The Planning Inspectorate
Yr Arolygiaeth Gynllunio

REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed Manston Airport

An Examining Authority report prepared with the support of the Environmental Services Team

Planning Inspectorate Reference: TR020002

17 June 2019

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1 INTRODUCTION

1.1 Background

1.1.1 RiverOak Strategic Partners Ltd (the Applicant) has applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed Manston Airport (the application). The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the application, to report its findings and conclusions, and to make a recommendation to the Secretary of State as to the decision to be made on the application.

1.1.2 The relevant Secretary of State is the competent authority for the purposes of the Habitats Directive[1] and the Habitats Regulations[2] for applications submitted under the PA2008 regime. The findings and conclusions on nature conservation issues reported by the ExA will assist the Secretary of State in performing their duties under the Habitats Regulations.

1.1.3 This report compiles, documents and signposts information provided within the DCO application, and the information submitted throughout the examination by both the Applicant and Interested Parties (IPs), up to Deadline 8 on 14 June 2019 in relation to potential effects to European Sites[3]. It is not a standalone document and should be read in conjunction with the examination documents referred to.

1.1.4 It is issued to ensure that IPs including the statutory nature conservation body (SNCB): Natural England (NE) is consulted formally on Habitats Regulations matters. This process may be relied on by the Secretary of State for the purposes of Regulation 63(3) of the Habitats Regulations. Following consultation, the responses will be considered by the ExA in making their recommendation to the Secretary of State and made available to the Secretary of State along with this report. The RIES will not be revised following consultation.

1.1.5 The applicant has not identified any potential impacts on European sites in other EEA States[4]. Only UK European sites are addressed in this report.

1.2 Documents used to inform this RIES

1.2.1 Documents used to inform this RIES are referred to in square brackets [] in the text of this report; that reference can be found in the Examination

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as codified) (the 'Habitats Directive').

[2] The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).

[3] The term European Sites in this context includes Sites of Community Importance (SCIs), Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), possible SACs, potential SPAs, Ramsar sites, proposed Ramsar sites, and any sites identified as compensatory measures for adverse effects on any of the above. For a full description of the designations to which the Habitats Regulations apply, and/ or are applied as a matter of Government policy, see PINS Advice Note 10.

[4] European Economic Area (EEA) States.

Library published on the National Infrastructure Planning website at the following link:

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002558-Manston%20Examination%20Library%20Template.pdf

1.3 Structure of this RIES

1.3.1 The remainder of this report is as follows:

- **Section 2** details the European sites and potential impacts (including in-combination impacts) that were identified within the DCO application. It provides a summary of related matters discussed during the examination period, up to and including Deadline 8.
- **Section 3** provides an overview of the Applicant's assessment of likely significant effects (LSE). It provides an overview of where IPs disputed the Applicant's conclusions, together with any additional European sites and qualifying features screened for potential LSEs during the examination.
- **Section 4** provides an overview of the Applicant's assessment of adverse effects on integrity (AEOI) of European sites. It provides an overview of where IPs have disputed the Applicant's conclusions.
- **Section 5** discusses the requirement to consider alternatives, compensation and Imperative Reasons of Over-riding Public Interest (IROPI).
- **Annexes 1 and 2** comprise matrices for the European site(s) and qualifying feature(s) for which the Applicant's conclusions were disputed in relation to potential LSEs and AEOI of European site(s). They summarise the evidence submitted by the applicant and interested parties up to and including Deadline 8.

2 OVERVIEW

2.1 Report to Inform the Appropriate Assessment

2.1.1 The Applicant submitted a Report to Inform the Appropriate Assessment ('the RIAA') as Appendix 7.1 [APP-044] of the DCO application. An updated version of the RIAA was submitted at Deadline 1 [REP1-007], which addressed matters raised by the ExA at Appendix F to the Rule 6 letter. A further RIAA was submitted at Deadline 7a [REP7a-014], which addressed a number of matters raised during the examination.

2.2 Relationship Between the Proposed Development and the Conservation Management of European Sites

2.2.1 Paragraph 3.1.1.3 of the RIAA [REP7a-014] states that "*The Proposed Development is not connected to, or necessary for, the management of any European site.*"

2.1 Identification of European Sites

Screening criteria

2.1.1 The Applicant identified European sites within a 15km radius from the perimeter of the Order Limits specified within the DCO. The Applicant stated that this took into consideration potential aircraft flight paths and the environmental effects which the European sites could experience, such as disturbance from construction and operations on-site, and pollution derived from aircraft entering and leaving the airfield.

2.1.2 The RIAA [REP7a-014] provided screening matrices at Appendix A, summarising the European sites and their qualifying features considered as part of the assessment. The European sites and their qualifying features are listed in Table 2.1 below.

Table 2.1: Sites Screened into the HRA by applicant

Name of European Site	Features
Thanet Coast and Sandwich Bay Ramsar site	Ruddy turnstone
	Supports 15 British Red Data Book invertebrate species
Thanet Coast and Sandwich Bay SPA	Golden plover
	Little tern
	Turnstone
Sandwich Bay SAC	Embryonic shifting dunes
	Shifting dunes along the shoreline

	Fixed coastal dunes with herbaceous vegetation
	Dunes with *Salix repens* ssp. *argentea*
	Humid dune slacks
Thanet Coast SAC	Reefs
	Submerged or partially submerged sea caves
Outer Thames Estuary Marine SPA	Red throated diver
Margate & Long Sands SAC[5] (Inshore Marine)	Sandbanks slightly covered by seawater at all times
Stodmarsh SPA	Bittern (breeding and non-breeding)
	Hen harrier (non-breeding)
	Gadwall (breeding)
	Gadwall (non-breeding)
	Shoveler (non-breeding)
Stodmarsh SAC	Desmoulin's whorl snail
Stodmarsh Ramsar	Red Data Book wetland invertebrates
	Bittern (non-breeding)
	Bittern (breeding)
	Hen harrier (non-breeding)
	Gadwall (Breeding)
	Gadwall (non-breeding)
	Shoveler (Non-breeding)
Blean Complex SAC	Sub-Atlantic and medio-European oak or oak hornbeam forests of the Carpinion betuli

2.1.3 Paragraphs 3.3.7.2 and 3.3.7.4 of the RIAA [REP7a-014] screened out effects on the Swale SPA and Ramsar, based on the distance of the site from the A299 and on the basis that air quality effects on these sites would be insignificant (see also 2.1.7; 3.1.10 and 3.2.2). No matrices were provided in respect of the Ramsar and SPA sites.

[5] In its original submission RIAA [APP-044] referred to Margate and Long Sands SCI. NE's relevant representation highlighted that full designation to SAC occurred in September 2017. The updated RIAA [REP7a-014] submitted at Deadline 7a amended all references to SCI to SAC.

Examination

2.1.4 The ExA requested that the Applicant provide revised matrices in Appendix F to the Rule 6 letter [PD-005] "*updated to reflect the full and accurate list of qualifying features of the designated sites and a full assessment of all relevant qualifying features*". The original and updated screening matrices were not prepared in strict accordance with the approach set out in Advice Note 10, which recommends that footnotes accompany the matrices and summarise the data used to underpin conclusions, instead the matrices supplied simply cross referenced to Table 3.2 of the RIAA [REP1-007], which provided a screening rationale. The rationale in Table 3.2 did not consistently address the effects raised in the screening matrices at Appendix A of the RIAA and Table 3.2 only discussed the sites screened in for further assessment. This was also the case for the revised RIAA submitted at Deadline 7a [REP7a-014].

2.1.5 The Sandwich Bay SAC was considered within the RIAA [APP-044], however the application version of the RIAA considered all of the qualifying dune features to be a single feature. The revised RIAA matrices and revised RIAA [REP1-007 and REP7a-014] separated out the individual features, although the Applicant's conclusion remained that no LSE were required to be screened into the assessment of effects. NE's written representation (WR) at Deadline 3 [REP3-089] confirmed that the revised matrices contained the correct features.

2.1.6 NE's relevant representation (RR) stated that the following designated sites could be screened out from further air quality assessment - Thanet Coast SAC; Outer Thames Estuary SPA; Stodmarsh SAC / SPA / Ramsar; Blean Complex SAC; and Margate and Long Sands SAC. NE's RR [RR-1408] also stated that in its view only Thanet Coast and Sandwich Bay SPA and Ramsar; Sandwich Bay SAC and the Sandwich Bay to Hacklinge Marshes SSSI and Thanet Coast SSSI required further consideration.

2.1.7 At Deadline 3 NE highlighted that air quality effects on the Swale SPA and Ramsar and effects on Thanet SAC should also be considered as part of the assessment [REP3-089]. The Applicant's revised RIAA [REP7a-014] sought to exclude the requirement to screen the Swale SPA and Ramsar sites (see paragraph 2.1.3 of this RIES). The revised RIAA also provided a screening matrix in relation to Thanet SAC. At Issue Specific Hearing (ISH)6 the ExA asked NE whether it was appropriate to screen out Swale SPA and Ramsar from further consideration. NE stated that it was happy with the conclusion reached with regards to the assessment of nitrogen and acid deposition and although it would have preferred the in-combination assessment of NOx to be different in approach, it generally accepted the conclusions reached.

2.1.8 Construction dust effects are referenced in the Applicant's screening matrices at Appendix A of the RIAA [REP7a-014] but justification for screening out construction dust effects is not provided in Table 3.2 despite it being cross referenced as the justification for the screening decisions reached. The basis for screening out construction dust in the matrices may be clarified through further written questions.

2.1.9 Damage to designated habitat from outfall construction works is loosely considered within the screening matrices for turnstone in the Thanet and Sandwich Bay Ramsar (under construction phase (noise), which covers physical works) and for golden plover in the SPA. It is not considered for the Ramsar invertebrate features, for little tern and turnstone in the Thanet and Sandwich Bay SPA or in relation to the Thanet SAC Annex 1 habitats but is then considered in the assessment of effects on integrity. The basis for screening out construction effects on qualifying features may be clarified through further written questions.

2.1.10 No additional European Sites for which the UK is responsible were identified for consideration by any interested party during the examination.

2.2 Potential effects

2.2.1 The potential effects screened into the assessment by the Applicant are summarised in Table 2.1 below.

Table 2.2: Potential effects assessed by the Applicant

Site Type	Feature(s)	Potential effects
Sandwich Bay Special Area of Conservation (SAC)	Annex 1 habitats	Air quality effects on qualifying habitats (NOx and nitrogen deposition)
Thanet Coast and Sandwich Bay Special Protection Area Ramsar	Ruddy turnstone (non-breeding)	Construction and operational effects on supporting habitats due to drainage discharge Operational disturbance - noise/visual presence of aircraft
	15 British Red Data Book invertebrate species	Effects on invertebrate supporting habitats due to air quality emissions (NOx and nitrogen deposition)
Thanet Coast and Sandwich Bay Special Protection Area (SPA)	Golden plover (non-breeding)	Construction and operational effects on supporting habitats due to drainage discharge Construction disturbance – noise, vibration and physical activity within the order limits including increases in road traffic. Operational disturbance - noise/visual presence of aircraft Operational disturbance/ displacement - bird scaring effects

Site Type	Feature(s)	Potential effects
		Operational barrier effects
	Little tern (breeding)	Operational disturbance - noise/visual presence of aircraft
	Ruddy turnstone (non-breeding)	Construction and operational effects on supporting habitats due to drainage discharge Operational disturbance/ displacement - noise/visual presence of aircraft

Examination

2.2.2 The examination of effects focused on four major themes as follows:

- The assessment of noise and visual disturbance, displacement and barrier effects on birds within the Thanet Coast and Sandwich Bay SPA and Ramsar. These were considered with respect to effects on bird populations within proximity to the airport site (utilising areas of functionally linked habitat); in Pegwell Bay (which lies under flightpaths to the east of the airport) and on the north Thanet coast; and the use of bird scaring techniques to disturb bird species that are qualifying features of the designated European sites;
- Baseline survey information – the approach to surveys and survey extent;
- The direct physical impact of construction works on the designated sites in Pegwell Bay and indirect impacts of construction and operational discharges at the airports existing drainage outfall into Pegwell Bay on the designated sites; including phasing of drainage mitigation measures relative to the operation of the airport.
- Air quality impacts on designated sites (in particular within Pegwell Bay) – effects of NOx on vegetation and the potential for nutrient nitrogen enrichment including the approach to in-combination assessment of air quality effects.

2.2.3 These matters have primarily been raised by NE, the Royal Society for the Protection of Birds (RSPB) and Kent Wildlife Trust, although a number of other responses have been received in respect of HRA related matters.

2.2.4 NE's RR [RR-1408] raised the following specific matters:

- Bird disturbance in relation to designated nature conservation sites – in particular the application of a 70dB L_{Amax} threshold to determine significant disturbance;

- Impacts from surface water discharge in relation to designated nature conservation sites, including the lack of specific definition of which designated sites and relevant interest features would be considered; and
- Air quality impacts in relation to designated nature conservation sites.

2.2.5 In particular, NE raised concerns in relation to effects on golden plover (SPA feature), turnstone (SPA/ Ramsar/ SSSI feature) and little tern (SPA/ SSSI feature) as well as other SSSI waders (grey plover, ringed plover and sanderling)[NE RR [RR-1408]; REP3-087; REP3-089; REP4-057 REP5-015; REP6-048; REP7-012]. NE's RR [RR-1408] stated its overall position that it was not satisfied that a conclusion of no adverse effects on integrity for the Thanet Coast and Sandwich Bay SPA and Ramsar or the Sandwich Bay SAC could be concluded beyond all reasonable scientific doubt. NE also set out a list of information it considered should be provided before the assessment of effects on integrity could be concluded, this included:

- L_{Aeq} and L_{Amax} noise contour mapping in 5 decibel (dB) steps down to 55dB L_{Amax};
- Information regarding bird scaring methods to be used at Manston (including any comparisons to London Ashford (Lydd) Airport);
- Information regarding impacts on SSSI features;
- Clarification regarding designated sites and relevant interest features;
- Clarification regarding controls on surface water discharge (e.g. permitting); and
- Discussion regarding further information required in respect of a bat license that are not considered further as part of this RIES.

2.2.6 NE's WR [REP3-089] expanded on its original comments relating to bird disturbance/displacement; reiterated its request for information regarding the outfall and provided commentary on the Applicant's air quality assessment. In its response to first written questions [REP3-087] NE stated that it did not agree that the impact of annual mean NOx was insignificant (AQ1.4); that further air quality assessment was required (AQ1.11) and that specific assessment of aircraft flightpaths was required (Ec1.1); that the Applicant's approach to mitigation had taken into account recent case law (C-323/17) Sweetman v Coillte Teoranta (Ec1.8); as well as confirming the relevant designations affected by the outfall (Ec1.9).

2.2.7 NE made further submissions at Deadline 4, 6, 7, 7a and 8 that expanded on these themes and are discussed in more detail below.

2.2.8 The RSPB's RR [RR-1729] also raised concerns with the conclusions of no adverse effects on integrity of the Thanet Coast and Sandwich Bay SPA and Ramsar sites and their species. The concerns were focussed on the Applicant's methodological approach to the ecological surveys submitted

with the application. RSPB made specific reference to wintering bird surveys (including the lack of surveys within the airport boundary); breeding bird surveys; 13km bird strike surveys; the need for nocturnal surveys in functionally linked habitat adjacent to the airport; and barn owl surveys[6]. RSPB also raised concerns in respect of damage to bird features at the Thanet Coast to Hacklinge Marshes SSSI and also mirrored NE's statement that a conclusion of no adverse effects on integrity of the Thanet Coast and Sandwich Bay SPA and Ramsar site could not be reached based on the current evidence.

2.2.9 At Deadline 3 the RSPB made comments regarding the accuracy of statements made in the RIAA regarding the designation status of golden plover and little tern as qualifying features [REP3-013].

2.2.10 Kent Wildlife Trust's (KWT) RR [RR-0978] raised concerns regarding the sufficiency of survey information provided; the impacts of the Proposed Development on designated sites; the impact of bird dispersal methods but otherwise deferred to the RSPBs comments. No further representations were made by KWT in respect of the Proposed Development, although a signed Statement of Common Ground (SoCG) with the Trust was provided at Deadline 7 [REP7-004]. The SoCG agreed that all of the survey issues and relevant effects had been addressed and that no matters were outstanding. Although KWT noted that a number of the matters that it was agreeing were '*outside of its areas of expertise'* (e.g. air and water quality).

2.2.11 The relevant local authorities Canterbury City Council, Dover District Council and Kent County Council have not made substantive comments in relation to HRA matters in their representations. Thanet District Council (TDC) made comments in relation to the in-combination assessment at Deadline 3 that are addressed in section 2.3 of this RIES.

2.2.12 Reference has been made to the effects of water pollution in Pegwell Bay in the response from the 250 members of Nethercourt Action Group (NAG) living in Nethercourt [REP3-012] and to ecological impacts in the representations made by Stonehill Park Limited [e.g. REP3-020]; and Ramsgate Town Council [e.g. REP3-064]. No Night Flights included commentary on effects on biodiversity in their Deadline 3 representation [REP3-275] including reference to concerns regarding disturbance and pollution in Pegwell Bay and the application of noise thresholds.

2.2.13 Five10Twelve Ltd made a late submission regarding the Applicant's noise contour data at Deadline 7a [REP7a-029 and REP7a-030] produced by the Environmental Research and Consultancy Department (ERCD) of the Civil Aviation Authority. The submission questioned the Applicant's approach to the assessment of a realistic 'worst case' scenario for noise and included a set of noise contours prepared in 3dB steps based on the Applicant's fleet mix in Appendix 3.3 of the ES [APP-044]. The noise contours were discussed at ISH6. Five10Twelve Ltd questioned whether RSPs assessment could be considered worst case based on the new data. Whilst Five10Twelve Ltd's comments related primarily to impacts on human

[6] Barn owls are not considered further in this report as they do not relate to the designated sites.

receptors, the ExA required the Applicant's views on the noise contours to be submitted at Deadline 8. The Applicant's ISH6 Summary [REP8-index number to be allocated] provided commentary on the most likely source of difference between the two sets of contours, highlighting in particular different flight paths/profiles. Clarification will be sought on this in further written questions from the ExA.

2.2.14 At ISH6 [EV-021] No Night Flights stated that it would be submitting independently commissioned noise contour data to the examination at Deadline 8 and challenged the basis for the worst case assessment. Members of the public also raised concerns regarding the impact of bird disturbance in Pegwell Bay due to airport operations. No Night Flights also commissioned the ERCD to prepare noise contours for the Proposed Development. These were submitted at Deadline 8 [REP8-index number to be allocated]. No Night Flights consider that the contours reveal a worse case than the Applicant's assessment. The impact of aircraft noise for bird disturbance was not considered as part of the report.

Examination – noise and visual disturbance, displacement and barrier effects on birds within the Thanet Coast and Sandwich Bay SPA and Ramsar

2.2.15 The ExA raised first written questions [PD-007] regarding consideration of specific aircraft flight paths (Ec1.1), bird dispersal measures (Ec1.2), bird disturbance (Ec1.6), surface water discharge (Ec1.7) and the potential location of golden plover within the order limits (Ec1.12).

2.2.16 The Applicant's response to first written questions [REP3-195] included justification of the approach taken to the assessment of aircraft noise; details of likely bird dispersal measures that would be secured in the Wildlife Hazard Management Plan; and clarification of the location of a field occupied by golden plover as being outside the Order Limits.

2.2.17 NE's Deadline 4 response to first written questions stated that information on the use of land by golden plover within the 1km buffer around the airport had been agreed to be provided by the Applicant [REP4-057]. NE also stated that whilst the Applicant has committed to providing a Wildlife Hazard Management Plan post-consent, sufficient detail was required to support the assessment. NE also stated that noise contour mapping should be overlaid with designated site boundaries and the location of interest features.

2.2.18 The ExA raised second written questions [PD-010b] regarding the status of outstanding ecological surveys (Ec2.2); regarding the assessment of specific bird flightpaths (Ec2.3); to NE regarding the Applicant's approach to noise impact assessment for qualifying bird features (Ec2.7); and to NE regarding draft DCO requirements (DCO2.9).

2.2.19 The Applicant's response to second written questions stated that site based ecological surveys had not been possible due to refusal of access under s53 of the Planning Act 2008 but that the ES and RIAA bird surveys would be supplemented by survey data collected over winter 2018/19, as reported in the Winter Bird Survey Report 2018-19 submitted at Deadline 6. Stonehill Park Ltd maintained that the Applicant had breached the

conditions of its s53 authorisation issued by the Secretary of State, such that its rights to access the land under the authorisation ceased [REP6-053; REP7-014; REP8-index number to be allocated]. Stonehill Park Ltd noted its willingness to engage with the Applicant regarding voluntary access arrangements to allow surveys to recommence but stated that that Applicant had not chosen to engage in negotiations. Following the Applicant's submission of additional L_{Aeq} and L_{Amax} noise contour data at Deadline 4 [REP4-018], NE raised concerns regarding noise impacts on qualifying bird species using the coastline adjacent to Herne Bay [REP6-048] and whether it would be more appropriate to consider the impact on qualifying bird species due to changes in L_{Aeq} rather than using an L_{Amax} threshold. It also remained of the view that additional information regarding bird scaring activities was still required.

2.2.20 NE's Deadline 7 [REP7-012] response stated that due to the lack of a full two years of wintering bird survey data, information was necessary to support the conclusion of no adverse effects on integrity reached in the RIAA. NE suggested that in light of the gap in survey data further information would be required to be provided in respect of impacts on birds (in particular golden plover) including the proportion of functionally linked land that would be lost; reasons why not all of the land within the 1km buffer would be suitable for golden plovers; and the crop rotation within the 1km buffer (i.e. how often the land would be suitable for golden plovers).

2.2.21 The Applicant provided the following data additional to the submission RIAA at subsequent deadlines and/or as appendices to the RIAA [REP7a-014].

- Noise contour mapping at Deadline 4 [REP4-018]; parts of which are included in the RIAA at Appendix G;
- Reference to 13km bird strike consideration in Table C1 of the RIAA.
- Appendix EC2.3 at Deadline 6 [REP6-014], included as Appendix F to the RIAA (Bird surveys report 2018-2019) which included functional habitat surveys (comprising winter daytime and nocturnal walkover and flight line surveys January to March 2019) and Pegwell Bay surveys (comprising waterbird distribution and Turnstone surveys);
- Appendix G to the RIAA (Bird disturbance report 2019) including Pegwell Bay bird disturbance and noise monitoring from January – May 2019; figures showing aircraft noise contour data; and for Thanet north coast a desk study and waterbird disturbance survey and noise monitoring in May 2019;
- Appendix H to the RIAA Note providing further analysis of the suitability of farmland within 1km of the Order Limits in relation to bird scaring methods; and

- Appendix I to the RIAA Modelling and assessment of nitrogen and acid deposition.

2.2.22 The updated documentation included the Applicant's justification for the use of an incomplete second year of wintering bird survey data in paragraph 1.1.2.11 of the RIAA [REP7a-014], which stated that the surveys were supported by an extensive literature review and desk study and were therefore robust. Paragraph 3.1.7 of RIAA Appendix G states that "*Two years of survey data are usually required to inform an assessment of effects on the qualifying bird features of a SPA. It is considered however, that the large quantity and quality of the data obtained from WeBS and KOS are sufficient to provide a robust baseline on which to base the assessment*."

2.2.23 NE stated that it remained in discussion with the Applicant over the conclusions to be drawn from the information submitted regarding impacts on the designated sites [REP7a-037].

2.2.24 At ISH6 [EV-021] the ExA asked NE what information was required to resolve the disagreement regarding the conclusions of no adverse effects on integrity. The ExA also queried whether in NE's view there was a requirement to move to a consideration of alternatives.

2.2.25 NE responded that it did not consider that an assessment of alternatives was required. NE stated that its disagreement regarding the conclusion of no adverse effects on integrity primarily related to the scope of mitigation proposed, particularly in relation to turnstone in the northern part of Pegwell Bay. NE was primarily concerned as to whether the Proposed Development would hinder the restore objective of the Thanet Coast and Sandwich Bay SPA designation. In its view, further mitigation should be proposed by the Applicant to resolve this matter. The ExA asked what mitigation would be appropriate. NE suggested that mitigation such as payment into a fund to reduce other forms of disturbance could be appropriate e.g. TDC's measures to reduce recreational disturbance arising from the Thanet Strategy. NE emphasised that such measures had not been discussed or agreed at the present time and that it was for the Applicant to propose and agree such measures.

2.2.26 As discussed above Five10Twelve's late submission of new noise contour data at Deadline 7a [REP7a-029 and REP7a-030] was discussed at ISH6 [EV-021]. The ExA requested that the Applicant comment on the new data by Deadline 8.

2.2.27 At Deadline 8 [REP8-index number to be allocated] NE provided further commentary on the noise contour maps submitted at Deadline 4 [REP4-018] and the additional noise assessment provided in the updated RIAA [REP7a-014]. The response highlighted NE's concerns in relation to impacts on turnstone and the potential to hinder the 'restore' conservation objective. NE indicated that discussions were ongoing with the Applicant and TDC regarding additional mitigation measures that could potentially support a conclusion of no adverse effects on integrity. NE also stated that Appendix H of the updated RIAA [REP7a-014] had addressed its concerns

regarding impacts on integrity of golden plovers from bird scaring on the airfield.

2.2.28 The Applicant's Deadline 8 ISH6 submission [REP8-index number to be allocated] stated that "At this deadline Natural England is indicating to the ExA that discussions are on-going in respect of development of acceptable mitigation. This allows for further discussions after today. However, it may also be of interest in respect of HRA conclusions that the Secretary of State's HRA for Hinkley Point C Connection project concluded that mitigation was needed in respect of potential effects on some sites, specifically with respect to bats. Although the mitigation had largely been defined in the Applicants HRA it is believed that it had not been secured and the conclusions in paragraph 7.32 of the HRA are worded such that 'The Secretary of State considers that, subject to mitigation being secured, managed, maintained, enforced and monitored, there will not be AEoI on the …..'. Clearly this is a point that we need to get to with Natural England by the close of the Examination." The Applicant's submission also proposes to include the following text in its s106 – "*To develop an appropriate contribution the Applicant has reviewed the contributions made in respect of Horizon Nuclear Power Wylfa Ltd developments which has established an Environment (Cemlyn Bay) Fund, and also funded specific posts, in respect of disturbance reduction projects on designated sites. Following review of these the Applicant is prepared to commit a sum of £100,000 towards a scheme, or schemes, to be agreed with Natural England and Thanet District Council, to benefit turnstone in the SPA.*"

2.2.29 TDC's Deadline 8 submission [REP8-index number to be allocated] stated that "*TDC have investigated the use of the Council's Strategic Access Management and Monitoring Plan (SAMM) by the applicant to overcome Natural England's concern over the impact of the development on the integrity of the Thanet Coast and Sandwich Bay Special Protection Area (SPA). The SAMM is primarily focussed on the impact of recreational disturbance in relation to human recreational activities, with contributions required from residential development in the district to fund mitigation/survey work at the SPA to address this impact. The contribution amount is linked to the housing targets within the Draft Local Plan to create a 'per dwelling' requirement. The SAMM project is specifically targeted to mitigate a particular impact, and there is no provision in the SAMM for contributions/mitigation to mitigate the impact of the proposed development (aircraft movements and the noise associated). The SAMM is therefore not considered the appropriate mechanism for mitigating this particular impact on the SPA*."

2.2.30 The Applicant's Deadline 8 s106 submission [REP8-index number to be allocated] commits to a sum of £54,900 (Fifty four thousand nine hundred pounds) to be used for the SAMM Contribution Purposes in respect of the Thanet section of the Thanet Coast and Sandwich Bay Special Protection Area [Fourth Schedule: Biodiversity].

Examination - Impacts from surface water discharge in relation to designated nature conservation sites

2.2.31 The impact of drainage discharges on the designated sites in Pegwell Bay and the likely timing of drainage mitigation were considered in the ExA's first written question Ec1.7 [PD-007], which asked for a clear list of designated sites and relevant interest features with potential to be affected by the outfall; a description of the type of habitat that surrounds the outfall; and confirmation of the likely nature, method and extent of works required to repair the outfall scour protection. The Environment Agency (EA) was also asked to comment on the permitting process for such a discharge as part of this question.

2.2.32 The EA's response to first written questions [REP3-222] set out the Agency's position in relation to the need for an Environmental Permit for the discharge, stating that a permit was not required for the discharge of clean, uncontaminated effluent but that anything other than this would be classified as an incident and could be subject to enforcement action.

2.2.33 The Applicant set out details of sites and features within a 100m zone of influence in its response to first written questions [REP3-195]. The Applicant's response to first written question Ec1.7 also highlighted a number of minor works required to the outfall.

2.2.34 The ExA requested confirmation of how minor works to the outfall had been assessed as part of the RIAA in second written question Ec2.10 [PD010b]. The Applicant responded that the potential minor works to the outfall have "*not been directly assessed as part of the RIAA [APP-044] as they constitute general maintenance of an existing structure*". Instead, the Applicant made reference to the requirement for NE consent for the works and access and stated that "*consent would be granted provided the works take place outside the wintering period to avoid disturbance to the bird interest of the designated sites, and any disturbance to the adjacent mudflat is avoided, or minimised through adoption of appropriate mitigation*."

2.2.35 NE's Deadline 4 response [REP4-057] stated that the from the list of works required it did not appear that there would be any direct loss of the designated sites (resolving concerns set out in its WR [REP3-089]) however, NE remained concerned about the method and timing of the works, which would need to avoid the wintering period to avoid disturbance to the bird interest of the designated site. At Deadline 6 NE responded to EXA question DCO2.9 [REP6-048] stating that it wished to be referenced as a consulting body at Requirement 13(1) and 13(2) in relation to surface water drainage because of the potential risk of contamination of Sandwich Bay SAC.

2.2.36 The ExA directed third written question Ec3.2 to NE [PD-014] and requested confirmation of whether NE was satisfied with the Applicant's response to question Ec2.10. NE responded at Deadline 7a [REP7a-037] stating that the works should be included as part of the in-combination assessment and also "*that subject to the detail of the works and a method statement, different or additional mitigation measures may be required*".

2.2.37 The ExA discussed drainage matters in relation to DCO requirement 13 [PD-015] at ISH6 [EV-021]. NE confirmed that it was content with the revised wording of the Requirement and that there were no outstanding matters relating to outfall works.

2.2.38 NE's Deadline 8 response [REP8-index number to be allocated] stated that "*The Applicant's response to Ec.1.7 sets out the maintenance works required to the outfall to Pegwell Bay. These works would require SSSI consent from Natural England if they are separate to the DCO application. Consent will depend on the method used and mitigation included. Natural England had advised, in our response to Ec.3.2, that the outfall works should be included in the 'in combination' Habitats Regulations Assessment. The Updated RIAA [REP7a-014] does this satisfactorily and Natural England accepts the conclusions."*

Examination - Air quality impacts in relation to designated nature conservation sites.

2.2.39 Air quality effects arising from NOx and nitrogen deposition were considered during the examination.

2.2.40 The ExA's Rule 6 letter [PD-005] stated "*Paragraph 6.8.6 in Volume 1 of the ES (APP-033) states that full results for each assessment criterion are available in Appendix 6.5. Appendix 6.5 of ES Volume 6 (APP-044) only includes results for NOx at ecological receptors. The ExA requests the Applicant to provide full data sets for all pollutants discussed in the text*."

2.2.41 The Applicant provided a replacement to Appendix 6.5 at Deadline 1 [REP1-009].

2.2.42 The ExA raised 24 first written questions [PD-007] in relation to air quality that included generalised questions relating to the assessment assumptions, as well as specific questions relating to the ecological assessment. Questions were raised in relation to provision of contour plots (AQ1.2), impacts on designated ecological sites (AQ1.4), modelling tools (AQ1.6), emissions factors (AQ1.20) and selection of representative receptors (AQ1.21). In addition, question Ec1.13 requested clarification regarding the approach to assessment of mean annual NOx emissions identifying errors in the receptors screened into further ecological assessment.

2.2.43 The Applicant provided responses to first written questions at Deadline 3 [REP3-195] and an errata sheet (enclosure 2 to D3 covering letter – [REP3-188]), which amended the annual mean NOx process contribution at receptor E24.

2.2.44 In respect of air quality effects at Deadline 3 NE's WR [REP3-089] stated the following:

- It was satisfied that no further consideration of acidity levels on ecological receptors was required;
- Nutrient nitrogen deposition required no further consideration;
- Daily mean NOx required no further consideration;

- Annual mean NOx had potential to be over the level of insignificance for some receptors in European sites in all years;
- UK Air Pollution Information System (APIS) data should have been updated with potential increases from other plans and projects and the date of the last APIS update should have been considered;
- Some of the annual mean NOx impacts have been subject to further assessment but that the assessment in ES Chapter 7 [APP-033] needed to be completely revisited; and
- In the absence of the above information the conclusion of no adverse effects on integrity of the designated sites was premature.

2.2.45 The Applicant's comments on WR [REP4-029] noted the various comments and cross referenced to the errata sheet. The Applicant also stated that the use of current deposition rates in the APIS background for future year's assessment was considered to be conservatively based on 20 year trends of flat or decreasing emissions and national and local measures to reduce emissions.

2.2.46 NE's comments on the Applicant's response to first written questions [REP4-057] stated that it was of the view that further assessment of air quality impacts, particularly in-combination impacts was required.

2.2.47 At Deadline 5 [REP-5-001] the Applicant provided a revised Transport Assessment [REP5-012] together with a note on noise and air quality accompanied by an addendum to the Traffic and Transport Chapter [REP5-013]. These documents formed addendums to ES Chapter 6 [APP-033]. REP5-012 stated that revised modelling to confirm the findings of the ES would be submitted at Deadline 6. At Deadline 6 the Applicant submitted an addendum to the ES [REP6-016].

2.2.48 NE provided comments on the air quality assessment at 6 [REP6-048], the comments related primarily to the approach to in-combination assessment (discussed in section 2.3 of this RIES), the threshold for further assessment, baseline data (APIS) and updated year 2, 6 and 20 on designated sites. At Deadline 7 [REP7-012] NE provided further comments in relation to the updated transport modelling work and suggested that, although the approach to in-combination assessment of combining process contributions from other development into the predicted environmental concentration did not provide a transparent audit trail, because the contribution from other plans or projects was insufficiently defined to isolate individual traffic combinations this approach was acceptable in this case. NE stated that updated consideration of the impact of NOx from construction and operation phase effects for years 2, 6 and 20 on designated sites had been provided. At Deadline 7 [REP7-012], NE remained of the view that the following information should be provided:

- APIS background data should have been updated to take account of major development approved and built since 2017; and

- Contour plots to clearly show where the Process Contribution of NOx is more than 1% (or relevant proxy) where the background is at or over 100% of the Critical Level. This should be overlain with habitat data.
- Nutrient nitrogen and acid deposition information that the Applicant committed to submit at Deadline 7a.

2.2.49 The ExAs second written transport question TR2.1 [PD-011] questioned the status of the Manston-Haine link included within the revised transport modelling work and whether its inclusion in the application constituted a material change to the application. The Applicant's response to second written questions TR2.1 [REP6-017] stated "*There are no changes necessary to the dDCO or revisions to the Work Plans as the Manston-Haine link road is not part of the DCO application.*"

2.2.50 Following the Applicant's response regarding the status of the Manston-Haine link, the ExAs third written question TR3.1 [PD-014] questioned the status of the additional transport, noise and air quality assessment provided. The Applicant's answers to third written questions [REP7a-002] states that "*The ES [APP-033] includes noise and air quality assessment on the basis of the Proposed Development's impacts on the existing road network*."

2.2.51 KCC's Deadline 8 submission [REP8-index number to be allocated] states that KCC does not agree with the Applicant's position of reverting to the original mitigation proposals and strategy in their initial transport assessment stating that "*in the absence of revised junction models relating to these schemes that have failed to be provided by the applicant to date, KCC simply does not have the required information to assess the impact and operation of the proposed mitigation schemes*."

2.2.52 At ISH6 [EV-021] the ExA asked NE to confirm its current position on the air quality assessment. NE confirmed, that based on the submission of the addendum material, it was satisfied with the nitrogen and acid deposition assessment and that whilst it would have preferred a different approach to the assessment of NOx effects it was now satisfied with the assessment.

2.2.53 The status of the transport assessment, modelling and dependent assessments such as air quality and noise will be subject to further written questions.

2.2.54 At Deadline 8 NE [REP8-index number to be allocated] stated that the updated air quality assessment and ecological assessment set out in the updated RIAA are sufficient to conclude no adverse effect on the integrity of any European sites, although it maintained its position that a clearer audit trail could have been provided in relation to assessment of NOx.

2.2.55 See the relevant European Site matrices for further details on these issues.

2.3 In-combination assessment

2.3.1 In-combination effects were assessed by the Applicant for designated sites screened into the assessment. The plans and projects that have been

identified as potentially giving rise to effects are summarised in ES Chapter 18: Cumulative effects [APP-035], as discussed in paragraph 4.2.5 of the RIAA [REP7a-014].

2.3.2 In-combination effects were considered in respect of Sandwich Bay SAC, however the potential for effects was ruled out on the basis that there are no other plans or projects that would combine with the minimal effects of air quality predicted and due to distance of qualifying features from other developments and plans (paragraph 4.5.4 of the RIAA [REP7a-014]).

2.3.3 IPs did not identify any other plans or projects for consideration within the in-combination assessment.

Examination

2.3.4 Several overarching matters related to the in-combination assessments were discussed during the examination, including:

- Approach to in-combination assessment; and
- Consideration of Thanet Parkway Station impacts on habitats functionally linked to the Thanet Coast and Sandwich Bay SPA and Ramsar sites.

2.3.5 The EXA raised first written question Ec1.14 regarding whether the in-combination effect of Thanet Parkway Station had been considered in the RIAA. The Applicant's response [REP3-195] stated that the effect of the parkway had been assessed cumulatively.

2.3.6 The ExA raised second written question Ec2.9 regarding the potential for impacts on functionally linked habitat [PD-010b] noting that Thanet Parkway had actually been excluded from the cumulative assessment on the basis that the development was not yet at planning. The Applicant's response to second written questions [REP6-012] provided information in respect of the parkway station, including details of winter bird survey reports prepared in respect of that development, which concluded that arable habitat present onsite was unsuitable for golden plover and therefore not functionally linked. On this basis the Applicant stated that no in-combination assessment was required.

2.3.7 The ExA raised third written question Ec3.2 [PD-014] regarding whether NE was satisfied with the Applicant's response to ExA second written question regarding the outfall. NE responded that the works should be included as part of the in-combination assessment [REP7a-037].

2.3.8 At Deadline 3 TDC [REP3-010] questioned the scope of projects identified for the in-combination assessment, based on the omission of ES appendices 18.1 and 18.2, which were subsequently provided at Deadline 4 [REP4-032]. TDC also stated that it disagreed with the scope of projects assessed and that certain draft local plan allocations and Lydd Airport should also be considered. The ExA asked TDC at ISH6 [EV-021] whether it considered any other projects should have been considered as part of the in-combination assessment. TDC confirmed that it was now satisfied with the scope of projects assessed.

2.3.9 NE's WR [REP3-089] questioned the approach to in-combination assessment of air quality effects due to traffic and disagreed with the Applicant's approach of including future traffic growth impacts in the predicted environmental concentration (PEC) rather than in the process contribution (PC). NE argued that this meant that the in-combination assessment had not been carried out correctly. Instead NE suggested that the future traffic growth contribution and the PC from the Proposed Development should be assessed in-combination. NE's WR also argued that the APIS background data should have been updated.

2.3.10 The Applicant argued in its comments on WR [REP4-029] that since TEMPRO growth factors take into account local plan growth and were used to growth traffic, these were part of the PEC. In relation to APIS it stated that based on future trends, use of the 2013-2015 data was conservative for the purposes of the assessment.

2.3.11 At Deadline 6 the Applicant provided an addendum to Chapter 6 of the ES [REP6-016]. At Deadline 7 [REP7-012] NE stated that the addendum had 'partially addressed' its comments raised at Deadline 6 in relation to air quality [REP6-048]. NE stated that the approach to in combination assessment still incorrectly assessed PC and PEC but that this might be acceptable provided that the transport modelling used contained the predicted effects of the Thanet Local Plan. NE stated that the Applicant's consultants had confirmed this. Other matters such as updating APIS background data remained outstanding. At Deadline 7a [REP7a-037] NE proposed to update its SoCG with the Applicant regarding the conclusions to be drawn from the assessment.

2.3.12 As highlighted in the discussion regarding air quality effects in section 2.2 of this RIES NE confirmed at ISH6 [EV-021] that it was satisfied with the assessment of effects on air quality based on the additional addenda submitted in respect of the Proposed Development. NE also confirmed that in its view the correct receptors had been considered.

2.3.13 Paragraph 3.2.4 of the RIAA [REP7a-014] when talking about other plans and projects states that potential in-combination effects could arise due to:

- Increased residential pressure;
- onshore cable laying works (for offshore wind);
- nitrogen deposition, pollution from surface water runoff from sites increased disturbance due to the visual presence of operatives and noise from vehicles and machinery.

2.3.14 The in-combination discussion only appears to consider recreational pressure. The basis for screening out other effects/projects may be subject to further written questions.

2.3.15 At Deadline 8 NE [REP8-index number to be allocated] confirmed that it agreed that an adverse effect on integrity of the European sites from air quality impacts could be ruled out alone and in combination.

2.3.16 Site-specific in-combination issues are detailed in the relevant European Site matrices.

2.4 Applicant's HRA Report conclusion

2.4.1 The Applicant [REP7a-014] concluded that there would be LSE on three designated European sites (see Table 3.1 of this RIES), however there would be no AEOI on any of these sites, either alone or in-combination with other projects.

2.4.2 These conclusions were refuted by IPs during the examination, based on the issues raised in relation to screening and potential effects discussed above.

Examination

2.4.3 No additional technical matters were raised in relation to the assessment of adverse effects on integrity in addition to those highlighted in the sections above.

2.4.4 RSPB stated in its RR [RR-1729] that it did not agree with the conclusion of no adverse effects on integrity, primarily due to the incomplete baseline survey data. No further representations regarding the assessment of effects on integrity were made by RSPB.

2.4.5 From its RR to Deadline 7 NE maintained that information was required to support the conclusion of the assessment of no adverse effects on integrity. At Deadline 7a [REP7a-037] NE stated that it remained in discussion with the Applicant over the conclusions.

2.4.6 At ISH6 [EV-021] NE confirmed that it had no further issues in relation to the assessment of air quality effects or the impact of the drainage outfall.

2.4.7 At Deadline 8 NE accepted the conclusion of no adverse effects on integrity in relation to air quality effects, the drainage outfall, on golden plover due to bird scaring. NE maintained its position that further mitigation was required in respect of turnstones to support a conclusion of no adverse effects on integrity of the Thanet Coast and Sandwich Bay SPA.

2.4.8 Details of the above issues can be found in the footnotes to the screening and integrity matrices in Annexes 1 and 2 of this RIES.

3 STAGE 1: LIKELY SIGNIFICANT EFFECTS

3.1 The Applicant's Assessment

3.1.1 The Applicant screened the European sites listed in Table 2.1 of this RIES for LSEs.

Screening process

3.1.2 Section 1.2 of the RIAA [REP7a-014] outlines the staged process that the Applicant has followed to screen the potential for the Proposed Development to give rise to LSE, referencing the process described in the Inspectorate's Advice Note 10 and the EC guidance documents '*Managing*

Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000)' and '*Assessment of plans and projects significantly affecting Natura 2000 sites (2001)*'.

3.1.3 Section 2 of the RIAA [REP7a-014] provides further detail regarding the screening process. Section 2.1.2 of the RIAA [REP7a-014] sets out the approach to identifying in-combination effects within the RIAA, which states that the Inspectorate's Advice Note 17 '*Cumulative Effects Assessment*' has been used to identify relevant projects for the purposes of the HRA in-combination assessment. Section 3.2.4.1 of the RIAA [REP7a-014] states that the short list of other plans and projects for which in-combination effects with the Proposed Development could potentially occur is presented in Table 18.2 of the ES [APP-035]. However, this appears to be a typographical error and the reference should be to Table 18.4 of the ES [APP-035].

3.1.4 In preparing screening matrices for this RIES it was noted that justification for screening out an assessment of construction dust effects was not provided in Table 3.2 of the RIAA [REP7a-014], which is cross referenced in each of the screening matrices. Clarification regarding the approach to screening of construction dust effects will be raised in the ExAs fourth written questions.

3.1.5 Section 4.2 of the RIAA [REP7a-014] considered the potential for construction displacement and habitat loss due to damage to roosting site caused by the outfall. Table 3.2 of the RIAA [REP7a-014], did not explicitly consider this issue. Clarification regarding the approach to screening of construction displacement and habitat loss due to outfall works will be raised in the ExAs fourth written questions.

3.1.6 Section 3.2.4 of the RIAA [REP7a-014] included reference to potential in-combination effects due to the residential effects, cable laying and nitrogen deposition/surface water runoff/increased disturbance due to machinery from other developments. Clarification regarding the approach to screening in-combination effects may be subject to further written questions.

3.1.7 The scope of the sites to be assessed was disputed by NE in its response to first written questions [REP3-087] and its written representation [REP3-089]. NE suggested that designated sites (SSSIs) within 5km of the order limits should be considered in its assessment of air quality effects.

3.1.8 The Applicant's comments on WR's at Deadline 4 [REP4-025] stated that "*The Applicant is not aware of any SSSIs in the 2 km to 5 km distance band, and therefore there are no additional SSSIs that need to be assessed but have not been*." NE provided no further response in relation to the study area.

3.1.9 NE's RR [RR1408] stated that the following designated sites could be screened out from further air quality assessment - Thanet Coast SAC; Outer Thames Estuary SPA; Stodmarsh SAC / SPA / Ramsar; Blean Complex SAC; and Margate and Long Sands SAC. NE's RR [RR1408] also stated that in its view only Thanet Coast and Sandwich Bay SPA and

Ramsar and Sandwich Bay SAC and the Sandwich Bay to Hacklinge Marshes SSSI and Thanet Coast SSSI required further consideration.

3.1.10 At Deadline 3 NE suggested that the potential for air quality effects on Swale SPA and Ramsar sites should also be considered [REP3-089]. Paragraphs 3.3.7.2 and 3.3.7.4 of the RIAA [REP7a-014] provided justification for screening out effects on the Swale SPA and Ramsar, based on distance of the site from the A299 and on the basis that air quality effects on these sites would be insignificant. No matrices were provided in respect of the Ramsar and SPA sites and justification was not provided with specific reference to the conservation objectives of the designated sites. At ISH6 [EV-021] NE confirmed that it was satisfied that air quality effects on Swale SPA and Ramsar could be screened out from further assessment.

3.1.11 NE made several representations regarding the Applicant's approach to the assessment of in-combination air quality effects, which could influence screening decisions [REP3-089; REP3-087; REP4-057; REP6-048; REP7-012].

3.1.12 NE's Deadline 6 [REP6-048] response stated that the following information was required:

- An updated air quality assessment taking account of the updated transport modelling that has been carried out, and including an in combination assessment of the Process Contributions from the proposal and other plans or projects.
- The updated air quality assessment should ensure that any approved development that has been built since 2015 is added to the APIS stated background.
- Contour plots to clearly show where the Process Contribution of NOx is more than 1% (or relevant proxy) where the background is at or over 100% of the Critical Level. This should be overlain with habitat data to clearly illustrate the potential effects on designated sites.
- An updated consideration of the impact of NOx from construction and operation phase effects for years 2, 6 and 20 on designated sites.

3.1.13 In response the ExA raised question EC3.3 in third written questions [PD-014] to understand the Applicant's response to NE's comments.

3.1.14 NE stated at Deadline 7 [REP7-012] that the Applicant should:

- provide a transparent audit trail of potential effects by separating process contributions (PC) from the airport proposal alone, and in combination with the PC from the Thanet Local Plan as a percentage of the critical levels for the designated sites;
- add approved development built since 2015 to the background from APIS;

- provide contour plots to clearly show where the PC of NOx is more than 1%, whether the background is at or over 100% of the critical level, overlain with habitat data;
- Update consideration of the impact of NOx from construction and operation phase effects for years 2, 6 and 20 on designated sites; and
- Provide an updated nitrogen and acid deposition assessment.

3.1.15 The ExA raised question EC3.3 in third written questions [PD-014] to understand the Applicant's response to NE's comments. The Applicant's response to third written questions [REP7a-014] stated that the issues had been addressed in its Deadline 6 and 7a submissions.

3.1.16 The ExA raised question TR3.1 [PD-014] in respect of the applicability of modelling outputs supplied during the examination that rely on the implementation of the Manston-Haine link road. The Applicant stated in its response to third written questions [REP7a-003] that a robust assessment of the proposed development had been supplied in respect of the Proposed Development without the Manston-Haine link Road in place. KCC [REP8-index number to be allocated] disagreed with this approach as highlighted in paragraph 2.2.49 above.

3.1.17 The Applicant supplied additional air quality assessment information at Deadline 6 and 7a. At ISH6 [EV-021] the ExA confirmed with NE that it was now satisfied with the assessment of air quality effects.

Scope of projects assessed

3.1.18 At Deadline 3 TDC [REP3-010] questioned the scope of plans and projects identified for the in-combination assessment, based on the omission of ES appendices 18.1 and 18.2, which were subsequently provided at Deadline 4 [REP4-032]. TDC also stated that it disagreed with the scope of plans and projects assessed and that certain draft local plan allocations and Lydd Airport should also be considered. TDC was asked at the ISH6 [EV-021] whether it considered any other projects should have been considered as part of the in-combination assessment. TDC confirmed that it was satisfied with the scope of the in-combination assessment.

3.1.19 In its first written question EC1.14 [PD-007], the ExA specifically requested commentary regarding the implications of Thanet Parkway project on the RIAA were it to be consented stating that it had been excluded from the RIAA.

3.1.20 At Deadline 3 the Applicant's response to first written questions [REP3-195] stated that Thanet Parkway Station had been considered in ES Chapter 18 [APP-035] and that "An assessment of cumulative effects on biodiversity is presented in paragraphs 18.5.9 to 18.5.32 of Chapter 18.5 [APP-035] for both on and off-site receptors. Thanet Parkway Station has therefore not been excluded from the in-combination assessment". It concludes that no significant cumulative effects on biodiversity are predicted.

3.1.21 The ExA raised a second written question in relation to Thanet Parkway Station at EC2.2.9 [PD010b] stating that the station was excluded from further assessment on the basis that the station proposals were not at planning, whereas KCC confirmed that an application for the station was submitted in June 2018. EC2.2.9 also requested confirmation of how this project would affect the in-combination assessment, with particular reference to effects on functionally linked habitat

3.1.22 The Applicant's response to second written questions [REP6-012] stated that the Thanet Parkway Assessment was accompanied by a Winter Bird Survey Report (Appendix Ec2.9), which did not record golden plover or other SPA species using the site and concluded that the arable habitat onsite was unsuitable for golden plover and was therefore not functionally linked habitat and would not affect the in-combination assessment.

3.1.23 As noted above, in preparing the RIES it was noted that paragraph 3.2.4 of the RIAA [REP7-014] made reference to in-combination effects from recreational pressure; onshore cable laying works; nitrogen deposition and disturbance due to visual presence of operatives and noise from vehicles and machinery. Clarification regarding the basis for screening out such effects (and therefore other projects) will be the subject of further written questions.

3.1.24 No other plans or projects were identified to be included within the assessment by any other IP.

3.1.25 Of the European sites screened, the Applicant concluded that the Proposed Development is likely to give rise to significant effects, either alone or in combination with other projects or plans, on the qualifying features of three European sites, as detailed in Table 3.1 below.

3.1.26 The Applicant's conclusions **were disputed** by IP's during examination in relation to effects on the sites and features outlined in Table 3.1.

3.1.27 As a result of the screening assessment, the Applicant concluded that the Proposed Development is **likely to give rise to significant effects**, either alone or in-combination with other plans or projects, on the qualifying features of the European site(s) listed in Table 3.1.

Table 3.1: European sites, qualifying features and potential impacts for which the Applicant concluded a LSE [REP1-007 and REP7a-014]

European Site	Feature	Impact	LSE agreed with SNCBs
Sandwich Bay SAC	Annex 1 habitats	Operation Phase (air quality) – deposition of oxides of nitrogen from aircraft and road vehicles	Yes
Thanet Coast and Sandwich Bay Ramsar site	Ruddy turnstone (non-breeding)	Construction and operation phase (outfall) – introduction of toxic pollutants or sediments and scour Operation Phase (noise/visual presence from aircraft) - Disturbance / displacement	Yes
	15 Red Data Book invertebrate species	Operation Phase (air quality)	Yes
Thanet Coast and Sandwich Bay SPA	Golden plover (non-breeding)	Construction and operation phase (outfall) - introduction of toxic pollutants or sediments and scour Construction phase (noise) - Noise, vibration and physical activity Operation Phase (noise/visual presence from aircraft) - Disturbance / displacement Operation phase (bird scaring) Operation phase (barrier effect)	Yes
	Little tern (breeding)	Operation Phase (noise from planes)	Yes
	Ruddy turnstone (non-breeding)	Construction and operation phase (outfall) - introduction of toxic pollutants or sediments and scour	Yes

European Site	Feature	Impact	LSE agreed with SNCBs
		Operation Phase (noise/visual presence from aircraft) - Disturbance / displacement	

*From applicant's RIAA [REP7a-014] and screening matrices (Appendix A).

3.2 Summary of HRA Screening outcomes during the examination

3.2.1 A total of 10 European sites were screened by the Applicant prior to examination (Table 2a). Of these sites, the Applicant concluded that there would be no likely significant effects on seven European sites and their qualifying features (Table 3a). Three sites were identified as having potential LSE and were taken forward to an assessment of adverse effects on integrity (Table 3.1).

3.2.2 NE confirmed at Deadline 3 [REP3-089] that it generally agreed with the European sites and features screened in by the Applicant, although Thanet Coast SAC and the Swale SPA and Ramsar sites were identified as having potentially relevant features. The RIAA [REP7a-014] screened out the Swale SPA and Ramsar sites from further assessment based on a very high level justification but no matrices were provided in respect of the sites. NE stated at ISH6 [EV-021] that it was content that air quality effects on the Swale SPA and Ramsar were screened out of the assessment. Thanet SAC was considered in the revised RIAA [REP7a-014].

Table 3.2: Additional European sites, features and potential impacts discussed during examination with regard to LSEs

European Site	Feature	LSE agreed with SNCBs
Thanet Coast SAC	Reefs and submerged or partially submerged sea caves	N (NE Deadline 3 WR REP3-089)
The Swale Ramsar	(Potential air quality impacts only) which is designated for: Assemblage of wetland plants and invertebrates Wintering waterbird assemblage Redshank, Tringa totanus; Dark bellied brent goose; Grey plover Pluvialis squatarola (non-breeding)	N (NE Deadline 3 WR REP3-089)
The Swale SPA	(Potential air quality impacts only) which is designated for: Dark bellied brent geese, Branta bernicla bernicla (non-breeding) Dunlin Calidris alpina alpina (non-breeding) Breeding bird assemblage Wintering waterbird assemblage	N (NE Deadline 3 WR REP3-089)

4 ADVERSE EFFECTS ON INTEGRITY

4.1 Conservation Objectives

4.1.1 The conservation objectives for all of the European sites taken forward to Appropriate Assessment and discussed in this section of the report were provided by the Applicant at Deadline 7a [REP7a-014].

4.2 The Integrity Test

No Adverse Effects on Site Integrity

4.2.1 The applicant concluded that the project will not adversely affect the integrity of the European site(s) and feature(s) listed below/in Table 4.1 below.

4.2.2 Table 4.1 below summarises where the Applicant's conclusion of no adverse effect on site integrity in relation to the European sites and qualifying features listed is currently disputed by SNCBs and IPs.

Table 4.1: The applicant's shadow appropriate assessment and degree of agreement with IPs

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
Sandwich Bay SAC			
Annex 1 habitats	Operation Phase (air quality) excluded	Y	NE disputed the approach to in-combination assessment of air quality effects on the designated sites [REP6-048]. Revised air quality assessment provided by the Applicant was based on the scheme + Manston-Haine link road. At ISH6 [EV-021] NE stated that it was now satisfied with the assessment of air quality effects and conclusion of no adverse effects on integrity based on the additional air quality data submitted at Deadlines 6 and 7a. This position was confirmed in its Deadline 8 submission.
Thanet Coast and Sandwich Bay Ramsar			
Ruddy turnstone (non-breeding)	Construction and Operational Phases (outfall) excluded	Y	NE disputed the original approach to assessment of effects of the outfall and the RIAA was updated to take into account the approach to maintenance and repair works. At ISH6 [EV-021] NE confirmed that it had no outstanding issues with the outfall works based on the further information supplied at Deadline 7a and that it was satisfied with the revised wording of Requirement 13 relating to drainage.

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			This position was confirmed in its Deadline 8 submission.
	Operation Phase (noise/visual presence from aircraft) excluded	N	NE and RSPB disputed the approach to assessment of disturbance due to noise [REP6-048; RR-1729]. Both organisations disputed the approach to bird survey work and the reliance placed on less than a two year period of survey activity [REP7-012; RR-1729]. NE also disputed the lack of assessment for bird disturbance on the north coast of Thanet [REP-6-048]. At ISH6 [EV-021] NE stated that further mitigation was required to be provided in respect of bird disturbance in Pegwell Bay in order to support the conclusion of no adverse effects on integrity. This position was confirmed in its Deadline 8 submission. TDC's Deadline 8 submission [REP8-index number to be allocated] did not consider that mitigation via the Strategic Access Management and Monitoring Plan (SAMM) was an appropriate mechanism for mitigating this impact. The Applicant's Deadline 8 submission [REP8-index number to be allocated] committed to a s106 contribution "towards a scheme, or schemes, to be agreed with Natural England and Thanet District Council, to benefit turnstone in the SPA". Different contributions are discussed in the

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			Applicant's s106 document and the ISH6 hearing summary. RSPB did not make representations at ISH6 [EV-021] and did not make any further representations to amend their RR [RR-1729] comments.
15 Red Data Book invertebrate species	Operation Phase (air quality) excluded	Y	NE disputed the approach to in-combination assessment of air quality [REP6-048]. Revised air quality assessment provided by the Applicant was based on the scheme + Manston-Haine link road. At ISH6 [EV-021] NE confirmed that it was now satisfied with the assessment of air quality effects and conclusion of no adverse effects on integrity based on the additional air quality data submitted at Deadlines 6 and 7a. This position was confirmed in its Deadline 8 submission.
Thanet Coast and Sandwich Bay SPA			
Ruddy turnstone (non-breeding)	Construction and operational phases (outfall) excluded	Y	NE disputed the original approach to assessment of effects of the outfall and the RIAA [REP7a-014] was updated to take into account the approach to maintenance and repair works but at time of writing, the final methodology for the works had not been agreed [REP7a-037]. At ISH6 [EV-021] NE confirmed that it had no outstanding issues with the outfall works based

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			on the further information supplied at Deadline 7a and that it was satisfied with the revised wording of Requirement 13 relating to drainage. This position was confirmed in its Deadline 8 submission.
	Operation phase (noise/visual presence from aircraft) excluded	N	NE and RSPB disputed the approach to assessment of disturbance due to noise [REP6-048; RR-1729]. Both organisations disputed the approach to bird survey work and the reliance placed on less than a two year period of survey activity [REP7-012; RR-1729]. NE also disputed the lack of assessment for bird disturbance on the north coast of Thanet [REP-6-048]. At ISH6 [EV-021] NE stated that further mitigation was required to be provided in respect of bird disturbance in Pegwell Bay (in particular relating to Turnstone) in order to support the conclusion of no adverse effects on integrity. This position was confirmed in its Deadline 8 submission. TDC's Deadline 8 submission [REP8-index number to be allocated] did not consider that mitigation via the Strategic Access Management and Monitoring Plan (SAMM) was an appropriate mechanism for mitigating this impact. The Applicant's Deadline 8 submission [REP8-index number to be allocated] committed to a s106 contribution

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			"*towards a scheme, or schemes, to be agreed with Natural England and Thanet District Council, to benefit turnstone in the SPA*". Different contributions are discussed in the Applicant's s106 document and the ISH6 hearing summary. RSPB did not make representations at ISH6 [EV-021] and did not make any further representations to amend their RR [RR-1729] comments.
Golden plover (non-breeding)	Construction and operational phases (outfall) excluded	Y	NE disputed the original approach to assessment of effects of the outfall and the RIAA [REP7a-014] was updated to take into account the approach to maintenance and repair works but at time of writing, the final methodology for the works had not been agreed [REP7a-037]. At ISH6 [EV-021] NE confirmed that it had no outstanding issues with the outfall works based on the further information supplied at Deadline 7a and that it was satisfied with the revised wording of Requirement 13 relating to drainage. This position was confirmed in its Deadline 8 submission.
	Construction phase (noise) excluded	Y	NE's Deadline 3 WR [REP3-089] considers that the original assessment relied on mitigation to achieve a conclusion of no adverse effects on integrity but that the conclusion is supported.

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			The revised RIAA [REP7a-014] does not apply mitigation in the consideration of screening.
	Operation Phase (noise/visual presence from aircraft) excluded	N	NE and RSPB disputed the approach to assessment of disturbance due to noise [REP6-048; RR-1729]. Both organisations disputed the approach to bird survey work and the reliance placed on less than a two year period of survey activity [REP7-012; RR-1729]. NE also disputed the lack of assessment for bird disturbance on the north coast of Thanet [REP-6-048]. At ISH6 [EV-021] NE stated that further mitigation was required to be provided in respect of bird disturbance in Pegwell Bay (in particular relating to Turnstone) in order to support the conclusion of no adverse effects on integrity. At Deadline 8 NE confirmed that it was 'more certain that an adverse effect on the integrity of this species will be avoided during operation of the airport. RSPB did not make representations at ISH6 [EV-021] and did not make any further representations to amend their RR [RR-1729] comments.
	Operation phase (bird scaring) excluded	Y	NE requested additional information in respect of this matter [REP3-089] but stated that in the absence of a full two years' worth of survey data for golden plover in functionally linked habitat

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			within 1km of the airport, further evidence was required to support the conclusions of no adverse effect on integrity [REP7-012]. The Applicant provided the information in its updated RIAA [REP7a-014]. NE's deadline 8 submission confirmed that it was now satisfied with the additional information provided in Appendix H of the RIAA [REP7a-014] in respect of impacts on golden plover.
	Operation phase (barrier effect) excluded	Unclear	NE's deadline 8 submission confirmed that it was now satisfied with the additional information provided in Appendix H of the RIAA [REP7a-014] in respect of impacts on golden plover – it is assumed that this covers both bird scaring and barrier effects although it is not explicitly stated.
Little tern (breeding)	Operation Phase (noise from planes) excluded	Unclear	NE and RSPB disputed the approach to assessment of disturbance due to noise [REP6-048; RR-1729]. Both organisations disputed the approach to bird survey work and the reliance placed on less than a two year period of survey activity [REP7-012; RR-1729]. NE also disputed the lack of assessment for bird disturbance on the north coast of Thanet [REP-6-048]. At Deadline 3 NE welcomed the fact that the RIAA considered whether the Proposed Development would hinder the return of little

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
			tern to the SPA (which no longer breed in the site). NE agreed that significant effects through construction disturbance, bird scaring and operation al barrier effects could be ruled out but that additional information on noise disturbance due to overflying aircraft would aid understanding as to whether additional disturbance from aircraft would be significant enough to deter little terns from returning. At ISH6 [EV-021] NE stated that further mitigation was required to be provided in respect of bird disturbance in Pegwell Bay (in particular relating to Turnstone) in order to support the conclusion of no adverse effects on integrity. RSPB did not make representations at ISH6 [EV-021] and did not make any further representations to amend their RR [RR-1729] comments.

*From applicant's HRA report [REP7a-014] and integrity matrices (Appendix E of REP7a-014).

5 ALTERNATIVES, COMPENSATION AND IROPI

5.1.1 The ExA raised with the Applicant and NE at ISH6 [EV-021] on 5 June 2019, whether there was a need for the ExA to consider the application of alternatives and imperative reasons of overriding public interest (IROPI) under the HRA process, in relation to any of the features for which an adverse effect on integrity has been identified or which remains uncertain.

5.1.2 NE stated that at ISH6 [EV-021] that it did not consider that there was a need to consider assessment of alternatives or IROPI but that further mitigation was required in respect of effects on the Thanet Coast and Sandwich Bay SPA and Ramsar sites.

5.1.3 NE's Deadline 8 submission maintained that further mitigation measures would be required to support the conclusions of no adverse effects on integrity for the Thanet Coast and Sandwich Bay SPA.

ANNEX 1 HRA STAGE 1 MATRICES: SCREENING

1) THANET COAST AND SANDWICH BAY SPA

EU Code: UK9012071																								
Distance to Order Limits: 0m																								
European site features	Likely effects of the Proposed Development																							
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 3 (AQ)			Effect 4 (bird scaring)			Effect 5 (barrier)			Effect 6 (dust)			Effect 7 (con. dist.)			Effect 8 (in-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
Turnstone (non-breeding)	✓ b	✓ b	✓ b	n/a	✓ b	n/a	X a	X a	X a	n/a	X a	n/a	n/a	X a	n/a	X a	n/a	X a	X a	n/a	X a	✓ b	✓ b	✓ b
Golden plover (non-breeding)	✓ d	✓ d	✓ d	n/a	✓ d	n/a	X c	X c	X c	n/a	✓ d	n/a	n/a	✓ d	n/a	X c	n/a	X c	✓ d	n/a	✓ d	✓ d	✓ d	✓ d
Little tern (breeding)	n/a	n/a	n/a	n/a	✓ e	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

TURNSTONE

a) **Air Quality** - Table 3.2 of the Applicant's RIAA states that turnstone primarily forage along shorelines and on rocky beaches, neither of which are identified as habitats vulnerable to nitrogen deposition. It further highlights that the UK Air Pollution Information System has not assigned a critical load value for NOx deposition to these habitat types, and that a critical load value of greater than 34 kg N ha^{-1} y^{-1} has been assigned to mudflats and sandbanks not covered by seawater at low tide in an analysis of sensitive Natura 2000 habitats in the Netherlands. The Applicant concludes that this habitat was one of the least sensitive to nitrogen deposition in the analysis of 75 different habitat types and as such no adverse effects on the habitats turnstone reply upon are predicted from an air quality perspective during the operational phase of the Proposed Development.

Bird Scaring - With regards to bird scaring during the operation of the Proposed Development, Table 3.2 of the RIAA states that the nearest point within the Ramsar site which provides suitable foraging or resting habitat for turnstone, being rocky beaches and intertidal sand and mud, is approximately 1.4km south-east of the fringes of the airfield where bird scaring methods would be deployed. In view of this, the Applicant concludes that no adverse effects on the population and distribution of turnstone are predicted.

Barrier - Table 3.2 of the Applicant's RIAA also concludes that there is no evidence to indicate that the flight paths of turnstone cross or will cross the Order Limits of the DCO. In view of this, the Applicant concludes that no adverse effects on the population and distribution of turnstone are predicted.

Construction Disturbance – Table 3.2 of the Applicant's RIAA states that due to the lack of presence of turnstone within 750m of the Order Limits of the DCO no adverse effects are predicted on the extent and structure of the habitats turnstone rely upon, or the numbers and distribution of this species due to the construction works of the Proposed Development.

Dust - Dust is not referenced in Table 3.2 for this feature, despite the footnote in the Applicant's matrix directing the reader there. Dust is considered in the screening criteria in Table 3.1 and Table A.1. The Applicant appears to have applied geographic screening criteria in Table 3.1 to rule out effects.

b) **Outfall** – Table 3.2 of the Applicant's RIAA states that there is the potential for direct effects to the foraging habitat and roosting sites of turnstone from the discharge of treated water to Pegwell Bay during the construction and operational phase of the Proposed Development, along with potential for the discharge to adversely affect the habitats that turnstone rely upon, through scour at the point of discharge and for maintenance works carried out on the outfall to disturb turnstone roosting in Pegwell Bay..

Aircraft – The RIAA states at Table 3.2 that there is the potential for foraging and roosting turnstone in Pegwell Bay to be adversely affected by auditory and visual disturbance caused by over-flying aircraft, and aircraft departing from and arriving at the airport.

In-combination – RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

GOLDEN PLOVER

c) **Air Quality -** The RIAA states at Table 3.2 that the intensively managed, arable farmland utilised by golden plover for foraging which would receive a high level of input from herbicides and pesticides is unlikely to be vulnerable to the effects of acidification and/ or enrichment due to nitrogen deposition. It further states that as the saltmarsh and mudflats used by roosting birds in Pegwell Bay are washed by tidal seawater on a regular basis, the structure of the vegetation and suitability as a roost site is unlikely to be changed by the Proposed Development to such a degree as to be rendered unsuitable due to nitrogen deposition. The Applicant highlights that these habitats have low levels of sensitivity to nitrogen deposition, with values of 21-23 kg N ha^{-1} y^{-1} for *Salicornia/ Spartina* covered saltmarsh and >34 kg N ha^{-1} y^{-1} for mudflats/ sandflats. In view of this the Applicant concludes that no adverse impacts to habitats that golden plover rely upon are predicted due to air quality during operation.

Construction Disturbance – Table 3.2 of the Applicant's RIAA states that due to the presence of golden plover within 750m of the Order Limits of the DCO, there is the potential for construction noise to adversely impact on the population and distribution of golden plover.

Dust - Dust is not referenced in Table 3.2 for this feature, despite the footnote in the Applicant's matrix directing the reader there. Dust is considered in the screening criteria in Table 3.1 and Table A.1. The Applicant appears to have applied geographic screening criteria in Table 3.1 to rule out effects.

d) **In-combination** – RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

LITTLE TERN

e) **Aircraft –** The Applicant states at Table 3.2 of the RIAA that due to the absence of Little Tern from the SPA, no likely significant effects are considered during either construction or operation of the Proposed Development. However, consideration is given to adverse effects on the SPA due to the potential of the Proposed Development preventing recolonisation of the SPA by Little Tern.

2) THANET COAST AND SANDWICH BAY RAMSAR

EU Code: UK11070																								
Distance to Order Limits: 0m																								
European site features	Likely effects of the Proposed Development																							
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 3 (AQ)			Effect 4 (bird scaring)			Effect 5 (barrier)			Effect 6 (dust)			Effect 7 (con. dist.)			Effect 8 (in-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
Turnstone (non-breeding)	✓ b	✓ b	✓ b	n/a	✓ b	n/a	X a	X a	X a	n/a	X a	n/a	n/a	X a	n/a	X a	n/a	X a	X a	n/a	X a	✓ b	✓ b	✓ b
Red Data Book invertebrates	X c	X c	X c	n/a	n/a	n/a	✓ d	✓ d	✓ d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓ d	✓ d	✓ d

TURNSTONE

a) **Air Quality -** Table 3.2 of the Applicant's RIAA states that turnstone primarily forage along shorelines and on rocky beaches, neither of which are identified as habitats vulnerable to nitrogen deposition. It further highlights that the UK Air Pollution Information System (APIS) has not assigned a critical load value for NOx deposition to these habitat types, and that a critical load value of greater than 34 kg N ha^{-1} y^{-1} has been assigned to mudflats and sandbanks not covered by seawater at low tide in an analysis of sensitive Natura 2000 habitats in the Netherlands. The Applicant concludes that this habitat was one of the least sensitive to nitrogen deposition in the analysis of 75 different habitat types and as such no adverse effects on the habitats turnstone reply upon are predicted from an air quality perspective during the operational phase of the Proposed Development.

Bird Scaring - With regards to bird scaring during the operation of the Proposed Development, Table 3.2 of the RIAA states that the nearest point within the Ramsar site which provides suitable foraging or resting habitat for turnstone, being rocky beaches and intertidal sand and mud, is approximately 1.4km south-east of the fringes of the airfield where

bird scaring methods would be deployed. In view of this, the Applicant concludes that no adverse effects on the population and distribution of turnstone are predicted.

Barrier - Table 3.2 of the Applicant's RIAA also concludes that there is no evidence to indicate that the flight paths of turnstone cross or will cross the Order Limits of the DCO. In view of this, the Applicant concludes no adverse effects on the population and distribution of turnstone are predicted.

Construction Disturbance – Table 3.2 of the Applicant's RIAA states that due to the presence of golden plover within 750m of the Order Limits of the DCO, there is the potential for construction noise to adversely impact on the population and distribution of golden plover.

Dust - Dust is not referenced in Table 3.2 for this feature, despite the footnote in the Applicant's matrix directing the reader there. Dust is considered in the screening criteria in Table 3.1 and Table A.1. The Applicant appears to have applied geographic screening criteria in Table 3.1 to rule out effects. **Outfall** – Table 3.2 of the Applicant's RIAA states that there is the potential for direct effects to the foraging habitat and roosting sites of turnstone from the discharge of treated water to Pegwell Bay during the construction and operational phase of the Proposed Development, along with potential for the discharge to adversely affect the habitats that turnstone rely upon, through scour at the point of discharge and for maintenance works carried out on the outfall to disturb turnstone roosting in Pegwell Bay..

Aircraft – The RIAA states at Table 3.2 that there is the potential for foraging and roosting turnstone in Pegwell Bay to be adversely affected by auditory and visual disturbance caused by over-flying aircraft, and aircraft departing from and arriving at the airport.

In-combination – RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

RED DATA BOOK INVERTEBRATES

b) **Outfall -** Table 3.2 of the RIAA states that none of the 15 British Red Data Book invertebrate species are known to be associated with the mudflat habitats that could be potentially adversely affected by discharge from the outfall due to scour. It continues that as all the habitats likely to support the invertebrate species such as sand dunes, grassland and other freshwater wetland habitats are located well beyond 100m of the outfall, no adverse impacts on the invertebrate species from outfall are predicted during construction or operation.

c) **Air Quality** – That Applicant concludes that the air quality modelling undertaken indicates that habitats upon which the invertebrate species are likely to depend are located within the ZOI in which adverse effects could occur due to NOx,

and that these habitat types (including freshwater marshes and sand dunes) are sensitive to nitrogen deposition. In view of this, further assessment has been provided by the Applicant in order to determine any adverse effects on the integrity of the Ramsar site.

In-combination – RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

3) THANET COAST SAC

EU Code: UK0013107																								
Distance to Order Limits: 300m																								
European site features	Likely effects of the Proposed Development																							
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 3 (AQ)			Effect 4 (bird scaring)			Effect 5 (barrier)			Effect 6 (dust)			Effect 7 (con. dist.)			Effect 8 (in-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
Reefs	n/a	n/a	n/a	n/a	n/a	n/a	Xa	Xa	Xa	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Xa	Xa	Xa
Submerged or partially submerged sea caves	n/a	n/a	n/a	n/a	n/a	n/a	Xa	Xa	Xa	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Xa	Xa	Xa

a) **Air Quality -**The RIAA states at Table 3.2 that the Annex I habitat features are submerged by tidal sea water on a daily basis, and therefore unlikely to be adversely affected by pollution derived from aircraft emissions. The Applicant points out that APIS have not assigned a critical load value for NOx deposition to these habitat types and that a critical load value of greater than 34 kg N ha^{-1} y^{-1} has been assigned to 'reefs' in an analysis of sensitive Natura 2000 habitats in the Netherlands. The Applicant concludes that this habitat was one of the least sensitive to nitrogen deposition in the analysis of 75 different habitat types and that in view of this, no adverse impacts on the qualifying habitats are predicted.

In-combination - RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

4) SANDWICH BAY SAC

EU Code: UK0013077																								
Distance to Order Limits: 0m																								
European site features	Likely effects of the Proposed Development																							
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 3 (AQ)			Effect 4 (bird scaring)			Effect 5 (barrier)			Effect 6 (dust)			Effect 7 (con. dist.)			Effect 8 (in-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
Embryonic shifting dunes	X a	X a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b	n/a	n/a	n/a	n/a	n/a	n/a	X a	n/a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b
Shifting dunes along the shoreline	X a	X a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b	n/a	n/a	n/a	n/a	n/a	n/a	X a	n/a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b
Fixed coastal dunes with herbaceous vegetation	X a	X a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b	n/a	n/a	n/a	n/a	n/a	n/a	X a	n/a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b
Dunes with Salix repens ssp. argentea	X a	X a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b	n/a	n/a	n/a	n/a	n/a	n/a	X a	n/a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b
Humid dune slacks	X a	X a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b	n/a	n/a	n/a	n/a	n/a	n/a	X a	n/a	X a	n/a	n/a	n/a	✓ b	✓ b	✓ b

a) **Outfall** - The Applicant states at Table 3.2 of the RIAA that all the qualifying habitats of the SAC are located well beyond 100m of the outfall, beyond which, no likely significant effects are predicted. In view of this, no adverse impacts on the

qualifying habitats and their plant species are predicted by the Applicant as a result of outfall during construction and operation.

Dust - Dust is not referenced in Table 3.2 for this feature, despite the footnote in the Applicant's matrix directing the reader there. Dust is considered in the screening criteria in Table 3.1 and Table A.1. The Applicant appears to have applied geographic screening criteria in Table 3.1 to rule out effects.

b) **Air Quality -** The Applicant concludes that air quality modelling undertaken indicates that sensitive sand dune habitats are located within the ZOI in which adverse effects could occur due to air-borne and deposition of nitrogen and that there is therefore the potential for air pollution to adversely impact the extent, distribution and structure of these habitats.

In-combination – RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

ANNEX 2 HRA STAGE 2 MATRICES: INTEGRITY

1) THANET COAST AND SANDWICH BAY SPA

EU Code: UK9012071																		
Distance to Order Limits: adjacent																		
European site features	Adverse effects of the Proposed Development																	
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 4 (bird-scaring)			Effect 5 (barrier)			Effect 6 (con. dist.)			Effect 7 (In-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
A169 Turnstone (non-breeding)	Xa	Xa	Xa		Xb											Xf	Xf	Xf
A140 Golden plover (non-breeding)	Xa	Xa	Xa		Xb			Xc			Xd		Xe		Xe	Xf	Xf	Xf
A195 Little tern (breeding)					Xb												Xf	

a) **Turnstone** - Section 4.4 of the RIAA states that the main foraging and roosting areas are located along the northern and north-west fringes of Pegwell Bay, approximately 300-400m north-east of the outfall, and concludes that following the incorporation of the environmental measures set out in in Paragraphs 4.2.4.45 to 4.2.4.58 of the RIAA, all effects on Pegwell Bay due to the outfall will be negligible. The Applicant further states that the mitigation for any maintenance works as referenced in paragraphs 4.2.4.59 to 4.2.4.62 of the RIAA would need to be agreed with NE beforehand and would be undertaken outside the main period when turnstone are present in Pegwell Bay, being September- March. Therefore, the Applicant concludes that there will be no adverse effects on the habitats utilised by turnstone in Pegwell Bay, and no adverse effect on the integrity of the Thanet Coast and Sandwich Bay SPA due to the outfall during construction and operation of the Proposed Development.

Golden Plover – Section 4.2 of the RIAA states that the Proposed Development has the potential to have a significant effect on water quality at Pegwell Bay through the generation of sediment laden run-off entering the site's drainage

system in an uncontrolled manner and pollution from the spillages of concrete, oils, fuels or other chemicals entering the Site's drainage system or reaching Pegwell Bay through groundwater inflows.

b) **Turnstone** – The Applicant relies on results from the desk study presented in Appendix 7.2 of ES Chapter 7 ES and the Pegwell Bay Distribution Surveys undertaken in 2016/17 and 2018/19 to conclude that turnstone primarily occur along the northern fringe of Pegwell Bay. The RIAA adds that the turnstone foraging area is located outside the area where planes will fly under 500m altitude and on the outer limits of the 1km lateral distance beyond which the species is unlikely to be disturbed. Table 4.6 of the RIAA shows that the turnstone foraging and roosting along the northern fringe of Pegwell Bay would receive peak noise levels ranging from 60-75 dBL_{Amax} due to the planes from the Proposed Development and would be exposed to the highest noise levels up to 29 times per day for 110 days per year. The Applicant suggests that this is not predicted to cause additional significant disturbance to turnstone due to: the cliffs dampening the noise that will be experienced; the discounting of visual stimuli due to the distance and presence of cliffs; research suggesting that birds react to the presence of aircraft in flight if they are perceived to be a threat; aircraft noise resulting in a gradual increase and decrease over a short period; the predictability and infrequency of flights; and the lack of evidence that birds using Pegwell Bay respond to the overflights of commercial jets or that the conservation objectives of the SPA were impacted by Manston Airport, when previously operational. The RIAA also states that turnstone along the Thanet north coast will not be disturbed due to the noise generated from aircraft flights for various reasons, including the altitude of aircraft; the predictability of flight lines; flight frequency; and the tolerance of turnstone to existing high levels of disturbance on the coast. The Applicant therefore concludes that the effects of noise and visual presence from aircraft on turnstone are considered negligible and would not adversely affect the integrity of the SPA.

Golden Plover - Section 4.2 of the RIAA highlights that the results from a literature review undertaken by the Applicant indicate that beyond distances of 500m in altitude and 1km ground-level, lateral distance, little golden plover are unlikely to be disturbed by the visual presence of flying aircraft. An indication of locations overflown by aircraft below 500m is shown in Figure 4.4 of the RIAA, based on indicative vertical climb profiles, operating procedures and flight paths. The Applicant states that the roosting area for golden plover in Pegwell Bay is outside the area where aircraft are predicted to fly at altitudes of less than 500m and is at its closest 1.5km from the proposed routes for aircraft flights to the east. The Applicant further contends that that use of farmland within the 1km lateral and 500m altitude areas of the proposed flight path to the west, and then north towards the Thanet north coast by golden plover was low in winter 2016/17 and while the Reculver Marshes are used by golden plover on a regular basis this is outside the 1km lateral disturbance distance. The RIAA states that the literature review also indicates that noise levels in excess of 80 dB L_{Amax} have been recorded as causing the more severe disturbance incidents. It continues that the highest predicted levels of noise would be generated by aircraft departing to the east on average, 29 times per day on 110 days per year, for higher and mid

noise level planes, with similar levels generated by aircraft departing to the west on average, 28 times per day on 255 days per year. The RIAA also states that the Bird Disturbance Study appended at Appendix G identifies no occurrences where noise alone elicited a response in the birds present. Therefore, the RIAA concludes that disturbance effects to the SPA population of golden plover are predicted to be low or negligible, particularly when taking into account: the discounting of visual stimuli due to the distance; research suggesting that birds react to the presence of aircraft in flight if they are perceived to be a threat; aircraft noise resulting in a gradual increase and decrease over a short period; the predictability and infrequency of flights; and the lack of evidence to suggest that the conservation objectives of the SPA were impacted by aircraft noise whilst Manston Airport was previously operational. The Applicant therefore contends that there would be no adverse effect on the integrity of the SPA.

Little Tern – Section 4.3 of the RIAA highlights that the results from a literature review undertaken by the Applicant indicate that beyond distances of 500m in altitude and 1km ground-level, lateral distance, little tern are unlikely to be disturbed by the visual presence of flying aircraft other than helicopters. An indication of locations overflown by aircraft below 500m is shown in Figure 4.4 of the RIAA, based on indicative vertical climb profiles, operating procedures and flight paths. The RIAA states that the literature review also indicates that noise levels in excess of 80 dB L_{Amax} have been recorded as causing the more severe disturbance incidents and that that breeding terns are relatively tolerant of aircraft flights. The Applicant highlights that little tern is a coastal species and does not use farmland to forage, rest or breed in, and that the closest potentially suitable nesting habitat of shingle/stony beaches available for little tern is located on Shell Ness on the southern edge of Pegwell Bay. Shell Ness is 2.5km from the airport runway and according to the Applicant is beyond the 1km lateral distance from the flight path and where aircraft are predicted to fly over at altitudes of less than 500m. The Applicant points to the noise contour figures provided in the Ecology Noise Contour Maps Technical Note as evidence that Shell Ness will receive a peak noise level of 55 dBL_{Amax} for arriving and departing 747-400 planes, being the noisiest aircraft type, with levels below this for all other aircraft types. The Applicant argues that these peak noise levels will be infrequent with a peak of eight times per day on 110 days per year. In view of this the Applicant concludes that noise and visual disturbance to nesting little tern at Shell Ness would not occur due to the planes. The RIAA also states that little tern nesting along the Thanet north coast will not be disturbed due to the noise generated from aircraft flights for various reasons, including the altitude of aircraft; the predictability of flight lines; flight frequency; and the lack of evidence to indicate that little tern are sensitive to aircraft noise disturbance during the breeding season. The Applicant therefore concludes that the effects of noise and visual presence from aircraft in deterring little tern from recolonising the SPA are considered negligible and would not adversely affect the integrity of the SPA.

c) Table 3.11 in Chapter 3 of the ES indicates that a Wildlife Hazard Management Plan (WHMP) will be prepared should consent be granted for the Proposed Development, and that the bird scaring methods therein are unlikely to differ markedly from the following: bird of prey distress calls; regular patrols; lures; and pyrotechnic bird scaring cartridges such as explosive shotgun shells. The RIAA also states that NE, Kent Wildlife Trust, TDC and the Civil Aviation Authority will all be consulted on the content of the WHMP. The Function Habitat Study appended at Appendix H to the RIAA argues that the type of crop rotation employed in the area means that suitable habitat for foraging golden plover would be available in all years, and that due to the presence of the 2-3m bund between the airport runway and farmland to the south of the A299, and busy roads adjacent, the effects of bird scaring activities outside the airport boundary in these areas would be limited. Therefore, the Applicant concludes that there would be no adverse effect on the integrity of the SPA due to disturbance/ displacement of golden plover, as a result of bird scaring activities.

d) The RIAA states that results from the desk study and surveys undertaken by the Applicant indicate that much of the golden plover population roosts at Pegwell Bay, and forages on farmland to the south and south-west and that the likely flights of golden plover are therefore unlikely to cross the Order Limits or the vicinity of flight paths of low flying aircraft. The Applicant therefore concludes that the impacts of barrier effect are considered negligible and that there would be no adverse effect on the integrity of the SPA due to barrier effects on golden plover caused by the presence of the Proposed Development.

e) Section 4.2 of the RIAA relies on varies desk studies to demonstrate that that farmland within 750m of the Order Limits is not used on a regular basis by important numbers of golden plover, citing a count of 530 birds in a single month, and that with the availability of extensive alternative inland feeding habitat within the vicinity, the effects of displacement on the SPA golden plover population during construction are considered to be negligible. The RIAA also notes that the main roost site for the species on Pegwell Bay is located more than 1km from the airport boundary and is therefore predicted not to be adversely affected by construction works for the Proposed Development.

f) RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

2) THANET COAST AND SANDWICH BAY RAMSAR

EU Code: UK11070															
Distance to Order Limits: 0m															
European site features	Adverse effects of the Proposed Development														
	Effect 1 (outfall)			Effect 2 (aircraft)			Effect 3 (AQ)			Effect 5 (barrier)			Effect 7 (In-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
Turnstone (non-breeding)	Xa	Xa	Xa		Xb								Xd	Xd	Xd
Red Data Book Invertebrates							Xc	Xc	Xc				Xd	Xd	Xd

a) Section 4.4 of the RIAA states that the main foraging and roosting areas are located along the northern and north-west fringes of Pegwell Bay, approximately 300-400m north-east of the outfall, and concludes that following the incorporation of the environmental measures set out in in Paragraphs 4.2.4.45 to 4.2.4.58 of the RIAA, all effects on Pegwell Bay due to the outfall will be negligible. The Applicant further states that the mitigation for any maintenance works as referenced in paragraphs 4.2.4.59 to 4.2.4.62 of the RIAA would need to be agreed with NE beforehand and would be undertaken outside the main period when turnstone are present in Pegwell Bay, being September- March. Therefore, the Applicant concludes that there will be no adverse effects on the habitats utilised by turnstone in Pegwell Bay, and no adverse effect on the integrity of the Thanet Coast and Sandwich Bay Ramsar Site due to the outfall during construction and operation of the Proposed Development.

b) The Applicant relies on results from the desk study presented in Appendix 7.2 of ES Chapter 7 ES and the Pegwell Bay Distribution Surveys undertaken in 2016/17 and 2018/19 to conclude that turnstone primarily occur along the northern fringe of Pegwell Bay. The RIAA adds that the turnstone foraging area is located outside the area where planes will fly under 500m altitude and on the outer limits of the 1km lateral distance beyond which the species is unlikely to be disturbed. Table 4.6 of the RIAA shows that the turnstone foraging and roosting along the northern fringe of Pegwell

Bay would receive peak noise levels ranging from 60-75 dBL_{Amax} due to the planes from the Proposed Development and would be exposed to the highest noise levels up to 29 times per day for 110 days per year. The Applicant suggests that this is not predicted to cause additional significant disturbance to turnstone due to: the cliffs dampening the noise that will be experienced; the discounting of visual stimuli due to the distance and presence of cliffs; research suggesting that birds react to the presence of aircraft in flight if they are perceived to be a threat; aircraft noise resulting in a gradual increase and decrease over a short period; the predictability and infrequency of flights; and the lack of evidence that birds using Pegwell Bay respond to the overflights of commercial jets or that the conservation objectives of the SPA were impacted by Manston Airport, when previously operational. The RIAA also states that turnstone along the Thanet north coast will not be disturbed due to the noise generated from aircraft flights for various reasons, including the altitude of aircraft; the predictability of flight lines; flight frequency; and the tolerance of turnstone to existing high levels of disturbance on the coast. The Applicant therefore concludes that the effects of noise and visual presence from aircraft on turnstone are considered negligible and would not adversely affect the integrity of the SPA.

c) The RIAA states at section 4.5 that the principal pollutant of concern is nitrogen dioxide, given its association with ground-based traffic and aircraft emissions which may increase the ambient NOx concentrations to which vegetation that the invertebrates depend upon is exposed, and that NOx emissions may form NO2 following chemical conversion in the air, which is then deposited. The RIAA points out that while EA guidance gives criteria for screening out source contributions at designated nature conservation sites, alternative approaches to the screening of annual mean NOx, nitrogen deposition and acid deposition were adopted by the Applicant following feedback from NE. This is detailed in the Manston Airport DCO: Environmental Statement Addendum - Potential Effects arising from the use of the Thanet Strategic Transport Model. The RIAA concludes that air quality effects cannot be screened out on the following ecological receptors associated with SAC: annual mean NOx on one receptor (ER012) in Year 2, Year 6 and Year 20 year; daily mean NOx on 5 receptors (E20, E21, E22, E23, E24) in Year 2, 3 receptors (E21, E22 and E23) in Year 6 and 1 receptor (E22) in Year 20; nitrogen deposition on one receptor (ER012) in Year 6 and receptors E26, E28 and ER012 in Year 20; and acid deposition on one receptor (ER012) in Year 20.

Annual mean NOx – The Applicant considers that no ecological effects that would undermine the conservation objectives for the Ramsar are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay Ramsar for the following reasons: none of the habitats present within areas affected by the exceedance of the 70 % threshold are considered to be particularly sensitive to NOx deposition; the APIS states that NOx are known to have greater adverse effects in the presence of SO2 or O3, both of which are well below their critical level; the habitats within the Sandwich Bay comprise littoral sediment regularly covered by eutrophic tidal waters and NOx deposition in each of the 3 assessment years at Receptor ER012 remains significantly lower than the AQAL; and Defra forecasts that NOx

concentrations will fall by about 2% per year during the 2020s and the Applicant therefore concludes that additional NOx deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced NOx emissions generally.

Maximum daily NOx - The Applicant considers that no ecological effects that would undermine the conservation objectives for the Ramsar are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay Ramsar for the following reasons: The maximum PEC at any of the sites occurs in Year 2 at Receptor E23, however this is 120.27 μg m−3 which is only 60 % of the AQAL. The PEC at all other major sites are less than 60 % of the AQAL and PECs at the receptors where contributions cannot be screened out as insignificant in Years 6 (E21, E22, E23) and 20 (E22) are all less than half the AQAL; the habitats within the designated areas in the immediate vicinity of Receptors E20, E21 and E22 would not be considered sensitive to changes in daily mean NOx, as these are the cliffs; habitats at two receptors E23 and E24 would likely be sensitive to elevations in daily mean NOx if sufficiently large over a long time period however, exposure to the maximum daily NOx would only occur at these sites when the wind is blowing from the north to north-west directions, which this occurs infrequently; the daily mean NOx contributions are dominated by construction inputs which are temporary and also not continuous during the construction period; and Defra forecasts that NOx concentrations will fall by about 2% per year during the 2020s and the Applicant therefore concludes that additional NOx deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced NOx emissions generally.

Nitrogen deposition - The Applicant considers that no ecological effects that would undermine the conservation objectives for the Ramsar are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay Ramsar for the following reasons: In Year 20 nitrogen deposition in the absence of the Proposed Development would already significantly exceed the nitrogen deposition AQAL and the additional nitrogen deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced N emissions generally.

Acid Deposition - The Applicant considers that no ecological effects that would undermine the conservation objectives for the Ramsar are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay Ramsar for the following reasons: the habitats within the Sandwich Bay comprise littoral sediment regularly covered by eutrophic tidal waters, which would be expected to limit the potential for the elevated acid deposition rates to adversely affect the littoral habitat areas; and current trends are for acid deposition to fall in future years therefore the additional acid deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced emissions generally.

d) RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].

3) SANDWICH BAY SAC

EU Code: UK0013077															
Distance to Order Limits: within															
European site features	Adverse effects of the Proposed Development														
	Effect 2 (aircraft)			Effect 3 (AQ)			Effect 4 (bird-scaring)			Effect 5 (barrier)			Effect 7 (In-comb.)		
	C	O	D	C	O	D	C	O	D	C	O	D	C	O	D
H2110 Embryonic shifting dunes				Xa	Xa	Xa							Xb	Xb	Xb
H2120 Shifting dunes along the shoreline				Xa	Xa	Xa							Xb	Xb	Xb
H2130 Fixed coastal dunes with herbaceous vegetation				Xa	Xa	Xa							Xb	Xb	Xb
H2170 Dunes with Salix repens ssp. argentea				Xa	Xa	Xa							Xb	Xb	Xb
H2190 Humid dune slacks				Xa	Xa	Xa							Xb	Xb	Xb

a) The RIAA states at section 4.5 that the principal pollutant of concern is nitrogen dioxide, given its association with ground-based traffic and aircraft emissions which may increase the ambient NOx concentrations to which vegetation that the invertebrates depend upon is exposed, and that NOx emissions may form NO2 following chemical conversion in the air, which is then deposited. The RIAA points out that while EA guidance gives criteria for screening out source contributions at designated nature conservation sites, alternative approaches to the screening of annual mean NOx, nitrogen deposition and acid deposition were adopted by the Applicant following feedback from NE. This is detailed in the Manston Airport DCO: Environmental Statement Addendum - Potential Effects arising from the use of the Thanet Strategic Transport Model. The RIAA concludes that air quality effects cannot be screened out on the following ecological receptors associated with SAC: annual mean NOx on one receptor (ER012) in Year 2, Year 6 and Year 20 year; daily mean NOx on 5 receptors (E20, E21, E22, E23, E24) in Year 2, 3 receptors (E21, E22 and E23) in Year 6 and 1 receptor (E22) in Year 20; nitrogen deposition on one receptor (ER012) in Year 6 and receptors E26, E28 and ER012 in Year 20; and acid deposition on one receptor (ER012) in Year 20.

b) **Annual mean NOx** – The Applicant considers that no ecological effects that would undermine the conservation objectives for the SAC are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay SAC for the following reasons: none of the habitats present within areas affected by the exceedance of the 70 % threshold are considered to be particularly sensitive to NOx deposition; the APIS states that NOx are known to have greater adverse effects in the presence of SO_2 or O_3, both of which are well below their critical level; the habitats within the Sandwich Bay comprise littoral sediment regularly covered by eutrophic tidal waters and NOx deposition in each of the 3 assessment years at Receptor ER012 remains significantly lower than the AQAL; and Defra forecasts that NOx concentrations will fall by about 2% per year during the 2020s and the Applicant therefore concludes that additional NOx deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced NOx emissions generally.

c) **Maximum daily NOx -** The Applicant considers that no ecological effects that would undermine the conservation objectives for the SAC are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay SAC for the following reasons: The maximum PEC at any of the sites occurs in Year 2 at Receptor E23, however this is 120.27 µg m−3 which is only 60 % of the AQAL. The PEC at all other major sites are less than 60 % of the AQAL and PECs at the receptors where contributions cannot be screened out as insignificant in Years 6 (E21, E22, E23) and 20 (E22) are all less than half the AQAL; the habitats within the designated areas in the immediate vicinity of Receptors E20, E21 and E22 would not be considered sensitive to changes in daily mean NOx, as these are the cliffs; habitats at two receptors E23 and E24 would likely be sensitive to elevations in daily mean NOx if sufficiently large over a long time period however, exposure to the maximum daily NOx would only occur at these sites when the wind is blowing from the north to north-west directions, which this occurs infrequently; the daily mean NOx contributions are dominated by construction inputs which are temporary and also not continuous during the construction period; and Defra forecasts that NOx concentrations will fall by about 2% per year during the 2020s and the Applicant therefore concludes that additional NOx deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced NOx emissions generally.

d) **Nitrogen deposition** - The Applicant considers that no ecological effects that would undermine the conservation objectives for the SAC are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay SAC for the following reasons: In Year 20 nitrogen deposition in the absence of the Proposed Development would already significantly exceed the nitrogen deposition AQAL and the additional nitrogen deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced N emissions generally.

e) **Acid Deposition** - The Applicant considers that no ecological effects that would undermine the conservation objectives for the SAC are predicted and therefore there would be no adverse effect on the integrity of the Sandwich Bay SAC for the following reasons: the habitats within the Sandwich Bay comprise littoral sediment regularly covered by eutrophic tidal waters, which would be expected to limit the potential for the elevated acid deposition rates to adversely affect the littoral habitat areas; and current trends are for acid deposition to fall in future years therefore the additional acid deposition predicted to result from operation of the airport including traffic generated in combination with other developments, is most likely to be off-set by reduced emissions generally.

f) RIAA paragraph 3.3.6 states that in-combination effects are considered as part of the screening considerations in Table 3.1 based on the assessment provided in ES Chapter 18 [APP-035].