



RiverOak Strategic Partners

Summary of Applicant's Case put Orally at the Biodiversity and Habitats Regulations Assessments hearing and associated appendices

TR020002/D8/ISH6

Examination Document

Project Name:

Manston Airport Development Consent Order

Application Ref:

TR020002

Submission Deadline:

8

Date:

14 June 2019

MANSTON AIRPORT DEVELOPMENT CONSENT ORDER APPLICATION

APPLICANT'S WRITTEN SUMMARY OF ORAL SUBMISSIONS PUT AT ISSUE SPECIFIC HEARING 6 ON HABITATS REGULATIONS ASSESSMENT, BIODIVERSITY AND OTHER ENVIRONMENTAL MATTERS

5 JUNE 2019 (pm)

Laurence Suite, Building 500, Discovery Park, Sandwich, CT13 9FF

1 Introduction

- 1.1 This document summarises the case put by RiverOak Strategic Partners (**the Applicant**), at Issue Specific Hearing 6. The hearing opened at 2pm on 5 June 2019 at the Laurence Suite, Building 500, Discovery Park, Sandwich, CT13 9FF. The agenda for the hearing was set out in the Examining Authority's (ExA) letter published on the Planning Inspectorate's website on 24 May 2019 [[EV-021](#)].

2 Agenda Item 4: EIA Matters

4(a) Air Quality

- 2.1 The Applicant noted that an Environmental Statement (**ES**) Addendum was submitted at Deadline 6 [[REP6-016](#)] which covered the potential effects arising from use of the Kent County Council (**KCC**) Thanet Strategic Transport Model (**TSTM**). The ExA was advised that the TSTM incorporated the proposed Manston-Haine Link Road.
- 2.2 The revised assessment concluded that there will be no significant effects on air quality resulting from the project (this was also the case in the original ES). In some areas the revised assessment concluded that **impacts would be less than those reported in the original ES**.
- 2.3 In Year 20 both the original and revised assessments predict two human receptors experiencing "moderate" impacts. The original ES assessment predicted 23 human receptors experiencing "slight" impacts, however the revised assessment only predicted 15. The interpretation of these impacts is a matter of expert judgement, and Mr Peirce for the Applicant confirmed that in his judgement, these **impacts are not significant**.
- 2.4 Thanet District Council (**TDC**) observed that the annual mean NO₂ concentrations monitored at the A36 receptor (TH70/71/72 diffusion tubes) were consistently around 44 µg m⁻³, compared to 38 µg m⁻³ assumed in the modelling. The Applicant takes note of this and observes that concentrations near road junctions vary considerably over a few metres. NO₂ concentrations are less than 30 µg m⁻³ at the TH66 diffusion tube, 40 m along the High Street and as such the assessment used the average of the three monitoring locations in St Lawrence as a reasonable estimate of the background concentrations in this area.
- 2.5 TDC noted that not all the mitigation that TDC would normally expect had been agreed or secured, in particular electric car charging points, as per Table 3 of TDC's Air Quality Technical Planning Guidance. In response, the Applicant has included a commitment to install electric vehicle charging points and to undertake an emissions mitigation assessment. Both of these commitments have been included within the Register of Environmental Actions and Commitments which is submitted with reference TR020002/D8/2.5.

- 2.6 The ExA requested copies of the input parameters for both the noise and air quality elements of the ES addendum, which are provided at Deadline 8 [raw documents at 8_Ref19_V1.zip so that timestamps are visible], with an explanation at Appendix ISH6-19 to this document (as requested at the ExA's action points 19 and 20).

(b)(i) Non-completion of Ecological Surveys

- 2.7 Natural England confirmed that despite the uncertainty regarding on-site habitats, the mitigation area was of a sufficient size to provide sufficient net gain. A minimum of 10 biodiversity units would be acceptable to Natural England.
- 2.8 The Examiner asked about the status of the bat licence that will be required from Natural England (NE). The Applicant noted that the draft bat licence has been completed and will be submitted to NE as soon as control of the mitigation land is secured. The Applicant updated the ExA regarding the status of the mitigation land noting that a draft option agreement is in discussion with the landowner with finalisation expected in the near future.

(b)(ii) ES in Chapter 7 [APP-033] and consequential changes from the revised traffic assessment

- 2.9 The Applicant noted that a revised assessment of ecological effects taking into account the outputs of the TSTM and updated traffic noise and NO_x modelling was included in the ES Addendum [REP6-016] submitted at Deadline 6.
- 2.10 The Applicant confirmed that no significant effects on ecological receptors are predicted as a result of the noise or air quality impacts associated with the revised Transport Assessment.
- 2.11 The revised assessment indicated negligible change in road noise on the A256 and A299 that pass closest to designated (SSSI, SAC, SPA, Ramsar) sites. The updated assessment indicated that there will be a small change in road noise on the B2190 Spitfire Way and B2050 Manston Road during construction and operational phases. However, farmland adjacent to these roads, within 750m of the site is not used on a regular basis by significant numbers of golden plover. This is the only SPA species that may forage over arable land around the airport. As such **the original assessment is unchanged and there are no significant effects.**
- 2.12 The Applicant went on to explain that the ecological assessment has been updated at ecological receptors subject to NO_x concentrations that could not be screened out as 'insignificant' against the Environment Agency criteria.
- 2.13 At each receptor the forecast concentration has been considered in the context of the site designation, habitats present, their condition, the extent of the affected area, all set against the Defra forecast reduction in NO_x over the next 10-20 years.
- 2.14 The Applicant confirmed that relevant conservation objectives will not be undermined and therefore **no significant ecological effects** are predicted for SSSI, while no adverse effects on site integrity are predicted for European/Internationally designated sites.
- 2.15 Natural England confirmed that they were in agreement with information provided in relation to The Swale. Natural England were satisfied with Appendix I to the RIAA which discusses nitrogen deposition and acid deposition, accept the assessment of NO_x, and are content that receptors have been screened correctly.

- 2.16 **Natural England raised no objections to the conclusions of the further assessment and accept that there are no adverse effects.**

(b)(iii) Biodiversity Net Gain, Biodiversity Impact Calculator Requirement 8 [PD-015] commitment to net gain of at least 10 BU.

- 2.17 The Applicant explained that a Biodiversity Unit is a measure of biodiversity value of the habitats present on site and that the method of calculation is solely habitat based and cannot take account of species value. Natural England confirmed that they are content with net gain of 10 biodiversity units. The Applicant explained that a conservative approach was adopted for the assessment of the provision of mitigation land and as such this provides a mitigation plan for a worst-case scenario.
- 2.18 The Applicant confirmed that confirmatory surveys will be carried out once access to the site is obtained. Recent and previous habitat management operations will also be confirmed. Given the managed nature of the airport site and the recent works carried out by DfT, the Applicant believes that the confirmatory surveys are likely to reduce the net loss of Biodiversity Units.
- 2.19 In the event that the habitat on site is less valuable than that assessed as the worst case, the Applicant is committed to delivery of a net gain of 10 Biodiversity Units. This is secured via the Register of Environmental Actions and Commitments.

(c) Climate Change

- 2.20 The Applicant explained that 'Net Zero: The UK's contribution to stopping global warming' (the CCC report) sets out the case for increasing the pace of Green House Gas (GHG) emission reduction in the UK. However, it does not alter climate change projections, guidance or best practice in the context of development projects. In this regard, it is concerned with the reduction of GHGs from the UK economy as a whole.
- 2.21 The applicant explained that the range of projections within UKCP18 remain the primary source for assessing the effects of climate change in the context of the Proposed Development. Therefore, the Applicant's proposed approach to climate change adaptation remains appropriate.
- 2.22 In this regard, the Applicant provided a framework Climate Change Adaptation Strategy (CCAS) at Deadline 4 [REP4-033]) which will be developed alongside the detailed design process. The Climate Change Adaptation Strategy is secured via the REAC which a certified document under Schedule 10 of the dDCO [PD-016].
- 2.23 As part of the CCAS development, the Applicant will complete a Climate Change Risk Assessment (CCRA) following the making of the DCO. This exercise will use UKCP18 projections, which will inform the climate change Adaptation Strategy.

(d) Noise

(d)(i) The ExA is considering whether it should be a Requirement in the draft DCO that the Authorised Development should have a daytime SOAEL of 60dBL_{Aeq,16hr} (free field), with consequent amendment to the NMP

- 2.25 The Applicant explained that it does not believe it is appropriate or necessary to impose a daytime SOAEL of 60dBL_{Aeq,16hr}.

- 2.26 The Applicant explained that:
- The concept of SOAEL originates from the Noise Policy Statement for England, and the level for SOAEL is derived from the Aviation Policy Framework; and
 - The Noise Mitigation Plan (NMP) aims to avoid significant effects and the Applicant has therefore set the NMP trigger threshold at 63dBL_{Aeq,16hr}
- 2.27 It was further emphasized by the Applicant that the SOAEL had been set at 63dBL_{Aeq,16hr} to avoid significant effects, as this is the threshold at which significant effects on health and quality of life occur.
- 2.28 The Applicant acknowledged that the Aviation 2050 consultation paper considers whether mitigation in the form of noise insulation and ventilation at 60dB may be appropriate. Nonetheless it was emphasised that a 60dB threshold is not current policy and may not be implemented. It is not for the Applicant or the examination process to pre-empt the outcomes of the current consultation process and, as such, in applying the 63dB threshold the Applicant has therefore correctly reflected current Government policy d.
- 2.29 The Applicant noted that Public Health England (PHE) declined to comment regarding the level of SOAEL [REP5-017]. It was also noted that the Independent Commission on Civil Aircraft Noise (ICCAN) also declined to comment on the issue of the 60dB contour. However as noted by the ExA, paragraph 2 of the ICCAN representation notes that *‘Government proposes making more routine the setting of noise caps as part of planning approvals reference to the use of noise caps’*. It should be noted that a noise cap is not the same as a threshold for noise insulation and the two issues should not be confused. The applicant has offered a noise cap in the form of a contour in addition to the noise insulation and ventilation threshold of 63dB.
- 2.30 For the reasons outlined above, the applicant does not believe it is appropriate to impose a 60dB threshold. Nonetheless the Applicant explained the implications of introducing a 60dB threshold. It was noted that a tiered approach can be used, with different provision at different noise levels. The Applicant approximated that the cost could be in the order of £2.75 million (63dB) (where £10,000 is offered to those within that contour, and a further £2.3 million (60dB) (where £4,000 is offered to those between the 63dB contour and the 60dB contour. To offer £10,000 to those between the 63dB and 60dB contours would add £5,750,000 to the cost of noise insulation. As current government policy is to consider offering a contribution to noise insulation at 63dB, the Applicant’s preference is to keep to that contour, but will change if government policy changes.
- 2.31 At the request of the ExA, the Applicant has produced a technical note [Appendix ISH6-21 to this document] which clarifies where a SOAEL of 60dBL_{Aeq,16hr} has been employed at other airports.

(d)(ii) Noise Mitigation Plan (NMP)

- 2.32 The Applicant notes that TDC have no objection to wording contained within the Noise Mitigation Plan. However, it was highlighted that section 9a provides no indication of timing. The Applicant noted that further discussion on this point would be given at the DCO Issue Specific Hearing.

- 2.33 Following a question for the ExA, the Applicant explained that LA1.0, 30 mins provides a measure of the highest noise levels occurring during a measurement interval. It is the level exceeded for 1 percent of the period over which a measurement is made. It can be measured during a survey, but not predicted using aircraft noise prediction software as the latter uses an energy-based source metric.
- 2.34 The Applicant noted the clarifications requested surrounding uncertainties in the noise modelling. The Applicant confirmed that if a 2dB increase was applied to predicted levels as a result of uncertainties, then a number of schools could exceed the 60dB threshold that would require the Applicant to provide noise insulation and mitigation. Such an exceedance would only be likely to occur approximately 20 years after the project commences operations.
- 2.35 The ExA questioned whether there would be adequate funds available within the Community Fund (CF) to provide noise insulation and ventilation to affected schools. The Applicant highlighted that all schools should be assessed on a case-by-case basis in order that the needs of individual schools can be taken into account rather than offering a one-size-fits-all solution. Nonetheless, the Applicant has now committed to providing £139,000 per year for affected schools for 20 years, to be spent on noise insulation or other measures to benefit pupils, based on 1% of the per-pupil funding of the schools concerned and to be distributed to each one annually, as reflected in the revised s106 agreement.
- 2.36 The Applicant emphasised that it does not underestimate the importance of noise control for schools and the school's liaison committee will be a further means of engaging with schools that have not taken the opportunity to comment during the DCO examination process.

(d) (iii) Noise DCO Requirements

- 2.37 Requirement 21 was discussed at the DCO Issue Specific Hearing and hence no further discussion on this point was undertaken.
- 2.38 With reference to Requirement 22, the applicant believes that this complements the night time noise contour cap. The QC reflects what is in the ES. The Applicant further clarified the following:
- no overriding within the proposed limits i.e. they each apply in their own right; and
 - few airports have multiple types of limits as is currently being discussed.
- 2.39 The Applicant explained that the purpose of the noise contour cap is to ensure that noise levels cannot exceed those reported in the ES. The proposed contour cap, as set out by the Applicant can be found in paragraph 2 of the Noise Mitigation Plan.
- 2.40 The Applicant highlighted that a cap should be based on a total area (in this case 38 km² as related to the daytime (50dB) LOAEL) rather than a shape. This is on the basis that the exact shape of the 50dB contour may vary depending on flight paths, weather conditions and other variables outside the control of the applicant. Such an approach is consistent with that adopted at other UK airports.
- 2.41 The Applicant then clarified the approach to determining whether the proposed breaching of caps. In this regard it was noted that a contour cannot be monitored by measurement and as such computer prediction will be undertaken on an annual basis.

- 2.42 Following a brief discussion regarding the Quota Count for night-time operations contained within the Noise Mitigation Plan, the applicant undertook to confirm whether the figure currently contained within the NMP remains relevant given the limits on night-time operations.
- 2.43 The Applicant has considered the night time quota count of 3028 that it is proposing in the light of night time flights now only consisting of late-arriving flights plus, emergency and humanitarian flights and departing flights between 0600 and 0700. It is unlikely that there would be more than five passenger flights departing during that hour, and unlikely that any aircraft with a quota count of greater than 1 would be used. The applicant is therefore willing to reduce the quota count to 2000 (365*5 being 1825), but this would be on the basis that late-arriving, emergency and humanitarian flights would be excluded from that total. If they are to be included as at present, then the Applicant would wish to keep the original figure of 3028.

(d)(v) Smuggler's Leap Caravan Park

- 2.44 The Applicant stated that the potential effectiveness of noise insulation in caravans and/or mobile homes can only be determined through detailed survey and inspection. A suitable monetary allowance has been made for noise mitigation, as detailed in the Noise Mitigation Plan. At present, re-location costs have not been allowed for as the Applicant does not consider that it will be required. A note on this issue is included at Appendix ISH6-25 to this document.

(d)(vi) Manston Green Development

- 2.45 Applicant acknowledged the concerns raised with regard to the reserved matters application for the Manston Green development. The Applicant confirmed that TDC had acted responsibly in imposing a planning condition [Appendix OP.1.10 in [REP3-187](#)] regarding need for the developers of Manston Green to mitigate the effects of noise arising from the re-opening of the airport. There is nothing in the wording of that condition suggesting that anyone other than the Manston Green developer should provide any necessary mitigation.
- 2.46 Cogent Land LLP noted that they have not been able to find the data from which the Applicant's noise contours were derived. This information is publicly available in the Environmental Statement, and the Applicant has provided a technical note at Deadline 8 that outlines the relevant application documents for Manston Airport requested by Cogent Land LLP. Prior to this, the Applicant provided contours to Cogent Land LLP in Second Written Question Appendix NS.2.12 [[REP6-014](#)]. The Applicant considers that it would be appropriate to provide a location map of the proposed alternative HRDF site(s) at a suitable scale showing the relevant safeguarding zones following the completion of the Aquila Feasibility Report (due for completion at the end of this month) and undertakes to do this.
- 2.47 It should be noted that no properties in the current Manston Green development masterplan fall within the 63dBL_{Aeq,16hr} (daytime) or 55d BL_{Aeq,8hr} contour (night time) for aircraft noise, as demonstrated by NS.2.12 Appendix to 2WQ [[REP6-014](#)]. Properties do however lie between LOAEL and SOAEL. The Applicant highlighted that Cogent Land LLP is required by its planning permission to provide noise insulation within the building design.

(d) (ix) Road traffic noise addendum [REP6-016]

- 2.48 An addendum to the ES was submitted at Deadline 6 and this presented a revised noise assessment that considered changes resulting from the use of the Thanet Strategic Transport Model (TSTM). The Applicant reiterated that it has included all of the measures within the Thanet Transport Strategy (TTS) as a baseline scenario. It was further noted that it will be KCC that will be responsible for bringing forward discrete projects associated with the TTS including the Manston-Haine link.
- 2.49 The applicant then summarised the findings presented in the addendum and undertook to provide additional noise mitigation for any properties experiencing road traffic noise in excess of the SOAEL where the change in noise level as a result of the proposed development exceeds 3dB.
- 2.50 The Applicant confirmed that the traffic mix utilised in the noise assessment matched that of the Air Quality assessment, alongside that used in the Environmental Statement (ES).
- 2.51 The Applicant noted TDC's concerns regarding combined aircraft noise and road traffic noise potentially affecting Smuggler's Leap caravan park. It was confirmed that any caravans effected by either road or aviation noise would qualify for noise insulation and ventilation under the scheme described in the noise mitigation plan. In addition, should insulation and ventilation not prove effective consideration would be given to relocation options albeit that the need for such a measure is considered highly unlikely. As noted above, this measure is secured via the revised Noise Mitigation Plan submitted at Deadline 8. Further information on Smugglers Leap is provided at Appendix ISH6-25.
- 2.52 The Applicant acknowledged the ExA's request for the input files used for the air quality and noise addendum modelling and these are provided as set out in paragraph 2.6.
- 2.53 Finally, the Applicant provides a response to Five10Twelve's noise contour modelling at Appendix ISH6-27 to this document. At the time of writing the No Night Flights noise contour modelling had not been published.

3 Agenda Item 5: HRA Matters

(a) Outfall works – Natural England response to ExA's Third Written Question Ec.3.2

- 3.1 Natural England confirmed that they had no outstanding issues with information provided by the Applicant in the updated RIAA [REP7a-014] with regard to the outfall works.

(b) Air Quality Effects – The Applicant's Response to the ExA's Third Written Question Ec.3.3

- 3.2 The updated RIAA submitted by the Applicant included an in-combination assessment which included all reasonably foreseeable plans and projects including proposed allocations (i.e. all those included in the TSTM).
- 3.3 The updated assessment for NOx and for nitrogen and acid deposition at Years 2, 6 and 20 all concluded that there would be **no significant effects**.
- 3.4 Natural England repeated that they were satisfied with this conclusion.

(c) Noise – Contours – The Applicant’s response to ExA’s Third Written Question Ec.3.4:

- 3.5 The main points of the discussion surrounding potential noise disturbance are outlined below. The key points resulting from the discussion were that
- That the revised RIAA as well as documentation supplied in relation to other designated sites is robust.
 - NE confirmed that in relation to the potential effects on European Designated Sites, agreement was close and that any residual concerns could be mitigated in the form of a contribution towards a wider mitigation programme. The programme would be tailored towards restoration of bird populations already depleted as a result of human activity.
 - In the event that a mitigation package can be secured, a Stage 2 assessment would be unlikely to be required.
- 3.6 Related to the above, the Applicant explained that it had submitted a report to address concerns raised by Natural England (at Appendix Ec.3.4 of REP7a-003). Natural England confirmed that the Applicant had provided all the appropriate information in the format requested.
- 3.7 The report concluded that there would be **no significant effects on the three SSSI wader species that are interest features of the Thanet Coast SSSI and Sandwich Bay to Hacklinge Marshes SSSI.**
- 3.8 The Applicant explained that birds react to threats, most frequently as a result of visual stimuli such as the presence of predators; reactions may also arise in respect of noise. However, the applicant also explained that birds can adapt to their surroundings, quickly learning what is and what is not adjusting their behaviour and reactions accordingly.
- 3.9 The Applicant explained that at Pegwell Bay, the aircraft flightpath is approximately 1km to the north of the Bay. This is sufficiently distant that disturbance of birds related to the visual stimulus of the presence of planes can be discounted as a likely significant effect.
- 3.10 The Applicant concluded that aircraft noise would not disturb the SPA qualifying interest species (golden plover, turnstone and little tern) and therefore would not result in an adverse effect on the integrity of the SPA in this area. However Natural England has some residual concern about potential effects of aircraft noise on turnstone.
- 3.11 The Applicant has concluded that aircraft noise would not disturb the SPA qualifying interest species that currently use the Thanet north coast. Natural England concurred with this assessment.
- 3.12 NE confirmed that agreement with the Applicant is close and the most appropriate way to ensure that any potential effects are mitigated would be for the Applicant to make a contribution towards a programme that would seek to restore populations of Golden Plover and Turnstone within the wider area.
- 3.13 **Post hearing note:** The Applicant is currently in the process of agreeing the form and quantum of the required contribution and has provided further information in relation to this as Appendix ISH6-28 to this document, and has committed to providing £100,000 for this purpose in the revised s106 agreement at TR020002/D8/S106.

(d) Requirement 13. Add new sub-paragraphs clause (3) and (4)

- 3.14 This agenda item was addressed at Issue Specific Hearing 8 dealing with matters relating to the draft DCO held on 7 June 2019.

ISH6 Appendix Index

ExA Action No.	Appendix No.	Document
19	ISH6 - 19	Date secured input parameters for updated air quality and noise assessments assessment and confirm the basis for the fleet mix used in both assessments.
20	Addressed in ISH6 – 19	Input files for ES addendum KCC Strategic Transport Model (date secured)
21	ISH6 – 21	List of UK airports applying the 60dB (SOAEL).
22	ISH6 – 22	Information on financial effects of adopting a 60dB (SOAEL) as the basis for the insulation, ventilation and relocation schemes in the draft Noise Mitigation Plan.
25	ISH6 – 25	Note on the apparent uncertainty over the effectiveness of noise insulation and ventilation schemes for the residential caravan park at Smugglers Leap in terms of mitigation being brought forward to year 6 (earliest LSAE) and consideration of further proposals.
27	ISH6 – 27	Evidenced response to: a) Five 10Twelve noise contour modelling undertaken by the Civil Aviation Authority (CAA); and b) No Night Flight noise contour modelling undertaken by CAA.
28	ISH6 - 28	Update on discussions to be provided for bird mitigation (with NE and TDC)

Appendix IS H6 – 19

Technical note:

Manston Airport Air Quality and Noise and Vibration Examination Authority clarification item 19 and item 20

1. Introduction

- 1.1.1 This Technical Note has been prepared to provide information as requested by the Examination Authority (ExA) following Issue Specific Hearing 6: Habitats Regulations Assessment, Biodiversity and other Environmental Issues, held on June 5 2019. This relates to items 19 and 20, which state:

'Item 19: Provide date secured input parameters for updated air quality and noise assessments and confirm the basis for the fleet mix used in both assessments'; and

Item 20: Provide input files for ES addendum KCC Strategic Transport Model (date secured).'

- 1.1.2 It should be noted that both item 19 and item 20 are asking for the same files, since the requested air quality and noise assessment input parameters are those contained within the ES addendum accounting for the KCC Strategic Transport Model.

2. Applicant's response

- 2.1.1 The input parameters for the updated air quality and noise assessments are provided in the accompanying zip file 8_Ref19_V1.zip. This contains the following files:

AQ_Inputs_Roads_Y20WithDev_Receptors_v1.upl: a date-stamped ADMS input file containing the detailed input data for the road model;

AQ_Road_Traffic_Model_Inputs.xlsx: a spreadsheet containing additional data for air quality modelling of road sources (i.e. road widths and speeds);

Manston Noise and AQ Flows - KCC Model - Year 2.xlsx: a date-stamped spreadsheet containing traffic flows for Years 2 and 6;

Noise and Air Quality Traffic Flows - KCC Model.xlsx: a date-stamped spreadsheet containing traffic flows for Year 20; and

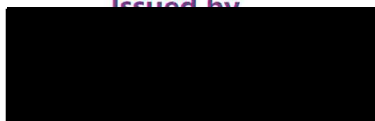
Noise_Road_Traffic_Model_Inputs.xlsx: a spreadsheet containing additional data for noise modelling of road sources (i.e. road widths and speeds).

- 2.1.2 The first of these (AQ_Inputs_Roads_Y20WithDev_Receptors_v1.upl) is included to provide the date-stamped file as requested. However, ExA may need specialist support to be able to use or interpret this file, which is in proprietary ADMS format. Therefore, the same input data is included in spreadsheet format for easier access to the data (AQ_Road_Traffic_Model_Inputs.xlsx).

- 2.1.3 The files containing traffic flows were used by both air quality and noise models.

- 2.1.4 The same road widths are used for both air quality and noise modelling, but there are a small number of differences in speeds between the air quality and noise models, so separate files are provided. The reason for these differences is as follows. In the models, traffic speeds are normally set to the speed limit for a given road link, unless this is inappropriate (e.g. narrow country roads where 60 mph would be unrealistic). The air quality model is not highly sensitive to speed at moderate speeds (approximately 30–60 mph). Noise emissions, however, increase strongly with speed, so for the noise model, speeds on selected links were adjusted to be more realistic (e.g. slower speeds when approaching junctions).
- 2.1.5 These two files do not have contemporaneous date-stamps since the original files used in the modelling contain additional intellectual property.
- 2.1.6 With regard to the aircraft fleet mix used in the ES Addendum accounting for the KCC Strategic Transport Model, the same fleet mix was employed as used in the ES.

Issued by



Martin Peirce

Approved by



Jo Webb

Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2019) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 21

Technical note:

Manston Airport Noise Assessment: Examination Authority clarification item 21

1. Introduction

This Technical Note has been prepared to respond to a request raised by the Examination Authority following Issue Specific Hearing 5. This relates to item 21 which states 'Provide a list of UK airports applying the 60dB (SOAEL)':

2. Applicant's Response

As set out in our response to Third Written Questions (REP7a-002), Ns.3.12:

There appears to be some confusion in the question between the SOAEL and the noise insulation eligibility threshold. The SOAEL is an evidence-based threshold above which significant adverse effects are expected to occur to the average person. This SOAEL should not be altered in the absence of evidence supporting a conclusion that the average person would be significantly affected by noise at a different level. For Manston Airport this has been defined as 63dB $L_{Aeq, 16hr}$ (based upon the APF as noted in paragraph 12.6.64 of Chapter 12 of the ES [APP-034]. Government policy states that above this threshold, significant observed adverse effects on health and quality of life can begin to be observed in an average person.

For Manston, the SOAEL level has also been set as the threshold for eligibility for noise insulation and ventilation. That is the appropriate level at which to set the threshold, because the noise insulation in the NMP (TR020002/D7a/2.4) is intended to avoid significant adverse effects of noise, as required by the first bullet point of paragraph 5.68 of the ANPS and in accordance with the first aim of government noise policy. It is maintained that setting the noise insulation threshold as the SOAEL is balanced and proportionate in the context of the Proposed Development.

The question which has now been posed could be interpreted in two ways:

Which UK airports have used 60dB as the trigger for their Noise Insulation provision; or

UK airports which have provided an ES or other document which has referred to SOAEL and identified a level.

We have endeavoured to answer both, to assist the ExA. The following tables set out a response to both interpretations respectively.

Table 2.1 Noise insulation eligibility levels in UK airports

Airport	Date/Document	Noise insulation trigger level	
		Day ($L_{Aeq, 16h}$)	Night ($L_{Aeq, 8h}$)
Heathrow	2018 EIA Scoping Report and see note 2	63 ²	55
Birmingham	2019 NAP	63	-
Stansted	2018 ES	63	57
Gatwick	2019 NAP	63	QC for night
Luton	2019 EIA	63	-
Manchester	2019 NAP	63	-
East Midlands	2019 NAP	-	4 tiers – see note 3
Prestwick	2018 NAP	63	-
Doncaster Sheffield	2018 masterplan	63	-
Aberdeen	2018 NAP	63	-
London City	2018 NAP	3 Tiers: 57, 63, 66	
Bristol	2019 NAP	63	-

Notes:

1. No airports have been identified which have used 60dB $L_{Aeq, 16h}$ as the threshold for noise insulation
2. Heathrow's committed community compensation package includes a commitment to: "Following a third-party assessment, to provide a contribution of up to £3,000 for acoustic insulation for residential properties within the full single mode easterly and westerly 57 dB $L_{Aeq, 16hr}$ or the full 55 dB L_{den} noise contours of an expanded airport, whichever is the bigger".
3. Answers to First Written Questions – appendices [REP3-187] Appendix Ns.1.30 refers but does not quote the noise levels for the tiers. Tiers are for average night time noise levels and are expressed in terms of $L_{Aeq, 8hr}$: Zone A: 55-60 dB; Zone B: 60 – 65 dB; Zone C: 66 – 69 dB and Zone D: anything > 69 dB.

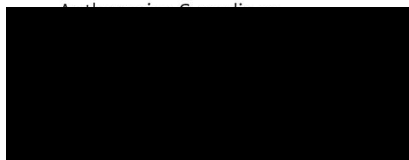
Table 2.2 Values of SOAEL referenced by UK airports

Airport	Date / Document	SOAEL	
		Day $L_{Aeq, 16h}$	Night $L_{Aeq, 8h}$
Heathrow	2018 EIA Scoping Report	63	55
Manston	2018 ES	63	55
Stansted	2018 ES	63	55
Gatwick	2019 NAP	63	-
Luton	2019 EIA	63	55
Manchester	2019 NAP	SOAEL N/A	
East Midlands	2019 NAP	SOAEL N/A	
London City	2018 NAP	SOAEL N/A	

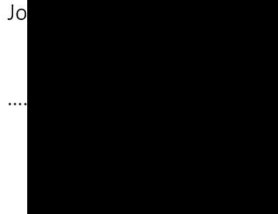
Notes:

1. SOAEL N/A means SOAEL was not mentioned in document
2. The following airport have Noise Action Plans (NAPs) but we have not been able to locate environmental assessment documents which refer to SOAEL: Prestwick, Aberdeen, Doncaster Sheffield, Bristol

Issued by



Approved by



Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2018) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 22

Technical note:

Manston Airport: Financial Effects of adopting the 60dB Daytime SOAEL Contour as Qualification for Noise Insulation and Ventilation

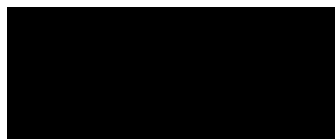
1. Introduction

- 1.1.1 This Technical Note has been prepared in response to Issue Specific Hearing 6 (Habitats Regulations Assessment, biodiversity and other environmental issues) held on 5 June 2019. At Agenda item 22 the Examining Authority requested that the Applicant “*provide[s] further information on financial effects of adopting a 60dB (SOAEL) as the basis for the insulation, ventilation and relocation schemes in the draft Noise Mitigation Plan*”.

2. Financial Effects

- 2.1.1 In response to the ExA’s Second Written Question Ns.2.15 [REP6-012], the Applicant provided a table showing the number of properties affected under different noise contour scenarios. Should the 60dB daytime contour be adopted as the level at which noise insulation and ventilation is provided to affected properties a total of 833 properties would qualify under the Noise Mitigation Plan (NMP) [APP-009]. In this scenario the total cost of noise insulation and ventilation would be £8,330,000. In the current cost plan, an allowance for 275 properties sat £10,000 per property has been made resulting in a cost of £2,750,000. As such, should the ExA decided to impose a 60dB contour the additional cost to the applicant would be a maximum of £5,580,000.

Issued by



Approved by



Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2019) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 25

Technical note:

Manston Airport Noise Assessment: Examination Authority clarification item 25

1. Introduction

This Technical Note has been prepared to respond to a request raised by the Examination Authority following the Issue Specific Hearing 5. This relates to item 25 which states '*Provide a note on the apparent uncertainty over the effectiveness of noise insulation and ventilation schemes for the residential caravan park at Smugglers Leap in terms of mitigation being brought forward to year 6 (earliest LSAE) and consideration of further proposals*'. (LSAE = likely significant adverse effect).

2. Applicants response

The Applicants Response to the Third Written Questions (REP7a-002), specifically NS.3.6, highlighted that it is not possible to comment on how effective noise insulation and ventilation will be on caravan park homes without undertaking a detailed survey and inspection. The effectiveness will depend on the existing sound insulation performance provided by the caravan walls, roof and glazing. These parameters are likely to depend on the age, specific type, design, construction and condition of the caravan. Because they are designed to be temporary buildings, the individual homes are not subject to scrutiny under planning requirements or building regulations with respect to noise in the same way as permanent dwellings.

Nonetheless, consumer pressure for energy efficient accommodation has driven a move to double glazing and better thermal insulation for newer mobile homes, so walls and/or roofs may have reasonable sound insulation, depending on how the thermal insulation is achieved. In 2015 BS 3632:2015 Residential park homes was published, which makes recommendations for sound insulation and ventilation for permanently occupied moveable buildings. This may further drive change in sound insulation and ventilation design in these buildings.

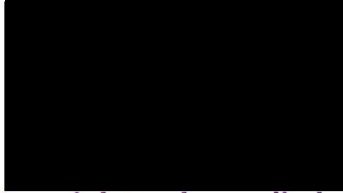
The sound insulation of mobile homes is rarely investigated, so there is a lack of credible evidence regarding sound insulation which could be relied on to respond to the Examination Authority's (ExA) request.

Consequently, it is anticipated that, in the event that a caravan qualifies for noise insulation and ventilation under the provisions of the NMP, detailed survey and inspection will be undertaken. Should the survey determine that noise insulation is unlikely to be sufficiently effective in the individual circumstances¹, relocation would be considered on the basis outlined in the NMP.

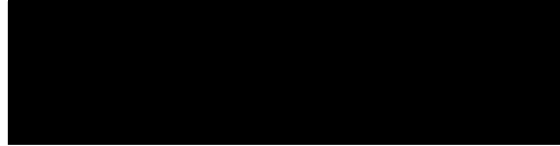
¹: taken as a 5dB improvement in average sound reduction index (R) calculated over a frequency range of 125Hz to 4000Hz.

Issued by

Jo Webb

**Approved by**

Ian Hepplewhite

**Copyright and non-disclosure notice**

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2019) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 26

Technical note:

Manston Airport Noise Assessment: Examination Authority clarification item 26

1. Introduction

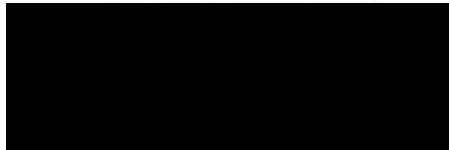
This Technical Note has been prepared to respond to a request raised by the Examination Authority following Issue Specific Hearing 5. This relates to item 26 which states '*Provide Cogent Land LLP with the detailed noise assessment outputs for the proposed Manston Green development*'.

Information which may be of assistance to Cogent Land LLP with respect to noise associated with Manston Airport and the Manston Green development is provided in a number of the application documents for the Proposed Development. General information on the noise predictions and the assumptions behind them is available in Chapter 12 of the Environmental Statement (ES) [APP-033,034,035] and its supporting appendices and figures. Specific information regarding aircraft noise contours at Manston Green has been provided in the Applicants Answers to the Second Written Questions [REP6-012] and its appendices [REP6-014].

To assist with stepping through the information, the following table has been prepared which maps the location of information which may be of assistance to Cogent Land LLP.

Information	Document description	Document name	PINS ref	Section	Page no. for ES	Link
Assumptions and limitations (aircraft noise modelling)	ES	5.2-2 Environmental Statement Volume 2: Main Text – Chapters 11– 16 TR020002/APP/5.2-2	APP-034	Table 12.1	12-1	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002408-5.2-2%20-%20Environmental%20Statement%20-%20Main%20Text%20-%20Chapters%2011-16.pdf
Assumptions for noise modelling, including general aviation movement assumptions	Appendix to ES	5.2-12 Environmental Statement Volume 12: Appendices 10 .1, Appendix B – 12.14;	APP-057	Appendix 12.3 subsection Aircraft Noise Modelling		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002431-5.2-12%20-%20Environmental%20Statement%20-%20Volume%2012%20-%20of%20%20-%20Appendix%2010.1,%20Appendix%20B,%20Part%202.pdf
Aircraft fleet assumptions behind noise modelling (cargo and passenger)	Appendix to ES	5.2-6 Environmental Statement Volume 6: Appendices 1.4 – 7.2 TR020002/APP/5.2-6	APP-044	Appendix 3.3 Aircraft Forecast		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002418-5.2-6%20-%20Environmental%20Statement%20-%20Volume%206%20-%20Appendices%201.4-7.2.pdf
Aircraft noise presented for both Year 2 and Year 20 using the forecast aircraft movements. Year 2 is considered the 'opening year' and Year 20 is considered the 'worst-case' year in terms of noise	ES	5.2-2 Environmental Statement Volume 2: Main Text – Chapters 11– 16 TR020002/APP/5.2-2	APP-034	Paragraph 12.7.38	12-42	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002408-5.2-2%20-%20Environmental%20Statement%20-%20Main%20Text%20-%20Chapters%2011-16.pdf
List of figures providing aircraft noise contours	ES	5.2-2 Environmental Statement Volume 2: Main Text –	APP-034	Paragraph 12.7.49	12-44	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002

		Chapters 11– 16 TR020002/APP/5.2-2				2/TR020002-002408-5.2-2%20-%20Environmental%20Statement%20-%20Main%20Text%20-%20Chapters%2011-16.pdf
Description of permanent noise impacts	ES	5.2-2 Environmental Statement Volume 2: Main Text – Chapters 11– 16 TR020002/APP/5.2-2	APP-034	Paragraph 12.7.50-57		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002408-5.2-2%20-%20Environmental%20Statement%20-%20Main%20Text%20-%20Chapters%2011-16.pdf
Figures - aircraft noise contours	ES Figures	5.2-4 Environmental Statement Volume 4: Figures TR020002/APP/5.4	APP-042	Year of forecast maximum capacity: Figure 12.6 daytime L _{Aeq16hr} ; Figure 12.7 night time L _{Aeq8hr}		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002416-5.2-4%20-%20Environmental%20Statement%20-%20Figures%20-%207%20of%207%20-%20Figures%2012.1-18.2.pdf
Commentary on likely effects at Manston Green	Response to Second Written Questions	Applicant's Answers to Second Written Questions TR020002/D6/SWQ Examination Document	REP6-012	Ns.2.12		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-003954-Answers%20to%20SWQs.pdf
Figures - aircraft noise and total road traffic noise	Response to Second Written Questions - appendix	Appendices to Answers to Second Written Questions TR020002/D6/SWQ/App endices Examination Document	REP6-028	Appendix Ns.2.11		https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-003992-Appendices%20to%20Answers%20to%20SWQ_s%20(reformatted).pdf
Figures – ES forecast worst case year (year 20) daytime aircraft noise contours for proposed Manston Green development	Response to Second Written Questions - appendix	Appendices to Answers to Second Written Questions TR020002/D6/SWQ/App endices Examination Document	REP6-028	Appendix Ns.2.12	Figure Ns.2.12(a) Manston Green Development; Figure 2.12(b) Manston Green Development	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-003992-Appendices%20to%20Answers%20to%20SWQ_s%20(reformatted).pdf

Issued by**Approved by****Copyright and non-disclosure notice**

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2019) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 27

Technical note:

Manston Airport Noise Assessment: Examination Authority clarification item 27

1. Introduction

This Technical Note has been prepared to respond to a request raised by the Examination Authority following Issue Specific Hearing 5. This relates to item 27 which states:

'Provide an evidenced response to:

- a) Five10Twelve noise contour modelling undertaken by the Civil Aviation Authority (CAA); and*
- b) No Night Flight noise contour modelling undertaken by CAA.'*

Five10Twelve Ltd commissioned a study which suggests slightly different noise levels than those reported in the Environmental Statement (ES) (APP-034). This Technical Note has been prepared to provide clarity regarding this situation.

Five10Twelve have employed CAA's Environmental Research and Consultancy Department (ERCD) section to produce noise contours for Manston Airport. These contours result in a difference area exposed to the Significant Observed Adverse Effect Level (SOAEL) and hence have a different conclusion with respect to the population exposed above the SOAEL presented in the ES.

It should be noted that the operation of Manston Airport will be limited to the noise effects reported in the ES via a noise contour cap imposed via the Noise Mitigation Plan. In this regard any variations in factors such as flight paths and fleet mix such as those reported below would not affect the outcomes of the assessments carried out on behalf of the Applicant.

2. Comparison

The ES sets out the parameters which influence aircraft noise prediction outcomes and the assumptions on which the assessment has been based. Where work specific to Manston has been carried out to derive these assumptions, explanations are provided. An example of this is Appendix 12.3 Aircraft Noise Modelling (APP-057).

To assist with interpretation of the information, the following table has been produced comparing the assessments carried out by Five10Twelve, NFF and the applicant.

Table Item 27.1 Comparison of the assessments conducted by the Applicant, Five10Twelve and NFF

Item	Applicant	Five10Twelve	NFF	Comment
Prediction model	INM	ANCON	Tbc when submitted	ANCON and INM both implement the standard method within the profession for producing noise contours around airports, provided in ECAC Doc 29 and SAE AIR1845A documents. Methodology is therefore unlikely to result in a difference in results. Inputs for the method are aircraft noise (and performance) data. INM is commercially available, whereas ANCON is only available to the CAA.
Aircraft noise data	Aircraft Noise and Performance (ANP) database	NPD data (and flight profiles) deriving from Noise and Track Keeping (NTK) systems	Tbc when submitted	ANP is publicly available data (https://www.aircraftnoisemodel.org/), whereas ANCON uses NPD data, derived from NTK data which may be refined for extant airports (i.e. where track keeping data is available). The CAA use it to produce airport specific curves for extant airports for which the data is refined individually. This is not possible for Manston as it is not currently operating.
Takeoff and approach flight profiles	Default takeoff/approach procedures within INM	Proxy average flight profiles of height, speed and thrust from ANCON Stansted database (departures and arrivals). Aircraft types not present in the Stansted database were substituted by Heathrow profiles where possible, and if not present in the Heathrow database, by Gatwick profiles. The flight profiles assume average weights. Standard instrumental departures and arrivals used.	Tbc when submitted	Actual take-off/approach procedures have not been set out in the Five10Twelve submission and instead referenced those at other airports. The use of ANCON-derived thrust and speed values may contribute to a marginal difference in outcomes because: <ul style="list-style-type: none"> • Standard instrumental departures are used, as in INM; • Average weights are assumed. Similarly, INM uses average weights for groups of aircraft. It is reasonable to assume that in average terms, weight differences are relatively small, compared to differences at single event level.
Flight path	Swathe Centreline ¹ (Error! Reference source not found.), with examination of likely possible variants (Appendix 12.3 Methodology 'Aircraft noise modelling' (APP-057)). Area navigation	Historical Manston airport flight tracks digitised from the 'Wiggins' route map (Figure 3). RNAV lateral spread was modelled on all the departure tracks. All arrivals were modelled	Tbc when submitted	As noted in previous submissions, it is highly unlikely that the CAA would adopt the same flight paths as previously used by the airport specifically because of the likely worsening of the noise

¹ Osprey Consulting Services Ltd; Review of potential aircraft noise abatement operational procedures; Report 70992-001 Version 2.1 for RiverOak Strategic Partners; 18 December 2017

Item	Applicant	Five10Twelve	NFF	Comment
	(RNAV) is assumed. Track dispersion as described in Table A12.3.40 in the ES (APP-057) is used, which is INM binomial dispersion pattern with 4 sub-tracks either side of a centre track). The distribution has been set as described in Table A12.3.41 of the ES (APP-057), with 2 options to west departures, where 50/50 has been assumed (see Table 12.3.40 of ES, APP-057).	as 'straight-in' tracks along the extended runway centreline. There are two options available for west departures, where an almost 50/50 has been assumed (departure route 1 and departure route 2 are used 49 and 23 times respectively).		impacts. This factor is considered to be the most likely cause of difference between outcomes.
Modal splits	Various were examined, the ES main text data reporting was based on scenario of 70% west and 30% east. The following scenarios were also assessed during examination (3 rd Written Questions: REP7a-002): <ul style="list-style-type: none"> • 100% west; and • 100% east. 	4 scenarios were assessed: <ul style="list-style-type: none"> • 100% west; • 100% east; • 70% west and 30% east; and • 30% west and 70% east. 	Tbc when submitted	When comparing like with like, this should influence the difference.
Fleet Mix	See Table Item 27.2 below. Figures used were 26,469 commercial air traffic managements (ATMs) and 36,135 general aviation (GA) movements.	See Figure 1 below. Figures used were 26,469 commercial ATMs and 38,000 GA movements.	Tbc when submitted	Five10Twelve believed that GA movements were not included in the Applicant's model, however they were. The difference is these numbers is not expected to make a significant difference in outcomes.
MET conditions	From INM standard setting: Temperature: 14.7 °C Pressure: 759.97 mmHg Average headwind: 14.8 km/hour Humidity: 70%	Not reported	Tbc when submitted	Comment not possible. However, it can be assumed that the MET conditions employed in ANCON modelling are within the reference conditions range suggested by ECAC doc 29 (if they are not the same as the INM default) and therefore should not induce differences in the outcomes.
Topography	Digital terrain mapping from the project Emap site	Meridian 2 Gridded Heights terrain data (OS)	Tbc when submitted	Unlikely to result in significant difference for aircraft in the air.
Households/ populations	2017 CACI census data	2018 CACI census data	Tbc when submitted	No influence
Assessment year	Year 20	Year 20	Tbc when submitted	No influence

Table Item 27.2 Applicant Fleet Mix for Year 20

Aircraft Type Description	INM Modelled Type	Yearly Movements (Year 20)
Boeing 747-800	7478	788
Boeing 737-300	737300	2309
Boeing 737-800	737800	8281
Boeing 747-400	747400	1232
Boeing 757-300	757300	154
Boeing 767-300	767300	0
Boeing 767-400	767400	0
Boeing 777-200	777200	3700
Boeing 757-200	757RR	2001
Airbus A320	A320-211	193
Airbus A330-200	A330-343	2001
ATR 72	ATR72	4310
Lockheed L-100 Hercules	C-130E	22
Boeing C-17 Globemaster III	C17	22
Fokker 70	FK50	1456
Total		26469

Figure 1 Five10Twelve Fleet Mix

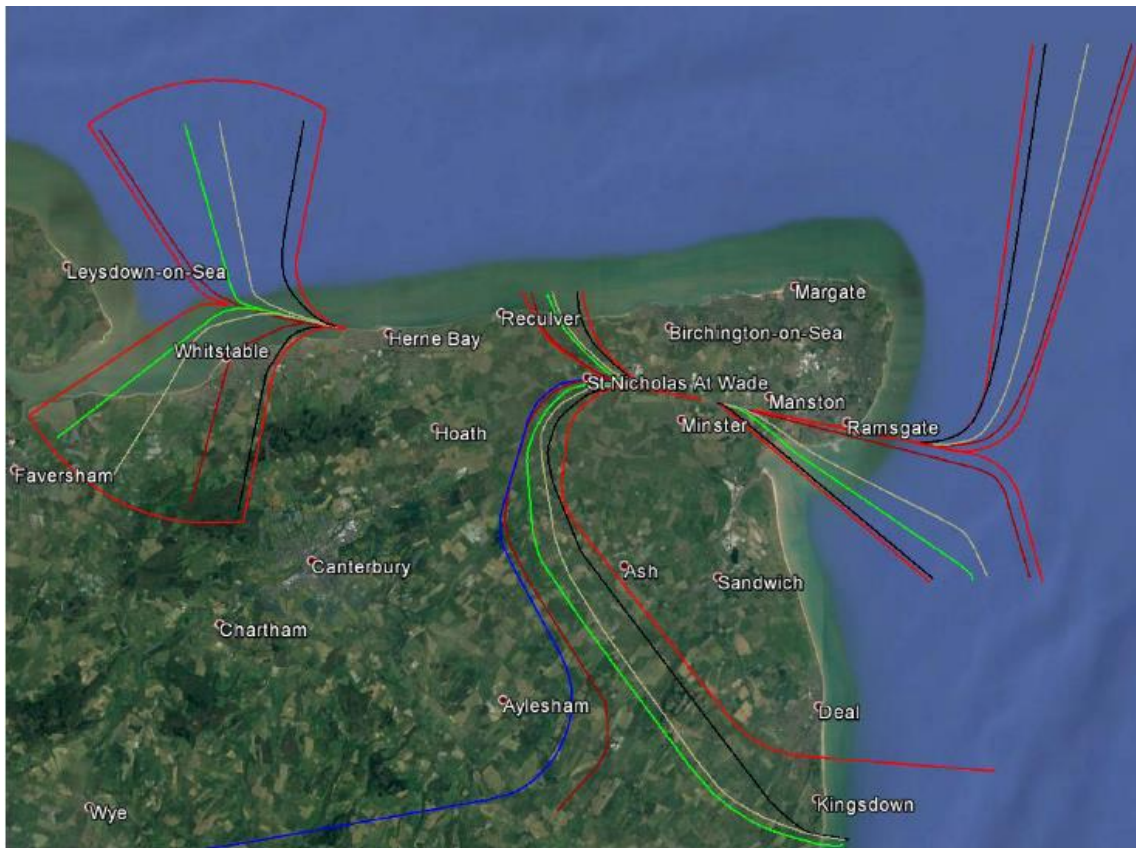
Table 1 Manston 'Five10Twelve' fleet mix average day 100% W traffic

Type	Code	Departure route 1	Departure route 2	RWY 28 arrivals
Airbus A320	A320	1	0	1
Airbus 330-200	A332	1	1	3
Boeing 747-400	B744	1	0	2
Boeing 747-800	B748	1	0	1
Boeing 757-200	B752	1	1	3
Boeing 757-300	B753	1	0	1
Boeing 737-800	B738	6	6	11
Boeing 737-300	B733	2	2	3
Boeing 777-200	B772	3	3	5
ATR72	AT72	3	3	6
Boeing C17 Globemaster III	C17	1	0	1
Fokker 70	F70	1	1	2
Lockheed L-100 Hercules	C130	1	0	1
Single Propeller	SP	15	15	30
Small Twin Piston	STP	4	4	8
Small Twin Turboprop	STT	4	4	8
Executive Jet	EXE3	3	3	6
	Total	49	43	92

Table 2 Manston 'Five10Twelve' fleet mix average day 100% E traffic

Type	Code	Departure route 3	RWY 10 arrivals
Airbus A320	A320	1	1
Airbus 330-200	A332	3	3
Boeing 747-400	B744	2	2
Boeing 747-800	B748	1	1
Boeing 757-200	B752	3	3
Boeing 757-300	B753	1	1
Boeing 737-800	B738	11	11
Boeing 737-300	B733	3	3
Boeing 777-200	B772	5	5
ATR72	AT72	6	6
Boeing C17 Globemaster III	C17	1	1
Fokker 70	F70	2	2
Lockheed L-100 Hercules	C130	1	1
Single Propeller	SP	30	30
Small Twin Piston	STP	8	8
Small Twin Turboprop	STT	8	8
Executive Jet	EXE3	6	6
	Total	92	92

Figure 2 Applicant's potential flight paths



Note: Applicant's swathe centreline (probable route) is grey lines

Table Item 27. 3 Indicative Airspace Option Design Principles (A12.3.39 (APP-057))

Design principle	ARR 10	ARR 28	DEP 10 N	DEP 10 S	DEP 28 N	DEP 28 S
Avoiding urban concentration	Green	Straight in	Grey (No green route available)	Green	Green	Green
Swathe Centreline	Grey	Straight in	Grey	Grey	Grey	Grey
Tight Turns	Black	Straight in	Black	Black	Black	Black
Over or Near Urban Concentration	Dark Red	Straight in	Dark Red	Dark Red	Dark Red	Dark Red
Swathe Line (closest to airport)	Red – Swathe (earliest turn)	Straight in	Red – Swathe (earliest turn)	Red – Swathe (earliest turn)	Red – Swathe (earliest turn)	Red – Swathe (earliest turn)
Swathe Line (furthest from airport)	Red – Swathe (latest turn)	Straight in	Red – Swathe (latest turn)	Red – Swathe (latest turn)	Red – Swathe (latest turn)	Red – Swathe (latest turn)

Figure 3 Five10Twelve Flight Paths



3. Conclusion

First it should be noted that noise resulting from the operation of the airport is limited by the noise contour cap (and other measures) contained within the noise mitigation plan (NMP). As such the adverse effects of the development are limited to those reported in the ES and minor variations such as those reported in the Five10Twelve commissioned report have limited relevance. It should also be noted that the measures described in the NMP will be reported on an annual basis using flight forecasts for the period when the airport is in operation. In this regard any variance in flight path, fleet mix etc is embedded within the ongoing monitoring and assessment process.

In terms of direct comparison, it is considered that the most likely source of difference between the contours/population affected is the different flight paths adopted, with a possible minor contributor being the flight profiles. It is not possible to comment on any difference associated with the aeroplane noise level input data as this has not been provided for ANCON.

The ES has provided what is considered to be the probable flight path, based on the options work carried out by the aviation expert. In the ES Appendix 12.3 p.5 it is stated:

'The assessment of aircraft air noise for ES has therefore considered six indicative airspace route options within a design swathe as provided by the airspace consultant Osprey Consulting Limited. The design swathe has taken into account the 'knowns' of the local airspace, including airways and navigational aids.'

Table 12.1 'Limitations' in the ES sets out the next stage of the process:

'In addition to the DCO application for the airport, the exact airspace options, operating principles and aircraft flight paths will be formalised through an Airspace Change Proposal (ACP), which is a separate consenting regime that will happen after the airport receives its powers under the DCO.'

...

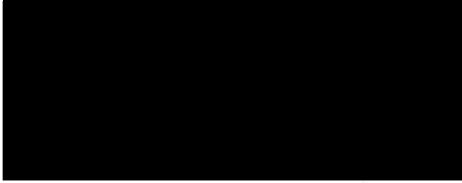
'This means that the assessment of aircraft noise presented in this ES is based on indicative prototype routes which will be subject to authorisation and/or modification via the ACP, hence the impact of aircraft noise will be subject to change during that process.' (emphasis added).

The ACP process is introduced on the CAA's website and defined in [Airspace Design: guidance on the regulatory process for changing airspace design including community engagement requirements \(CAP1616\)](#). The environmental requirements for the process are given in [Airspace Design: environmental requirements technical annex \(CAP 1616a\)](#). Our options appraisal approach within Appendix 12.3 followed the (then) draft Airspace Change proposal guidance linked above.

The final routes will therefore not be determined by the current DCO application, but by the CAA via the Airspace Change process. The Manston application can be followed on the CAA website under ID ACP-2018-75.

Issued by

Anthanasios Synodinos

**Approved by**

Jo Webb

**Copyright and non-disclosure notice**

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2018) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

Appendix IS H6 – 28

Manston Airport DCO:

Examination Item 28: Provide an update on discussions to be provided for bird mitigation (with NE and TDC)

1. Proposed Response

Following the recent Hearing session the ExA requested, at item 28 for Deadline 8: 'Provide an update on discussions to be provided for bird mitigation'. Please find below an update on the current status of discussions with NE and TDC.

Thanet District Council has implemented a Strategic Access Management and Monitoring (SAMM) plan for the benefit of turnstone in the SPA, through reducing the impacts of recreational pressure. The plan identifies a number of measures to be implemented across the SPA, funded by contributions from new residential developments within Thanet District.

Natural England suggested that mitigation could be provided through financial contribution to implementing the SAMM plan, and that it is necessary, to meet the requirements of the Habitats Regulations, for the contribution to relate specifically to a project to be implemented in Pegwell Bay.

The Applicant has been in discussion with Natural England and Thanet District Council since the Examination and is working towards an agreement. At this stage TDC has confirmed that there are no currently defined schemes for Pegwell Bay. However, as contributions from new residential developments are unlikely to be targeted to work in the SPA location closest, and that the objective of the SAMM is to reduce pressure on turnstone in the SPA generally, it is suggested that a contribution to the scheme in general from the Manston project would be appropriate, benefitting the species across the SPA. Nonetheless, the Applicant is committed to continue working with Natural England and Thanet District to develop a scheme targeted at Pegwell Bay.

The following text is intended for the S106 but may also be appropriate for the response to the ExA.

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.

1.1 Background Information to the statement above

In the absence of having reached agreement prior to today, the Wylfa S106 has been reviewed to identify possible options to include in a proposal. The S106 defines a number of funds in the Environment and Historical Heritage Schedule 11 including:

"Environment (Cemlyn Lagoon) Fund" means a total fund of £[245,000] (Two Hundred and Forty Five Thousand Pounds) (Indexed) which may be allocated in accordance with [Schedule 11];

"Environment Enhancement Fund" means a total fund of £[400,000] (Four Hundred Thousand) (Indexed) which may be allocated in accordance with [Schedule 11];

"Tern Warden Payment" means a payment of £[90,000] (Ninety Thousand Pounds) (Indexed);

"Environment Officer Contribution" means a contribution of £[40,000] (Forty Thousand Pounds) (Indexed).

There seems to be two possible approaches to consider:

1. Due to the associated work of the warden/officer posts that are similar to needs under the TDC SAMM, two of these - the Tern warden payment and Environment Officer Contribution figures - and would seem potentially appropriate to Manston and would give a contribution of c.70k.
2. An equivalent to the Environment (Cemlyn Lagoon) Fund with the details of how this is allocated provided in Schedule 11, Section 2 of the Wylfa S106. Perhaps for Manston it could referred to as the Environment (Pegwell Bay) Fund with how this is allocated taking a similar approach to that detailed for Wylfa.

The latter would seem to be the more appropriate as this would relate to projects of direct benefit to Pegwell Bay (which is what Natural England are suggesting is necessary to meet the requirements of the Habitats Regulations), albeit that it does not identify a specific project or projects at this time, whereas the posts option under the SAMM would likely relate to the wider SPA and may not be roles that specifically benefit Pegwell. Nonetheless, if means we are able to continue working to agree an acceptable project after today.

The text provided in Section 1 however has been left flexible as we don't currently know what Natural England or Thanet District Council will accept.

1.2 HRA Issues

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.

Issued by

Andy Brooks

Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions UK Limited 2019) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

Management systems

This document has been produced by Wood Environment & Infrastructure Solutions UK Limited in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.