Meridian Solar Farm

EN010169

Volume 6

Environmental Statement

6.3 ES Appendix 9-14: Habitat Regulations Assessment (Rev 1) (Clean)

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

September 2026

Table of Contents

Executive Summary 1

1. Introduction 3

1.1. Background 3
1.2. Scope of the Report 3
1.3. Site Context And Status 4
1.4. The Scheme 4
1.5. Competent Expert 5
1.6. Nomenclature 6

2. Legislation and Policy 6

2.1. Legislation 6
2.2. Policy 7

3. Methodology 10

3.1. The HRA Process 10
3.2. Stage 1 HRA (Screening) 12
3.3. Screening Area 14
3.4. Baseline Data Sources 16

4. Stage 1 HRA (Screening) 16

4.1. Overview 16
4.2. Conservation Objectives and Supplementary Advice 17
4.3. Sites Of Special Scientific Interest (SSSI) 30
4.4. Screening For Likely Significant Effects 30
4.5. Conclusions and Recommendations 58

5. Stage 2 HRA (Appropriate Assessment) 58

5.1. Overview 58
5.2. Construction and Decommissioning Phases 58
5.3. Operational Phase 60
5.4. In-Combination Assessment 62
5.5. Adverse Effect On Site Integrity (AEOSI) Test 75
5.6. Consultation 75

Appendix 1: Figures 77

Appendix 2: HRA Evidence Plan 78

Appendix 3: Analysis of potential FLL 87

Tables

Table 1: Internationally important wildlife sites within 20km of the Site 15
Table 2: Qualifying interest features for relevant IIWS within 20km of the Site 21
Table 3: Summary of bird populations associated with The Wash SPA & Ramsar and Nene Washes SPA & Ramsar 26
Table 4: Summary of qualifying features, threats/pressures and impact pathways relating to relevant IIWS 30
Table 5: Summary of collision risk modelling 47
Table 6: Summary of Likely Significant Effects in relation to qualifying features of IIWS as a result of the Scheme 54
Table 7: Review of Other Projects and Potential for In-Combination Effects 63

Executive Summary

This Shadow Habitats Regulations Assessment (HRA) has been prepared as part of the application for a Development Consent Order (DCO) application for the Meridian Solar Farm Nationally Significant Infrastructure Project (NSIP) ('the Scheme') north-east of Crowland, Lincolnshire. Information is required so that the Secretary of State, as the Competent Authority, can undertake an HRA. This report provides evidence to support Stage 1 (screening for likely significant effects) and Stage 2 (Appropriate Assessment).

The Scheme would comprise the construction, operation (including maintenance) and decommissioning of a solar PV electricity generating station with associated infrastructure, including co-located Battery Energy Storage System (BESS), Inter-Array Connections to link the land parcels that form the Solar Development Areas, and an up to 13km overhead line Grid Connection (with one short undergrounded section) which would run north towards a point of connection (PoC) at the proposed Weston Marsh B National Grid Electricity Transmission (NGET) substation, to the north of Weston.

The Solar PV generating station, associated BESS, on-site substations and other associated infrastructure would be located within four land parcels (A, B, C and D) referred to collectively as the Solar Development Area, as shown in **ES Figure 1-1** (Doc Ref. 6.2).

The Inter-Arrays would be the areas within which 132kV connection cables (the 'Inter-Array Connections') would link the land parcels of the Solar Development Area. The configuration of the Inter-Array Connections (132kV) would comprise underground cabling between Land Parcels A and B ('the Underground Inter-Array') and an overhead line between Land Parcels C and D ('the Overground Inter-Array').

The Grid Connection Route would be the area between the Solar Development Area and the National Grid Weston Marsh B Substation in which a 400kV overhead line (the 'Grid Connection') would be located. There is one section where the Grid Connection would route underground to avoid conflicts with an existing 132kV overhead line. Cable Sealing End Compounds (CSECs) would join the proposed underground cable at that section with the proposed overhead line.

The main findings are as follows:

- The following Internationally Important Wildlife Sites were identified within 20km of the Scheme:

- The Wash and North Norfolk Coast Special Area of Conservation (SAC);
- The Wash Special Protection Area (SPA);
- The Wash Ramsar;
- Baston Fen SAC;
- Nene Washes SAC;
- Nene Washes SPA; and
- Nene Washes Ramsar.

- Stage 1 (Screening / Likely Significant Effects Test) conclusions:
  - Likely significant effects during construction or decommissioning as a result of visual and noise disturbance; and
  - Risk of injury and mortality of birds as a result of collision risk with proposed overhead lines during operation.
- Stage 2 (Appropriate Assessment) conclusions:
  - Measures are included in the **OCEMP** (Doc Ref. 7.10) and **ODEMP** (Doc Ref. 7.12), including timing of works, noise reduction, monitoring during works and visual screening;
  - Line markers to be installed on sections of the proposed 400kV overhead line south of Weston Hills and at the southern end of the Grid Connection Route to mitigate collision risk;
  - Taking account of mitigation, no likely significant effects alone or in combination with other plans or projects are predicted to occur.

1. Introduction

1.1. Background

1.1.1. This Shadow Habitats Regulations Assessment (HRA) has been prepared as part of the application for a Development Consent Order (DCO) application for the Meridian Solar Farm Nationally Significant Infrastructure Project (NSIP) ('the Scheme') north-east of Crowland, Lincolnshire.

1.1.2. This report provides the necessary information to enable the Secretary of State to assess potential impacts of the Scheme on internationally important wildlife sites (IIWS) and thereby meet its obligations as Competent Authority under The Conservation of Habitats and Species Regulations 2017[1] (also referred to as the "Habitats Regulations") and to ensure alignment with relevant National Policy Statements and local planning policies. This report provides evidence to support Stage 1 (screening for likely significant effects) and Stage 2 (Appropriate Assessment).

1.1.3. This report refers to the "Scheme" as described in the associated Environmental Statement (ES); which is directly equivalent to the "Project" as referred to in the terminology of the Habitats Regulations and guidance.

1.2. Scope of the Report

1.2.1. Stage 1 of the HRA process assesses whether, unmitigated, likely significant effects are predicted upon Habitats Sites[2] as a result of the proposed project or plan.

1.2.2. Likely significant effects are considered first in isolation and then in combination with other plans and projects. In line with the precautionary principle, unless a significant effect can be objectively ruled out with certainty, it is considered 'likely'. This screening exercise takes into account recent case

[1] HMSO (2017). *The Conservation of habitats and Species Regulations*, 2017 No. 1012. The Stationery Office Ltd

[2] For the purpose of this report, these sites include Special Areas of Conservation (SAC) and Special Protection Areas (SPA), which, together with Ramsar sites, will be referred to as IIWS. SACs and SPAs were formerly part of the Natura 2000 network of European designated sites; however, since leaving the EU, these sites now form part of the National Sites Network within the UK.

law 'People over Wind and Sweetman v Coillte Teoranta (C-323/17)'[3], which determined that mitigation aimed specifically at reducing the impacts of a given plan or project should only be taken into account at Stage 2 (Appropriate Assessment) and not at Stage 1 (Screening).

1.3. Site Context And Status

1.3.1. The site consists of three main components: the Solar Development Area (SDA), the Grid Connection Route (GCR) and the Inter-Array Connections (IAC) areas as shown in Appendix 1, Figure 1. The SDA is located approximately 12km west of Wisbech and 11km south of Holbeach and are connected by the IAC areas; the GCR is located approximately 4km east of Spalding and 3km southwest of Moulton.

1.3.2. The wider area is predominantly a typical Fenland landscape with open, low-lying arable agricultural land with individual field parcels separated by a network of ditches and IDB main drains, with isolated pockets of woodland, a small number of hedgerows, and small parcels of scrub.

1.4. The Scheme

1.4.1. The Scheme would comprise the construction, operation (including maintenance) and decommissioning of a solar PV electricity generating station with associated infrastructure, including co-located Battery Energy Storage System (BESS), Inter-Array Connections to link the land parcels that form the Solar Development Areas, and an up to 13km overhead line Grid Connection (with one short undergrounded section) which would run north towards a point of connection (PoC) at the proposed Weston Marsh B National Grid Electricity Transmission (NGET) substation, to the north of Weston.

1.4.2. The Solar PV generating station, associated BESS, on-site substations and other associated infrastructure would be located within four land parcels (A, B, C and D) referred to collectively as the Solar Development Area, as shown in **ES Figure 1-1** (Doc Ref. 6.2).

[3] European Court of Justice (2018) *Judgment of the Court (Seventh Chamber) of 12 April 2018. People Over Wind and Peter Sweetman v Coillte Teoranta. Screening in order to determine whether or not it is necessary to carry out an assessment of the implications, for a special area of conservation, of a plan or project — Measures that may be taken into account for that purpose. Case C-323/17*

1.4.3. The Inter-Arrays would be the areas within which 132kV connection cables (the 'Inter-Array Connections') would link the land parcels of the Solar Development Area. The configuration of the Inter-Array Connections would comprise underground cabling between Land Parcels A and B ('the Underground Inter-Array') and an overhead line between Land Parcels C and D ('the Overground Inter-Array').

1.4.4. The Grid Connection Route would be the area between the Solar Development Area and the National Grid Weston Marsh B Substation in which a 400kV overhead line (the 'Grid Connection') would be located. There is one section where the Grid Connection would route underground to avoid conflicts with an existing 132kV overhead line. Cable Sealing End Compounds (CSECs) would join the proposed underground cable at that section with the proposed overhead line.

1.4.5. The Site constitutes the total land area within the Order Limits of the Scheme, including the Solar Development Area, Inter-Array Connections and Grid Connection Route. A summary of the areas for each part of the Scheme is provided below:

- Solar Development Area - Land Parcel A: 197ha
- Solar Development Area - Land Parcel B: 335ha
- Solar Development Area - Land Parcel C: 205ha
- Solar Development Area - Land Parcel D: 330ha
- Underground Inter-Array between Land Parcel A & B: 15ha
- Overhead Inter-Array between Land Parcel C & D: 46ha
- Grid Connection Route: 510ha
- Site (total): 1616ha*

*Note the sum of parts for the areas of the Scheme exceeds the total area of the Order Limits due to an overlap of the Grid Connection Route with Solar Development Area Land Parcel B.

1.5. Competent Expert

1.5.1. All ecologists working on this report are full members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their

code of professional conduct[4] when undertaking ecological work. The author is a full member of CIEEM, with an MSc in Ecological and Environmental Sciences and over 20 years' experience in ecological consultancy and research. The report was reviewed by a full member of CIEEM with 13 years' experience in ecological consultancy.

1.6. Nomenclature

1.6.1. All scientific names provided in the text follow the common name and are provided at the first mention only in accordance with Stace[5] and the National History Museum Species Dictionary[6].

2. Legislation and Policy

2.1. Legislation

2.1.1. Plans or projects must consider Regulation 63 under the Conservation of Habitats and Species Regulations 2017[7] to determine whether operations are likely to result in damage, alone or in combination, to the ecological features and conservation objectives of sites within the National Site Network (formerly the Natura 2000 Network, referred to as European Sites). These Habitats Sites include Special Areas of Conservation (SACs), candidate SACs (cSACs) and Special Protection Areas (SPAs).

2.1.2. Articles 6 (3) and 6 (4) of the Habitats Directive (92/43/EEC), are transposed into English Law by Regulation 63 the Conservation of Habitats and Species Regulations 2017 (as amended), and state:

2.1.3. (3) 'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's

[4] CIEEM (2025) *Code of Professional Conduct*. Available at https://cieem.net/wp-content/uploads/2019/02/Code-of-Professional-Conduct-April-2025.pdf [Accessed January 2026]
[5] Stace (2019). *New Flora of the British Isles*. 4th edition. Cambridge University Press.
[6] Natural History Museum (2025). *UK Species*, available at https://www.nhm.ac.uk/our-science/data/uk-species.html [accessed January 2026]
[7] HMSO (2017). *The Conservation of habitats and Species Regulations, 2017* No. 1012. The Stationery Office Ltd

conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public'.

2.1.4. *(4) 'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted'.*

2.2. Policy

National Policy

National Policy Statements

2.2.1. The Overarching National Policy Statement for Energy (EN-1), 2025[8] Section 5.4, outlines the need for applicants to ensure the ES defines effects in relation to biodiversity and geological conservation.

2.2.2. Paragraph 5.4.4 of EN-1 refers to the application of the Habitats Regulations and the need for an HRA to assess the implications of a plan or project on sites, including SPA and SAC.

2.2.3. In addition to those sites provided statutory protection by the Habitats Regulations, Paragraph 5.4.5 of EN-1 states that "As a matter of policy, the following should be given the same protection as sites covered by the Habitats Regulations and an HRA will also be required:

- potential Special Protection Areas and possible Special Areas of Conservation;
- listed or proposed Ramsar sites; and

[8] Department for Energy Security & Net Zero (2026). *Overarching National Policy Statement for energy (EN-1), 2025*. Available at https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1-2025/overarching-national-policy-statement-for-energy-en-1-2025-accessible-webpage. [Accessed January 2026]

- sites identified, or required, as compensatory measures for adverse effects on Special Protection Areas, Special Areas of Conservation, and any of the other sites covered by this paragraph.

2.2.4. Collectively these are all referred to as Internationally Important Wildlife Sites (IIWS).

2.2.5. Paragraph 5.4.18 of EN-1 outlines the need for the applicant to "*ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance (including those outside England and Wales), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats.*"

2.2.6. Paragraph 5.4.20 of EN-1 states that "*The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.*"

2.2.7. Paragraph 5.4.23 of EN-1 reiterates that "*The design of Energy NSIP proposals will need to consider the movement of mobile/migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure.*"

2.2.8. Paragraph 5.4.26 of EN-1 outlines that "*The applicant should seek the advice of the appropriate SNCB [Statutory Nature Conservation Body] and provide the Secretary of State with such information as the Secretary of State may reasonably require, to determine whether an HRA Appropriate Assessment [(AA)] is required. Applicants can request and agree 'Evidence Plans' with SNCBs, which is a way to record upfront the information the applicant needs to supply with its application, so that the HRA can be efficiently carried out. If an AA is required, the applicant must provide the Secretary of State with such information as may reasonably be required to enable the Secretary of State to conduct the AA. This should include information on any mitigation measures that are proposed to minimise or avoid likely significant effects.*"

2.2.9. The Scheme will also be subject to the National Policy Statement for Renewable Energy Infrastructure (EN-3), 2025[9], and the National Policy Statement for Electricity Networks Infrastructure (EN-5), 2025[10].

2.2.10. Paragraphs 2.10.67 to 2.10.84 of EN-3 set out considerations for conservation of biodiversity in relation to photovoltaic generation schemes. While this section does not refer specifically to the Habitats Regulations, paragraph 2.10.69 highlights issues that may need assessment including "*habitats, ground nesting birds, wintering and migratory birds, bats, dormice, reptiles, great crested newts, water voles and badgers*", some of which are relevant in relation to some IIWS.

2.2.11. Paragraphs 2.9.3 to 2.9.6 of EN-5 describe particular considerations for electricity networks in relation to ornithological receptors:

2.2.12. "*Electricity networks infrastructure pose a particular potential risk to birdlife including large birds, such as swans and geese, and perching birds. These may collide with overhead lines and risk being electrocuted. Large birds may also be electrocuted when landing or taking off by completing an electric circuit between live and ground wires. Even perching birds can be killed as soon as their wings touch energised parts of the infrastructure.*

2.2.13. Applicants should consider measures to make lines more visible such as bird flappers and diverters which are covered in more detail in Sections 2.10.2 - 2.10.4.

2.2.14. The applicant will need to consider whether the proposed line will cause such problems at any point along its length and take this into consideration in the preparation of the ES (see Section 4.3 of EN-1).

2.2.15. *Particular consideration should be given to feeding and hunting grounds, migration corridors and breeding grounds, where they are functionally linked to sites designated or allocated under the 'national site network' provisions of the*

---

[9] Department for Energy Security and Net Zero (2026) *National Policy Statement for Renewable Energy Infrastructure (EN-3) (E03486059 11/25)*. Available at: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3-2025. [Accessed January 2026]

[10] Department for Energy Security and Net Zero (2026) *National Policy Statement for electricity networks infrastructure (EN-5), 2025 (E03486068 11/25)*. Available at: https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5-2025. [Accessed January 2026]

Conservation of Habitats and Species Regulations and Conservation of Offshore Marine Habitats and Species Regulations."

National Planning Policy Framework

2.2.16. The National Planning Policy Framework (NPPF)[11] is referred to in NPS EN-1, paragraph 4.1.18, which states that "*The Secretary of State should consider the guidance in the NPPF* [...]" in relation to development consent. The NPPF states in paragraph 195 that "*the presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the Habitats Site*".

Local Policy

2.2.17. The South East Lincolnshire Local Plan[12] (SELLP) 2011-2036 outlines under Policy 28 (The Natural Environment) how the protection, enhancement and management of natural assets will ensure a high-quality ecological network of interconnected designated sites, sites of nature conservation importance and wildlife friendly greenspace. In particular 28.1 specifically refers to internationally-designated sites:

- a. development proposals that would cause harm to these assets will not be permitted, except in exceptional circumstances, where imperative reasons of overriding public interest exist, and the loss will be compensated by the creation of sites of equal or greater nature conservation value.

3. Methodology

3.1. The HRA Process

3.1.1. The Habitats Directive and Regulations do not prescribe a detailed methodology for assessment. This report therefore follows the approach set

[11] Ministry of Housing, Communities and Local Government (2025) *National Planning Policy Framework*, December 2024 (updated February 2025)

[12] South East Lincolnshire Joint Strategic Planning Committed (2019) *South East Lincolnshire Local Plan 2011-2036* (adopted March 2019). Available at: https://southeastlincslocalplan.org/media/21941/South-East-Lincolnshire-Local-Plan-2011-2036/pdf/Local-Plan-text-March-2019.pdf?m=1720710748483. [Accessed January 2026]

out by the Department for Communities and Local Government (DCLG)[13], the RSPB[14], UK Government guidance on Habitats Regulations Assessments[15] and Natural England's Operational Standard for HRA[16].

3.1.2. HRAs are required for all projects/strategic plans likely to impact on IIWS. Such assessments apply the precautionary approach in considering the effects on site integrity, in that plans or projects may only proceed if the competent authority is satisfied that there is no reasonable doubt as to the absence of adverse effects on the integrity of an IIWS (taking into account appropriate mitigation or compensation where effects could not otherwise be avoided).

3.1.3. Although the HRA process relates specifically and exclusively to the qualifying interests of IIWS, given that each designation overlaps to some degree with Sites of Special Scientific Interest (SSSI), the features of international importance cited and the condition of the SSSI, are also important considerations for the planning process and form part of the assessment where relevant.

3.1.4. The Habitats Regulations describe a procedure that provides for a systematic set of stages for the transparent consideration of the likely significant effects a plan or project could have on an IIWS. The DCLG Guidance states that there are four stages in producing an assessment as follows:

- Stage 1: Screening – the process which identifies whether the plan or project is required for the management of IIWS and, if not, whether there are likely to be any effects upon a site as a result of the plan or project, either alone or in combination with other projects or plans, as well as considering whether these effects are likely to be significant.
- Stage 2: Appropriate Assessment - the consideration of the impact of the plan or project on the integrity of the IIWS, either alone or in combination with other projects or plans, with respect to the IIWS's structure and

[13] DCLG (2006). *Planning for the Protection of European Sites: Appropriate Assessment*. DCLG, London

[14] Dodd A.M., Cleary B.E., Dawkins J.S., Byron H.J., Palframan L.J. & Williams G.M. (2007). *The Appropriate Assessment of Spatial Plans in England: a guide to why, when and how to do it*. The RSPB, Sandy

[15] Defra/ Natural England (2023). *Habitats Regulations Assessments: protecting a European site* https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site. [Accessed January 2026]

[16] Natural England (2019). *Natural England Standard: Habitats Regulations Assessment (HRA)*. 02.04.2019 V1.4

function and its conservation objectives. Additionally, where adverse effects on IIWS integrity exist, an assessment of the effectiveness of potential mitigation of those impacts will be made;

- Stage 3: Assessment of alternative solutions - the process which examines alternative ways of achieving the objectives of the plan or project that avoid likely significant effects on the integrity of the IIWS identified at Stage 2; and
- Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the plan or project should proceed.

3.1.5. Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage 1 are that there are no likely significant effects on the IIWS, there is no requirement to proceed further.

3.1.6. This report provides evidence to support an HRA to be undertaken by the Secretary of State as the competent authority.

3.1.7. This report uses the approach provided in Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites[17], and is in accordance with CIEEM[18], Natural England[19] and IAQM Guidance[20].

3.2. Stage 1 HRA (Screening)

3.2.1. Likely significant effect is not defined in the Habitats Regulations or the Directive. A practical definition of 'significant effect', which takes account of

[17] European Commission (2002). *Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*

[18] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester

[19] Natural England (2018). *Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*. June 2018

[20] Holman, C., Barrowcliffe, R., Harker, G., Hawkings, C., Horrocks, S., and Prismall, F. (2020). *A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1*, Institute of Air Quality Management, London.

case law[21], is any effect that may reasonably be predicted as a consequence of a plan or project that could affect the achievement of the conservation objectives of the features for which the site was designated, but excluding effects that are not appreciable (also variously referred to as trivial, inconsequential or de minimis). Likely effect is not only one that is probable but should also be taken to mean an effect that could happen if its occurrence cannot be ruled out, based on the best available objective information. Effects that are likely to be significant include:

- changes to the ecological coherence or robustness of the IIWS, or to the wider series of IIWS (for example by presenting a barrier between isolated fragments, or reducing the ability of the IIWS to act as a source of new colonisers);
- reduction in the area of a particular habitat or habitats within the IIWS, or in some way sterilising part of the IIWS from its ecological functioning;
- direct or indirect physical change to the quality of the environment (including the hydrology) or habitat within the IIWS;
- ongoing disturbance to qualifying species or habitats;
- alteration of community structure (species composition);
- direct or indirect damage to the size, characteristics or reproductive ability of populations on the IIWS, including effects in relation to supporting habitat outside the IIWS (functionally linked land (FLL));
- increased vulnerability of populations to other impacts;
- reduced resilience of the feature against external change (for example its ability to respond to extremes of environmental conditions); or
- affecting restoration of a feature where this is a conservation objective.

3.2.2. Each phase of the Scheme has been considered against each of the IIWS' qualifying features and an assessment of potential effects made using best available evidence. Where uncertainty remains, effects cannot be excluded and the project must proceed to Appropriate Assessment.

[21] European Court of Justice (2002). *Judgment of the Court (Grand Chamber) of 7 September 2004. Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij – Concept of "plan' or "project' - Assessment of the implications of certain plans or projects for the protected site. Case C-127/02.*

3.2.3. The various elements of the Scheme have first been considered 'alone', that is in isolation from any potential combined effects of other development proposals that may also affect the IIWS. Following assessment of effects 'alone', the assessment then considers the potential for significant effects 'in combination' with other plans or proposals.

3.2.4. An in-combination, or cumulative, assessment is required only where the project may have an appreciable effect on an IIWS but on its own, the effects are not likely to be significant. In these cases, the effects of the Scheme are considered alongside other live (within the planning system pending decision or decided but not yet in place) plans or projects, which themselves may have an appreciable, but non-significant effect to assess whether they may add up to a significant 'in-combination' effect. Where other plans or projects have a predicted significant effect alone, no in-combination assessment is needed as any residual effects from the Scheme would only be adding to an already significant effect.

3.3. Screening Area

3.3.1. For the purposes of assessing the potential for significant effects from the Scheme alone, an initial screening radius of up to 15km was considered on a precautionary basis, taking into account the type and scale of the Scheme and the potential impact pathways in relation to IIWS in the wider area. Following consultation with Natural England, this was extended to 20km for IIWS for which qualifying features included birds or otter.

3.3.2. The Impact Risk Zones (IRZ) for SSSI on MAGIC[22] were also consulted. Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to terrestrial SSSI posed by a Scheme. They define zones around each SSSI which reflect the sensitivities of the features for which the site is notified and indicate the types of development proposal which could potentially have adverse impacts and need further consideration. In certain locations they also include Natural England's statutory advice for certain development types. The SSSI IRZs also cover the interest features and sensitivities of those IIWS that are underpinned by a terrestrial SSSI

[22] Natural England (2025) Multi-Agency Geographic Information for the Countryside (MAGIC). Available at https://magic.defra.gov.uk/home.htm. [Accessed January 2026] The MAGIC website provides geographic information about the natural environment from across government. The information covers rural, urban, coastal and marine environments across Great Britain.

designation. The sites within Table 1, below were therefore considered (also see Appendix 1: Figure 2).

Table 1: Internationally important wildlife sites within 20km of the Site

Designation	Underpinning SSSI	Distance from Site
The Wash and North Norfolk Coast SAC	The Wash SSSI	8.4km NE of the Grid Connection Route
The Wash SPA	The Wash SSSI	8.4km NE of the Grid Connection Route
The Wash Ramsar	The Wash SSSI	8.4km NW of the Grid Connection Route
Baston Fen SAC	Baston and Thurlby Fens SSSI	10km W of the Grid Connection Route
Nene Washes SAC	Nene Washes SSSI	12km S of the Solar Development Area
Nene Washes SPA	Nene Washes SSSI	12km S of the Solar Development Area
Nene Washes Ramsar	Nene Washes SSSI	12km S of the Solar Development Area
Barnack Hills & Holes SAC	Barnack Hills & Holes SSSI	19.2km SW of the Solar Development Area (not designated for birds or otter and beyond 15km, therefore not considered further)
Orton Pit SAC	Orton Pit SSSI	19.8km SW of the Solar Development Area (not designated for birds or otter and beyond 15km, therefore not considered further)

3.4. Baseline Data Sources

3.4.1. This assessment draws on a number of studies and consultation undertaken to support the impact assessment for the Scheme, including:

- Wintering bird transect surveys of the Solar Development Area in 2022 to 2023 (**ES Appendix 9-4 Wintering Bird Survey 2022-2023** (Doc Ref. 6.3));
- Wintering vantage point surveys of the broader Grid Connection Route options area in 2023 to 2024 (**ES Appendix 9-6 Grid Connection Wintering Bird Survey Report 2023-2024** (Doc Ref. 6.3));
- Wintering vantage point surveys of the western route option Grid Connection Route corridor (now the selected route) in 2024 to 2025 (**ES Appendix 9-10 Wintering Bird Vantage Point Survey 2024-2025** (Doc Ref. 6.3));
- A desk study including bird records from Greater Lincolnshire Nature Partnership (GLNP) within 20km of the Site (**ES Appendix 9-13 Summer 2025 Vantage Point Survey** (Doc Ref. 6.3));
- Consultation with Natural England (see Appendix 2);
- Consultation with Lincolnshire Wildlife Trust; and
- Consultation with NGET and initial survey data from NGET available at the time of submission.

4. Stage 1 HRA (Screening)

4.1. Overview

4.1.1. This section provides a summary of the IIWS scoped into the Stage 1 HRA screening and its conservation objectives and sets out the potential effect pathways in which the Scheme might reasonably be expected to affect the qualifying features. This includes an assessment of location, proximity, type, scale, extent, duration, frequency and timing of proposed operations or activities, where relevant information is currently available.

4.1.2. Descriptions of the IIWS are presented below, along with summaries of the qualifying habitats and species. These are taken from the Natural England

Designated Sites View[23] and include: SAC data forms; SAC site citations, Site Improvement Plans, Conservation Objectives and Supplementary Advice on achieving Conservation Objectives (SACO). The full list of qualifying features is provided in Table 2, with details of potential impact pathways in relation to threats and pressures in Table 4. A summary of screening for Likely Significant Effects for the construction, operational and decommissioning phases of the Scheme is presented in Table 6.

4.2. Conservation Objectives and Supplementary Advice

4.2.1. The Conservation Objectives are the same for all of the IIWS considered, subject to the relevance to specific qualifying features. Supporting information such as Supplementary Advice documents provide more detailed advice and information to enable the application and achievement of the Objectives for each site. These Objectives are to ensure that, subject to natural change, the integrity of the IIWS is maintained or restored as appropriate, and that the IIWS contributes to achieving the Favourable Conservation Status (Natural England interprets Favourable Conservation Status as the situation in which a habitat or species is thriving throughout its natural range and is expected to continue to thrive into the future)[24] of its qualifying features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of the qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of the qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of qualifying species; and
- the distribution of qualifying species within the site.

[23] Natural England (2025) Designated Sites View. Available at https://designatedsites.naturalengland.org.uk/ [Accessed March 2026]
[24] Natural England (2023) *Defining Favourable Conservation Status in England EIN062*

The Wash and North Norfolk Coast SAC

4.2.2. The Wash and North Norfolk SAC encompasses the largest embayment in the UK, as well as: extensive intertidal sand and mudflats, subtidal sandbanks, biogenic and geogenic reef, saltmarsh, a barrier beach system, unique in the UK.

4.2.3. Subtidal sandbanks and reefs are widespread throughout The Wash and North Norfolk coast. Commercially important fish species use sandbanks as nursery grounds and reefs are associated with elevated biodiversity and species abundance. The site has an outstanding example of the habitat *Sabellaria spinulosa* reef, which is of European significance. It is one of only five SACs in the UK where this habitat is the primary reason for designation and contains a significant proportion of the *S. spinulosa* reef located on the eastern coast of the UK.

4.2.4. The large areas of intertidal sand and mudflats form important habitat for polychaete worms, bivalves and crustaceans and foraging ground for wading bird species. Mussel and cockle beds found on the intertidal flats also support important fisheries in the area.

4.2.5. Further inland, saltmarsh and saline reedbeds cover 7,642ha of the site. Salicornia and saltmarsh communities colonise the sand and mudflats. Atlantic salt meadows form one of the most diverse and extensive examples of this habitat in the UK. The high diversity of these salt meadows is partly due to the variety of specialist species associated with the different habitats present in the site.

4.2.6. The salt meadow expanse within the site also includes the only location in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. Four SACs have been designated for this habitat in the UK, totalling around 155ha, of which 107ha is located along the North Norfolk coast.

4.2.7. Coastal lagoons on the North Norfolk coast are maintained by the barrier beach system and inland coastal lagoons provide habitat for unique invertebrate communities.

4.2.8. The site is also important for harbour or common seals, providing key habitat for breeding and hauling-out. The site is home to the largest colony of common seals in the UK, around 7% of the UK breeding population, and they can be found hauling out on sand and mudflats throughout in areas such as Blakeney

Point. In addition, otters *Lutra lutra*, are also present in the site and included as a qualifying feature.

The Wash SPA and Ramsar

4.2.9. The Wash SPA and Ramsar is composed of tidal rivers, estuaries, lagoons, mud and sand flats and in the centre, deep channels surrounded by shallower waters. These areas predominantly consist of saltmarsh, intertidal banks of sand and mud, sandy and shingle beaches and subtidal sandy sediments. Shallow coastal waters support small fish which are preyed upon by tern species. Intertidal mud and sand flats support a variety of polychaete worms and bivalve molluscs including cockle and mussel beds which alongside algae provide rich foraging grounds for a number of bird species. These include the dark-bellied brent goose *Branta bernicla bernicla*, oystercatcher *Haematopus ostralegus*, common scoter *Melanitta nigra*, sanderling *Calidris alba*, gadwall *Anas strepera*, curlew *Numenius arquata*, pintail *Anas acuta*, shelduck *Tadorna tadorna*, dunlin *Calidris alpina alpina*, knot *Calidris canutus*, bar-tailed godwit *Limosa lapponica* and black-tailed godwit *Limosa limosa islandica*.

4.2.10. Further inland saltmarsh provides important roosting habitat at the site for a number of bird species, including redshank, curlew, pintail and dunlin. Additionally, saltmarsh provides an important foraging habitat for the dark-bellied brent goose, wigeon *Anas penelope*, pintail and dunlin, the latter of which also roosts alongside oystercatchers on arable fields.

4.2.11. Bordering agricultural and pasture land provide foraging for pink-footed goose *Anser brachyrhynchus* and overspill foraging for curlew, oystercatcher, dunlin and black-tailed godwit during high tides. Some of the species roosting at the site require unrestricted views of the surrounding area and take advantage of bare ground and short vegetation to roost. These include redshank *Tringa totanus*, grey plover *Pluvialis squatarola* and both black and bar-tailed godwit. Other species, such as common tern *Sterna hirundo*, little tern *Sternula albifrons*, sanderling and grey plover utilise the sandy, shingle and gravel beaches to roost. Wigeon roost at Wainfleet, Black Bout and Wolfreton Sands and pink footed goose can be found roosting at Freiston, Snettisham and Terrington. Roger and Toft Gat and Seal sands support roosting sanderling and pintail roost on the flats of the rivers Nene and Ouse.

4.2.12. In addition to the bird interest and estuarine habitats, The Wash Ramsar qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary

source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary. The flats support high concentrations of marine worms and shellfish. There is an abundant growth of algae and high concentrations of marine invertebrates which provides a food source for over 300,000 wintering wildfowl. The Ramsar holds one of the North Sea's largest breeding populations of harbour or common seal *Phoca vitulina*. Extensive saltmarshes fringe the bay. Higher level marshes are characterised by *Elytrigia atherica*, *Atriplex portulacoides*, *Suaeda maritima* and *Limonium vulgare*. Where the saltmarsh has been grazed by cattle and wildfowl, there may be extensive lawns of *Puccinellia* spp. Abundant *Aster tripolium* occurs at lower levels whilst *Salicornia* spp. and *Spartina anglica* are the principal colonising species.

Baston Fen SAC

4.2.13. Baston Fen SAC lies within the Fens, a large, low-lying, flat agricultural landscape with many drainage ditches, dykes and rivers that slowly drain towards the Wash, England's largest tidal estuary.

4.2.14. The SAC comprises the Counter Drain, which is a large, slow-flowing drainage channel lying adjacent to Baston Fen. It is approximately 2.3km in length. The drain forms an important refuge for a diverse community of aquatic and emergent plants including yellow water-lily *Nuphar lutea*, needle spike-rush *Eleocharis acicularis*, arrowhead *Sagittaria sagittaria*, frogbit *Hydrocharis morsus-ranae*, fan-leaved water-crowfoot *Ranunculus circinatus* and spiked watermilfoil *Myriophyllum spicatum*. Of particular note is the presence of an unusually rich assemblage of pondweeds which includes perfoliate pondweed *Potamogeton perfoliatus*, flat-stalked pondweed *P. friesii*, the nationally uncommon hairlike pondweed *P. trichoides* and grass-wrack pondweed *P. compressus*.

4.2.15. The site is also rich in freshwater invertebrates, including dragonflies, damselflies, aquatic snails and water beetles. Amongst the variety of fish which have been recorded from the site is the spined loach *Cobitis taenia*, a significant population of which occurs in the Counter Drain.

Nene Washes SPA and Ramsar

4.2.16. The Nene Washes are an extensive mosaic of low lying wet grassland and rough pasture that lie in the Fens of Norfolk and Cambridgeshire. They were created in the 17th century with a primary function to store floodwater from the Nene and protect surrounding land. They total around 1500ha and are located on the lower reaches of the River Nene, running out eastwards from Peterborough, towards and past Whittlesey, ending at Ringsend. The soils of

the washes are slightly base rich peats, alluvial in nature and with a high silt content from the flood waters.

4.2.17. These grasslands play a major land drainage role as a flood water storage area and this washland is therefore subject to regular winter flooding. In the summer months the grasslands provide grazing and hay. The regular winter flooding and the continuance of traditional management of cattle grazing and hay cutting maintains the nature conservation value of the area.

4.2.18. When severe winters occur elsewhere in continental Europe, it can force water birds from these areas to seek a relatively milder climate such as that found around the Washes. The site can also act as refuge when other nearby areas such as the Ouse Washes are subject to deep and prolonged flooding. During the winter large assemblages of waterfowl can congregate, sometimes in excess of 20,000 birds.

Nene Washes SAC

4.2.19. Covering a total area of approximately 88 hectares within the Fens, the Nene Washes SAC lie north-west of the Ouse Washes. The Nene Washes are one of the country's few remaining areas of low-lying, periodically-inundated grassland (washland) habitat and this site is notable for the diversity of plant and associated animal life within its network of dykes.

4.2.20. The general site character is predominantly standing and running water, with bogs, marshes, water fringed vegetation and fens, and areas of improved grassland. The washlands are used for the seasonal uptake of floodwaters and, traditionally, for cattle grazing in the summer months. Many of the ditches hold a rich flora which includes such uncommon species as frogbit *Hydrocharis morsus-ranae*, water violet *Hottonia palustris* and flowering rush *Butomus umbellatus*.

4.2.21. The primary reason for the SAC designation on the Nene Washes is for its representative populations of spined loach *Cobitis taenia*. Moreton's Leam, a large drainage channel running along the southern flank of the washes, contains a high density of spined loach.

Table 2: Qualifying interest features for relevant IIWS within 20km of the Site

Name and distance from site	Qualifying Features
The Wash and North Norfolk Coast SAC, 8.4km	Annex I habitats that are a primary reason for selection of this site

Name and distance from site	Qualifying Features
north-east of Grid Connection Route	• 1110 Sandbanks which are slightly covered by sea water all the time • 1140 Mudflats and sandflats not covered by seawater at low tide • 1160 Large shallow inlets and bays • 1170 Reefs • 1310 Salicornia and other annuals colonizing mud and sand • 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site • 1150 Coastal lagoons – Priority feature Annex II species that are a primary reason for selection of this site • 1365 Harbour seal *Phoca vitulina* Annex II species present as a qualifying feature, but not a primary reason for site selection • 1355 Otter *Lutra lutra*
The Wash SPA, 8.4km north-east of Grid Connection Route	Article 4.1 Qualification: Breeding: • Common tern, *Sterna hirundo*; little tern, *Sterna albifrons*.
	Article 4.1 Qualification: Non-breeding: • Bar-tailed godwit *Limosa lapponica*; Bewick's swan *Cygnus columbianus bewickii*; black-tailed godwit *Limosa limosa islandica*; common scoter *Melanitta nigra*; curlew *Numenius arquata*; dark-bellied Brent goose *Branta bernicla bernicla*; dunlin *Calidris alpina*

Name and distance from site	Qualifying Features
	alpina; gadwall *Anas strepera*; goldeneye *Bucephala clangula*; grey plover *Pluvialis squatarola*; knot *Calidris canutus*; oystercatcher *Haematopus ostralegus*; pink-footed goose *Anser brachyrhynchus*; pintail, *Anas acuta*; redshank *Tringa totanus*; sanderling *Calidris alba*; shelduck, *Tadorna tadorna*; turnstone, *Arenaria interpres*; wigeon, *Anas Penelope*
	Article 4.2 qualification: • An internationally important assemblage of birds (comprising all species above)
The Wash Ramsar, 8.4km north-east of Grid Connection Route	Ramsar Criterion 1: • Estuary - large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.
	Ramsar Criterion 3: • Inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.
	Ramsar Criterion 5: • Waterfowl assemblages of international importance • Non-breeding waterfowl assemblage
	Ramsar Criterion 6: species/populations occurring at levels of international importance:

Name and distance from site	Qualifying Features
	Species with peak counts in spring/autumn: • Oystercatcher; grey plover; knot; sanderling; curlew (breeding); redshank; turnstone. Species with peak counts in winter: • Pink-footed goose; dark-bellied Brent goose; shelduck; pintail; dunlin; bar-tailed godwit. Species/populations identified subsequent to designation for possible future consideration under criterion 6: Species with peak counts in spring/autumn: • Ringed plover; black-tailed godwit. Species with peak counts in winter: • Golden plover; lapwing.
Baston Fen SAC, 10km west of Land Parcel A	S1149 Spined loach
Nene Washes SAC, 12km south of Land Parcel D	S1149 Spined loach
Nene Washes SPA, 12km south of Land Parcel D	Article 4.1 Qualification: Non-breeding • Bewick's swan
	Article 4.2 Qualification: Breeding • Shoveler, garganey, gadwall, black-tailed godwit, pintail, teal, wigeon
Nene Washes Ramsar, 12km south of Land Parcel D	Ramsar Criterion 6: species/populations occurring at levels of international importance: Species with peak counts in winter: • Bewick's swan Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Name and distance from site	Qualifying Features
	Species with peak counts in spring/autumn: • Black-tailed godwit Species with peak counts in winter • Pintail

4.2.22. A summary of the cited bird populations for The Wash SPA and Ramsar and Nene Washes SPA and Ramsar is provided in Table 3, along with the latest Wetland Bird Survey (WeBS) data[25]. Due to the age of the citations, the WEBS data are taken to be a more accurate representation of the current bird populations (except where no WeBS count is given). Qualifying features are highlighted in bold.

[25] BTO (2026) https://app.bto.org/webs-reporting/principal.jsp - 5-year averages from 2019/20 to 2023/24

Table 3: Summary of bird populations associated with The Wash SPA & Ramsar and Nene Washes SPA & Ramsar

Species/Feature	Season	The Wash Ramsar	The Wash SPA	The Wash WeBS	Nene Washes Ramsar	Nene Washes SPA	Nene Washes WeBS
Waterfowl assemblage	Winter	**292,541**	**214,000**	423,684			40,809
Avocet	Winter			550			
Bar-tailed godwit	Winter	**16,546**	**8,200**	16,607			
Bean goose	Winter	7					
Bewick's swan	Winter				**694**	**1,300**	151
Black-headed gull	Winter	31,403	8000				
Black-tailed godwit	Breeding					**32**	
	Spring or autumn	6,849			482		
	Winter		**260**	10,271			1,734
Common eider	Winter	1,109					
Common greenshank	Spring or autumn	376					
Common pochard	Winter				1,795		
Common redshank	Spring or autumn	**6,373**					
Common scoter	Winter	1,190	**830**				
Common shelduck	Winter	**9,746**					
Common tern	Breeding	304					

Species/Feature	Season	The Wash Ramsar	The Wash SPA	The Wash WeBS	Nene Washes Ramsar	Nene Washes SPA	Nene Washes WeBS
Cormorant	Spring or autumn	367					
Curlew	Spring or autumn	**9,438**					
	Winter		**3,700**	8,047			
Dark-bellied brent goose	Winter	**20,861**	**17,000**	11,546			
Dunlin	Winter	**36,600**	**29,000**	28,364			
Eider	Winter			2,593			
Gadwall	Breeding					**50**	
	Winter		**130**			**95**	325
Garganey	Breeding					**10**	
Golden plover	Winter	22,033		23,898	2,949		6,013
Goldeneye	Winter		**220**				
Greenshank	Winter			179			
Grey plover	Spring or autumn	**13,129**					
	Winter		**5,500**	12,116			
Knot	Winter		**7,500**	222,796			
Lapwing	Winter	46,422		29,548			10,707
Lesser black-backed gull	Breeding	2,756					

Species/Feature	Season	The Wash Ramsar	The Wash SPA	The Wash WeBS	Nene Washes Ramsar	Nene Washes SPA	Nene Washes WeBS
	Spring or autumn	1,993					
Little egret	Winter			442			
Little tern	Breeding	66					
Oystercatcher	Spring or autumn	**15,616**					
	Winter	**292,541**	**24,000**	22,836			
Pied avocet	Spring or autumn	422					
Pink-footed goose	Winter	**29,099**	**7,300**	18,138			
Pintail	Winter	**431**	**1,700**	543	1,848	**440**	673
Pochard	Winter						427
Red knot	Spring or autumn	**68,987**					
Redshank	Winter		**4,331**	5,727			
Red-throated diver	Winter	55					
Ringed plover	Spring or autumn	1,500					
	Winter			1,348			
Ruff	Spring or autumn	25					
	Winter			74	98		164
Sanderling	Spring or autumn	**3,505**					

Species/Feature	Season	The Wash Ramsar	The Wash SPA	The Wash WeBS	Nene Washes Ramsar	Nene Washes SPA	Nene Washes WeBS
	Winter		**500**	9,072			
Shelduck	Winter		**16,000**	3,065			
Shoveler	Breeding					**72**	
	Winter			460	343	**110**	879
Spoonbill	Winter			62			
Spotted redshank	Winter	54					
Teal	Winter				2,015	**980**	
Turnstone	Spring or autumn	**888**					
	Winter		**980**	918			
Whimbrel	Spring or autumn	191					
	Winter			242			
White-fronted goose	Winter	100					
Whooper swan	Winter			457	80		2,040
Wigeon	Winter		**3,900**	11,107	9,651	**3,640**	10,391

4.3. Sites Of Special Scientific Interest (SSSI)

4.3.1. The IIWS are underpinned by a number of component SSSI including The Wash SSSI, Baston and Thurlby Fens SSSI and the Nene Washes SSSI. Although impacts on the interest features of nationally important sites do not form part of the HRA process, relevant information *e.g.* condition assessments for individual SSSI units[26] have been used to help understand current threats and pressures to the site and the IIWS they underpin.

4.4. Screening For Likely Significant Effects

4.4.1. Table 4 below list the threats and pressures relevant to each qualifying feature of the IIWS as presented in their respective Site Improvement Plans (SIP) where available and identifies whether there is a potential impact pathway whereby the Scheme could contribute to these and result in a significant effect (highlighted in bold type). Other impact pathways anticipated to arise from the Scheme that are additional to those identified in the SIP are also presented based on IRZ criteria and known sensitivities.

Table 4: Summary of qualifying features, threats/pressures and impact pathways relating to relevant IIWS

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
Inappropriate water levels/ Hydrological changes	The Wash SPA (Pressure)	Common redshank	No impact pathway
	Nene Washes SPA	Wintering and passage birds	

[26] Natural England – Designated Sites View: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1000452. [Accessed January 2026]

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
Public Access/Disturbance	The Wash and North Norfolk Coast SAC (Threat)	Intertidal mudflats and sandflats, Shallow inlets and bays, Glasswort and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean saltmarsh scrub, Common seal, Otter	No impact pathway
	The Wash SPA (Threat)	Wintering/ migratory birds Breeding common tern & little tern	
Siltation	The Wash and North Norfolk Coast SAC (Threat)	Subtidal sandbanks, Intertidal mudflats and sandflats, Coastal lagoons, Glasswort and other annuals colonising mud and sand, Mediterranean saltmarsh scrub,	No impact pathway
	Baston Fen SAC (Threat)	Spined Loach	No impact pathway
Fisheries: Recreational marine and estuarine	The Wash and North Norfolk Coast SAC (Threat)	Intertidal mudflats and sandflats	No impact pathway

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
	The Wash SPA (Threat)	Wintering/ migratory birds Breeding common tern & little tern	
Invasive species	The Wash and North Norfolk Coast SAC (Threat)	Subtidal sandbanks, Intertidal mudflats and sandflats, Shallow inlets and bays, Reefs, Glasswort and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean saltmarsh scrub	No impact pathway
Inappropriate coastal management	The Wash and North Norfolk Coast SAC (Threat)	Coastal lagoons, Glasswort and other annuals colonising mud and sand	No impact pathway
	The Wash SPA (Threat)	Breeding common tern	
Fisheries: Commercial marine and estuarine	The Wash and North Norfolk Coast SAC (Threat)	Intertidal mudflats and sandflats, Shallow inlets and bays, Reefs	No impact pathway
	The Wash SPA (Threat)	Wintering/ migratory birds Breeding common tern & little tern	

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
Predation	The Wash SPA (Threat)	Common tern, Little tern	No impact pathway
Coastal squeeze	The Wash and North Norfolk Coast SAC (Threat)	Intertidal mudflats and sandflats, Coastal lagoons, Glasswort and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean saltmarsh scrub,	No impact pathway
	The Wash SPA (Threat)	Wintering/ migratory birds Breeding common tern & little tern	
Changes in Species Distribution	Baston Fen SAC (Threat)	Spined Loach	No impact pathway
Impacts on Functionally Linked Land (FLL)	The Wash and North Norfolk Coast SAC (Threat– **not identified in SIP**)	Otter	Loss of FLL (during construction) Disturbance (noise and visual) of birds on FLL, resulting in displacement (temporary loss of available resource), loss of energy and impacts on
	The Wash SPA The Wash Ramsar (Threat – **not identified in SIP**)	Wintering/ migratory birds	

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
	Nene Washes SPA Nene Washes Ramsar (Threat – **not identified in SIP**)		foraging/roosting behaviour (during construction & decommissioning) Displacement from FLL due to predator shadow and structures (during operation)
Direct impacts on individuals of qualifying species	The Wash and North Norfolk Coast SAC (Threat– **not identified in SIP**)	Otter	Killing or injury during construction/ decommissioning
	The Wash SPA The Wash Ramsar (Threat – **not identified in SIP**)	Wintering/ migratory birds	Collision risk with overhead lines during operation
	Nene Washes SPA Nene Washes Ramsar (Threat – **not identified in SIP**)		

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
Air pollution	The Wash and North Norfolk Coast SAC (Threat– **not identified in SIP**)	All qualifying features	Construction/ Decommissioning traffic
	The Wash SPA The Wash Ramsar (Threat – **not identified in SIP**)		
	Baston Fen SAC (Threat – **not identified in SIP**)		
	Nene Washes SPA Nene Washes Ramsar (Threat – **not identified in SIP**)		
Water pollution	The Wash and North Norfolk Coast SAC (Threat– **not identified in SIP**)	All qualifying features	Surface water pollution through hydrological connections to the SAC/SPA (during

Threats/ Pressures to site integrity	Relevant Sites (Pressure/ Threat)	Features Potentially Affected	Impact pathways
	The Wash SPA The Wash Ramsar (Threat – **not identified in SIP**)		construction & decommissioning)
	Baston Fen SAC (Threat – **not identified in SIP**)		
	Nene Washes SPA Nene Washes Ramsar (Threat – **not identified in SIP**)		
	Nene Washes SAC (Threat)	Spined Loach	

4.4.2. The potential impact pathways identified above in relation to threats and pressures to the qualifying features are examined below. The screening for Likely Significant Effects for the construction, operational and decommissioning phases of the Scheme are presented in Table 6, below.

Impacts on Functionally Linked Land

Wintering & migratory birds (The Wash SPA & Ramsar, Nene Washes SPA & Ramsar)

4.4.3. Natural England's published advice on the consideration of land outside the boundaries of European sites in assessing likely significant effects is summarised in their Commissioned Report NECR207 on functional linkages[27]:

"Supporting habitat in areas beyond the boundary of a SAC or SPA which are connected with or 'functionally linked' to the life and reproduction of a population for which a site has been designated or classified should be taken into account in a Habitats Regulations Assessment. However, that assessment will need to determine how critical the area may be to the population of the qualifying species and whether the area is necessary to maintain or restore the favourable conservation status of the species."

4.4.4. Desk-study data and survey data from the wintering bird surveys (**ES Appendix 9-4 Wintering Bird Survey 2022-2023** (Doc Ref. 6.3)) and vantage point surveys (**ES Appendix 9-6 Grid Connection Wintering Bird Survey Report 2023-2024** (Doc Ref. 6.3); **ES Appendix 9-10 Wintering Bird Vantage Point Survey 2024-2025** (Doc Ref. 6.3)) have been used to identify locations where qualifying species of the relevant SPA designations have been recorded. These locations have been subject to further review to determine if they should be considered to act as FLL, summarised in Appendix 3, taking account of the following key considerations (provided by Natural England in their relevant representation):

- Is the number of birds recorded measurable against the SPA population (i.e. ≥1%), noting that whilst NE have generally advised a 1% threshold, this is dependent on a number of factors and cannot be considered in isolation?
- How regularly did this species use the area?
- What is the conservation status and population trend for those species within the SPA?
- How mobile are the species?

[27] Natural England Commissioned Report NECR207 (2016) Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions. Available at: https://publications.naturalengland.org.uk/publication/6087702630891520 [Accessed 15/09/2026]

- How much alternative habitat is available?
- Did the birds use the site as refuge during harsh weather/high water events?

4.4.5. This review identified four locations outside the Order Limits that are considered to be FLL, based on the presence of aggregations of waterbirds that are assumed to be associated with populations that are qualifying features of The Wash SPA and Ramsar and Nene Washes SPA (but not Nene Washes Ramsar). These are shown on Appendix 1, Figure 3 and summarised below.

4.4.6. Land adjacent to the River Welland, to the west of Land-Parcel A (estimated approximately 240ha), supported notable flocks of wildfowl. These birds were utilising areas of farmland that is flooded or wet for much of the winter where damage to the bund along the River Welland has allowed water to escape into the adjacent field, thereby providing good foraging habitat for a range of wildfowl. The feature may therefore be relatively transitory and dependent on the future interventions of the Environment Agency or other bodies responsible for maintaining flood defences on the River Welland. During wintering bird surveys in 2022-2023, peak size flocks of up to 800 wigeon, 300 teal, 150 pintail and 45 gadwall were recorded. These represent significant numbers (>1%) in relation to the cited populations for Nene Washes SPA (wigeon 21.98%, teal 30.61%, pintail 34.09%, gadwall 47.37%), for The Wash SPA (wigeon 21.51%, pintail 8.82%, gadwall 34.62%) and The Wash Ramsar (pintail 38.4%). The vantage point surveys also recorded notable activity of pink-footed goose, lapwing and golden plover in this area.

4.4.7. Fleet Drain, to the east of Land-Parcel D is a large drainage channel that is likely to regularly attract ducks throughout the winter (estimated approximately 60ha) and connects into South Holland Main Drain to the north. During wintering bird surveys in 2022-2023, teal (peak count of 85) and wigeon (peak count of 70) occurred on repeated occasions in numbers that are considered significant in relation to the cited populations at Nene Washes SPA (teal 5.92%, wigeon 1.92%) and The Wash SPA (wigeon 1.79%). These birds were restricted to Fleet Drain itself and were not using adjacent land, which is as would be expected for these species.

4.4.8. To the west of Vantage Point 2, west of the road called Delgate Bank, peak flocks of up to 1000 golden plover were recorded within and over arable farmland to the west of the Grid Connection Route (estimated approximately 110ha), during vantage point surveys in 2024-25, which equates to 4.5% of the population cited for The Wash Ramsar. Although this species is not a qualifying feature of either The Wash Ramsar or SPA, it is cited on the Ramsar

Information Sheet[28] as having been identified subsequent to designation for possible future consideration under criterion 6. These birds can be also considered as potentially part of the overall wintering waterbird assemblage, which is a qualifying feature of The Wash SPA.

4.4.9. To the north of Parcel D of the Solar Development Area, an impact risk zone is shown on Magic, which consultation with Natural England confirmed should be considered to indicate the location of records of qualifying species associated with The Wash SPA and Ramsar or Nene Washes SPA and Ramsar. No qualifying species were recorded within the Site in this area, but the land immediately to the north is assumed to act as functionally linked land on a precautionary basis for the purpose of this assessment.

4.4.10. The use of supporting habitats by birds, particularly wintering flocks, can vary widely depending on food availability, crop rotation and weather conditions. Therefore, sites may be used by relatively large numbers of birds in one particular month or year, but be of limited value overall. Conversely, site may be used only occasionally, but provide refuge in extreme weather conditions, such that they are important for maintaining survival rates. Therefore, even where significant numbers of birds are observed, this does not necessarily mean that the location is important as FLL. Evidence over several years would be needed to determine longer term usage and dependence on these sites, the gathering of which would not be proportional nor appropriate for the Scheme, so on a precautionary basis it is assumed that they do provide important long-term value.

4.4.11. The assemblages of birds recorded may derive from a combination of populations associated with either or both The Wash and Nene Washes, as well as a proportion resident in the wider area and not associated directly with either site. Therefore, even where the numbers recorded are significant in relation to the cited populations of these IIWS, the number directly associated with each site may be significantly less. However, on a precautionary basis, it is prudent to assume for the purpose of assessment, that the recorded aggregations are directly linked to the SPA populations.

4.4.12. Taking these assumptions into account, the above locations have been taken to represent FLL for wintering birds associated with the qualifying populations of The Wash SPA and Ramsar and Nene Washes SPA on a precautionary basis.

[28] JNCC (2008) *Information Sheet on Ramsar Wetlands: The Wash*. Version 3.0, 13/06/2008

4.4.13. Noise modelling has been undertaken, based on peak predicted noise levels during construction, to inform assessment of disturbance effects on a precautionary basis. This additional analysis has been provided at Deadline 1 in response to Natural England's request in their relevant representation for further detail on impacts on FLL.

4.4.14. Drawing on available literature, in particular using the TIDE toolkit[29], high levels of disturbance are likely to result from intermittent noise levels over around 70dB, and background levels of around 60dB. High levels of disturbance are such that are likely to cause birds to exhibit startle response and move away from the area, or suffer stress or reduced foraging efficiency. These behaviours may have an impact on survival rates. Moderate disturbance, where birds are likely to exhibit a response, but the risk of harmful effects is low, occurs at around 55dB for intermittent noise and 60dB for background noise, increasing to around 72dB where birds can habituate. While the sensitivity of birds to noise disturbance varies between species, these thresholds are appropriate for the qualifying species recorded in the areas identified as FLL.

4.4.15. The noise modelling for the Scheme has used a precautionary (worst case) scenario based on a piling rig, which would create intermittent noise with the highest noise output of plant anticipated to be used during construction works. This has a source power level of 130 dB L_{AFmax}. The modelling shows that the peak noise levels would be at the threshold of high disturbance at approximately 1100m, and at the threshold of moderate disturbance at approximately 700m. Noise levels from modelled point sources (Figure 6), show each of the four identified areas of FLL fall at least partially within the zone of high disturbance peak noise levels. Therefore, in the absence of mitigation to minimise disturbance of birds within FLL, a likely significant effect cannot be excluded on the qualifying features of The Wash SPA and Ramsar and Nene Washes SPA.

[29] Cutts, N., Hemingway, K., Spencer, J., 2013. Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects Version 3.2, https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/8f/bd/8fbdd7e9-ea6f-4474-869f-ec1e68a9c809/11367.pdf [Accessed 15/09/2026]

4.4.16. Sensitivity of birds to visual disturbance varies quite widely between species, and depends on the type of disturbance. NatureScot guidance[30] provides recommended buffer distances for a range of species, including many of those using the FLL areas, including whooper swan, pink footed goose, gadwall and golden plover. Disturbance distances range from 100m to 200m for gadwall up to 200m to 600m for whooper swan and pink-footed goose. All four areas of FLL fall within these disturbance ranges from locations of proposed construction activity. Therefore, in the absence of mitigation to minimise disturbance of birds within FLL, a likely significant effect cannot be excluded on the qualifying features of The Wash SPA and Ramsar and Nene Washes SPA.

Otter (The Wash & North Norfolk Coast SAC)

4.4.17. Otters, a qualifying feature for The Wash & North Norfolk Coast SAC, range over large territories in freshwater habitats, with home ranges of around 20km for females and 32km for males. The Site includes a network of small drainage ditches connected to the main drain network, including South Holland Main Drain and the River Welland. **ES Appendix 9-7: Otter and Water Vole Report** (Doc Ref. 6.3) includes desk study records of otter on both of these watercourses. Otter use at the Site was evidenced by identification of a spraint at a bridge on South Holland Main Drain and at the southern end of the Grid Connection Route and an old spraint near the River Welland, indicating a permanent presence in the area of the Site.

4.4.18. The surveyed drains form part of a wider lowland drainage network connected to the River Welland and other main drains. Survey evidence indicates the River Welland and South Holland Main Drain form part of otter territories, but any use of the Site and the network of drains within it is likely to be very limited and habitats are not suitable for natal holts. There is no evidence as to whether the otters using these features are the same animals that form part of the qualifying feature of the Wash & North Norfolk Coast SAC, but as these drains form part of the same wider river catchment, it is reasonable to assume that they are directly linked to the SAC population.

[30] NatureScot, 2022. Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance [Accessed 15/09/2026]

Screening for likely significant effects

4.4.19. The Scheme has been designed to take account of baseline ecological data and avoids loss of habitats within identified areas of FLL, and incorporates buffer zones to minimise the risk of damage or disturbance. On the basis of the nature, scale and location of the Scheme, and noting that the Scheme would not result in direct land take within areas identified as FLL, there is no plausible impact pathway by which the Scheme could result in a likely significant effect on qualifying features of The Wash and North Norfolk Coast SAC, The Wash SPA and Ramsar, or the Nene Washes SPA and Ramsar as a result of loss of FLL.

4.4.20. In relation to disturbance effects on identified FLL (including wintering and migratory birds and otter), measures set out within the **Outline Construction Environmental Management Plan** (OCEMP) (Doc Ref. 7.10) and **Outline Decommissioning Environmental Management Plan** (ODEMP) (Doc Ref. 7.12) (included in the DCO application to satisfy other policy and compliance requirements) provide precautionary controls to minimise risks of noise, visual disturbance and air and water pollution during construction and decommissioning.

4.4.21. These measures will include pre-works inspections and avoidance measures in relation to protected species, in particular otter, which will mitigate any significant risk of disturbance during construction and decommissioning works. Therefore, **no likely significant effect** is identified at the screening stage in relation to disturbance of otter during construction and decommissioning.

4.4.22. While these generic measures may reduce potential impacts on wintering and migratory wildfowl in some cases, additional measures would be required to provide confidence in avoiding any likely significant effect. The assessment therefore proceeds to Stage 2 (Appropriate Assessment) to consider the implications for site integrity in view of the relevant conservation objectives, taking account of mitigation measures.

4.4.23. Activity within the Site during operation is not expected to be significantly greater than baseline agricultural activity and no impacts are predicted from disturbance during operation.

4.4.24. The introduction of large structures into the landscape can have an effect on the behaviour of birds, particularly in relation to 'predator shadow' effects. Many birds will avoid roosting or foraging in areas where they perceive a risk of predators; for example, golden plover show a strong preference for large open fields with good sightlines to avoid ground-based predators, and tend to

avoid large structures that could provide perches for aerial predators, such as peregrine. This effect will be greatest when these predators are present, but there may still be an effect where there are no predators due to the perceived risk. The Solar Development Areas are not likely to result in such an effect due to the absence of structures that would elicit an avoidance response, so potential FLL adjacent to the River Welland and along South Holland Main Drain, would not be affected. Pylons may be used by peregrine, as well as other raptors and corvids for perching and nesting; nesting is usually only on corner gantries with platforms, but all pylons can contribute to the predator shadow effect. The detailed siting of pylons along the Grid Connection Route is not determined at this stage, so assessment is based on the proposed corridor for the Grid Connection Route. Following selection of the western route option, of the two options presented in the Scoping Report, the Scheme was further refined such that the proposed Grid Connection Route lies to the eastern part of the selected option corridor. This has minimised potential effects on the FLL to the west, being situated approximately 200-300m east of the area west of Delgate Bank where most of the golden plover were recorded. This section of the Grid Connection Route is approximately 1.65km long, so it would not be possible to avoid pylons in this stretch (these would be spaced at approximately 350m apart), and increasing spacing would likely increase collision risk, so this has not been recommended. However, given the distance of the potential FLL from the Grid Connection Route, the effect of predator shadow is not considered to be significant.

Direct impacts on individuals of qualifying species

Otter (The Wash and North Norfolk Coast SAC)

4.4.25. As discussed above, otters using drains within or adjacent to the Site could be linked to populations associated with the Wash & North Norfolk Coast SAC. Killing, injury or displacement of these otters would be potential pathway for effects on the SAC qualifying feature. However, taking account of the implementation of the **OCEMP** (Doc Ref. 7.10) and **ODEMP** (Doc Ref. 7.12), which include measures to avoid disturbance, killing or injury of otter in the course of construction and decommissioning respectively, **no likely significant effects** are predicted.

Wintering and Migratory Birds (The Wash SPA and Ramsar, Nene Washes SPA and Ramsar)

4.4.26. The installation of overhead lines will present a collision hazard for birds in flight through the Grid Connection Route and electricity infrastructure can cause an electrocution risk to birds.

4.4.27. High voltage overhead line infrastructure does not present a significant risk of electrocution for birds as the separation between conducting elements is too large to allow for birds to bridge it. Lower voltage poles can present a risk to large perching birds, but records of these species in the Inter-Array Connections were very low and do not indicate a significant risk. The outline design, as described within **ES Chapter 2: The Scheme** (Doc Ref. 6.1) and fixed by the **Design Parameters** (Doc Ref 7.4), assume the installation of wooden H-frame poles to support 132kV overhead cables, but the precise design is expected to be subject to refinement post-consent, and would consider arrangements that minimise the risk of electrocution to large perching birds as a precaution in accordance with the **OOEMP** (Doc Ref. 7.11).

4.4.28. The primary risk associated with overhead lines is collision with the cables, as pylons are more easily seen by birds and therefore more easily avoided.

4.4.29. The desk study records from GLNP for birds within 20km of the Site have been filtered for potential collision risk species and mapped using a hotspot analysis to present the density of records and species. As an indicative review of the context on the Site's location in relation to key areas of bird activity and likely movement corridors, links between hotspot locations are shown on Appendix 1, Figure 4. This shows direct routes between hotspot locations, and highlights the River Welland, which is likely to act as an important movement corridor for many birds. These data are not comprehensive, with recording effort being a significant influencing factor in the number of records (records tend to be fewer in areas where there is restricted access to the public, or limited features of interest for bird watchers). However, this analysis does provide a strong indication that the Grid Connection Route is not located in the line of any major movement flightlines. These sites and movement corridors correlate with information from communications with Lincolnshire Wildlife Trust regarding movements of common crane, which travel regularly between Willow Tree Fen, west of Spalding, and the Nene Washes to the south as well as sites to the north. They are regularly recorded on the fields across south Lincolnshire including the Crowland Washes (to the west of the Site, along the River Welland).

4.4.30. NatureScot have developed detailed modelling tools to assist with assessment of avian collision risk with onshore wind turbines, but advise that a generic collision risk model is unlikely to accurately predict levels of mortality for power lines and the focus should therefore be on providing mitigation where survey data indicate potential conflicts[31]. In consultation with Natural England, it has been agreed that a collision model will be used to support interpretation of the survey data and inform if and where mitigation may be required, but it is important to note the limitations of a modelling approach and make use of wider survey data to inform assessment.

4.4.31. A collision risk model has been used, based on numbers of bird transits through the area of the Grid Connection Route recorded during vantage point surveys in 2024-25, see **ES Appendix 9-15 Avian Collision Risk Model – Technical Note** (Doc Ref 6.3). A summary of the outputs of the model is shown in Table 5, which presents the estimated risk in terms of bird collisions per year and the relative change in mortality rate compared to the baseline[32]. A 1% change in mortality rate is considered to be the limit below which changes cannot realistically be distinguished from natural background fluctuations. Natural England have advised, during consultation, that an increase of more than 1% in baseline mortality (found through collision risk modelling, or other impact assessment conducted because of the likely significant effect test) has been used historically as the trigger for further investigation, which may include Population Viability Assessment modelling. This threshold of 1% increase in mortality is therefore taken, for the purpose of modelling, to indicate a de minimis threshold below which further detailed numerical assessment is unlikely to be required. This should not be relied on alone, given the limitations of using the collision risk model, but will be taken in the context of wider qualitative assessment. The outcomes of the model, shown in Table 5, gives an indication of where significant effects may arise (*i.e.* >1% increase in mortality rate), highlighted in orange shading. For reference, qualifying features of the relevant IIWS are highlighted in bold (noting that all species listed may contribute to the wildfowl assemblage); species listed as being for potential

[31] NatureScot (2025). *Guidance - Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*. https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds. [Accessed January 2026]

[32] Mortality rate is determined as 100% annual adult survival rate, where survival is shown as the proportion of birds surviving from one year to the next and is taken from bird ringing data from BTO (2025) *Bird Facts* https://www.bto.org/learn/about-birds/birdfacts. [Accessed January 2026]

consideration for as qualifying features for Ramsar sites are denoted with an asterisk.

Table 5: Summary of collision risk modelling

Species	Total Bird Transits	Collision Rate (birds/yr)	Baseline Mortality Rate	Percentage change of mortality					
				The Wash Ramsar	The Wash SPA	The Wash WeBS	Nene Washes Ramsar	Nene Washes SPA	Nene Washes WeBS
Black-headed Gull	110	0.595	10%	0.02%	0.06%	-	-	-	-
Common Gull	23	0.124	14%	-	-	-	-	-	-
Dunlin	9	0.040	11%	0.00%	0.00%	0.00%	-	-	-
Golden Plover	1485	13.508	27%	0.23%	-	0.21%	1.70%	-	0.83%
Lapwing	1150	12.004	29%	0.09%	-	0.14%	-	-	0.39%
Mallard	50	0.516	37%	-	-	-	-	-	-
Pink-footed Goose	259	0.529	17%	0.01%	0.04%	0.02%	-	-	-
Whooper Swan	18	0.127	20%	-	-	0.14%	0.79%	-	0.03%
Waterfowl Assemblage	3108	34.620	26%	0.05%	0.06%	0.03%	-	-	0.32%

Figures shown in bold type represent qualifying features of relevant IIWS
Figures highlighted in orange shading exceed 1%
Figures marked with an asterisk "*" denote species listed for future consideration as Ramsar qualifying features.
Cells marked with a dash " –" denote species with no cited figure for their population in the relevant reference.

4.4.32. The model indicates that there is an appreciable risk in relation to golden plover, which were recorded to the west of VP2, south of Weston Hills, with peak flocks of up to 1000 birds recorded in 2024-2025. Surveys in 2023-2024 for the wider optioneering area recorded a maximum flock of 300 golden plover, approximately 2km to the north-east of this area, although none were recorded from the nearest vantage point, located 1km to the north-west. This indicates that the usage of the area by golden plover is variable, and that the number recorded in the 2024-25 surveys (used in the modelling) is likely to be representative of the upper range.

4.4.33. Golden plover is not a qualifying feature for The Wash SPA or Ramsar, but the population forms part of the waterbird assemblage for which both the SPA and Ramsar are classified. It is also listed as a species for future consideration in the Ramsar Information Sheet (RIS) for The Wash Ramsar and given that the WeBS data indicate an increase in population relative to the Ramsar citation, it is reasonable to treat as a qualifying feature for consideration of likely significant effects. The collision risk model does not indicate a likely significant effect, but there is relatively localised and likely regular usage of this area by a significant number of golden plover in relation to the population associated with The Wash. On this basis of qualitative assessment, potential for a significant effect is identified, on a precautionary basis, on golden plover associated with The Wash SPA and Ramsar.

4.4.34. While golden plover is not cited as a qualifying feature for Nene Washes SPA or Ramsar, the model indicates that there is potential for an effect on the population associated with the Nene Washes (in relation to the Ramsar cited population). As golden plover is not a qualifying feature, it does not need to be formally assessed under Regulation 63; however, this effect is considered alongside the assessment of effects on this species associated with The Wash to provide additional context.

4.4.35. No other species indicate potentially significant collision rates in the model; however, there were a number of different species including higher collision risk species such as geese and swans recorded at the southern end of the Grid Connection Route. This included a total of 23 records of common crane, which were recorded only below the collision-risk height for the proposed overhead line. Common crane is a rare breeding species in the UK and there is an important breeding population located at Willow Tree Fen nature reserve, approximately 9km west of the Grid Connection Route. None of the cranes recorded were flying within the collision risk zone during surveys, but due to the small breeding population, any collisions could result in a significant effect

in relation to the population at a national level. Common crane is not cited in relation to any of the IIWS, but they are known to move regularly between their main breeding site and Nene Washes SPA and are likely to also be present at The Wash SPA. As such, they can be considered to form part of the overall waterbird assemblages (a qualifying feature for The Wash SPA and Ramsar) on a precautionary basis.

4.4.36. In both the 2023-24 and 2024-25 surveys, there was a notable assemblage of waterfowl to the south-west of the southern end of the Grid Connection Route using flooded land along the River Welland (shown as functionally linked land on Appendix 1, Figure 3), including species that are qualifying features of The Wash SPA and Ramsar and Nene Washes Ramsar.

4.4.37. The survey and desk-study evidence show that the Grid Connection Route is not likely to cause a significant collision risk to birds moving more widely in the area, but there is an increased risk in locations close to foraging habitats south of Weston Hills and adjacent to the River Welland. Taking account of these considerations, and applying the precautionary principle, the potential for a likely significant effect cannot be excluded in relation to collision risk affecting qualifying bird populations associated with The Wash SPA and Ramsar and the Nene Washes Ramsar. The assessment therefore proceeds to Stage 2 (Appropriate Assessment) to consider the implications for site integrity in view of the relevant conservation objectives, taking account of mitigation measures.

Air Pollution

4.4.38. IAQM guidance[33] states that risk assessment for effects from dust pollution should be taken where high-sensitivity receptors are located within 50m of a site boundary, or within 50m of any routes used by construction vehicles on the public highway, up to 500m from a site entrance. No parts of any IIWS are present within 50m of the Site boundary or potential construction traffic routes within 500m of the Site entrance. Therefore, there are **no likely significant effects** predicted as a result of dust pollution from construction and decommissioning of the Scheme.

[33] Institute of Air Quality Management (IAQM) (2023). *Guidance on the Assessment of Dust from Demolition and Construction*. Available online at https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-dust-2023-BG-v6-amendments.pdf. [Accessed January 2026]

4.4.39. IAQM[34] and JNCC[35] guidance provides guidelines in determining whether the impacts of road traffic from a project on designated habitats can trigger a significant air quality effect. To support this, it presents a series of relevant criteria, which have been used for screening, including:

- Road alignment;
- Changes in traffic speed;
- Roads where changes in traffic flow (average annual daily traffic (AADT)) are predicted to be ≥1000 vehicles or 200 heavy duty vehicles (HDV), collectively referred to as the affected road network (ARN); and
- Projects which are associated with an ARN within 200m of European sites.

4.4.40. Air pollution may affect habitats through increased dust deposition, nitrogen oxides (NOx), ammonia (NH3), acid deposition and other emissions. Sources may include construction and decommissioning activities such as demolition and land clearance, use of vehicles and plant, increased road/site usage by vehicles (cars and heavy-duty vehicles HDV) and emissions from industrial processes. Due to the nature of the Scheme, no effects from traffic are predicted during operation, and no operational emissions are predicted, so effects on air quality are only considered where they may arise as a result of construction and decommissioning traffic.

4.4.41. Natural England guidelines[36] advise that designated sites beyond 200m from the affected road network can be screened out from assessment as proposals are likely to have no effect on these sites. Approximate distances of the relevant IIWS to major roads are:

- The Wash and North Norfolk Coast SAC – 2.4km to the A17 (screened out);

[34] Holman, C., Barrowcliffe, R., Harker, G., Hawkings, C., Horrocks, S., and Prismall, F. (2020). *A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1*, Institute of Air Quality Management, London.

[35] Chapman, C and Kite, B. (2021). *Main Report. Guidance on Decision-making Thresholds for Air Pollution.* JNCC Report No. 696. Available online at: https://data.jncc.gov.uk/data/6cce4f2e-e481-4ec2-b369-2b4026c88447/JNCC-Report-696-Main-FINAL-WEB.pdf. [Accessed January 2026]

[36] Natural England (2018). *Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*. June 2018

- The Wash SPA and Ramsar - 2.4km to the A17 (screened out);
- Baston Fen SAC – 2.2km to the A15 (screened out);
- Nene Washes SAC – adjacent to the A141 (screened in); and
- Nene Washes SPA and Ramsar – adjacent to the A141 and A47 to the east and 140m from the A1139 to the west (screened in).

4.4.42. **ES Appendix 15-3 Receptor Traffic Flow Tables** (Doc Ref. 6.3) states that the maximum increase in total vehicle traffic (AADT) from construction, on routes that may pass close to Nene Washes, is 351 vehicles per day at J15 (A16 Crowland Bypass / B1040 Nene Terrace Road / Thorney Road South) in the "Future Baseline vs. Development". This includes a maximum AADT increase of heavy vehicles (HDV) from construction of 144 HDV per day. In addition to the above, there will be a daily peak of 64 HDV travelling to and from the Solar Development Area and Inter-Array Connections as well as 75 HDV travelling to and from the Grid Connection Route during the AM and PM Construction peaks respectively. Institute of Air Quality Management (IAQM)[37] guidelines advise that changes in traffic volumes of less than 1000 AADT for light vehicles (LDV) or 200 AADT for HDV are unlikely to result in any significant increase in air pollution and can therefore be screened out. Light vehicles used by construction works are therefore unlikely to contribute significantly to air pollution; however, the increase in HDV exceeds the 200 AADT threshold and therefore needs to be considered further.

4.4.43. The Nene Washes SAC and SPA are underpinned by the Nene Washes SSSI, which is in Favourable condition for all bird species assessed, but in Unfavourable-Recovering condition for ditches and wet grassland habitats (assessed in 2010)[38]. Neutral grassland and ditches are present in units 1 (near the A1139 to the west) and 7 (adjacent to the A47 and A141 to the east) of the SSSI, within 200m of the major road network.

[37] Environmental Protection UK and Institute of Air Quality Management (2017) *Land-Use Planning & Development Control: Planning for Air Quality*. Available at: https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf. [Accessed January 2026]

[38] Natural England (2025) *Designated Sites View*. Available at https://designatedsites.naturalengland.org.uk/. [Accessed January 2026]

4.4.44. Data available on APIS[39] indicate that critical loads of nitrogen deposition are exceeded: 14.59-17.61 kgN/ha/yr in unit 1, 15.01-17.08 kgN/ha/yr in unit 7 (calculated for 'moorland/ short vegetation' between 2012 and 2021), compared to a minimum critical load of 10 kgN/ha/yr. On this basis, additional air nitrogen deposition contributions from traffic arising from the Scheme would not result in causing an exceedance, but could contribute to an existing exceedance, thereby potentially limiting the effectiveness of measures to restore features in Unfavourable condition. **ES Chapter 6: Air Quality** (Doc Ref. 6.1) concludes that, whilst the traffic from the Scheme can contribute to an existing exceedance, the contribution is likely to be negligible on the basis of the assessment completed. Furthermore, since bird receptors are already considered to be in Favourable condition despite current exceedances, it is anticipated that the Scheme would result in **no likely significant effect** on birds and thereby on Nene Washes SPA and Ramsar as a result of air quality impacts from construction or decommissioning traffic associated with the Scheme .

4.4.45. APIS does not cite any critical loads in relation to spined loach, the qualifying feature of Nene Washes SAC. **ES Chapter 6: Air Quality** (Doc Ref. 6.1) determined through dispersion modelling that changes in annual pollutant concentration were less than 1% of the relevant Air Quality Assessment Level for NO_2, PM_{10} and $PM_{2.5}$, concluding that changes to all receptors were negligible. On the basis of this assessment, it is reasonable to conclude that there will be **no likely significant effect** on spined loach, and therefore on the qualifying features of the Nene Washes SAC as a result of air quality impacts from traffic from the Scheme.

Water pollution

4.4.46. The Site lies within the catchment of the River Welland, which drains to the Wash and is therefore hydrologically connected to The Wash SPA and Ramsar and The North Norfolk Coast and Wash SAC.

4.4.47. However, having regard to the nature of the proposed works, the absence of any identified mechanism by which the Scheme would give rise to pollutant releases of a nature or scale capable of affecting the conservation objectives of relevant Internationally Important Wildlife Sites, and the controls that would apply through standard construction practice, **no likely significant effect** is

[39] UKCEH (2025). *APIS – Air Pollution Information System* https://www.apis.ac.uk/. [Accessed January 2026]

predicted at the screening stage in relation to water pollution during construction or decommissioning.

4.4.48. During operation, the Scheme would not introduce material sources of pollution beyond baseline conditions and no pathway for a likely significant effect is identified.

4.4.49. Measures secured through the **OCEMP** (Doc Ref. 7.10), **ODEMP** (Doc Ref. 7.12) and **Outline Operational Environmental Management Plan** (OOEMP) (Doc Ref. 7.11) provide further precautionary controls to avoid water pollution.

4.4.50. Where likely significant effects have been screened out for the pathways identified above for potential effects alone, these effects are considered to be negligible alone and would not, therefore, contribute appreciably to any in-combination effects with other plans or projects. Where likely significant effects have been identified from other plans or projects alone, no assessment of in-combination effects is required at this stage.

Table 6: Summary of Likely Significant Effects in relation to qualifying features of IIWS as a result of the Scheme

Name and distance from site	Qualifying Features	Impact pathway	Likely Significant Effect	
			Alone	In Combination
The Wash and North Norfolk Coast SAC, 8.4km north-east of Grid Connection Route	1110 Sandbanks which are slightly covered by sea water all the time 1140 Mudflats and sandflats not covered by seawater at low tide 1160 Large shallow inlets and bays 1170 Reefs 1310 Salicornia and other annuals colonizing mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) 1150 Coastal lagoons Priority feature 1365 Harbour seal 1355 Otter	**Construction/ Decommissioning Phase**		
		Air Quality (traffic)	No Likely Significant Effect	No Likely Significant Effect
		Loss or disturbance of Functionally Linked Land (otter)	No Likely Significant Effect	No Likely Significant Effect
		Direct impacts on individuals of qualifying species (otter)	No Likely Significant Effect	No Likely Significant Effect
		Water pollution	No Likely Significant Effect	No Likely Significant Effect
		Operational Phase		
		Disturbance of Functionally Linked Land (otter)	No Likely Significant Effect	No Likely Significant Effect
		Direct impacts on individuals of	No Likely Significant Effect	No Likely Significant Effect

Name and distance from site	Qualifying Features	Impact pathway	Likely Significant Effect	
			Alone	In Combination
		qualifying species (otter)		
The Wash SPA & Ramsar, 8.4km north-east of Grid Connection Route	Article 4.1 Qualification: Breeding Common tern, little tern. Article 4.1, Article 4.2 Qualification: Non-breeding birds Ramsar Criterion 1: Estuary. Ramsar Criterion 3: Inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. Ramsar Criterion 5: Waterfowl assemblages of international importance Ramsar Criterion 6: species/populations occurring at levels of international importance (Species with peak counts in spring/autumn and winter)	**Construction/ Decommissioning Phase**		
		Air Quality (traffic)	No Likely Significant Effect	No Likely Significant Effect
		Disturbance of Functionally Linked Land	**Potential for Likely significant effect**	n/a
		Direct impacts on individuals of qualifying species	No Likely Significant Effect	No Likely Significant Effect
		Water pollution	No Likely Significant Effect	No Likely Significant Effect
		Operational Phase		
		Disturbance of Functionally Linked Land	No Likely Significant Effect	No Likely Significant Effect
		Direct impacts on individuals of	**Potential for Likely significant effect**	n/a

Name and distance from site	Qualifying Features	Impact pathway	Likely Significant Effect	
			Alone	In Combination
		qualifying species (collision risk)		
Baston Fen SAC, 10km west of Land Parcel A	S1149 Spined loach	**Construction/ Decommissioning Phase**		
		Air Quality (traffic) Water pollution	No Likely Significant Effect	No Likely Significant Effect
		Operational Phase		
		No impact pathways	n/a	n/a
Nene Washes SPA & Ramsar, 12km south of Land Parcel D	Article 4.1 Qualification: Non-breeding Bewick's swan Article 4.2 Qualification: Breeding shoveler, garganey, gadwall, black-tailed godwit, pintail, teal, wigeon Ramsar Criterion 6: species/populations occurring at levels of international importance with peak counts in winter: Bewick's swan	**Construction/ Decommissioning Phase**		
		Air Quality (traffic)	No Likely Significant Effect	No Likely Significant Effect
		Disturbance of Functionally Linked Land	**Potential for Likely significant effect** (Nene Washes SPA only)	n/a
		Direct impacts on individuals of qualifying species	No Likely Significant Effect	No Likely Significant Effect
		Water pollution	No Likely Significant Effect	No Likely Significant Effect

Name and distance from site	Qualifying Features	Impact pathway	Likely Significant Effect	
			Alone	In Combination
		Operational Phase		
		Disturbance of Functionally Linked Land	No Likely Significant Effect	No Likely Significant Effect
		Direct impacts on individuals of qualifying species (collision risk)	**Potential for Likely significant effect** (Nene Washes Ramsar only)	n/a
Nene Washes SAC, 12km south of Land Parcel D	S1149 Spined loach	**Construction/ Decommissioning Phase**		
		Air Quality (traffic)	No Likely Significant Effect	No Likely Significant Effect
		Operational Phase		
		No impact pathways	n/a	n/a

4.5. Conclusions and Recommendations

Assessment of likely significant effects

4.5.1. The above exercise has identified possible impact pathways associated with the Scheme and considered them in relation to each of the qualifying interest features of IIWS within a 20km radius of the Site during the operational phase.

Construction and decommissioning phases

4.5.2. Likely significant effects have been screened in for impacts on qualifying passage and wintering bird populations associated with The Wash SPA and Ramsar and Nene Washes SPA as a result of potential disturbance in functionally linked habitat areas during construction and decommissioning.

Operational phase

4.5.3. Likely significant effects have been screened in for impacts on qualifying passage and wintering bird populations associated with The Wash SPA and Ramsar and Nene Washes Ramsar as a result of the risk of collision with proposed overhead power lines during operation.

4.5.4. Progression to Stage 2 (Appropriate Assessment) is made to assess potential collision risk impacts in detail and to assess the residual effects, taking account of relevant mitigation measures.

5. Stage 2 HRA (Appropriate Assessment)

5.1. Overview

5.1.1. This section considers the impact of the Scheme on the integrity of the relevant IIWS in respect of the likely significant effects identified at Stage 1, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where adverse effects on site integrity exist, an assessment of the effectiveness of potential mitigation of those impacts is made.

5.2. Construction and Decommissioning Phases

Disturbance on FLL

5.2.1. During the construction and decommissioning phases, there is potential for significant effects on qualifying features of The Wash SPA and Ramsar and

Nene Washes SPA as a result of noise or visual disturbance of birds using any of the identified areas of FLL.

Mitigation

5.2.2. Measures are included within the **OCEMP** (Doc Ref. 7.10) and **ODEMP** (Doc Ref. 7.12), in addition to standard practice environmental protection, to mitigate potential effects from noise and visual disturbance. The following measures have been included:

- Where practicable, high-noise works, such as piling, within 1100m of these locations would be avoided during the wintering and migratory bird sensitive period September to March.
- Where works within 700m to 1100m of FLL areas are to be carried out within the sensitive period, standard noise-reduction measures will be employed, and an ecologist would be present to monitor bird activity. If birds show signs of significant disturbance, works would be paused until birds have moved away or additional noise-reduction measures are in place.
- Where works within less than 700m of FLL areas are to be carried out within the sensitive period, additional noise reduction measures, such as alternative piling methods and/or temporary noise screening, will be employed to reduce peak noise levels within the FLL areas to below 60dB (*i.e.* to below the threshold of high level of disturbance). An ecologist would be present during works to monitor bird activity as a precaution in case of residual disturbance; if birds show signs of significant disturbance, works would be paused until birds have moved away.
- Visual screening (e.g. opaque mesh covering on Heras fencing) will be installed between the FLL areas and any work locations within 600m of the FLL areas.

5.2.3. The mitigation proposed in the **OCEMP** (Doc Ref. 7.10) and **ODEMP** (Doc Ref. 7.12) is considered to be sufficient and appropriate to reduce the risk of any significant effect on the usage of FLL by qualifying species or on the supporting function that these areas provide to the relevant sites, to a negligible (non-significant) level. Therefore, having regard to the relevant conservation objectives, it can be concluded that the Scheme would not adversely affect the integrity of The Wash SPA and Ramsar, or the Nene Washes SPA, as a result of disturbance from the Scheme alone. The residual effect would also be negligible in contribution to any in-combination effects with other plans or projects.

5.3. Operational Phase

Collision risk

5.3.1. During the operational phase, there is the potential for significant effects on interest features of The Wash SPA and Ramsar and Nene Washes Ramsar alone as a result of the risk of injury and mortality of wintering birds from collision with the overhead lines proposed for the Grid Connection Route.

5.3.2. The collision risk assessment used a model to identify where potentially significant conflicts occur between the proposed overhead line and key areas of passage and wintering bird activity. This identified significant numbers of golden plover to the west of Vantage Point 2, south of Weston Hills. The surveys also indicate movement of a range of birds, including higher collision risk cranes, geese and swans, potentially birds using flooded land along the River Welland, at the southern end of the Grid Connection Route. These have been screened in as likely significant effects alone, without mitigation, on a precautionary basis.

Mitigation

5.3.3. Potential mitigation options for collision risk include (adapted from NatureScot guidance[40]):

- Route planning to avoid areas of high bird use;
- Using bird-friendly power line designs (configurations with fewer layers of cables vertically, and without an earth wire, may also reduce collisions; deterring perching and nesting, and using insulated components and/or large air gaps, can reduce the risk of electrocution);
- Installing cables underground (whilst the only way to completely eliminate collision mortality, it is a costly option that is likely only to be necessary where the significance of the impact justifies the additional costs); or
- Installing line markers on earth wires and/or conductors as appropriate to reduce collision.

[40] NatureScot (2025). *Guidance - Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds*. https://www.nature.scot/doc/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds. [Accessed January 2026]

5.3.4. Alternative Scheme layout and design evolution is presented within **ES Chapter 3: Alternatives and Design Evolution** (Doc Ref. 6.1).

5.3.5. The design of the overhead line route has taken account of options to reduce collision risk and disturbance of birds by refining the proposed route to the east of the selected Grid Connection Route corridor, away from areas of golden plover activity south of Weston Hills (west of the road called Delgate Bank).

5.3.6. As noted in the NatureScot advice (referred to above), underground cabling may not be a viable option and has not been selected for the Scheme following consideration of options, in part because it would have greater impacts on a number of ecological and other receptors, potentially including wintering birds foraging and roosting in the area.

5.3.7. Potential changes to the configuration of the Grid Connection Route to reduce collision risk have been considered, but it has been concluded that the most appropriate mitigation will be to install line markers in those areas identified as having increased risk of collision south of Weston Hills and at the southern end of the Grid Connection Route (see Figure 5 in Appendix 1).

5.3.8. A range of designs of line markers are available, with varying levels of effectiveness in different conditions[41], but the more effective choices of markers have risk reduction rates evaluated to be between 58.3% and >98.8%. Selection of specific designs will be made as part of detailed engineering design, subsequent to obtaining development consent, but the model chosen will need to remain visible at night when common crane, golden plover, geese and swans are often active. This is be secured within the **Design Parameters** (Doc Ref. 7.4) for the Scheme.

5.3.9. As an indicator of the effect of line markers in the reduction of collision risk relative to the collision risk model, **ES Appendix 9-15 Avian Collision Risk Model – Technical Note** (Doc Ref 6.3), applying a risk reduction factor of 58.3% (i.e. using the lower end of the cited effectiveness range) reduces the estimated increase in mortality rate for golden plover in relation to The Wash Ramsar from 0.23% to 0.10% (*i.e.* 0.23 x (1 - 0.583) = 0.10). While not a qualifying feature of Nene Washes, this mitigation would also reduce the change in mortality rate for golden plover in relation to the Nene Washes

[41] Renewable Grid Initiative (2024). *Avian-Power Line Collision: Overview of Risk Factors and Effectiveness of Mitigation Measures*

Ramsar cited population from 1.70% to 0.71 %. These changes would be below the 1% lower limit of meaningful variation.

5.3.10. Taking account of the precautionary mitigation proposed, including installation of appropriately specified line markers at locations identified as having elevated collision risk, and having regard to the relevant conservation objectives, it can be concluded that the Scheme would not adversely affect the integrity of The Wash SPA and Ramsar, or the Nene Washes Ramsar, as a result of collision risk from the Scheme alone.

5.4. In-Combination Assessment

5.4.1. This section provides a review of the likelihood of in-combination effects with other extant proposals for plans or projects that could have impacts that could combine with impacts from the Scheme and result in a significant effect that would not occur as a result of either project alone. In-combination effects are considered where residual effects are identified, but they are not considered to be significant.

5.4.2. The residual effects of all potential impact pathways identified, except for collision risk, were screened out at Stage 1 as being inconsequential such as not to require consideration of in-combination effects. The effect of collision risk, taking proposed mitigation into account, is also considered unlikely to result in any residual effect that could meaningfully contribute to any significant effects in combination with other plans. To provide additional confidence in this conclusion, a review of other projects has been undertaken to determine whether any could be considered to have potential to result in significant in-combination effects, presented in Table 7.

Table 7: Review of Other Projects and Potential for In-Combination Effects

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
Nationally Significant Infrastructure Projects					
DCO 001 EN020036	**Grimsby to Walpole (G2W)** The project will be a new c140km long 400kv overhead line and 5 new substations stretching from a new substation to the west of Grimsby in the north to a new substation at Walpole near Wisbech in the south. Three further substations will be built, two to the south west of Mablethorpe and one to the north east of Spalding. This project is proposed to run parallel to the Meridian Grid Connection Route from Holbeach St Johns to Weston, overlapping with the Scheme order limits at Weston Marsh.	Within Grid Connection Route and c.500m north-east of parcel D of the Solar Development Area	Pre-application, application expected Q2 2027	There is potential for additionality of impacts through collision risk; however, the project is not at a stage of having sufficient information for an in-combination assessment to be undertaken so it is not appropriate to include detailed assessment. The published Preliminary Environmental Information Report (PEIR) for G2W identifies a likely significant effect alone on the qualifying	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
				interest features of The Wash SPA and Ramsar and the Nene Washes Ramsar (among others) (on a precautionary basis in the absence of detailed assessment). Qualitatively, given the low residual (likely inconsequential) effect of the Scheme and assuming that G2W project will be required to provide mitigation for any effects (including an in-combination assessment), no LSE in-combination can be concluded.	

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
DCO EN0210007	**Weston Marsh to East Leicestershire (WMEL)** The project consists of construction of approximately 60 km of new 400 kV overhead line between Weston Marsh and Wartnaby in East Leicestershire, two new substations, and upgrading approximately 55 km of existing 400 kV overhead line between East Leicestershire and the existing Grendon substation in Northamptonshire.	Within Grid Connection Route	Pre-application, application expected March 2028	As above for G2W	No
DCO 002 EN010130	**Outer Dowsing Offshore Wind (Generating Station)** The Outer Dowsing Offshore Wind project comprises an offshore wind farm and associated offshore and onshore infrastructure including offshore	Approximately 1.3km north of the Grid Connection Route	Consent granted February 2026	The project includes no onshore overhead cables and identifies no pathways for significant effects on birds during operation.	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
	and onshore high voltage electricity cables, onshore and offshore electricity substation(s), connection(s) to the National Grid and ancillary and temporary works.				
DCO 003 EN021003	**Eastern Green Link 3 and Eastern Green Link 4** **Eastern Green Link 3 (EGL3)** comprises a converter station in the Walpole area of Norfolk along with associated development. **Eastern Green Link 4 (EGL4)** comprises a converter station in the Walpole area of Norfolk alone or together with a switching station and a converter station in the East Lindsey area of Lincolnshire, along with associated development.	Approximately 1km east of the Solar Development Area	Pre-application, application expected summer 2026	The project is restricted to upgrades of existing overhead power lines and therefore unlikely to result in any additional effects in relation to collision risk	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
DCO-004 EN010110	**Medworth Energy from Waste Combined Heat and Power Facility** An Energy from Waste combined heat and power facility with a maximum gross capacity of 58MW.	Approximately 13km south-east of the Solar Development Area	Consent granted February 2024.	All grid connections will be installed underground. No other pathways for significant in-combination effects	No
DCO-005 WA010004	**Fens Reservoir** Reservoir exceeding 30 million cubic metres of water storage, together with associated development including water transfer pipelines, abstraction facilities, pumping stations, treatment works, renewable energy generation, access roads, parking, wildlife and environmental areas, leisure and recreation and education facilities.	Approximately 24km south of the Solar Development Area	Pre-application, application expected February 2027	Possible increase in the number of birds passing through the Site to the reservoir, which could increase collision risk; however, the Site does not lie directly between the Fens Reservoir project and either The Wash or Nene Washes, so is unlikely to coincide with potential flightlines.	No.

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
DCO-006 EN010151	**Beacon Fen Energy Park** A 400MW solar photovoltaic farm incorporating up to 600MVA Battery Energy Storage System and on-site substation and electrical connection, including solar PV panels up to 4.5m in height; single stacked BESS units up to 4.5m in height; security perimeter fencing; hedgerow improvements; ecological enhancements; above and/or below ground electrical cable connection at up to 400kV; associated development and ancillary works.	Approximately 14km north of the Grid Connection Route	Examination stage	The project HRA identified no pathways for collision risk or other effects that could result in in-combination significant effects.	No
DCO-008 WA010003	**Lincolnshire Reservoir** Reservoir exceeding 30 million cubic metres of water storage, together with associated	Approximately 15km west of the Grid	Pre-application, application	Possible increase in the number of birds passing through the Site to the reservoir, which could increase collision risk;	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
	development including water transfer pipelines, abstraction facilities, pumping stations, treatment works, renewable energy generation, access roads, parking, wildlife and environmental areas, leisure and recreation and education facilities.	Connection Route	expected Q4 2028	however, the Site is not located on any potential flightline between this project and either The Wash or Nene Washes	
DCO-009 EN010123	**Heckington Fen Solar Park** The project will comprise the construction, operation and decommissioning of a solar photovoltaic (PV) electricity generating facility exceeding 50-megawatt (MW) output capacity, together with associated energy storage. The installed capacity of the solar generation is expected to be in the order of 500MW.	Approximately 15km north of the Grid Connection Route	Consent granted January 2025	The project HRA identified no pathways for collision risk or other effects that could result in in-combination significant effects.	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
DCO 010 EN010095	Boston Alternative Energy Facility	~13km north-west of GCR	DCO Granted (Approved)	The project HRA identified no pathways for avian collision risk or other effects that could result in in-combination significant effects.	No
DCO 012 EN210006	Ossian Wind Farm	Overlapping EIA Scoping Boundary with the Grid Connection Route	Pre-application	No detailed information currently available however, there are no relevant OHL/land use pathway within the ZOI.	No
Planning Applications					
H09-0501-23	**Land off Holbeach Drove Gate Holbeach Drove Spalding.** Erection of agricultural machinery assembly facility, research and training facility, ground mounted solar array and associated infrastructure.	0km	Approved	None	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
H02-0875-22	**Decoy Farm Spalding Road Crowland.** King Prawn Hatchery, Grow Out and Processing Facility.	0km	Approved	None	No
EA 001	**Spalding Power Station, West Marsh Road, Spalding.** Spalding Energy Expansion. Combined cycle gas turbine Power Station / Variation of a Section 36 consent, Electricity Act 1989.	0.9km	Approved	None	No
EIA/11/24	**Land to the East of Surfleet Bank and West of Woad Farm, Spalding.** Proposed anaerobic digester operation and associated infrastructure.	1km	Undecided	None	No
H16-0871-24	**Fields South of Pilgrim's Pride Ltd, Fulney Lane, Spalding.**	1km	Approved	None	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
	A Solar PV Array and an onsite connection to the existing Pilgrim factory.				
H13-0190-23	**Land at Moulton Bulb Co. Ltd Long Lane Moulton Spalding.** Erection of a ground mounted solar array with associated infrastructure.	1km	Approved	None	No
23/00483/OUT	**Land East Of Newborough Road Newborough Road Paston Peterborough.** Demolition of existing agricultural buildings and the development of a phased residential development (up to 1,130 dwellings) including green space, access and other associated infrastructure	10km from the site	Awaiting Decision	None	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
19/00272/OUT	**Land Off Newborough Road, North Of A47 And West Of A16 Paston Peterborough.** Outline application for the Erection of up to 870 residential dwellings with access from Newborough Road; provision of a primary school and playing field; a local center up to 0.25ha with A1/A2/A3/A4/A5/D1 use classes; open space and landscaping; and other infrastructure and associated works including demolition of all buildings on site,	10km from the site	Approved	None	No
H04-0849-22 / B/22/0356	**Land West of Cowbridge Road Bicker Fen Boston.** Proposed development of a solar PV array and associated	12km from the site	Approved	None	No

ID and Application Reference	Application and Description	Distance from the Site (closest point)	Status	Possible pathways for in-combination effects	Potential for significant in-combination effects
	infrastructure at Bicker Fen, Boston and South Holland.				
APP-SKDC-009 / S24/2100	**Home Farm Dyke Drove Bourne PE10 0AG** Installation of solar farm, comprising ground mounted solar photovoltaic panels, including mounting systems, inverters and transformers, stock proof fencing, CCTV internal access tracks and associated infrastructure and landscaping for a temporary period of 40 years.	14.4km from the Site	Granted March 2025	No relevant pathways for in-combination effects identified in the project assessments.	No
B/21/0443	**Land North West of Bicker, Vicarage Drove Solar Farm.** Proposed construction and operation of a solar photovoltaic farm, battery storage and associated infrastructure,	14.9km from the site	Approved	None	No

5.4.3. The Meridian project team has consulted National Grid Energy Transmission regarding in-combination assessment in relation to G2W and WMEL. NGET confirmed their agreement with the approach and conclusions detailed above in Table 7 on the basis that, with Meridian being the first scheme to come forward, the onus of detailed in-combination assessment will lie with the G2W and WMEL projects to demonstrate that there will be no likely significant effects, or if progressed to Stage 2, that there will be no adverse effect on site integrity as a result of in-combination effects.

In-combination summary

5.4.4. In summary, it is predicted that there will be **no likely significant effect** from the Scheme in combination with other plans or projects as a result of collision risk with overhead power-lines, when taking into account proposed mitigation.

5.5. Adverse Effect On Site Integrity (AEOSI) Test

5.5.1. With the exception of collision risk to qualifying bird features, Stage 1 screening identified no plausible impact pathways capable of resulting in likely significant effects on the conservation objectives of the identified Internationally Important Wildlife Sites. Collision risk was carried forward to Stage 2 (Appropriate Assessment).

5.5.2. Taking account of the mitigation proposed for collision risk, including targeted installation of line markers secured through the [insert relevant control document] and applying the precautionary principle, the competent authority can be satisfied, beyond reasonable scientific doubt, that the Scheme **will not adversely affect the integrity** of The Wash SPA and Ramsar or the Nene Washes Ramsar, either alone or in combination with other plans or projects.

5.6. Consultation

5.6.1. Natural England have been consulted through their Discretionary Advice Service (DAS) on the scope of surveys and assessment and approach to collision risk analysis applied in this assessment (see HRA evidence plan in Appendix 2).

5.6.2. If further consultation is undertaken as part of the determination of consent for the Scheme, or subsequent to consent, then this will be taken into account, through revision of the shadow HRA where appropriate, where it has bearing in relation to the Habitats Regulations. The Secretary of State should take into

account Natural England's views pertaining to determination of the Habitats Regulations Assessment.

5.6.3. Natural England will be further consulted at the stage of detailed design, in relation to siting of pylons and choice of line-markers to mitigate collision risk effects, which is secured in accordance with the **Design Parameters** (Doc Ref. 7.4) for the Scheme.

Appendix 1: Figures

Figure 1: Site Layout

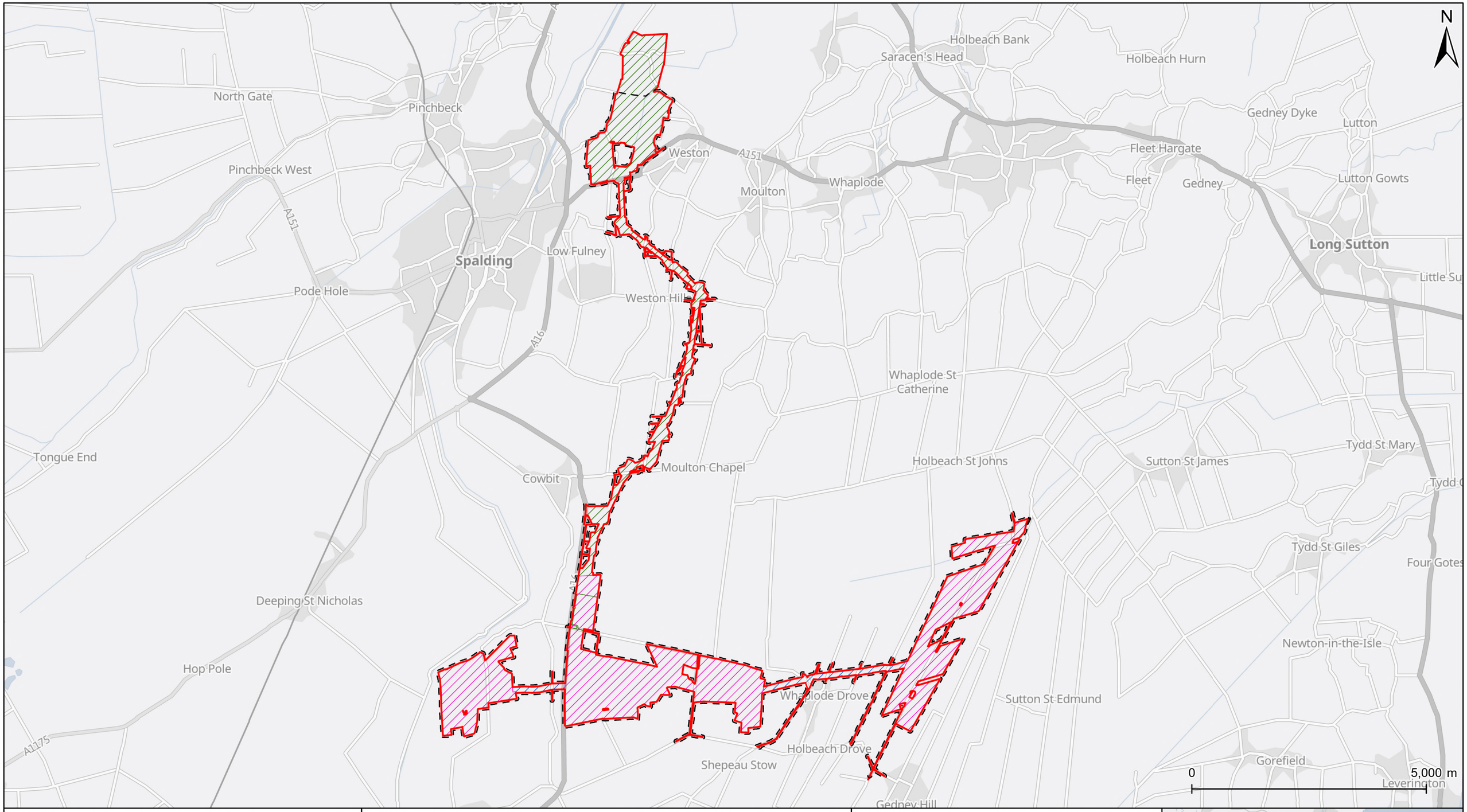
Figure 2: Site location in relation Internationally Important Sites within 20km

Figure 3: Areas identified as Functionally Linked Land

Figure 4: Desk Study Hotspots and Movement Corridors

Figure 5: Proposed Line Marker Locations

Figure 6: Modelled Precautionary Noise Contours in Relation to FLL



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 1: Site Layout and
Survey Areas (until September 2025)

Scale @ A3	Version	Drawn	Reviewed
1:75,000	0	JM	JET

Legend

- Order Limits
- Solar Development Areas
- Inter-Array Connections
- Grid Connection Route
- Survey Area

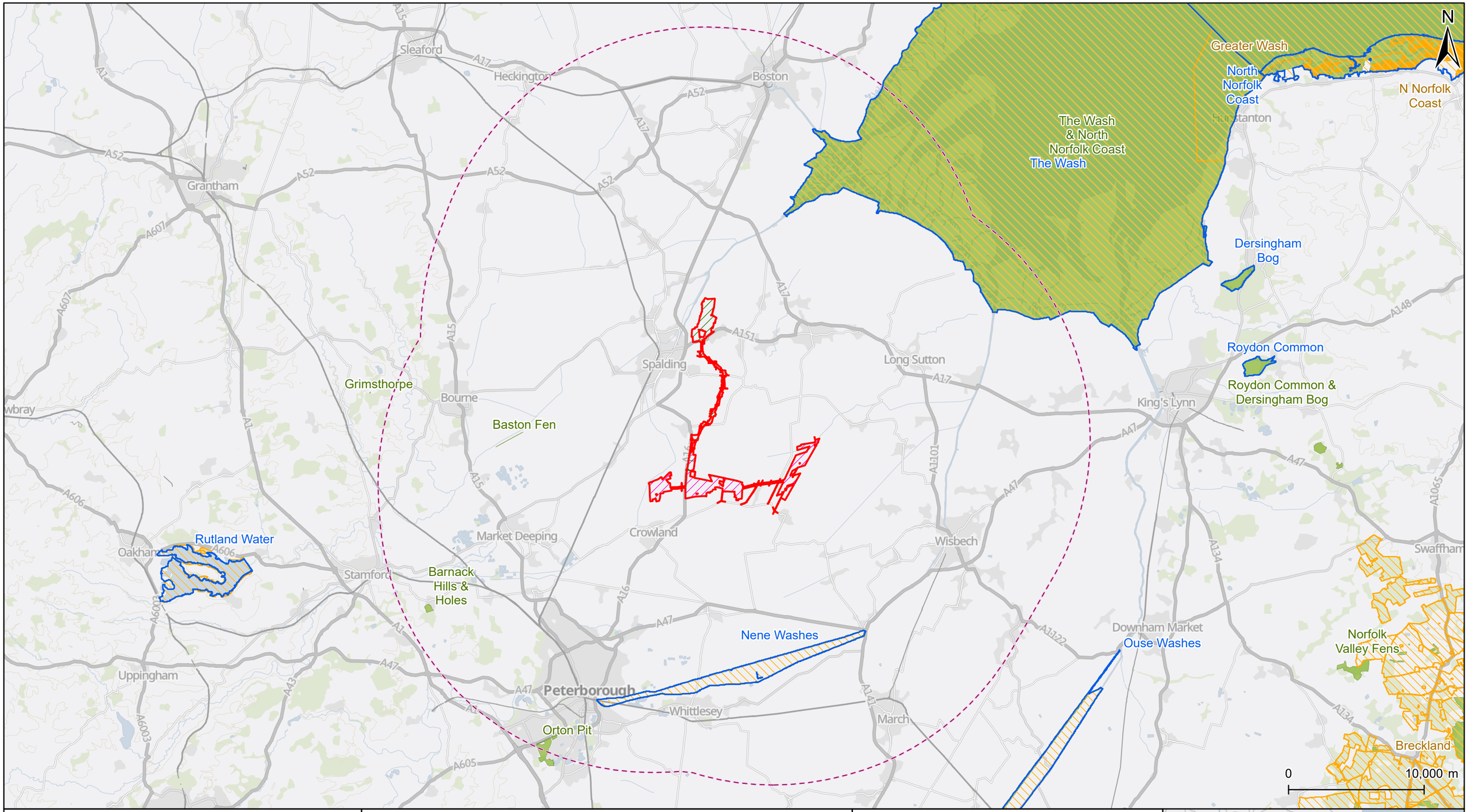
Date: 20/03/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



C:\Users\JOED7\Ramboll\Joanna Morgan - Projects\Ecology\ESF\Figures\2026\ESFfigures2026.aprx



Project Title: Meridian Solar Farm			
Map Title: Habitats Regulation Assessment: Figure 2: Site Location In Relation To Internationally Important Sites Within 20km			
Scale @ A3: 1:260,000	Version: 0	Drawn: JM	Reviewed: JET

Legend

- Order Limits
- Order Limits - 20km buffer
- Solar Development Areas
- Inter-Array Connections
- Grid Connection Route
- Ramsar
- Special Protection Area (SPA)
- Special Areas of Conservation (SAC)

Date: 20/03/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.
Contains public sector information licensed under the Open Government Licence v3.0.

Meridian Solar



C:\Users\JOED\Ramboll\Joanna Morgan - Project\Ecology\ES\Figures\2026\ES\Figure2026.aprx

N

0 5,000 m

0 10 km

Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 3: Areas identified as
Functionally Linked Land

Scale @ A3	Version	Drawn	Reviewed
1:90,000	0	JM	JET

Legend

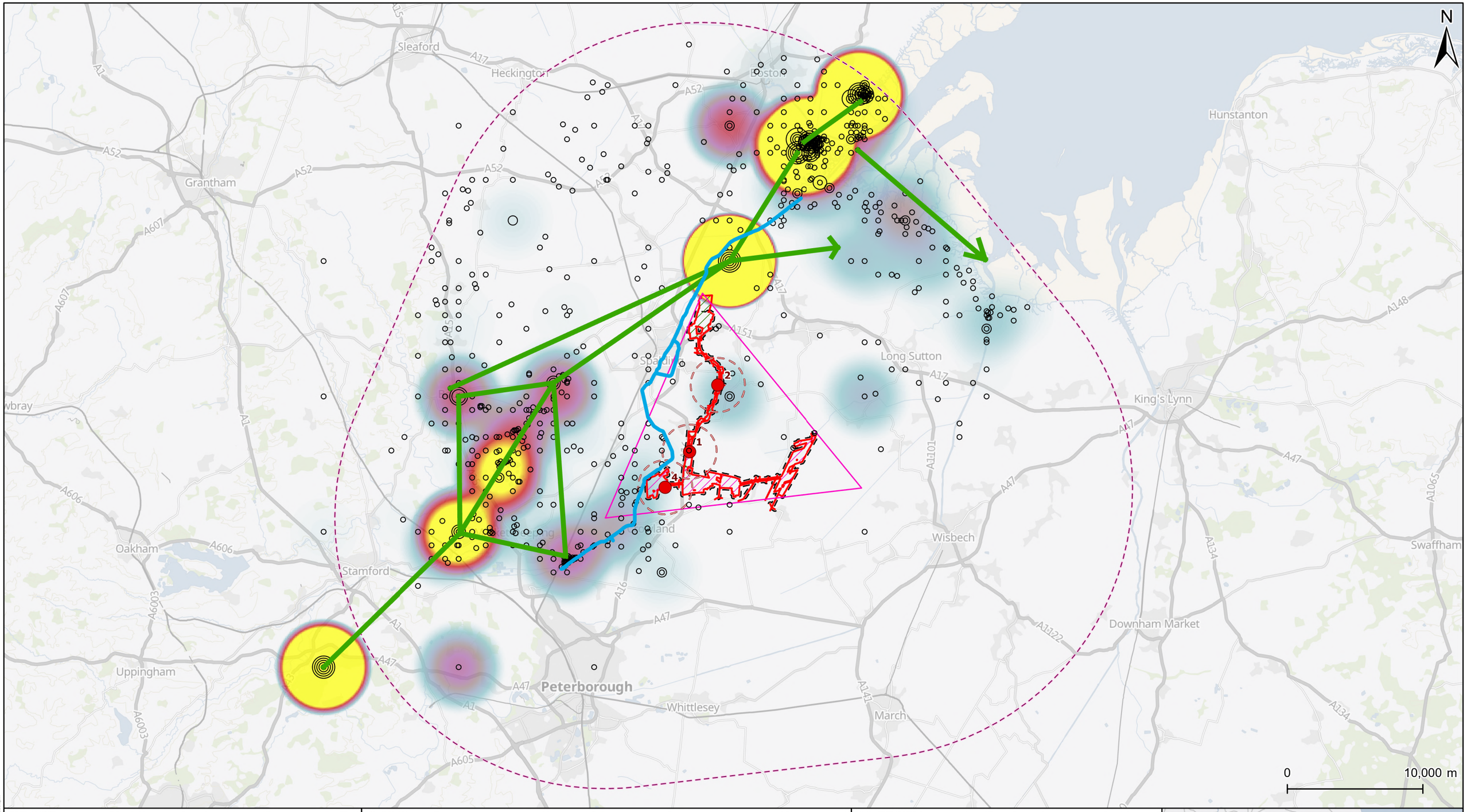
- Order Limits
- Solar Development Areas
- Inter-Array Connections
- Grid Connection Route
- Functionally Linked Land

Date: 20/03/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar

C:\Users\JDEDT\Ramboll\Joanna Morgan - Projects\Ecology\ESF\gis\mxd\2026\ESF\gis\mxd\2026.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 4: Desktop Study Hotspot and Movement Corridors

Scale @ A3	Version	Drawn	Reviewed
1:260,000	0	JLEM	JET

Legend

- Order Limits
- Survey Area
- Solar Development Areas
- Inter-Array Connections
- Grid Connection Route
- Potential Cable Routing Area
- Potential Cable Routing Area - 20km Buffer
- Vantage point extent
- Vantage Point Locations
- River Welland
- Focal birds analysis

Data Search Records Density

- 1 - 1600
- 1601 - 3200
- 3201 - 4800
- 4801 - 6400
- 6401 - 8000

Density - weighted by number of birds

Sparse — Dense

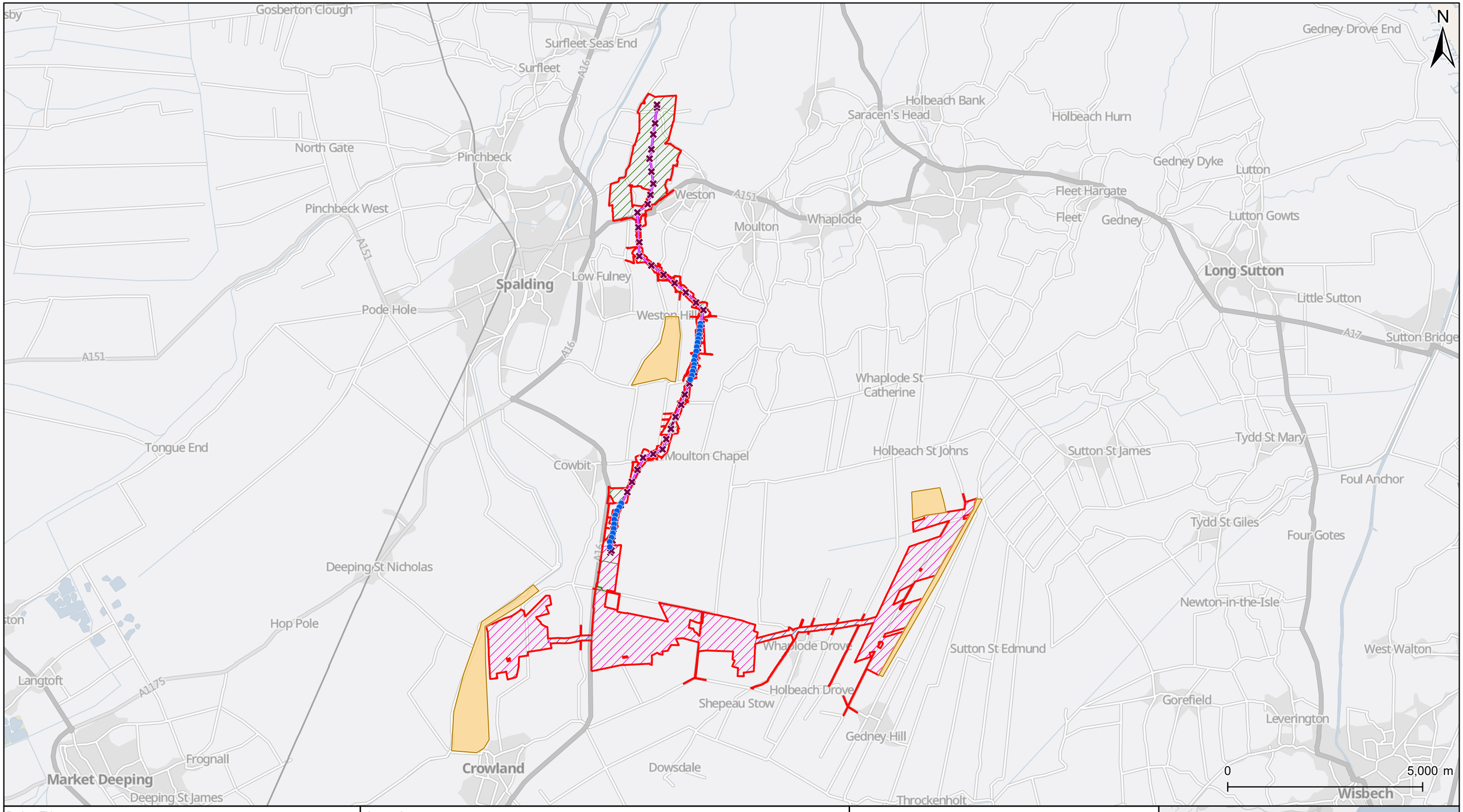
Date: 20/03/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.
© Greater Lincolnshire Nature Partnership.
Contains public sector information licensed under the Open Government Licence v3.0.

Meridian Solar



C:\Users\JCE\TP\Ramboll\Joanna Morgan - Projects\Ecology\Wintering Breeding Birds\17915_2_BreedingBirds_2025.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 5: Proposed Line Marker Locations

Scale @ A3	Version	Drawn	Reviewed
1:90,000	0	JM	JET

Legend

- Order Limits
- Solar Development Areas
- Inter-Array Connections
- Grid Connection Route
- Functionally Linked Land
- Proposed Line Marker Locations

Grid Connection Alignment

- Indicative OHL
- Indicative UGC
- Indicative Downlead
- Pylon locations

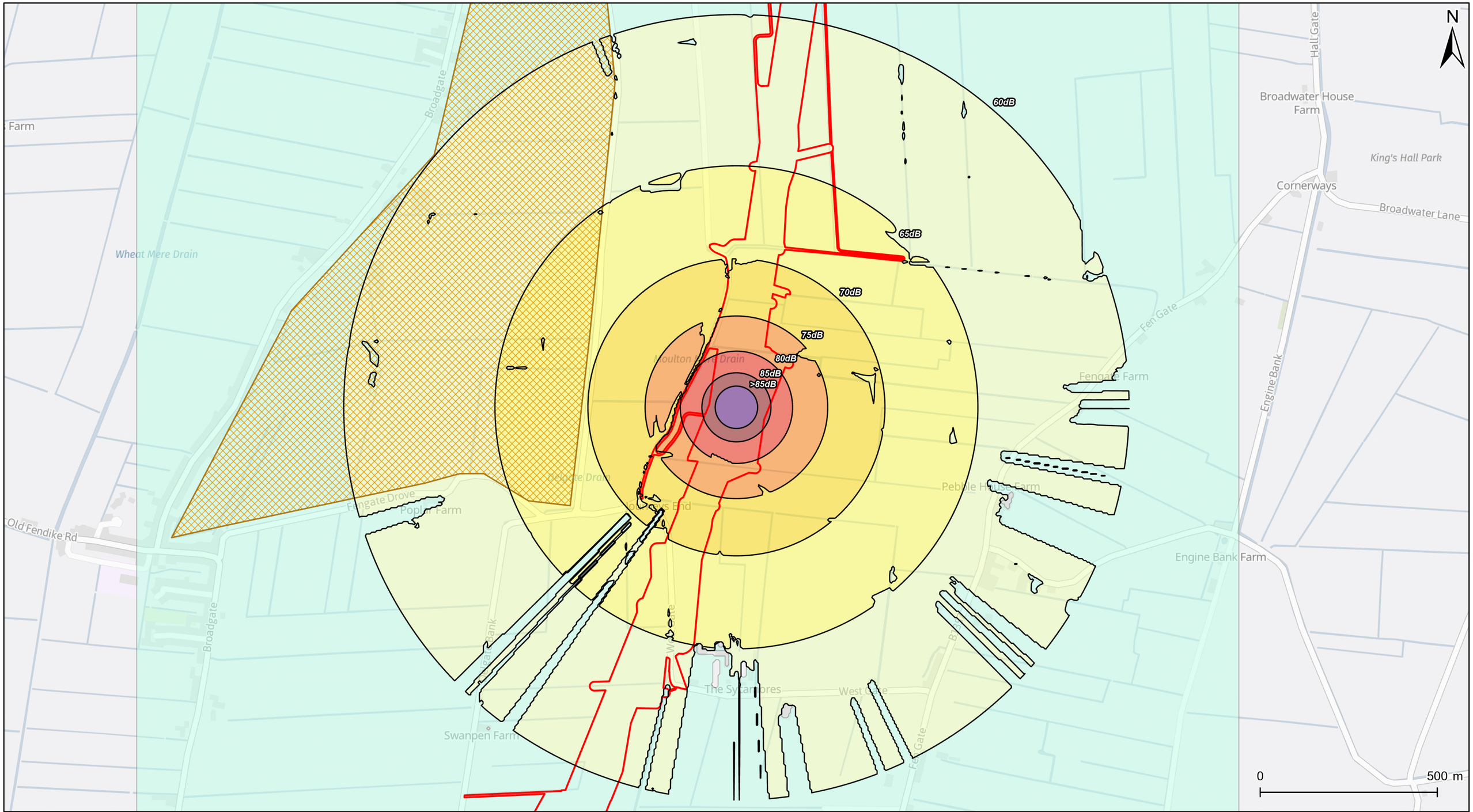
Date: 20/03/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



C:\Users\JD\EDT\Ramboll\Joanna Morgan - Projects\Ecology\ES\Figures\2026\ES\Figure5v2026.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 6: Construction Noise Levels on FLL - ML23

Scale @ A3	Version	Drawn	Reviewed
1:10,000	0	JET	DC

Legend

- Order Limits
- Functionally Linked Land
- 5dB Contours

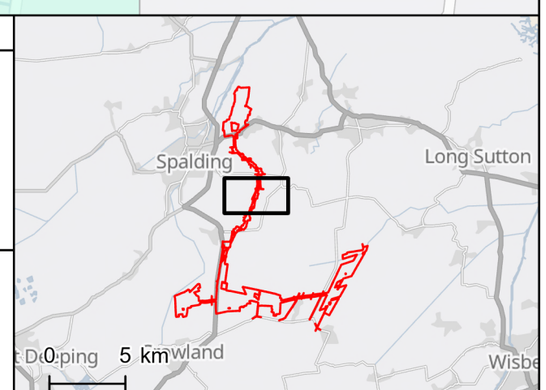
Noise Levels in dB (L_{AFmax})

- 55
- 60
- 65
- 70
- 75
- 80
- 85
- >85

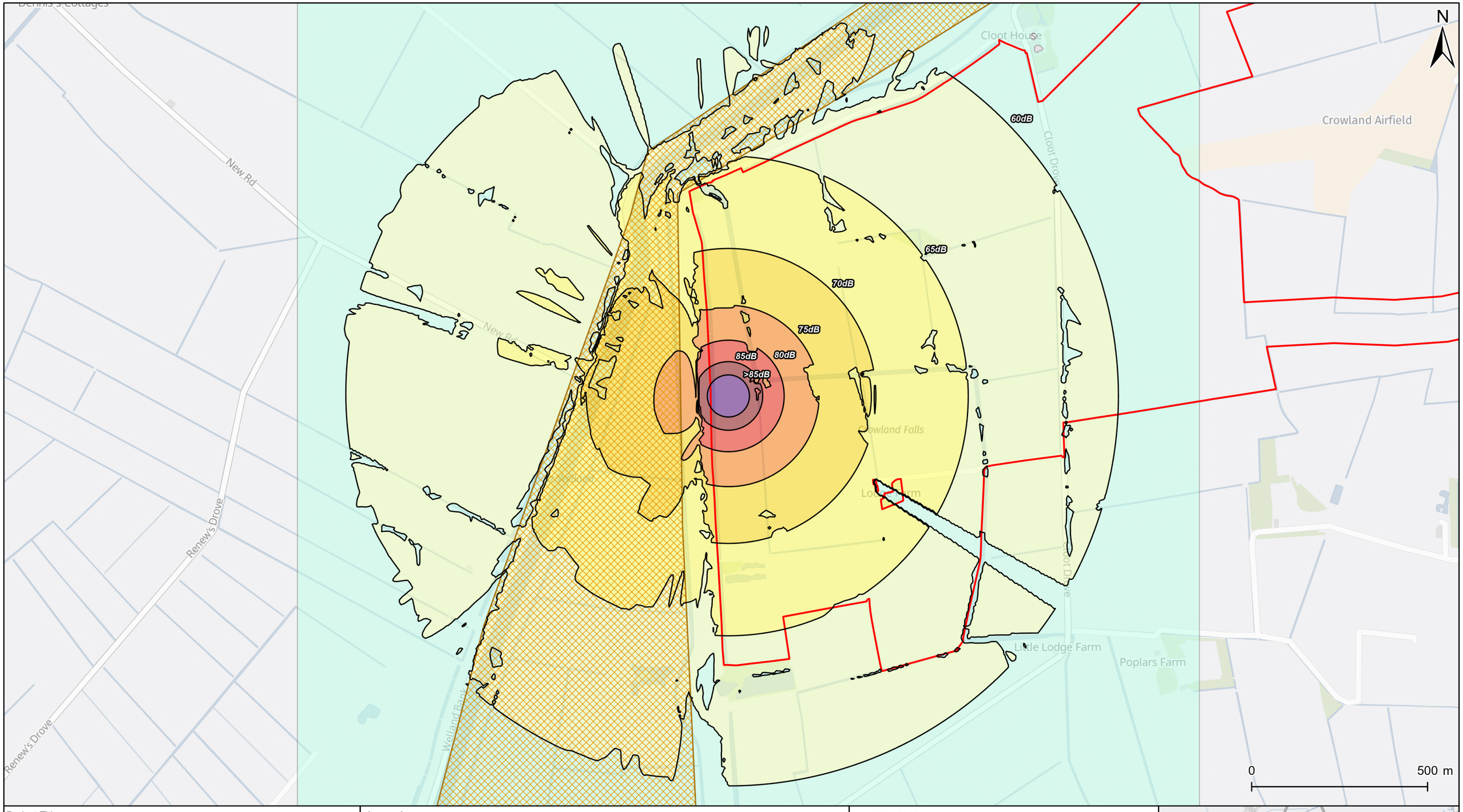
Date: 04/09/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



T:\GIS\GIS\20\Projects\178115_HolbeachSolarMarsh\PVEcology\ESFigures\2026\ESFigures2026.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 6: Construction Noise Levels on FLL - ML02

Scale @ A3	Version	Drawn	Reviewed
1:10,000	0	JET	DC

Legend

- Order Limits
- Functionally Linked Land
- 5dB Contours

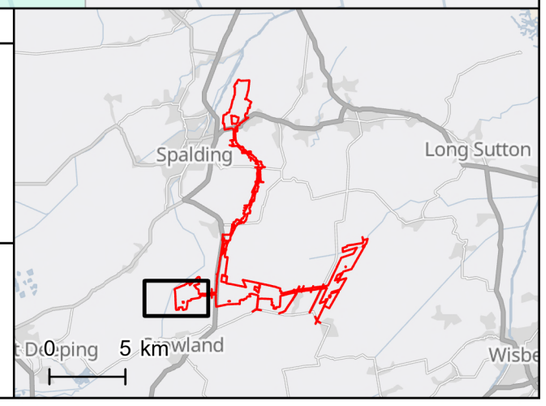
Noise Levels in dB (L_{AFmax})

- 55
- 60
- 65
- 70
- 75
- 80
- 85
- >85

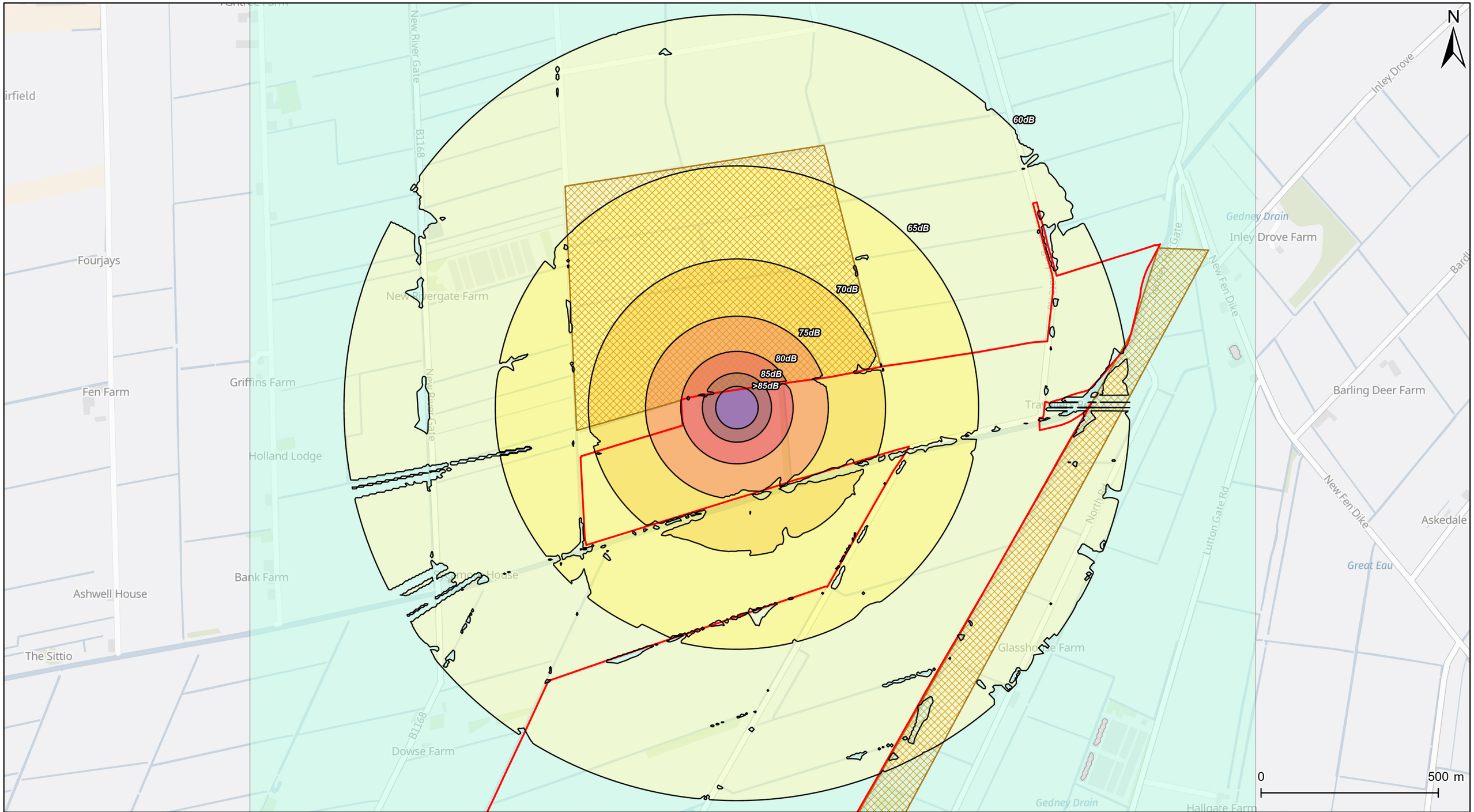
Date: 04/09/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



T:\GIS\GIS\02\Projects\17\615_Holbeach\Solar\Maps\PVEcology\ESFigures\2026\ESFigure6.2026.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 6: Construction Noise Levels on FLL - ML19

Scale @ A3	Version	Drawn	Reviewed
1:10,000	0	JET	DC

Legend

- Order Limits
- Functionally Linked Land
- 5dB Contours

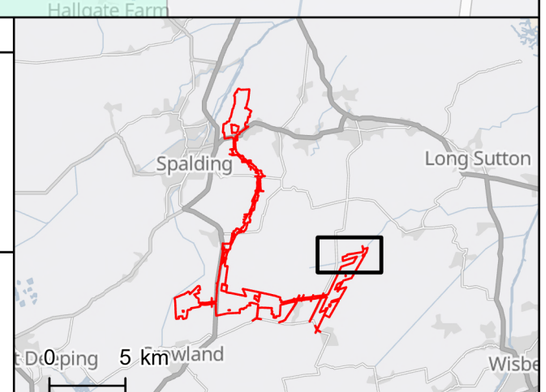
Noise Levels in dB (L_{AFmax})

- 55
- 60
- 65
- 70
- 75
- 80
- 85
- >85

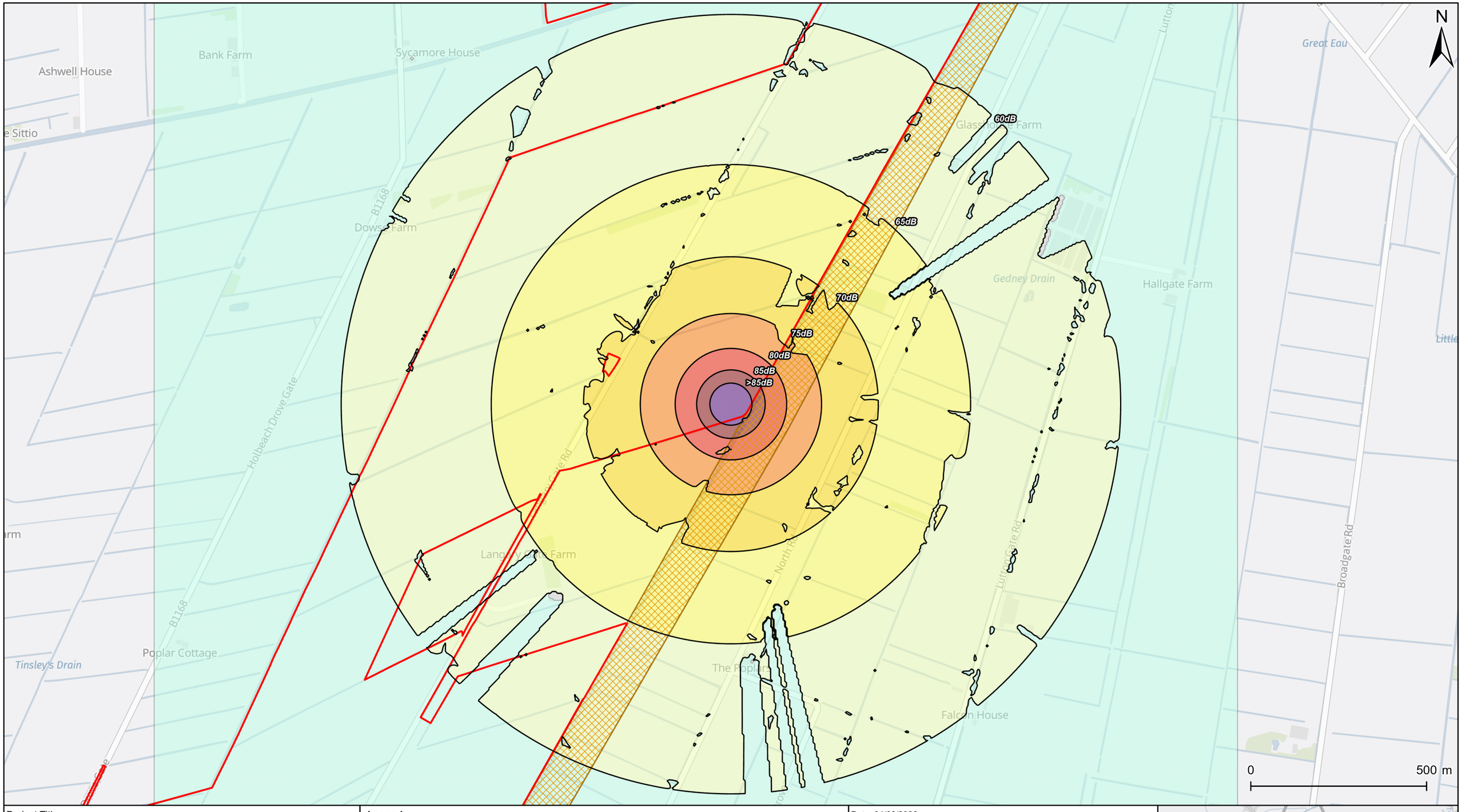
Date: 04/09/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



Y:\GIS\GIS\02\Projects\17\15_HotbeachSolarFarm\PV\Ecology\ES\Figures\2026\ES\Figures2026.aprx



Project Title

Meridian Solar Farm

Map Title

Habitat Regulations Assessment
Figure 6: Construction Noise Levels on FLL - ML17

Scale @ A3	Version	Drawn	Reviewed
1:10,000	0	JET	DC

Legend

- Order Limits
- Functionally Linked Land
- 5dB Contours

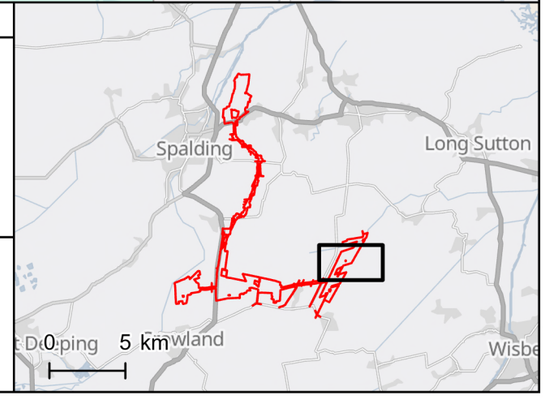
Noise Levels in dB (L_{AFmax})

- 55
- 60
- 65
- 70
- 75
- 80
- 85
- >85

Date: 04/09/2026

Copyright
Contains OS data © Crown copyright and database right 2026.
Contains data from OS Zoomstack.
Reproduced from Ordnance Survey digital map data © Crown copyright 2025.
All rights reserved. Licence number AC0000808122.

Meridian Solar



T:\GIS\GIS\02\Projects\17915_HolbeachSolarFarm\PVEcology\ES\Figures\2026\ES\Figure3\2026.aprx

Appendix 2: HRA Evidence Plan

Meridian Solar Farm – Evidence Plan for Supporting Shadow Habitats Regulations Assessment – Presented to Natural England 20/03/2025

Receptor	Impact pathways	Desk study review & consultation	Surveys
The Wash and North Norfolk Coast SAC - 8.4km NE			
Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Large shallow inlets and bays Reefs Salicornia and other annuals colonizing mud and sand Atlantic salt meadows Mediterranean and thermo-Atlantic halophilous scrubs	No likely significant impact pathways	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone of influence of the scheme including possible hydrological connections and the construction traffic affected road network Review of sensitivities and scheme parameters to confirm screening out	N/A
Otter (present, but not a primary reason for selection)	No likely significant impact pathways		N/A
Harbour seal	No likely significant impact pathways		N/A

Receptor	Impact pathways	Desk study review & consultation	Surveys
The Wash SPA - 8.4km NE			
Breeding common tern & little tern	No likely significant impact pathways - birds of these qualifying populations that breed in the SPA are highly unlikely to use habitats affected by the scheme, or to move regularly through areas where there could be a collision risk as these birds will be foraging at sea or in coastal areas during the breeding season.	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone of influence of the scheme including possible hydrological connections and the construction traffic affected road network	N/A
Wintering/ migratory birds	Collision risk	Engagement with LWT, BTO, RSPB & National Grid to identify data held and advice on effective mitigation measures (e.g. at Frampton Marsh); review of potential flightpaths and habitats with potential to attract wintering wildfowl, creating possible collision hotspots	(4), (5) – Vantage point surveys (6) – Nocturnal vantage point surveys

Receptor	Impact pathways	Desk study review & consultation	Surveys
	Loss/ disturbance of Functionally Linked Land	Data records and engagement with LWT, BTO & RSPB; review of habitats with potential to provide FLL	(1), (2) – Habitat surveys (3) – Wintering bird surveys (6) – Nocturnal vantage point surveys Note: Vantage Point Surveys (4, 5) will also inform assessment.
The Wash Ramsar – 8.4km NE			
Wintering/ migratory birds	Collision risk	Engagement with LWT, BTO, RSPB & National Grid to identify data held and advice on effective mitigation measures (e.g. at Frampton Marsh); review of potential flightpaths and habitats with potential to attract wintering wildfowl, creating possible collision hotspots	(4), (5) – Vantage point surveys (6) – Nocturnal vantage point surveys
	Loss/ disturbance of Functionally Linked Land	Data records and engagement with LWT, BTO & RSPB; review of habitats with potential to provide FLL	(1), (2) – Habitat surveys (3) – Wintering bird surveys (6) – Nocturnal vantage point surveys Note: Vantage Point Surveys (4, 5) will also inform assessment.

Receptor	Impact pathways	Desk study review & consultation	Surveys
Baston Fen SAC – 10km W			
Spined loach	No likely significant impact pathways	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone of influence of the scheme including possible hydrological connections and the construction traffic affected road network	N/A
Nene Washes SAC – 12km S			
Spined loach	No likely significant impact pathways	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone of influence of the scheme including possible hydrological connections and the construction traffic affected road network	N/A

Receptor	Impact pathways	Desk study review & consultation	Surveys
Nene Washes SPA – 11km S			
Breeding gadwall, garganey & northern shoveler	No likely significant impact pathways – birds of these qualifying populations that breed in the SPA are highly unlikely to use habitats affected by the scheme, or to move regularly through areas where there could be a collision risk as these species forage close to their nest sites during the breeding season.	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone of influence of the scheme including possible hydrological connections and the construction traffic affected road network	N/A
Wintering/ migratory birds	Collision risk	Engagement with LWT, BTO, RSPB & National Grid to identify data held and advice on effective mitigation measures (e.g. at Frampton Marsh); review of potential flightpaths and habitats with potential to attract wintering wildfowl, creating possible collision hotspots	(4), (5) – Vantage point surveys (6) – Nocturnal vantage point surveys

Receptor	Impact pathways	Desk study review & consultation	Surveys
	Loss/ disturbance of Functionally Linked Land	Data records and engagement with LWT, BTO & RSPB; review of habitats with potential to provide FLL	(1), (2) – Habitat surveys (3) – Wintering bird surveys (6) – Nocturnal vantage point surveys Note: Vantage Point Surveys (4, 5) will also inform assessment.
Nene Washes Ramsar – 11km S			
Nationally scarce plants	No likely significant impact pathways	Review of sensitivities and scheme parameters to confirm screening out; to include a high-level review of the potential zone	N/A
British RDB invertebrates	No likely significant impact pathways		N/A

Receptor	Impact pathways	Desk study review & consultation	Surveys
Breeding bird assemblage	No likely significant impact pathways – birds of these qualifying populations that breed in the SPA are highly unlikely to use habitats affected by the scheme, or to move regularly through areas where there could be a collision risk as these species forage close to their nest sites during the breeding season.	of influence of the scheme including possible hydrological connections and the construction traffic affected road network	N/A
Wintering/ migratory birds	Collision risk	Engagement with LWT, BTO, RSPB & National Grid to identify data held and advice on effective mitigation measures (e.g. at Frampton Marsh); review of potential flightpaths and habitats with potential to attract wintering wildfowl, creating possible collision hotspots	(4), (5) – Vantage point surveys (6) – Nocturnal vantage point surveys

Receptor	Impact pathways	Desk study review & consultation	Surveys
	Loss/ disturbance of Functionally Linked Land	Data records and engagement with LWT, BTO & RSPB; review of habitats with potential to provide FLL	(1), (2) – Habitat surveys (3) – Wintering bird surveys (6) – Nocturnal vantage point surveys Note: Vantage Point Surveys (4, 5) will also inform assessment.
Summary of Surveys to inform assessment:			
1. Habitat surveys (UKHab); PV array site: August-September 2023, February & August 2024 – informing identification of potentially suitable habitat areas for winter usage 2. Habitat surveys (UKHab); grid connection and inter-array connection areas: spring/summer 2025 – will inform identification of potentially suitable habitat areas for winter usage by roosting and/ or foraging waterbirds 3. Wintering bird surveys; PV array site: October 2022 - March 2023, October 2023 - March 2024 – used to identify areas used by roosting and/ or foraging winter waterbirds and potential functionally linked land (FLL) 4. Vantage point surveys; grid connection wider area: November 2023 - March 2024 – will inform collision risk analysis and provide incidental information in relation to FLL 5. Vantage point surveys; grid connection western option and inter-array areas: October 2024 - March 2025– will inform collision risk analysis and provide incidental information in relation to FLL 6. Nocturnal vantage point surveys; grid connection western option and inter-array areas, including areas of potential FLL to the west of the PV array area and views of PV array areas: November 2023 - March 2024 – will inform collision risk analysis and assessment of FLL			

Appendix 3: Analysis of potential FLL

Analysis of Potential FLL (additional to areas presented in main text)

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
A1 – c.195ha arable land (occasional surface flooding)	Black headed gull	3 on one occasion in Oct 2023	0.04% of The Wash SPA population	Usage occasional only	Stable	Mobile	Abundant similar habitat, recorded in greater numbers to S.	No evidence of refuge	Unlikely FLL
	Common Gull	A total of 5 in 2023; 30 seen at land to the south in 2024	No IIWS reference population value (numbers unlikely to be significant)	Usage occasional only	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Golden plover	A max count of 30 birds seen in January and February 2025; 33 individuals in November 2023	0.15% of The Wash Ramsar population	Occasional usage.	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Grey heron	1 bird seen 2024	No IIWS reference population value (numbers unlikely to be significant)	Only used in one year on one occasion	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Habitat unsuitable in location, abundant suitable habitat elsewhere	No evidence of refuge	Unlikely FLL
	Great white egret	1 bird seen in 2024	No IIWS reference population value (numbers unlikely to be significant)	Only used in one year on one occasion	Increasing	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Lapwing	A max count of 300 birds in December 2024	1.02% of The Wash WeBS population	Winter of 24/25 only	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat (also recorded to NW)	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
	Mallard	A max count of 32 birds recorded October 2024; 24 in November 2023	No IIWS reference population value (numbers unlikely to be significant)	Recorded each winter in low numbers	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Moorhen	Max count of 2 in March 2025; individual birds in 2023	No IIWS reference population value (numbers unlikely to be significant)	Recorded once per winter	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Habitat unsuitable in location, abundant suitable habitat elsewhere	No evidence of refuge	Unlikely FLL
	Mute swan	8 recorded in March 2024; 3 in february 2025	No IIWS reference population value (numbers unlikely to be significant)	Low numbers 24/25	Stable	Mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Snipe	5 in October 2024; 1 in December 2022	No IIWS reference population value (numbers unlikely to be significant)	Recorded on two occasions	Stable	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Shelduck	Max count of 2 birds in December 2024	0.07% of The Wash WeBS population	Small numbers over winter 24/25	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Teal	Max count of 50 birds recorded January 2025	5% of Nene Washes SPA population	Only seen on twice in 2025	Increasing	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL (significant number but not regular or dependent usage)
	Whooper swan	Max count of 350 birds	76.59% of The Wash WeBS population	Regular usage winter 24/25 but largely	Increasing	Mobile, dependent on	Abundant similar habitat, evidence of	No evidence of refuge	Unlikely FLL (significant number but not

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
		December 2024; 5 in 2023		absent in other years		availability of suitable sites	much greater dependency on land adjacent to Welland		regular or dependent usage and likely opportunistic overspill from land to W.)
	Waterfowl Assemblage	Max count – 2,264 in 2024/25	10.6% of The Wash SPA population	Regular usage winter 24/25 but minimal previous years	n/a	n/a	Abundant similar habitat, evidence of much greater dependency on land adjacent to Welland	No evidence of refuge	Unlikely FLL (potentially significant number but not regular or dependent usage and likely opportunistic overspill from land to W.)
B – c.400ha arable land	Black headed gull	Peak count of 25 in March 2024	0.31% of The Wash SPA population	Recorded on two occasions in winter 23/24	Stable	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Common gull	6 in January 2024; 1 March 2023	No IIWS reference population value (numbers unlikely to be significant)	Recorded twice only	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Coot	2 recorded north March 2025; 1 recorded south west January 2023	No IIWS reference population value (numbers unlikely to be significant)	Recorded twice only	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Habitat unsuitable in location, abundant suitable habitat elsewhere	No evidence of refuge	Unlikely FLL
	Golden plover	150 recorded on site December 2025	0.68% of The Wash Ramsar population	Recorded three times in total.	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat, greater numbers recorded to N.	No evidence of refuge	Unlikely FLL
	Grey heron	1 recorded March 2024 on	No IIWS reference	Recorded on 5 occasions.	Stable	dependent on suitable	Habitat unsuitable in	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
		site;1 recorded 4 times to the north across 2024/2025	population value (numbers unlikely to be significant)			waterbodies, but highly mobile in wider habitats	location, abundant suitable habitat elsewhere		
	Herring gull	Max count of 4 in Feb and March 2024; 4 recorded March 2023	No IIWS reference population value (numbers unlikely to be significant)	Recorded on four occasions	Decreasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Great white egret	1 recorded January 2025.	No IIWS reference population value (numbers unlikely to be significant)	Recorded once	Increasing	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Lapwing	16 recorded January 2024;	0.05% of The Wash WeBS population	Recorded a total of seven times across all surveys	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat, greater numbers recorded to W	No evidence of refuge	Unlikely FLL
	Mallard	6 recordings in 23/24; 3 records 23/24; Max count of 75 birds Oct 24	No IIWS reference population value (numbers unlikely to be significant)	Mallards in low numbers to the south. Seen regularly in the north throughout 24/25	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Mute swan	Max count of 8 recorded to the north in winter 24/25	No IIWS reference population value (numbers unlikely to be significant)	Occasional in 2024/25	Stable	Mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Snipe	1 snipe recorded November	No IIWS reference population value (numbers	Only recorded twice	Stable	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
		2024 and March 2025	unlikely to be significant)						
	Shelduck	2 seen centrally March 2024	0.07% of population (3,065 The Wash WeBS)	Only seen on one occasion	Stable	dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Teal	Recorded outside the area (12 records to the south of site Jan 23; 28 recorded to the north Dec 24)	0% in area	Seven occurrences in the north and 2 in the south	Increasing	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat, greater numbers recorded to N	No evidence of refuge	Unlikely FLL
	Whooper swan	6 records in the north, largest count 70 from 24/25.	15.32% of The Wash WeBS population	Intermittent usage in 2024/25	Increasing	Mobile, dependent on availability of suitable sites	Abundant similar habitat, also recorded to S	No evidence of refuge	Unlikely FLL
	Waterfowl Assemblage	Max count – 557	0.26% of The Wash SPA population	Intermittent usage	n/a	n/a	Abundant similar habitat	No evidence of refuge	Unlikely FLL
C – 219ha arable land	Black headed gull	Peak count of 240 to the south east in Nov 23	3.00% of The Wash SPA population	Intermittent usage (19 records across surveys)	Stable	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL (occasional significant numbers but not regular or dependent usage)
	Common Gull	Peak count of 12 in 2023	No IIWS reference population value (numbers unlikely to be significant)	Intermittent usage (10 records in total across all surveys)	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Golden Plover	150 recorded to the south Nov 23; 70	0.68% of The Wash Ramsar population	3 records across the surveys	Decreasing	mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
		recorded to the north.							
	Herring gull	2 recorded just south of site	No IIWS reference population value (numbers unlikely to be significant)	Recorded once only	Decreasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Lapwing	Peak count of 120 in Feb 23; 50 in Jan 24	0.41% of The Wash WeBS population	Occasional usage (Recorded on six occasions)	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Mallard	Max count of 4 in both 22/23 & 23/24	No IIWS reference population value (numbers unlikely to be significant)	Intermittent usage (Recorded 14 times)	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Mute swan	Single bird recorded October 23	No IIWS reference population value (numbers unlikely to be significant)	Single record	Stable	Mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Snipe	Max count of 9 Dec 23.	No IIWS reference population value (numbers unlikely to be significant)	Eight records from 23/24 only	Stable	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Whooper Swan	Max count of 8 Dec 23; 3 recorded Oct 23	1.75% of The Wash WeBS population	2 occurrences only	Increasing	mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
	Waterfowl Assemblage	Max count – 547	0.26% of The Wash SPA population	Intermittent usage	n/a	n/a	Abundant similar habitat	No evidence of refuge	Unlikely FLL
D – c.280ha arable land	Black headed gull	32 recorded in 23/24; 7 records in 22/23, max count of 100	1.25% of The Wash SPA population	Intermittent usage across all surveys	Stable	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)
	Common gull	Max count of 120 in 23/24; flock of 120 recorded to the west in 24/25	No IIWS reference population value (numbers unlikely to be significant)	Recorded 10 times in 23/24 and single occurrence in 24/25	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Golden plover	Max count of 320 January 24 with a further 110 Oct 23; 5 recorded Dec 24	0.45% of The Wash Ramsar Population	6 occurrences in total	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)
	Grey heron	15 records, max count of 2 in Dec 23	No IIWS reference population value (numbers unlikely to be significant)	Intermittent (15 occurrences between 23-25)	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Herring gull	Max count of 40 in March 24	No IIWS reference population value (numbers unlikely to be significant)	14 occurrences in 23/24; 2 in 22/23	Decreasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Great white egret	2 records from 24/25, max count of 2 in Jan 25	No IIWS reference population value (numbers	2 occurrences in total	Increasing	dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
			unlikely to be significant)						
	Lapwing	Max count of 600 Jan 25; 200 max count Oct 23	2.03% of The Wash WeBS population	15 occurrences in total	Decreasing	mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)
	Mallard	Max count of 220 October 24; 40 in Feb 24; 2 in 22/23	No IIWS reference population value (numbers unlikely to be significant)	Regular usage, recorded over 50 times in total across all survey years	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Moorhen	Single record of an individual Oct 23	No IIWS reference population value (numbers unlikely to be significant)	1 occurrence	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Mute swan	Max count of 28 Dec 23; Max count of 12 Feb 25	No IIWS reference population value (numbers unlikely to be significant)	Intermittent usage, 17 occurrences	Stable	mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Snipe	Max count of 26 Nov 23; 6 in Feb 25	No IIWS reference population value (numbers unlikely to be significant)	Frequent usage, total of 32 occurrences	Stable	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Shelduck	2 recorded March 24	0.07% of The Wash WeBS population	1 occurrence	Stable	dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
	Teal	Max count of 42 in Feb 24; 32 count Jan 25	4.29% of Nene Washes SPA population	Intermitted usage (9 occurrences)	Increasing	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL (significant peak number, but not regular or dependent usage)
	Whooper swan	Max count of 250 Nov 23; 80 in March 25	54.70% of The Wash WeBS population	Occasional usage (6 occurrences across all years)	Increasing	Mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL (significant peak number, but not regular or dependent usage)
	Waterfowl Assemblage	Max count – 1766	0.83% of The Wash SPA populations	Intermitted usage	n/a	n/a	Abundant similar habitat	No evidence of refuge	Unlikely FLL
Land between Austendyke Road and West Gate - c.250ha arable land	Black headed Gull	Max count of 470 birds Oct 24	5.88% of The Wash SPA population	6 occurrences all from Oct 24	Stable	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL (significant peak number, but not regular or dependent usage)
	Golden plover	Max count of 500 birds Dec 24	2.27% of The Wash Ramsar population	5 occurrences within site boundary	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)
	Lapwing	Max count of 60 to the east Feb 25	0.20% of The Wash WeBS population	3 occurrences in total	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Mallard	Max count of 6 in Feb and March 25	No IIWS reference population value (numbers unlikely to be significant)	7 occurrences	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Snipe	Max count of one in March 25	No IIWS reference population value (numbers	1 bird seen twice	Stable	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
			unlikely to be significant)						
	Unidentified duck	Count of 32 to the east of site boundary	No IIWS reference population value (numbers unlikely to be significant)	1 flock recorded once	n/a	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Waterfowl Assemblage	Max count – 1069	0.50% of The Wash SPA population	Intermittent usage	n/a	n/a	Abundant similar habitat	No evidence of refuge	Unlikely FLL
Land north of A151 - c.60ha arable land	Black headed gull	One flock of 60 Dec 24	0.75% of The Wash SPA population	1 occurrence	Stable	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Golden plover	35 recorded March 25	0.16% of The Wash Ramsar population	1 occurrence	Decreasing	Mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Grey heron	1 heron seen 4 times March 25	No IIWS reference population value (numbers unlikely to be significant)	4 occurrences in total	Stable	Dependent on suitable waterbodies, but highly mobile in wider habitats	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Lapwing	300 lapwing recorded Jan 25;	1.02% of The Wash WeBS population	3 occurrences in 2025	Decreasing	mobile, but faithful to preferred locations	Abundant similar habitat	No evidence of refuge	Unlikely FLL (potentially significant peak number, but not regular or dependent usage)
	Mallard	Max count of 3 March 25	No IIWS reference population value (numbers unlikely to be significant)	12 occurrences	Increasing	Mobile	Abundant similar habitat	No evidence of refuge	Unlikely FLL

Feature	Species	Overview of evidence	Significant population*	Regular usage	Conservation status/ trend**	Species mobility	Alternative habitat	Refuge	Conclusion
	Whooper swan	Single count of 3 birds March 25	0.66% of The Wash WeBS population	1 occurrence	Increasing	mobile, dependent on availability of suitable sites	Abundant similar habitat	No evidence of refuge	Unlikely FLL
	Waterfowl Assemblage	Max count – 402	0.19% of The Wash SPA population	Intermittent usage	n/a	n/a	Abundant similar habitat	No evidence of refuge	Unlikely FLL

*Reference populations taken as lowest relevant IIWS population taken from SPA citation, Ramsar citation and BTO WeBS count data.
**Status based on BTO population data, and relevant SSSI condition status.