Specific Issue Hearing on the compensation proposals (Monday, 12 and Tuesday, 13 November 2012)

Written summary of oral representations by Natural England

1. This summary follows the Panel's agenda in the order that it was covered over the two day hearing; it is broadly sequential but has aggregated some of the matters for presentational purposes and has amplified certain points where appropriate.

2. This summary should be read together with Natural England's outline position dated 9 November 2012 and submitted ahead of the hearing.

General

3. It is appropriate to cover some general matters of policy at the outset. The Panel sought clarification on the RSPB's submission in its 9 November 2012 submission (para.46) that in this case there must be "no reasonable scientific doubt that the compensation will replace the ecological function lost." Natural England does not consider that European law includes a test of "no reasonable scientific doubt" in relation to the success of compensatory measures under Art.6(4) of the Habitats Directive. The language of "no reasonable scientific doubt" in the habitats context comes from the case of ***Waddenzee*** **(Case C-127/02)**, in which the ECJ considered Art.6(3) of the Directive, in particular the questions of (i) whether there was a likely significant effect that required appropriate assessment and (ii) whether it could be "ascertained that [a proposal] will not adversely affect the integrity of the site concerned."

4. The ECJ concluded (at paras.59 and 61) that competent national authorities would only be entitled to authorise an activity (there, mechanical cockle fishing) "if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effect." It is therefore settled that the precautionary principle applies to the assessment of harm to a European site.[1] The same is not the case for the assessment of compensatory measures. There will always be a measure of doubt as to whether compensatory measures will be successful – if this were not the case, there would be no need for the system of strict protection in Art.6 – it would be enough to ensure that compensatory measures were provided. The point was recognised by Advocate General Kokott in her opinion for **Case C-239/04** (that related to the Castro Verde SPA in Portugal). At para.35 she drew the following distinction:

> "Within the framework of Article 6 of the Habitats Directive, the adverse effects on a site must be strictly separated from the compensatory measures. Under the regulatory system of the Habitats Directive, adverse effects are to

[1] See also the last paragraph of section 1.5.1 (page 16) of the Commission's guidance on Art.6(4)

be avoided as far as possible. That is done preferably by eliminating any risk of harm or by taking appropriate damage mitigation and prevention measures. By contrast, compensatory measures can be considered only when adverse effects have to be accepted in the absence of any alternative, for overriding reasons of public interest. The preservation of existing natural resources is preferable to compensatory measures simply because the success of such measures can rarely be predicted with certainty."

5. The test as expressed in Art.6(4) is that the compensatory measures must be sufficient to "ensure that the overall coherence of Natura 2000 is protected". This requires a degree of confidence in any compensation proposed. As noted in the European Commission's guidance on Art.6(4) (p.18), it is for this reason usual to require higher ratios of compensatory habitat to that lost ("well above 1:1"): "compensation ratios of 1:1 or below should only be considered where it is demonstrated that with such an extent, the measures *will be 100% effective* in reinstating structure and functionality within a short period of time". It is for the decision-maker's judgement whether the requisite degree of confidence to satisfy the Art.6(4) test has been met.

1. The effectiveness of the proposed Regulated Tidal Exchange scheme at Cherry Cobb Sands and the proposed wet grassland scheme

6. It is acknowledged that the Applicant's proposals are still in draft form. In particular, the report (currently EX28.3(3)), which is referred to in the EMMP, should be clear and consistent about what it proposed. The proposals set out in Chapter 8 should be presented up front, given that they are what has been assessed and what it is intended to implement. The inconsistencies noted in the RSPB's Annex C also need addressing. It is also acknowledged that the operational details are subject to change, to ensure that the proposals are as effective as possible.

7. Royal Haskoning carried out a desk-based review of the proposals for Natural England and concluded that they contained "quite comprehensive engineering detail for this stage of the site's development".[2] Overall, Natural England is satisfied that the combined RTE scheme and managed realignment site should be able to meet the objectives defined in the Black & Veatch report (para.1.2.1), subject to the following provisos:

    - The proposed compensation would not be fully functional until December 2018 (see the Applicant's revised timeline). If quay works commence in

[2] Royal Haskoning also reviewed the final draft of EX28.3 and provided very brief comments by an email dated 24 October to the effect that its comments did not change

June 2014[3], this leaves a considerable time lag where there will be inadequate compensation for the displaced birds.

- The area of *sustainable* mudflat created is not 2:1 (it is acknowledged that 88 ha will only be a nominal starting figure, but that the mudflat in the managed realignment area will rapidly accrete to saltmarsh). In fact long-term mudflat will be provided only at a ratio of just over 1:1, and as Dr Dearnaley confirmed at times the amount of mudflat available to birds *could* at times be as little as c.15 ha (c.0.333:1) because other fields would need to be impounded during parts of the tidal cycle: even if Black-tailed Godwit would feed at depths of 100mm water, smaller species would not.

- The limited extent of mudflat to be created means that it must be of exceptional value to ensure that it serves as functional replacement habitat for Black-tailed Godwit and the other species. There are a number of reasons to doubt the quality of the habitat that will be provided. These are:

    - The failure to demonstrate how the food resource (benthic invertebrates) will be equivalent to that lost at NKM where very different estuarine processes are at work

    - The failure to replicate the open aspect of the mudflat lost, which is attractive for Black-tailed Godwit (see EX28.3(4) para.7.2.1)

    - The need for intrusive management interventions once the level of mudflat is around 2.2m AOD[4] – while the impact of such interventions may be able to be minimised (through sensitive and adaptive processes etc), they would undoubtedly disturb the habitat and the associated benthos and reduce its quality

- The provisions in the EMMP and legal agreement (below) are inadequate to ensure that the compensation proposed is carried out properly or with appropriate monitoring and adaptive measures.

8. It is right to acknowledge that much work has been put into developing (albeit at a very late stage) interesting and apparently workable plans for mudflat habitat at Cherry Cobb Sands. The proposal is however novel, and the environment in which it is located is challenging. It is possible that the compensatory measures will succeed, however there is a substantial risk that they will not. It is acknowledged that there will always be doubts in relation to compensation

[3] This is the date taken from the Applicant's indicative timeline produced on 13 November, it is inconsistent with earlier projected start dates, but it is assumed accurately reflects the Applicant's current proposals

[4] EX28.3(3) para.7.39 states that when the average levels in the fields "approach rise above [sic] +2.2m OD it will begin to become necessary to remove sediment …" the confused wording has not yet been clarified

proposals, however the doubts in this case are amplified by a combination of the points noted above: time lag, limited extent, questionable quality and uncertain implementation. The remainder of this summary will elaborate on some of these points.

Benthic invertebrates

9. Natural England's position has consistently been that NKM mudflat is of a particularly high quality for Black-tailed Godwit feeding (see e.g. WRs paras.8.13 and 8.23).

10. As far as monitoring for benthic invertebrates, it is agreed that this may be informed by a further assessment of the resource at NKM in autumn 2013 prior to commencement of the works. This will ensure that a robust target is used to determine the performance of the new habitat based on the carrying capacity of the existing site. This is different to the biotope mapping that is mentioned in the Statement of Common Ground. A biotope map is synonymous with a phase 1 habitat map and does not provide any information on invertebrate biomass; the SoCG states the "biotope map illustrates the location and distribution of the dominant biotopes in the area".

11. However, the Applicant asserted ahead of these hearings that "[t]here is no objective evidence that the Killingholme Marshes foreshore contains an especially high prey density compared to the rest of the middle estuary" (Comments on answers to 2Qs, para.10.4). Twelve transects were undertaken for the invertebrate monitoring work at Killingholme. Whilst the majority of birds were located in count sectors C & D; of the 12 transects only the third transect bisected sectors C & D with the fourth and second transects passing along the northern and southern boundaries respectively. In addition samples were taken during a period (May) when invertebrate biomass will be depleted.[5]

12. Invertebrate data for the Humber Estuary (Allen 2006) were used in comparison to Killingholme data (IECS 2010) to show that availability of bird food at Killingholme was similar or less than at other areas within the estuary. Natural England contacted IECS before the hearing to query the surprising nature of these results, at odds with the observed distribution of birds that feed on these invertebrates and followed these queries with a series of written questions to IECS. Analysing the additional data provided at the hearings has confirmed

[5] The standard methodology requires samples to be taken in the early autumn as by the following spring, invertebrate numbers are depleted following bird predation over the preceding winter period. Furthermore, for *Hediste*, one of the key prey species of black-tailed godwits, breeding adult worms will have died and disintegrated following reproduction, yet juveniles will have yet to develop any significant biomass.

Natural England's view that there are significant errors in the report and that the most likely explanation is that totals from a single sample site at Killingholme have been compared with totals from five samples for the rest of the Humber.

13. Whilst it is clear that the data has been misinterpreted, instead of using this site specific data to inform the objectives for the compensation site, the Applicant refers to an entirely different study and a target of 4g/M^2 (ash free dry weight), which was described as 'precautionary' during the hearing. Richard Saunders explained that the figure is inappropriate and should not be described as a "precautionary" figure – it is the threshold below which birds start to die, so is not applicable to the creation of a feeding resource sufficient for many thousands of birds.

14. The objective for the compensation site should be assessed on the basis of a target for creating high quality habitat, and not a target for creating average to low quality habitat. An invertebrate target of just 4g/M^2 (ash free dry weight) would be too low to support all those SPA birds displaced and in this respect the compensation would fail.

15. The invertebrate biomass target, prior to further monitoring at Killingholme, should be expressed as a range, with the upper figure reflecting the maximum biomass recorded on the limited sampling undertaken in the correct area. Whilst the precise target could be agreed following further monitoring work at Killingholme, the increased reliance this places upon the EMMP and any mitigation subsequently triggered to deal with any residual effect has to be recognised.

16. For more detailed comments on benthic invertebrates see the attached Annex document.

Changes to intertidal habitat at NKM foreshore

17. Question 7 of the Panel's 1 November 2012 rule 17 questions to the Applicant asks for the "best estimate as to how much of the current inter-tidal mudflat in the quay site [i.e. NKM] would be likely to become saltmarsh, and over what period". This reflects question 13 of the Panel's second questions (that does not appear to have been directly answered by the Applicant). The Applicant's answer to the Rule 17 question was that taking the accretion reported in EX11.24 with the effect of sea level rise "the total loss of mudflat from the NKM foreshore might reasonably be estimated to be 25 ha over the next 20-50 years" and set out an uncertainty range of "12.5 – 37.5 ha of natural mudflat loss". This information appears to relate to the entire foreshore at NKM and does not provide detail as to how the area of mudflat to be lost to the new quay will change over time. Indeed on the second day (13 November 2012), Dr Dearnaley acknowledged that it could be incorrect as it did not consider accreting mudflat and had not been

modelled. It may be that it is hard to predict with confidence what significant changes (if any) there would be at NKM, and the impact of those changes on the interest features of the SAC and SPA. There does not appear to be a robust scientific study on which the Applicant relies.

18. The Applicant confirmed that it sought to rely upon potential changes at NKM as relevant to the Secretary of State's eventual assessment of *confidence* as to the adequacy of its compensation proposals in the longer term. Natural England accepts that the Humber is a very dynamic environment, and that this is a factor in assessing the adequacy of compensatory measures. However, a more robust justification is required before specific reliance could be placed on the above information.

Operation and management of the RTE

19. As noted by Royal Haskoning the RTE proposal is heavily engineered and relies greatly upon operation and management in order for the objectives to be met.

20. Dr Dearnaley of HR Wallingford said that the number of inundations per annum aimed for would be 530 (not 450 or 500 as previously stated). He also said that there will be a need to bring more water into the impounded reservoirs than previously considered; this may require larger sluice gates. Maintenance dredging will occur from April-June, to avoid the autumn passage and over-wintering period for birds. However this will affect the benthic invertebrates which will have just spawned. This timing issue can be resolved in the EMMP.

21. There will be two full-time members of staff engaged. Methods of preventing the spread of saltmarsh suggested orally included chemical control and removal by hand of pioneer plants – Natural England does not recommend the former, although there may be scope for the latter within the management scheme.

Wet grassland and roost

22. The roost is relied upon to replicate the functionality that is likely to be lost from the proximity of NKM to North Killingholme Haven Pits (NKHP). It is therefore very likely that it will be required on a permanent basis, and provision should be made for this. Mr Hatton for the Applicant emphasised at the hearing that the presence of an undisturbed roost in close proximity to foraging habitat is critical for moulting black-tailed godwits. It is consistent with this understanding to expect that the roost should be a permanent, rather than temporary, feature of the compensation package.

23. The wet grassland *may* be required on a permanent basis: this depends upon whether the main compensation site provides functionally adequate compensation – if it does, it will cease to be necessary to provide the wet grassland. However, on the basis of its current assessment, Natural England considers that if the main compensation is to be relied upon, it would need to be

enhanced by the wet grassland area (and even this would not overcome the main uncertainties involved). This is consistent with Natural England's position in its Written Representations and with European guidance.[6]

24. Some other matters in relation to the wet grassland site that have been raised in writing (in particular whether converting the site to wet grassland is restricted by services or hydrological factors) were not raised orally.

2. The possible impacts of the two schemes

25. Natural England's only outstanding concern as far as additional impacts from the main compensation proposals are concerned relates to potential increased erosion of both mudflat and saltmarsh on the foreshore in front of the RTE scheme. Confirmation from the Applicant is awaited on this matter.

26. As far as consultation on the two schemes is concerned, Natural England considers that it has had the opportunity to consider the revised proposals as presented in EX28.3. It is right to note that it has put a lot of pressure on the organisation, and that there has been limited time to engage with the detail of the proposals. Of greater concern will be the ability to respond sensibly to further iterations of the proposals. For example, the revised compensation EMMP received in hard copy only on the morning of 13 November 2012 was substantially changed and contained much new raw data.

3. The requirement for overcompensation

27. The Applicant's position at the hearing was that it was providing "overcompensation" already in its proposals for wet grassland at Cherry Cobb Sands. In addition it was putting forward as a contingency further "overcompensation" at East Halton on the south bank of the Humber, as detailed in EX28.3(8).

28. There are three ways in which additional compensation may be relevant. First, it could provide *interim* habitat while more permanent and suitable habitat is forming (this was the basis on which the Old Little Humber Farm wet grassland proposal was initially put forward). Secondly, it could help to overcome risks and uncertainties with a main compensation proposal – if the risks do not eventuate, the additional compensation need no longer be maintained (this is how the current wet grassland proposal at Cherry Cobb Sands is understood). Thirdly, it could provide permanent compensation retrospectively to overcome an interim loss. Overcompensation and time lags is considered further under agenda item 4 (below).

29. In its Written Representations, Natural England's advice was that given the (then) apparent difficulties at Cherry Cobb Sands, the Applicant should consider other

[6] See FN25 on p.36 of NE's WRs and section 1.5.4 of the Art.6(4) guidance

potential sites. As set out at para.8.25 "[i]deally [Natural England] would have understood the limitations of the Cherry Cobb Sands proposal much earlier (as well as explored alternative options earlier). Despite this late stage in the process [Natural England is] urging the Applicant to explore in as much detail as possible alternative options for the provision of compensatory habitat."

30. However, there are a number of fundamental difficulties with the East Halton proposal. First, it is proposed to create "pasture/meadow" and a "mosaic of different ecological functionalities" – it is unclear how this corresponds to the functionality to be lost at NKM. Secondly, the habitat would not be fully functional until the end of 2015, so there will still be a time lag following the loss of the mudflat at NKM. Finally, it would need to be ensured that the use of the site for compensation was secured against the Applicant's current proposals before the local planning authority to develop the same field for port related storage as part of the Able Logistics Park.

31. It would be wrong to discount entirely a proposal to improve land for wild birds (including some of the species displaced from NKM). However, the proposal at East Halton is not clearly linked to the ecological function that would be lost were development of the main proposal to go ahead. If it is relied upon, some, but fairly limited, additional confidence may be derived from this aspect of the compensation proposal.

32. Natural England has no difficultly in principle with amending the EMMP post-consent to include East Halton should the Secretary of State consider it appropriate.

4. The implementation process

33. A preliminary issue is whether the period required for the wet grassland to achieve "full functionality" is 2-4 years or 3-4 years. Richard Saunders for Natural England questions the accuracy of 2-4 years.

34. This time period was evidenced using three different references. The reference evidencing the shorter period is a PhD thesis (Eglington, 2008), yet this study did not contain any information relating to colonisation by worms and therefore provided no evidence to support a claim that earthworms would be available in sufficient densities to support SPA birds after two years. The following statement was provided by the author:

> *It took two years for mobile surface invertebrates, such as flies and beetles, to colonise a former area of arable land in sufficient densities to support a comparatively small breeding lapwing population (numbering between 10 – 20 pairs over the duration of the study). Worms are slower to colonise and were not part of this study. Therefore, this reference does not provide evidence that worms could colonise in sufficient densities within a two year time period in*

*order to support large numbers of foraging black-tailed godwits (potentially numbering in the 1000s) (*Eglington, S. pers. comm.*).*

35. The references provided for the timescales of 3 and 4 years do not relate to wet grassland. They relate to the length of time taken for biomass to develop following arable reversion to grassland, but do not take into account the further transition from pasture to wet grassland. Based on the references provided by the applicant, the lower end of the range (i.e. 2 years) should be viewed as incorrect and the upper end of the range (3-4 years) as potentially incorrect.

Time lag and overcompensation

36. It is necessary to consider the implications of the time lag on the effectiveness of the compensation proposals. The starting point (again) is the duty to maintain the coherence of the Natura 2000 network. The draft Defra guidance (August 2012) provides at para.24 that

> "… Compensation measures should *normally* be delivered before the adverse effect on the European site occurs, as this reduces the chance off harming the network of sites and also ensures there is no loss during the period before the compensatory measures are implemented" (emphasis added)

37. Failure to provide compensation measures at the time of loss increases the risk of harm to the coherence of Natura 2000. Similarly, the text to the Commission's 2011 guidance on estuaries and coastal zones states (at p.31):

> "compensation measures must ensure the continuity of the ecological processes essential for maintaining the overall coherence of the Natura 2000 network. The compensation scheme should be 'effective' at the time the negative effects occur on the site concerned. Early implementation is of the essence. The application of specific mitigation measures to overcome possible interim losses may be necessary."

38. The Commission's Art.6(4) guidance states (at p.13) that "best efforts should be made to assure compensation is in place beforehand and in the case that this is not fully achievable, the competent authorities should consider extra compensation for interim losses that would occur in the meantime."

39. *Managing Natura 2000* provides (at para.5.4.2) the example (with a direct analogy to the case here) that "a wetland should normally not be drained before a new wetland, with equivalent biological characteristics, is available for inclusion in the Natura 2000 network".

40. Accordingly it is the clear expectation that effective compensation will be provided at the time of loss in order to meet the Art.6(4) duty. There may be circumstances where for a project to proceed harm necessarily occurs before

compensation can be established. The available guidance does not fully define those circumstances, however the Commission's guidance is clear that if a plan or project is to proceed "overcompensation would be required for the interim losses."

41. The 2012 Defra draft guidance states (para.25) that in some cases "it may be acceptable to put in place measures which do not provide a complete functioning habitat before losses occur, provided undertakings have been made that the measures will in time provide such habitat and additional compensation is provided to account for this" – it adds, importantly: "[s]uch cases require careful consideration by the competent authority in liaison with statutory nature conservation bodies."

42. The Commission's Art.6(4) guidance sets out a number of factors on timing at section 1.5.6. The four main factors listed are:

    - A site must not be irreversibly affected before compensation is in place.

    - The result of compensation should be effective at the time the damage occurs on the site concerned. Under certain circumstances where this can not be fully achieved, overcompensation would be required for the interim losses.

    - Time lags might only be admissible when it is ascertained that they would not compromise the objective of 'no net losses' to the overall coherence of the Natura 2000 network.

    - Time lags must not be permitted, for example, if they lead to population losses for any species protected in the site under Annex II of Directive 92/43/EEC or Annex I of Directive 79/409/EEC, requiring particularly attention when it entails priority species.

43. The guidance is clear that irreversible damage, net losses and population losses of important species should be avoided. The Applicant argued that the effects of the AMEP proposal were reversible because while the birds may suffer a population decline they could recover and would eventually use the compensation site. However a distinction between irreversible effects and irreversible impacts is probably unhelpful. It is necessary to look carefully at the facts in any given case. Here, an internationally significant population of Black-tailed Godwits will be displaced. The Applicant has accepted that the proposal will harm the integrity of the SPA. It is not possible to have confidence that the birds will not suffer in competition with others and without compensatory habitat in place at the time of loss. As was the case for Redshank at Cardiff Bay, there may be reduced survival in the populations of displaced birds.

44. While some other examples of time lags in the delivery of compensation may be raised, none appear to be a scheme of a similar nature to this. On the Humber,

compensation was proposed with the Immingham Outer Harbour development, although the circumstances there were different (see Natural England's response to 2Qs para.29f). In that case Natural England was satisfied that the displacement of 603 over-wintering wildfowl (this constitutes 8 times fewer birds than in this case) would not harm the coherence of Natura 2000 where effective compensation was provided within 10 months.

45. In any event, it is hard to conceive of the two areas relied upon as proper "overcompensation". The Cherry Cobb wet grassland site (providing 26 ha of wet grassland habitat within the 38.5 ha site) is required due to the risks associated with the RTE scheme, and is not proposed as permanent compensation. The East Halton site appears geared toward a very different function (set out above in paragraph 30).

46. Ultimately the Panel and the Secretary of State must look at the main compensation proposal and weigh up the risks, including that associated with the time lag. It is possible that the birds will (eventually) thrive in the new environment at Cherry Cobb and not suffer excessively in the meantime. The provision of overcompensation does not really alter the position.

5. The operation of the Environmental Monitoring and Management Plan

47. It is noteworthy that the guidance referred to above also emphasises the importance of robust monitoring and management strategies (etc). Page 29 of the Commission's 2011 guidance states that "[m]onitoring schemes should be designed in such a way that they signal any unexpected development at a stage where effective corrective measure can still be taken." A rigorous scheme and pre-defined package of corrective measures is one way to help overcome some of the other uncertainties connected with proposed compensation.

48. A new version of the compensation EMMP was submitted late on 12 November 2012. It was significantly different to the former version, although it did not follow many of the basic comments made by Emma Hawthorne on behalf of Natural England, sent to the Applicant on 5 November 2012. There is no generic guidance on EMMPs that Natural England is aware of, although it knows of a number of examples of similar arrangements made by way of annexes or appendices to legal agreements.

49. As a general comment, the 12 November EMMP is wrongly called a report and is too discursive. Given that the Applicant is currently reworking the EMMP and a new version is due today (16 November 2012) incorporating some of the comments already made, only a few additional points will be reiterated here.

Scope of matters covered in EMMP

50. The EMMP covers the main parts of the compensation proposal (excluding the contingent East Halton pasture): the RTE scheme and the wet grassland.

Whatever view is taken on the overall adequacy of the compensation plans, given that the requirements of the DCO refer to the EMMP(s), it is important that they contain robust and consistent references.

Whether adequate mechanisms have been identified in the EMMP

51. The objectives are too scattered and generally loosely prescribed. They should be set out in a single place. There are serious inconsistencies in how the objectives are presented: e.g. 'aspirational' target (para.175), overall objective (para.165), management aim (para.167). Some particular issues (or potential issues) are over:

    a. The objective for benthic invertebrate densities (paras.13 and 98-106)

    b. The number of inundations required per year (para.13)

    c. The use of appropriate numerical objectives for birds (generally)[7]

52. It was accepted by the Applicant towards the end of the second day of the hearing that the bird targets within Table 7 of the EMMP be removed, because it did not adequately reflect harm to the site.

53. It is very important that the revised targets for the proposed compensation reflect the accepted position in relation to the harm caused. The Applicant's stated aim, on a precautionary basis, is to support displaced birds from NKM (EX28.3(2) para.1.7.5) and that prey items should be present in sufficient densities to support displaced shorebird populations (EMMP para.37). The compensation must be capable of supporting not just *some* Black-tailed Godwit, but an internationally important population.

54. Similarly the baseline data is also too scattered. There are likely to be fewer issues over the baseline data, although the baseline for NKM is disputed (para.96) and others need providing (paras.28 and 162).

55. The process for monitoring, management and risk management needs to be much better defined. The only feedback mechanism contained at present is the "Environmental Manager" who will review monitoring reports and where he identifies adverse environmental trends is responsible for investigating them. The Ecological Advisory Group (EAG) has no clear remit (paras.18-24). The key provisions at paras.209-211, relating to recommendations and adaptive measures are not fully worked out. There is even less definition of the circumstances against which the success of the EMMP can be measured or changes made – para.187 records that the EAG "will need to draw on a range of

[7] Analogous agreements refer to a habitat being "capable of supporting" an assemblage or species of a set number

metrics to ascertain causal factors related to the AMEP and or Compensation Site delivery".

Process for finalising and formalities

56. It is hoped that by the end of the Examination process Natural England will be in a position to send to the Panel comments on all the issues (both generally and in relation to the EMMPs) it considers resolved: any issues that are outstanding (but can be resolved) and its final position on any other outstanding issues (that cannot be resolved).

6. The operation of the legal agreement

57. The Applicant is also currently in the process of redrafting the legal agreement (or Deed) in light of the comments made by the parties in writing and orally. Given this, it is either inappropriate or unnecessary to set out points again. The Applicant is also considering (i) whether other parties ought to be party to the Deed, (ii) whether provisions relating to the purchase of and permission for development on the wet grassland site are desirable and (iii) whether to provide a financial bond.

58. Natural England's view is that a legal agreement is preferable in this case, and it would be willing to enter into one – ideally with other parties such as the Crown Estate and RSPB. It is accepted that the DCO provides some scope to contain the details of compensation proposals. However, for a number of reasons the robustness and enforcement of the compensation proposals would be enhanced if it were secured additionally by legal agreement. First, it would give Natural England a direct role in enforcement, if necessary. The relevant local planning authority East Riding of Yorkshire Council (that would enforce any requirement under the DCO) has not been active in the hearings over the compensation proposals. Secondly, part of the area relevant to the compensation proposals concerns the MMO, a proposed party to the agreement. Thirdly, the roost and wet grassland site is without the red line area of the application, so a supplementary commitment of some kind is required to secure that. Ultimately, it is a matter for the Applicant whether it enters into such an agreement and on what terms.

Conclusion

59. It is worth noting that the draft Defra guidance (2012) acknowledges the complex nature of determinations over the adequacy of compensation measures. Para.22 is of particular relevance and assistance and reflects the points set out above. It provides:

> "The competent authority (liaising with the statutory nature conservation body and others as necessary) must have confidence that the compensatory

measure will be sufficient to offset the harm. This can be a complex judgement and requires consideration of factors including:

- Distance from the affected site: in general compensation close to the original site will be preferable, but there may be instances where a site further away will be better suited, in which case it should be selected. This judgement must be based solely on the contribution of the compensatory measures to the coherence of the network of European sites.
- Time to establish the compensatory measures to the required quality.
- Whether the re-creation / restoration methodology is technically proven or considered reasonable.
- If there is uncertainty or a time lag between harm to the site and the establishment of compensatory measures, a larger area of compensation may be needed, coupled with a monitoring and management strategy that would require the applicant to take action if the compensation is not successful."

60. Natural England will submit any final comments prior to the close of the Examination process, it is hoped that these will be able to include further comments on the legal agreement and compensation EMMP, as well as the marine and terrestrial EMMPs.

16 November 2012

ANNEX 1: Benthic Invertebrates

Interpretation of Killingholme invertebrate data (IECS 2010)
With regards to the IECS 2010 report, it is the interpretation of the data from this report that was highlighted by Natural England at the hearing. It is Natural England's view that the data has the following limitations:

- Small sample size
- Distribution of transects not reflecting bird use or development location
- Samples taken at the wrong time of year,
- No account of prey depletion,
- No account of die-off of adult Hediste post reproduction (one of the key prey species)

Developing invertebrate monitoring targets for EMMP
Whilst it might be possible, on a precautionary basis, to use the maximum figures from transect 3 to provide a target for the EMMP (a maximum wet weight of Hediste of 136g / m^2), ideally further survey work could be completed, which would provide biomass information for key prey species at the correct time of year and for transects within the area of the development (with particular focus on areas of maximum bird use). This would help determine the correct peak amount of bird food and the extent to which this maximum area of food availability is distributed across the area of mudflat potentially to be lost. It is not possible to state with any certainty to what extent peaks from very limited number of samples within IECS 2010 may or may not be representative of the larger area potentially lost following development.

Time taken for RTE to become fully functional and biomass predictions
Unlike for grassland, the experimental nature of the RTE means that there are no directly comparable peer reviewed studies upon which i) the time taken for invertebrates to colonise and ii) predictions for total biomass, can be based. Therefore, the time taken for mudflats within the RTE to become fully functional is, at best, an estimate. In order to maintain an area of wet mudflat at an elevation that would normally result in saltmarsh establishment, water levels will need to be carefully managed within the RTE. As a result, Natural England understands that there will be approximately $1/6^{th}$ of the water moving over the site in comparison to a naturally functioning mudflat. For filter feeding invertebrates, the organic matter suspended in the water column upon which they feed, will also drop to $1/6^{th}$ of levels that would normally be present over a naturally functioning area of mudflat. The impact of this significant reduction in the invertebrate food source upon the growth rates of those invertebrates and the predicted biomass that will be attained does not appear to have been considered.

Natural England
16 November 2012