Date: 09 November 2012

Our ref:

Your ref:

David Harrison
Foundry House
3 Millsands
Riverside Exchange
Sheffield
S3 8NH

T 0300 060 1775
F

Mr R Cram

SENT BY EMAIL ONLY TO: rcram@ableuk.com

Dear Mr Cram,

Able Marine Energy Park
PINS Reference: TR030001
Natural England Unique Reference Number: 10015549

I enclose on behalf of Natural England, a note on Able UK's document EX 28.3 and draft EMMPs, setting out an outline of Natural England's position and key points of concern. I also enclose the report referred to in that note.

Yours sincerely

David Harrison
Principal Solicitor
For and on behalf of Natural England

Email: david.harrison@naturalengland.org.uk

Enc.

Cc Mr M Harris, National Infrastructure Directorate
ablemarineenergypark@infrastructure.gsi.gov.uk

ABLE UK: EX28.3 AND DRAFT EMMPs

Outline of Natural England's position and key points of concern

INTRODUCTION

Natural England has had the opportunity to review the further details provided by the Applicant relating to mitigation for and compensation of the nature conservation impacts of its main proposal. The majority of this information was supplied under the heading EX28.3.

This note provides an outline of Natural England's position. It does not go into detail. Points will be expanded upon and added to as necessary at the hearings on 12 and 13 November 2012. The note is produced primarily to give the Applicant and other parties advance knowledge of what Natural England considers the main issues at this stage. Time constraints preclude the production of anything more detailed, and Natural England reserves the right to make further points at the hearings as appropriate.

COMPENSATION PROPOSAL

There are a number of elements to the updated compensation proposal (EX28.3), most of which are not discussed here. The starting point is the compensation objectives. This has been largely agreed and the main relevant elements are as follows:

(i) A ratio of 2:1 of mudflat compensation to loss, i.e. 88ha of mudflat; in the longer term and provided that the mudflat can be shown to be achieving its ecological objectives, this amount may reduce to 1:1 (i.e. 44ha)

(ii) An alternative roost in close proximity to the compensatory mudflat

(iii) An area of high quality wet grassland in close proximity to the compensatory mudflat

Natural England's position is that the roost habitat will need to be a permanent feature of the compensation package. On the basis of its current assessment, the wet grassland will also need to be a *permanent* feature of the compensatory package.

These objectives should be clearly and consistently expressed in the final version of the proposals.

In additional to its own expertise, Natural England has obtained an independent review of report EX28.3 part 3s by Dr Nick Cooper of Royal Haskoning, who has expertise in the field of tidal modelling (etc) that Natural England does not have in-house. The review is attached to this note.

For the purposes of this summary, Natural England's key points are:

- The combined managed realignment and regulated tidal exchange (RTE) proposal provides the minimum amount of compensatory mudflat - 88.1ha of mudflat, decreasing to a minimum of 45.2ha. Limited adjustments will be possible at the detailed design stage. This leaves very little scope for underperformance of the mudflat habitat.

- There is a significant time lag in the provision of functional compensatory habitat: the mudflat will not be functional for up to 7 years after habitat loss (by the end of 2019); the compensatory wet grassland will not be functional until 3-4 years after habitat loss (by 2015/6). It is highly unlikely that this will be able to provide sufficient habitat for the number of birds displaced from Killingholme Marshes.
- The risk posed by the time lag cannot simply be overcome by additional compensatory provision. Natural England has doubts over the further area of habitat proposed at East Halton Marshes (see EX28.3 pt 8). It is provisionally suggested that the land be managed as pasture/grassland, although little detail is provided. It is therefore not clear how it will compensate for the species affected by the proposal rather than provide terrestrial habitat for species such as golden plover and lapwing. It also forms part of the land for the Able Logistics Park (ALP) development, so as Natural England understands it, would not be available in any event. This needs explaining.
- Clarity is required on the sources of and robustness of the quality features for mudflat set out, for example, at para.1.13.2 of EX28.3 Pt 2, in particular, why a minimum depth of 100mm is suitable, contrary to the advice of the RSPB.
- The invertebrate data relied upon to assess the quality of the new mudflat should reflect surveys carried out at Killingholme Marshes foreshore; the Applicant's consultant has acknowledged that there appears to be some errors in the interpretation of the survey data for benthic invertebrates. If this cannot be resolved, Natural England advises that new baseline data will need to be collected at the correct time of year.
- The RTE proposal is heavily engineered and relies greatly on operational management in order for the objectives to be met. Some quite major interventions are proposed, such as maintenance dredging. There needs to be more information on monitoring and the thresholds that will be applied before such management measures are engaged (see Royal Haskoning review).
- Information and further clarity is required as to how the adjacent managed realignment site will develop and the extent to which that will affect the intake, discharge and conveyance of water to and around the RTE site (see Royal Haskoning review).
- With regards to the area of wet grassland proposed at Cherry Cobb Sands, Natural England notes that there are a number of gaps, as follows:
    - No survey of underground utilities has been carried out
    - There has not been detailed modelling based on topographical and hydrological data to confirm the functionality of the site, the statements regarding water volumes appear to be based on a number of assumptions
    - There is no explanation of the timescale for creating the open water area for the wet roost, or as to how that will be achieved
    - The appropriate timescale for the establishment of sufficient invertebrate biomass is at least 3-4 years, not 2-4 years (as confirmed by the Applicant's consultant in personal communication with Richard Saunders)

Plainly it is never possible to say that compensation *will definitely* work. There is always a level of risk and a possibility of failure. To some extent this can be addressed by monitoring and management. However, even taking into account the possibility of adaptive management, at present it is clear that the level of risk in this case is substantial.

ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS

Natural England has sent some comments to the Applicant already on the draft Environmental Management and Monitoring Plans, and the Applicant has indicated that a further iteration will be provided by 8 November 2012.

The following main points should be emphasised:

- Objectives should be clearly defined in the EMMPs. Equally, triggers for remedial action should those objectives be missed should clearly be set out and not left for further development (contrast draft compensation EMMP para.106).
- The EMMPs should use numerical data for bird targets. Natural England does not agree that it is inappropriate to identify a fixed target for bird use: it can only be demonstrated that the compensatory site is meeting its objectives if targets for the numbers and species composition of birds that use it are specified.
- Monitoring will be required for longer than 5 years (see draft compensation EMMP para.118). Natural England has suggested that monitoring be set for at least 10 years, however it is clear given the nature of the proposal that a mechanism for ongoing monitoring and management will be necessary – the level of this should be defined by the environmental steering group and will be able to be altered and/or scaled down over time.
- The composition and the role of the environmental steering group need to be fully set out. The group should have a remit to review the functionality of the compensation provided, make amendments to the management plans and make other binding recommendations.
- Some information is left out of the EMMPs and/or is proposed to be provided in further plans or assessments. As Natural England has previously advised, the substance of what is proposed by way of mitigation and compensation must be included within the application documents *before* DCO process ends. There may be scope for some final details to be submitted subsequently, such as a bat mitigation strategy in line with the commitments set out in the application documents. However, it is not acceptable to leave for subsequent assessment key points, such as whether it is "feasible to provide suitable water-level regimes to enable the creation of targeted wet grassland communities and/or to attract target species" in Mitigation Area A (draft terrestrial EMMP para.72).

THE LEGAL AGREEMENT

A legal agreement (entitled Deed) is provided at EX28.3 pt 10. The Deed is largely a replica of the provisions in a 2004 agreement relating to the Bathside Bay Container Terminal, Harwich. It is important that the provisions in the EMMPs and any legal agreement are properly considered and reflect the circumstances in this case.

Natural England has the following main points at this stage:

- Ideally, the parties to the agreement should include local authorities, RSPB and the Crown Estate.

- The “Advisory Group” should be better defined and have a more active role, this is particularly important given the uncertainties over what will be required as compensation in this case.

- It is not strictly necessary to duplicate the mitigation proposals (Area A and B) in the Deed (Schedule 1).

- The provisions for compensation in the Deed (Schedule 2) overlap with points about the compensation EMMP above. Fundamentally, there is inadequate definition of (i) objectives, (ii) targets and triggers for action and (iii) monitoring. A clear timetable should be set out for the provision of compensation. Para.1.3 allows 15 months after Quay Works commence to Breach the sea wall – this appears to allow habitat destruction before any kind of replacement has been established.

- The provision of a bond to cover future works and management would increase confidence that onerous and ongoing management will be carried out. This will help to answer Royal Haskoning’s question “[h]ow will th[e] commitment be ensured, especially over longer timescales?” Natural England also notes that there is no breakdown of the Applicant’s assessment of costs at EX28.3 pt 9, in particular “ongoing maintenance costs” of c.£90,000 seem optimistic.

- There should be provision that the Applicant obtain proprietary interests and necessary consents *before* works commences; currently it has neither in relation to the new proposed wet grassland area.

CONCLUSION

There has been limited time for Natural England to assess the Applicant’s proposals due to the late stage at which final versions have been submitted. The versions that Natural England has reviewed remain to some extent even provisional, and subject to further discussion at the forthcoming hearings. Ideally, Natural England would have been able to give advice on fully worked-up proposals well ahead of November 2012. The proposals have improved, but as matters stand, there remains a substantial risk that the Applicant’s compensatory proposals will not maintain the coherence of the Natura 2000 network.

9th November 2012

Able Marine Energy Park - Cherry Cobb Sands Compensation Site
Peer Review

Background

This peer review relates to the draft report on 'Development and Operation of the Regulated Tidal Exchange', prepared by Black & Veatch, ERM, HR Wallingford and Able UK Ltd and dated September 2012.

The draft report contains further development of the work previously undertaken on the Cherry Cobb Sands Compensation Site, with the principal change from earlier reports being that it is proposed that the compensatory habitat would now be delivered through a combination of breaching the outer flood embankment (Managed Realignment (MR)) and connecting the breached site to a series of four compartmentalised fields through Regulated Tidal Exchange (RTE) systems. The intent of this scheme is to ensure that a suitable proportion and ecological quality of mudflat is developed and maintained to provide compensation for the quantity and quality of mudflat that would be lost due to the reclamation works associated with the development of the Able Marine Energy Park (AMEP) near Killingholme.

This peer review has been undertaken by Dr. Nick Cooper, with quality assurance provided by Ms. Sian John, both of Royal HaskoningDHV.

General Overview

Overall, the draft report is well written and comprehensive. Although it is disappointing that the Non-Technical Summary is not yet produced (Chapter 1), the report is thereafter usefully structured. It first provides an introduction to its purpose and the specific objectives of the compensation site (Chapter 2), which of course are vital criteria in determining whether or not the proposed Compensation Site works are likely to be effective.

It then provides a review of key historic and recent changes along the Killingholme foreshore (Chapter 3) and describes the foraging requirements of SPA qualifying bird species, especially the Black-tailed Godwit, (Chapter 4); which provides further context to the requirements for the compensation site.

A review of information from the Paull Holme Strays managed realignment scheme (Chapter 5) provides a useful analogue for the changes that may be anticipated at the proposed Cherry Cobb Sands compensation site, since it is located only around 6km away. Observations in relation to accretion rates at Paull Holme Strays have also helped revise some of the assumptions used in modelling for Cherry Cobb Sands.

Details about the general arrangements of the proposed RTE scheme (Chapter 6), its operation during the initial warping-up phase over the first three years (Chapter 7) and its operation thereafter (Chapter 8) provide quite comprehensive engineering detail for this stage of the site's development, leading to the definition of management activities for the site (Chapter 9).

The draft report then provides an environmental impact assessment of the RTE scheme (Chapter 10), intended to complement the original Environmental Statement (ES), before concluding with a summary of findings (Chapter 11), references (Chapter 12) and a series of technical appendices (Chapters 13 – 16).

From our desk-based review of the draft report, the main issues that we would wish to bring to Natural England's attention are:

- Some of the principal objectives relate to the quantity (area) of intertidal / mudflat to be created. Objective 1 proposes a minimum area of 101.5ha of intertidal, objective 2 a target within this overall area of 88ha of mudflat and, objective 3, a minimum area of 44ha of mudflat. However, it is not entirely clear from the report what actual totals are going to result from the four RTE sites and the breach MR site, and this could usefully be summarised for purposes of clarity.

- In relation to the above, it is also not clear whether the minimum and target areas defined in objectives 1 – 3 arise from the direct 'footprint' loss associated with the AMEP reclamation works, or whether consideration has additionally been given to the potential indirect effects. Chapter 3 clearly identifies that since construction of the Humber International Terminal (HIT) the adjacent mudflat has experienced accretion over a significant area. This has reversed a trend of historic erosion, pushed the MHWN contour towards the estuary channel and encouraged the establishment of some salt marsh vegetation. Is a similar response anticipated following construction of the AMEP and has this been factored-in to the quantities of mudflat habitat that need to be created as compensation?

- Given the objectives of the compensation site works in terms of area of habitat, level of landform (to ensure mudflat creation rather than salt marsh), and ecological quality of habitat, it is understandable why a RTE solution has been preferred over solely a breach solution. However, this does mean that the proposed works are relatively heavily engineered, based essentially on principles of 'water balancing' and 'sediment management', rather than a more natural geomorphologically functioning solution based on full connectivity between the estuary channel, existing intertidal zone and newly inundated parts of the low-lying floodplain.

- Due to the above 'engineered approach' there will, in our view, be a **great reliance** on Operation and Maintenance (O&M) activities during the whole life of the scheme in order for the objectives to be met. In the longer term, the draft report acknowledges that this may extend to the need for: (i) mechanical bed levelling; (ii) flushing to induce bed-scour; or (iii) maintenance dredging, all of which would be quite major interventions.

- Further, due to uncertainties regarding scheme performance in some areas (such as accretion rates, flow exchanges, etc.), the O&M regime would need to be flexible ('dynamic'), with management responses contingent upon site performance. This should be defined through a mutually agreed process of monitoring and review and, at present, I do not see enough information about the monitoring activities and thresholds for either 'water balancing' or 'sediment management' interventions. However, the process of developing and agreeing a dynamic O&M regime may be usefully informed by site developments during the 'warping-up' phase over the first three years.

- There are a few minor errors and general inconsistencies within the draft report which ought to be picked up during its finalisation. These have been identified in the more detailed comments provided for each chapter in turn below.

Chapter 1

- A Non-Technical Summary would be useful, especially if it included a table setting out target/minimum habitat areas against projected.

Chapter 2

- Figure 2-1 should be larger and with landscape orientation so the text can be read. Also it should be located nearer para. 21.5 because it is showing the scheme arrangements as presented in the ES, not the presently proposed arrangements.

- It may be worth having a figure showing the now proposed arrangements involving the RTE too.

Chapter 3

- Para. 3.2.2 – replace 'concrete flood bank' with 'concrete wall' / 'concrete wave return wall'.

- Figure3-2 shows some salt marsh vegetation establishment at the toe of the embankment. If, as the text suggests, the levels in this location are around 2.5mOD then should the threshold in objective 4 of keeping levels below 2.5mOD (to ensure mudflat development as opposed to salt marsh) be a little lower still?

- Para. 3.3.2 – worth mentioning future maintenance dredge requirements in addition to capital dredge associated with the main AMEP development?

- Para. 3.3.5 – land claim would be achieved using sea-dredged or estuary-dredged material. Presumably the impacts of this construction activity have been assessed in the ES?

- Section 3.5 – given the changes in the Killingholme foreshore since construction of HIT, does the mudflat compensation target include both the direct effects (land claim) and indirect effects (accretion on adjacent mudflat leading to its transgression to salt marsh)?

Chapter 4

- No comments on this chapter as it is outwith my area of expertise, being focused on foraging requirements for bird species.

Chapter 5

- This chapter (and the more detailed associated appendix) is very useful in informing the reader about actual changes experienced at Paull Holme Strays, which is a useful analogue for what may be anticipated at Cherry Cobb Sands.

- Table 5-1 – the proposed changes in siltation parameters seem sensible, given the findings at Paull Holme Strays.

- Figure 5-1 – the upper and lower banding assumptions for typical suspended sediment concentrations seems to lead to accretion rates after 3 years that replicate well the observed patterns at Paull Holme Strays, although note that the lower bound modelled estimates are slightly lower than observations in the lowest lying areas.

Chapter 6

- Para. 6.1.1 – as discussed previously, does the mudflat compensation target include both the direct effects (land claim) and indirect effects (accretion on adjacent mudflat leading to its transgression to salt marsh)?

- Para. 6.1.2 – agree with the approach of using RTE given the (prescriptive) requirement for mudflat habitat. Breach MR alone would be likely to result in quite notable salt marsh development over time, rather than the desired mudflat extent.

- Para. 6.1.3 – the RSPB/Environment Agency guidance cited is, to my knowledge, a reliable best practice source.

- Para. 6.2.5 – what is the magnitude and the implication of the difference in foreshore levels shown between use of the LiDAR and terrestrial laser scanning techniques?

- Paras. 6.2.1 and 6.3.3 – in any habitat creation scheme, I consider two of the greatest uncertainties in the data used for the assessments to be in: (i) topographic levels; and (ii) tidal levels. For this work the former has been covered using a comprehensive topographic survey. There has been no direct measurement of the latter however, with reliance on assumed differences between measured stations and outputs from numerical modelling. Given the criticality of topographic level (which has been measured at the site) relative to tidal level which has not) in terms of mudflat versus salt marsh creation, it could be argued that tidal level measured directly adjacent to the breach for a short duration would help improve confidence in assumptions and be useful in calibrating the model.

- Para. 6.4.3 – In the absence of measured data, I agree with this assumption

- Para. 6.4.5 – ‘error reference source not found’

- Para. 6.4.5 – in essence, the scheme is an engineered 'water retention and water balancing' scheme between a series of discrete 'ponds'

- Para. 6.5.25 – given these comments, O&M activities are going to be critical to achievement of the scheme's objectives (and may indeed be quite onerous in terms of frequency of interventions and their on-going nature over a long period of time). This will need to include both water balancing and, probably over the longer term, sediment management.

- Paras. 6.5.6 and 6.5.7 – this is where a table summarising target/minimum and projected habitat areas would be useful because at present it is a little confusing

- Para. 6.5.7 – 'error reference source not found'

- Figure 6-3 – the effectiveness of the scheme is reliant on a number of inter-related aspects: (i) the effectiveness of the breached section of existing embankment and the new channel to deliver water from the estuary to the RTE infrastructure; (ii) the effectiveness of the RTE infrastructure in conveying water from the new channel to the fields; and (iii) the effectiveness of the four separate field arrangements in retaining and discharging water that enters the RTE infrastructure. There is quite a high risk that one or more of these elements may not work in practice as effectively as intended during design and modelling. This places great reliance on the adequacy of the O&M regime during both the 'warping-up' phase and the operational phase of the project.

- Paras. 6.6.4 & 6.6.10 – I can quite understand the requirement for armouring of the distribution channel through the RTE infrastructure and the provision of baffle blocks, because areas surrounding inlets/outfalls can very easily erode during high flow conditions and this in turn will compromise the effectiveness of the infrastructure. Due to this, I consider these aspects to be an engineering necessity in order to offer best opportunity to deliver the scheme objectives.

- Section 6 (general) – there is a good level of engineering detail here given the stage of the scheme.

- Section 6.8 (monitoring and maintenance) – nothing mentioned in any great detail about monitoring of accretion rates (e.g. accretion plates) or changes in topography or level at the site (topographic or laser scan surveys) to inform the O&M regime.

Chapter 7

- Para. 7.1.1 – this supports the need for level monitoring and the feeding of results into the O&M regime.

- Para. 7.1.2 – I suggest that Natural England should seek to remain informed of developments during the detailed design phase of the scheme (in addition to being involved in the development of a monitoring programme and O&M regime).

- Para. 7.1.4 – the lessons learnt about scheme performance (in terms of water balancing, sediment management and ecological function) during the 'warping up' phase need to inform the O&M and monitoring regimes during the operational phase.

- Para. 7.4.1 – the projected accretion rates seem quite precise here – in reality there will be uncertainty over these rates and the O&M regime must be flexible enough to enable 'tuning' to ensure that the required proportion of mudflat remains present.

- Figure 7-5 – will accretion within the breach site (which is not intended to be managed) eventually develop to such an extent that it affects: (i) the ability of the breach site channel to convey water to the RTE sites; or (ii) the ability of the RTE infrastructure to intake / discharge water between the RTE fields and the breach site channel?

Chapter 8

- Para. 8.1.4 – agreed and this demonstrates the importance of flexibility in the O&M regime, which needs to be linked to, and contingent upon, monitoring of levels, gradients, water balances and ecological functioning of the site.

Chapter 9

- Para. 9.1.1 – again a clearer summary of target/minimum and projected habitat areas would be useful.

- Para. 9.4.4 – the longer term implications (beyond the 10 - 12 years mentioned here) are heavily dependent on the O&M regime adopted.

- Para. 9.5.4 – the success of the scheme (in terms of habitat area) is greatly dependent on a long term O&M regime involving water balancing between the 'ponds' and sediment management activities, possibly involving future bed levelling or even maintenance dredging. How will this commitment be ensured, especially over longer timescales?

Chapter 10

- Is there a need to consider effects on the wider estuary system in-combination with the main AMEP development?