

# WHITCHURCH BRIDGE COMPANY TOLL APPLICATION DATED 5<sup>th</sup> NOVEMBER 2014

## Bridge Reconstruction Project Management

### 1. Introduction

1.1 For the reasons given in the 2008 Toll Application the Bridge was reconstructed in 2013-2014. The Company's Project Manager throughout has been Oxfordshire County Council.

### 2. Timeline

2.1 Key dates in the Reconstruction Project are as follows:

Date	Event
2 <sup>nd</sup> May 2005	Pre-Application Meeting with SODC to discuss Planning issues, in particular on Conservation matters
19 <sup>th</sup> May 2008	Further pre-Application Meeting with SODC and OCC
May – Oct 2008	Informal consultation with Environment Agency, and initial architectural and engineering design and cost estimates
31 <sup>st</sup> October 2008	Toll Application submitted
2 <sup>nd</sup> /3 <sup>rd</sup> June 2009	Public Inquiry into 2008 Toll Application
12 <sup>th</sup> October 2009	Toll Order issued for increase in regulated Tolls
26 <sup>th</sup> October 2009	New Toll rates implemented
3 <sup>rd</sup> May 2011	Planning Applications submitted to SODC and WBC
7 <sup>th</sup> March 2012	Decision Notice granting Planning permission (subject to conditions) issued by WBC
31 <sup>st</sup> May 2012	Decision Notice granting Planning permission (subject to conditions) issued by SODC
1 <sup>st</sup> November 2012	Formal Consent (subject to conditions) from Environment Agency
June 2012 – January 2013	Detailed engineering design and preparation of tender documentation (bases on NEC3 Option C model) by Atkins
January 2013	Tender documentation issued to 6 selected contractors by OCC
April 2013	Bids evaluated as per NEC3 and Birse Civils Ltd (now known as Balfour Beatty) appointed as main contractor
June 2013	License agreements concluded with Pangbourne Parish Council and Pangbourne Medical Practice for the use of their land
29 <sup>th</sup> July 2013	Work on site commences with the construction of the contractors' compound on Pangbourne river meadow
3 <sup>rd</sup> October 2013	Bridge closed to road traffic
2 <sup>nd</sup> November 2013	River below Bridge closed to river traffic
20 <sup>th</sup> December 2013	Environment Agency issues Strong Stream Warning for the River Thames at Pangbourne, causing the Contractor to suspend all work on and above the river
17 <sup>th</sup> March 2014	Environment Agency withdraws Strong Stream Warning. Contractor remobilises and recommences work on and above the river
1 <sup>st</sup> April 2014	River below Bridge reopened to river traffic
19 <sup>th</sup> September 2014	River re-opens to all road traffic
14 <sup>th</sup> November 2014	Clearance of contractors' compound completed. Area fenced as agreed with Pangbourne Parish Council
April 2015	Grass seeding by the contractor: area remains fenced off until grass established.

SODC = South Oxfordshire District Council

OCC = Oxfordshire County Council

WBC = West Berkshire Council

### **3 Contract Model**

3.1 The Company, as client, accepted the recommendation of OCC in consultation with Atkins that the tender and contract be managed within the framework of the "NEC Engineering and Construction Contract (ECC), 3rd edition (June 2005), Option C - Target Contract with Activity Schedule". This model was recommended as the most suitable for the reconstruction works taking account of the specific risks and constraints associated with the works, which included:

- The Environment Agency specified that the works must be undertaken over the winter months to minimise inconvenience to river users: in particular, the river closure period was limited to 2nd November 2013 to 31st March 2014 (see Appendix 1 for details of consultation with the Environment). The winter months are of course the highest risk period for high river levels and flows.
- The only available location for the contractor's compound was on Pangbourne river meadow, which is flood plain and thus liable to flooding particularly in winter
- Because the Bridge is Grade II listed and to comply with Planning requirements the design of the reconstructed Bridge retains the side-girders and other visually-important components which thus needed to be either retained or removed carefully without damage during the demolition.
- Because the Bridge was life expired with a load assessment of only 7.5 tonnes, heavy plant could not be used on the Bridge deck for the demolition or reconstruction works.
- Most works, including heavy lifts and pile drilling, had to be done from river-mounted plant and was thus at risk from adverse river conditions ie high levels and/or flows and to a lesser extent from high winds.
- Access to the site is limited by the road layout in Pangbourne and by the railway overbridge with a headroom of only 11 feet (3.33 metres)

3.2 Six suitable companies were invited to tender for the contract after expressing interest. Of these, 1 withdrew at an early stage because of the perceived risks, and 1 other effectively withdrew at tender evaluation stage because of a non-compliant bid driven by the perceived risks. The remaining bids were evaluated in accordance with NEC3 processes on both quality and financial criteria, and the winner was Birse Civils Ltd, now known as Balfour Beatty Ltd. The contract was duly awarded in April 2013.

3.3 Key NEC3 roles were appointed by the Company (as Client) as follows:

Project Manager	OCC
Designer	Atkins
Contract Supervision	Atkins

### **4 Project Management and Cost Control**

4.1 In accordance with the Contract a detailed Project Plan was produced by Balfour Beatty and approved by the Client's Project Manager. This Plan demonstrated that the contractor had a robust and viable plan for completing the works within the Contract.

4.2 Flooding was of course recognised as a significant risk. A Flood Probability Study was commissioned from Jacobs in 2009 from which it was concluded that a 1 in 5 year flooding event would translate into 18 lost working days on site. The Contract stipulated that the Contractor should carry this risk: the risk of further delays would be shared with the Company as client as per the Contract model. The Contractor's Plan included provision for this.

4.3 Each month the Contractor submitted a detailed Payment Assessment in accordance with NEC3 processes. Each of these was scrutinised and amended if necessary by the Company's project management team, in consultation with the Contractor as necessary, after which a Payment Certificate was produced and certified by the Project Manager. The Contractor produced an Invoice against each Payment Certificate which was then paid by the Company. The Company is thus satisfied that it only made payments where there was a clear audit trail back to costs actually and properly incurred and certified.

- 4.4 Each month a Progress Meeting was held on site chaired by the client's Contract Supervisor, the purpose of which was to identify and resolve issues which may affect the delivery of the Project on budget and on time. The contractor produced written Progress Reports prior to each meeting giving details of physical progress, financial information, outstanding issues etc. and Minutes were produced and circulated after each meeting and used as a basis for ensuring that agreed actions were taken. Progress meetings were attended by:
- The client's Contract Supervisor (as Chairman)
  - The client
  - The client's Project Manager
  - The client's Designer
  - The main Contractor's Project Manager
  - The main Contractor's Contract Manager
- 4.5 A week after each Progress Meeting, and after the Minutes from it had been produced, the Client held a Company Project Meeting to discuss the outputs from each progress meeting and to seek further clarification etc from the client's Project Manager and Contract Supervisor on issues of concern. The client also gave guidance to the Project Manager as permitted under NEC3. These meetings were attended by:
- The 3 executive directors of the Whitchurch Bridge Company (with the Company Chairman as Chairman)
  - The client's Project Manager
  - The client's Contract Supervisor
- 4.6 The Company is very pleased with both the design and build quality of the reconstructed Bridge, which retains its key visual characteristics whilst meeting current highway standards.
- 4.7 The Company acknowledges the professionalism and expertise of its Project Manager, Designer and Contract Supervisor. The Company is satisfied that the Project was properly managed and that costs were properly controlled.

## **5 Costs**

- 5.1 At the time of the 2008 Toll Application the estimated Bridge reconstruction cost (at 2008 prices) was as follows.

Overall Reconstruction cost	£2,742,279
VAT (at 17.5%)	£ 479,899
<b>Total</b>	<b>£3,222,177</b>

This would be funded as follows:

Bridge Replacement Fund and operating income	£2,222,177
Bank Borrowing	£1,000,000
<b>Total</b>	<b>£3,222,177</b>

- 5.2 In January 2013, after allowing for a temporary footbridge instead of a ferry, higher than expected costs on Planning, the preparation of detailed engineering design and tender documentation the estimated Bridge reconstruction cost (at 2013 prices) was as follows (Costs invoiced after 11 January 2011 incurred VAT at 20%):

Overall Reconstruction cost	£3,420,000
VAT	£ 680,000
<b>Total</b>	<b>£4,100,000</b>

This would be funded as follows:

Bridge Replacement Fund and operating income	£3,000,000
Bank Borrowing	£1,100,000
<b>Total</b>	<b>£4,100,000</b>

5.3 After contract award in April 2013 the estimated reconstruction costs (at 2013 prices) were:

Overall Reconstruction cost	£3,700,000
VAT	£ 700,000
<b>Total</b>	<b>£4,400,000</b>

This would be funded as follows:

Bridge Replacement Fund and operating income	£3,000,000
Bank Borrowing	£1,400,000
<b>Total</b>	<b>£4,400,000</b>

5.4 During the Project six specific issues caused significant cost increases as follows:

- Service diversions by the utility Companies at the start of the project were delayed because West Berkshire Council formally stopped these works on several days as they perceived that these works would conflict with their own streetworks in Pangbourne. Planned slots were thus lost and had to be reprogrammed:
- Demolition was delayed because the original method statement had to be reviewed in the light of structure condition issues which were found during the early stages of the demolition works.
- Exceptionally adverse river conditions between December 2013 and March 2014 prevented any work being carried out on site for 11 weeks.
- The Environment Agency's requirement to open the river for navigation as from 1st April 2014 necessitated a fundamental rethink of how the works could be completed safely while maintaining a 7m wide navigation channel as required by the Environment Agency. This reassessment included the provision of an additional crane and out of hours working.
- The piling sub-contractor raised concerns, subsequently found to be unfounded, about the quality of the chalk coming up from below the riverbed. As a precautionary measure piling was halted while additional ground investigations were undertaken.
- Service reconnections by the utility Companies at the end of the project were not completed within the timescales that they had discussed and agreed with the Contractor.

5.5 The combined effect of these six issues was a 5 month delay in re-opening the Bridge, to September 2014. Final costs estimated in April 2015 are:

Overall Reconstruction cost	£5,500,000
VAT	£1,000,000
<b>Total</b>	<b>£6,500,000</b>

This is funded as follows:

Bridge Replacement Fund and operating income	£3,200,000
Bank Borrowing	£2,800,000
Shareholder Funding (see paras 5.6 and 5.7)	£ 500,000
<b>Total</b>	<b>£6,500,000</b>

5.6 The shareholder funding came from the decision by the Company in June 2014 to raise more finance. Following discussions with its legal and financial advisers the Company introduced a scheme of Unsecured Convertible Loan Notes up to a value of £600,000. An interest rate of 6 % per annum was decided upon, reflecting the unsecured nature of the notes and the fact they could not be redeemed until after the Barclays loan had been repaid.

5.7 Because of financial regulation issues this scheme was a private offer to the Company's shareholders only. The scheme was not fully subscribed, perhaps reflecting shareholders views on the interest rate, unsecured status etc of the Loan Notes.

## **6 Bank Borrowing**

- 6.1 The Company is a long standing customer of Barclays Bank Ltd. The Company started informal discussions with Barclays in 2009 on a loan of £1 million towards the expected reconstruction costs of £3.22 million. Barclays were supportive.
- 6.2 The Company submitted a formal document to Barclays in December 2011 seeking a loan of up to £1.4 million, although at this stage it was expected that only £1.1 million would be required. Barclays agreed in principle: there followed a period of discussion, negotiation and finally agreement on terms.
- 6.3 During 2012-2013 various legal processes were completed to give Barclays the securitisation they needed to deliver the loan. Barclays also appointed an independent monitoring surveyor – WSP – to monitor the progress of the works and payments made by the Company and to report back to them.
- 6.4 During the floods in January-March 2014 Barclays, alerted both by WSP and their own understanding of the flood-related risks to the works, contacted the Company seeking more information on the progress of the works and the financial implications of the delays. Barclays understood the exceptional circumstances faced by the Company and agreed in principle to increase the loan to ensure that the works could be completed.
- 6.5 During the works the Company provided detailed progress and financial information to WSP (acting on behalf of Barclays) on a monthly basis. During 2014 Barclays remained supportive and when the final costs of the works were known agreed a loan amount of £2.8 million.
- 6.6 In late 2014 the Company agreed terms with Barclays to “fix” (ie a fixed interest rate for a fixed period of time) approximately 75% of the loan. This protects the Company from unpredictable interest rate rises in the future, thus removing the uncertainty of loan repayment costs from business planning. Barclays also agreed to extend the repayment period to 15 years, which is generous for a commercial loan of this type.
- 6.7 The Company has received excellent advice and support from Barclays and is satisfied that it has secured the best possible deal in terms of type of loan, repayment period and interest rates.

## **7 Conclusion**

- 7.1 The Bridge has been successfully reconstructed with a design life of not less than 100 years. However, the delays caused mainly by the exceptional flooding in early 2014 resulted in significant cost increases and thus increased Bank and other borrowing which has to be repaid out of Toll revenue.
- 7.2 Loan repayments will be significantly more than that expected not only at the time of the last Toll Application in 2008, but at all times subsequently up to as late as December 2013 (ie just before the floods). It for this reason that an increase in Tolls is required and sought as set out in the Toll Application.

GW

## Appendix 1 – Consultation with Environment Agency

- 1 Letter from OCC to EA dated 20<sup>th</sup> June 2008
- 2 Letter from EA to OCC dated 15<sup>th</sup> July 2008
- 3 Notes of meeting between EA and OCC dated 15<sup>th</sup> September 2008
- 4 Notes of meeting between EA and OCC dated 23<sup>rd</sup> April 2010

EA = Environment Agency  
OCC = Oxfordshire County Council



Environment Agency  
Red Kite House  
Howberry Park  
Wallingford  
Oxfordshire  
OX10 8BD

Tel: 01865 815700  
Fax: 01865 815085

20 June 2008

Attn; Lewis Purbrick (By letter & e-mail)

My ref: MJBr/3.1.0.148      Your ref:

**Please ask for: Martin Brain**

**Direct line: 01865 815832**  
[martin.brain@oxfordshire.gov.uk](mailto:martin.brain@oxfordshire.gov.uk)

Dear Sir,

**Whitchurch Toll Bridge, Pangbourne**

As you will be aware the Whitchurch Toll Bridge is privately owned by The Company of Proprietors of Whitchurch Bridge. The County Council was appointed by the Bridge Company in 1997 to act as their consultant in providing engineering advice in relation to the bridge. The bridge dates from 1901 and carries the B471, but has a 7.5t structural weight limit imposed due to its condition. Corrosion will continue to make this worse and so the Bridge Company are intending to carry out substantial reconstruction, but not before the year 2013.

The bridge is a Grade II Listed Structure and is situated within the Whitchurch Conservation Area. A planning application will therefore be submitted to the District Council and preliminary discussions have already been held with South Oxfordshire DC. However, on behalf of the Bridge Company we should also like to have early discussions with the Environment Agency to discuss navigation, ecology and other aspects which would have a bearing on the timing of the construction.

Outline proposals have been prepared in conjunction with Jacobs, our engineering and architectural consultant and accordingly I attach the following drawings for your information;

- A 1:2500 Location Plan
- Drwg. No. B0479000/WHT/STR/001 Rev. P2 – Existing General Arrangement.
- Drwg. No. B0479000/WHT/STR/002 Rev. P2 – Proposed General Arrangement.
- Drwg. No. B0497000/WHT/STR/003 Rev. P3 – Proposed Cross Section.

---

**Oxfordshire County Council is a partner in Oxfordshire Highways**

The listed status imposes significant planning and structural restrictions and therefore the proposals have been prepared with the intention of minimizing alterations to the overall appearance of the bridge, whilst at the same time upgrading the structure in accordance with current engineering design standards to give a new 120 year design life.

You will therefore see from the drawings that all 4 spans will be retained to their current waterway widths and that the existing headroom will also remain unaltered. The present main external parapet girders are being retained, but new longitudinal steel beams and a concrete deck will be incorporated to support the carriageway. As a result the river piers will be modified to support the new beams and additional piling will be required. The fenders around the piers will also be enhanced. There will be no alteration to the overall width of the bridge.

The logistics of the reconstruction will be considerable due to the difficult access and the only realistic location for the contractor's compound will be on Pangbourne Meadow to the south east of the bridge. Discussions on that issue will be held with West Berkshire Council and Pangbourne Parish Council in due course.

Formal Consent will of course be required from the Environment Agency, but at this stage I should like to have an initial meeting with you and your other colleagues who would have an interest in the relevant issues. Therefore, please circulate the attached details within the Environment Agency as appropriate. Ideally I should like to meet mid July.

Yours faithfully,

Martin Brain  
Principal Engineer – Bridges



Mr Martin Brain  
Oxfordshire County Council  
Speedwell House Speedwell Street  
Oxford  
Oxfordshire  
OX1 1NE

**Our ref:** WA/2008/104730/01-L01

**Your ref:** -

**Date:** 15 July 2008

Dear Mr Brain

**SUBSTANTIAL RECONSTRUCTION WHITCHURCH BRIDGE  
WHITCHURCH TOLL BRIDGE, PANGBOURNE**

Thank you for your consultation, which we received on 23 June 2008. I apologise for the delay in my response.

We are pleased to take part in pre-development discussions. We encourage this process to help to shape future applications.

We have reviewed the submitted drawings and document and have the following comments to make.

With regard to flood risk and drainage, our main concern with this proposal is the likelihood of an increase in flood risk, due to the impedance of flows. This could occur as an ongoing problem due to the new design itself or as a temporary problem during the construction phase. From the information submitted so far, it appears that the new design will not cause a significant ongoing impedance of flow. However, it is imperative that a detailed method statement for the works is produced, which demonstrates that the impedance of flows and increases in flood risk will be minimised during the construction phase.

With regard to groundwater and contaminated land, the potential for historical groundwater or soil contamination from the use of the bridge is small and given its proximity to the river therefore there is likely to be little or no impact on groundwater quality. The only areas where groundwater quality may be impacted in the future is if substantial piling works are proposed for the foundations or extensive dewatering were proposed in the bank areas adjacent to the main span. This might have the capacity to create new pollutant pathways to deeper horizons.

In relation to biodiversity, the existing structure could well be used a roost by local

Environment Agency  
Red Kite House Howbery Park, Wallingford, Oxfordshire, OX10 8BD.  
Customer services line: 08708 506 506  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Cont/d..

bat populations. Bat roosts (occupied or not) are protected by law. A licence from Natural England may be required if signs of bat use are evident. A survey by a licensed surveyor should be commissioned before any work begins.

The new design should build in artificial bat roosting opportunities as described in the 'Design Manual for Roads and Bridges' - Highways Agency.

A methodology needs to be submitted on how the work will minimise damage to existing bank habitat and how any damage will be rectified or mitigated for. Areas where disturbance is likely should be surveyed for water voles.

Disturbance to riverine habitat should be kept to a minimum and a working methodology should demonstrate how this will be done. Work in the river should avoid the main coarse fish spawning period especially if gravel shoals are present upstream or downstream. Ideally work should be done August/September. Our guidance document on working in or near to watercourses (Planning Policy Guidance 5: 'Works and maintenance in or near water') should be followed.

If the area of Pangbourne meadow where access is to be taken is a valuable species rich meadow habitat then steps should be taken to minimise impacts or find an alternative access point.

With regard to waterways, any works requiring reduction in height, width or closure of the navigation must be agreed in advance with the Waterways department and will only be considered from 1 November - 31 March. For the duration of any works appropriate signage and lighting (to be agreed with the Waterways department) must be manufactured and displayed at the contractor's cost.

In an ideal world we would like to see an increased headway for navigating traffic and an increased navigable width (increased distance between piers 1 and 2 approaching from the Whitchurch side of the bridge). We would not consider any permanent reduction in height or width than at present.

We would not consider any increase to the width of the fender beams (thus reducing navigable width) but would consider increase in length as indicated in the drawings.

All navigation signage currently installed will need to be replaced and installed at the contractor's cost.

Please note:

Under the terms of the Water Resources Act 1991 and the Land Drainage Byelaws 1981, the prior written consent of the Environment Agency is required for any proposed works or structures in, under, over or within 8 metres of the brink of the Thames main river.

Under the terms of the Land Drainage Byelaws 1981, the prior written consent of the Environment Agency is required for any proposed works within the Byelaw floodplain which does not require planning permission.

Due to the proximity of the site to the River Thames all works carried out in connection with this development should comply with our pollution prevention guidelines (Planning Policy Guidance 5: 'Works and maintenance in or near water' (PPG5)). Copies and further information are available on [www.environment-agency.gov.uk/ppg](http://www.environment-agency.gov.uk/ppg).

Yours sincerely

**Miss Juliane Hedel**  
**Planning Officer**

Direct dial 01491 828 486

Direct fax 01491 834 703

Direct [e-mail Juliane.Hedel@environment-agency.gov.uk](mailto:Juliane.Hedel@environment-agency.gov.uk)

End

3

## OXFORDSHIRE HIGHWAYS

NOTE OF A MEETING	
Held At: Environment Agency Red Kite House, Wallingford, Oxon	Date: 17 September 2008
On: 2 September 2008	Ref: MJBr/GCK/3.1.0.148
Subject: Whitchurch Toll Bridge Reconstruction	
Present  Martin Brain OCC Juliane Hedel (EA – Planning) Colin Hounslow (EA – Waterways – Navigation) Ian Norris (EA – Drainage, Flood Risk) Paul Pierre (EA – Conservation)	Distribution  Those present  File:

1. Background

OCC working on behalf of Whitchurch Bridge Company (WBC) who own the toll bridge. Reconstruction proposed as future load assessment would result in a weight limit reduction to 3t, at which point it becomes uneconomic for WBC. Ties in with other engineering works required – eg., bridge repainting, repairs to cracked pier columns, waterproofing etc, all of which need closures. Reconstruction programmed for 2013.

2. Key Features

- Grade II Listed and within Conservation Area -  
Therefore main edge parapet girders to be retained, as will key dimensions – spans, headrooms, widths etc
- Internal cross girders and jack arches to be demolished, replaced by new longitudinal beams which will become main load bearing members. Therefore new pier crossheads required to support, together with new piles into riverbed, in between existing piles.
- Stability issues with edge parapet girders during demolition, therefore expect to lift out temporarily to river bank for blast clean/paint refurbishment prior to re-erecting.
- Only available location for contractor's site compound is Pangbourne Meadow.
- Heavy lifting equipment and piling rigs needed on river – therefore timing key re navigation issues.

3. Navigation/Flood Risk

Environment Agency concerns to avoid busy summer river use and coarse fish spawning period March – July. Therefore river closure may be possible, subject to justification, during period 1 November – 31 March (or Easter if earlier). Some works may be permitted on river from 1 October providing span 2 (main navigation span) not obstructed.

### ACTION

## ACTION

However, winter working increases Environment Agency concerns re flooding issues – obstructions to flow from temporary works etc and reduction of floodplane on Pangbourne Meadows/Contractors Compound. Also concerns re impact on Dolphin Adventure Centre operations.

Environment Agency recommend further enquiries re flood levels on Pangbourne Meadow to correlate with Oxfordshire County Council topographical survey – could then send to Environment Agency for further comment.

Environment Agency agreement to use of Pangbourne Meadow for compound would require;  
Enhanced justification  
Measures to minimise obstruction – maintain flows through embankment flood arch  
Implement Flood Warning System  
Minimise plant on site at any one time – secondary plant area?

Part of compound has to be close to riverbank to enable edge girders to be lifted into tented area for grit blasting/painting etc. Consideration should be given to enhancing any temporary works needed to improve permanent mooring facilities in that area.

#### 4. Ecology

Ecological status of Pangbourne Meadow uncertain at present but OCC expect to carry out appropriate surveys etc to establish data. Ditto with immediate bridge area – current sheet piled banks may reduce potential for water voles and bat roost potential may be limited to brickwork abutments – remainder of bridge all metal.

#### 5. Effects of Bridge Closure

Whitchurch Bridge Company have obligation to provide crossing for pedestrians during the reconstruction, but not vehicular traffic. Closure could be 4/5 months. Temporary footbridge or ferry being considered. Footbridge would require large spans between islands upstream of bridge and would itself require substantial foundations. Therefore likely to be expensive. Environment Agency referred to recent use of temporary crossing for Reading Festival by ESS Staging.

Oxfordshire County Council to contact boat companies re ferry options for 18 plus hours per day service. Have also considered potential use of weir/lock as route for pedestrians – Environment Agency consider weir area unlikely to be suitable due to Health and Safety considerations and no rights to private land at each end.

#### 6. Planning Permission / Consents

Whitchurch Bridge Company/Oxfordshire County Council have had preliminary discussions with South Oxfordshire District Council re the proposal. Whitchurch Bridge Company will submit a Planning Application in due course and therefore the outline views of Environment Agency would be useful at that stage as part of the submission. An application

for Environment Agency Formal Consent would be made 2010/11 to ensure that the 2013 construction fell within the three year consent period. Three months minimum notice required for any river closure application.

**ACTION**

## ENVIRONMENT & ECONOMY

NOTE OF A MEETING	
Held At: Environment Agency Red Kite House, Wallingford, Oxon	Date: 23 April 2010
On: 23 March 2010	Ref: MJBr/GCK/3.1.0.148
Subject: Whitchurch Toll Bridge Reconstruction – Flood Risks	
Present  Martin Brain – OCC, Bridges Juliane Hedel – EA, Planning Ian Norris – EA, Drainage, Flood Risk Phil Garvey – Jacobs, Rivers & Coastal	Distribution  Those present    File: 3.1.0.148

		ACTION
1.	<u>Introduction</u>	
	<p>1.1 Initial EA/OCC meeting 02/09/08 discussed background to project in relation to general planning, navigation, flood risk and conservation issues.</p> <p>1.2 This meeting called to discuss flood risk issues in more detail.</p> <p>1.3 Jacobs have carried out preliminary flood study work on behalf of OCC since 2008 meeting.</p>	
2.	<u>Background</u>	
	<p>2.1 OCC explained background to choice of Pangbourne Meadow as only viable location for contractor's compound during the reconstruction. EA accepted this choice.</p> <p>2.2 Using LIDAR data and output from River Thames hydraulic models, Jacobs have established 39.3m AOD as being critical bankfull level for that location.</p> <p>2.3 Ground level across the Meadow varies 39.3m – 40.1m AOD.</p> <p>2.4 Study has shown that 5 year return period flood event level is 39.9m; 20 year return is 40.3m.</p> <p>2.5 On average, 39.3m level could be expected to be exceeded on 9 working days during the 01/11 – 31/03 period when reconstruction work will be concentrated.</p> <p>2.6 Therefore, contractor will need to ensure compound is set at a level</p>	

		ACTION
	<p>to minimise lost time, otherwise works will extend beyond 31/03 and affect navigation.</p> <p>2.7 Advice from national contractor suggests compound size approx 50m x 30m.</p> <p>2.8 To preserve Meadow ecology, it is anticipated that contractor would lay geotextile over grass and then typically 400mm hardcore to establish working platform. Access route from track nearby would be similarly formed.</p> <p>2.9 Compound will need to make use of existing hard-standing at riverbank for movement of materials and labour on daily basis onto pontoons for reconstruction of the 4 span bridge.</p> <p>2.10 A dedicated area close to the riverbank will also be needed to enable the existing 8 No. 20m long main bridge girders to be transported to a painting tent for grit blasting and refurbishment.</p>	
3.	<u>Discussion</u>	
	<p>3.1 EA need assurance that the compound will minimise obstruction to flows and that there would be no loss of conveyance. Also need to demonstrate that there will be no increased flood risk to neighbouring properties.</p> <p>3.2 EA accept that since the compound will be used for a temporary, short term period, it would not be necessary to carry out flood compensation measures (excavation) nearby which would be ecologically damaging.</p> <p>3.3 EA require existing flood arch (invert level 39.8m) under southern approach to remain in use.</p> <p>3.4 OCC/Jacobs have identified that the natural path for flows downstream of the flood arch is along the southern perimeter of the Meadow. This would be under the access to the compound area and therefore the proposal would be to install several small diameter steel pipes, say 250/300mm diameter, at ground level within the hardcore forming the access track.</p> <p>3.5 EA agreed in principle that the compound area should be established at approx 39.9m AOD to tie in with 5 year flood event level. The existing hydraulic modelling shows that no properties in the vicinity are at risk of flooding in a 1 in 5 year design event flood.</p> <p>3.6 OCC indicated that contractor's CDM, Health and Safety obligations would necessitate an uninterrupted "working platform" at that level within the compound area. However, it was agreed that consideration should be given to individual site office cabins being founded on stilts to minimise loss of floodplain volume. Cabins and other temporary buildings should also be aligned to present the minimum width to any potential out-of-bank flow.</p> <p>3.7 A similar approach for the tented painting area was discussed, but for</p>	



		ACTION
	<p>operational reasons a uniform working level is also expected to be required.</p> <p>3.8 OCC said that whilst a 50m x 30m compound size had been suggested, it could not be certain whether the successful contractor to be appointed in 2013 might require a larger area.</p> <p>3.9 It was agreed that OCC would sketch out an outline compound layout such that Jacobs could model the effects, including the influence of the flood arch/access track. The sensitivity to different compound sizes would then be compared such that an upper limit on the compound area could be established.</p>	OCC Jacobs
4.	<u>Flood Risk Assessment</u>	
	<p>4.1 OCC stated that the Whitchurch Bridge Company intended to submit a full planning application for the bridge reconstruction early 2011. Jacobs would prepare the formal Flood Risk Assessment (FRA) required as a supporting document.</p> <p>4.2 EA will expect the FRA to include justification for the thought process leading to the selection of Pangbourne Meadow as the location for the compound.</p> <p>4.3 FRA should also identify any potential risk to neighbouring properties and the measures proposed to mitigate that risk.</p> <p>4.4 A method statement should also be included to outline the key construction operations to be undertaken during the bridge reconstruction. This should clearly identify the risks associated with each stage of the work. OCC explained that the bridge's 4 spans dictated that the majority of this work would have to be carried out using water borne craft and that it was expected to be sequential in nature dealing with each span in turn. It should also mention that the concrete loading/unloading wharf already exists on the meadow and no new temporary or permanent wharfage would be required for the project.</p> <p>4.5 During the work the EA would expect a Flood Warning System to be implemented.</p>	Jacobs  OCC/Jacobs  Jacobs  OCC/Jacobs