Medworth Energy from Waste
Combined Heat and Power Facility

PINS ref. EN010110
Document Reference: Vol 5.3
Revision 2
August 2022

Habitat Regulations Assessment No Significant Effects Report (NSER)

Regulation reference: The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(g)

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Executive Summary

Medworth CHP Ltd (the 'Applicant') intends to make an application to the Secretary of State for a Development Consent Order (DCO) for an Energy from Waste (EfW) combined heat and power (CHP) facility (the 'Proposed Development') on the industrial estate, Algores Way, Wisbech, Cambridgeshire.

Under Regulation 63 of the Habitats Regulations, a person applying for any consent, permission or other authorisation for a plan or project must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable them to determine whether an appropriate assessment is required. Thus, the Applicant is responsible for assembling and describing all the relevant information required to enable the competent authorities to carry out their Habitat Regulations Assessment (HRA) responsibilities.

This Habitat Regulations Assessment Non-Significant Effects Report (NSER) has been produced, and details the scope, approach and conclusions of the HRA screening in respect to the impact of the project on the qualifying interest features of the European sites screened into the assessment, either alone or in combination with other plans or projects. The report concludes that Likely Significant Effect (LSE) on all qualifying interest features of these sites can be excluded.

Contents

1. Introduction

1.1.1 Medworth CHP Limited (the Applicant) is applying to the Secretary of State (SoS) for a Development Consent Order (DCO) to construct operate and maintain an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on the industrial estate, Algores Way, Wisbech, Cambridgeshire. Together with associated Grid Connection, CHP Connection, Access Improvements, Water Connections, and Temporary Construction Compound (TCC), these works are the Proposed Development.

1.1.2 The Proposed Development would recover useful energy in the form of electricity and steam from over half a million tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of over 50 megawatts and the electricity would be exported to the grid. The Proposed Development would also have the capability to export steam and electricity to users on the surrounding industrial estate. Further information is provided in **Chapter 3: Description of the Proposed Development (Volume 6.2)**.

1.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) under Part 3 Section 14 of the Planning Act 2008 (2008 Act) by virtue of the fact that the generating station is located in England and has a generating capacity of over 50 megawatts (section 15(2) of the 2008 Act). It, therefore, requires an application for a DCO to be submitted to the Planning Inspectorate (PINS) under the 2008 Act. PINS will examine the application for the Proposed Development and make a recommendation to the SoS for Business, Energy and Industrial Strategy (BEIS) to grant or refuse consent. On receipt of the report and recommendation from PINS, the SoS will then make the final decision on whether to grant the Medworth EfW CHP Facility DCO.

1.1.4 An outline of the Proposed Development is provided in **Section 2.2** with a detailed description in ES **Chapter 3 Description of the Proposed Development (Volume 6.2)** which accompanies the DCO application. The site location is shown in ES **Figure 1.1 Site Location (Volume 6.3)**.

1.2 Purpose of this Report

1.2.1 The Proposed Development is in close proximity to several European wildlife sites[1], notably Nene Washes Sandwich Special Protection Area (SPA)/Ramsar Site/Special Area of Conservation (SAC) and Ouse Washes SPA/Ramsar Site/SAC; and the Wash SPA/Ramsar Site. In addition to the assessment of potential effects on these sites that have been addressed in the ES, there is a requirement under

[1] Under The Conservation of Habitats and Species Regulations 2010 (SI 2010 No. 490), European sites are defined as Special Areas of Conservation (SACs), candidate SACs, Sites of Community Importance, Special Protection Areas (SPA) and European Marine Sites (EMS), which are marine areas designated as SACs and SPAs. UK policy extends the requirements pertaining to European sites to include Ramsar Sites and potential SPAs, and this would include proposed extensions or alterations to existing SPAs.

The Conservation of Habitats and Species Regulations 2010 (SI 2010 No. 490) (the 'Habitats Regulations') to undertake a HRA.

1.2.2 Council Directives 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and 2009/147/EC on the conservation of wild birds ("the Birds Directive") provide for the designation of sites for the protection of certain species and habitats. The sites designated under these Directives are collectively termed European sites and form part of a network of protected sites across Europe, known as the Natura 2000 network. In the UK the Habitats Regulations transpose these Directives into national law and apply up to the 12-nautical mile limit of territorial waters.

1.2.3 The Conservation of Habitats and Species Regulations 2017 (as amended) are one of the pieces of domestic law that transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives). Changes were made to these Regulations by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. SACs and Special Protection Areas (SPAs) in the UK no longer form part of the EU's Natura 2000 ecological network. The 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SACs and SPAs, new SACs and SPAs designated under these Regulations.

1.2.4 Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new national site network.

1.2.5 The UK Government is also a signatory to the Convention on Wetlands of International Importance 1972 ("the Ramsar Convention"). The Ramsar Convention provides for the listing of wetlands of international importance. UK Government policy is to give sites listed under this convention ("Ramsar Sites") the same protection as European sites and the new national site network.

1.2.6 For the purposes of this HRA, in line with the Habitats Regulations and relevant Government policy, the term "European sites" and new national site network includes Special Areas of Conservation ("SAC"), candidate SACs ("cSAC"), possible SACs ("pSAC"), Special Protection Areas ("SPA"), potential SPAs ("pSPA"), Sites of Community Importance ("SCI"), listed and proposed Ramsar Sites and sites identified or required as compensatory measures for adverse effects on any of these sites.

1.2.7 Amongst other things, the Habitats Regulations define the process for the assessment of the implications of plans or projects on European sites. This process is termed the HRA.

1.2.8 HRA can involve up to four stages, as detailed in **Graphic 1.1**.

Graphic 1.1 Stage of Habitats Regulation Assessment

Stage 1 – Screening:

This stage identifies the likely impacts upon a European Site of a project or Plan, either alone or 'in combination' with other projects or plans and considers whether these impacts are likely to be significant.

Stage 2 – Appropriate Assessment:

Where there are likely significant impacts, this stage considers the impacts of the Plan or project on the integrity of the relevant European Sites, either alone or 'in combination' with other projects or plans, with respect to the sites' structure and function and their conservation objectives. Where there are adverse impacts, it also includes an assessment of the potential mitigation for those impacts.

Stage 3 – Assessment of Alternative Solutions:

Where adverse impacts [on the integrity of the site] are predicted, this stage examines [whether or not there are] alternative ways of achieving the objectives of the project or Plan that avoid adverse impacts on the integrity of European Sites.

Stage 4 – Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain:

This stage assesses compensatory measures where it is deemed that the project or Plan should proceed for imperative reasons of overriding public interest (IROPI).

1.2.9 Stages 1 and 2 are covered by Regulation 63 and Stages 3 and 4 are covered by Regulation 64 and 68.

1.2.10 With respect to Stage 2, the integrity of a European Site relates to the site's conservation objectives and has been defined in guidance as "the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated"[2]. An adverse effect on integrity, therefore, is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of designation. The HRA screening process uses the threshold of LSE to determine whether effects on European sites should be the subject of further assessment. The Habitats Regulations do not define the term LSE. However, in the Waddenzee case (Case C-127/02)[3] the European Court of Justice found that an LSE should be presumed and an AA carried out if it cannot be excluded on the basis of objective information that the plan or project will not have significant effects on the conservation objectives of the site concerned, whether alone or in-combination with any other project. The Advocate General's opinion of the Sweetman case (Case

[2] Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, at section 4.6.3 (Updated Version, November 2018)
[3] 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. Reference for a preliminary ruling: Raad van State - Netherlands. Case C-127/02

C-258/11)[4] further clarifies the position by noting that for a conclusion of an LSE to be made "*there is no need to establish such an effect...it is merely necessary to determine that there may be such an effect*" (original emphasis).

1.2.11 For the reasons highlighted above the assessment process follows the precautionary principle throughout and the word 'likely' is regarded as a description of a risk (or possibility) rather than in a legal sense an expression of probability.

1.2.12 Screening can be used to screen-out European sites and elements of works from further assessment, if it is possible to determine that significant effects are unlikely (e.g., if sites or interest features are clearly not vulnerable (exposed and/or sensitive) to the outcomes of the proposal due to the absence of any reasonable impact pathways).

1.2.13 The screening process has two potential conclusions, namely that the proposed development, alone or in combination with other developments, could result in:

- No LSE on any of the qualifying features of the site; or
- LSE identified, or cannot be ruled out, on one or more of the qualifying features of the site.

1.2.14 Only the second of these outcomes will trigger an AA. If one or more LSE are identified, or cannot be ruled out, it is then necessary to proceed to Stage 2 and produce an AA.

1.2.15 On 12 April 2018, the Court of Justice of the European Union (CJEU) issued a judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta) which stated (at paragraph 41):

1.2.16 "Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site."

1.2.17 This means that any mitigation relating to protected sites under the Habitat Regulations 2017 Regulation 63 (1) will no longer be considered at the screening stage but taken forward and considered at the appropriate assessment stage to inform a decision on whether no adverse effects on site integrity can be demonstrated.

1.2.18 The assessment provided within this HRA takes into account the CJEU ruling on 'People over Wind'. It has also adopted a strong precautionary principle; if a pathway of effect is established between the Proposed Development and a European Site, then that site is taken through to appropriate assessment. This ensures all effects are captured, including de minimis effects.

1.2.19 The approach to the HRA also takes into consideration the 'Dutch Nitrogen Case' judgements from the Court of Justice for the European Union.

[4] Judgment of the Court (Third Chamber), 11 April 2013 Peter Sweetman and Others v An Bord Pleanála. Request for a preliminary ruling from the Supreme Court (Ireland) Case C-258/11

1.2.20 *"...the positive effects of the autonomous decrease in the nitrogen deposition…be taken into account in the appropriate assessment…, it is important that the autonomous decrease in the nitrogen deposition be monitored and, if it transpires that the decrease is less favourable than had been assumed in the appropriate assessment, that adjustments, if required, be made*."

1.2.21 The Dutch Nitrogen judgement also states that according to previous case law:

"*…it is only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm to the integrity of the site concerned, by guaranteeing beyond all reasonable doubt that the plan or project at issue will not adversely affect the integrity of that site, that such a measure may be taken into consideration in the 'appropriate assessment' within the meaning of Article 6(3) of the Habitats Directive*."

1.2.22 The subject of this report is HRA Stage 1, which examines whether the Proposed Development is likely to have significant effects on any European sites.

1.2.23 If one or more significant effects are likely to occur, it is then necessary to proceed to HRA Stage 2 (PINS 2017), however as detailed in PINS (2017), in the absence of any likely significant effects, this report will take the form of a 'No Significant Effects Report' (NSER).

1.3 Structure of this Report/HRA Screening Steps

1.3.1 This report is intended to cover HRA Stage 1 - Screening only.

1.3.2 Screening aims to determine whether the Proposed Development will have any LSE on any European site as a result of its implementation. It is intended to be an informed coarse filter for identifying effects (positive and negative) that may occur, to allow the assessment stage to focus on the most important aspects.

1.3.3 Planning Inspectorate Advice Note Ten[5] details the process for which HRA is undertaken in relation to applications for Nationally Significant Infrastructure Projects (NSIPs) and provides advice for applicants in relation to the preparation of the HRA. The advice note details that "*Anyone applying for development consent for a NSIP must provide the competent authority (with such information as may reasonably be required 'for the purposes of the assessment' or 'to enable them to determine whether an appropriate assessment is required'. This information normally takes the form of a No Significant Effects Report (NSER) or a Habitats Regulations Assessment Report (HRA Report)*."

1.3.4 Planning Inspectorate Advice Note Ten Screening Matrices (summarising the screening stage HRA Stage 1) are provided in **Appendix E: No Significant Effects Report: Screening Matrices.**

1.3.5 As well as the advice within PINS Advice Note Ten, this report follows the procedures for screening described by the European Commission in the guidance document *'Assessment of plans and projects significantly affecting Natura 2000*

[5] PINS (2017). The Planning Inspectorate Advice Note 10: Habitats Regulations Assessment relevant to nationally significant infrastructure projects November 2017, Version 8.

sites: Methodological guidance on provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC'. These steps are:

- Step 1: Determining whether the project or plan is directly connected with or necessary for the management of the site.
- Step 2: Describing the project (or plan).
- Step 3: Identifying the potential effects on European sites.
- Step 4: Assessing the significance of any effects on European sites.

Step 1

1.3.6 Regulation 63 of the Habitats Regulations applies to plans or projects that are not directly related to the conservation management of a Natura 2000 site. This first step of the screening process is therefore to identify whether the plan or project in question is related to the conservation management of any European sites.

1.3.7 The European Commission guidance makes it clear that, for a project or plan to be 'directly' connected with or necessary to the management of a European site, the management must refer to measures that are for conservation purposes, with the 'directly' element referring to measures that are solely conceived for the conservation management of a site and not direct or indirect consequences of other activities.

1.3.8 The Proposed Development is a 'plan or project', for the purpose of the Habitat Regulations, but is not directly connected with or necessary for the management of any European site. An AA may, therefore, still be required and so it is necessary to proceed to Step 2 of the Screening Process.

Steps 2 - 4

1.3.9 Sections 2 - 4 of this report deal in turn with Steps 2 - 4 of the screening process. Section 5 sets out the conclusions from the screening process.

1.3.10 As detailed within PINS (2017) potential impacts upon the European sites, which are considered within this NSER, are provided in **Appendix E: No Significant Effects Report: Screening Matrices**.

2. HRA Screening Step 2: Proposed Development Description

2.1 Introduction

2.1.1 This step requires an understanding of the location and description of the elements of the Proposed Development that could result in effects on a European site or land functionally linked to that site. The description must identify the elements of the Proposed Development that may directly affect a European Site (e.g., land-take), those that may in-directly affect a European Site (e.g., emissions to air) and those that may act in-combination with other plans or projects.

2.2 The location and description of the Proposed Development

2.2.1 The Proposed Development comprises the following key elements:

- The EfW CHP Facility;
- CHP Connection;
- Temporary Construction Compound (TCC);
- Access Improvements;
- Water Connections; and
- Grid Connection.

2.2.2 A summary description of each Proposed Development element is provided below. A more detailed description is provided in ES **Chapter 3: Description of the Proposed Development (Volume 6.2)** of the ES. A list of terms and abbreviations can be found in **Chapter 1 Introduction, Appendix 1F Terms and Abbreviations (Volume 6.4)**.

- EfW CHP Facility Site: A site of approximately 5.3ha located south-west of Wisbech, located within the administrative areas of Fenland District Council and Cambridgeshire County Council. The main buildings of the EfW CHP Facility would be located in the area to the north of the Hundred of Wisbech Internal Drainage Board (HWIDB) drain bisecting the site and would house many development elements including the tipping hall, waste bunkers, boiler house, turbine hall, air cooled condenser, air pollution control building, chimneys and administration building. The gatehouse, weighbridges, 132kV switching compound and laydown maintenance area would be located in the southern section of the EfW CHP Facility site.
- CHP Connection: The EfW CHP Facility would be designed to allow the export of steam and electricity from the facility to surrounding business users via dedicated pipelines and private wire cables located along the disused March to Wisbech railway. The pipeline and cables would be located on a raised, steel structure.

- TCC: Located adjacent to the EfW CHP Facility Site, the compound would be used to support the construction of the Proposed Development. The compound would be in place for the duration of construction.
- Access Improvements: includes access improvements on New Bridge Lane (road widening and site access) and Algores Way (relocation of site access 20m to the south).
- Water Connections: A new water main connecting the EfW CHP Facility into the local network will run underground from the EfW CHP Facility Site along New Bridge Lane before crossing underneath the A47 (open cut trenching or horizontal directional drilling (HDD)) to join an existing Anglian Water main. An additional foul sewer connection is required to an existing pumping station operated by Anglian Water located to the northeast of the Algores Way site entrance and into the EfW CHP Facility Site.
- Grid Connection: This comprises a 132kV electrical connection using underground cables. The Grid Connection route begins at the 132kV switching compound in the EfW CHP Facility Site and runs underneath New Bridge Lane, before heading north within the verge of the A47 to the Walsoken Substation on Broadend Road. From this point the cable would be connected underground to the Walsoken DNO Substation.

3. HRA Screening Step 3: Identification of Potential Effects on European Sites

3.1 Scope of Screening Principles

3.1.1 The following sections outline the principles discussed with consultees, whereby potentially sensitive qualifying features, possible effects of the development, and their interactions, have been identified. The outcome of this HRA Screening stage is a list of SPAs, SACs, and Ramsar Sites and associated qualifying features for which the potential for LSE to arise as a result of works associated with the Proposed Development cannot be excluded.

3.1.2 In line with the ruling of the European Court of Justice in 2004, an LSE is one which cannot be excluded on the basis of objective information, either individually or in-combination with other plans or projects[6].

3.1.3 In order to undertake a robust assessment, it has been essential to determine the linkages between bird species, the Proposed Development, and relevant European sites. For wintering birds, these linkages were determined based on, dispersal from roost sites, an understanding of foraging range and movement between inland foraging sites and low tide roost sites.

3.2 European Sites Included for Assessment

Approach

3.2.1 Each European site is designated as a SAC, classified as an SPA, or listed as a Ramsar Site in respect of specific 'qualifying features'. These 'qualifying features' (habitats, mosaics of habitats, species or assemblage of species, and combinations of these) are the reasons for which the site is to be protected and managed for conservation purposes.

3.2.2 For SPAs the qualifying features are the birds for which the SPA is classified, under either:

- Article 4(1) rare and vulnerable species, species in danger of extinction or requiring particular attention because of their habitat needs, listed in Annex 1 of the Birds Directive; or
- Article 4(2) regularly occurring migratory species (e.g., on passage or over-wintering or an internationally important assemblage of birds) not listed in Annex 1.

3.2.3 The qualifying features of SACs are the habitats listed in Annex I of the Habitats Directive and the species listed in Annex II of the Directive. The 'qualifying features' of Ramsar Sites are the list of Criteria as set out in the Convention on Wetlands of International Importance (Ramsar Convention). All receptors that are qualifying

[6] European Court of Justice, Case C-127/02, Judgement of the Court, September 2004, paragraph 45.

features of European sites (Natura 2000/Ramsar Sites) (or support such features), and which may potentially be affected by the Proposed Development have been considered within this screening process.

Study Area

3.2.4 With respect to European sites featuring qualifying ornithological interests that could be affected by the Proposed Development, sites were included if they fell within 20km of the Proposed Development, including the Grid Connection Corridor (accepting that the design has evolved such that the Grid Connection is now proposed to be underground).

3.2.5 For ornithological features that utilise functionally linked habitats within and outwith the European site boundaries (such as wetland and farmland respectively), these linkages were determined based on an understanding of potential connectivity with foraging range and movement between the roosting and foraging sites and through published literature and consultation with Natural England. The 20km search distance is generally considered to be the maximum distance beyond which most non-marine species of birds would not travel on a regular basis between foraging and roost sites[7].

3.2.6 As the EfW CHP Facility incorporates a combustion activity with a thermal input exceeding 50MW, in accordance with the Environment Agency's (EA) *Air emissions risk assessment for your environmental permit guidance*[8], the assessment is required to consider nature conservation sites up to 15km from this emission source. Consequently, this search area will include an area encompassing 15km from the location of the chimney emissions and up to 350m from the boundary of any construction activity within the Order limits in accordance with the IAQM's Guidance on the assessment of dust from demolition and construction[9]. Therefore, European sites featuring qualifying habitats were included if they fell within 15km of the Main Development Site (the air emission source).

Disturbance to birds

3.2.7 In order to assess the potential effects of disturbance on qualifying bird species (due to construction works and operational activities), ornithological baseline data was obtained from desk study and field surveys to ascertain the type and level of use by these species within the Order limits and surrounds. Published literature on the sensitivity of these species was then used to assess the effects of disturbance on the qualifying bird populations involved and determine any LSE.

[7] Scottish Natural Heritage (2016). Assessing Connectivity with Special Protection Areas (SPAs) Guidance Version 3 June 2016
[8] Environment Agency (2020) Air emissions risk assessment for your environmental permit.
[9] IAQM (2014). Guidance on the assessment of dust from demolition and construction.

Consultation

3.2.8 The HRA Screening has also been informed by a consultation process undertaken with relevant Stakeholders. **Table 3.1 Consultation Feedback** provides an overview of the consultation feedback regarding the EIA Scoping Report[10] presented in the EIA Scoping Opinion[11], the Winter Bird Survey Report 2019/20 (**Appendix C: Winter Bird Survey Report 2019/20**) and a draft HRA Screening Report, which this document supersedes and which were previously shared with consultees. This feedback has been factored into the winter bird survey approach and the approach to the HRA.

Table 3.1 Consultation Feedback

Stakeholder/Date of consultation	Stakeholder comment	Action taken to address comment
Scoping Opinion		
Natural England [20 December 2019]	The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites (e.g., designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, paragraph 176 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site. Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process.	The NSER considers effects on European sites, including classified, potential and proposed SPAs, SACs and Ramsar Sites, as well as Functionally Linked Land (FLL).

[10] Wood (2020). Medworth Energy from Waste Combined Heat and Power Facility, EIA Scoping Report (Doc Ref. 413-WOOD-ZZ-XX-RP-J-0001_S4_1).
[11] Planning Inspectorate (2020). Scoping Opinion: Proposed Medworth Energy from Waste Combined Heat and Power Facility

Stakeholder/Date of consultation	Stakeholder comment	Action taken to address comment
	Sites of Special Scientific Interest (SSSIs) and sites of European or international importance (Special Areas of Conservation, Special Protection Areas and Ramsar sites). The development site triggers the impact risk zone for combustion for the following designated nature conservation site: Nene Washes SAC, SPA, RAMSAR & SSSI.	The NSER includes the Nene Washes SAC, SPA and Ramsar Site.
Fenland District Council [23 December 2019]	Potential effects on statutory designated biodiversity sites should also consider the impact of the proposal on functional land located beyond the designation boundary, such as the Goose and Swan Functional Land Impact Risk Zone associated with the Nene and Ouse Washes International Sites.	The NSER considers FLL and likely migratory routes of qualifying bird species in the assessment as to whether a LSE would occur.
Cambridgeshire County Council [3 January 2020]	It is important that the bird surveys will cover breeding, wintering and migratory birds – particularly given the proposal for above ground cabling, and the potential impact on Goose and Swan Functional Impact Risk Zone.	Vantage point surveys to assess the level of flight activity over the Grid Connection Corridor have been undertaken in winter, breeding and passage periods.
	Potential effects on statutory designated biodiversity sites should also consider the impact of the proposal on functional land located beyond the designation boundary, such as Goose and Swan Functional Land Impact Risk Zone. It should also include consideration of migratory routes for designatory bird population, particularly those on route to nearby Special Areas of Conservation/Special Protection Areas.	The NSER considers potential FLL outwith the European sites, and likely migratory routes of qualifying bird species in the assessment as to whether a LSE would occur.
	Whilst Habitats Regulation Assessment (HRA) fails [falls] outside the EIA/ES scoping process, it is worthwhile highlighting that the applicant will need to discuss with Natural England whether an HRA is required and the scope of the HRA.	Pre-app advice was sought from Natural England on the draft HRA screening report.
PINS [13 January 2020]	An assessment of the impacts from collision mortality with the Grid Connection should be provided, where significant effects are likely to occur. This should be informed by surveys of breeding, wintering and migratory birds (the latter of which is not currently proposed in the Scoping Report).	Vantage point surveys to assess the level of flight activity over the Grid Connection Corridor have been undertaken in winter, breeding and passage periods. No collision risk assessment is included as the cable is undergrounded.

Stakeholder/Date of consultation	Stakeholder comment	Action taken to address comment
Winter Bird Report 2019/20		
Norfolk County Council (NCC) [1 September 2020]	The wintering bird report is clear and describes the situation well. Some information on the weather conditions during the surveys might have been helpful, as well as a discussion of the habitats and cropping patterns in the areas concerned. The survey is, of course, a 'snap-shot' in time; the use of the area by birds could be different in a colder winter, when frozen ground sometimes make the more usual feeding grounds less accessible. In your HRA it might be helpful to describe the weather data for the winter and how it compares to long-term and recent weather trends. The use by geese and swans of farmland habitat functionally-linked to the Wash and N Norfolk Coast SPAs, often relates to the particular cropping regime in a given year. It might be necessary to discuss this point in the HRA.	Discussion of weather conditions and crop/habitat types provided in the wintering bird report (**Appendix C**). **Section 4.2.8 – 4.2.10** considers the weather data for the winter and compares to long-term and recent weather trends.
Natural England [28 July 2020]	NE note the findings that the birds recorded are mainly not qualifying species of The Wash, Nene Washes and Ouse Washes internationally designated sites, and that the application area, (including the surrounding area), doesn't appear to be used regularly by them. Whilst only one season's survey work has been completed, we are satisfied that the vantage point and transect surveys are comprehensive, and therefore sufficient, in this case.	Noted
Cambridgeshire County Council [11 September 2020]	We are satisfied with your approach, given that Natural England have confirmed their approval of your methodology and that only the single year of data is required. We agree with NCC in that it would be good to discuss whether the 2019/20 survey is considered representative of the likely usage of the area by wintering birds, particularly focusing on the weather conditions and the cropping patterns (for areas in agricultural production).	Discussion of weather conditions and crop/habitat types provided in wintering bird report (**Appendix C**).
Draft HRA Screening Report		
Natural England [17 November 2020]	Natural England agrees with the conclusion that there is not likely to be a significant effect on the Ouse Washes SPA, Ramsar, the Wash SPA, Ramsar and the Nene Washes SPA, Ramsar sites in relation to effects to their qualifying bird interest. We agree that it does not appear likely that the birds from these designated sites are using the application site or nearby areas for foraging, or in terms of migration.	Noted

Stakeholder/Date of consultation	Stakeholder comment	Action taken to address comment
Norfolk County Council [3 December 2020]	The draft HRA Report is fit for purpose, and I note the additions that relate to my previous comments. As you are aware, the report will need updating once you have completed dispersion modelling which will be required to quantify the potential direct and indirect impacts on the Ouse Washes SAC/SPA/Ramsar and the Nene Washes SAC/SPA/Ramsar.	Updates have been included based on dispersion modelling and presented in **Section 4.3**.
Natural England [13 August 2021] Statutory Consultation	Habitats Regulation Assessment (HRA) Natural England notes the Habitats Regulation Assessment Draft Screening Report – Clarification Note, dated June 2021, that effects arising from air emissions from the Proposed Development have not yet been screened in the HRA dated October 2020. It has also not assessed the two Grid Connection Options or alternative Temporary Construction Compounds, which now form part of the PEIR. We understand an updated HRA to reflect these additions will be issued to us in due course. For clarification, we have already made comments on the winter bird survey findings, in our correspondence dated 28th July 2020 (our ref: 321909) which indicated that birds recorded are mainly not qualifying species of The Wash, Nene Washes and Ouse Washes internationally designated sites, and that the application area, (including the surrounding area), doesn't appear to be used regularly by them and can therefore be considered not functionally linked to these sites. Whilst only one season's survey work had been completed, we were satisfied that the vantage point and transect surveys were comprehensive, and therefore sufficient, in this case. The HRA screening has concluded there is no potential for likely significant effects to occur in relation to potential effects associated with collision, disturbance and displacement on any of the qualifying features of the following European sites: • Nene Washes SPA, SAC and Ramsar site; • Ouse Washes SPA, SAC and Ramsar site; and • The Wash SPA and Ramsar site. It concludes that, as there are no likely significant effects, an appropriate assessment is not required. Subject to the findings of the updated HRA screening to reflect developments in project design and air quality dispersion modelling results, Natural England currently concurs with the findings of the draft HRA screening.	Updates have been included based on dispersion modelling and presented in **Section 4.3**.

European Sites Screened into the Assessment

3.2.9 There are three SPAs, three Ramsar Sites and three SACs, within 20km of the Proposed Development - the Ouse Washes SAC, SPA and Ramsar Site; the Nene Washes SAC, SPA and Ramsar Site; and The Wash SPA and Ramsar Site (designated for ornithological features) and The Wash and North Norfolk Coast

SAC. There are no potential or possible SPAs, SACs or Ramsar Sites within the search areas.

3.2.10 Details of the European sites considered for assessment and their qualifying features are listed in **Table 3.2 - European Sites Included for Assessment**. The distances provided are from the closest point of the Order limits.

3.2.11 **Figure 3.1 Location of European Sites** illustrates the location of these sites relative to the Order limits.

Table 3.2 European Sites Included for Assessment

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
Nene Washes SPA	7.2km south-west of Site	The Nene Washes SPA (covering 1,520 Ha) is an area of seasonally flooding grassland and grazing marsh in the lower reaches of the River Nene, Cambridgeshire. The SPA is designated for supporting internationally important numbers of water birds during winter and the breeding season. 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. The site 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. The mosaic of rough grassland and wet pasture provide a variety of sward structure and herbs of importance respectively for bird nesting habitat and feeding. Additional winter feeding is provided by remains of arable cropping on small areas.	Populations of international importance in winter for the following species (taken from the European Site Conservation Objectives for Nene Washes Special Protection Area[12]): • Bewick's swan (1,718 individuals); • Wigeon (8,292 individuals); • Gadwall (206 individuals); • Teal (2,179 individuals); • Pintail (1,435 individuals); and • Shoveler (318 individuals). Populations of international importance during the breeding season for the following species: • Gadwall (25 pairs); • Garganey (5 pairs); • Shoveler (36 pairs); and • Black-tailed godwit (16 pairs).

[12] [redacted] - Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
		These washlands play an additional role in relation to the nearby Ouse Washes in that they accommodate wildfowl populations displaced from the Ouse Washes when deep floodwaters prevent their feeding. In summer, the site is of importance for an assemblage of breeding waders whilst in winter the site holds large numbers of waders and wildfowl.	
Nene Washes Ramsar Site	7.2km south-west of Site	The Nene Washes Ramsar (covering 1,517ha), shares a common boundary across much of its area with the Nene Washes SPA. The Ramsar site is designated for supporting internationally important numbers of water birds during winter and the breeding season.	*Ramsar Criterion 2* An important assemblage of nationally rare breeding birds and a wide range of raptors through the year. The site also supports several nationally scarce plants, and two vulnerable and two rare British Red Data Book invertebrate species have been recorded. *Ramsar Criterion 6* Populations of international importance in winter of Bewick's swan (694 individuals). Populations of international importance, with peak numbers during the spring and autumn passage periods of black-tailed godwit (482 individuals).
Nene Washes SAC	7.2km south-west of Site	The Nene Washes SAC (covering 83Ha) support a population 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.	Spined loach

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
The Ouse Washes SPA	12.5km South-west of the Site	The Ouse Washes (covering 2,494Ha) are located on one of the major tributary rivers of The Wash. The washes cover an extensive area of seasonally flooding wet grassland ('washland') lying between the Old and New Bedford Rivers, that act as a floodwater storage system during winter months. The cycle of winter storage of floodwaters from the river and traditional summer grazing by cattle, as well as hay production, have given rise to a mosaic of rough grassland and wet pasture, with a diverse and rich ditch fauna and flora. The washlands support important numbers of breeding and wintering waterbirds. In summer, there are important breeding numbers of several wader species, and in winter, the site holds very large numbers of swans, ducks and waders. During severe winter weather elsewhere, the Ouse Washes can attract waterbirds from other areas due to its relatively mild climate (compared with continental Europe) and abundant food resources. In winter, some wildfowl, especially swans, feed on agricultural land surrounding the SPA.	The qualifying features of the SPA are listed as follows (qualifying populations, obtained from the European Site Conservation Objectives for The Ouse Washes Special Protection Area[13] are shown in parenthesis). Internationally important assemblage of waterbirds in winter (64,428 birds), including: gadwall (342 individuals), pochard (3,135 individuals), tufted duck (986 individuals), mute swan (611 individuals), coot (2,201 individuals), cormorant (259 individuals) and ruff (137 individuals). Important assemblage of breeding birds. A diverse assemblage of the breeding migratory waders of lowland wet grassland, including oystercatcher, redshank, snipe, ruff, lapwing and black-tailed godwit. A diverse assemblage of breeding wildfowl including mute swan, shelduck, gadwall, teal, mallard, pintail, garganey, shoveler, pochard, tufted duck, moorhen and coot. Populations of international importance in winter for the following species: • Bewick's swan (4,639 individuals); • Whooper swan (963 individuals); • Wigeon (29,713 individuals); • Teal (3,085 individuals); • Pintail (1,755 individuals); • Shoveler (681 individuals); and • Hen harrier (12 individuals). Populations of international importance during the breeding season for the following species:

[13] [redacted] - Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
			• Gadwall (111 pairs); • Mallard (850 pairs); • Garganey (14 pairs); • Shoveler (155 pairs); • Ruff; and Black-tailed godwit (26 pairs).
The Ouse Washes Ramsar Site	12.5km South-west of the Site	The Ouse Washes Ramsar site (covering 2,469Ha) shares a common boundary with the Wash SPA over much of its area.	The qualifying ornithological features of the Ramsar Site are listed as follows (qualifying populations, taken from the Ouse Washes Ramsar Information Sheet are shown in parenthesis): *Ramsar Criterion 1* The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain. *Ramsar Criterion 2* The site supports several nationally scarce plants, including small water pepper (Polygonum minus), whorled water-milfoil (*Myriophyllum verticillatum*), greater water parsnip (*Sium latifolium*), river water dropwort (*Oenanthe fluviatilis*), fringed water-lily (*Nymphoides peltate*), long-stalked pondweed (*Potamogeton praelongus*), hair-like pondweed (*Potamogeton trichoides*), grass-wrack pondweed (*Potamogeton compressus*), tasteless water-pepper (*Polygonum mite*) and marsh dock (Rumex palustris). Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species: the scarce chaser dragonfly (Libellula fulva) and the rifle beetle (Oulimnius major). A diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
			Ramsar Criterion 5 Internationally important assemblage of waterfowl in winter comprising a total of 59,133 birds. *Ramsar Criterion 6* Populations of international importance in winter for the following species (Ramsar Criterion 6): • Bewick's swan (1,140 individuals); • Whooper swan (653 individuals); • Wigeon (22,630 individuals); • Gadwall (438 individuals); • Teal (3,384 individuals); • Pintail (2,108 individuals); and Shoveler (627 individuals).
The Ouse Washes SAC	12.5km South-west of the Site	The Ouse Washes SAC (covering 332.61Ha) support spined loach populations within the River Ouse catchment. The Counter Drain, with its clear water and abundant macrophytes, is particularly important, and a healthy population of spined loach is known to occur.	Spined loach.

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
The Wash SPA	17.3km north of Site	The Wash (covering 62,044Ha) is located on the east coast of England and is the largest estuarine system in the UK. It is fed by the rivers Witham, Welland, Nene and Great Ouse that drain much of the east Midlands of England. The Wash comprises very extensive saltmarshes, major intertidal banks of sand and mud, shallow waters and deep channels. The eastern end of the site includes low chalk cliffs at Hunstanton. In addition, on the eastern side, the gravel pits at Snettisham are an important high-tide roost for waders. The intertidal flats have a rich invertebrate fauna and colonising beds of Glasswort Salicornia spp. which are important food sources for the large numbers of waterbirds dependent on the site. The Wash is of outstanding importance for a large number of geese, ducks and waders, both in spring and autumn migration periods, as well as through the winter. In summer, the Wash is an important breeding area for terns and as a feeding area for Marsh Harrier that breed just outside the SPA.	The qualifying features of the SPA are listed as follows (qualifying populations, taken from European Site Conservation Objectives for The Wash Special Protection Area[14] are shown in parenthesis): Internationally important assemblage of waterfowl in winter, comprising a total of 400,367 birds. Populations of international importance in winter for the following species: • Bewick's swan (68 individuals); • Pink-footed goose (33,265 individuals); • Brent goose, dark-bellied (22,248 individuals); • Shelduck (15,981 individuals); • Wigeon (3,241 individuals); • Gadwall (71 individuals); • Pintail (923 individuals); • Common scoter (68 individuals); • Goldeneye (114 individuals); • Oystercatcher (25,651 individuals); • Grey plover (9,708 individuals); • Knot (186,892 individuals); • Sanderling (355 individuals); • Dunlin (35,620 individuals); • Black-tailed godwit (859 individuals); • Bar-tailed godwit (11,250 individuals); • Curlew (3,835 individuals); • Redshank (2,953 individuals); and

[14] [redacted] - Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
			• Turnstone (717 individuals). Populations of international importance during the breeding season for the following species: • Little tern (33 pairs); and • Common tern (152 pairs).
The Wash Ramsar Site	17.3km north of Site	The Wash Ramsar site (covering 62,212Ha) shares a common boundary with the Wash SPA over much of its area.	The qualifying ornithological features of the Ramsar site are listed as follows (qualifying populations, taken from the Wash Ramsar Information Sheet are shown in parenthesis): *Ramsar Criterion 1* The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels. *Ramsar Criterion 3* 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. *Ramsar Criterion 5* Internationally important assemblage of waterfowl in winter comprising a total of 292,541 birds. *Ramsar Criterion 6* Populations of international importance, with peak numbers in winter for the following species:

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
			• Pink-footed goose (29,099 individuals); • Brent goose, dark-bellied race (20,861 individuals); • Shelduck (9,746 individuals); • Pintail (431 individuals); • Dunlin (36,600 individuals); and • Bar-tailed godwit (16,549 individuals). Populations of international importance, with peak numbers during the spring and autumn passage periods for the following species: • Oystercatcher (15,616 individuals); • Grey plover (13,129 individuals); • Knot (68,987 individuals); • Sanderling (3,505 individuals); • Curlew (9,438 individuals); • Redshank (6,373 individuals); and • Turnstone (888 individuals).
The Wash & North Norfolk Coast SAC	17.3km north of Site	The Wash is the largest embayment in the UK. It is connected via sediment transfer systems to the north Norfolk coast. Together, the Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Subtidal communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar beds and areas of an abundant reef-	The qualifying features of the SAC site are listed as follows: • Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks • Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats • Coastal lagoons* • Large shallow inlets and bays • Reefs • Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

Site Name	Approximate distance from Proposed Development boundary	Site Description	Qualifying features
		building worm ('ross worm') Sabellaria spinulosa. The embayment supports a variety of mobile species, including a range of fish, otter *Lutra lutra* and common seal *Phoca vitulina.* The extensive intertidal flats provide ideal conditions for common seal breeding and hauling-out.	• Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub • Otter • Common seal

3.2.12 When considering the effects of the Proposed Development on European sites, consideration must be given to the effects on birds using land outwith the boundaries of the European sites as well as within. Such land can be deemed to be functionally linked to the European site, for example, Bewick's and Whooper swans feeding on the arable farmland surrounding the Ouse and Nene Washes SPAs (including land within the Study Area). Therefore, farmland in these locations found to be supporting qualifying interest features is considered to be FLL.

3.2.13 FLL in this context is defined as: Areas of land or sea outside of the boundary of a European site that may be important ecologically in supporting the populations for which the European site has been designated or classified pursuant to the Holohan ECJ ruling. Occasionally impacts to such habitats can have a significant effect upon the species interest of such sites, where these habitats are considered to be functionally linked to the European site[15].

3.2.14 The Wash SPA and Ramsar Site, Ouse Washes SPA and Ramsar and Nene Washes SPA and Ramsar Site will all have FLL (farmland grazed by qualifying species of water birds) associated with these European sites.

3.3 Ornithology baseline

3.3.1 This section summarises information obtained from the following sources:

- Winter bird surveys undertaken along the Grid Connection Corridor from December 2019 to March 2020 inclusive, the scope of which was agreed with PINS and Natural England in order to provide comprehensive coverage of potentially FLL (See Table 3.1) - these surveys covered the Grid Connection Corridor as proposed at the time of survey and therefore covered a wide area extending up to the Walpole Substation, the 2019/2020 Grid Connection Corridor. The survey data is considered valid[16] in support of the NSER and representative of the Grid Connection Survey Area;
- Bird records obtained from the Cambridgeshire & Peterborough Environmental Records Centre (CPERC) and Norfolk Biodiversity Information Service (NBIS); and
- Published literature: in particular, The National Bird Atlas 2007-11[17] and Norfolk Bird Atlas 1999-2007[18].

3.3.2 The scientific names for all bird species referred to in this report are provided in **Appendix A: Species Names**.

[15] Natural England (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. Natural England Commissioned Report NECR207, first published 29 February 2016.
[16] Natural England have previously confirmed (See Table 3.1) that the birds recorded are mainly not qualifying species of The Wash, Nene Washes and Ouse Washes internationally designated sites, and that the application area, (including the surrounding area), does not appear to be used regularly by them and can therefore be considered not functionally linked to these sites, and that a single year of data collection was sufficient.
[17] Balmer, D.E., Gillings, S., Caffrey, B.J., Downie, I.S., & Fuller, R.J. (2013). Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford.
[18] Taylor, M. and Marchant, J.H. (2011). The Norfolk Bird Atlas, Summer and Winter Distributions 1999-2007. British Trust for Ornithology, Thetford.

Desk study

3.3.3 The National Bird Atlas 2007-11, which mapped the occurrence and abundance of all species at a 10km National Grid square resolution returned records of Bewick's swan, whooper swan and pink-footed goose from the 10km squares in which the Grid Connection Corridor is located.

3.3.4 The Norfolk Bird Atlas 1999-2007 which mapped the occurrence of species in winter at a much finer resolution of 2x2km National Grid squares (tetrads) provided no records of these species within the Grid Connection Corridor.

3.3.5 Records were obtained from the Cambridgeshire & Peterborough Environmental Records Centre (CPERC)[19] and Norfolk Biodiversity Information Service (NBIS)[20] in March 2020, which included bird records within 2km of the Grid Connection Corridor.

3.3.6 The following records from within 2km of the Proposed Development of species that appear as qualifying (non-breeding) features of the Wash, Nene Washes and Ouse Washes SPAs and Ramsar site were provided for 2009-2016/17, as follows (number of records in parenthesis), with full details provided in **Table B.1** in **Appendix B: Desk Study Data**.

- Hen Harrier (3);
- Oystercatcher (2);
- Pink-footed Goose (2);
- Shelduck (2);
- Shoveler (2); and
- Whooper Swan (5).

Field Survey

3.3.7 A programme of winter bird surveys was completed from December 2019 to March 2020 inclusive of the Study Area which included for a Grid Connection Corridor potentially extending to the Walpole Substation. For the purposes of the NSER, this is known as the 2019/2020 Grid Connection Corridor. Details of the methods employed, and survey results are provided in **Appendix C: Winter Bird Survey Report 2019/2020**.

3.3.8 These surveys were undertaken to obtain data on the type and level of use of the Grid Connection Corridor as defined at that time (and its air space) by target bird species and included:

- Vantage Point (VP) survey: to determine the level of flight activity and identify any regularly used flight lines by SPA/Ramsar site qualifying and other target species; and
- Winter bird transect survey: to determine the type and level of use of the farmland within the Grid Connection Corridor by qualifying and other target species.

[19] CPERC bird data was provided up to and including 2017.
[20] NBIS bird data was provided up to and including 2016.

3.3.9 Results from the winter bird surveys 2019/20 provided no evidence to indicate that the farmland within the 2019/2020 Grid Connection Corridor (as defined at that time and which included and extended beyond the Grid Connection Corridor shown on **Figure 2.2 Grid Connection Corridor**) is used on a regular basis by SPA/Ramsar Site qualifying features for foraging or resting; or is used as a regular flight path by these species. A summary of the results from the surveys is provided as follows:

Vantage Point Survey

3.3.10 VP watches were conducted in accordance with SNH guidance[21] in order to ascertain the level of flight activity by target species across the 2019/2020 Grid Connection Corridor as defined at that time and to identify any regularly used flight lines. This method focuses on identifying the flight paths of target species such as swans, geese and scarce birds of prey which are easily detectable at 2km and allows any regularly used flight lines to be identified.

3.3.11 A total of 36-hours of VP observation was completed from each of VPs 1 and 2 (covering the Northbound route - see **Appendix C: Winter Bird Survey Report 2019/2020**, from December 2019 to March 2020 inclusive. A total 21-hours of VP observation was completed from VP3 (covering the Eastbound route), from 9 January to 19 February 2020 after which the Eastbound route was not taken forward. Part of the 2km viewshed for VP3 includes the 2019/2020 Grid Connection Corridor for the Northbound route.

3.3.12 The following qualifying species of the European sites listed in **Table 3.2 European Sites Included for Assessment** were recorded within the 2019/2020 Grid Connection Corridor for the northbound route during the VP surveys (no species were recorded within the final Grid Connection Corridor that is, the corridor within which the Grid Connection forming part of the Order limits is now located):

- Whooper swan: a single flight of six birds was recorded from VP3 flying south-east, through the 2019/2020 Grid Connection Corridor for the northbound route (approximately 750m to the southern east of the final Grid Connection Corridor) on 21 January; and
- Redshank: a single flight of one bird from VP2 (approximately 1,250m to the north-east of the final Grid Connection Corridor) on 27 February 2020.

3.3.13 In addition, a flock of 150 pink-footed geese were seen to land in fields, 1-2km north of the 2019/2020 Grid Connection Corridor (approximately 9.5km to the north of the final Grid Connection Corridor) on 9 January 2020.

3.3.14 Two further species listed in the winter waterbird assemblage qualification for the Ouse Washes SPA were also recorded, as follows:

- Mute swan: a single flight of two birds from VP1 (approximately 4.5km to the north-east of the Grid Connection Corridor) on 17 January 2020; and
- Cormorant: three flights of single birds through the 2019/2020 Grid Connection Corridor for the northbound route, involving two flights from VP3 (100m and

[21] Scottish Natural Heritage (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. 2017. Available online at http://www.snh.gov.uk/docs/C278917.pdf [Accessed September 2020].

500m north-east of the Grid Connection Corridor) and one from VP2 (approximately 250m to the north-east of the final Grid Connection Corridor).

Winter Bird Transect Survey

3.3.15 Once monthly Winter Bird Transect Surveys were completed from December 2019 to March 2020 inclusive along the 2019/2020 Grid Connection Corridor.

3.3.16 One record of a qualifying species of a European site (listed in **Table 3.2 – European Sites Included for Assessment**) was recorded approximately 500m to the north of the final Grid Connection Corridor, involving 20 teal feeding in a ditch on 28 January 2020.

3.4 Potential Impact Pathways

3.4.1 This step identifies whether impacts of the Proposed Development (during construction, operation and decommissioning) described in Step 2 (**Section 2**) have the potential to result in LSE on the qualifying features of these European sites.

3.4.2 The main mechanisms by which the Proposed Development could affect European sites are through either direct or indirect impact pathways, and described as follows:

Construction

3.4.3 **Construction activity including use of plant and presence of workforce**. The production of aural and visual stimuli due to noise and vibration and movement of construction vehicles and operatives has the potential to result in disturbance/displacement of birds from SPA/Ramsar Site FLL (if present) resulting in a reduction of energy intake and/or an increase in energy expenditure leading to a reduction in survival or productivity rates.

3.4.4 **Use of construction vehicles and generator sets**. The deposition of oxides of nitrogen and concentrations of NOx in air from vehicle emissions has the potential to result in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats and species (as qualifying features of SACs and SPAs).

3.4.5 **Dust creation during construction activity**. The deposition of dust has the potential to result in loss of or damage to terrestrial or freshwater environments from smothering or enrichment resulting in effects on habitats and species (as qualifying features of SACs and SPAs).

3.4.6 **Use of chemicals (e.g. fuels, solvents etc.) and the liberation of fine material (e.g. through excavation).** Run-off of the above has the potential to result in damage or degradation of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats and species (as qualifying features of SACs and SPAs).

Operation

3.4.7 **Use of plant and presence of workforce**. The production of aural and visual stimuli due to noise and vibration and movement of vehicles and operatives has the potential to result in disturbance/displacement of birds from functionally linked land (qualifying features of SPAs/Ramsar Sites) resulting in a reduction of energy intake and/or an increase in energy expenditure leading to a reduction in survival or productivity rates.

3.4.8 **Emissions from the EfW CHP Facility**. The deposition of oxides of nitrogen and NOx in air from the facility have the potential to result in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats (as qualifying features of SACs) and the habitats on which birds depend (as qualifying features of SPAs).

3.4.9 **Vehicles (along highway routes to access the Proposed Development)**. The deposition of oxides of nitrogen from engine exhausts derived from vehicles moving to and from the Proposed Development has the potential to result in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats and species (as qualifying features of SACs, SPAs and Ramsar Sites).

Decommissioning

3.4.10 The environmental changes and effects due to the decommissioning phase have been considered to be the same as for the construction phase.

3.5 High Level Screening

3.5.1 **Table 3.3** - **High Level Screening Table of Environmental Changes and Effects of the Proposed Development** provides a high-level screening exercise of each potential environmental change and effect due to the Proposed Development during construction/decommissioning and operation, and its geographic extent. Environmental changes and effects for which no European sites are within their geographic extent are screened out for further consideration within this Non-Significant Effects Report (in **Section 4**).

Table 3.3 High Level Screening Table of Environmental Changes and Effects of the Proposed Development

Activity	Potential Change	Potential Effect	Geographic Extent	Rationale	Screened in	European sites potentially affected
Construction (and Decommissioning) Phase						
Construction activity including use of plant and presence of workforce.	Production of aural and visual stimuli due to noise and vibration and movement of construction vehicles and engineers.	Disturbance/displacement of birds (qualifying features of SPA/Ramsar Sites) resulting in a reduction of energy intake and/or an increase in energy expenditure leading to a reduction in survival or productivity rates.	Within 500m of the Order limits. This is a precautionary distance based on information reported on disturbance in the literature (e.g., Cutts, Phelps & Burdon 200922, Ruddock & Whitfield 200723).	The are no European sites within 500m of the Order limits. Potential FLL is present within 500m of the Order limits.	Yes	Nene Washes SPA & Ramsar Site Ouse Washes SPA & Ramsar Site The Wash SPA & Ramsar Site
Use of chemicals (e.g. fuels, solvents etc.) and the liberation of fine material (e.g. through excavation).	Loss of pollutants or fine material from the Site due to surface water flows during rainfall events.	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as qualifying features of SACs and SPAs).	Within 50m of the Order limits. This geographic parameter is based on professional judgement following a review of the Environment Agency Pollution Prevention Guidance PPG524 (which suggests control of impacts can be managed within a distance of 50m),	The are no European sites within 50m of the Order limits. Potential FLL within 50m of the Order limits.	Yes	Nene Washes SPA & Ramsar Site Ouse Washes SPA & Ramsar Site The Wash SPA & Ramsar Site

[22] Cutts, N., Phelps, A. & Burdon, D. (2009). Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.
[23] Ruddock, M. & Whitfield, D. P. (2007). A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage. [redacted].
[24] Environment Agency (2007). Pollution Prevention Guidelines: Works and maintenance in or near water: PPG5, Environment Agency, October 2007.

Activity	Potential Change	Potential Effect	Geographic Extent	Rationale	Screened in	European sites potentially affected
Use of construction vehicles and generator sets.	Deposition of oxides of nitrogen and NOx in air from engine exhausts.	Deposition of oxides of nitrogen and concentrations of NOx in air from vehicle emissions resulting in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats and species (as qualifying features of SACs and SPAs).	Within **200m** of the Order limits and/or wider road network. This geographic parameter is based on the Institute of Air Quality Management (IAQM) - A guide to the assessment of air quality impacts on designated nature conservation sites[25].	The are no European sites within 200m of the Order limits. Potential FLL is present within 200m of the Order limits but comprises arable alongside the Grid Connection which is not vulnerable to air pollution.	**No**	None
Dust creation during construction activity	Deposition of dust in areas neighbouring the Site.	Deposition of dust resulting in loss of or damage to terrestrial or freshwater environments from smothering or enrichment resulting in effects on habitats and species (as qualifying features of SACs) and birds (as qualifying features of SPAs)	Within **50m** of the Order limits, and **500**m of the EfW CHP Facility Site entrance. IAQM guidance[6] is to assess ecological receptors which are within 50m of the construction Order limits and within 500m of the EfW CHP Facility Site entrance.	The are no European sites within 500m of the Order limits. Potential FLL is present within 500m of the Order limits used for construction but comprises arable farmland which is not vulnerable to the effects of dust deposition.	**No**	None
Operational Phase						

[25] Holman *et al* (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.

Activity	Potential Change	Potential Effect	Geographic Extent	Rationale	Screened in	European sites potentially affected
Operational activities (including presence of workforce)	Production of aural and visual stimuli due to noise and vibration from machinery and their operatives during operational activities.	Disturbance/displacement of birds (qualifying features of SPA) resulting in a reduction of energy intake and/or an increase in energy expenditure leading to a reduction in survival or productivity rates.	Within **500m** of the Order limits. This is a precautionary distance based on information reported on disturbance in the literature (e.g. Cutts, Phelps & Burdon 2009[14], Ruddock & Whitfield 2007[15]).	Potential FLL is present within 500m of the Order limits.	**Yes**	Nene Washes SPA & Ramsar Site Ouse Washes SPA & Ramsar Site The Wash SPA & Ramsar Site
Operational activities (emissions from the facility)	Deposition of oxides of nitrogen and NOx in air from the facility.	Deposition of oxides of nitrogen and concentrations of NOx in air from the facility resulting in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats (as qualifying features of SACs) and the habitats on which birds depend (as qualifying features of SPAs).	Within 15km of the emission source. Following the EA's "Air emissions risk assessment for your environmental permit guidance"[6] as the EfW CHP Facility incorporates a combustion activity with a thermal input exceeding 50 MW. The following sites lie outside the 15km buffer – The Wash SPA, The Wash Ramsar and The Wash and North Norfolk Coast SAC.	European sites with sensitive habitats (such as wetlands and wet grassland) are located within 15km of the chimney emissions source.	**Yes**	Nene Washes SAC, SPA & Ramsar Site Ouse Washes SAC, SPA & Ramsar Site
				European sites with sensitive habitats (such as wetlands, saltmarsh and wet grassland) are located outside 15km of the chimney emissions source.	**No** **No**	The Wash SPA & Ramsar Site The Wash and North Norfolk Coast Special Area of Conservation (SAC)
				Potential FLL comprising arable farmland is present within 500m of the order Limits.	**Yes** **Yes**	Nene Washes, SPA & Ramsar Site Ouse Washes SPA & Ramsar Site

Activity	Potential Change	Potential Effect	Geographic Extent	Rationale	Screened in	European sites potentially affected
Vehicles (along highway routes to access the Proposed Development)	Deposition of oxides of nitrogen from engine exhausts.	Deposition of oxides of nitrogen from vehicle emissions resulting in enrichment and/or acidification of the environment leading to alteration of the plant community through changes in baseline conditions resulting in effects on habitats and species (as qualifying features of SACs and SPAs)	European sites within 200m of the Main Development Site boundary and/or major road links with it (the wider road network). This geographic parameter is Based on the Institute of Air Quality Management (IAQM) - A guide to the assessment of air quality impacts on designated nature conservation sites[26].	There are European sites within 200m of the A47 which is a major road link to the Order limits.	**Yes**	Nene Washes SAC, SPA & Ramsar Site Ouse Washes SAC, SPA & Ramsar Site

3.6 In combination effects

3.6.1 As part of the HRA screening process, information on other projects and plans that have been subject to a HRA in relation to the European designated sites being assessed is required to allow an assessment of any 'in-combination' effects of the Proposed Development with other schemes that may affect the European sites.

3.6.2 The screening assessment provided within this HRA takes into account the CJEU ruling on 'People over Wind'. It has also adopted a strong precautionary principle; if a pathway of effect is established between the Proposed Development and a European Site, then that site is taken through to appropriate assessment. This ensures all effects are captured, including *de minimis* effects.

3.6.3 Only those qualifying features and European sites where it can be demonstrated that there is no likelihood of a LSE occurring have been screened out.

3.6.4 Therefore, due to the precautionary approach taken to the screening process and identification of LSEs for the Proposed Development, in-combination effects will only need to be considered if it is found that the Proposed Development is likely to result in LSE on the European sites being considered and detailed within the HRA Screening Assessment.

4. HRA Screening Step 4: Assessing Significance of Effects on European Sites

4.1 Introduction

4.1.1 This step identifies whether the Proposed Development described in Step 2 (**Section 2**) and potential effects taken forward for further consideration in Step 4 (in **Table 3.3 - High Level Screening of Environmental Changes and Effects of the Proposed Development**[26]) have the potential to cause LSE on the qualifying features of those European Sites identified in Step 3 (**Table 3.2 - European Sites Included for Assessment**). The potential effects taken forward for further consideration are:

- Construction and Decommissioning:
  - The effects of disturbance (and resulting displacement) from operatives and their machinery on potential FLL associated with the Wash SPA/Ramsar Site, Nene Washes SPA/Ramsar Site and Ouse Washes SPA/Ramsar Site; and
  - The effects of pollution on potential FLL via use of chemicals (e.g., fuels, solvents etc.) and the liberation of fine material (e.g., through excavation).
- Operation:
  - The effects of disturbance/displacement from operatives and their machinery on potential FLL associated with the Wash SPA/Ramsar Site, Nene Washes SPA/Ramsar Site and Ouse Washes SPA/Ramsar Site;
  - The effects of displacement from potential FLL associated with the Wash SPA/Ramsar Site, Nene Washes SPA/Ramsar Site and Ouse Washes SPA/Ramsar Site;
  - The effects of air pollution (from the EfW CHP Facility and vehicles) on qualifying and supporting habitats and species within the Nene Washes SAC/SPA/Ramsar Site and Ouse Washes SAC/SPA/Ramsar Site, and the habitats that qualifying species depend upon.

4.1.2 To determine whether the Proposed Development is likely to have a significant effect on the European sites, the likely impacts in respect of each of the SPA and SAC conservation objectives (hereby also used to determine effects on the Ramsar Sites), based on the evidence provided in **Sections 4** and **5**, are considered below in relation to the qualifying features.

[26] Three sites identified in **Table 3.3** (The Wash SPA, the Wash Ramsar and The Wash and North Norfolk Coast SAC) lie outside the 15km emissions source ZOI and are therefore not taken through for further assessment.

4.2 Effects of disturbance and resultant displacement on qualifying bird species and potential FLL

4.2.1 There is the potential for qualifying bird species of the Wash, Ouse Washes and Nene Washes SPAs and Ramsar Sites to be deterred from using the farmland surrounding the Order limits for foraging and roosting, due to disturbance during construction and operation of the Proposed Development (due to noise, vehicles, machinery and the presence of operatives).

4.2.2 The majority of bird species which form qualifying features of the SPAs and Ramsar Sites listed in **Table 3.2 - European Sites Included for Assessment** are species associated with intertidal and near-shore marine habitats. These species are therefore very unlikely to utilise the terrestrial habitats (farmland, woodland, hedgerows, ditches) within 500m of the Order limits (including the Grid Connection Corridor). Based on the distributions and known habitat preferences of the species[12], the qualifying species that could potentially utilise the Site and 500m buffer and any associated FLL include: whooper swan, Bewick's swan, pink-footed goose, teal, curlew, redshank and hen harrier.

4.2.3 Further consideration is given below, to species recorded within potential FLL considered to be most vulnerable to disturbance from the Proposed Development: pink-footed goose, Bewick's swan and whooper swan.

4.2.4 Wintering whooper and Bewick's swans fly out to arable fields surrounding the Ouse Washes at dawn to feed on sugar beet tops, potatoes and winter stubbles, returning at dusk to roost on the washes within the SPA[12]. In Cambridgeshire, the swans are also noted as feeding on grassland within the Nene Washes SPA, but also further afield in fields of oilseed rape as well as the crops mentioned previously[27].

4.2.5 Wintering pink-footed geese favour large, open fields with few hedgerows, flying from their coastal roost sites after dawn to feed on grassland, sugar beet tops, cereals and stubbles[12].

4.2.6 The farmland within the within 500m of the Order limits comprises a mosaic of fields given over to arable crops (primarily oilseed rape, winter cereals and sugar beet) and grassland (rough ungrazed, as well as grazed by horses), interspersed by roads bounded by hedgerows and belts of trees. As such, much of the farmland does not provide the open and undisturbed character (many of the fields are bounded by orchards and other trees) that these geese and swan species require in order to detect predators at a distance. This open character is very much evident in the farmland surrounding the Ouse and Nene Washes where much of the Bewick's and whooper swan spend the winter.

4.2.7 Results from the desk study and winter bird surveys in 2019/20 (**Appendix C: Winter Bird Survey Report 2019/20**) (the study area for which was the larger 2019/2020 Grid Connection Corridor) provide no evidence to indicate that farmland within 500m of the Order limits is utilised on a regular basis by any of the aforementioned qualifying bird species or constitutes FLL associated with any European Site.

[27] Bacon, L., Cooper, A. and Venables, H. (2013). Cambridgeshire Bird Atlas 2007-2011. Cambridgeshire Bird Club.

4.2.8 Extreme weather conditions can force the birds to find alternative areas for foraging and roosting. Weather conditions during the period when the winter bird surveys were undertaken (December 2019 to March 2020) were generally 'milder' than the average for recent years. **Table 4.1 - Cambridge Weather Data** shows the Met Office data for Cambridge (the closest data station from the Order limits) for 2010-2020[28] compared with that each month during the survey period.

4.2.9 Temperatures were overall higher in December 2019 and January and February 2020 than the 10-year average, with March being closer to the average. Days of frost were lower during the survey period than the 10-year average.

4.2.10 Given the warmer than average temperatures recorded during the survey period and predicted climatic change (warming), it is reasonable to conclude that the levels of use along the Grid Connection Corridor by qualifying species of swans and geese noted in winter 2019/20 will be representative of future years, including the period when the Proposed Development is in operation.

Table 4.1 Cambridge Weather Data 2010-2020

	Period	Dec	Jan	Feb	Mar
Mean day maximum temperature (Degrees Celsius)	During survey	9.0	9.1	10.2	11.1
	10yr Mean	8.7	7.5	8.3	11.1
Mean day minimum temperature (Degrees Celsius)	Survey	3.0	3.9	3.2	2.5
	10yr Mean	2.8	1.8	1.9	2.8
Days of air frost	Survey	6.0	4.0	4.0	4.0
	10yr Mean	7.3	9.5	8.1	5.7

4.2.11 To conclude, the farmland within 500m of the Order limits provides suboptimal conditions for foraging pink-footed geese, whooper and Bewick's swans and therefore does not provide FLL to the SPA/Ramsar Site populations of these species. The effects of disturbance from the construction and operation of the Proposed Development would therefore be negligible, with no LSE predicted.

4.2.12 The Proposed Development would have no LSE on the following Conservation Objectives[29] for the qualifying bird features of the Ouse Washes, Nene Washes and The Wash SPAs and Ramsar Sites:

"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features;*

[28] Data obtained from https://www.metoffice.gov.uk/pub/data/weather/uk/climate/stationdata/cambridgedata.txt, accessed 23 September 2020.
[29] Obtained from the Natural England website: [redacted], accessed 1 October 2020.

- *The structure and function of the habitats of the qualifying features;*
- *The supporting processes on which the habitats of the qualifying features rely;*
- *The population of each of the qualifying features; and*
- *The distribution of the qualifying features within the site*."

4.3 Effects of air pollution on qualifying habitats

4.3.1 SPAs, SACs and Ramsar Sites within 15km of the Order limits are considered in the assessment of chimney emissions and road traffic dispersion modelling. These included:

- Nene Washes SPA/SAC and Ramsar Sites (7.2km south-west); and
- Ouse Washes SPA/SAC and Ramsar Sites (12.5km south-east).

Assessment of concentrations of NOx, NH_3, SO_2 and HF, and nitrogen and acid deposition rates

4.3.2 The emissions from the two chimneys and road traffic dispersion models were used to calculate the incremental contributions to baseline concentrations of NO_X, NH_3, SO_2 and HF, in addition to nitrogen and acid deposition rates, at the European sites detailed above. These predictions were compared against critical levels and critical loads provided by APIS.

4.3.3 **Tables 4.2** - **Impact to Air Quality at Ouse Washes SPA/SAC/Ramsar** and **Table 4.5** - **Nitrogen Deposition at Nene Washes SPA/SAC/Ramsar** present predicted pollutant concentrations compared to critical levels and deposition compared to critical loads, respectively, at Ouse Washes SPA/SAC/Ramsar Site and Nene Washes SPA/SAC/Ramsar Site. All long-term averages are predicted to be below 1%, and short-term averages below 10%, of the critical load. In addition, both nitrogen and acid deposition process contribution (PC) are predicted to contribute less than 1% of the critical load. Further details are provided in the **Air Quality Technical Report (Volume 6.4).**

Table 4.2 Impact to Air Quality at Ouse Washes SPA/SAC/Ramsar

Pollutant	Averaging Period	Critical level (µg m-3)	Maximum PC (µg m-3)	Maximum PC as a % of critical level
NOX	Annual	30	0	0%
NOX	Daily	200	0.6	0%
SO_2 (ecological receptors)	Annual	20	0.0	0%
HF (ecological receptors)	24-hour	5	0.0	0%
HF (ecological receptors)	Weekly	0.5	0.0	0%
NH_3 (ecological receptors)	Annual	3	0.0	0%

Pollutant	Averaging Period	Critical level (µg m-3)	Maximum PC (µg m-3)	Maximum PC as a % of critical level

Table 4.3 Impact to Air Quality at Nene Washes SPA/SAC/Ramsar

Pollutant	Averaging Period	Critical level (µg m-3)	Maximum PC (µg m-3)	Maximum PC as a % of critical level
NOx	Annual	30	0.1	0%
NOx	Daily	200	1.4	1%
SO_2 (ecological receptors)	Annual	20	0.0	0%
HF (ecological receptors)	24-hour	5	0.0	0%
HF (ecological receptors)	Weekly	0.5	0.0	0%
NH_3 (ecological receptors)	Annual	3	0.0	0%

Table 4.4 Nitrogen Deposition at Ouse Washes SPA/SAC/Ramsar

	Critical Load	Maximum N PC	Maximum S PC	Maximum PC as a % of CL
Nitrogen deposition	20 kg N/ha/yr	0.02 kg N/ha/yr	-	0%
Acid deposition	1.3 kq N/ha/yr	0.001 kq N/ha/yr	0.001 kq S/ha/yr	0%

Table 4.5 Nitrogen Deposition at Nene Washes SPA/SAC/Ramsar

	Critical Load	Maximum N PC	Maximum S PC	Maximum PC as a % of CL
Nitrogen deposition	20 kg N/ha/yr	0.03 kg N/ha/yr	-	0%
Acid deposition	1.3 kq N/ha/yr	0.002 kq N/ha/r	0.002 kq S/ha/yr	0%

4.3.4 With regard to Nene Washes and Ouse Washes SPA/SAC/Ramsar Sites for this assessment and in line with the EA guidance, effects may be screened out as insignificant and do not require further assessment if the long-term PC is less than 1%, or the short-term PC is less than 10%, of the air quality assessment level

(AQAL). Therefore, no LSE are predicted for effects of air pollution on qualifying habitats.

Assessment of In-combination effects

4.3.5 The air quality assessment concluded that impacts on Nene Washes SAC, SPA and Ramsar and the Ouse Washes SAC, SPA and Ramsar from the chimneys and traffic emissions associated with the Proposed Development are negligible. Potential in combination effects on these European sites from emissions from other relevant developments, as presented in **Table 18.9 - Short listed projects for Cumulative Effects Assessment** of **Chapter 18: Cumulative Effects Assessment** of the ES, was also undertaken.

4.3.6 In the assessment of traffic emissions, the future year traffic data included traffic growth associated with local plan allocations, i.e., developments 48-55 of Table 18.9 in the ES **Chapter 18: Cumulative Effects Assessment**. The air quality assessment has therefore also considered in-combination effects from traffic emissions. The only committed development that is associated with significant combustion emissions and not included in Table 18.9 is the Boston Alternative Energy Facility, located 34km to the north of Wisbech.

4.3.7 The Boston facility is therefore outside the 15km stipulated by the EA guidance when defining the spatial extend of an air quality assessment - the Boston Alternative Energy Facility is located approximately 6km to the north of The Wash SPA/SAC/Ramsar at its nearest point and the Proposed Development is located 16km south-west of The Wash SPA/SAC/Ramsar (the Boston facility is also located approximately 40km to the north of The Nene Washes SPA/SAC/Ramsar; and 48km north of the Ouse Washes SPA/SAC/Ramsar). When considering nitrogen deposition the Proposed Development process contribution is 0.1 % of the critical load, whereas the Boston facility in combination impact on nitrogen deposition (Table 14-30 Operational Phase Ecological Impacts – The Wash SPA/SAC/Ramsar, Boston Alternative Energy Facility – Environmental Statement, Chapter 14 Air Quality) is 2.1% of the critical load, predicted at the area of The Wash SPA/SAC/Ramsar closest to the Boston facility (Figure 14.15, Boston Alternative Energy Facility – Environmental Statement, Chapter 14 Air Quality**)**. It is reasonable to conclude therefore that it is unlikely that the areas of the Wash SPA/SAC/Ramsar, Nene Washes SAC/SPA/Ramsar and Ouse Washes SAC/SPA/Ramsar experiencing the maximum impact from the Boston development will also be affected from emissions from the Proposed Development. In summary, in-combination effects on European sites from emissions to air, including associated nitrogen and acid deposition, are considered negligible.

4.3.8 On the basis of available evidence, LSEs on the SPA/Ramsar can be discounted and as such there will be no threat to the ability of the European site to achieve its conservation objectives or maintain its integrity as a result of the Proposed Development, in combination with other committed developments based on the modelled scenarios.

4.4 Conclusion

4.4.1 A summary of the conclusions set out in **Section 4** is provided in **Table 4.6 - European Sites, Qualifying Features and Potential for LSE**. Each European site and its qualifying features are listed with a screening rationale on whether an LSE is predicted.

Table 4.6 European Sites, Qualifying Features and Potential for LSE

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
Nene Washes SPA	Populations of international importance in winter of Bewick's swan, wigeon, gadwall, teal, pintail and shoveler. Populations of international importance during the breeding season of gadwall, garganey, shoveler, black-tailed godwit.	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any Nene Washes SPA qualifying features associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects. Air pollution Effects on supporting habitats within the SPA site may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, **(see Section 4.4**). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No
Nene Washes Ramsar Site	Ramsar Criterion 2 An important assemblage of nationally rare breeding birds and a wide range of raptors through the year. The site also supports several nationally scarce plants, and two vulnerable and two rare British Red Data Book invertebrate species have been recorded. Ramsar Criterion 6 Populations of international importance in winter of Bewick's swan (694 individuals).	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Nene Washes Ramsar Site associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects. Air pollution Effects on supporting habitats within the Ramsar site may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, (see Section 4.4). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
	Populations of international importance, with peak numbers during the spring and autumn passage periods of black-tailed godwit (482 individuals).		
Nene Washes SAC	Spined loach	Air pollution Effects on habitats within the SAC that spined loach depend on may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, (see Section 4.4). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No
The Ouse Washes SPA	Internationally important assemblage of waterbirds in winter (64,428 birds). Important assemblage of breeding birds. A diverse assemblage of the breeding migratory waders of lowland wet grassland, including oystercatcher, redshank, snipe, ruff, lapwing and black-tailed godwit. A diverse assemblage of breeding wildfowl including mute swan, shelduck, gadwall, teal, mallard, pintail, garganey, shoveler, pochard, tufted duck, moorhen and coot.	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any Ouse Washes SPA qualifying features associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects. Air pollution Effects on supporting habitats within the SPA site may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, (see Section 4.4). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
	Populations of international importance in winter for the following species: Bewick's swan, whooper swan, wigeon, teal, pintail, shoveler and hen harrier. Populations of international importance during the breeding season for the following species: gadwall, mallard, garganey, shoveler, ruff and black-tailed godwit.		
The Ouse Washes Ramsar Site	Ramsar Criterion 1 The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain. Ramsar Criterion 2 The site supports several nationally scarce plants. Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species. A diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland. Ramsar Criterion 5	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Ouse Washes Ramsar Site associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects. Air pollution Effects on supporting habitats within the Ramsar site may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, (see Section 4.4). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
	Internationally important assemblage of waterfowl in winter comprising a total of 59,133 birds. Ramsar Criterion 6 Populations of international importance in winter for the following species: Bewick's swan, whooper swan, wigeon, gadwall, teal, pintail and shoveler.		
The Ouse Washes SAC	Spined loach	Air pollution Effects on habitats within the SAC that spined loach depends may be screened out as insignificant and do not require further assessment as the long-term PC is less than 1%, (see Section 4.4). No Likely Significant Effect is predicted as a result of the Proposed Development either alone or in combination with other plans and projects.	No
The Wash SPA	Internationally important assemblage of waterfowl in winter, comprising a total of 400,367 birds. Populations of international importance in winter for the following species: Bewick's swan, pink-footed goose, brent goose, shelduck, wigeon, gadwall, pintail, common scoter, goldeneye, oystercatcher, grey plover, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit,	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any of the Wash SPA qualifying features associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects.	No

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
	curlew, redshank and turnstone. Populations of international importance during the breeding season for the following species: little tern and common tern.		
The Wash Ramsar Site	Ramsar Criterion 1 The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels. Ramsar Criterion 3 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. Ramsar Criterion 5 Internationally important	Disturbance and resultant displacement There is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and therefore does not form FLL. Therefore, there will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Wash Ramsar Site associated with disturbance and resultant displacement as a result of the Proposed Development either alone or in combination with other plans and projects.	No

Site Name	Qualifying Feature	Screening Rationale	Potential for LSE
	assemblage of waterfowl in winter comprising a total of 292,541 birds. Ramsar Criterion 6 Populations of international importance in winter of pink-footed goose, dark-bellied brent goose, shelduck, pintail, dunlin and bar-tailed godwit. Populations of international importance, with peak numbers during the spring and autumn passage periods for the following species: oystercatcher, grey plover, knot, sanderling, curlew, redshank and turnstone.		

5. Potential LSE on European Sites

5.1.1 Stage 1 of the HRA process, the four-part screening, identifies the likely impacts upon a European Site of a project or plan, either alone or 'in combination' with other projects or plans, and considers whether these impacts are likely to be significant.

5.1.2 The screening assessment provided within this HRA takes into account the CJEU ruling on ‘People over Wind’. It has also adopted a strong precautionary principle; if a pathway of effect is established between the Proposed Development and a European Site, then that site is taken through to appropriate assessment. This ensures all effects are captured, including *de minimis* effects.

5.1.3 Only those qualifying features and European sites where it can be demonstrated that there is no likelihood of a significant effect occurring have been screened out.

5.1.4 Therefore, due to the precautionary approach taken to the screening process and identification of LSEs for the Proposed Development, in-combination effects will only need to be considered if it is found that the proposed development is likely to result in LSE on the European sites being considered and detailed within the HRA Report.

5.1.5 Based on the evidence set out in **Sections 3** and **4** and **Table 4.6 - European Sites, Qualifying Features and Potential for LSE**, there is no potential for LSEs to occur in relation to potential effects associated with collision, disturbance and displacement and air pollution on any of the qualifying features of the following European sites:

- Nene Washes SPA, SAC and Ramsar Site;
- Ouse Washes SPA, SAC and Ramsar Site; and
- The Wash SPA and Ramsar Site.

5.1.6 As there are no LSEs for any qualifying features of any European sites, either alone or in combination with other plans or projects, there is no requirement for Stage 2 of HRA, Appropriate Assessment, to be undertaken on this basis.

Appendix A
Species Names

Table A.1 Species Names

Species English (common) Name	Species, Scientific Name
Mute swan	*Cygnus olor*
Bewick's swan	*Cygnus columbianus*
Whooper swan	*Cygnus cygnus*
Pink-footed goose	*Anser brachyrhynchus*
Brent goose (dark-bellied)	*Branta bernicla bernicla*
Shelduck	*Tadorna tadorna*
Wigeon	*Anas penelope*
Gadwall	*Anas strepera*
Teal	*Anas crecca*
Mallard	*Anas platyrhynchos*
Pintail	*Anas acuta*
Garganey	*Anas querquedula*
Shoveler	*Anas clypeata*
Pochard	*Aythya ferina*
Tufted duck	*Aythya fuligula*
Common scoter	*Melanitta nigra*
Goldeneye	*Bucephala clangula*
Cormorant	*Phalacrocorax carbo*
Hen harrier	*Circus cyaneus*
Moorhen	*Gallinula chloropus*
Coot	*Fulica atra*
Oystercatcher	*Haematopus ostralegus*
Grey plover	*Pluvialis squatarola*
Lapwing	*Vanellus vanellus*
Knot	*Calidris canutus*

Species English (common) Name	Species, Scientific Name
Sanderling	*Calidris alba*
Dunlin	*Calidris alpina*
Ruff	*Philomachus pugnax*
Snipe	*Gallinago gallinago*
Black-tailed godwit	*Limosa limosa*
Bar-tailed godwit	*Limosa lapponica*
Curlew	*Numenius arquata*
Redshank	*Tringa totanus*
Turnstone	*Arenaria interpres*
Little tern	*Sternula albifrons*
Common tern	*Sterna hirundo*

Appendix B Desk Study Data

Table B.1 Records of SPA/Ramsar qualifying species within 2km of the Proposed Development

Species	Location	Grid Ref.	Precision	Date	Number of individuals	Notes
Hen Harrier	Wisbech	TF4511	1km	01/04/2013	1	Male over arable, just north of town near R. Nene
Hen Harrier	West Walton	TF4512		04/01/2015	1	Male
Hen Harrier	West Walton	TF4512		19/01/2014	1	Male
Oystercatcher	West Walton	TF4512		25/03/2016	21	
Oystercatcher	West Walton	TF4512		03/01/2009		
Pink-footed Goose	West Walton	TF4512		16/10/2010	95	150 on 24/10
Pink-footed Goose	West Walton	TF4512		03/01/2016	300	300 feeding on wheat field
Shelduck	West Walton	TF4512		24/12/2009		
Shelduck	West Walton	TF4512		24/12/2009		
Shoveler	West Walton	TF4512		23/03/2016	2	Present until 7 April pair Marsh Pools
Whooper Swan	Elm	TF4606	1km	06/11/2009	9	Flying east
Whooper Swan	Elm	TF4606	1km	25/02/2011	30	Flying north, 7:20 am
Whooper Swan	River Nene, Wisbech	TF4511	1km	21/10/2010	12	Flew S down River Nene & over Wisbech

Species	Location	Grid Ref.	Precision	Date	Number of individuals	Notes
Whooper Swan	Wisbech	TF4510	1km	14/11/2010	4	Adults flew S over Harecroft Road
Whooper Swan	Wisbech	TF4510	1km	07/03/2011	230	In four flocks, flew N in early morning

Appendix C
Winter Bird Survey Report 2019/20

Medworth Energy from Waste
Combined Heat and Power Facility

PINS ref. EN010110
The Planning Act 2008
The Infrastructure Planning
(Application Prescribed Forms & Procedures)
Regulations 2009

Winter Bird Survey Report 2019/2020

July 2020

Revision 1
APFP Regulations 5(2)(q)
Volume 0001
Document ref. 41310-WOOD-XX-XX-TN-OE-0001_S3_1

We inspire with energy.

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Document revisions

No.	Details	Date
1	Draft Report	17 June 2020
2	Final Report 41310-WOOD-XX-XX-TN-OE-0001_S3_1	8 July 2020

Contents

1. Introduction

1.1 Background

1.1.1 MVV Environment Ltd (the developer) intends to submit an application for a Development Consent Order (DCO) for the construction and operation of an energy from waste facility – known as 'Medworth Energy from Waste combined heat and power (CHP) Facility' (the Proposed Development). The Proposed Development would be located on an industrial estate in Wisbech within Fenland District, Cambridgeshire (known as the Main Development Site). The Proposed Development also includes associated development such as a CHP Connection, access improvements and a grid connection, much of the latter is located within the administrative boundary of King's Lynn and West Norfolk.

1.2 Purpose of this report

1.2.1 This report details the results of an ornithological desk study and field surveys of the Grid Connection Corridor, (the collective name for the common grid and the northern and eastern corridors) undertaken in winter 2019/2020. These results will be used, along with results from other ecological studies, to inform the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for the Proposed Development. No surveys were undertaken of the Main Development Site as this is industrial land accessed from Algores Way and currently occupied by a waste management company.

1.2.2 For the purposes of this report, nomenclature follows that of the British Ornithologist's Union (BOU, 2017). The scientific names of all bird species listed in this report are provided in **Appendix A**, and details of the legislation pertaining to birds provided in **Appendix B.**

1.3 Grid Connection Corridor Description

1.3.1 The winter bird surveys began by considering two options whereby the Energy from Waste CHP Facility would be connected to the National Grid: via a 132kV connection or a 400kV connection. Starting at the Main Development Site, both options shared a common Grid Connection Corridor (GCC) running east of Wisbech. The corridor then splits; the 132kV route continuing north to Walpole St. Peter **(the Northbound route)**, and the 400kV connection continuing east to meet an existing 400 kV line beyond Emneth Hungate **(the Eastbound route)**. The Overall GCC covers a broad area as identified in **Figure 1.1**. This area will be refined further as part of the route selection process and indeed subsequent to the completion of the February surveys, it was advised that the Eastbound route would not be taken forward as one of the preferred options for the route.

1.3.2 The GCC crosses the Fenland / Cambridgeshire Administrative boundary into Kings Lynn and West Norfolk Borough Council, and Norfolk County Council. It includes both urban, industrial and agricultural land. The land within the GCC (for

both route options) comprises primarily farmland on flat, low-lying ground. The farmland is predominantly arable, interspersed by farmsteads, villages, orchards and blocks of woodland and shelter belts. The arable farmland at the time of the surveys in winter 2019/20 held crops such as winter-sown wheat, sugar beet and rape-seed oil, as well as fields containing cereal stubble, uncultivated (fallow) and bare (often ploughed) soil. There were also fields of improved and semi-improved grassland (some of which were grazed by horses and ponies) and extensive blocks of planted orchards. The fields were bounded by both water-filled (reed-lined) ditches, hedgerows and shelter belts of trees. There were no extensive areas of woodland or wetland habitat (including major water courses – wide rivers or drains) within the GCC.

1.3.3 The A47 (partly dual carriageway road) runs north-south through the GCC. The GCC and surrounding area already contain a number of high and lower voltage electricity transmission lines including the 132kV double circuit overhead line between West March to Walpole which is routed close to the east and south of Wisbech near Elm village, and further to the east, the 400kV overhead line between Burwell Main and Walpole.

1.4 Background and Scope

1.4.1 The GCC is located between the Ouse Washes Special Protected Area (SPA) and Ramsar Site (at its closest point, 12.3km south-east, of GCC the Northbound route); the Nene Washes SPA and Ramsar Site (at its closest point, 6.3km south-west of GCC the Northbound route) and the Wash SPA and Ramsar Site (at its closest point, 9.5km north of GCC the Northbound route). These sites support internationally important numbers of wintering water birds, including Bewick's swan and/ or whooper swan (see **Section 3.1**).

1.4.2 Potential issues relating to birds and overhead electrical transmission lines are:

- The effects of collision with the overhead lines (i.e. killing or injury of birds), which is of particular relevance for sites located in areas with high activity by swans and raptors or which support large concentrations of other water birds; and
- The effects of disturbance and displacement of birds from the proximity of the overhead lines and towers. Such disturbance may occur as a consequence of construction work, or due to the presence of the overhead lines and associated infrastructure close to foraging and resting sites, nest sites or on habitual flight routes.

1.4.3 Due to the proximity of the statutory designated sites to the proposed grid connection route, there is the potential for qualifying bird species of SPAs/ Ramsar sites (in particular, the large, less manoeuvrable species such as swans) to collide with the overhead lines. There is also the potential for the presence of the lines and towers, as well as other elements of the built infrastructure for the proposed development to deter qualifying (and other) species from utilising the surrounding farmland for foraging and roosting, and act as a barrier to their flight movements in this area.

1.4.4 In response to this, a programme of winter bird surveys was undertaken:

- **Vantage-point survey**: to determine the level of flight activity and identify any regularly used flight lines by SPA/ Ramsar site qualifying and other target species; and
- **Winter bird transect survey**: to determine the type and level of use of the farmland within the GCC by qualifying and other target species.

1.4.5 Given that the effects on birds of proposed overhead line developments are likely to be similar to those for wind farms (i.e. collision and displacement), the survey methods employed for the winter bird surveys were based on Scottish Natural Heritage (SNH) guidance for wind farms. A range of guidance documents have been produced relating to the assessment of bird/ wind farm interactions and the following publications and guidelines (in particular), have been influential in determining the scope of the works for the proposed development:

- Scottish Natural Heritage (2017). *Recommended bird survey methods to inform impact assessment of onshore wind farms*. http://www.snh.gov.uk/docs/C278917.pdf; and
- Scottish Natural Heritage (2006, updated in 2018). *Assessing significance of impacts from onshore windfarms on birds outwith designated areas.* SNH, Battleby;

1.4.6 The survey methods were based upon that provided within SNH guidance (as above), though Natural England (NE) guidance was also considered (NE, 2010). SNH and NE guidance recommends that field surveys should be focussed on those species of high nature conservation value for which there is potential for an impact which might be judged significant and adverse. In most circumstances these “target species” tend to be limited to those protected species and other species of conservation concern which may be subject to impact from wind farms.

1.4.7 Scottish Natural Heritage (2017) guidance states that there are three overarching species lists which describe protected species and species of conservation concern from which the **Target Species** may be drawn:

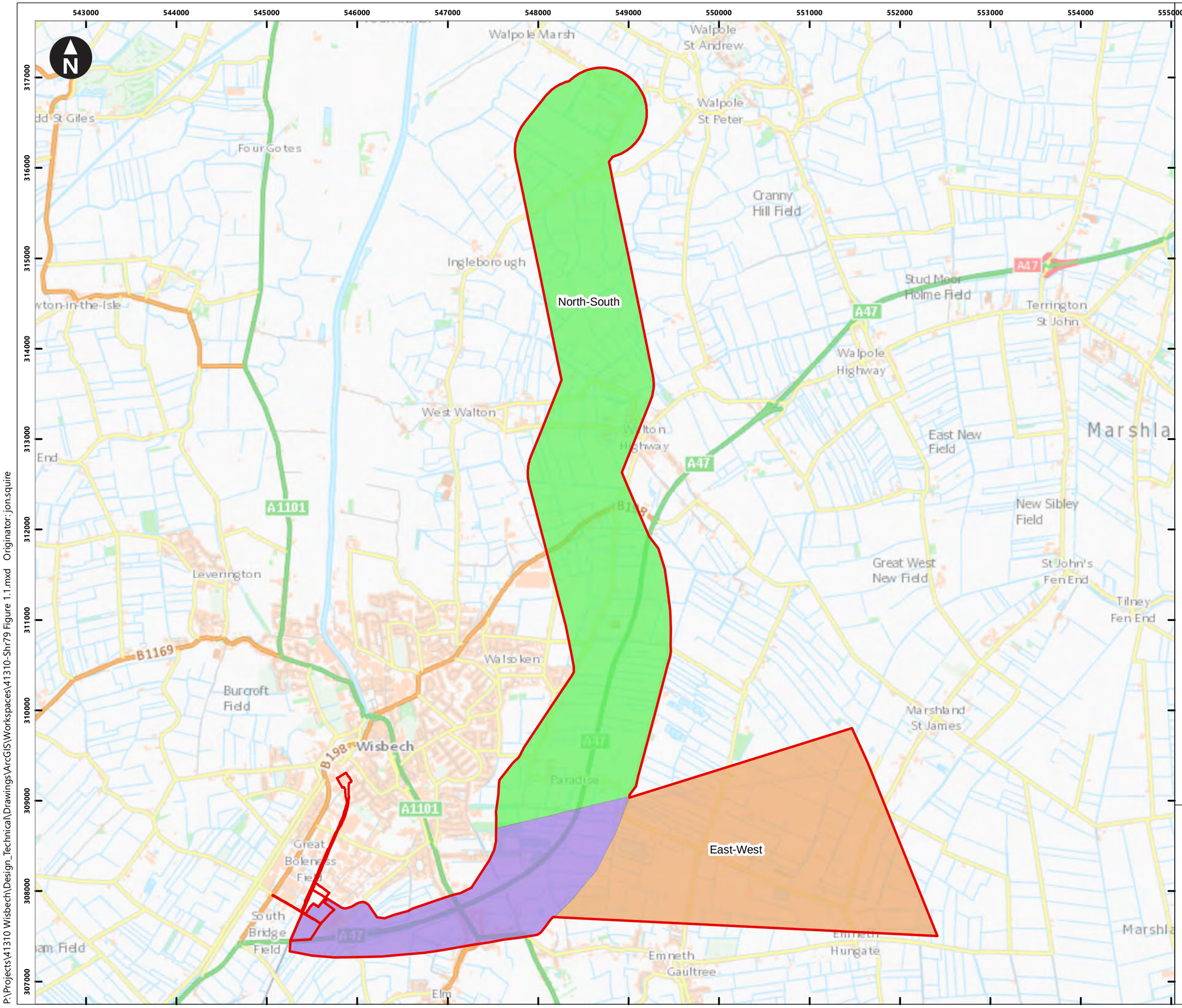
- Qualifying bird species of Special Protection Areas (SPA) and Ramsar sites, and those listed under Annex 1 within the *Directive 2009/147/EC on the conservation of wild birds*, commonly referred to as the Birds Directive;
- Species listed under Schedule 1 of the *Wildlife & Countryside Act 1981* (as amended); and
- Species listed under the Red List of Birds of Conservation Concern (BoCC) (Eaton *et al*., 2015).

1.4.8 In addition, consideration should also be given to bird species that form notified features of SSSIs; are identified within Local Biodiversity Action Plans; and Species of Principal importance, listed on Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC). Target species should however be limited to those likely to be affected by overhead lines. Research indicates that passerine species are not significantly affected by wind farms, and therefore, it is reasonable to assume that this is also the case for overhead lines. Many species included on the BoCC red list are passerines and therefore, care should be exercised when considering red list species for inclusion as target species.

Target Species

1.4.9 In view of the above and the location of the GCC and likely habitats present, the target species for the VP and walkover surveys were defined as follows:

- Swans, geese and ducks (all species except mallard and Canada goose);
- Waders (all species);
- Other water bird species potentially vulnerable to collision by virtue of their low reproductive rates and flight characteristics, including grey heron, little egret and cormorant;
- Birds of prey (all species, excluding kestrel and buzzard, which have high populations in the counties of Cambridgeshire and Norfolk); and
- Other species of conservation value with relatively low UK populations that could potentially be vulnerable to collision with overhead lines, such as kingfisher.



Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 1.1
Location of the Site and Grid Connection Corridor (GCC) options

July 2020

wood.

41310-Shr79 Figure 1.1

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2. Methodology

2.1 Desk Study

2.1.1 In accordance with the scoping opinion received from the Planning Inspectorate (on behalf of the Secretary of State) the presence of SPAs and Ramsar sites within 15km, and Sites of Special Scientific Interest (SSSIs) (with an ornithological interest) within 5km of the GCC was determined by accessing the Multi-Agency Geographical Information for the Countryside (MAGIC) website[1]. Details of the qualifying/ cited features of designated sites and their conservation objectives were obtained from the JNCC website.

2.2 Vantage Point Survey

2.2.1 Vantage Point (VP) watches were conducted in accordance with SNH (2017) guidance and undertaken from December 2019 to March 2020 inclusive. This method focuses on identifying the flight paths of target species such as swans which are easily detectable at 2km and allows any regularly used flight lines to be identified. The data generated can also be used to estimate the theoretical risk of collision with overhead lines by incorporation into a suitable model.

2.2.2 The SNH methodology guidance states that VPs should be chosen parsimoniously to achieve maximum visibility from the minimum number of locations, such that all parts of the survey area are within 2km of a VP location. Three VPs were identified; VPs 1 and 2 covering the GCC (at the time of starting the surveys) for the Northbound route and VP3 for the Eastbound route, though the western part of the viewshed for VP3 is within the GCC for the Northbound route. The VP locations and view-sheds are shown in **Figure 2.1** and are considered sufficient to survey the proposed overhead line routes to identify the flights of target species; the locations of which were:

- VP1 – TF 49582 14828 – view bearing 255°;
- VP2 – TF 49317 10134 – view bearing 285°; and
- VP3 - TF 50102 09421 – view bearing 165°.

2.2.3 Flights were classified using the following five Height Bands (HBs), of which, only Band B includes flights at Potential Collision Height (PCH) for the line height for the Northbound route (assuming a 132Kv wood pole line, and a line height of 14-18m) and Band D (assuming a line height of 49m for a 400kV line) for Option 2:

- Band A: 0-10m;
- Band B: 10-20m (PCH for Northbound route);
- Band C: 20-40m;
- Band D: 40-60m (PCH for Eastbound route); and

1 http://magic.defra.gov.uk/

- Band E: > 60m.

Secondary Species

2.2.4 The numbers and flight details (at PCH or not) of non-target (secondary) species were also recorded, at each five-minute interval during the VP surveys. These secondary species include other species of conservation value or concern (SPI/ BoCC red listed) and/or other potentially important congregation of a particular species.

Incidental Records

2.2.5 Birds seen outside formalised timed surveys were also recorded (i.e. those observed during walks on and off the Site, during walks between VPs and during other breaks in survey work). Detailed notes on the activity of any target and secondary species were made and target species flights mapped.

2.3 Winter Bird Transect Survey

2.3.1 A programme of transect surveys were undertaken covering all accessible farmland within the GCC (at the time of starting the surveys) and within approximately 1km of its boundary. Given the extensive area to be covered, the surveys were undertaken by driving slowly along the minor roads, stopping frequently to scan the fields for target bird species from conveniently placed observation points, either along the roads or by walking along public rights of way. The survey area and transect routes are shown on **Figure 2.2**.

543000 544000 545000 546000 547000 548000 549000 550000 551000 552000 553000 554000 555000

317000 316000 315000 314000 313000 312000 311000 310000 309000 308000 307000

N

Walpole Marsh
Walpole St Andrew
Walpole St Peter
Four Gotes
Cranny Hill Field
Ingleborough
Stud Meor Holme Field
Terrington St John
Walpole Highway
West Walton
East New Field
New Sibley Field
Great West New Field
St John's Fen End
Tilney Fen End
Leverington
Burcroft Field
Wisbech
Marshland St James
Paradise
Great Bolemass Field
South Bridge Field
Emneth
Emneth Hungate
Gaultree
Elm

A47
A1101
B1169
B198

Key

- Grid Connection Corridor
- Viewpoint
- Viewshed 1
- Viewshed 2
- Viewshed 3

0 500 1,000 1,500 2,000 m

Scale at A3: 1:40,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 2.1
Vantage Point Survey: VP locations and viewsheds

June 2020

wood.

41310-Shr80 Figure 2.1

C:\GIS\41310 Wisbech\ArcgGIS\Workspaces\41310-Shr80 Figure 2.1.mxd Originator: jon.squire

Key

- Grid Connection Corridor
- Grid Connection Corridor 1 km buffer survey area
- Transect routes

0 1,000 2,000 3,000 m

Scale at A3: 1:50,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 2.2
Winter Bird Transect Survey: survey area and transect routes

June 2020

wood.

41310-Shr81 Figure 2.2

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3. Results

3.1 Desk study

3.1.1 Six sites of international importance to birds (SPAs and Ramsar sites) are located within 15km of the GCC, the locations of which are shown on **Figure 3.1**, and the reasons for their designation detailed below. No sites of national importance to birds (SSSIs) are located within 5km of the GCC.

The Nene Washes SPA

3.1.2 The Nene Washes SPA (covering 1,520ha) is located 6.3km southwest of the GCC. The qualifying features of the SPA are listed as follows (qualifying populations, taken from the Natura 2000 Data Form obtained from JNCC website, are shown in parenthesis):

- Populations of international importance in winter for the following species:
  - Bewick's swan (1,718 individuals);
  - Wigeon (8,292 individuals);
  - Gadwall (206 individuals);
  - Teal (2,179 individuals);
  - Pintail (1,435 individuals); and
  - Shoveler (318 individuals).
- Populations of international importance during the breeding season for the following species:
  - Gadwall (25 pairs);
  - Garganey (5 pairs);
  - Shoveler (36 pairs); and
  - Black-tailed godwit (16 pairs).

The Nene Washes Ramsar Site

3.1.3 The Nene Washes Ramsar site (covering 1,517ha) is located 6.3km southwest of the GCC and shares a common boundary with the Nene Washes SPA over much of its area. The qualifying ornithological features of the Ramsar site are listed as follows (qualifying populations, taken from the Nene Washes Ramsar Information Sheet are shown in parenthesis):

- An important assemblage of nationally rare breeding birds and a wide range of raptors through the year (Ramsar Criterion 2);
- Populations of international importance in winter for the following species (Ramsar Criterion 6):

- Bewick's swan (694 individuals).

- Populations of international importance, with peak numbers during the spring and autumn passage periods for the following species (Ramsar Criterion 6):
  - Black-tailed godwit (482 individuals).

The Wash SPA

3.1.4 The Wash SPA (covering 62,044ha) is located 9.5km north of the GCC. The qualifying features of the SPA are listed as follows (qualifying populations, taken from the Natura 2000 data form are shown in parenthesis):

- Internationally important assemblage of waterfowl in winter, comprising a total of 400,367 birds;
- Populations of international importance in winter for the following species:
  - Bewick's swan (68 individuals);
  - Pink-footed goose (33,265 individuals);
  - Brent goose, dark-bellied (22,248 individuals);
  - Shelduck (15,981 individuals);
  - Wigeon (3,241 individuals);
  - Gadwall (71 individuals);
  - Pintail (923 individuals);
  - Common scoter (68 individuals);
  - Goldeneye (114 individuals);
  - Oystercatcher (25,651 individuals);
  - Grey plover (9,708 individuals);
  - Knot (186,892 individuals);
  - Sanderling (355 individuals);
  - Dunlin (35,620 individuals);
  - Black-tailed godwit (859 individuals);
  - Bar-tailed godwit (11,250 individuals);
  - Curlew (3,835 individuals);
  - Redshank (2,953 individuals); and
  - Turnstone (717 individuals).
- Populations of international importance during the breeding season for the following species:
  - Little tern (33 pairs); and

- Common tern (152 pairs).

The Wash Ramsar Site

3.1.5 The Wash Ramsar site (covering 62,212ha) is located 9.5km north of the GCC and shares a common boundary with the Wash SPA over much of its area. The qualifying ornithological features of the Ramsar site are listed as follows (qualifying populations, taken from the Wash Ramsar Information Sheet are shown in parenthesis):

- Internationally important assemblage of waterfowl in winter comprising a total of 292,541 birds (Ramsar Criterion 5);
- Populations of international importance, with peak numbers in winter for the following species (Ramsar Criterion 6):
  - Pink-footed goose (29,099 individuals);
  - Brent goose, dark-bellied race (20,861 individuals);
  - Shelduck (9,746 individuals);
  - Pintail (431 individuals);
  - Dunlin (36,600 individuals); and
  - Bar-tailed godwit (16,549 individuals).
- Populations of international importance, with peak numbers during the spring and autumn passage periods for the following species (Ramsar Criterion 6):
  - Oystercatcher (15,616 individuals);
  - Grey plover (13,129 individuals);
  - Knot (68,987 individuals);
  - Sanderling (3,505 individuals);
  - Curlew (9,438 individuals);
  - Redshank (6,373 individuals); and
  - Turnstone (888 individuals).

The Ouse Washes SPA

3.1.6 The Ouse Washes SPA (covering 2,494ha) is located 12.3km southwest of the GCC. The qualifying features of the SPA are listed as follows (qualifying populations, obtained from the Natura 2000 Data Form are shown in parenthesis):

- Internationally important assemblage of waterbirds in winter (64,428 birds), including: gadwall (342 individuals), pochard (3,135 individuals), tufted duck (986 individuals), mute swan (611 individuals), coot (2,201 individuals), cormorant (259 individuals) and ruff (137 individuals);
- Important assemblage of breeding birds. A diverse assemblage of the breeding migratory waders of lowland wet grassland, including oystercatcher,

redshank, snipe, ruff, lapwing and black-tailed godwit. A diverse assemblage of breeding wildfowl including mute swan, shelduck, gadwall, teal, mallard, pintail, garganey, shoveler, pochard, tufted duck, moorhen and coot;

- Populations of international importance in winter for the following species:
  - Bewick's swan (4,639 individuals);
  - Whooper swan (963 individuals);
  - Wigeon (29,713 individuals);
  - Teal (3,085 individuals);
  - Pintail (1,755 individuals);
  - Shoveler (681 individuals); and
  - Hen harrier (12 individuals).
- Populations of international importance during the breeding season for the following species:
  - Gadwall (111 pairs);
  - Mallard (850 pairs);
  - Garganey (14 pairs);
  - Shoveler (155 pairs);
  - Ruff; and
  - Black-tailed godwit (26 pairs).

The Ouse Washes Ramsar Site

3.1.7 The Ouse Washes Ramsar site (covering 2,469ha) is located 12.3km southeast of the GCC and shares a common boundary with the Ouse Washes SPA over much of its area. The qualifying ornithological features of the Ramsar site are listed as follows (qualifying populations, taken from the Ouse Washes Ramsar Information Sheet are shown in parenthesis):

- A diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland (Ramsar Criterion 2);
- Internationally important assemblage of waterfowl in winter comprising a total of 59,133 birds (Ramsar Criterion 5);
- Populations of international importance in winter for the following species (Ramsar Criterion 6):
  - Bewick's swan (1,140 individuals);
  - Whooper swan (653 individuals);
  - Wigeon (22,630 individuals);
  - Gadwall (438 individuals);

- Teal (3,384 individuals);
- Pintail (2,108 individuals); and
- Shoveler (627 individuals).

3.2 Vantage Point Survey

3.2.1 A total of 36 hours of VP observation was completed from each of VPs 1 and 2 (covering the Northbound route), from December 2019 to March 2020 inclusive. A total 21 hours of VP observation was completed from VP3 (covering the Eastbound route), from 9 January to 19 February 2020 after which the Eastbound route was not taken forward. The dates, times and weather conditions of the VP surveys are provided in **Appendix C** in **Table C.1**.

Target Species

VPs 1 and 2

3.2.2 A total of eleven target species were recorded within the viewsheds for VPs 1 and 2, covering GCC Northbound route (mute swan, cormorant, little egret, grey heron, merlin, peregrine, lapwing, golden plover, green sandpiper, redshank and kingfisher).

3.2.3 Up to three green sandpiper were feeding in a part-flooded, muddy field within 100m of VP2 (within the viewshed), and made regular flights to and from this area throughout the survey period. A single green sandpiper was also seen feeding in a ditch adjacent to VP1 and occasionally made usually low-level (below PCH) flights to and from this location. One or two little egret were seen foraging in the ditches within the VP2 viewshed and made regular low-level flights. A pair of lapwing was holding territory within the VP2 viewshed in March and also made occasional flights when disturbed. Very few flights of flocks of wintering lapwing were recorded, with the highest count involving a flock of 80 birds flying at PCH and then landing within the VP1 viewshed. A flock of 50 lapwing and 100 golden plover were seen feeding in a field of winter beans adjacent to the east of VP1 (outside the viewshed) on 21 January. There was one flight of four golden plover recorded, within the viewshed for VP2 (above PCH).

3.2.4 There were also infrequent flights of grey heron, cormorant, mute swan and golden plover (just one flight of four birds) through the viewsheds for VP1 and/ or VP2. Female merlin were recorded hunting over farmland within the viewsheds for VP1 and VP2 on one date each (9 and 23 January respectively), and a male peregrine was seen hunting at VP1, and sitting on nearby pylons on 21 January and 17 March. No pink-footed geese were seen within the GCC during the VP or other surveys, though a flock of 150 birds was seen to land in fields, 1-2km north of the GCC on 9 January.

VP3

3.2.5 A flock of six whooper swans were recorded from VP3 flying above PCH, south-east on 21 January (within the viewsheds for VP3 and VP2). A flock of 300

lapwing flew high (above PCH) through the VP3 viewshed on 23 January, with 100 recorded on 9 January flying at PCH. A single golden plover was heard (but not seen) somewhere within the VP3 viewshed on 23 January.

3.2.6 A summary of the flights of target species recorded within the viewsheds for VPs1-3 is provided in **Tables 3.1, 3.2 and 3.3** respectively. Details of the records of target species are provided in **Appendix D in Table D.1.**

Table 3.1 Summary of target species flights from VP1

Species	Total number of flights (individuals) within the GCC	Total time in seconds at Potential Collision Height (PCH) within GCC2
Green sandpiper	10 (10)	60
Little egret	7 (7)	30
Grey heron	1 (1)	0
Lapwing	2 (81)	1,200
Merlin	1 (1)	0
Mute swan	1 (2)	0
Peregrine	3 (3)	0

Table 3.2 Summary of target species flights from VP2

Species	Total number of flights (individuals) within the GCC	Total time in seconds at Potential Collision Height (PCH) within GCC
Cormorant	1 (1)	0
Green sandpiper	24 (30)	525
Golden plover	4 (1)	0
Kingfisher	1 (1)	0
Lapwing	5 (26)	150
Merlin	1 (1)	0
Redshank	1 (1)	15

[2] This includes flocks of birds; for example, a flock of 10 lapwing flying at PCH for 20 seconds, would equate to a total of 200 seconds.

Table 3.3 Summary of target species flights from VP3

Species	Total number of flights (individuals) within the GCC	Total time in seconds at Potential Collision Height (PCH) within GCC
Cormorant	2 (2)	180
Greylag goose	1 (2)	0
Grey heron	1 (1)	0
Lapwing	3 (424)	4,500
Whooper swan	1 (6)	0

Figures 3.2-3.4 show the flight lines for the following species[3]:

- Figure 3.2a – Flight lines of Green Sandpiper (GE), observed from VP1;
- Figure 3.2b – Flight lines of Little Egret (ET), observed from VP1;
- Figure 3.2c – Flight lines of Grey Heron (H.), Lapwing (L.), Merlin (ML), Mute Swan (MS) and Peregrine (PE), observed from VP1;
- Figure 3.3a – Flight lines of Green Sandpiper (GE), observed from VP2;
- Figure 3.3b – Flight lines of Cormorant (CA), Golden Plover (GP), Kingfisher (KF), Lapwing (L.), Merlin (ML) and Redshank (RK), observed from VP2; and
- Figure 3.4 – Flight lines of Cormorant (CA), Greylag Goose (GJ), Grey Heron (H.), Lapwing (L.) and Whooper Swan (WS), observed from VP3.

Secondary Species

VP1

3.2.7 There were regular flights of fieldfare and starling within the VP1 viewshed, particularly around the solar farm (often at PCH), with a flight of 300 fieldfare and 300 starling on 3 February, and 200 starling on 19 February and 3 March. There were 12 flights of 1-2 buzzard, usually high over the viewshed, as well as 6 flights of kestrel and 4 of sparrowhawk. Up to six mallard made regular flights to and from the ditches in the viewshed, and a flock of 100 black-headed gull and 50 common gull were flying to and from the Solar Farm area (within the viewshed) on 17 January, though no regular movements of gulls were noted through the VP1 viewshed or that for VP2 or VP3.

VP2

3.2.8 A muddy, part-flooded field close to VP2, comprising weeds and bare soil (which as well as being used by 1-3 foraging green sandpiper), attracted a diverse range

[3] The number shown on the flight lines shows the number of individuals in a flock of birds for all species except green sandpiper and little egret where only 1-3 birds were ever recorded.

of other bird species to feed and drink throughout the survey period. There were regular flights of 1-8 mallard arriving and leaving the field and nearby ditches, together with flocks of linnet (up to 70 birds), meadow pipit (15 birds), yellowhammer (10 birds) and stock dove (20 birds). There were regular flights of buzzard (14 flights in total) and kestrel (22 flights) and occasional sparrowhawk (8 flights) through the VP2 viewshed. The orchards within the VP2 viewshed held high numbers of fieldfare (peak count of 300 birds on 17 December) and starling (peak count of 900 birds on 17 December), which undertook regular flights in the area.

VP3

3.2.9 A total of four buzzard, 13 kestrel and two sparrowhawk flights were recorded within the VP3 viewshed during the surveys. Flocks of up to 100 fieldfare and 100 starling were seen occasionally flying through the area, as well as regular flights of 1-2 herring gull.

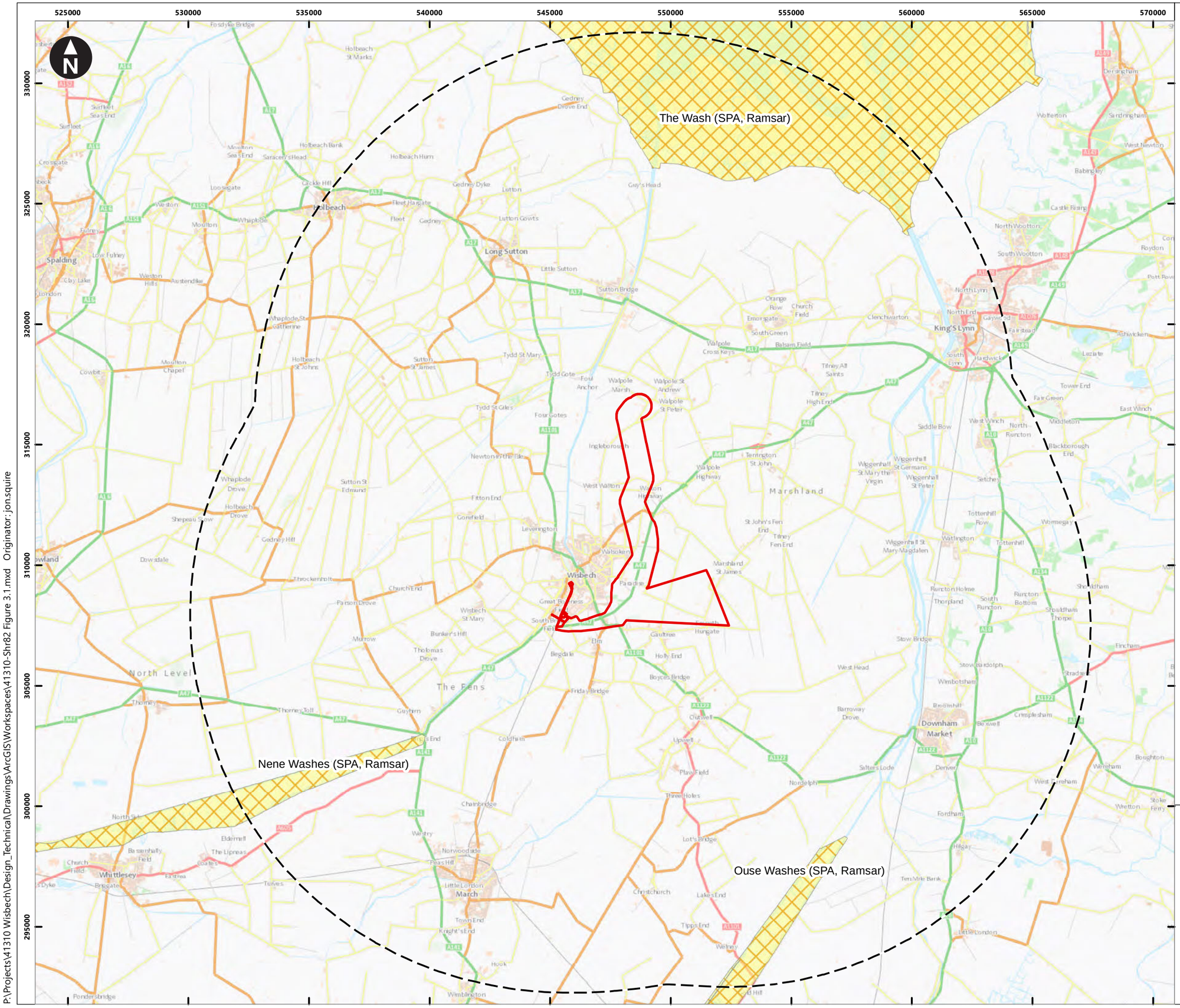
3.3 Winter Bird Transect Survey

Target Species

3.3.1 Once monthly Winter Bird Transect Surveys were completed from December 2019 to March 2020 inclusive, the dates, times and weather conditions of which are provided in **Appendix C** in **Table C.2**. A total of eight target species were recorded during the survey (coot, little egret, green sandpiper, greylag goose, grey heron, lapwing, shoveler and teal), the locations of which are shown on **Figure 3.5**, and the record details provided in **Appendix D in Table D.2**.

Secondary Species

3.3.2 A wide range of other non-target species were recorded during the transect survey including regular sightings of buzzard and kestrel and occasional sparrowhawk hunting across the survey area; low numbers of mallard (usually 1-5 birds) in the ditches and large flocks of wintering thrushes (primarily fieldfare) and starlings feeding in the orchards and fields of grassland and cereal stubble. The largest flocks within 1km of the Northbound route were 500 starling and 100 fieldfare feeding on improved grassland (between Chequers Corner and Rosedale in the south of the survey area) on 24 February; 400 starling feeding in a field of winter beans (near Rose Hall in the north of the survey area) on the same date and 150 fieldfare feeding in an orchard (at Rosedale) on 11 December.



Key

- Grid Connection Corridor
- Grid Connection Corridor 15 km buffer
- Ramsar site
- Special Protection Area (SPA)

0 2,500 5,000 7,500 m

Scale at A3: 1:150,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.1
Statutory designated sites of international importance to birds within 15km of the GCC

June 2020

wood.

41310-Shr82 Figure 3.1

P:\Projects\41310 Wisbech\Design_Technical\Drawings\ArcGIS\Workspaces\41310-Shr82 Figure 3.1.mxd Originator: jon.squire

546500 547000 547500 548000 548500 549000 549500 550000 550500 551000

316500 316000 315500 315000 314500 314000 313500 313000

N

Key

Grid Connection Corridor

Viewpoint

Viewshed 1

Green Sandpiper

Flight height at non-Potential Collision Height (non-PCH)

Flight height at Potential Collision Height (PCH)

0 250 500 750 m

Scale at A3: 1:15,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.2a
Flight lines of Green Sandpiper (GE), observed from VP1

June 2020

wood.

41310-Shr83 Figure 3.2a

C:\GIS\41310 Wisbech\ArcgGIS\Workspaces\41310-Shr83 Figure 3.2a.mxd Originator: jon.squire

546500 547000 547500 548000 548500 549000 549500 550000 550500 551000

316500 316000 315500 315000 314500 314000 313500 313000

N

Key

Grid Connection Corridor

Viewpoint

Viewshed 1

Little Egret

Flight height at non-Potential Collision Height (non-PCH)

Flight height at Potential Collision Height (PCH)

0 250 500 750 m

Scale at A3: 1:15,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

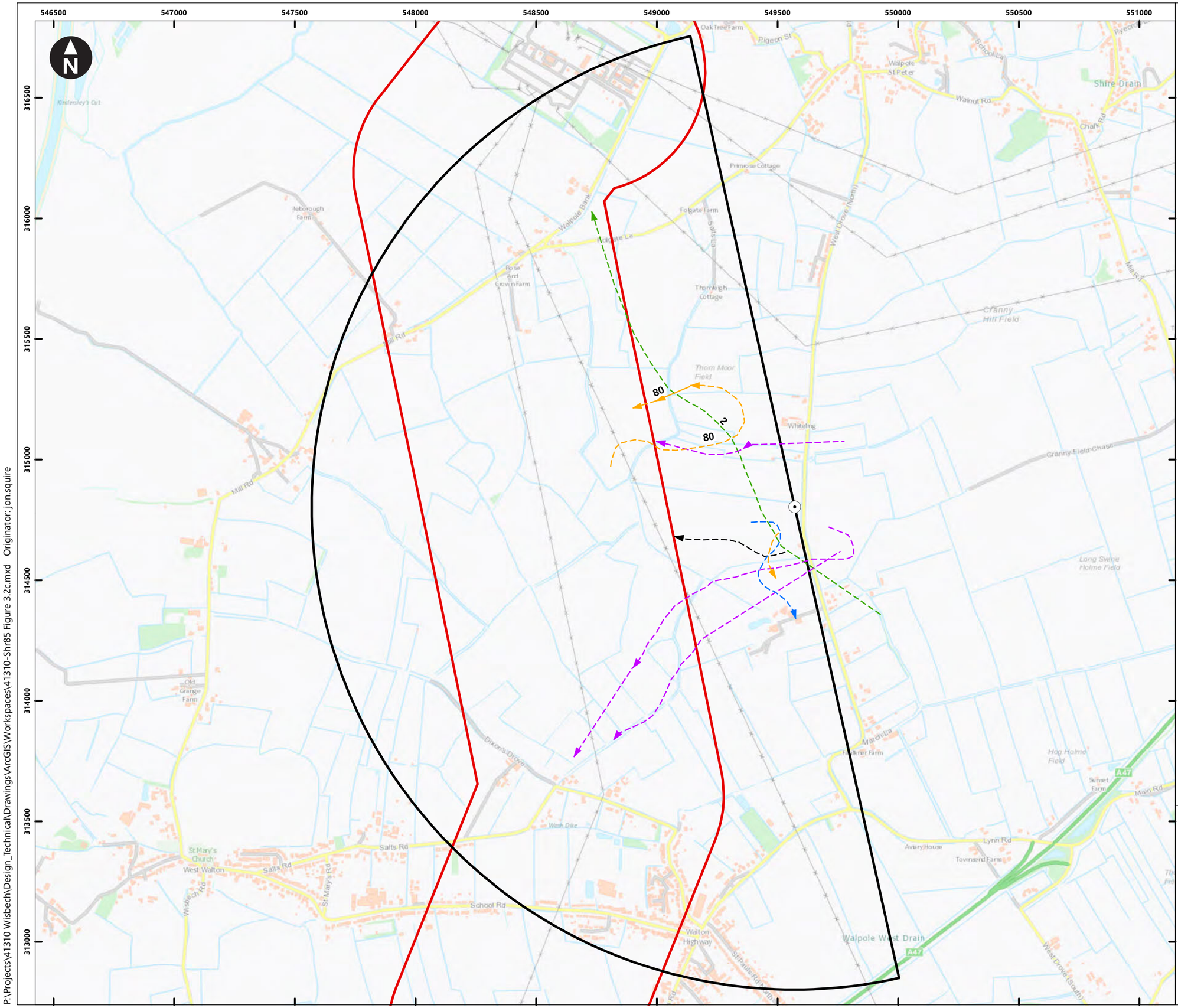
Figure 3.2b
Flight lines of Little Egret (ET), observed from VP1

June 2020

wood.

41310-Shr84 Figure 3.2b

C:\GIS\41310 Wisbech\ArcgGIS\Workspaces\41310-Shr84 Figure 3.2b.mxd Originator: jon.squire



Key

- Grid Connection Corridor
- Viewpoint
- Viewshed 1

Grey Heron

- Flight height at non-Potential Collision Height (non-PCH)

Lapwing

- Flight height at non-Potential Collision Height (non-PCH)
- Flight height at Potential Collision Height (PCH)

Merlin

- Flight height at non-Potential Collision Height (non-PCH)

Mute Swan

- Flight height at non-Potential Collision Height (non-PCH)

Peregrine

- Flight height at non-Potential Collision Height (non-PCH)

0 250 500 750 m

Scale at A3: 1:15,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.2c
Flight lines of Grey Heron (H.), Lapwing (L.), Merlin (ML), Mute Swan (MS) and Peregrine (PE), observed from VP1

June 2020

wood.

41310-Shr85 Figure 3.2c

P:\Projects\41310 Wisbech\Design_Technical\Drawings\ArcGIS\Workspaces\41310-Shr85 Figure 3.2c.mxd Originator: jon.squire

546500 547000 547500 548000 548500 549000 549500 550000 550500

312000 311500 311000 310500 310000 309500 309000 308500

N

Key

Grid Connection Corridor

Viewpoint

Viewshed 2

Green Sandpiper

Flight height at non-Potential Collision Height (non-PCH)

Flight height at Potential Collision Height (PCH)

0 250 500 750 m

Scale at A3: 1:15,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

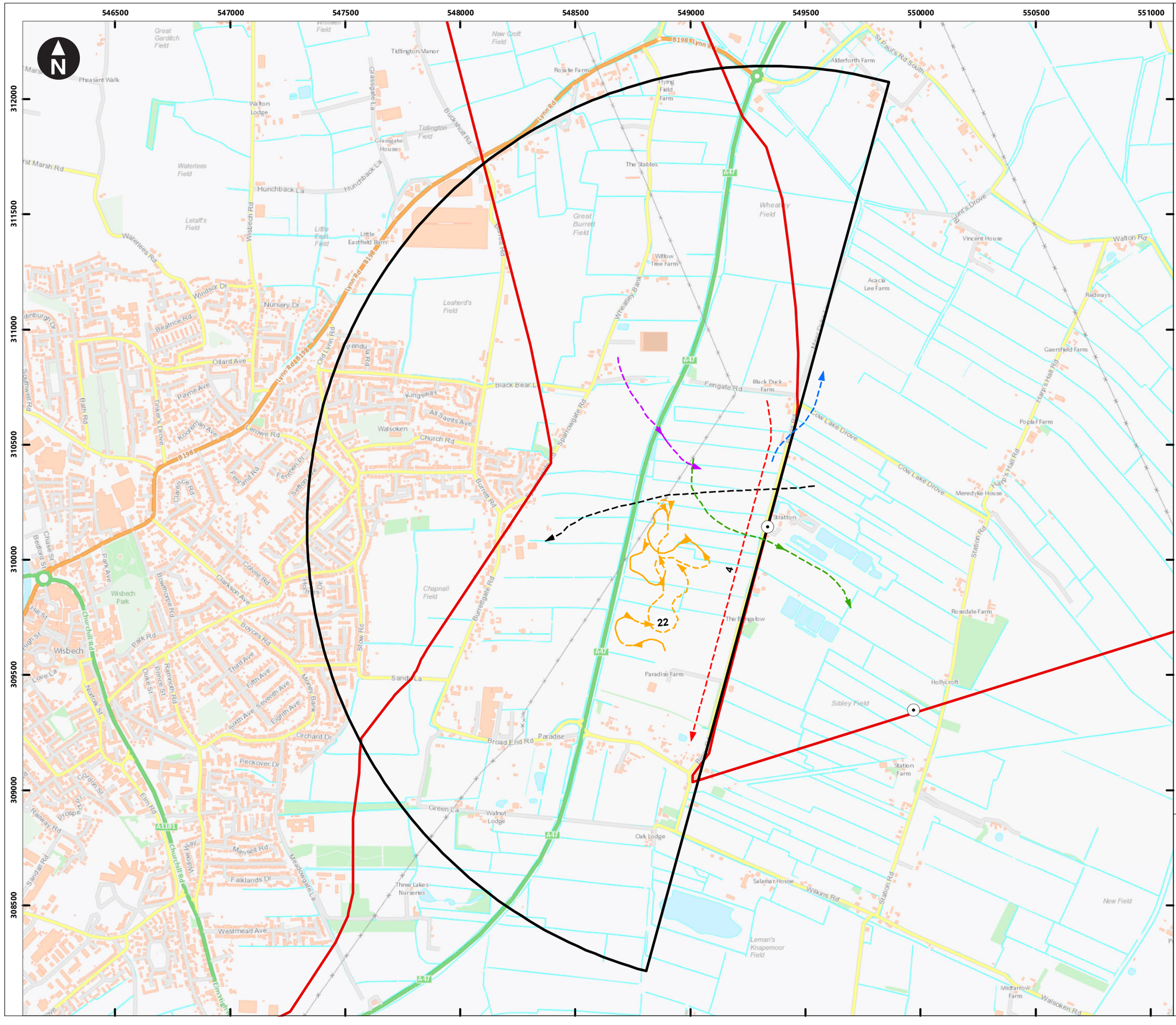
Figure 3.3a
Flight lines of Green Sandpiper (GE), observed from VP2

June 2020

wood.

41310-Shr86 Figure 3.3a

C:\GIS\41310 Wisbech\ArcgGIS\Workspaces\41310-Shr86 Figure 3.3a.mxd Originator: jon.squire



Key

- Grid Connection Corridor
- Viewpoint
- Viewshed 2

Golden Plover

- Flight height at non-Potential Collision Height (non-PCH)

Kingfisher

- Flight height at non-Potential Collision Height (non-PCH)

Lapwing

- Flight height at non-Potential Collision Height (non-PCH)
- Flight height at Potential Collision Height (PCH)

Merlin

- Flight height at non-Potential Collision Height (non-PCH)

Redshank

- Flight height at non-Potential Collision Height (non-PCH)
- Flight height at Potential Collision Height (PCH)

Cormorant

- Flight height at non-Potential Collision Height (non-PCH)

0 250 500 750 m

Scale at A3: 1:15,872

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.3b
Flight lines of Grey Heron (H.), Lapwing (L.), Merlin (ML), Mute Swan (MS) and Peregrine (PE), observed from VP2

August 2022

wood.

41310-Shr87 Figure 3.3b

P:\Projects\41310 Wisbech\Design_Technical - GI\Drawings\ArcGIS\Workspaces\41310-Shr87 Figure 3.3b.mxd Originator: jon.squire

548000 548500 549000 549500 550000 550500 551000 551500 552000

310500 310000 309500 309000 308500 308000 307500 307000

N

100 24 24 24 2 6 300

Key

Grid Connection Corridor

Viewpoint

Viewshed 3

Greylag Goose

Flight height at non-Potential Collision Height (non-PCH)

Grey Heron

Flight height at non-Potential Collision Height (non-PCH)

Lapwing

Flight height at non-Potential Collision Height (non-PCH)

Flight height at Potential Collision Height (PCH)

Whooper Swan

Flight height at non-Potential Collision Height (non-PCH)

Cormorant

Flight height at Potential Collision Height (PCH)

0 250 500 750 m

Scale at A3: 1:15,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.4
Flight lines of Cormorant (CA), Greylag Goose (GJ), Grey Heron (H.), Lapwing (L.) and Whooper Swan (WS), observed from VP3

June 2020

wood.

41310-Shr88 Figure 3.4

P:\Projects\41310 Wisbech\Design_Technical\Drawings\ArcGIS\Workspaces\41310-Shr88 Figure 3.4.mxd Originator: jon.squire

Key

Grid Connection Corridor

Grid Connection Corridor 1 km buffer

CO — BTO species code and number of individuals

BTO Code and Species

CO	Coot
GE	Green sandpiper
H.	Grey heron
GJ	Greylag goose
L.	Lapwing
ET	Little egret
SV	Shoveler
T.	Teal

0 500 1,000 1,500 2,000 2,500 3,000 m

Scale at A3: 1:50,000

Medworth Energy from Waste Combined Heat and Power Facility
Winter Bird Report 2019-20

Figure 3.5
Winter Bird Transect Survey: Records of Target Species

June 2020

wood.

4. Key Species Summary

4.1.1 A total of nine target species were recorded from VPs 1 and 2 within the GCC of the Northern route during the winter bird surveys undertaken from December 2019 to March 2020 inclusive (mute swan, merlin, peregrine, cormorant, grey heron, little egret, golden plover, lapwing and green sandpiper). A flock of whooper swan was recorded from VP3, partly within the GCC of the Northbound route, and greylag goose was also recorded from VP3.

4.2 Target Species (qualifying features of SPAs/ Ramsar sites)

Whooper swan

4.2.1 Non-breeding whooper swan is a qualifying feature of the Ouse Washes SPA and Ramsar site and listed on Annex I of the Birds directive. The UK population of whooper swan in winter was estimated to be 15,000 birds in 2005 (Musgrove *et al*., 2013). The wintering population in Cambridgeshire was estimated at 4,000-6,000 birds during 2007-11 (Bacon *et al*., 2013), with 1,500-2,500 birds wintering in Norfolk during 1999-2007 (Taylor *et al.*, 2011)

4.2.2 Whooper swan were not recorded during the Winter Bird Transect survey or during the VP surveys from VPs 1 and 2. The only record during the surveys was of a flock of six birds flying above PCH, south-east (above PCH) from VP3. However, part of this flight line was within the GCC of the Northbound route (see Figure 3.4).

4.3 Target Species (other species)

Lapwing

4.3.1 Non-breeding lapwing form part of the assemblage qualifications for the Wash and Nene Washes SPAs and Ramsar sites. Lapwing is also a Species of Principal Importance (listed on Section 41 of NERC). The UK population of lapwing in winter was estimated to be 650,000 birds during 2006-07 (Musgrove *et al*., 2013). The wintering population in Cambridgeshire was estimated at 10,000-50,000 birds during 2007-11 (Bacon *et al*., 2013), with 40,000-50,000 birds wintering in Norfolk during 1999-2007 (Taylor *et al.*, 2011).

4.3.2 Very few lapwing were recorded foraging or resting in farmland within the GCC of the Northbound route during the Transect surveys in winter 2019/20, with just two records, and a peak count of 20 birds. A total of seven flights of lapwing (totalling 107 birds) were recorded during the VP surveys from VPs 1 and 2, of which four flights of single birds were at PCH within the GCC of the Northbound route, all involving individuals from a pair of breeding birds within the VP2 viewshed.

Golden Plover

4.3.3 Golden plover form part of the assemblage qualification for the Wash SPA. The UK population of golden plover in winter was estimated to be 420,000 birds during

2006-07 (Musgrove *et al*., 2013). The wintering population in Cambridgeshire was estimated at 10,000-30,000 birds during 2007-11 (Bacon *et al*., 2013), with 35,000-50,000 birds wintering in Norfolk during 1999-2007 (Taylor *et al.*, 2011).

4.3.4 The only record of golden plover within the GCC of the Northbound route during the winter 2019/20 surveys was of four birds flying high over the VP2 viewshed, and none were recorded during the transect survey. A flock of up to 100 birds was however, recorded feeding in a field adjacent to VP1 (just outside the viewshed and GCC) in January.

Green Sandpiper

4.3.5 The UK population of green sandpiper in winter was estimated to be 910 birds during 2004-10 (Musgrove *et al*., 2013). The wintering population in Cambridgeshire was estimated at 20-60 birds during 2007-11 (Bacon *et al*., 2013), with 25-30 birds wintering in Norfolk during 1999-2007 (Taylor *et al.*, 2011).

4.3.6 Peak counts of three green sandpiper were recorded at VP2 and one at VP1 during the winter bird surveys in 2019/20. A total of ten flights of green sandpiper were recorded within the VP1 viewshed, though none within the GCC. However, all of the 24 flights of this species recorded within the VP2 viewshed were wholly or partly within the GCC of the Northbound route, for a total of 525 seconds at PCH.

Little Egret

4.3.7 Little egret is listed on Annex I of the Birds Directive. The UK population of little egret outside the breeding season was estimated to be 4,500 birds during 2004-10 (Musgrove *et al*., 2013), though numbers have continued to increase since this period. The wintering population in Norfolk was estimated at 50-250 birds in 1999-2007 (Taylor *et al*., 2011) and 100-300 birds in Cambridgeshire during 2007-11 (Bacon *et al*., 2013). A co-ordinated roost count in north Norfolk produced a total of 229 birds in December 2018 (Stoddart [ed] 2019), and the total county population is now likely to very much exceed 250 birds. In both counties, the species now breeds and is resident throughout the year.

4.3.8 Up to two little egret were seen feeding in ditches within the viewshed for VP1 on five survey dates, and made occasional short, low flights, with one flight at PCH.

Merlin

4.3.9 Merlin is listed on Annex I of the Birds Directive, Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) and is on the BoCC red list. The species is described as an uncommon winter visitor and passage migrant in Cambridgeshire, with a wintering population estimated at 5-20 birds during 2007-11 (Bacon *et al*., 2013). In Norfolk, the wintering population of merlin was estimated at 15-25 birds during 1999-2007 (Taylor *et al*., 2011).

4.3.10 There were two records of female birds, hunting low (below PCH) within the viewsheds for VPs 1 and 2 on two separate dates.

Peregrine

4.3.11 Peregrine is listed on Annex I of the Birds Directive and Schedule 1 of the Wildlife & Countryside Act 1981 (as amended). The species is described as an uncommon winter visitor and passage migrant in Cambridgeshire with a few now breeding, and with a wintering population estimated at 5-20 birds during 2007-11 (Bacon *et al*., 2013). In Norfolk, the wintering population of this now resident and breeding species in the county, was estimated at 15-25 birds during 1999-2007 (Taylor *et al*., 2011).

4.3.12 Single male birds were seen on two dates at VP1, though none of the flights were at PCH.

Other Target Species

4.3.13 The remaining target species (greylag goose, grey heron, cormorant and kingfisher) were all recorded infrequently and/ or in very low numbers.

5. Conclusion

5.1.1 Results from the VP and Transect Surveys undertaken in winter 2019/20 provide evidence that the proposed overhead line of the Northbound route would result in a minimal/ negligible number of collisions of the target species. Very few records of qualifying bird species of the Wash, Nene Washes and Ouse Washes SPAs and Ramsar sites were recorded during the surveys. Only one record of whooper swans was obtained, and none of Bewick's swan. The farmland was used by relatively low numbers of lapwing and golden plover on an infrequent basis over the winter, and there were infrequent records of scarce raptors (such as merlin and peregrine) hunting over the area.

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Appendix A
Species Names

BTO Species Code	Species English (common) Name	Species, Scientific Name
MS	Mute swan	Cygnus olor
BS	Bewick's swan	Cygnus columbianus
WS	Whooper swan	Cygnus cygnus
PG	Pink-footed goose	Anser brachyrhynchus
GJ	Greylag goose	Anser anser
DB	Brent goose (dark-bellied)	Branta bernicla bernicla
SU	Shelduck	Tadorna tadorna
WN	Wigeon	Anas penelope
GA	Gadwall	Anas strepera
T.	Teal	Anas crecca
MA	Mallard	Anas platyrhynchos
PT	Pintail	Anas acuta
GY	Garganey	Anas querquedula
SV	Shoveler	Anas clypeata
PO	Pochard	Aythya ferina
TU	Tufted duck	Aythya fuligula
CX	Common scoter	Melanitta nigra
GN	Goldeneye	Bucephala clangula
CA	Cormorant	Phalacrocorax carbo
ET	Little egret	Egretta garzetta
H.	Grey heron	Ardea cinerea
HH	Hen harrier	Circus cyaneus
SH	Sparrowhawk	Accipiter nisus
BZ	Buzzard	Buteo buteo
K.	Kestrel	Falco tinnunculus

BTO Species Code	Species English (common) Name	Species, Scientific Name
ML	Merlin	Falco columbarius
PE	Peregrine	Falco peregrinus
MH	Moorhen	Gallinula chloropus
CO	Coot	Fulica atra
OC	Oystercatcher	Haematopus ostralegus
RP	Ringed plover	Charadrius hiaticula
GP	Golden plover	Pluvialis apricaria
GV	Grey plover	Pluvialis squatarola
L.	Lapwing	Vanellus vanellus
KN	Knot	Calidris canutus
SS	Sanderling	Calidris alba
DN	Dunlin	Calidris alpina
RU	Ruff	Philomachus pugnax
SN	Snipe	Gallinago gallinago
BW	Black-tailed godwit	Limosa limosa
BA	Bar-tailed godwit	Limosa lapponica
CU	Curlew	Numenius arquata
GE	Green sandpiper	Tringa ochropus
RK	Redshank	Tringa totanus
TT	Turnstone	Arenaria interpres
BH	Black-headed gull	Chroicocephalus ridibundus
CM	Common gull	Larus canus
HG	Herring gull	Larus argentatus
AF	Little tern	Sternula albifrons
CN	Common tern	Sterna hirundo
SD	Stock dove	Columba oenas
KF	Kingfisher	Alcedo atthis
MP	Meadow pipit	Anthus pratensis

BTO Species Code	Species English (common) Name	Species, Scientific Name
FF	Fieldfare	Turdus pilaris
RE	Redwing	Turdus iliacus
SG	Starling	Sturnus vulgaris
LI	Linnet	Carduelis cannabina
Y.	Yellowhammer	Emberiza citrinella

Appendix B
Legislation and species designations

Wildlife and Countryside Act 1981 (as amended)

With certain exceptions[4], all wild birds, their nests and eggs are protected by Section 1 of the *Wildlife and Countryside Act 1981* (as amended). Therefore, it is an offence, *inter alia*, to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- intentionally take or destroy the egg of any wild bird.

Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- intentionally or recklessly disturb the dependent young of any such bird.

For golden eagle, white-tailed eagle and osprey, it is also an offence to:

- take, damage or destroy the nest of these species (this applies at any time, not only when the nest is in use or being built).

Natural Environment and Rural Communities Act 2006

Section 40 of the *Natural Environment and Rural Communities (NERC) Act 2006* places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 41 of the NERC Act requires the Secretary of State to publish a list of species which are of Principal Importance for conservation in the UK. This list is largely derived from the 'Priority Species' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as Priority Species under the subsequent country-level biodiversity strategies. The Section 41 list replaces the list published by Defra in 2002 under Section 74 of the *Countryside and Rights of Way (CRoW) Act 2000*.

Directive 2009/147/EC (The Wild Birds Directive), 2009

Certain bird species receive protection at a European level as listed on Annex I of the Directive 2009/147/EC of The European Parliament and of The Council of 30 November 2009 on the conservation of wild birds (codified version).

The *Wild Birds Directive* recognises that habitat loss and degradation are the most serious threats to the conservation of wild birds. It therefore places great emphasis on the protection of habitats for endangered as well as migratory species (listed in Annex I),

[4] Some species, such as game birds, are exempt in certain circumstances.

especially through the establishment of a coherent network of Special Protection Areas (SPAs) comprising all the most suitable territories for these species. Together with Special Areas of Conservation (SACs) designated under *Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('Habitats Directive')*, SPAs form a network of pan-European protected areas known as Natura 2000.

Ramsar Sites

Ramsar sites are wetlands of international importance designated under the Ramsar Convention. Sites proposed for selection are advised by the UK statutory nature conservation agencies, or the relevant administration in the case of Overseas Territories and Crown Dependencies, co-ordinated through JNCC. In selecting sites, the relevant authorities are guided by the Criteria set out in the Convention. The Criteria pertaining specifically to birds are as follows:

- Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds; and
- Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

In the UK, the first Ramsar sites were designated in 1976 since which, many more have been designated. The initial emphasis was on selecting sites of importance to waterbirds within the UK, and consequently many Ramsar sites are also Special Protection Areas (SPAs) classified under the Birds Directive. However, greater attention is now being directed towards non-bird features which are increasingly being taken into account, both in the selection of new sites and when reviewing existing sites.

Birds of Conservation Concern: Red List birds

Red and Amber list bird are those listed as being of high or medium conservation concern (respectively) in Birds of Conservation Concern (BoCC) 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man (Eaton *et al*., 2015). Red list species are those that are Globally Threatened according to IUCN criteria; and/or those whose population or range has declined rapidly in recent years; and/or those that have declined historically and not shown a substantial recent recovery.

Appendix C
Survey Visit Details

Table C.1 Vantage Point Survey: Visit Details

VP	Date	Start time	End time	Cloud (of 8)	Wind direction	Wind force (Beaufort Scale)	Precipitation	Visibility	Temperature range (°C)
1	17-Dec-19	09:00	12:00	8		0	None	Poor (<1km)	5
2	17-Dec-19	12:15	15:15	8		0	None	Very good (>3km)	5 to 6
3	09-Jan-20	09:45	10:45	6-7	SW	5	None	Very good (>3km)	12
1	09-Jan-20	11:00	14:00	5-8	SW	4-5	None	Very good (>3km)	11
2	14-Jan-20	09:30	12:30	8	SW	3-4	Occasional light showers	Very good (>3km)	7 to 8
3	14-Jan-20	12:45	15:45	8	SW	5-6	Occasional light showers	Moderate (1-3km)	8 to 9
1	17-Jan-20	07:45	10:45	4-8	S	4	Occasional light rain	Very good (>3km)	7
2	17-Jan-20	12:30	15:30	7-8	S	4-5	Heavy showers	Very good (>3km)	7
3	21-Jan-20	09:40	12:40	8		0-1	None; but ground frost	Moderate (1-3km)	1
1	21-Jan-20	13:00	16:00	0	WSW	2-3	None	Very good (>3km)	6 to 8
2	23-Jan-20	09:30	12:30	8		0	None	Very good (>3km)	7 to 8

VP	Date	Start time	End time	Cloud (of 8)	Wind direction	Wind force (Beaufort Scale)	Precipitation	Visibility	Temperature range (°C)
3	23-Jan-20	13:30	16:30	8		0	None	Very good (>3km)	8
1	30-Jan-20	10:00	13:00	7-8	SW	3-4	None	Very good (>3km)	9
2	30-Jan-20	13:30	16:30	8	SW	3	None	Very good (>3km)	10
3	03-Feb-20	10:00	13:00	2-6	SW	2-4	None	Very good (>3km)	9
1	03-Feb-20	13:30	16:30	2-7	W	2-5	None	Very good (>3km)	8 to 10
2	05-Feb-20	08:40	11:40	2-4		0-1	None; but ground frost	Very good (>3km)	1 to 8
3	05-Feb-20	12:20	15:20	5-7		0-1	None	Very good (>3km)	8 to 9
1	06-Feb-20	09:00	12:00	0-4		0	None; but ground frost	Moderate (1-3km)	1 to 7
2	06-Feb-20	12:50	15:50	0		0-1	None	Very good (>3km)	7
3	19-Feb-20	09:35	12:35	1	SW	3	None	Very good (>3km)	5
1	19-Feb-20	13:15	16:15	2	W	3	Occasional heavy rain	Very good (>3km)	6 to 7
2	27-Feb-20	08:45	12:45	7-8	N	0-3	Occasional light rain/ sleet	Very good (>3km)	1 to 2
1	02-Mar-20	08:45	11:45	4-6	W	2-3	None	Very good (>3km)	4
2	02-Mar-20	12:25	15:25	3-4	WNW	2-4	None	Very good (>3km)	8 to 10
2	03-Mar-20	07:20	10:20	1-7	SW	1-3	None	Very good (>3km)	2 to 6

VP	Date	Start time	End time	Cloud (of 8)	Wind direction	Wind force (Beaufort Scale)	Precipitation	Visibility	Temperature range (°C)
1	03-Mar-20	12:55	15:55	7-8	W	3-4	Occasional light rain	Very good (>3km)	7 to 8
1	17-Mar-20	08:30	11:30	5	SSW	3	None	Very good (>3km)	9
2	17-Mar-20	12:05	15:05	6-7	SW	4-5	None	Very good (>3km)	11
1	24-Mar-20	12:00	15:00	1-2	S	2	None	Very good (>3km)	9
2	24-Mar-20	15:15	18:15	4-5	S	3-4	None	Very good (>3km)	9

Table C.2 Winter Bird Transect Survey: Visit Details

Visit No.	Date	Start time	End time	Cloud (of 8)	Wind direction	Wind force (Beaufort Scale)	Precipitation	Visibility	Temperature range (°C)
1	11-Dec-19	08:30	15:30	4-5	SW	2-3	None	Very good (>3km)	5 to 7
2	28-Jan-20	08:00	16:00	3-4	S	3-4	None	Very good (>3km)	4
3	24-Feb-20	07:00	15:30	8	SW	3-4	Heavy rain	Very good (>3km)	7
1	19-Mar-20	08:30	15:30	8		0-1	None	Very good (>3km)	8

Appendix D
Survey Results

Table D.1 VP Survey: Flight Line Details of Target Species

VP	ID	Species code	Date	Time	Flight number	No. individuals	Height Band A	Height Band B	Height Band C	Height Band D	Height Band E
1	0003	ET	02-Mar-20	11:40	4	1	45				
1	0013	ET	06-Feb-20	11:21	2	1	30				
1	0025	ET	19-Feb-20	13:28	1	1	60				
1	0031	ET	21-Jan-20	15:33	10	1	15				
1	0032	ET	21-Jan-20	15:58	11	1	15				
1	0052	ET	17-Mar-20	13:00	2	1	15				
1	0053	ET	17-Mar-20	14:25	3	1	15	30			
1	0001	GE	02-Mar-20	08:57	1	1	15				
1	0002	GE	02-Mar-20	09:03	2	1	15				
1	0007	GE	03-Feb-20	13:46	1	1	15				
1	0008	GE	03-Mar-20	13:02	1	1	15				
1	0023	GE	17-Dec-19	11:32	1	1		15			

VP	ID	Species code	Date	Time	Flight number	No. individuals	Height Band A	Height Band B	Height Band C	Height Band D	Height Band E
1	0028	GE	21-Jan-20	13:37	5	1	15				
1	0047	GE	30-Jan-20	10:27	1	1	45				
1	0048	GE	30-Jan-20	11:14	2	1	30				
1	0050	GE	30-Jan-20	12:51	4	1		45			
1	0054	GE	17-Mar-20	14:55	4	1	30				
1	0049	H.	30-Jan-20	11:40	3	1	60				
1	0026	L.	19-Feb-20	14:12	2	80	15	15	60		
1	0027	L.	21-Jan-20	13:36	4	1	45				
1	0016	ML	09-Jan-20	13:35	4	1	45				
1	0020	MS	17-Jan-20	08:26	1	2			90		
1	0029	PE	21-Jan-20	13:40	8	1			75	30	
1	0030	PE	21-Jan-20	14:12	9	1	90				
1	0051	PE	17-Mar-20	13:13	1	1			30	60	
2	0019	CA	14-Jan-20	11:17	4	1			45	45	
2	0004	GE	02-Mar-20	13:05	1	1	30				
2	0006	GE	02-Mar-20	15:11	5	2	45				

VP	ID	Species code	Date	Time	Flight number	No. individuals	Height Band A	Height Band B	Height Band C	Height Band D	Height Band E
2	0009	GE	03-Mar-20	07:25	1	1	30	30			
2	0010	GE	03-Mar-20	07:49	2	2	30	30			
2	0011	GE	05-Feb-20	08:45	1	2	45				
2	0012	GE	05-Feb-20	09:45	2	1	30	60			
2	0014	GE	06-Feb-20	14:51	2	2	15				
2	0015	GE	06-Feb-20	15:24	4	1	30	15	30		
2	0017	GE	14-Jan-20	10:19	1	1	30				
2	0018	GE	14-Jan-20	11:15	3	1	30	30	60		
2	0022	GE	17-Jan-20	15:08	5	1		30			
2	0024	GE	17-Dec-19	15:15	1	1	15				
2	0033	GE	23-Jan-20	10:10	1	1	75				
2	0034	GE	23-Jan-20	10:35	2	1	45				
2	0035	GE	23-Jan-20	10:41	3	1	15	15	75		
2	0037	GE	23-Jan-20	11:20	5	1	30	30	60		
2	0039	GE	27-Feb-20	08:55	1	1	30	30	105		
2	0042	GE	27-Feb-10	10:10	4	1	30	30			

VP	ID	Species code	Date	Time	Flight number	No. individuals	Height Band A	Height Band B	Height Band C	Height Band D	Height Band E
2	0043	GE	27-Feb-20	11:37	7	2	30	30	30	60	
2	0044	GE	30-Jan-20	13:30	1	1		30			
2	0045	GE	30-Jan-20	13:36	2	1	30	30	30		
2	0046	GE	30-Jan-20	15:35	5	1		15	60		
2	0056	GE	17-Mar-20	10:32	2	1	30	60			
2	0059	GE	24-Mar-20	14:51	3	2	30				
2	0021	GP	17-Jan-20	14:46	3	4					135
2	0036	KF	23-Jan-20	10:50	4	1	15				
2	0005	L.	02-Mar-20	14:49	3	1	30	30			
2	0040	L.	27-Feb-20	09:34	2	22	60				
2	0055	L.	17-Mar-20	08:50	1	1	30	45			
2	0057	L.	24-Mar-20	12:56	1	1	30	45			
2	0058	L.	24-Mar-20	13:50	2	1	30	30	60		
2	0038	ML	23-Jan-20	12:19	7	1	75				
2	0041	RK	27-Feb-20	09:51	3	1	15	15	15		
3	0061	CA	05-Feb-20	14:43	4	1				60	

VP	ID	Species code	Date	Time	Flight number	No. individuals	Height Band A	Height Band B	Height Band C	Height Band D	Height Band E
3	0065	CA	21-Jan-20	10:45	2	1				120	
3	0066	GJ	21-Jan-20	11:28	3	2			75		
3	0062	H.	05-Feb-20	15:07	6	1	45				
3	0060	L.	05-Feb-20	14:09	2	24	15	15	135		
3	0063	L.	09-Jan-20	10:43	4	100				45	
3	0067	L.	23-Jan-20	14:06	1	300					105
3	0064	WS	21-Jan-20	10:05	1	6					105

NB: time (in seconds) at PCH is shown in bold

Table D.2 Winter Bird Transect Survey, Target Species Records

Date	Time	Species code	Number (individuals)	Habitat/ crop	Activity
11-Dec-19	09:26	CO	2	Lake (reed-fringed)	Foraging
19-Mar-20	14:45	ET	2	Ploughed land	Loafing
28-Jan-20	09:15	GE	1	Muddy field	Foraging
24-Feb-20	08:00	GE	3	Muddy fields & pools	Foraging
28-Jan-20	09:20	GJ	3	Lake	Loafing
24-Feb-20	09:05	GJ	52	Winter cereal	Loafing
19-Mar-20	08:55	GJ	5	Lake (reed-fringed)	Loafing
11-Dec-19	09:26	H.	1		Foraging
28-Jan-20	09:20	H.	1	Lake	Loafing
19-Mar-20	14:10	H.	1	Improved grassland	Loafing
11-Dec-19	09:26	L.	20	Peas	Foraging
19-Mar-20	10:50	L.	1	Cereal stubble	Foraging
24-Feb-20	09:05	SV	2	Lake (reed-fringed)	Loafing
24-Feb-20	09:05	SV	2	Lake (reed-fringed)	Roosting
28-Jan-20	08:10	T.	20	Lake	Loafing
24-Feb-20	09:05	T.	8	Lake (reed-fringed)	Loafing
19-Mar-20	08:55	T.	12	Lake (reed-fringed)	Loafing

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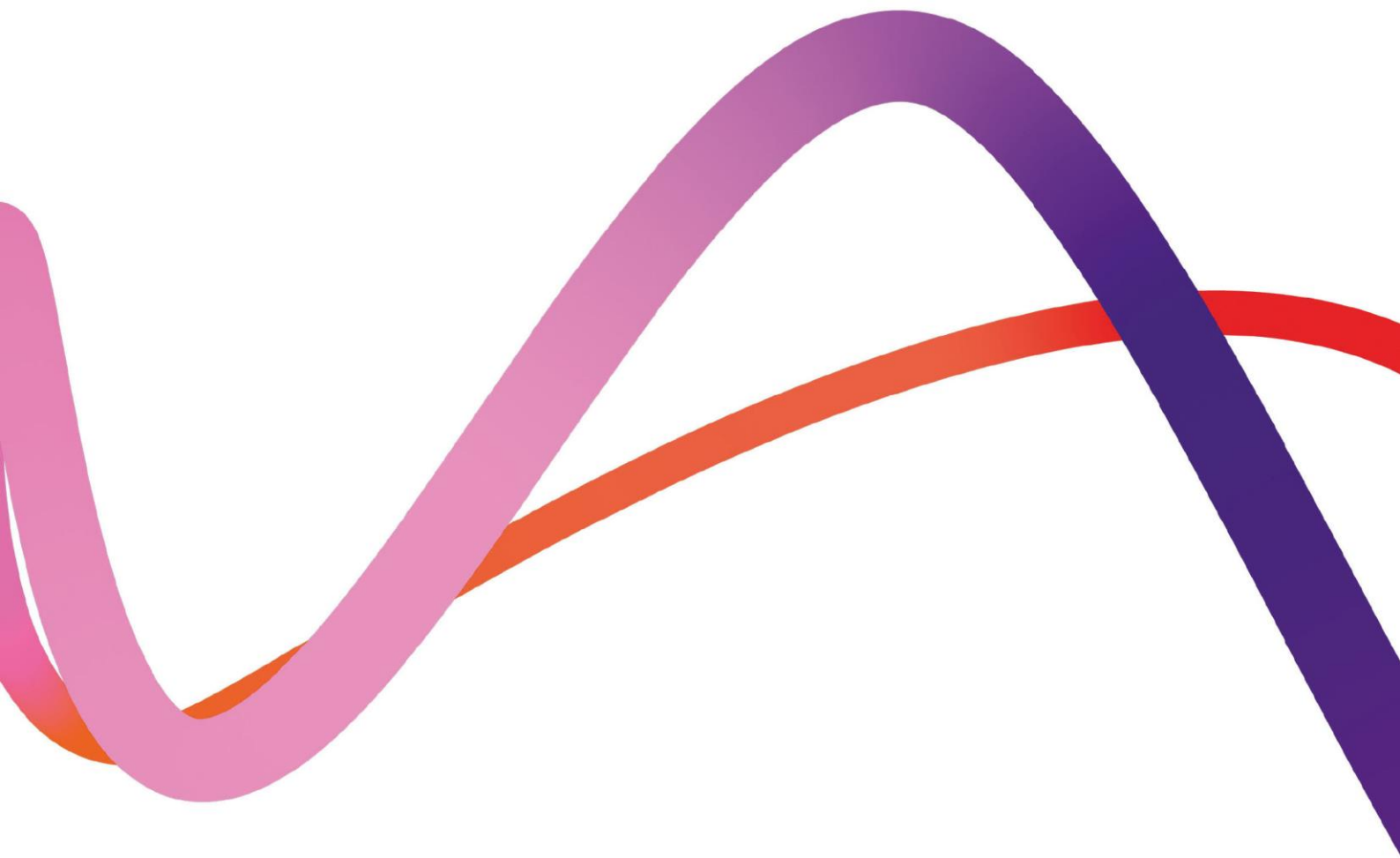
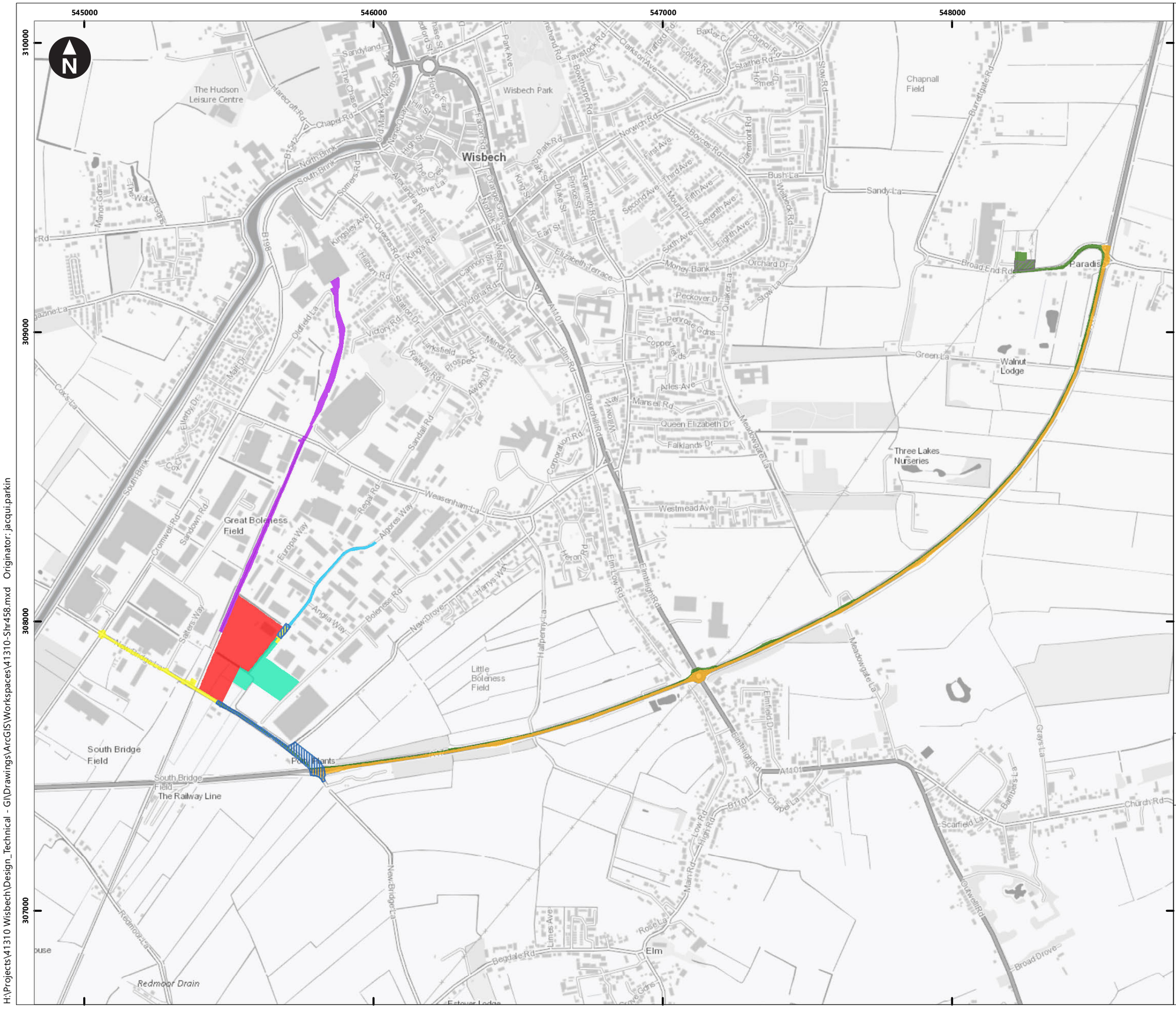


Appendix D
Figures



Client

Medworth CHP Limited
Medworth Energy from Waste Combined Heat and Power Facility
Non Significant Effects Report

Figure 2.1
Project Components

June 2022

41310-Shr458

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545000 546000 547000 548000 549000

310000 309000 308000 307000

Key

- EfW CHP Facility Site
- CHP Connection
- Temporary Construction Compound
- Grid Connection
- Walsoken Substation
- Access Improvements
- Algores Way
- A47 Traffic Management Area
- Water Connection
- Grid Connection Corridor

0 250 500 750 m

Scale at A3: 1:15,000

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Medworth Energy from Waste Combined Heat and Power Facility
Non Significant Effects Report

Figure 2.2
Grid Connection Corridor

June 2022

wood.

41310-Shr459

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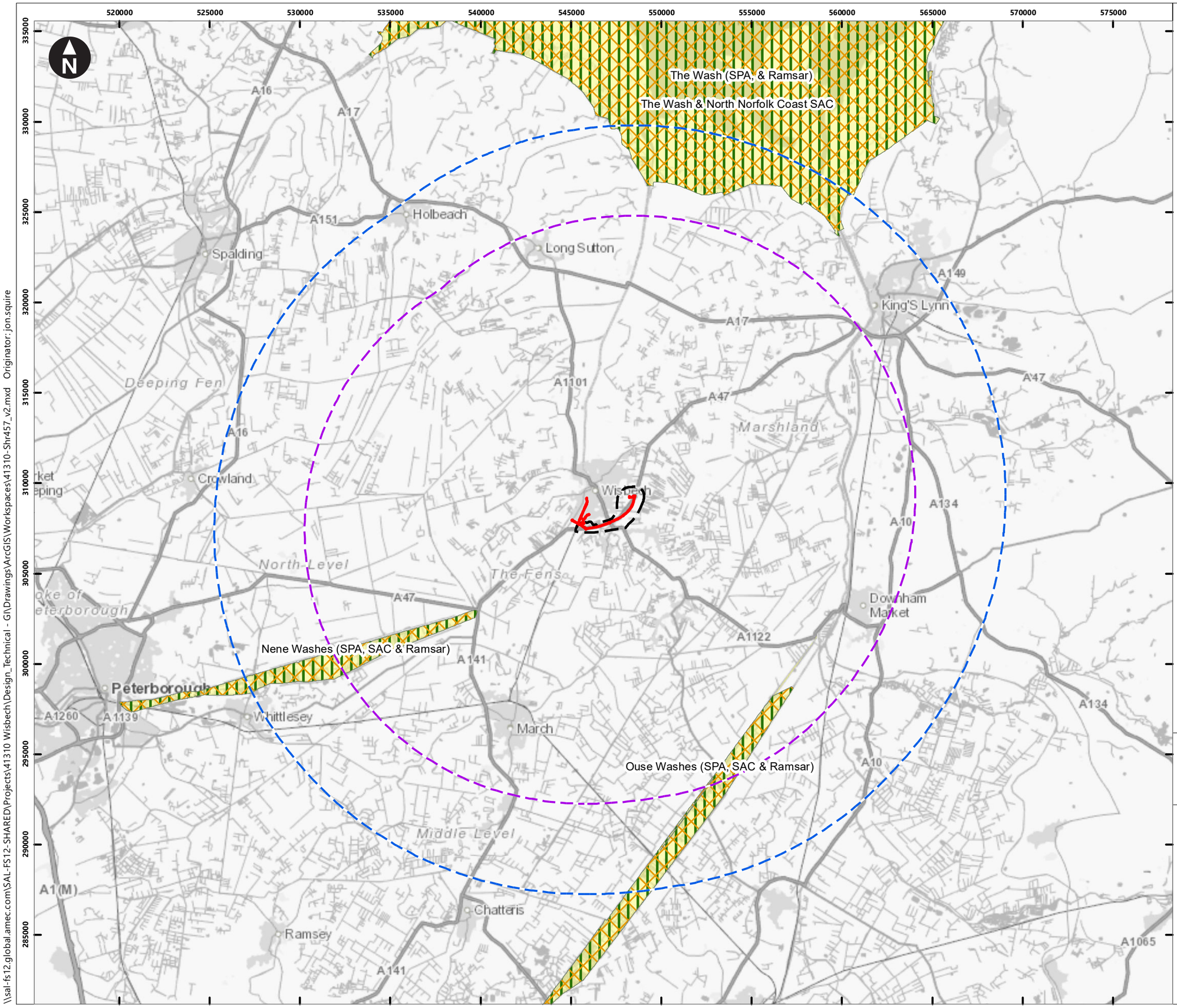

Key

- Order limits
- Grid Connection Corridor
- Grid Connection Corridor 15km buffer
- Grid Connection Corridor 20km buffer
- Special Protection Area (SPA)
- Special Areas of Conservation (SACs)
- Ramsar site

0 2,500 5,000 7,500 10,000 m

Scale at A3: 1:200,000

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Medworth Energy from Waste Combined Heat and Power Facility
Non Significant Effects Report

Figure 3.1
Location of European Sites

June 2022

wood.

41310-Shr457_v2

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Appendix E
No Significant Effects Report: Screening Matrices

Medworth Energy from Waste
Combined Heat and Power Facility

PINS ref. EN010110
Document Reference: Vol 5.3
Revision 2
August 2022

Habitat Regulations Assessment No Significant Effects Report (NSER)

Appendix E: No Significant Effects Report: Screening Matrices

Regulation reference: The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(g)

We inspire with energy.

1. Potential Effects

1.1.1 Potential effects upon the European sites, which are considered within the submitted No Significant Effects Reports (NSER), are provided in the table below. Effects have been grouped where appropriate for ease of presentation.

Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
Nene Washes SPA	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
	In combination effects	In-combination
Nene Washes Ramsar	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
	In combination effects	In-combination
Nene Washes SAC	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
Ouse Washes SPA	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution

Designation	Effects described in submission information	Presented in screening matrices as
	In combination effects	In-combination
Ouse Washes Ramsar	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
	In combination effects	In-combination
Ouse Washes SAC	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
	In combination effects	In-combination
The Wash SPA	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	In combination effects	In-combination
The Wash Ramsar	Disturbance/displacement of birds (designated features of SPA/Ramsar)	Disturbance/displacement
	In combination effects	In-combination
The Wash & North Norfolk Coast SAC	The introduction of toxic pollutants or sediments resulting in loss of, or damage to terrestrial or freshwater environments leading to effects on habitats and species (as designated features of SACs and SPAs).	Air pollution
	In combination effects	In-combination

1.2 Stage 1: Screening Matrices

1.2.1 The European Sites included within the screening assessment are:

- Nene Washes SPA;
- Nene Washes Ramsar;
- Nene Washes SAC;
- Ouse Washes SPA;
- Ouse Washes Ramsar; and
- Ouse Washes SAC
- The Wash SPA;
- The Wash Ramsar;
- The Wash & North Norfolk Coast SAC

1.2.2 Evidence for, or against, likely significant effects (LSE) on the European sites and their qualifying features is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect **cannot** be excluded
✗ = Likely significant effect **can** be excluded

Stage of development:
C = construction
O = operation
D = decommissioning

Where effects are not applicable to a particular feature the matrix cell is greyed out.

HRA Screening Matrix 1: Nene Washes SPA

Name of European site: Nene Washes SPA									
EU Code: UK0030222									
Distance to Proposed Development 7.2km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Bewick's swan	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Gadwall (breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Garganey (breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Northern shoveler (Breeding	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Black-tailed godwit (Breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Eurasian wigeon (Non-breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Gadwall (Non-breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Eurasian teal (Non-breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c
Northern shoveler (Non-breeding)	✕a	✕a	✕a		✕b		✕c	✕c	✕c

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any Nene Washes SPA qualifying features associated with disturbance and resultant displacement.

b. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the SPA site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

c. As detailed **in Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development**,** there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 2: Nene Washes Ramsar

Name of European site: Nene Washes Ramsar									
EU Code: UK11051									
Distance to the Proposed Development 7.2km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	***Disturbance/displacement (Indirect)***			***Air pollution***			***In combination effects***		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 2: important assemblage of nationally rare breeding birds	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Ramsar criterion 6 – species/populations occurring at levels of international importance: tundra swan, black-tailed godwit, northern pintail	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3,** there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and therefore does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Nene Washes Ramsar Site associated with disturbance and resultant displacement.

b. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the Ramsar site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

c. As detailed **in Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development**,** there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 3: Nene Washes SAC

Name of European site: Nene Washes SAC									
EU Code: UK0030222									
Distance to the Proposed Development 7.2km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Spined loach					**✕a**			**✕b**	

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the SAC site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

b. As detailed in **Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 4: Ouse Washes SPA

Name of European site: Ouse Washes SPA									
EU Code: UK9008041									
Distance to the Proposed Development 12.5km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Internationally important assemblage of waterbirds in winter	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Important assemblage of breeding birds	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Populations of international importance in winter for the following species: Bewick's swan, whooper swan, wigeon, teal, pintail, shoveler and hen harrier	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Populations of international importance during the breeding season for the following species: gadwall, mallard, garganey, shoveler, ruff and black-tailed godwit	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3,** there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any Ouse Washes SPA qualifying features associated with disturbance and resultant displacement.

b. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the SPA site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

c. As detailed in **Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 5: Ouse Washes Ramsar

Name of European site: Ouse Washes Ramsar									
EU Code: UK11051									
Distance to the Proposed Development 12.5km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar Criterion 1 Extensive area of seasonally-flooding washland	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Ramsar Criterion 2 The site supports several nationally scarce plants; and a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Ramsar Criterion 5 Internationally important assemblage of waterfowl in winter	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**
Ramsar Criterion 6 Populations of international importance in winter for the following	**×a**	**×a**	**×a**		**×b**		**×c**	**×c**	**×c**

Name of European site: Ouse Washes Ramsar									
EU Code: UK11051									
Distance to the Proposed Development 12.5km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
species: Bewick's swan, whooper swan, wigeon, gadwall, teal, pintail and shoveler									

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3,** there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Ouse Washes Ramsar Site associated with disturbance and resultant displacement.

b. As detailed in Table 4.4 of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the Ramsar site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

c. As detailed in Section 5.5 of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 6: Ouse Washes SAC

Name of European site: Ouse Washes SAC									
EU Code: UK0013011									
Distance to the Proposed Development 6.3km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Spined loach					**✕a**			**✕b**	

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects to supporting habitats within the SAC site as the long-term PC is less than 1% (No LSE), air pollution effects may be screened out as insignificant and do not require further assessment.

b. As detailed in **Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Medworth Energy from Waste Combined Heat Project, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 7: The Wash SPA

Name of European site: The Wash SPA									
EU Code: UK9008021									
Distance to the Proposed Development 17.3km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Bewick's swan (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Pink-footed goose (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Dark-bellied brent goose (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Common shelduck (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Eurasian wigeon (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Gadwall (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Northern pintail (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**

Name of European site: The Wash SPA									
EU Code: UK9008021									
Distance to the Proposed Development 17.3km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Black (common) scoter (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Common goldeneye (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Eurasian oystercatcher (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Grey plover (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Red knot (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Sanderling (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Dunlin (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Black-tailed godwit (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**

Name of European site: The Wash SPA									
EU Code: UK9008021									
Distance to the Proposed Development 17.3km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Bar-tailed godwit (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Eurasian curlew (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Common redshank (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Ruddy turnstone (Non-breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Common tern (Breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Little tern (Breeding)	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Waterbird assemblage	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3**, there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the SPA qualifying features and therefore does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on any of the Wash SPA qualifying features associated with disturbance and resultant displacement.

b. As detailed in Section 5.5 of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 8: The Wash Ramsar

Name of European site: The Wash Ramsar									
EU Code: UK11072									
Distance to the Proposed Development 17.3km									
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**								
Effect	*Disturbance/displacement (Indirect)*			*Air pollution*			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 6 – species/populations occurring at levels of international importance: gery plover, red knot, sanderling, Eurasian curlew, common redshank, ruddy turnstone, pink-footed goose, dark-bellied goose, common shelduck, northern pintail, dunlin, bar-tailed godwit.	**×a**	**×a**	**×a**				**×b**	**×b**	**×b**
Species/populations identified subsequent to designation for possible future consideration under criterion 6: ringed plover, black-tailed godwit, European golden plover, northern lapwing	**×a**	**×a**	**×a**				**×d**	**×d**	**×d**

Evidence supporting conclusions

a. As detailed in **Table 4.4** of the Screening Assessment of the **NSER Doc. Volume 5.3,** there is no evidence to indicate that the farmland within 500m of the Order limits is utilised by the Ramsar Site qualifying features and therefore does not form FLL. There will be no impacts from disturbance and displacement during construction and operation of the Proposed Development and consequently there would be no pathway for LSE on the Wash Ramsar Site associated with disturbance and resultant displacement.

b. As detailed in **Section 5.5** of the Screening Assessment of the **NSER Doc. Volume 5.3**, given the minimal predicted effects (No LSE) for the Proposed Development, there are assessed to be no LSE for in-combination effects.

HRA Screening Matrix 9: The Wash & North Norfolk Coast SAC

Name of European site: The Wash & North Norfolk Coast SAC			
EU Code: UK0017075			
Distance to the Proposed Development 17.3km			
European site features	**Likely Effects of Medworth Energy from Waste Combined Heat and Power Facility (NSIP)**		
Effect	*Air pollution*		
Stage of Development	*C*	*O*	*D*
Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks			
Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats			
*Coastal lagoons**			
Large shallow inlets and bays			
Reefs			
Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand			
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)			
Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi); Mediterranean saltmarsh scrub			
Otter			
Common seal			

Evidence supporting conclusions

As detailed in **Table 3.3** of the Screening Assessment of the **NSER Doc. Volume 5.3**, The Wash and North Norfolk Coast SAC lies outside the 15km emissions source ZOI and has therefore not taken through for further assessment.

References

PINS (2017). Advice Note Ten: Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects Republished November 2017 (version 8)