The Planning Inspectorate
National Infrastructure Directorate
Temple Quay House
Temple Quay
Bristol
BS1 6PN

Via email:

Our ref: AE/2019/124219
Our PINS ref: 200022819
Your ref: TR010023

Date: 25 October 2019

Dear Sir/Madam

APPLICATION BY NORFOLK COUNTY COUNCIL FOR GREAT YARMOUTH THIRD RIVER CROSSING. RULE 8 LETTER: WRITTEN QUESTIONS

This response relates to the Examining Authority's first set of written questions dated 1 October 2019, in relation to the proposed development a river crossing. This letter contains a response to the question directed to the Environment Agency only. As advised in your letter and due our responses being limited to a small number of questions, we have chosen to respond by letter rather than tabulated format. I apologise for the delayed response which was caused by difficulties with the generic email address that the email was sent to.

Q 1.6.1.
Can you please provide an update to your letter 31 July 2019 and specifically when you anticipate providing final comments on the modelling work?

Further to the concerns raised in our Relevant Representations, the Applicant undertook to present new modelling incorporating the extended domain that was recommended. We received confirmation from the Applicant's consultants on 22 October that all models had been uploaded successfully. Due to the size of the files it took until 24 October to successfully transfer all data. Our national teams that verify the accuracy of flood modelling, are now reviewing the submitted modelling with a deadline to report by 8 November. If the model is found to be sufficiently reliable, the case will be passed to our local teams to review the Flood Risk Assessment. To date, we have not received a revised Flood Risk Assessment. We had previously raised concerns to the Applicant regarding identification of offsite receptors and comparison of impacts/flood risk from the proposals. It is possible that some of these concerns might be answered quite quickly but until the modelling is reviewed we cannot address the Flood Risk Assessment in detail.
I stress that at the time of writing we are not in a position to comment on the reliability of the information presented and it is possible that errors or anomalies may be found that require further investigation. Therefore, whilst this case is being treated as a priority there are factors outside of our control that mean I cannot say with confidence that we will be in a position to comment before the commencement of the Issue Specific Hearings in November.

I trust that this sufficiently outlines our position. Please contact me via the details below in you require any further information.

Yours faithfully

[redacted]

MRS BARBARA MOSS-TAYLOR
Sustainable Places - Planning Specialist
[redacted]
[redacted]

Relevant Representations

On behalf of the Environment Agency

Flood Risk Assessment

1.0 Environmental Statement Appendix 12B - Flood Risk Assessment

1.1 The hydraulic model is important supporting information to the Flood Risk Assessment; it is used to inform the flood risk posed to the development and offsite impacts caused by it.

1.2 Prior to submission the applicant sought advice regarding hydraulic modelling and the Flood Risk Assessment

1.3 We have undertaken two reviews of the hydraulic tidal modelling undertaken to support this application. However, the application was submitted before our second review was concluded.

1.4 Our modelling reviews have identified concerns with the model as presented.

1.5 Our concerns include:

- That the model boundary is too small and needs to be enlarged
- Accurate representation of some of the flood defences
- Inconsistencies in how structures have been represented in the applicant's model and the Environment Agency's 2011 model

1.6 As presented the model is not sufficient to understand the offsite impacts likely to arise from the proposed development.

1.7 Due to the uncertainties surrounding the hydraulic model, we are unable to place reliance on the Flood Risk Assessment because the evidence on which it relies cannot be regarded as sound.

1.8 Due to the issues outlined our position is to register a holding objection on the basis of insufficient information.

1.9 We expect to continue to discuss this issue with the applicant to resolve the concerns that we have raised and welcome further engagement.

1.10 Once the issues related to the hydraulic model are resolved we will be pleased to review a revised Flood Risk Assessment.

Sediment Transport

2.0. Document 6.2: Environmental Statement, Appendix 11C, Sediment Transport Assessment

2. 1 In summary, whilst we do consider that there are shortcoming in the Assessment as presented, the conclusions appear to be reasonable and do not present significant concerns regarding areas that are within our remit.

2.2 The Assessment states at various points for example section 11.4.38 that the Assessment was developed in consultation with the Environment Agency. This is misleading; whilst we provided initial advice, we did not have ongoing engagement in the development of the document.

2.3 However, we note that the main analysis is based on the spring and neap tide work, which uses the Gorleston tide gauge data. This is a standard and acceptable approach.

2.4 At section 6.2.3, peak speeds on a typical spring tide of 2m/s are predicted. This is very fast and may not be an accurate prediction. At the existing Haven Bridge, current speeds are around 1.5m/s, which seems more reasonable in an estuarine environment.

2.5 The model calibration requires further consideration. Hourly measurements over 12 hours are not sufficient to support a model calibration. Furthermore there is no indication of variations through the water depth.

2.6 Section 5.2.22 details a vertical resolution of 1m at the seabed. In 6-7m total depth this is not enough to give high accuracy predictions – which are essential for sediment transport.

2.7 Section 6.2.27 states that long-term sediment transport modelling 'cannot be undertaken'. We disagree, this type of modelling is feasible and desirable for a project such as this one.

2.8 The sediment analysis seems to disregard the hydrodynamic predictions. The Assessment effectively assumes that the sediment will scour until the open cross-section area of the channel under the bridge reaches its current size. Since the width has been reduced by a factor of 2, the Assessment assumes that the depth will increase by a factor of 2, leading to a conclusion of 7m scour depth. This conclusion is incorrect and erroneous and should be reconsidered.

2.9 The Assessment does not appear to consider the geology of the site. There may be bedrock present under the proposed bridge that would halt the progress of scour.

2.10 There is no mention of the environmental effects of the deepening of the channel, or of mitigation against it.

2.11 The Assessment assumes that the sediment will scour out from under the bridge, and then settle in the adjacent low-velocity areas, on either side of the knuckles. This appears simplistic. There is no mention of how far the sediment may

disperse along the estuary before settling, or whether it might re-suspend. The transport pathways that lead to this local deposition are not considered, and neither is the long-term evolution of the estuary.

2.12 However, from an ecological perspective, there is little habitat that would be affected by additional silt deposition in the proximity of the works (1.5km upstream or downstream).

2.13 The river channel through Great Yarmouth is predominantly steel piling and concrete walls, with occasional small bars of saltmarsh / reed bed where the location allows, the channel is regularly subjected to dredging to maintain navigation.

Groundwater

3.0 **Document 6.2 Environmental Statement V.2. Technical Appendix 11F: Groundwater Modelling Study of the Bascule Pit Groundwater Control System**

3.1 Whilst we agree that the proposed dewatering is unlikely to have any significant and long term impacts on local groundwater resources we would like to see the full data set used to determine the model parameters, in particular, the relative river and aquifer levels and geological data used to support the division of the Crag into sand and clay layers. Full details of the proposals for the dewatering discharge should also be provided; the discharge will presumably ameliorate some of the abstraction impacts on the River Yare.

3.2 No derogation at the Camplings laundry abstraction from the shallow sand & gravel aquifer is acceptable in terms of yield or water quality, even if occurring only for a short period of time; we would like to see a more detailed assessment of the impacts in this context.

3.3 Full details of the proposals for the dewatering discharge should also be provided; the discharge will presumably ameliorate some of the abstraction impacts on the River Yare.

3.4 It is the Environment Agency's policy not to dis-apply the requirement for a licence under the Water Resources Act 1991. A licence will be required for construction dewatering, unless the proposal falls within the recognised exemptions. The following link provides details:
http://www.legislation.gov.uk/uksi/2017/1044/regulation/5/made

3.5 Document 6.2 Environmental Statement V.2. Technical Appendix 11B: Impact Assessment Criteria for Surface Water and Groundwater

3.6 Assessing the importance of a water body by using its Water Framework Directive (WFD) status is not appropriate. The WFD requires us to work to bringing all water bodies to Good status; no further deterioration in status is permitted.

3.7 Any derogation of a right to abstract water is likely to be unacceptable, even if this is a temporary requirement during construction.

3.8 Document 6.2 Environmental Statement V.2. Technical Appendix 11E: Water Framework Directive Assessment

3.9 Whilst we agree that the proposal is unlikely to have any significant impact on the Broadland Rivers Chalk and Crag WFD groundwater body, table 1.4 ('Broadland Rivers Chalk and Crag Waterbody') conflicts with other information supplied to the Environment Agency.

3.10 Table 1.4 suggests a lack of hydraulic continuity between the superficial deposits and the underlying Crag aquifer. However, previous/other consultation documents (e.g. Appendix 16C: Interpretative Environmental Ground Investigation Report, S. 5.2.12 & 5.2.13) suggest hydraulic continuity between superficial sands and the Crag to be likely and that waters in the two aquifers already mix. The degree of hydraulic continuity is important in assessing proposals; this point should be clarified.

3.11 An assessment of the salinity of groundwater at the northern and southern sites should also be provided; if it is not saline, further assessment will needed to determine how the piling will be undertaken within Lake Lothing itself without introducing saline water into the underlying aquifers.

Contaminated Land

4.0 Document 6.2 Environmental Statement Appendix 16C - Interpretative Environmental Ground Investigation Report

4.1 Overall we agree with the conclusions of the report that residual contamination is unlikely to pose a significant risk to the River Yare or deeper groundwater. We do have the following comments to make:

4.2 Table 6.5 – Screening Values and comparison with data – the table indicates that speciated hydrocarbons have been compared to the CLAIRE Guidance 2017, however the values used are incorrect. This should be checked and amended

4.3 Table 6.6 – Summary of groundwater exceedances 2006 GI – No values have been inserted into the table for cadmium, nickel, zinc, total cyanide and free cyanide. Given there have been some exceedances of the assessment criteria used, it may be beneficial to take up and downstream river samples to add into the risk assessment. In addition, construction activities must ensure that existing contamination is not mobilised by the creation of pathways, for example through piling.

4.4 Paragraph 9.4.2 – A strategy for dealing with unexpected contamination must be included in the Code of Construction Practice (CoCP).

4.5 Given the presence of residual contamination, infiltration drainage would not be appropriate for this development.

Construction Practice

5.0 Document 6.16 Outline Code of Construction Practice

5.1 In relation to point 5.4 above the detailed CoCP should include a strategy for unexpected contamination.

5.2 Part 6.2 of the outline CoCP satisfactorily outlines the expected pollution prevention methods that should be included in the full CoCP including dust

suppression, site drainage, spillage control measures etc. but, as recognised, there will be excavation dewaterings requiring disposal.

5.3 If dewaterings are to be discharged to the foul sewer system, Anglian Water will need to be consulted and permission/consent gained.

5.4 There should be no discharge to surface waters without Agency assessment of the treatment involved and, if required, a discharge permit.

5.5 Regarding the scheme design, there are 2 options stated for the Western Discharge of surface water, to IDB-controlled watercourse or direct to the River Yare. In either case, the proposed attenuation storage and pollution controls would appear to be adequate to ensure sufficient protection from any accidental spills.

Ecology and Biodiversity

6.0 We have no comments in relation to the reports submitted.

6.1 However, increasingly developers seek to deliver a net gain for biodiversity on sites and indeed, a 10% net gain in biodiversity is expected to be proposed as a requirement in the forthcoming Environment Bill.

6.2 This proposal presents an opportunity to enhance the intertidal biodiversity of this watercourse through the installation of 'verti-pools' or other similar surface structures. These may be affixed to the setback surface of steel piling, where they remain protected from passing or moored vessels.

Protective Provisions

7.0 The Applicant seeks to disapply various pieces of legislation (Article 3 of the Explanitory Memorandum submitted with the draft DCO).

7.1 We are currently considering our position in relation to the legislation which is relevant to the Environment Agency. However, the draft protective provisions contained within part 4 of Schedule 14 of the draft DCO do not correspond with the latest version of the Environment Agency's model protective provisions.

7 .2 We will be responding to the Applicant on these issues in due course and will provide the Examining Authority with an update.