

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

Able - Proposed MEP, Killingholme

Associated British Ports (10015525)

Summary of Oral Representations by Associate British Ports at Marine Hearing

13th September 2012

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1. Introduction

This document provides a summary of the information presented at the Marine Matters oral hearing on 13 September 2012. A list of abbreviations used in this document is provided at the end.

2. Hydrodynamic and Sedimentation Issues

2.2. As regards hydrodynamic and sedimentation issues, ABP expressed the view that the original ES as submitted is unreliable for a number of reasons related to the modelling.

- I. The model baseline configuration did not include the Immingham Outer Harbour (IOH) or representation of the significant jetty infrastructure from Immingham through to North Killingholme. The interactive effects of these features with the Humber International Terminal (HIT) and the various dredged pockets are a major characteristic of the estuary flow around the existing port facilities and through the area of the AMEP development. As such, **the baseline hydrodynamics in the applicant's modelling are unreliable.** (Able said that the HRW sediment modelling included IOH but the JBA hydrodynamic model did not include IOH)
- II. In the response to the WR of Peter Whitehead (Applicant's comments on Written Representation – August 2012) a comparison of maintenance dredge figures from the model are presented in Table 22.3 (i.e. post the supplementary modelling) for model runs with IOH in and out of the model for the baseline case. These figures suggest that the results are all but insensitive to IOH. **Given the local flow patterns and the fact that IOH is a sediment sink, this is simply not credible, and suggests further problems with the modelling undertaken.**
- III. Whilst the modelling calibration is shown, this is for only a single location in the area of the waterfront near the proposed development site. This does not validate the model in a spatial context. **The hydrodynamic model results must be considered unreliable;**

- IV. The flow patterns 'drive' the subsequent sediment modelling, therefore any errors will affect subsequent results, **reducing the level of certainty of those results**;
- V. With respect to the fine (mud) sediment modelling which is the most appropriate modelling tool for the area of the development, **the calibration cannot be relied upon**. This is primarily due to incorrect representation of the flood and ebb distribution of the suspended sediment concentrations (SSC) in the model. The model data presented in Figures 8 and 10 of Annex 8.3 of the ES show considerably higher ebb (falling tide) concentrations than flood (rising tide), where in reality the reverse is true. This is illustrated in Figures 4 to 7 of Mr Whitehead Written Representation (WR July 2012) for all tidal ranges and the water sample measurements undertaken for the AMEP study.
- VI. Supplementary report EX8.5 (produced almost at the same time as the deadline for the WR) discusses the calibration/validation, seeking to justify the modelling with respect to magnitudes of SSC. It also shows new information indicating the correct sediment distribution. However, this is provided for a large tidal range only, whilst the results presented in Figures 4 to 7 of the WR of Mr Whitehead show that the distribution is present at all tidal ranges and has been consistent over a long time period. **This demonstrates that the sediment modelling is unreliable as a consequence of which any quantification of the results must be treated with caution**, particularly when combined with the uncertainty of the baseline hydrodynamics. **It should be noted that the addition of the supplementary information gives no material comfort as to the accuracy of the results**;
- VII. Where derivation of the effects on sedimentation and identifying maintenance dredging requirements is important, the order of quantitative representation of the existing maintenance dredging in the modelling should be closer to the actual dredging data than was accepted by the applicant in its modelling calibration. **Such large differences (in areas where it is possible to compare observations) between actual data and the results of the modelling exercise cast doubt on the reliability of the quantification derived from the modelling**;
- VIII. As regards determining the effects of the AMEP, the proposed scheme was not modelled for the hydrodynamic assessment. Whilst this modelling has now been undertaken and

reported in the supplementary environmental information, it indicates a different local distribution of effect to that presented in the ES. This is illustrated by comparing Figures 15 and 16 from Annex 8.1 (the ES) with Figures 3.9 and 3.10 in Supplementary report EX8.7, which show considerable difference in local detail;

- 2.2. These various omissions and are not discussed in the ES, so that the **assessment is unreliable**. Its results must, therefore, be regarded as **highly uncertain**. This uncertainty is, to a degree, reduced by the additional modelling provided in the supplementary environmental information, but the modelling still suffers at the very least from the omission of IOH in the hydrodynamic model and from the inadequacies of the calibration, particularly with respect to the fine mud modelling and the base model setup.

3. Dredge and Disposal Issues

- 3.1. As regards the disposal of dredged material (capital and maintenance), ABP raised concerns about the choice of HU080 as the proposed deposit ground for erodible material. Such concerns arise due to the following:

- I. The material (particularly with respect to the maintenance dredge arisings) would be transferred from the middle to the lower estuary, where a greater proportion will be lost from the system, thereby affecting the sediment balance of the estuary in the longer term;
- II. Also, finer sediment would be distributed to an area where generally sandier sediment dominates, in such a way as is likely to have an impact on the local benthos in a European designated SAC. Generally, in the designation of deposit grounds there is normally a presumption in favour of depositing sediments of like character to the bed material at disposal sites in the Humber where possible;
- III. The additional supply of sediment to the water column from the dispersal of the deposits at HU080 would effectively raise the supply of sediment available for sedimentation within the Sunk Dredged Channel (SDC). This would increase the potential interference for navigation through the (SDC) at times of high sedimentation in the cyclic pattern which hitherto has occurred in the channel. At present the channel is self-maintaining and has scoured to the underlying resistant boulder clay bed. A similar situation occurred at the

beginning of the 1980's, where no maintenance dredging was required. In 1996/7, however, settlement from the water column, along with bed movement caused rates of sedimentation with which two dredgers working together could not keep pace. This caused navigation restrictions through the channel. Should/when such a pattern of sedimentation returns to the SDC the additional maintenance arisings from AMEP will add to the 'pool' of available sediment, increasing sedimentation rates to greater than occurred in 1996/7. Considerable development has been undertaken since the difficulties of 1996/7, so that the channel now also services the berths at HIT. As such, any potential restriction would have greater consequences on the navigation to the channel than previously. **This issue has not been assessed in the ES, therefore any monitoring and mitigation have not been proposed.**

4. List of Abbreviations

ABP	Associated British Ports
AMEP	Able Marine Energy Park
ES	Environmental Statement
HIT	Humber International Terminal
HRW	Hydraulics Research Wallingford
IOH	Immingham Outer Harbour
SAC	Special Area of Conservation
SDC	Sunk Dredged Channel
SSC	Suspended Sediment Concentrations
WR	Written Representation