Fees		
E3 Ecology	10,000	9,000
PB Environment	2,000	2,000
Noise pre-work survey	2,000	2,000
Noise pre-work bund investigation	12,000	11,000
CDM Co-ordinator	5,000	4,500
Archaeology	25,000	22,500
DBC Internal Fees		
Planning fees	10,000	1,000
Site investigation	110,000	110,000
Miscellaneous	150,000	150,000
Design & prep (*inc additional £40k)*	670,000	670,000
Property insulation /LCA /Noise Attenuation	600,000	200,000
Site equipment	17,000	17,000
Risk *(Included within compensation events estimates)*		
HA commuted sum	211,500	211,500
HA Design fees	285,589	285,600
Refundable costs		
Contingency on non-construction – inc above		
Design & Admin – included above		
Contract Management 7%	630,000	580,000
SCHEME TOTAL	**15,032,002**	**13,890,100**

3.4.15 The worst-case scenario has been calculated by the current project management team and we understand that it represents the anticipated cost of the Scheme should the Council seek to increase the DfT grant further. It is intended to be a maximum cost that would be used in any further application so that there would be no need to make a later application.

3.4.16 It is not clear that the Council may make any further application to supplement the grant already allocated to the Scheme by the DfT, the letters approving the grant make specific reference to there being no further funding available from the DfT. Notwithstanding this, our interviews suggested that there may be an avenue for additional recovery and this would be for the Council to apply for additional funding

to assist with the anticipated costs above the existing grant approved. There appears to be no direct entitlement to such additional funding.

3.5 BUDGET REPORTING

3.5.1 Four regular meetings were set up to monitor project progress following the award of contract.

- Monthly meetings between Birse and the Council.
- Monthly meetings on site attended by Birse and the Council. These meetings are to discuss progress of the work, including compensation events and value engineering, and any issues arising from that. The minutes of the meetings are held on site.
- Monthly Project Board meetings involving only Council staff. At these meetings the Project Manager submits a written report on physical and financial progress of the project and any peripheral implications for the Council. The reports are circulated to all attendees and a copy is held on site.
- Weekly meetings between the Project Manager and the Council to up date on progress. A written briefing note is prepared for each meeting.

3.5.2 There is also a bi-monthly meeting (the Transport Briefing) at which the relevant Cabinet member is appraised of various transport projects in Darlington and a three-monthly meeting of the Transport Forum (a group of representatives from various transport organisations). A (verbal) up date is given by the Project Manager on the physical scheme progress to both these bodies.

3.5.3 EC Harris is not aware of the reporting procedures of the Council officers to Cabinet or committees.

3.5.4 The September financial report to the Project Board referred to a full review of the project carried out in August. The review advised of a possible final cost of £14.5m. It was apparently this review, showing a possible increased expenditure on the Scheme of £2m above the original £12.5m that initiated concern over the Scheme expenditure.

3.5.5 The routine financial report presented in September 2007 showed a likely final figure of £13.6m. The report explains the difference as the way in which value engineering

savings were treated and the significant difference in allowance for Land Compensation Act claims.

4 SCHEME CONTRACTS

4.1 THE NEC ENGINEERING AND CONSTRUCTION CONTRACT

4.1.1 The form of construction contract used for the Darlington Eastern Transport Corridor is the NEC Engineering and Construction Contract 2nd Edition. From the interviews conducted it would appear that this is not a contract with which the staff at the Council were particularly familiar with in terms of both preparation and administration on site. Therefore, the Council took the decision to employ an experienced project co-ordinator to accountable for the scheme delivery in a non design role to steer the project at high level through the tender and approvals process to ensure successful start on site and successful delivery on site; taking responsibility for co-ordination of design team, including direct liaison with the press, Members, Senior officers, HA, DfT, landowners and stakeholders and another (ECC) Project Manager on site, who is now the key client representative on site to administer the Contract.

4.1.2 Following its promotion for use in construction works and its adoption by many government departments, the NEC form of contract has become routinely used in many public contracts. It has become the favoured contract form for public works and in recognition of this the OGC has recommended the latest revision, the 3rd Edition, to be used for all public works contracts. Indeed, such is the popularity of this contract that it has been recommended for use for the 2012 Olympic build programme.

4.1.3 The following is a short description of the overall principles and features of the NEC contracts.

4.1.4 The NEC suite of contracts was designed as a “stimulus to good management”. Its success is dependent upon the parties to the contact and those with authorities and duties under the Contract to pro-actively manage the Contract, using collaborative foresight to identify potential difficulties in advance. These can then be dealt with in a managed way in order that the potentially excessive costs and time that will inevitably arise from the occurrence of unexpected events are minimised. The intended result is that the opportunity to achieve a profit is enhanced for the Contractor and other supply chain members and the Employer has reduced risks of cost and time overruns.

4.1.5 This pro-active management system that underpins the NEC contracts is fundamentally different to many of the standard form contracts. Most standard forms of contract rely on a system in which the time and cost effects are calculated after the event and the cost element is often based upon tendered rates and prices.

4.1.6 The contract is also different in its execution and administration on site to the previously used other standard forms of contract and although it is supposed to be relatively simple to use, the transfer from using traditional contracts to the NEC can be challenging, since its underlying principles are based upon pro-active management systems with the parties working to resolve all changes to the contract during the construction period.

4.1.7 In the event that this pro-active management system is not followed, then it becomes harder to administer from the Project Manager's point of view (and therefore the Client's) because to a large extent, the contract relies upon adherence to procedures by all parties. In the event of non-compliance with those procedures, the available options to the Project Manager can be limited.

4.1.8 In terms of changes to the contract, the NEC procedures require that changes or variations to the contract result in "compensation events", and that where possible, the time and cost effects of compensation events can be agreed in advance. Essentially, each quotation given in advance for a compensation event is supposed to become fixed in both time and cost. In theory and if followed, this affords the Employer and the Contractor certainty prior to the work being undertaken.

4.1.9 Where it is not possible to agree the time and cost effects in advance of the Contractor undertaking the works, the effect on the cost is based upon Actual Cost (under the NEC ECC 2nd Edition this term is slightly misleading, since Actual Cost is made up of a defined Schedule of Cost Components) and any effect on the Completion Date is established from records and by adjusting the accepted programme with the as-built details.

4.1.10 The actual construction works required to install the DETC are in two sections, those works that affect land and highways for which the Council is responsible and those within areas of highway for which the Highways Agency are responsible. In order to complete the DETC, works are required to connect the DETC to the A66 at the eastern end of the new highway. This connection to the A66 and the associated works

are a separate section of highway; the Highways Agency has employed its own consultant, Faber Maunsell, to undertake the design of the A66 highway works.

4.1.11 The Highways Agency has used the NEC ECC 2nd edition as a matter of course in its procurement of construction contracts. A significant proportion of the works being undertaken within Highways Agency land meant that initially the Highways Agency preferred to procure its element of the works via its own procurement procedures and use a contractor selected by its own procedures.

4.1.12 The Council preferred a single contract for the construction works in order to avoid interface problems in the actual construction works.

4.1.13 We understand that after protracted discussion, the Highways Agency agreed to let the works in one contract; providing the form of contract followed its requirements; that it assisted in the selection of the tenderers and was involved in selection of the successful tenderer; and that it was a joint employer under the contract. The latter requirement was required in order that in the event of defective work, the Highways Agency could have direct recourse to the contractor throughout the liability period of 12 years.

4.2 THE DARLINGTON EASTERN TRANSPORT CORRIDOR CONTRACT

4.2.1 Following the agreement between the Council and the Highways Agency in respect of a single contract, we understand that the basic form of contract was determined by the Highways Agency. This form of contract is used widely by both the Highways Agency and for other public contracts.

4.2.2 Under the NEC suite of contracts, a main option is chosen; the main options determine the relative payment mechanisms and allocation of risk between the parties. Once the main option is selected, a number of secondary options are also selected. In traditional standard form contracts, the standard form would automatically include the items dealt with by both the main and secondary options in the NEC. However, in the NEC, the secondary options have to be specifically selected or there is no default position on the subject of that secondary clause. For example, the delay damages clause must be selected or the contract will not include any reference to delay damages.

4.2.3 The main options include a Target Cost option (either Option C or Option D) that shares the risks of the difference between the original tender cost and the final cost using a pain/gain share mechanism. A pain/gain share mechanism provides that if the final cost of a scheme is either lower or higher than the target cost, then the difference between the Actual Cost and the Target Cost is shared in agreed proportions. The inclusion of risk-sharing is intended to incentivise the contractor, since it would either share in any savings and/or keep costs down by the pain share mechanism. The percentage of pain/gain share is set in ranges within the contract and in theory can be effectively used to promote savings within the overall contract sum. To do this would require the contractor to benefit from savings but meet most of the cost of any over-expenditure. The share ranges must therefore reflect the intended outcome.

4.2.4 The contract between the Council and Birse is the NEC Engineering and Construction Contract 2nd Edition (the Contract) Main Option C (Target Cost with Activity Schedule) with Secondary Options H (Parent company guarantee), L (Sectional completion), M (Limitation of the *Contractor's* liability for his design to reasonable skill and care), P (retention) and R (delay damages), T(Changes in the law) and Z (Special Clauses).

4.2.5 Under Option C, an Activity Schedule is used as a means of tendering; the Activity Schedule is a sequence of activities to which, at tender stage, each is assigned a price by the Contractor. The Employer may include a minimum number of activities required to be included within the Schedule for tender assessment purposes but essentially the Contractor determines the activities to suit his method of working. Ideally, the Activity Schedule would broadly follow the anticipated programme activities in sufficient detail so that the Employer can assess differences in the tenders submitted.

4.2.6 The level of detail of the Activity Schedule can also be an indication of the level of detailed consideration any contractor has put into the preparation of its tender.

4.2.7 The Highways Agency preferred choice of main option C was agreed by the Council, who, we understand, would have preferred to use Option D (Target Cost with Bills of Quantities). In fact, these two options are very similar in execution and it is only the tender arrangements that differentiate between them; Option C uses an activity schedule for tender and under Option D a Bill of Quantities is prepared to use in determining the Target Cost.

4.2.8 In both options actual payment is made on the monies that the Contractor has expended to date calculated under a defined mechanism. In negotiation with the Highways Agency, the Council sought the reasons why Highways Agency required Option C rather than D. Option C requires tenderers price against an Activity Schedule; Option D requires tenderers price against Bills of Quantities.

4.2.9 If the Employer had prepared the Bills of Quantities for Option D, this would have ensured that all tenders were on a like-for-like basis and this is less obvious using an Activity Schedule but the Employer takes the risk of the accuracy of the Bills of Quantities. If the Activity Schedule tendered for Option C is quite brief, then it is harder to assess whether the Contractor has understood the contract requirements. However, the method of payment is the same, so in terms of contract administration and the right to be paid additional monies, there is only nominal differences between Option C and D.

4.2.10 The contract should have included secondary option Y(UK)2, which incorporates the requirements of the Housing Grants Construction and Regeneration Act 1996. The omission means that if the parties should get into dispute, the procedures will not be those designed for the NEC but will default to the "Scheme", which is the statutory default procedure for adjudication.

4.2.11 It is not immediately obvious why Option M (Limitation of the *Contractor's* liability for his design to reasonable skill and care) is included within the contract, since normally a contractor will be required to take the responsibility for its design on a fitness for purpose basis in a design-build contract, rather than to apply this limitation. The contractor undertakes design in this contract for the A66 bridge works.

4.2.12 The bridge is within the A66 works, so elements of outline design will have been undertaken by Faber Maunsell (Bullen) but in the event of a difficulty with the A66 bridgeworks designed by the Contractor, the Highways Agency may have much less recourse against the Contractor than it might have anticipated unless this inclusion was a Highways Agency requirement.

4.2.13 The special Z clauses are used to include specific and/or unusual requirements and/or transfer of liabilities between the parties into a contract that are outside the general

clauses. In this contract, there was a specific intention to transfer the responsibility for the Statutory Bodies to the Contractor. This responsibility was to include procurement and making all the necessary arrangements with the Statutory Bodies, incorporation of their work into the programme and taking liability for their performance.

4.2.14 Therefore, additional Z (special) clauses were inserted into the Contract that were designed to transfer the risk of the utilities to the Contractor. However, once the Contract was let, we understand that the Contractor put forward the proposition that the main clause 60.1(5) :

" 60.1 The following are compensation events.

(5) The Employer or Others do not work within the times stated on the Accepted Programme or do not work within the conditions stated within the Works Information."

and

"11.2(2) Others are people or organisations who are not the Employer, the Project Manager, the Supervisor, the Adjudicator, the Contractor, or any employee, Subcontractor or supplier to the Contractor."

would mean that the Council still retained the liability for the Statutory Bodies because the Statutory Bodies fall within the definition of "Others" and its Accepted Programme required all the orders to have been placed with the Statutory Bodies prior to contract award.

4.2.15 Birse's argument that the Statutory Bodies would fall within the category of Others is correct because clause 11.2.(2) was not amended. The inclusion of the order requirements within the Accepted Programme would mean that a compensation event would arise as a result of 60.1(5) if the times stated on the Accepted Programme were not met. The times within the Accepted Programme were actually exceeded by up to four months.

4.2.16 We also understand that there has been some discussion as to whether the special clause Z9 did transfer the liability of the Statutory Bodies to the Contractor and it has been concluded that the clauses were insufficient to do so. This appears to be a reasonable assessment when combined with the clause 17, discussed in the next paragraph.

4.2.17 Under NEC contract clause 17.1, the precedence clause requires that in the event of an inconsistency or ambiguity between the documents, the ECC Project Manager gives an instruction that resolves the ambiguity or inconsistency. Normally, the liability for ambiguous or inconsistent requirements is taken by the party that prepared the documents (which would be the Council).

4.2.18 Clause Z9.1 imposes significant obligations on Birse in respect of the actions it must take in managing those Statutory Bodies. Clause Z9.3 also requires Birse to meet obligations within the programme in respect of Statutory Bodies.

4.2.19 However, under this contract, the contractor specified a programme of works with its tender and this programme was subsequently accepted by the Council, which became the Accepted Programme. We understand that this programme required that the orders for works by the Statutory Bodies had been placed by November 2006. This was to be undertaken by the Council. By the time of tender acceptance, the Council had not complied with this programme. This programme is used to determine any extensions of time and/or delays to the contract.

4.2.20 A precedence clause could have been added at the start of the Z clauses, or an amendment to Clause 17 to indicate that in the event of any conflict and ambiguities, then the terms and conditions of the special (Z) clauses prevail.

4.2.21 Such precedence clauses in respect of the contract conditions and specifications and preambles to bills of quantities are often incorporated within construction contracts, since alterations, amendments and additions to the standard documents in the form of special clauses and particular specifications and preambles are specific to a particular contract. It is in these amendments that often the most important requirements (i.e. those different from the norm) are identified.

4.2.22 The Contractor was also required to comply with Clause Z9.3. This clause requires the Contractor to allow within his Accepted Programme any notice period required by the Statutory Bodies. The problem remains, however, that the programme accepted by the Council was one it could not meet and as such it was subsequently limited by that acceptance to the extent that it must meet the cost of delays caused to Birse against that programme.

4.2.23 Any mitigation could only surround whether as a matter of fact, there was actually less delay to the construction works than the delay in placing orders to the Statutory Bodies than expected. However, if the compensation event were agreed on a forecast basis under the contract conditions, the Council would be unable to take advantage of this difference, if there was one.

4.3 CONTRACT PAIN – GAIN SHARE ARRANGEMENTS

4.3.1 The Target Cost contract is subject to a pain-gain share arrangement in which the Council and the Contractor share the gains of saving against the Target Cost or share the burden of the Actual Costs exceeding the Target Cost of the Scheme.

4.3.2 The pain-gain share mechanism is based on percentages of the Target Cost

Share range *[Target price base figure = 100%]*	*Contractors* share percentage
less than 80% of target price:	15%
from 80% to 90%	30%
from 90% to 110%	50%
greater than 110%	100%

4.3.3 These share percentages mean that if the Contractor saves significant monies on the Target Cost, then the Council will take most of the saving. If the Target Cost is exceeded, the Contractor will have to meet all costs above 110% of the Target Cost.

4.3.4 If the Actual Cost of the Project is more than the Target Cost between 100% and 110%, the Council will have to meet 50% of that difference. This is a separate liability that is independent of the cost of compensation events.

4.3.5 The Target Cost is adjusted to account for any increased costs as a result of compensation events issued under the Contract. Therefore, increases in the Target Cost would also increase the Council's exposure to meeting 50% of the pain share costs, if any.

4.3.6 The Council has no control over Birse's expenditure on site. If the Contractor 's costs exceed the Target Cost, the Council is bound to meet 50% of the costs above the Target Cost to a maximum of 110% of the Target Cost. If the scope or specification can be altered in advance (reduced) to try to reduce the overall expenditure on the Scheme, then potentially savings could be made that reduce the Council's overall

liability. Regular "value engineering "meetings with the Contractor examine ways in which costs can be saved, which can save and have saved the Council money. It is sometimes difficult to achieve savings in this manner, as the Council's opportunity to reduce the scope of works is likely to be limited. Only future work scope can be reduced and it may not be apparent that the Contractor will be in pain share until late in the construction of the Scheme.

4.3.7 Under this arrangement, if the Target Cost was £8M, the Council may have to meet £400k of excess cost. This is a separate amount of money NOT related to monies due to the Contractor in respect of compensation events. The Project Manager will be able to estimate the likelihood of this occurring.

4.4 JOINT EMPLOYER ARRANGEMENT

4.4.1 Under the Construction Contract, the Council is a joint employer with the Highways Agency.

4.4.2 The arrangements for funding, responsibility for the works, liability for costs incurred on the Scheme and other matters are included within the Section 278 Agreement that was put in place for the Scheme.

4.4.3 Under this arrangement the Council will meet all costs associated with the works carried out affecting Highways Agency land.

4.5 DESIGN CONTRACT

4.5.1 As previously described, the Scheme is split between work undertaken within Council land and that undertaken within Highways Agency land. Also, as discussed above, the Council agreed that the Highways Agency design and construction would be undertaken by the Highways Agency's own approved and/or framework contractors and consultants.

4.5.2 The Highways Agency insisted that the design of its works was undertaken by an approved consultant and as a result, Bullens (now Faber Maunsell) consultants were appointed for the design of the Scheme on Highways Agency land. The Council agreed to meet the cost of the employment of this consultant. This would not necessarily incur the Council any additional cost, since the works would always have had to be designed.

4.5.3 We understand that the Highways Agency also required agreement from the Council that its consultants would supervise the construction of the works in the locations for which the Highways Agency is responsible. These supervisory staff are a Section Engineer and Clerk of Works and these people take responsibility on site for works in the A66 area. We understand that the Council agreed to secondment for these staff for the duration of the work and agreed to meet the cost of that employment.

4.5.4 The Council will meet the costs of the supervisory staff on site until completion of the work on the A66 and has met the cost of £285,589 for design of the A66 works.

4.6 A66 WORKS SITE SUPERVISION

4.6.1 As stated above we understand that the Council agreed to secondment of staff from the consultant to the Council to work on site supervisory roles.

4.6.2 This employment of these staff on site for supervision and checking gives rise to a number of aspects in respect of the Council's responsibility:

- Is the Council responsible for the work of those staff and will the Council take responsibility to the Highways Agency in the (possibly unlikely) event of any deficiency?
- The Council is responsible for costs on the scheme as a result of employing those staff. However, it has been possible to resource the staffing levels on site by the extent of the Scheme so our information is that no excessive costs have been incurred as a result of the employment of those staff.
- The staff have no delegated responsibilities under the Construction Contract so they are not able to alter the contract requirements other than through the Project Manager. Delegated responsibilities define the limits of their authority to alter the scheme requirements and/or supervise the works. This limitation of their responsibility on site is appropriate.

4.6.3 Faber Maunsell designed the A66 works but the liability for costs associated with any changes to the design to the A66 works will fall to the Council under the Section 278 agreement.

4.6.4 Compensation events are ordered for changes under the contract; these can include changes to the design (Works Information), unforeseen conditions, delays caused by parties for whom the Employer is responsible etc.

4.6.5 If the Works Information was changed because the design was incomplete or changed during the works the Contractor would be entitled to additional payment for his direct costs and time. There will probably always be at least an element of changes to a scheme that are required due to the nature of the work itself.

4.6.6 We have requested information from the Project Manager as to how much the compensation events on the A66 works have cost the Council. The response we have received is that this is not particularly straightforward to establish but at the present time, £130,000 is the estimated value of CE's on the A66 section of the road with some costs still to be estimated for the overall effects of changes to drainage details. Some of this is due to delays by the utility companies and changes in traffic management requirements by AOne who is the Highways Agency managing contractor.

4.6.7 The Project Manager also believes that there is another £22,000 estimated value of CE's in connection with the bridleway bridge which is also strictly Highways Agency work but is a contractor designed structure. Most of this is due to ground conditions under the abutments and some to changes in the technical approval system required by Highways Agency itself.

4.6.8 The Council has not necessarily incurred any additional cost as a result of the arrangements for design and construction of the A66 works, since it would have incurred costs for the same work if the Council had undertaken it. It might have been disadvantaged in respect of the grant funding if the cost estimate for the A66 works was less than the final costs in the same way as if its own works had been under-estimated. EC Harris is not aware of how the cost estimates were prepared over the two sections of the Scheme or the accuracy of those estimates, so cannot comment on whether the arrangements for the A66 works have meant that the Council has incurred additional cost. In any event, the Council agreed to the arrangements made.

4.6.9 We recommend that if the Council decides to use this contract in future, it either undertakes appropriate training or engages professional assistance to advise on its more onerous elements that would affect the Council's liabilities.

5 TENDER PROCESS

5.1 GENERAL

5.1.1 The Council is concerned that this Scheme is subject to similar problems that it has experienced on another Council scheme and that this may be due to its employment of the same contractor.

5.1.2 EC Harris has therefore been asked to review the reasons why Birse were employed on the Scheme and to identify whether it was an appropriate decision to award this contract to Birse, in the light of its previous experience.

5.1.3 Although the Scheme was let by the Council, the Highways Agency is a joint employer under the contract (see Section 4 above). As described earlier, certain concessions appear to have been made to accommodate the Highways Agency requirements in order to reach agreement on the single contract option. One of these concessions was that the Highways Agency procedures for selection of contractors would be used, another was that the Highways Agency would be involved in part of the tender assessment.

5.1.4 EC Harris is not aware whether the procedure used is similar to the Council's own procedures but the adoption of the Highways Agency selection process and tender procedure is not a matter for criticism, since these procedures will be used for selection and award of very substantial numbers of similar construction contracts. Indeed, the Council may have benefited from using an independent procedure.

5.1.5 The anticipated cost of this Scheme was in excess of the threshold limits for advertisement in the OJEU, so the OJEU procedures had to be followed. Expressions of Interest were invited from contractors and eleven Expressions of Interest were received. It was decided that a tender list of six contractors would be selected. Our discussions indicated that there being six tenderers was either a preference of the Council and/or that the Council was satisfied with this number of tenderers.

5.1.6 The Highways Agency required that it consider all the Expressions of Interest received in response to the OJEU notice. The Highways Agency also required that as the Scheme was to be awarded on a quality and price basis, that it was to be involved

in both the decision as to the exact split between quality and price but only the quality panel once tenders were received.

5.1.7 The Highways Agency carried out the selection of tenderers process, based on its own standard internal procedures which used a scoring system based upon past performance in quality and financial aspects of previous contracts. These also comply with procurement rules.

5.1.8 The previous contracts considered were completed contracts and Highways Agency contracts, so incomplete contracts were not considered. There are good reasons for this, since overall performance on a contract may not be reflected at an interim stage and performance could vary throughout a current contract. For example, initial difficulties on a contract may be reversed to result in a successful contract delivered on time and to budget.

5.1.9 Using its standard procedures, the Highways Agency recommended the six tenderers for the Scheme. We understand that the Council determined that there would be six tenderers. On the quality scoring system used, Birse were the sixth out of the total of eleven Expressions of Interest. The scoring system operated was standard and independently carried out.

5.1.10 Both the Highways Agency and the Council took part in the selection process but the Highways Agency retained a power of veto over the selection of tenderers.

5.1.11 The six tenderers were all issued the tender documents, however, Edmund Nuttall, the fifth placed selected contractor decided against tendering in the short period allowed and declined to tender due to other commitments.

5.1.12 It was decided that six tenderers should still be approached, so the seventh placed contractor in the Highways Agency assessment was offered the opportunity to tender. Interserve took the opportunity to price the Scheme in place of Edmund Nuttall. This replacement was put to the Tendering Panel on 18th August 2006.

5.1.13 The plans for assessment of tenders was submitted to the Council's Tendering Panel on 7th August 2006. The decision process to appoint the contractor was to Highways Agency procedures.

5.1.14 The tenders were to be evaluated on a two envelope system; Envelope A, the Quality submission and Envelope B, the Financial submission. Envelope A was evaluated first and scored. Any contractor not meeting the quality requirements would have their Envelope B returned without consideration or opening.

5.1.15 All tenderers qualified under the quality assessment system and subsequently, after the results of the Quality assessment were known and documented, the financial envelopes were also opened and evaluated.

5.1.16 The Highways Agency took a significant role in evaluating the quality submissions submitted for the tender. However, it declined to be involved in the financial assessment, since the Council was funding the Scheme.

5.1.17 The assessment of the tenders was based on a quality/financial split of 40%/60%, so the quality submission was worth 40% of the total score, whilst 60% of the score was financially based. Quality was assessed against set criteria and both the Council and the Highways Agency were on the assessment panel. Each tender was marked on various aspects of the quality submission and then the overall score translated into a percentage score based on the highest mark. The most economically advantageous offer is that with the highest overall mark combining the two separate quality and financial scores.

5.1.18 The Council undertook the financial assessment, which included checking the tenders for ethical pricing and a review of the tender sum.

5.1.19 The financial submissions were checked for “ethical pricing” i.e. a check to see that no particular area of the tender was biased to gain a financial advantage or was biased to trigger unusually large compensation in the event of any extension of time.

5.1.20 This check took the form of ensuring that such items as the Working Area Overhead percentage (WAOH) were similar and also that no particular item on the activity schedule was unduly biased. The WAOH percentage of the other tenders were similar to the 38% of Birse, so it was decided that Birse`s 38% was not out of the ordinary. In EC Harris’ experience, other employers often make alterations to the Schedule of Cost Components so that Actual Cost as defined under the Contract is the actual costs incurred on items such as preliminaries and the WAOH is not used but this is by no means a standard practice.

5.1.21 Similarly, a review of the rates included within Birse's tender are not out of the range that would be expected for the various categories listed. A spreadsheet provided by the Council showed the grouping of the activity schedules and demonstrated a comparison of the prices.

5.1.22 Perhaps the most noticeable aspect of this spreadsheet is that Birse's tender (although Birse was not alone) pricing on the Activity Schedule uses few activities, which might suggest, as mentioned above, that Birse may have given less detailed consideration of the contract requirements than other contractors had taken to understand what was required. This was echoed in one of our interviews in which it was mentioned that the Haughton Road junction was complicated to construct and other tenderers had attempted to more fully describe their method of construction of this junction than Birse had in its tender.

5.1.23 The financial envelopes checked for arithmetical accuracy and ethical pricing, was ranked based on tendered target price. Birse were signficantly cheaper than all the other tenderers. The financial percentage score (i.e. the mark out of 60%) was determined on the percentage a tender was higher than the lowest tenderer. Since Birse was very much cheaper than the other tenderers (the nearest tender was >11% higher than Birse's tender), then the financial scores for other tenderers reduce substantially, resulting in this low tender price being advantageous in the appraisal process.

5.1.24 However, the assessment was set in advance and followed standard procedures. Not following a set procedure for arbitrary reasons would be a justifiable criticism, had it happened but in this instance, standard procedures were applied and followed. On the other hand, the tender assessment procedure is usually communicated to the tenderers, so there may be an opportunity for the tendering strategy to account for the bias towards financial scoring, although it is stressed that this is not evident from the information we have reviewed.

5.1.25 There was concern that Birse's tender was so much cheaper than the other tenders and a meeting held of 15th November 2006 sought clarifications of areas of concern regarding completeness of tender and practicality of programme. This included a discussion over liability for the Statutory Bodies.

5.1.26 By this time it was anticipated that the Scheme budget was already tight and acceptance of a higher tender would not allow the Council to keep within the available funding. It appears that there was recognition of the position that if another tenderer were awarded the contract, then the budget would be exceeded. However, although consideration appears to have been given to whether the costs were likely to increase to the level of the other tenderers, it is difficult to assess whether this would happen.

5.1.27 The known potential increases in respect of delays due to newt trapping were not certain at the time. It is not clear whether the Council took into consideration that if the tendered target price remained constant (which would be unlikely), the Council may be responsible for 5% of the Target Cost on the pain-share arrangement if the Contractor's Actual Cost exceeded the target cost (on £8M, the Council may have an additional liability of £400k).

5.1.28 The Council attempted to determine the additional cost due to delay in trapping the newts. Costs were requested from Birse and submitted and it would have been prudent to have agreed with Birse that the costs should be fixed and appropriate negotiations undertaken to alter the contract to suit the known changes. EC Harris is not aware of the Council's tendering procedures and whether negotiation of this nature would have been permitted with one tenderer or whether others would have had to be offered similar negotiation. The alternative would have been to re-tender the Scheme, which we understand was discounted due to the further delays this would have caused to the start of the Scheme.

5.1.29 However, leaving the final pricing of the known compensation event to during the contract period effectively missed the opportunity to fix for certain the additional costs that were already anticipated at the time. The contract form does not however, lend itself to making such pre-contract agreements so an alteration to the contract might have been required in order to do this.

5.1.30 At the time of reporting to the tendering panel, it was assumed that a sufficient allowance had been made for the newts during post tender/pre-start discussions but it is now clear that all costs had not been taken into account, as further consequential costs would also be incurred. The newts issue is discussed further in Section 6.

5.1.31 To summarise, it appears that the Council were justified in awarding the contract for the Scheme to Birse, since it followed appropriate procedures to do so. However by the time of contract award, potentially large increases in costs were known and it appears that the actions taken to try to secure fixed costs increases were insufficiently undertaken and managed to effect the required result.

6 SCHEME EXPENDITURE

6.1 GENERAL

6.1.1 The Scheme is currently anticipating an increased outturn cost, which could be as much as £1.97M and will probably be at least £840k above the November 2006 budget. These figures are based upon the current "worst case" and "expected out-turn" costs.

6.1.2 The opportunities for the Council to reduce this figure are essentially limited, since the majority of the increased costs are to be incurred on the construction contract and now that the construction contract is in place, the Council is bound by the liabilities imposed upon it by the contract it has agreed.

6.1.3 We understand from the grant application letters from the DfT that the Council is unlikely to be able to recover additional grant monies through a further application to the DfT to assist with the increased funding requirements. Nevertheless, we believe that the Council plans to make a further application based upon the maximum anticipated cost of the Scheme. We understand that there is no guarantee that additional monies will be granted.

6.2 CONTRACT FACTORS

6.2.1 The contractor's entitlement to additional monies for the construction work is defined by the Contract.

6.2.2 Under the Contract, the Target Cost is based upon a workscope described in the Works Information. Any alterations to the Works Information or the occurrence of an Employer's risk event are known as "compensation events". Such events are listed in Clause 60.1 and the procedural requirements, evaluation and implementation of compensation events in terms of both time and cost are dealt with under Clauses 61 to 65.

6.2.3 Compensation events are to be priced on the Schedule of Cost Components (SCC). The SCC is made up of various cost heads and the elements payable under each head of cost is described in the SCC. These include but are not limited to People, Equipment, Plant, Materials, Charges, with the addition of percentage additions for

the Contractor's Fee (which includes items such as part-time management staff and head office overheads) and Working Area Overheads (WAOH).

6.2.4 Amendments to the Contract are often made that alter the WAOH from a percentage to Actual Cost. The costs of People and whether those costs are recoverable separately or included in the Fee appears also to have been a contentious item. The latter is a common area of contention under the NEC.

6.2.5 The basic principle behind the pricing of additional work under the NEC is that it is carried out in advance and priced in terms of both time and cost as a forecast where possible, also in advance of implementation. The intended outcome is that the effect of compensation event is known and agreed in advance providing certainty to both Contractor and Employer.

6.2.6 Advance agreement of cost and time effects for a proposed compensation event does, however, present an element of risk to the Contractor, since in theory there is no recourse to the Employer if the quotation for the compensation event should be insufficient to complete the work. Consequently, it is commercially advantageous to submit compensation event quotations that are not final, even though this is outside the intentions of the Contract. Where work has been completed prior to a compensation event quotation being agreed, the Contractor is limited in its recovery to his Actual Cost.

6.2.7 This is particularly so with the effect on the Completion Date for a compensation event, since the time effect is often more difficult to predict and calculate than the direct costs and requires a revision of the programme. Hence, in order to preserve its position, a Contractor can qualify its quotation of direct costs, this having the benefit of reserving the opportunity to re-visit the compensation event in respect to time and with an alteration to the time with a consequential effect of adjustment of costs that may follow. A separate compensation event is then raised which only includes time effects. Our investigation has not reviewed whether this practice also occurs on this contract.

6.2.8 This practice is, in EC Harris' experience, a common method employed by Contractors. Nevertheless, it does not comply with the Contract conditions. The Contract provides that the Project Manager can make his own assessment of compensation events if there is a default of the Contractor under Clause 64.1.

However, the Project Manager may not have sufficient information to make a proper assessment in advance of the works being carried out.

6.2.9 The practice of including a number of changes within one compensation event for delay effects could prevent and/or obscure the Project Manager from properly interpreting the effect of any one compensation event. It would also arguably allow the Contractor to obscure the effects of any Contractor culpable delays for which it would not be entitled to a change to the Completion Date. It is also possible that the practice could in certain instances benefit the Employer.

6.2.10 The anticipated costs of compensation events under the DETC Contract is at the present time, valued at a maximum of £2,642,987.65.

6.2.11 A significant proportion of this is due to delays to the works for work relating to Statutory Bodies and the newts. These delay costs are in excess of £1M. These are discussed below.

6.3 STATUTORY BODIES – DIRECT COSTS

6.3.1 The increased direct costs associated with utilities diversions by Statutory Bodies have increased the Scheme costs.

6.3.2 The price of service diversions was included in the initial budgets at £200k. This was later increased to £328k but the November 2006 estimates allowed £1.2M due to more accurate figures from the Utility companies and a risk factor of £400k was also included in the November 2006 estimate (this could either relate to direct or delay costs). The final direct cost of payments to the Statutory Bodies is estimated to be in the region of £1.2M.

6.3.3 The overall increased costs of diversions to the Scheme may be due to several reasons; that the extent of diversions was not established early in the Scheme (i.e. there are more diversions); that the diversions themselves are much more expensive than expected; that accurate estimates were not received (see next paragraph); that the final costs will exceed any estimates received or that insufficient monies were allowed for the diversions in Scheme budgets.

6.3.4 Any increased costs due to differences between estimates and final costs from Statutory Bodies is due to the process undertaken in procurement of estimates for proposed work. Statutory Bodies have to base early estimates on very limited information and it is not possible for them to produce accurate estimates until detailed design has been carried out. Since Statutory Bodies have only limited resources and cannot expend monies on producing detailed estimates for until they are sure that the work will be undertaken, since requests they receive for possible scheme estimates are numerous. It may therefore have been prudent in earlier Scheme budgets to include a very considerable contingency for services diversions since the Scheme is in an urban area where extensive underground services could be expected.

6.3.5 In respect of controlling the costs of service diversions, there is little that can be done, other than controlling the number of diversions required by scheme re-design, if it is anticipated that a particular diversion will increase the scheme to the extent that re-design is more cost advantageous.

6.3.6 Statutory Bodies advise on the service diversions they require; they work to their own programme of work and recover costs as expended, so in terms of control and management once the need for a diversion is identified, there are limited actions that can be taken.

6.3.7 We were told that the Council tried to shorten the time periods for the service diversions by pro-actively pursuing the utilities (especially for the gas diversion) to ensure that the diversions were prioritised in the respective organisations and therefore delay costs on the construction contract were minimised.

6.3.8 Whilst the Council meets the cost of diversions outside of the construction contract, the liability for managing and procurement of the diversions is discussed in Section 4 under the special clause Z9.

6.3.9 It is noted that the increase in cost of service diversions (which is yet to be finally confirmed) is a factor of six from its original estimated cost.

6.3.10 The Council is limited in actions it could have taken to avoid these cost increases. However, for future projects, it could ensure that adequate allowances are made in the early budget estimates and that the projected costs are updated as and when information becomes available.

6.4 NEWTS – DIRECT COSTS

6.4.1 Trapping Great Crested Newts prior to construction work had to happen under licence and had to take place during a 30-night period when night-time temperatures did not go below 5^{o}C.

6.4.2 In order to get a licence, an ecologist is required to produce a method statement for agreement by DEFRA. Agreement of the method statement took longer than expected. The application for a newt licence to DEFRA could not go ahead until the funding of the Scheme had been approved by the DfT. This delayed the start of the process until May 2006, when conditional approval was given for the Scheme grant.

6.4.3 By November 2006 the Council had approval for the method statement but by then it was too late in the year to trap the newts because the temperatures had started dropping below 5^{o}C. The trapping period to trap newts was started but temperatures dropped and trapping was abandoned prior to completion. A timeline was provided by the Council that showed the history of the newt trapping.

6.4.4 Fencing was provided for the trapping but by the time the trapping could be carried out in the Spring of 2007, this had been stolen or vandalised and had to be replaced. These costs were additional to the Scheme costs as compensation events.

6.4.5 The main cost involved in dealing with the newts were delay costs. Since the issue of delays is the primary cost associated with newts and there are also delay issues with the Statutory Bodies, these are dealt with together in the following section.

6.5 STATUTORY BODIES AND NEWTS – DELAY COSTS

6.5.1 It was known before the construction contract was awarded, that the Council had failed to trap all the Great Crested Newts. Therefore, it was known that if the Contract went ahead to plan, then the Contract would incur delay costs.

6.5.2 The Council anticipated that these costs could be considerable and recognising that these would affect the Scheme budget, entered into some negotiation with the Contractor. At least three meetings were held with Birse, a brief summary of these was provided by the Project Manager (although he did not attend them).

6.5.3 Birse, in its tender, decided to reduce the Scheme programme from the 70 (to be confirmed) weeks anticipated in the tender documents to 44 weeks. Whilst it is attractive to complete works early and in theory saves costs, a shortened programme period has several disadvantages, which include but are not limited to that any changes made by the Employer are more likely to be regarded as critical, with an increase in prolongation costs, rather than an element of preliminaries thickening.

6.5.4 Birse were asked to price for the delay to the areas affected by the newts and forwarded a cost to the Council which was apparently taken as being the full cost of delay. However, as the Project Manager noted, this cost was limited to only certain items and factors identified as "risk" amounting to £376k, most of which would inevitably occur, was left at the Council's risk. In other words, this £376k would have to be spent but was not included within the "headline" delay cost of £400k. Further investigation into the figures provided could be undertaken but this is unlikely to change the Council's financial position.

6.5.5 In respect of Statutory Bodies, the Council has met the Contractor's claims for additional costs arising from the delays due to Statutory Bodies have been accepted to date, on the basis of Birse's assertion that it did not take liability for any delays due to Statutory Bodies under the Contract.(see Section 4 above). This appears to be the result of a combination of contract drafting and the Council's acceptance of the original tender programme.

6.5.6 Other consequential costs it seems were not priced in the initial delay costs due to newts include that the earthworks balance was affected, so additional costs for imported material were incurred because material from the newt area could not be made available when needed; this was followed by the increased costs for disposal of material from the newt area, when it did become available.

6.5.7 Clearing of part of the newt area by hand was necessary due to the area not being cleared before the bird-nesting season, incurring more additional costs.

6.5.8 One other increased cost that was not allowed for in the original delay estimates is the increased cost of tarmac surfacing material that has increased substantially due to increased oil prices.

6.5.9 Whilst these costs could not necessarily have been forecast, it represents an increased cost that the Council has had to meet due to the delays involved in Statutory Bodies and newts. Even if the Scheme had been re-tendered, the Council would have met the at least part of the cost of these increases as it has now, since the increases would have been included in the Target Cost.

6.5.10 The risk of price increases is normally one that the Employer transfers to the contractor in traditional contracts. In NEC, there is the opportunity to include risk allowances in the Target Cost and this is one for which a contractor may make some allowance.

6.5.11 If the project Actual Cost exceeds the Target Cost up to 110% of the Target Cost, the Employer will take half of the difference between these values, so the risk of price increases is shared to some extent in this situation. If the Scheme is in gain share, the Employer will have met the full cost.

6.6 RE-TENDER

6.6.1 EC Harris has been asked to consider whether the Scheme should have been re-tendered to accommodate the newt delay. It is concluded in hindsight that this would probably have been an appropriate course of action. However, we note that there are the following factors that have been mentioned that (whether these are good reasons or not) would have impinged on any decision not to re-tender. These include:

- that the costs of the newt delay were thought to have been identified and confirmed
- that it was thought that Birse was taking the liability for the Statutory Bodies
- that a re-tender might have been outside the grant funding, so another grant application would be required.

Also, it appears that any further delay to the Scheme might have meant the Scheme exceeded the 5-year constraint on its planning permission. The planning permission has a decision date of 27/06/02 and construction was to commence within 5 years (this was not mentioned by any of the interviewees).

6.6.2 The work could have been re-tendered and if it had, the Council would have had certainty that it was committed to a competitive price for the works. However, it must be recognised that this would not necessarily have been at a lower cost.

6.6.3 Alternatively the contract terms themselves could have been utilised to price the newts issues in advance to greater certainty, since under Clause 65.2 a forecast part of a compensation event cannot be revised, so a complete quotation beforehand may have fixed the delay costs. This would, however, have required a full appreciation of the affected elements of the works. Alternatively, if procedures allowed, the Council could have had a fixed price quotation agreed and incorporated into the Contract Agreement.

6.7 A66 WORKS

6.7.1 Under the arrangement as we understand it, the Council will meet the costs of any changes under the A66 works, even though the Council may not have been responsible for the design information given to the Contractor. Without knowledge of the specific arrangements, the Council may not have checked the A66 design provided to the Council for the tender and/or contract. However, it seems that the Council has agreed to take the financial risk of any deficiencies in the Highways Agency design works and supervisory responsibilities, if any should arise (which has not been established or considered by EC Harris).

6.7.2 The compensation events on the A66 works, which have resulted from changes regarding drainage details, delays resulting from the actions of utility companies and changes in traffic management requirements by AOne, amount to approximately £130,000 at the present time. A further estimated £22,000 relates to further compensation events in connection with the bridleway bridge, which is a Contractor designed structure. This latter amount is mostly due to ground conditions under the abutments and some changes in the technical approval system required by the Highways Agency itself. The Council will be responsible for these monies under the Contract.

6.7.3 These are not necessarily an additional cost, since had the details been available, the Council might have identified the cost earlier but still incurred it.

6.8 DESIGN AND ADMINISTRATION FEES

6.8.1 EC Harris has been asked to consider whether the early design fees represent a disproportionate amount of the overall project budget.

6.8.2 As we have discussed with the Project Manager, to a certain extent, it depends upon which cost elements are included in the description of “design fees”. Specific design

costs are not easy to define between projects because there is no standard list of elements as to what they might include. For example site investigation costs might be included in one assessment but not another.

6.8.3 If all pre-contract costs prior to the start of contract works were classed as "design and preparation", these amounted to £1.4m out of the (November 2006) expected budget of £12.5m (11.2%). This figure also equates to 17% of the tender sum.

6.8.4 However, some of the pre-contract costs were for Land and legal fees (£190,000), utilities advance payments (£105,000) and geotechnical investigations (£105,000). Geotechnical investigations were included in the early budgets as a separate cost to the design and administration.

6.8.5 From our experience, on a typical construction scheme, the design fees may vary as a percentage of the construction costs from around 8% to 12%, which aligns with the allowance of 10% within at early budget cost estimates. In fact, actual design fees appear to be of the same order (including specialist fees such as archaeology fees that were not specifically identified) as the budget allowance (see Section 3 above). Nevertheless the following comments were given during our investigations.

6.8.6 Our investigations suggested that it was believed that any disproportionate design fees would be the result of the design of the Scheme being over a long period of time; the Scheme having been at least outline designed for the planning permission in 2000/2001 with various inputs on the project through to the tender in the summer of 2006.

6.8.7 It was also thought that some changes e.g. to the Highways Agency requirements (generally minor requirements); and the number of iterations of design had contributed to the fees spent and that it was time consuming dealing with the Highways Agency, especially over the contract form and employer requirements.

6.8.8 We are not aware of the internal departmental charging system the Council has within the Highway and Engineering Services for allocation of time to projects but in terms of any assessment of the original brief for the works and changes to it, it is likely that any additional expenditure would have been more transparent if the Council had used an external design consultant. This is simply because the original brief would have had to have been well defined in order that an external consultant could price it

properly and then the consultant would have been expected to provide reasons for any claim for increased fee levels, supporting any such claim with appropriate justification. However, the use of external design consultants to design works when resources are available in-house would not be economically sound. It is not suggested that the Council has necessarily incurred additional costs for the project because it used internal, rather than external, resources.

6.8.9 An extended design period would also usually involve increased expenditure on any scheme, although such expenditure may be hard to allocate to any particular task. For example there may be wider consideration of the design generally or an increased element of design development or development of options for specific aspects of the project. Alternatively, intermittent involvement that requires re-visiting the design or other aspects, such as budgets and project pricing and associated repeated familiarising of (perhaps different) staff with the scheme and its detail could all contribute to a higher design fee percentage.

6.8.10 Assuming that this explanation is correct, then it will be difficult to assess the reasons for any overspend, if any, unless timesheet records have been accurately kept and time properly allocated to tasks on the project, which may have included for example, the re-familiarisation with the project, had work on the project been previously suspended.

6.8.11 It was also noted in our interviews that some of the design undertaken up to 2005 was insufficient because the design to that time had not properly accommodated the land availability issues and also the junction at Haughton Road was not workable and would be difficult to construct, so this design work had to be repeated.

6.9 UNFORESEEN GROUND CONDITIONS

6.9.1 There is approximately £250k of compensation events relating to unforeseen conditions. These include items such as additional extent of Japanese knotweed (which requires an onerous disposal regime), the additional of Tensar SS40 Geogrid (which would be required to improve ground strength), ash and other unacceptable material removal and disposal, the requirements for land and other drainage.

6.9.2 Working in areas of existing drainage, particularly land drainage often results in additional work. Since land drainage is not recorded on plans, its presence is only known when it is excavated and usually some replacement must be installed.

6.9.3 The difficulty here is that there is no contingency left in the budget to deal with on-site alterations and necessary additions to the works. For example, it could be foreseen that in a brownfield area along an existing railway line in a previously heavily industrial area, then the products of industrial tipping may be present. It is more difficult to estimate the costs that may be involved to deal with that material. Similarly, land drainage will exist in fields but will not be apparent until its discovery on site.

6.9.4 The lack of any real contingency or risk allowance within the budget available within the Scheme at the start of construction meant that increased costs have to be met as an addition to the available funding. Although at November 2006, it appears that there was £953k available for "risk", much of this was allocated to known items that would give rise to additional expenditure i.e. these sums were effectively already committed, leaving a much lower contingency or risk factor available. In fact, the allowances within the budget at November 2006 for delays to the works and utilities costs were insufficient and even these costs were also exceeded by a substantial margin.

6.10 LAND AVAILABILITY

6.10.1 In our discussions with the project designer, it seems that there were cost implications of the extent of the land available for the Scheme. . Having been determined early in the Scheme and then found in detailed design that these boundaries were not ideal, the decision was made to raise the carriageway levels.

6.10.2 There may be cost implications of increasing the levels in a direct sense i.e. the physical cost of the earthworks in filling the additional area but these costs will be incorporated into the tender sum and although these could be isolated and identified, the overall construction cost being based on historical and price-book data rather than actual quantities means that these costs will be absorbed into the Scheme costs.

6.11 TENDER EARTHWORKS QUANTITIES

6.11.1 Various aspects of the cost implications of the form of contract are discussed in Sections 3 and 4 above. These implications include, in Section 3, a discussion on the pre-tender estimate and the preparation of bills of quantities for a scheme.

6.11.2 NEC Option C leaves the taking off quantities to the Contractor. Therefore although the risk appears to be passed to the Contractor to get the quantities right and this

apparently saves the Employer the cost of preparing bills of quantities, this is not strictly correct. Apparently, several tenderers used one firm of quantity surveyors to take off the quantities, which it is suggested was incorrect, the earthworks quantities being too low. We cannot comment on whether this is true but make the following comments.

6.11.3 Inaccuracies during the take-off by the tenderers will have altered the tender prices for those contractors that tendered on the incorrect quantities. Since a number of the tenderers apparently all used the incorrect quantities, then the tenders from those particular contractors will have been on a comparative basis. However, the incorrect quantities were not used by all the tenderers, so all tenders may not have been on an equivalent basis. However, unless the tenders were qualified to the quantities included (there is no suggestion that they were), they were properly regarded as equivalent for tender assessment purposes.

6.11.4 One implication of using this form of contract is that whether the quantities used for the tender are correct or not, the Contractor is paid on a different basis, this being the Actual Cost plus a Fee. The Contractor is not paid on the basis of quantity of work carried out and re-measured. Any error that reduced the tender quantity will have impacted on the Target Cost, which will have been lower than the Target Cost should have been. Therefore, in theory, the Contractor may be in pain share for the element that was not priced in the tender.

6.11.5 In this particular contract, since there is a pain share arrangement, in theory the Council would meet at least some of the cost of the deficiency in the tender price.

6.11.6 Whilst this affects the actual expenditure, the Council will not necessarily be any worse off (other than in respect of late knowledge of the cost and budgetary management) since had the quantities been correctly determined, the Council would have always have met that cost. If the Scheme is in pain share, the Contractor will also have taken some of the cost of its error.

6.12 LIGHTING COLUMNS

6.12.1 EC Harris has been asked to comment on that the original contract specification called for tubular steel lighting columns however the Highways Agency works called for passive lighting columns on the A66 section this add a further £65k to the project.

6.12.2 This point is currently under consideration by the project designer. We understand that the specification required tubular steel columns that would also provide passive resistance (a particular type of lamp column that is safer for vehicle occupants in the event of a collision with the column). We understand that Birse contended that it was not possible to purchase columns that were both passively resistant and of tubular steel construction.

6.12.3 As a result of this contention, we understand that some re-design has been undertaken so that passive resistant columns are either not necessary or that their use is limited to fewer locations. This apparently required increased heights of columns and/or extended column bracket arms.

6.12.4 We have asked whether Birse's contention that the combination of tubular steel and passive resistance is in fact unavailable (on the basis that there might be a possibility that this contention was made due to an unexpectedly high cost of these particular columns, although there is nothing to suggest this at the present time). Since any changes to the columns are a variation to the Works Information any increased cost as a result of the re-design would have to be met by the Council under a compensation event cost.

6.12.5 At the present time, EC Harris has not received a response to this query. It is apparent, however, that some mitigation of the potential increased costs has taken place.

6.13 DRAINAGE

6.13.1 EC Harris has been asked to comment on whether the drainage works were not fully designed and subsequent changes have added approximately £120k to the Scheme.

6.13.2 The Project Manager confirmed that there have been alterations to the drainage design on the scheme and as such compensation events have been issued as required under the Contract. We believe that the majority of the changes required are within the A66 area of works, so this may be an instance where the Council has met the cost of an increase in the A66 work.

6.13.3 The cost of drainage alterations does not appear to be as much as £120k but there are drainage works within the compensation events (some could be categorised as unforeseen conditions, for example). If land drainage is included, then this would be a

justifiable additional cost, since land drainage is unidentifiable because it is not recorded. However, there was a likelihood it would be present, so it would have been reasonable to have allowed for some suitable measure in any more detailed estimates, or include the equivalent of a provisional sum within the tender/contract documents.

6.14 FOOTWAY/CYCLE LINK

6.14.1 We were requested to review whether these works were omitted from the Scheme and had therefore been at additional cost. Our investigations have revealed that this was included on the contract drawings and has not been the subject of compensation events for additional monies.

6.14.2 The cost of this link may not have been included within early budget estimates because the estimates were based upon carriageway area, which would not have included this additional area. Similarly, there was a suggestion that the costs of Red Hall Nature Reserve were not included.

6.15 TRAFFIC SIGNALS

6.15.1 EC Harris was asked to comment on whether the design and provision of traffic signals was not included in the main works contract. The cost of these signals was perceived to have increased from £200k to £360k.

6.15.2 We have established that these particular traffic signals were to be provided by a separate specialist contract with Newcastle City Council and as such were not planned to be included in the main contract. The increased costs, if any, are apparently the result of design development but remained outside the construction contract.

6.15.3 The final costs are anticipated to be in the region of £240k, rather than £360k.

6.15.4 This approach of separate employment of the specialist subcontractor directly would save the Council the percentage fee of 8.5% that would have been applied if procurement had been through the main contract.

6.16 OPPORTUNITIES FOR SAVING

6.16.1 It was brought to our attention in the interviews that steps have been taken during the construction phase to save costs and this has resulted in identifying a total saving of £630k, so this mitigates the effects of some of the compensation events.

6.16.2 This is an appropriate action to undertake and the Council has benefited from this approach.

6.17 COUNCIL STAFF

6.17.1 The Council asked EC Harris for its opinion of whether the Council will have suffered as a result of there being no Council employee engaged on the construction contract including signing off of payments.

6.17.2 There is no particular issue with the fact that no Council employee is engaged on the construction contract or that any council employee is involved in certifying payments to the Contractor. The staff concerned with the on site management of the Contract were engaged as a result of their knowledge of the scheme or their substantial experience on similar schemes.

6.18 PAIN/GAIN SHARE COSTS

6.18.1 As described in this Report in Section 4, the contract with Birse is a Target Cost contract that has a pain/gain share mechanism incorporated for risk sharing of the Scheme actual costs.

6.18.2 The upper limit for this contract is 110% before the Contractor meets the whole of any excessive actual cost. The Employer has little, if any control over the Contractor's costs during the works, so it is possible that the Contract Actual Cost will exceed the Target Cost and that the Council will be responsible for meeting 50% of that excess up to a limit of 5% of the Contract value. On a Contract upon which the Target Cost remained at £8,000,000 for example, this would mean that the Council is at risk of meeting 50% of £800,000 i.e. £400,000. Whether or not this pain share materialises, the Council needs to be aware that meeting this liability is a potential risk to the Council.

6.18.3 The Project Manager should be able to establish the likelihood of a contract pain share and the extent of the Council's contribution to it, if any.

6.18.4 Of course, if the Contract is in gain share rather than pain share, the Council could benefit from a substantial saving on the Target Cost. However, since the tender Target Cost was significantly lower than other tenders (a minimum of ~11% lower) then this is less likely but apparently possible.

6.19 LAND COMPENSATION ACT

6.19.1 The Council will be liable for claims made under the Land Compensation Act, even though no budget was allowed for any such claims.

6.19.2 We understand that these are made after one year from completion of the Scheme, so although what is considered to be an adequate allowance has been made, there will be at least some risk that this is exceeded.