

Construction Sector Transparency Initiative (CoST)

Assurance Team Report

A46 Newark to Widmerpool Improvement Project, Highways Agency

September 2010



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1. Summary

- 1.1.1 The Highways Agency is constructing a new 17 miles long two-lane dual carriageway adjacent to the existing single carriageway A46. The new road runs along a north south axis commencing in the south at the A606 two level junction at Widmerpool and ending at Farndon, on the outskirts of Newark. The improvement is being constructed in order to reduce congestion, improve safety and provide a bypass for East Stoke and Farndon. Some sections of the existing A46 will be retained for use by local traffic and some sections would be downgraded for use by cyclists, walkers and horse riders and for private means of access.
- 1.1.2 The decision to construct this scheme followed a detailed assessment of options, including costs and benefits. The site works began in the spring of 2009 and are due for completion in the summer of 2012.
- 1.1.3 The Highways Agency operates procedures for the control of cost, management of the programme of work and monitoring of quality. They have made full and accurate disclosure of documents demonstrating their procedures for awarding contracts for this project and in operating their procedures with clear evidence of a transparent approval process. However some draft documents have never been marked as “final” or “approved” and this is an area where “processes” could be improved.
- 1.1.4 The contractor for this project was selected following the submission of competitive tenders based around quality rather than price. This was because a strategic decision was made for “Early Contractor Involvement” in which a contractor also designs as well as builds the project.
- 1.1.5 This approach has the benefit of getting the contractor's detailed input to the design, and the use of an experienced cost consultant to negotiate an initial target price and any subsequent changes to it. This approach also has the benefit of ongoing reassurance that any changes to the contract price are appropriate through the cost consultant's close involvement with the project.
- 1.1.6 The contract with the contractor is based on the NEC standard contract document for design and construction in common use in the construction industry. Proper management of the contract in accordance with the form of contract used and Highways Agency procedures is critical to the success of the project. Programme, quality and cost are generally managed by the Highways Agency in accordance with the requirements of these contracts and their own procedures.
- 1.1.7 During construction, the Highways Agency motivates the contractor to control costs within the available agency budget by sharing savings and overruns on the budget with him. This approach is a useful way of controlling costs on such contracts. To ensure that the contractor has a sufficiently challenging target, the number of items which could give rise to a change to this budget during the construction stage was limited.
- 1.1.8 Moreover for this method of procurement to work the contractor and Highways Agency work on a transparent “open book” basis sharing full financial information of both cost increases and savings.
- 1.1.9 We have discussed with HA staff the major Compensation Events which principally relate to services diversions and archaeological remains. These were both anticipated risk items but until excavation commenced it was difficult to predict the actual extent of Roman archaeological findings. However what has been costed to date is well within the contingency allocation for such items.

- 1.1.10 Communications and public relations is another issue which has emerged after discussions with the project team. Much project information has been put into the public domain via ongoing public consultations, Radio, TV and the HA web site (www.highways.gov.uk) simply as part of the project communications strategy.

2. Introduction

2.1 Background

- 2.1.1 The Construction Sector Transparency Initiative (CoST) is an international multi-stakeholder programme designed to increase the accountability of public sector organisations and construction companies for their construction projects. It will do this by disclosing information at all stages of the construction project cycle, from the initial identification of the project to the final completion.
- 2.1.2 It is, however, recognised that the disclosure of this information may not be sufficient on its own to achieve greater accountability. This is because some of the information is likely to be complex and not easily intelligible to the general public. For example, there are many reasons for time and cost overruns on construction projects that may be quite legitimate and not necessarily an indication of poor governance of the procurement process. To ensure that the information that is released is both accurate and available in a form that can easily be understood by stakeholders it is verified and interpreted by experts appointed for this purpose -- the assurance team.
- 2.1.3 Eight projects have been identified by the UK Multi-Stakeholder Group (MSG) to form a pilot study of operation of this initiative, in the UK. The MSG has divided the 'CoST projects' into two groups of 4 projects referred to as Group A and Group B. The A46 Widmerpool to Newark scheme is one of the chosen Group B projects.
- 2.1.4 The UK pilot is led by the UK CoST Multi-Stakeholder Group. It is supported by the Department for International Development, the Department for Business, Innovation and Skills, and the Treasury. The Institution of Civil Engineers (ICE) is managing the pilot study on behalf of the UK CoST Multi-Stakeholder Group.
- 2.1.5 The assurance team appointed for this pilot study comprises four senior construction industry specialists, working together to obtain and assess information and provide reports. This report has been prepared by Richard Bayfield, the team member who carried out the A46 information review.

2.2 Objectives of the pilot study

- 2.2.1 The UK pilot has four objectives:
- to learn lessons to help in the development of CoST
 - to learn lessons on improving transparency through the disclosure of project information
 - to gain an improved understanding of construction project costs amongst public sector clients
 - to learn and share lessons on the management and control of publicly-funded construction projects.

2.2.2 On this project, the assurance team has been appointed to carry out the following tasks:

- collect the project information
- verify the accuracy and completeness of the information
- report on the extent and accuracy of the information which has been released
- on Group B projects only, analyse the information and make informed judgements about the cost and quality of the project
- on Group B projects only, report on the findings regarding the cost and quality of the project and highlighting any outstanding questions.

2.3 Work carried out on the pilot study

- 2.3.1 Initially, we held a meeting with the Highways Agency's project manager for the scheme to explain the objectives and procedures for this pilot study. Subsequently, we held a workshop with members of the project team to explain what information was needed and how it would be used.
- 2.3.2 The International Secretariat had prepared a standard list of project information to be disclosed on all pilot projects, and we adapted this into a schedule to suit this contract. The International Secretariat had also prepared two lists of disclosures; the first list of disclosures would be requested for both Group A and Group B projects; a second list of further disclosures could be requested for Group B projects. The further disclosures would depend on the information that was required to meet the additional Group B objectives. We provided a copy of the applicable schedule to project team members. At the workshop, we identified the information which they held and which was needed to provide the information on the schedule. Jointly with the project team, we reviewed how this information could best be produced to minimise additional work for them.
- 2.3.3 We assisted the ICE in setting up a computerised data store to receive and store this information, and in establishing the arrangements for providing access to the data store. At the workshop with the project team, we explained how this data store would operate and how access to information and other material would be controlled. We explained how the disclosed information would be used, and what access team members would have to review and comment on reports before publication.
- 2.3.4 The Highways Agency and its project team provided the documents by electronic transfer to the data store. Following our review of the information initially provided, the agency provided further documents we had identified as necessary.
- 2.3.5 We reviewed the information disclosed, and held further meetings with the project team to clarify certain matters, verify the accuracy and completeness of information, and to obtain further understanding of how the project was managed.
- 2.3.6 The schedule of project information which the Highways Agency was expected to disclose under the pilot study is set out in Appendix 2. We have completed the schedule by identifying the information required.
- 2.3.7 A detailed schedule of the documents disclosed, with a description of their purpose, is included at Appendix 3.
- 2.3.8 The documents disclosed fall into the following categories.

- General material describing the need for the A46, identifying the costs and benefits of various options, and gaining agreement to the funding and programme for the scheme.
- Documents dealing with the selection and appointment of the consultants EC Harris and Jacobs and the management of their contracts.
- Documents dealing with the selection and appointment of Balfour Beatty and the management of their contract.
- Documents relating to the monitoring and control of costs on the project.

2.4 The A46 Widmerpool to Newark Improvement Project

- 2.4.1 This section of the report gives the schemes history and background since 2001. It is noteworthy that the project has started on site whilst there is an ongoing Supplementary Orders public inquiry concerning some possible additional works to the scheme. These additional works have been included in the scheme budget.
- 2.4.2 The A46 is an important regional trunk road connecting the East and West Midlands. The section between Widmerpool and Newark carries up to 25,300 vehicles per day. This level of traffic gives rise to frequent congestion and delay. The existing A46 is generally straight and undulating as it follows the line of the old Roman Road - Fosse Way. This can make safe overtaking difficult and the existing road has a poor safety record.
- 2.4.3 The new scheme is a 17 mile long two-lane dual carriageway adjacent to the existing single carriageway A46. The new road runs along a north south axis commencing in the south at the A606 two level junction at Widmerpool and ending at Farndon, on the outskirts of Newark.
- 2.4.4 The initial Public Consultation on the scheme took place in 2003. There was significant majority public support for the principle of dualling the existing A46 road.
- 2.4.5 Contractor Balfour Beatty was appointed on 15th March 2004 under the Early Contractor Involvement (ECI) form of Contract. The ECI Supervisor was Jacobs. Balfour Beatty with its design consultant Scott Wilson is responsible for the design and construction of the works.
- 2.4.6 Publication of Orders by the Secretary of State in 2005 confirmed the route which had been developed with Balfour Beatty and Scott Wilson. The orders provide the legal basis for the proposals and comprise the line of the new road, the detrunking of the existing road, alterations to accesses, accommodating public rights of way and the land required for the construction of the scheme.
- 2.4.7 Following the decision on Regional Funding the proposed Construction start date was confirmed as 2012/13, although this date was subsequently brought forward. The draft Orders and Environmental Statement which were published on 9 December 2005 were withdrawn and republished on 26 January 2007. A Public Inquiry was held in the summer of 2007 at which objections and independently promoted alternatives were heard in front of an independent Inspector. The Secretary of State's Decision letter was published on 19th December 2008. The Decision Letter and Inspector's report have been published on the Department of Transport website <http://www.dft.gov.uk/>.
- 2.4.8 The made orders were published on January 31st 2009. The Inspector's report and the Secretary of State's decision letter following the 2007 Inquiry into the initial orders, recommended that a number of design issues should be considered and some minor amendments to the orders were identified. These changes resulted in the need for the publication of a Supplementary Side Roads Orders and Compulsory Purchase Order on 24th April 2009.

2.4.9 Objections were then received during the Objection Period and as a result of this a further Public Inquiry into the Supplementary Orders was held in January and February 2010. The Inquiry decision was announced on the 27th July 2010 and allowed the Supplementary orders to proceed to construction. Under this form of contract there is the flexibility to modify the scope of work at a late stage without unduly impacting the outturn cost.

2.5 Fiscal Stimulus for A46 Widmerpool to Newark Improvement Project

2.5.1 In November 2008 Geoff Hoon MP the then Secretary of State for Transport announced that the A46 Newark to Widmerpool Improvement scheme would be brought forward as part of the Government's Fiscal Stimulus policy. £174m additional funding was to be made available representing 50% of the total scheme cost, the remainder to be funded by the Regional Assembly.

2.5.2 The start of the construction of the project was therefore brought forward from 2013 to 2009. The initial scope of construction was limited to the works that had been approved at public inquiry with the balance to follow if the current Inspector's decision turned out to be positive towards the proposed additional work. This is another example of the benefit of an ECI approach which allows flexibility in start time and which is simply not feasible in most other types of construction procurement, certainly for this size of project.

3. Validation and analysis of documents

3.1 Overview of documentation

3.1.1 A comprehensive set of documentation has been provided by the project team which goes back to 2003. These documents cover most, but not all, of the major decisions pertaining to the project including the appointment process of the Contractor and Consultants. The documentation is extensive and in some instances documents marked “draft” have been clearly acted upon by all parties. This has meant that some documents have been “approved” by email and there is clear evidence of this transparent approval process. However some draft documents have never been marked as “final” or “approved” and this is an area where “processes” could be improved.

3.2 Highways Agency procedures

3.2.1 It is necessary to set out the Highways Agency’s procedures for awarding and managing contracts in order to understand the status of documents disclosed by them.

3.2.2 A framework is a selected list of suppliers (consultants or contractors) who will carry out work of a specified nature when instructed by the Highways Agency. To set up a framework, the Highways Agency invites submissions from companies who wish to be selected and who are judged to be capable of carrying out the work. Submissions are marked by the agency against published criteria. Those scoring the highest are appointed to the framework. The framework will last for a period of time – typically four or five years, following which a replacement framework is set up and fresh submissions are sought and marked as before.

3.2.3 New highway schemes are assessed in three stages prior to construction with construction being the major element of stage 4. Stage 1 corresponds to a feasibility study or an assessment of the need and possible options for a scheme. Stage 2 corresponds to a pre-public consultation assessment, or route selection. This includes preliminary assessment of a number of route options. Stage 3 corresponds to assessment of the preferred route prior to commitment to construct the scheme. This is a more detailed assessment focused on the preferred option. The requirements of a Stage 3 Assessment are to identify clearly the advantages and disadvantages, in environmental, engineering, economic and traffic terms, of the preferred route.

3.2.4 Following completion of Stage 1 and 2, a Contractor is appointed after a tender process.

3.2.5 The intention of the Highways Agency’s Early Contractor Involvement (ECI) Procurement Strategy is to engage the Contractor early in the design and Statutory Process in order to bring more innovation and buildability to the design and construction methodology, resulting in time saving and improved value to the HA.

3.2.6 By using this approach of early contractor involvement, the Contractor contributes significantly to the Stage 3 assessment. During this stage, two reports are made: i) the Stage 3 scheme assessment report, which explains the scheme development and covers the engineering, economics and traffic issues associated with the scheme and is provided to allow both statutory bodies and the public to comment on the proposals and ii) the Environmental Statement, which covers all environmental aspects. The stage 3 assessment report was published in December 2005 and republished in January 2007 following a public consultation exercise.

3.2.7 Stage 3 also incorporates the publication of draft Orders, the Public Inquiry process, preparation of Compulsory Purchase Orders, the Secretary of States Decision, value engineering detailed design and target cost approval.

- 3.2.8 Under the Early Contractor Involvement scheme (ECI) the agency works together with the contractor to develop and agree a "target price" basis for payment on major contracts. Under this arrangement, the Contractor is paid the cost of the work carried out, and then shares in the savings or cost overruns if this is less or greater than the tendered price for the work.
- 3.2.9 Stage 4 (the final Stage) starts with the approval to commence construction works and also the construction of the Works.
- 3.2.10 Most agency work is carried out using the NEC forms of contract - standard model forms for construction and for design work used widely for construction projects in the public sector. Under these contracts, where a change would have an effect on either the date of completion of the work or the cost of the work, a "compensation event" procedure is followed to obtain changes to prices and programme.

3.3 Project identification and budget

- 3.3.1 The Highways Agency appointment letter to Balfour Beatty of the 17th April 2005 refers to a budget allowance of **£171.68M** for the construction work. The Balfour Beatty target cost summary of the 29th May 2009 reports a target cost of **£259.8M**. The Balfour Beatty cost is primarily that of construction whereas the scheme budget includes additional items such as land costs, consultant fees, utility diversions and VAT (refer to Appendix 5 for a cost breakdown).
- 3.3.2 We have spoken to the HA's Project Manager about this cost increase. He has advised that since 2005 the scheme has gone through a number of iterations and the scheme being built today is "nothing like that originally proposed". At one time most of the scheme was on line (i.e. being built above the existing A46 Roman road). Now most is now off line (i.e. running parallel with the existing road). Building the road "off line" adds to cost as do the recently introduced grade separated junctions, low noise surfacing and other scheme modifications following the Inspectors recommendations after the Public Inquiry in 2007.
- 3.3.3 As to the total project cost, the Agency's signed client remit form of the 9th April 2009 refers to a Ministerially Approved Budget of **£317M**.
- 3.3.4 The Agency's signed client requirements form of the 9th April 2009 refers to an expected Budget of **£365M** and a range between £322M and £409M.
- 3.3.5 Funding for the work required at the A46 was provided by the Department for Transport (up to £174M) and the East Midlands Regional Funding Allocation (RFA) was responsible for the balance.
- 3.3.6 The EC Harris report of September 2009 reports a scheme budget of **£375M** (i.e. £374.9M rounded up) and a projected final cost of **£363M**.
- 3.3.7 The EC Harris report of May 2010 reports a scheme budget of **£375M** and a projected final cost of **£357.7M** which compares to projected final cost of **£358.2M** the previous month.
- 3.3.8 The monthly updating of the projected final cost is an example of best practice financial reporting as it takes into consideration changes in design, changes in construction, changes in risk and actual spend on an ongoing basis. Thus the projected final cost has decreased from £362.7M in September 2010 to £357.7M in May 2010 (refer to Appendix 5).
- 3.3.9 The project report of May 2010 reports a certified amount to the 28th March 2010 of £56,474,879.
- 3.3.10 Having considered the documents disclosed by the agency in the light of the agency's procedures, we are satisfied that these documents adequately identify the project and the method of funding for the project.

3.4 Approach to awarding contracts

- 3.4.1 The use of frameworks by the Highways Agency is a cost effective way of awarding contracts, as it avoids the delays and increased costs which would result from opening the tender to a wider selection of companies. Moreover entry onto a framework is a competitive process which is reviewed and tendered typically every 5 years.
- 3.4.2 Frameworks are frequently used by major organisations as they also allow efficiencies to be gained through familiarity between employer and contractor or consultant.
- 3.4.3 We consider that the selection of suppliers from a framework for consultancy and contract services is an effective and efficient way of providing good value for money and potential time savings. By seeking tenders from several suppliers from a framework, the agency retains the benefit of competition to identify the best supplier for the contract.
- 3.4.4 The Early Contractor Involvement (ECI) contracts require consultancy expertise and input to ensure the Client is being delivered a project that meets the Client's technical objectives at the same time as paying an equitable or fair price. The role of "contract supervisor and project management support" provides the technical expertise whereas the role of "commercial supervisor" provides financial and commercial expertise.
- 3.4.5 The "contract supervisor and project management support" for this contract, Jacobs, was appointed from the framework of consultants.
- 3.4.6 The "commercial supervisor" for this contract, EC Harris, was appointed from the framework of consultants on the basis of specific KPI feedback identified below: –
- "The supplier has worked for the Agency since the early 90's providing commercial and valuation advice. Their performance in this area of work has been excellent.
 - The supplier has considerable depth of resource and can respond quickly and flexibly.
 - There are no conflicts of interest likely to arise as EC Harris has not been working with the contractor as part of design and build or ECI teams.
- 3.4.7 It is good practice and good governance to see the rationale for appointing a Consultant to a specific project under a framework as was the case for EC Harris.

3.5 Incentive Bonus Arrangements

- 3.5.1 As noted above the Contractor is paid the cost of the work carried out, and then shares in the savings or cost overruns if this is less or greater than the tendered price for the work adjusted for events which occur and which are at the agency's risk. These risk events are called compensation events or "CE's". For this project the bonus share percentage is a variable percentage between 10% and 50% depending on the extent of the saving or overrun. This means the Contractor (Balfour Beatty) gains between 10% and 50% of any saving and contributes between 10% and 50% of any overrun.
- 3.5.2 A bonus payment is triggered if the project is completed within the agency's target cost.
- 3.5.3 The target cost was fixed but could change if certain defined events which were entirely outside the control of Balfour Beatty occurred. It was not considered appropriate to transfer the risk to them as they could only be motivated to manage costs within the budget if they could in some way influence them.
- 3.5.4 The employer's principal retained risks (i.e. those which can affect the target) were
- archaeological findings
 - major changes to the project scope
 - changes in the law

- additional costs of statutory procedures (including service diversions)
- programme or budgetary restraints by the Highways Agency
- maintenance of the existing A46 road.

The Supervisor (Jacobs), in consultation with the cost consultant (EC Harris), decides whether a compensation event is also an employer's retained risk. The value of the compensation event is often established by discussion and negotiation with the contractor who may well be asked to provide significant supporting information to justify its costs.

- 3.5.5 Careful control must be kept of the process for deciding the target price. It would be wrong to allow a contractor to improve their position by renegotiating the price after contract award. To avoid this pitfall, the agency employs experienced cost consultants to advise them on any amendment to the target. In the case of the A46, this service was initially provided by Jacobs and then in May 2009 EC Harris was appointed to support the negotiations for the final agreement of the target cost in July 2009.
- 3.5.6 Once the target is agreed along with the inclusions / exclusions to the target, then all parties are motivated to seek ways to build within the target and share any savings. The savings will typically arise through redesign or further analysis through a process called "value engineering". The process starts by asking what is the function of this element of the work? This is followed by can we achieve the same function with an alternative design using alternative materials that will not compromise the functionality but will save money? If the alternative satisfies the test then the design is changed and that translates into a saving against the overall target.
- 3.5.7 The project report of the 4th May 2010 reports a projected saving of £4.6M with approximately 22% of the site work completed. This saving if it is maintained for the remainder of the works will be shared with the contractor.
- 3.5.8 The use of such incentive arrangements is a useful tool in controlling the effect of changes during the construction project. Although the contractor would be compensated by any changes that did happen during the construction contract, unless they fell within the restricted category of employer's retained risks, they would effectively have to contribute part of the cost themselves through losing their potential incentive bonus or make payment towards a cost overrun. Thus both employer and the contractor have a shared objective of minimising cost of any changes that do occur during the project.
- 3.5.9 The range of compensation events which affect this incentive target, whilst limited, leaves the agency with a risk of cost overruns. The agency includes risk allowances in its budget for these risks. By incentivising the contractor to achieve a lower budget, the agency retains some buffer against cost overruns from their retained risks.

3.6 Consultancy Appointment – Jacobs

- 3.6.1 Jacobs is appointed to act as "Contract Supervisor and Project Management Support" to the HA Project Manager, Geoff Bethel.
- 3.6.2 Jacobs's role includes "supervision, design review, technical advice, inspection / quality and contractual advice".
- 3.6.3 Jacob's appointment came about by virtue of 2 company sales. Brown and Root (subsequently KBR) was appointed in 2001 to carry out preliminary design and see the scheme through public consultation in 2003 and the appointment of an ECI Contractor in 2004. The part of KBR responsible for this project was subsequently sold to Jacobs Babbie. The KBR commission was "novated" or transferred to Jacobs Babbie on the 13th March 2006. "Jacobs Babbie" subsequently became Jacobs in 2007.

- 3.6.4 Jacobs has a “rolling” one year contract and a copy of the Agency’s orders dated the 20th December 2006, 18th December 2007 and 20th October 2009 have been provided. These orders include a requirement for a performance review for each task. The arrangements for performance measurement are to be agreed with the Project Manager at inception and as a minimum a Key Performance Indicator (KPI) report is required at completion of each task. The Agency stipulates that the KPI is needed before further work can be allocated. The Agency adds that performance is one of a number of factors that will be considered when allocating future work.
- 3.6.5 The “rolling contract” with Jacobs includes an approved annual target cost which cannot be exceeded without reference to the HA procurement team. The actual spend and projected spend is reviewed on a monthly basis with the HA project management team. Any proposed increase in the approved annual target cost needs to be justified to the HA procurement team before any increase can be agreed. The monthly reviews and ultimate reference to the procurement team provides a good discipline for working within the approved annual target cost.
- 3.6.6 The target cost is derived from a pre-estimate of consultant man hours at various rates per consultant dependent upon the consultant’s role and seniority. There is an agreed profit percentage added to this cost to reach a target cost with profit.
- 3.6.7 This approach based upon estimated resource (i.e. number of people) is more transparent and provides greater accountability than the more common consultant appointment based upon an agreed percentage value of the construction works. However more information is needed to understand how the profit or loss is apportioned between the consultant and the Agency.
- 3.7 Consultancy Appointment – EC Harris**
- 3.7.1 E C Harris is appointed to act as “Commercial Supervisor” to the HA Project Manager, Geoff Bethel.
- 3.7.2 E C Harris’s role includes “commercial supervision, management support, programming and planning”.
- 3.7.3 E C Harris was appointed in May 2009.
- 3.7.4 E C Harris has a “rolling” one year contract and a copy of the Agency’s order dated the 28th May 2009 has been provided. This order includes a requirement for a performance review for each task. The arrangements for performance measurement are to be agreed with the Project Manager at inception and as a minimum a Key Performance Indicator (KPI) report is required at completion of each task. The Agency stipulates that the KPI is needed before further work can be allocated. The Agency adds that performance is one of a number of factors that will be considered when allocating future work.
- 3.7.5 A copy of the Agency’s internal request for placing an order under the framework has been provided. This order request dated the 8th October 2009 notes 3 reasons for appointing EC Harris:
- KPI Feedback
 - Depth of resource
 - There are no conflicts of interest likely to arise
- 3.7.6 The “rolling contract” with EC Harris includes an approved annual target cost which cannot be exceeded without reference to the HA procurement team. The actual spend and projected spend is reviewed on a monthly basis with the HA project management team. Any proposed increase in the approved annual target cost needs to be justified to the HA

procurement team before any increase can be agreed. The monthly reviews and ultimate reference to the procurement team provides a good discipline for working within the approved annual target cost.

- 3.7.7 The target cost is derived from a pre-estimate of consultant man hours at various rates per consultant dependent upon the consultant's role and seniority. There is an agreed profit percentage added to this cost to reach a target cost with profit.
- 3.7.8 This approach based upon estimated resource (i.e. number of people) is more transparent and provides greater accountability than the more common consultant appointment based upon an agreed percentage value of the construction works. However more information is needed to understand how the profit or loss is apportioned between the consultant and the Agency.

3.8 Contractor Appointment - Balfour Beatty

- 3.8.1 The appointment of Balfour Beatty was made on the 20th April 2004. Balfour Beatty was appointed following a competitive tender based on quality criteria as opposed to cost
- 3.8.2 The approach to awarding contracts based on quality recognise the additional skills which contractors (i.e. builders) can bring to a large scheme when involved at an early stage. This approach also allows a more rational approach to risk management.
- 3.8.3 The basis of contract was that Balfour Beatty would be paid the cost they incurred in carrying out the work, but that in addition they would share in the savings or overspend incurred by the Highways Agency on the entire budget of the project. This way, Balfour Beatty is motivated to keep their costs down in order to earn a bonus, but also to carry out the work in a way which minimised the likelihood of increases in costs incurred elsewhere by the agency. To this end, the Highways Agency budget for the work was fixed in the contract and could only be changed by a limited number of events.
- 3.8.4 Following the decision to accelerate the scheme Balfour Beatty worked with Jacobs to agree the final target cost. The agreed target price for construction was £259,199,676. An extensive list of agreed assumptions relating to the target cost was transmitted by Balfour Beatty on the 13th July 2009. These assumptions largely reflected the fact the target cost did not include matters that were beyond the control of Balfour Beatty. Thus the target cost excluded archaeological findings beyond an agreed modest area, changes in the law, actions of 3rd parties and so on.
- 3.8.5 The agreement of this comprehensive list of assumptions allowed the parties to proceed with actual construction in the knowledge that most of the potential areas for dispute had been pre-empted in advance by the publication of the above list.
- 3.8.6 The following documents have been provided in relation to the appointment of Balfour Beatty.
- Balfour Beatty tender submission (October 2003)
 - Specifications (Works Information, conditions of contract) and other tender documents for the construction work
 - The signed form of agreement by deed and dated 20th April 2004
 - Conditions of contract
 - Works information
 - Supplementary Information.

- 3.8.7 A procurement strategy document discussing rationale for an ECI contract has not been provided but the tender and selection processes indicate a structured and professional procurement process.
- 3.8.8 Five contractors had been selected to submit tenders for the construction of this project. Tenders were to take the form of a quality submission. The quality submission covered such matters as programme, methodology, resources, quality management and risk management.
- 3.8.9 Balfour Beatty scored the highest mark on the different quality criteria, and was awarded the ECI contract.
- 3.8.10 The tender submitted by the team of Balfour Beatty and Scott Wilson was evaluated, in accordance with the stipulated evaluation criteria and concluded to be the highest scored compliant quality submission. The tender assessment report records the salient details and outcome of the tender process. The successful delivery partner is notified in an "acceptance of offer" letter. A Highways Agency "Contract Award Certificate" records the primary details of this Contract. In this instance it was signed by the Agency's Procurement Officer. For major contracts a "Tender Assessment Report" is prepared to recommend the tender for acceptance. After this report is accepted, a "Contract Award letter" is prepared confirming the award the contract.
- 3.8.11 A letter was sent to Balfour Beatty by the Highways Agency on the 17th February 2004 proposing 2 changes to the contract information prior to award and enclosing a full set of contract documents which included the proposed changes. It is self evident these 2 changes were accepted by Balfour Beatty and confirmed by the Agency in its letter to Balfour Beatty of the 12th March 2004.
- 3.8.12 The "form of agreement" by deed was signed by the parties on the 20th April 2004. Other documents will also be significant in identifying the details of the contract. The scope of works - the "Scope" or "Works Information" sets out the technical detail of what the supplier is required to do. The "Contract Data" identifies the specific contract clauses which will apply.
- 3.8.13 The following documents have been provided in relation to the finalisation with Balfour Beatty of the agreed target cost of construction work.
- Bill of quantities.
 - Final target cost breakdown
 - Balfour Beatty programme of work
- 3.8.14 HA notice to proceed dated to construction dated 14th July 2009 and confirming target cost of £259,199, 676.

Design changes

- 3.8.15 There have been no significant design changes to date. The compensation events discussed in the next section cover risk items such as Archaeological findings that cannot be quantified in advance.
- 3.8.16 The outcome of the recent public inquiry concerning construction at the southern end of the project will significantly impact the design as it will now result in further access roads being provided as part of this project.

Compensation events

- 3.8.17 The project and financial reports of May 2010 record just over 125 compensation events occurring during the construction to date. 72 compensation events were agreed up to 25th

May 2010. Adjustments are being made to the target price and completion date for these events. A schedule of these events is included at Appendix 4, which also provides a build-up for the cost changes resulting from the events. .

- 3.8.18 The events which have been agreed total £2,263,827, whilst those which have not yet been agreed amount to £1,918,193.
- 3.8.19 The consequence of the agreed compensation events was to change the target price from **£259,199,676** to **£261,463,503** (refer to Appendix 4).
- 3.8.20 The Highways Agency uses a computer based system for managing the contract. Under this system, all communications are made electronically, including the treatment of compensation events. The documents stored electronically in respect of compensation events include the initial notification of the event, the contractor's assessment, the project manager's acceptance or his own assessment, and copies of detailed build up sheets and other communications.
- 3.8.21 We have inspected the electronic contract management system for this contract, and are satisfied that appropriate records of each event have been maintained.
- 3.8.22 We have discussed with HA staff the major Compensation Events which principally relate to services diversions and archaeological remains. These were both anticipated risk items but until excavation commenced it was difficult to predict the actual extent of Roman archaeological findings. However what has been costed to date is well within the contingency allocation for such items.
- 3.8.23 We are satisfied that full and accurate disclosure has been made of the assessment of compensation events on this contract to date.
- 3.8.24 We conclude the documents produced in relation to the compensation events show that the procedures required by the contract for notifying and assessing events are being followed by Balfour Beatty and the Highways Agency. The value of the compensation events is being agreed on an ongoing basis in accordance with the correct contractual mechanism and the Agency's "tracker methodology".
- 3.8.25 The assessment of some compensation events is incomplete, and further costs are likely to be agreed for those events. In any case until the project is completed in 2012 the assessment of compensation events will be an ongoing process.

Programme

- 3.8.26 The relevant programme at the start of construction of the contract by the contractor, shows advance work was due to start on 2nd March 2009, with notice to proceed on the 1st June 2009 and the project to be completed by 19th April 2012. The project report of May 2010 reports a completion date of 19th April 2012 but notes a potential 2 week delay due to service diversions.
- 3.8.27 Detailed programmes for the entire project are provided monthly by the Contractor, As a result, the Highways Agency is able to monitor closely the progress of the works and to assess the impact of any changes as they arise.
- 3.8.28 Furthermore in view of the number of compensation events on this contract it seems clear that efforts have been made by the contractor to recover lost time and to complete the works on or about 19th April 2012 as was envisaged when the contract price and programme was agreed in 2009.

Overview

- 3.8.29 The contractor is required to manage the works using a quality management system. This is a method of working, following an international standard on quality management, which is

aimed at giving a greater level of assurance that the employer's requirements of the project will be met. In addition to this, quality of the work is monitored by Jacobs, who carry out inspections of the work and of the contractor's quality management system.

- 3.8.30 We conclude that the approach used in awarding the contract to Balfour Beatty and in using a consultant to advise on fixing the target price was likely to give the Agency the best price for the work.
- 3.8.31 The additional costs and time identified and compensated for are considered acceptable in a construction project where uncertainties can be expected to arise during construction. Better value for money is achieved by compensating for such risks as they arise rather than expecting the Contractor to shoulder risks that are outside his control.
- 3.8.32 The documents provided demonstrate that the construction works is being carried out in accordance with good practice, and can be expected to provide value for money.

3.9 Project outturn costs.

- 3.9.1 A summary spreadsheet is included at Appendix 5.
- 3.9.2 The detailed tracker spreadsheet shows the consequence of the agreed compensation events which is to change the target price from **£259,199,676** to **£261,463,503** (refer to Appendix 4).
- 3.9.3 The target cost breakdown prepared by EC Harris on the **September 2009** shows a target cost of **£259,199,676**, however VAT, contingency, land, early design and other costs of **£115.8M** take the overall scheme cost to **£375M**.
- 3.9.4 The EC Harris report of May 2010 reports a scheme budget of **£375M** and a projected final cost of **£357.7M** which compares to projected final cost of **£358.2M** the previous month. In fact the September 2009 report included a projected final cost of £362.7M.
- 3.9.5 The monthly updating of the projected final cost is an example of best practice financial reporting as it takes into consideration changes in design, changes in construction, changes in risk and actual spend on an ongoing basis. Thus the projected final cost has decreased from £362.7M in September 2009 to £357.7M in May 2010 (refer to Appendix 5).
- 3.9.6 There are currently discussions ongoing over the value of the compensation events which when agreed will affect the target price (and therefore the profit share). These discussions will continue for the next two years until the project is completed and all potential compensation events have been closed out.
- 3.9.7 We have discussed the disclosed documents with the Highways Agency's project manager, and are generally satisfied that full and accurate disclosure of the likely outturn costs has been made.

Appendices

1. Glossary
2. Material project Information
3. Schedule of documents disclosed
4. Schedule of contract changes
5. Table of cost forecasts and budgets

Appendix 1: Glossary

Accountability: CoST's aim is to enhance the accountability of procuring bodies and construction companies for the cost and quality of public-sector construction projects. The core accountability concept is to 'get what you pay for'. The 'you' in this context applies equally to national governments, affected stakeholders and to the wider public.

Audit: A review of procedures to establish whether work has been carried out as anticipated.

Benchmarking: Comparison of performance against other organisations or providers of similar services, particularly those recognised as undertaking best practice.

Budget: An amount of money allocated to a project or scheme.

Compensation event: An event at the risk of the Employer, which may change the programme or price for the project if it occurs.

Competitive Tendering: Awarding contracts by the process of seeking competing bids from more than one contractor.

Computerised data store: A centrally located computer on which information is stored and made available to those who have been given access to it.

Construction Sector Transparency (CoST) Initiative: An international multi-stakeholder initiative designed to increase transparency and accountability in the construction sector.

Consultant: An organisation or individual who has made a contract to provide services.

Contract: A binding agreement made between two or more parties, which is intended to be legally enforceable.

Contract Documents: Documents incorporated in the enforceable agreement between the Procuring Entity and the contractor, including contract conditions, specification, pricing document, form of tender and the successful tenderers' responses (including method statements), and other relevant documents expressed to be contract documents (such as correspondence, etc.).

Contractor: An organisation or individual who has made a contract to undertake works, supply goods or provide services.

Contract period: An arrangement for the supply of works, goods or services established for a fixed period of time.

Cost estimate: A cost estimate prepared by the buyer of works, goods or services which provides a benchmark or a basis for evaluation and/or negotiation when tenders/offers are received from tenderers. It also serves as an instrument of project planning and budgeting.

Employer: In the context of the CoST initiative, the Procuring Entity awarding construction and consultancy contracts for the project.

Feasibility study: An evaluation of a proposed project to determine the difficulty and likely success and benefits of implementing the project.

Framework Agreement: An arrangement under which a Procuring Entity establishes with a provider of goods, works or services, the terms under which contracts subsequently can be entered into or called off (within the limits of the agreement when particular needs arise).

Material Project Information (MPI): MPI in this context is intended to indicate that information disclosed on a project is sufficient to enable stakeholders to make informed judgements about the cost and quality of the infrastructure concerned.

Offer: An offer can be the positive answer issued by a tenderer in response to a tender invitation, or an announcement to deliver goods, carry out works and/or services to every or a specific buyer

without a specific request or invitation to tender. Also refers to an expression of readiness by a tenderer to enter into a contract.

Procurement: The process of acquiring goods, works and services, covering acquisition from third parties and from in-house providers. The process spans the whole life cycle from identification of needs, through to the end of a services contract or the end of the useful life of an asset.

Procuring Entities (PEs – also referred as clients and contracting authorities): The State, regional or local authorities, bodies governed by public law or associations formed by one or several of such authorities that procure works, goods and services with full or part public funding.

Programme: The projected timing of activities required under the contract.

Quality Management System: Procedures and practices for controlling the quality of the work carried out.

Quotation: A proposed price and programme for work.

Supervision contract: A contract with a consultant to oversee the performance of the contractor on the construction work, to give a level of reassurance to the Employer about the quality of the work.

Specification: It is an essential part of the design, and states how the work should be executed to ensure that it meets the designer's assumptions.

Tender: An official written offer to an invitation that contains a cost proposal to perform the works, services or supplies required, and is provided in response to a tendering exercise. This normally involves the submission of the offer in a sealed envelope to a specified address by a specified time and date.

Tender Documents: Documents provided to prospective tenderers when they are invited to tender and that form the basis on which tenders are submitted, including instructions to tenderers, contract conditions, specification, pricing document, form of tender and tenderers responses

Tender Evaluation: Detailed assessment and comparison of contractor, supplier or service provider offers, against lowest cost or most economically advantageous (cost and quality based) criteria.

Transparency: In the context of the CoST initiative transparency relates to the disclosure of material project information on construction projects.

Value for Money: The optimum combination of whole-life cost and quality to meet the PEs and user's requirement.

Appendix 2 – Material project Information

Stage of project cycle	List of MPI to be disclosed	Project name: M40 Junction15 Procuring Entity: Highways Agency
Project identification	Project purpose	To improve safety and reduce congestion on the A46
	Location	Widmerpool to Newark
	Intended Beneficiaries	Public at large
	Specification	17 mile dual carriageway and associated junctions, bridges etc
Funding	Budget	Construction budget of £171.68M in April 2005 increased to £258.2M in May 2009. Overall scheme budget of £375M in Sept 2009 includes fees, land, VAT etc
	QS's estimate	Projected final cost of £357.7M against £375M budget as at May 2010
Tender process (ECI supervisor and project support)	Tender procedure	Jacobs appointed for initial design and supervision following their previous work on preliminary design / feasibility study in 2001
	Name of main consultant	Jacobs
Tender process (commercial supervisor)	Tender procedure	Review key performance indicators between framework consultants – EC Harris was appointed
	Number expressing interest	Framework appointment
	Number shortlisted	Framework appointment
	Number submitting tender	Framework appointment
Tender process (main contract for works)	Tender procedure	ECI tender on quality basis
	Number expressing interest	At least 5
	List of tenderers	Balfour Beatty, Costain, McAlpine, Mowlem & Skanska
	Number shortlisted	5
	Number submitting tender	5
Contract award (ECI supervisor and project support)	Name of main consultant	Jacobs
	Contract price	£1,397,624
	Contract scope of work	Set out in HA order and attachments dated 20 th October 2009 and Jacobs submission document
	Contract programme	August 2009 – August 10 (1 year rolling framework)
Contract award (commercial supervisor)	Name of main consultant	EC Harris
	Contract price	£130,278

Stage of project cycle	List of MPI to be disclosed	Project name: M40 Junction15 Procuring Entity: Highways Agency
	Contract scope of work	Set out in HA order and attachments dated 28 th May 2010 and EC Harris submission document
	Contract programme	March 2009 – March 10 (1 year rolling framework)
Contract award (main contract for works)	Name of main contractor	Balfour Beatty
	Contract price	£259.2M
	Contract scope of work	Set out in technical specifications, bills of quantities, works information and supplementary information
	Contract programme	Advance works commenced on 2 nd March 2009. Main works commenced on 1 st June 2009 and completion is due 19 th April 2012
Contract Execution (ECI supervisor and project support)	Changes to contract price, programme, scope with reasons	NA as 1 year rolling resource based contract
Contract Execution (commercial supervisor)	Changes to contract price, programme, scope with reasons	NA as 1 year rolling resource based contract
Contract Execution (Main contract for works)	Individual changes to the contract which affect the price with reasons	£2,263,827 agreed value of compensation events (i.e. beyond target contract) as at 25 th May 2010. However an overall saving of £4.6M against the £259.2M target is being reported in May 2010
	Individual changes to the contract which affect the programme, with reasons	Current programmed completion remains 19 th April 2012
	VO's, claims, Early Warnings & Compensation Events	125 compensation event notices issued to May 2010
	Payment certificates	Payment certificates issued at monthly intervals
	Details of any re-award of main contract	None
Post contract completion details (main contract for works)	Actual contract price	Final target price £259.2M
	Total payments made	£56,474,879 certified up to 28 th March 2010
	Actual contract scope of work	Original specification as changed by instructions forming compensation events
	Actual contract programme	Current programmed completion remains 19 th April 2012
Documents to be disclosed		
Feasibility study		HA Project Management Plan document version 4 – May 2010
Financing agreement		HA signed client remit form of 9 th April 2009 refers to a ministerially approved budget of £319M

Stage of project cycle	List of MPI to be disclosed	Project name: M40 Junction15 Procuring Entity: Highways Agency
Procurement Strategy		Project level Procurement strategy March 2009 Audit of decision to adopt ECI not available
Contract Strategy / Type		ECI - Early Contractor Involvement
Tender evaluation report (Main contractor)		Tender assessment report dated Jan 2004
Project evaluation reports (on completion and on-going)		Monthly Project Reports

Appendix 3 – Schedule of documents disclosed

Filename / Document title	Subject of document
Definition and budget for project	
HA A46 Phase 2 version 5 Commissioning Report 130709	Commissioning report (required as per Works Information Vol 2, 3.10).
(HA) Commitments Register following Public Inquiry	Section 23 - Commitments Register following Public Inquiry
HA Works Information Document 060707	Works Information document dated 6th July 2007
HA Site Information Doc 121007	Site Information
BB Schedule of Pre-construction condition survey 130709	Section 25 - Pre-construction condition survey
HA A46 Business Case draft 240410	Business case (marked draft)
HA A46 Project Management Plan V4 010510	Project Management Plan
HA Cost Estimate Spreadsheet 240510	Estimates of Total and Nett Project Costs
Scheme Information pro forma for NRTS (July 04)	Scheme info - background, strategy and milestones at July 2004
Project level procurement strategy March 2009	Project level procurement strategy March 2009
Tender assessment report January 2004	Tender assessment report January 2004
091119 A46 N-W Funding Deal.doc	Details of the funding package between East Midlands Regional Funding allocation, Fiscal stimulus budget and HA budget
091119 A46 N-W Funding Calculator.xls	Funding spreadsheet
Contract for Contract Supervisor and Project Management Support (Jacobs)	
HA Supplier Performance Report (on Jacobs) 300409	Supplier Performance Report - Motivating Success - A Toolkit for Performance Measurement
HA Award Letter for ECI Supervisor (Jacobs) 171207	HA Award Letter for ECI Supervisor (Jacobs) 171207
HA - Transfer of duties For Supervisor from KBR to Jacobs Babtie 290306	Transfer of duties For supervisor from KBR to Jacobs Babtie dated 29th March 2006
HA request Jacobs as ECI Supervisor 080106	HA request to appoint Jacobs
HA appoint Contract Supervisor and PM Support (Jacobs) 201009	HA Order No M238 for Contract Supervisor and PM Support for period 1st Sept 2009 to 31st Aug 2010
HA re-appoint ECI Supervisor (Jacobs) for 52 weeks 211107	(HA request to) re-appointment Jacobs as ECI Supervisor under the Professional Services Framework (PSF)
HA Award Letter for ECI Supervisor (Jacobs) 201206	Award letter

HA Award Letter for ECI Supervisor (Jacobs) - actual date TBC	Supervisor appointment to 31st March 2009
HA email confirming Jacobs to continue 210509	Award email
HA appoint Contract Supervisor and PM Support (Jacobs) 201009 (2)	Contract Supervisor and Project Management Support for the 12 month period from 1st Set 2009 - 31st Aug 2010
HA Project Support Framework (PSF) Conditions of Contract 300106	Project Support Framework (PSF) Agreement - Conditions of Contract
HA PSF Agreement - Operational Guidance Note 250706	Project Support Framework Agreement - Operational Guidance Note. Procurement Directorate dated 25/07/06
Copy of PSF Suppliers - Services list. Type A and B	Framework suppliers matrix of service type and company
MST Pro forma	Appraisal pro-forma for annual kpi review
Contract for Commercial Supervisor (EC Harris)	
HA Award Letter for Commercial Supervision (ECH) 280509	HA Award Letter for Commercial Supervision (ECH) dated 28th May 2009
EC Harris Organisational Chart	EC Harris Organisational Chart
HA A46 EC Harris justification to appoint 081009	EC Harris Justification to appoint
HA Award Letter for Commercial Supervisor (EC Harris) 161009	Award letter
HA Award Letter to appoint Contract Supervisor and PM Support (Jacobs) 201009	Contract Supervisor and Project Management Support for the 12 month period from 1st Set 2009 - 31st Aug 2010
HA Project Support Framework (PSF) Conditions of Contract 300106	Project Support Framework (PSF) Agreement - Conditions of Contract
HA PSF Agreement - Operational Guidance Note 250706	Project Support Framework Agreement - Operational Guidance Note. Procurement Directorate dated 25/07/06
Copy of PSF Suppliers - Services list. Type A and B	Framework suppliers matrix of service type and company
MST Pro forma	Appraisal pro-forma for annual kpi review
Contract for Construction (Balfour Beatty)	
BB Company Guarantee and Insurance Documents 070509	Section 12 - Balfour Beatty's Company Guarantee & Insurance Documents with covering letter and emails
BB (SW-KBR) Tender Submission (incl Cover letter 14-10-03)	Tender Submission and covering letter dated 14th March 2003
HA Changes to Contract Docs letter (to BB) 170204	HA letter re proposed changes to Contract Docs dated 17th Feb 2004 including Form of Tender; Form of Agreement, Contract Data Parts one & two
Project target cost	

BB Final Target Cost (FTC) Assumptions Register 100709	Section 3 - Balfour Beatty's Revised Final Target Cost Assumptions Register. Updated information for "notice to proceed" - 13 July 2009
BB Risk Allowance Register 290509	Section 8 - Balfour Beatty's Risk Allowance Register
BB Target Cost Breakdown (Front Cover Sheet Only)	Section 5 - Balfour Beatty's Target Cost Breakdown
BB Target Cost Summary (Annex 1) 290509	Section 4 - Balfour Beatty's Target Cost Summary Annex 1 in total of £259,199,676
HA Schedule of Departures from Standard Checklist (with Status) 090709	Design Information - Section 7 - Schedule of Departures from Standard "Design" (13 Departures plus 17 relaxations in total) granted up to 9th July 2009
BB Scheme Asbestos Management Plan 010409	Section 20 - Scheme Asbestos Management Plan (SAMP) dated April 2009
SW Report on Impact of New Standards on Scheme 010309	Section 24 - Scott Wilson's Implementation Report for New Standards Report No: PD0285/2/002 dated March 2009
HA Notice To Proceed To Construction and Agreed Target Cost 140709	HA Letter confirming contract changes dated 14/07/09 & the "Notice to Proceed to Construction"
SW Site Extent Index of Drawings and Limitations of Use Report 070709	Section 11 - Site Extent Index of Drawings PD0285/SE/25001000-021
HA Board Paper - Approval of a Construction Phase Budget 190509	Board Paper - A46 Newark to Widmerpool (Approval of a Construction Phase Budget)
Project outturn cost	
BB A46 Application for Payment No 74 280510	BB Application for Payment to 28/5/10
HA A46 Payment Certificate No 74 020610	HA Payment Certificate 2/6/10
Scott Wilson A46 Email advising HA Approved BCR=15.1 190509	Scott Wilson A46 Email advising HA Approved BCR=15.1 190509 The revised BCR is 15. 1. Previously it was 18.6 This figure is based upon a scheme budget of £383m (previously £365m)
BB Bill of Quantities Summary 220409	Section 5b - Updated Information for Notice To Proceed Pack-21 May 2009 2b.
BB-HA draft Construction Prog 011208	Section 10 - Balfour Beatty's draft programme indicating completion date of 19th April 2012 - Clause 31
BB Preliminaries - GE Book 290509	Section 5a Balfour Beatty's Preliminaries (GE Book). General Expenses
BB (HA-SW) Time Chainage Programme 210509	Section 6 - Balfour Beatty's Time Chainage Programme 21st May 2009
HA's Build up of Costs - Annex 5 - (Front Cover Sheet Only)	" Section 9 - HA's Build up of Costs - Annex 5 - (This is a restricted document that cannot be distributed externally)"

HA Risk Register of Highways Agency Risks (undated)	Section 13 - HA's Risk Register of Highways Agency Risks
SW (HA) Phase 2 Commissioning Report 130709	Section 2 - Phase 2 Commissioning Report 13th July 2009
BB Report on Statutory Undertakers Diversions Progress 100609	Section 28 - Statutory Undertakers Diversions Progress Report 10/6/09
BB-HA Progress Report No 55 dated 4 May 2010	Progress Report No 55 dated 1/5/10
HA A46 Newark Phase Remit 060409	Phase: Development - Stage 5 - Construction Preparation
HA Client Scheme Requirements 060409	HA Client Scheme Requirements 060409
HA A46 Client Phase Remit 131109 -	Phase: Construction - Stage 6
ECH Estimated Total Spend Report 051009	MMA Commentary Period Ending September 2009
HA Acceptance of Jacobs Rates Increase 041006	HA acceptance of Jacobs rates increase 041006
HA Post PI Economic Appraisal Report 010409	Post Public Enquiry Economics Appraisal Report
HA Sign off Phase Budget 240510	HA budget sign off by commercial division
HA Commercial Reporting and Monitoring System 310510	Report No 11 - to end of May 2010
ECH Scheme Financial Reporting 020610 (BAMS) May 2010	Comprehensive financial report - current projected scheme cost £358M, several worksheets containing full financial information. Includes a Dashboard which displays a summary (very good practice).
HA Change Control Tracker 250510	HA Change Control Tracker 250510
BB Summary Programme 190809	BB Summary Programme 190809
BB Summary Programme 130510	BB Summary Programme 130510

Appendix 4 – Schedule of contract changes

	Initial target cost	£259,199,676.00
CE Ref.	Details of Compensation Event (note some CE's withdrawn hence gaps in reference numbers)	Agreed Amount £ (a blank indicates matter still under discussion)
1	Directional Drilling to facilitate the BT SU diversion at Station Road within the construction programme constraints	31,054.36
2	Production of hard copies of drawings to assist in the more timely submission of detailed C4 estimates	6,236.72
3	Accommodation work for replacement of old training area in carriageway works at Syerston Airfield	34,879.78
4	Temporary fencing required due to accelerated start	44,326.46
5	Site clearance operations disrupted/fragmented due to accelerated start (land access not gained for all areas at once)	37,073.21
6	Partial demolition of burnt out building for safety and environmental reasons	3,179.27
7	Construction of access road and temporary car park to facilitate the 'Sod Cutting' ceremony as requested by the HA	32,655.43
8	Additional scope of work in connection with new fencing and trapping due to Natural England licensing requirements	37,527.57
9	Pre-construction Side Road Traffic Count survey required by the HA	7,324.38
10	Trial Holes and CCTV surveys required by Severn Trent in order to establish the information necessary for production of C4 estimates	22,311.42
11	Asbestos identified in buildings for demolition	4,525.32
12	Following an asbestos survey at Roundhill Spinney, contamination has been found. As a result the topsoil and contaminated	31,882.38
13	Asbestos management plan for existing A46	5,718.41
14	Grantham Canal lock condition survey	
15	Reinstate website for PI documents	2,314.85
16	Provision of asbestos surveyor to accompany to accompany bat survey	
17	Geophysical survey on DE land	7,160.81
18	Further intensive archaeological Metal Detection works at Thorpe following initial metal detection works highlighted an area of medieval artefacts	14,742.92
19	Archaeological SMS works at Flintham Junction	9,712.91
20	Archaeological SMS works at Cotgrave	58,543.79
21	Archaeological SMS works at Syerston	6,089.51
22	Archaeological SMS works at Syerston	5,260.82
23	Archaeological SMS works at Elston	9,731.29
24	Archaeological extension of SMS works at Moor Lane South	5,734.94
25	Archaeological SMS works at Moor Lane North	16,430.49
26	Archaeological SMS works at Moor Lane North	8,788.08
27	Archaeological extension of SMS works at Hawton Lane South	13,879.83
28	Archaeological SMS works at Cropwell Road	5,734.94
29	Archaeological SMS works at Station Road	5,734.94
30	Archaeological SMS works at Moor Lane North	5,794.33
31	Archaeological SMS works at High Thorpe	5,794.33
32	Archaeological Strip Map and Sample works at Hawton Lane South	5,751.91
33	Fencing to perimeter of Allsops scrap yard	3,439.43
34	Further trial trenching required at Hawton Lane.	6,200.53

35	Network Rail have confirmed that they require an alternative access where the new road severs the existing access off the A46. Network Rail did not identify this requirement within Phase 1, therefore no allowance has been included.	
36	It is proposed to undertake a 3D non intrusive survey at Flintham, where the most concentrated area of stats diversions is planned	25,833.96
37	In order to investigate geophysical anomalies of a potential archaeological nature and potential false negatives, archaeological trial trenching is required as described in Report N0: PD0285/5.5/059.	
38	Further strip map and sample as described in Report No: PD0285/5.5/065	5,473.49
39	Further strip map and sample as described in Report No: PD0285/5.5/070	10,546.27
40	The number of days with rainfall greater than 5mm has exceeded the 1 in 10 year amount for the month of July 2009 (see attached monthly summary from Met Office)	48,621.26
41	A targeted Archaeological Watching Brief on the topsoil strip between chainage 24,750 and 26,000 is required to fully mitigate impacts of the scheme in this area.	5,275.62
42	Following initial Strip Map and Sample works at Saxondale Archaeological features were identified. To Facilitate the topsoil strip for construction a strategy of stripping the topsoil under watching brief supervision was agreed with the Senior Archaeologist for NCC.	47,143.35
43	The area between chainage 23,150 and 24,450 has been subject to Metal Detection, Strip Map and Sample, and Trial Trenching works. During Strip Map and Sample Works an Archaeological feature was revealed. To facilitate the topsoil strip a targeted Watching Brief strategy will be used.	8,200.62
44	Requirement to carry out traffic turning counts at Widmerpool Roundabout as current survey data is near to expiry date.	4,652.79
45	Topographical survey's are enquired which form part of the archaeological mitigation works which could not be accessed during phase 1 when the survey's should have been carried out.	4,871.46
46	Time spent by Scott Wilson in agreeing Accommodation Works with the District Valuer and Land Owners, which should have been carried out in Phase 1B, which was curtailed because of the accelerated start.	44,311.80
47	The private water main serving Jerico Farm will be within the new highway boundary which means the HA will have to liaise within the land owner of Jerico Farm. This requires to be re-routed/replaced as accommodation works and it is proposed that the works be undertaken to adoptable standards in order to minimise future maintenance issues foe HA.	70,617.79
48	Site clearance operations adjacent to the existing A46 had to be undertaken outside normal working hours.	15,716.42
49	Building condition survey to be carried out on Hawton Lane properties	9,450.65
50	Asbestos identified in buildings for demolition	4,512.10
51	Detailed design for technology equipment and associated infrastructure layout.	188,937.00
52	Further SMS work to be carried out between chainages 18,450 and 18,750. Described in report no. PD0285/5.5/077	4,804.81
53	Further SMS work to be carried out between chainages 10,500	29,199.92

	and 11,300. Described in report no. PD0285/5.5/037	
54	Further SMS work between chainage 9,500 and 9,700, Further described in Report No: PD0285/5.5/055	5,205.52
55	Area identified on for further archaeological Works (Haul Road Strip/Roehoe Wood) will be subject to a targeted archaeological watching brief during the stripping of the topsoil for the haul road by the Earthworks Contractor. On completion a site inspection to be carried out. Further described in report no. PD0285/5.5/064	
56	Further SMS work to be carried out between chainages 13,000 and 13,500. Further described in report no PD0285/5.5/076	4,804.81
57	Additional site accommodation requirements for the Archaeologists due to an increase in the duration of their works.	6,012.35
58	Additional site security requirements for the Archaeologists due to an increase in the duration of their works.	
59	Further archaeological work to be carried out between chainage 13,600 and 14,400, involving trial trenching. Further described in report number PD0285/5.5/063	3,984.87
60	Further archaeological work between chainage 11,250 and 12,250. This is described further in report no. PD0285/5.5/034	265,378.85
61	Extension of SMS work that were carried out to the south of elston Lane as a result of archaeological features initially identified in SM2028. Further described in report no. PD0285/5.5/060	
62	Additional SMS works adjacent to Moor Lane Overbridge	
63	A new pumping station (STS 5 - STS 7a) required at Farndon junction, will require planning permission. Severn Trent (ST) believe that this could take a duration of 6 months (min) to 12 months to achieve which will not commence until the design is complete.	
64	The Virgin Media (VM) plant (fibre optic cable) identified as VM1 is in close proximity to earthworks operations between ch2900 and ch4500. VM generally do not allow any ground to be mechanically excavated within 2.0m of this type of plant.	16,890.49
65	Virgin Media diversion at ch 2500	
66	Central Networks diversion at ch 2480	
67	Central Networks diversion at south end	14,275.74
68	Central Networks diversion at ch 1940/2880	18,562.83
69	Central Networks diversions at ch 5100/3300	16,552.66
70	Earthworks mound left in place due to late diversion of electricity supply at Lings Farm	20,011.29
71	Central Networks diversion at ch 11200	4,785.55
72	Central Networks diversion at Lings Farm	
73	Central Networks diversions at ch 890/960	5,164.82
74	Central Networks diversion at ch 21050	
75	Central Networks diversions at north end ch 21050-27820	35,622.50
76	Further SMS works between ch 27,100 - 27,350	
77	Detailed archaeological excavation at Margidunum B following Strip Map and Sample works.	164,753.07
79	2nd heap of Asbestos Removal at Roundhill Spinney	9,538.38
80	Removal of rubble contaminated with Asbestos behind the Squash Courts at RAF Syerston	21,481.85
81	S/C BB Ground Engineering Ltd experiencing water strikes whilst boring piles at Hawton Lane approx 11m below ground	21,356.63
82	Network Rail Insurances	49,549.86
83	Foul sewer diversion at Flintham	317,601.47
84	Asbestos cement sheet being uncovered during vegetation clearance at Fosse Farm	
85	The number of days with rainfall greater than 5mm has	

	exceeded the 1 in 10 year amount for the month of November 2009	
86	BB's requirement to provide additional supervision for SU diversion works during Night Shifts	24,980.82
87	Traffic Management to facilitate the Virgin Media diversion ref VM1.	40,798.43
88	Further archaeological mitigation works around Margidunum	4,038.64
89	As confirmed in the FTC Clarifications "Accommodation Works" are excluded from the FTC and are to be treated as a Compensation Event.	
90	Removal or relocation of existing weather station and other existing technology	4,859.44
91	Accommodation works - Global Crossing cable works at Bingham Rail Bridge	42,757.24
92	Cropwell Court Access Track - Requirement to remove 170m of existing track	
93	Further service investigations required by Severn Trent Water at Farndon Roundabout and Flintham Junction 2.	15,025.23
95	Large amount of services at Farndon - delay to detailed design process and increased risk of damage to services during works-could have effect of STATS budget & Construction Programme	
97	Directional Drilling to provide ducts to facilitate Central Network diversions referenced EME 7,8 and 9	
98	Accommodation Works - NWT Woodhouse	
99	Accommodation Works - DT & P Herrick	
100	Accommodation Works - Cliffe Investments	
101	Accommodation Works - T Broadley	
102	Accommodation Works - SVM Herrick	
103	Accommodation Works - Trustees of TA Barton	
104	Accommodation Works - R & P Mattock	
105	Accommodation Works - Allsop Metals	
106	Accommodation Works - FC Bradwell	4,600.97
107	Accommodation Works - J & P Guthrie	8,250.07
108	Accommodation Works - DT & P Herrick	
109	Accommodation Works - Secretary of State	12,324.81
110	Replacement of Septic tank at Jerico farm	16,051.47
112	SU Diversions to be carried out in order to maintain the current construction programme.	
113	SU Diversions to be carried out in order to maintain the current construction programme.	12,268.74
114	SU Diversions to be carried out in order to maintain the current construction programme.	
115	SU Diversions to be carried out in order to maintain the current construction programme.	
116	SU Diversions to be carried out in order to maintain the current construction programme.	
117	Supplementary Orders and exhibitions as a consequence of PI.	
120	SU Diversions to be carried out in order to maintain the current construction programme - Directional Drilling	
121	SU Diversions to be carried out in order to maintain the current construction programme.	
122	SU Diversions to be carried out in order to maintain the current construction programme - Directional Drilling	
123	SU Diversions to be carried out in order to maintain the current construction programme - Directional Drilling	
124	SU Diversions to be carried out in order to maintain the current construction programme - Directional Drilling	
125	SU Diversions to be carried out in order to maintain the current construction programme.	25,794.92

126	SU Diversions to be carried out in order to maintain the current construction programme.	
127	Detailed design for technology equipment and associated infrastructure layout.	
128	SU Diversions to be carried out in order to maintain the current construction programme.	19,031.26
129	CDM duties carried out by BB on behalf of Statutory Utilities	2,625.28
130	NCC additional signs requirements	
154	Scott Wilson EW - Agents of Crown Estates have requested detailed documents and information from SW in order to advise HA on their client's claim	5,181.90
155	Traffic Management to facilitate the BT diversions ref: BT9 and BT14.	
	Additions / omissions agreed to 25th May 10	£2,263,827.43
	Revised target cost	£261,463,503.43

Appendix 5 - Table of cost forecasts and budget

A46 Newark - Windmerpool CASHFLOW PROJECTION (May 2010)		Budget figure presented at HIB	Current Anticipated Final Cost	Previous Anticipated Final Cost
BBCEL FTC Settled Figure as of 29 May 09	Project Overhead	51,871,912	51,079,940	51,079,940
	Design	7,751,214	7,751,214	7,751,214
	Management Costs	6,348,802	6,348,802	6,348,802
	Traffic Management	7,569,133	7,569,133	7,569,133
	Site Clearance & Fencing	4,179,755	4,529,755	4,529,755
	Road Restraint Systems	5,413,629	5,413,629	5,413,629
	Drainage, ducts	23,157,297	22,675,074	22,675,074
	Pavements	53,607,160	52,207,160	52,207,160
	Kerbs Footways & paved areas	8,079,676	8,079,676	8,079,676
	Earthworks	30,577,895	30,577,895	30,577,895
		3,459,458	3,459,458	3,459,458
	Landscaping & Ecology	3,670,025	3,670,025	3,670,025
	Structures	31,233,441	29,145,434	29,145,434
	Fee	8,830,488	8,830,488	8,830,488
	Adjustment Figure	14,050,115	12,518,678	12,935,591
BBCEL Budget / Current / Previous AFC	BBCEL Costs	259,800,000	253,856,361	254,273,274
	Accommodation Works		2,400,000	2,400,000
	Compensation Events		2,263,827	1,977,920
	Early Warnings		2,782,173	2,226,038
	Anticipated Project Pain/Gain		2,671,657	2,470,891
		259,800,000	263,974,018	263,348,123
Stats	All Direct SU's	S 13,950,000	12,289,430	13,066,216
EA Phase 2 costs	Employers Agents	S 3,850,000	3,961,265	3,853,236
HA direct Phase 2 costs	Jade Press etc	S 200,000	832,471	832,471
Historic Costs Options Phase	Prior 1st April 2009	S 7,200,000	7,200,000	7,200,000
Historic Costs Development Phase	Prior 1st April 2009	S 11,600,000	8,031,943	8,031,943
Historic Costs Accelerated Construction Costs	Prior 1st April 2009	1,100,000	1,100,000	1,100,000
Development Phase residual Costs	Phase 1B costs	S 250,000	-	0
Winter Maintenance	Future Years	250,000	250,000	250,000
HA Employers Risk	Future Years	S 5,955,850	7,697,500	8,096,458
		S		
HA Budget taken to HIB {excluding LAND, NR VAT}		304,155,850	305,336,627	305,778,447
Non Recoverable VAT		S 46,619,150	36,043,356	36,101,345
Total monthly spend excluding land		350,775,000	341,379,982	341,879,792
New Technology			2,489,796	2,510,138
Weather Stations	S		-	0
ANPR				
Land CPO		19,759,200	10,255,056	10,255,056
Land Blight		1,975,215	2,469,203	2,469,203
Land part 1 Claims		2,165,585	1,075,000	1,075,000
Land Non recoverable VAT	S	225,000		
Total monthly spend including land		374,900,000	357,669,038	358,189,188
HA Budget taken to HIB {inclusive of LAND, NR VAT & Reduction in VAT}		374,900,000		



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