

Chapter 7: Ecology and Nature Conservation

Land off Duke's Park, Woodbridge

ENVIRONMENTAL STATEMENT

November 2015

7.1 INTRODUCTION

- 7.1.1 This chapter of the Environmental Statement has been prepared by FPCR Environment & Design Ltd. and assesses the potential impacts of the proposed residential development at Land off Duke's Park, Woodbridge on ecology and nature conservation.
- 7.1.2 The chapter sets out how proposals will result in a neutral and in some cases a positive ecological impact and how it complies with national and local planning policy.
- 7.1.3 This chapter is divided into the following sections;
- a) **Legislative & Planning Policy Context** – Outlines planning policy and legislative requirements relevant to ecology and nature conservation, establishing the context for the assessment process and findings of the ES and eventual planning decision.
 - b) **Assessment Methodology & Significance Criteria** – Details of the methodology and criteria by which the impacts are assessed with reference to the Chartered Institute of Ecology & Environmental Management's (CIEEM's) Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006). Methodologies used to gather baseline survey data are also detailed.
 - c) **Baseline Conditions** – Summarises all relevant ecological data obtained about the site in order to inform the assessment process. This includes descriptions of the desk study and field survey findings and an evaluation of potential ecological receptors values based on CIEEM's geographical hierarchy.
 - d) **Potential Effects** – Examines all ecological receptors that may be affected as a result of development, taking the development framework/masterplan into account. A prediction of the significance of these effects is also given to reflect their extent and magnitude.
 - e) **Mitigation Measures** – Outlines the scope for mitigation of effects through avoidance, reduction or compensation. The potential for ecological enhancement to achieve biodiversity gain and the establishment of a monitoring process to assess the success of these measures post-construction are also described.
 - f) **Residual Effects** – Reassess the significance of impacts once the benefits provided by mitigation and enhancement is taken into account.
 - g) **Cumulative Effects** – Considers the residual effects of the proposed scheme in terms of other proposed developments in the surrounding area, and how these together may lead to combined impacts on ecological receptors.

7.2 LEGISLATION & PLANNING POLICY CONTEXT

- 7.2.1 The policy and guidance framework for nature conservation is provided by various national, regional and local planning policies as outlined below, with further details as necessary within the relevant subsequent sections.

National Planning Policy Framework (NPPF)

- 7.2.2 This national policy provides relevant information relating to the approach to be taken within the planning system by the various issues and disciplines uncompressed by sustainable development, including the production of local development plans and the determination of planning permissions for local councils. Planning applications should seek to conform to the principles set out within the frameworks and other planning policy documents for the area.
- 7.2.3 The existing government circular *Associated Government Circular: Biodiversity and Geological Conservation, ODPM Circular 06/2005*; for the former PPS9 which provides the background, further information and detail on the content of PPS9, still applies to the new NPPF until such a time as this has been reviewed and revised (and for which there is no timetable).
- 7.2.4 Paragraph 17 of the NPPF states that “*within the overarching roles that the planning system ought to play, a set of core land – use planning principles should underpin both plan – making and decision taking*” of the 12 principles outlined, the following are relevant to ecology and nature conservation:
- contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this framework; and
 - promote mixed developments and encourage multiple benefits from the use of land in urban and rural area, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage or food production);
- 7.2.5 Section 11 Paragraph 109 states “*the planning system should contribute to and enhance the natural and local environment by:*
- *protecting and enhancing valued landscapes, geological conservation interests and soils;*
 - *recognising the wider benefits of ecosystem services;*
 - *minimising impacts on biodiversity and providing net gains in biodiversity where possible contributing to the Government’s commitment to halt overall decline in biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures;*
 - *preventing both new and existing development from contributing to or being put at unacceptable risk from or being adversely affected by unacceptable levels of soil, air, water or noise pollution or total instability; and*
 - *remediating and mitigating despoiled, degraded, derelict contaminated and unstable land where appropriate.*
- 7.2.6 Paragraph 113 states “*Local Planning Authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of*

international, national and locally designated sites so that protection is commensurate with their importance and the contribution that they make to wider ecological networks”

7.2.7 Paragraph 118 addresses the conservation and enhancement of biodiversity and requires LPA's to “conserve and enhance biodiversity by applying the following principles;

- *if significant harm resulting from development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensated for, then planning permission should be refused;*
- *proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the sites notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both impacts that it is likely to have on the features of the site that make it of Special Scientific Interest and only broader impacts on the National Network of Sites of Special Scientific Interest;*
- *development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *opportunities to incorporate biodiversity in and around developments should be encouraged.*
- *planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran areas found outside or ancient woodland unless the need for, and or benefits of, the development in that location clearly outweigh the loss; and*
- *The following wildlife sites should be given the same protection as European Sites;*
- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar Sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on European Sites, Potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar Sites.*

Local Planning Policy

Suffolk Coastal District Local Plan – Core Strategy and Development Management Policies

7.2.8 Suffolk Coastal District Council formally adopted the Core Strategy and Development Management Policies document on 5th July 2013. This document is used in the determination of planning applications and sets out the vision for the Suffolk Coastal District up to 2027.

7.2.9 Objective 11 – Protecting & Enhancing the Physical Environment, represents the key part of the Local Plan with two targets:

- *“Improve biodiversity, geodiversity, landscape and townscape quality throughout the district; and*
- *No loss in number and area of ecological and geological designations.*

- 7.2.10 The key Core Strategy and Development Management Policies that are expected to be instrumental in achieving these targets are:

Strategic Policy SP14 – Biodiversity and Geology

“Biodiversity and geodiversity will be protected and enhanced using a framework based on a network of:

- *Designated sites;*
- *Wildlife corridors and links;*
- *The rivers, estuaries and coast;*
- *Identified habitats and geodiversity features;*
- *Landscape character areas; and*
- *Protected species.*

Sites of European importance, which include Special Areas of Conservation and Special Protection Areas are statutorily protected under the Conservation of Habitats and Species Regulations 2012 (based on EU directives), and wetlands of global importance (Ramsar Sites) are protected by government policy to apply the same level of protection as to European sites.

More generally, the policy approach to development on sites designated for their biodiversity or geodiversity interest is set out in Policy DM27.

The Suffolk Biodiversity Action Plan and Suffolk Local Geodiversity Action Plan will be implemented. The Strategy will also be to contribute to county targets through the restoration, creation and on-going management of new priority habitats as identified in those documents.”

Development Management Policy DM27 – Biodiversity and Geodiversity

“All development proposals should:

- (a) protect the biodiversity and geodiversity value of land and buildings and minimise fragmentation of habitats;*
- (b) maximise opportunities for restoration, enhancement and connection of natural habitats; and*
- (c) Incorporate beneficial biodiversity conservation features where appropriate.*

Development proposals that would cause a direct or indirect adverse effect (alone or combined with other plans or projects) to the integrity of internationally and nationally designated environmental sites or other designated areas, priority habitats or protected/priority species will not be permitted unless:

- (i) prevention, mitigation and, where appropriate, compensation measures are provided such that net impacts are reduced to a level below which the impacts no longer outweigh the benefits of the development*, or*
- (ii) with regard to internationally designated sites that the exceptional requirements of Reg. 62 of the Conservation of Habitats and Species Regulations 2010 (as amended) relating to the absence of alternative solutions and Imperative Reasons of Overriding Public Interest (IRO PI) have been met.*

Improved site management and increased public access will be encouraged where appropriate.

Footnote If the result of the Appropriate Assessment is that part of the Core Strategy cannot be delivered without adverse impacts on a European site which cannot be appropriately mitigated then planning permission will only be granted for a level and location of development for which it can be concluded that there will be no adverse impact on the integrity of the site even if the level is below that indicated in the Core Strategy...*

...5.72 Plans or projects which may have a likely significant effect on a European site will require appropriate assessment under Reg. 61 of the Conservation of Habitats and Species Regulations 2010 (as amended). Accordingly, local authorities can only consent plans or projects where it can be ascertained that they will have no adverse effect on the integrity of a European site. In exceptional circumstances, where there are no alternative solutions, a plan or project may meet the tests of IRO PI, which then requires demonstration that appropriate compensation will be provided to ensure that the integrity of the Natura 2000 network is not compromised. Given the rigour of these tests, the presumption is that plans or projects that could adversely affect Natura 2000 sites will not be approved. In practice schemes which qualify for IRO PI are extremely rare and are very unlikely to fall under the Council's remit for decision making.

5.73 In order to protect nature conservation, it will also be important to protect habitats outside designated sites and to protect particular species, such as those which are rare or protected. Suffolk Biodiversity Action Plan priority species and habitats defined by Suffolk Biodiversity Partnership, and other species protected by law will be protected from harmful development. Where there is reason to suspect the presence of nature conservation interests, applications for development should be accompanied by a survey and assessment of their value, in accordance with local biodiversity validation requirements. If present, the proposal must be sensitive to, and make provision for, their needs..."

Biodiversity Action Plans

- 7.2.11 In 2012 the UK Biodiversity Action Plan (UK BAP) was succeeded by the UK Post-2010 Biodiversity Framework. This aims to implement the 1992 Convention on Biological Diversity, to protect rare to declining habitats and species targeting those identified as being of UK priority, with specific actions to reduce their rarity and decline, and additionally sets out the priorities for UK-level work to support the Convention's Strategic Plan for Biodiversity 2011-2020 and agreed strategic goals and targets. Species and habitats of Principal Importance under S41 of the NERC Act (2006) continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.
- 7.2.12 At a more local level, the Suffolk Biodiversity Action Plan (SBAP) targets those species and habitats of specific relevance to the county. Such habitats of relevance to the proposed development site include hedgerows, and species include bats, common lizard *Zootoca vivipara*, and various birds including farmland birds such as yellowhammer *Emberiza citrinella*, and skylark *Aluada arvensis*.

7.3 METHODOLOGY

Scoping

7.3.1 As part of the scoping assessment Suffolk Coastal District Council (SCDC) were approached for comments regarding the proposals. In addition to comments received from SCDC, recommendations from Natural England (NE) were also provided. A summary of this response pertinent to ecology and nature conservation follows:

- Proposals will require an Appropriate Assessment and a Strategic Environmental Assessment to assess the impacts upon the SPA's and other designated sites. Consultation should be undertaken with Natural England to establish the scope and requirements of both documents;
- A variety of sources including Suffolk Biodiversity Records should be consulted to provide a desktop search for local, national and internationally designated sites, priority (BAP) species and protected species;
- The potential impact upon priority (BAP) species, such as reptiles, breeding birds and stag beetles as well as priority habitats such as hedgerows should be addressed (both on and off site);
- It is recommended that surveys for reptiles are undertaken to inform the assessment of development in terms of impacts upon biodiversity. Surveys must also include checks for bat roosts in and around the site;
- The assessment of likely ecological impacts needs to include sufficient mitigation measures to minimise impacts as well as identify compensation or offsetting requirements; and
- The EIA should explore options for habitat creation and enhancement and connections both for wildlife and people to complement the local habitats and species, and be sustainable within the context of the proposed project. Considerations should be given to the likelihood of species colonising new habitats and any measures needed to ensure their protection.

7.3.2 The full scoping response is provided in Appendix 1.2.

Survey Methodology

7.3.3 Baseline ecological information for the site was collected from the following surveys and appropriate methods:

- **Desk Study:** An ecological desk study was undertaken for the presence of statutory and non-statutory sites and records of legally protected species and Species of Principal Importance. The Multi Agency Geographic Information for the Countryside (MAGIC) website was interrogated for the presence of any statutory designated sites of international, national/regional or local nature conservation importance within 10km, 2km and 1km of the site, respectively. Suffolk Biological Records Centre (SBRC) were consulted for the presence of non-statutory designated sites and legally protected species and Species of Principal Importance within 1km of the site. In addition, existing ecology surveys undertaken in 2011 and 2012 on the site and local area as part of the East Anglia Offshore Wind Project and Galloper Wind Farm application by RSK were included in the assessment of the ecology baseline of the site. The desk study is reported in the Preliminary Ecological Appraisal, FPCR 2015).

- **Extended Phase I habitat survey:** A Phase I Habitat survey of the site was carried out on 13th March and 4th August 2014. Habitats were described and mapped following standard Phase I Habitat survey methodology (JNCC, 2010). The site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act, 1981. Hedgerows were surveyed using the Hedgerow Evaluation and Grading System (HEGS) and assessed against the Wildlife and Landscape criteria contained within Statutory Instrument No: 1160 – The Hedgerow Regulations 1997. The potential of the site to support protected species was assessed from field observations carried out in tandem with the habitat survey. (See Appendix 7.1: Ecological Appraisal, FPCR 2015).
- **Reptile Survey:** A strategic reptile presence / absence survey was undertaken between 21st August and the 30th September 2014 targeting locations identified by the Phase I survey as offering potential habitat within the site. The survey was undertaken based on the methodology detailed in the *Herpetofauna Workers Manual (2003)* and the *Froglife Advice Sheet 10*. (See Appendix 7.2: Reptile Survey Report, FPCR 2015).

7.3.4 An arboricultural assessment and survey of the trees located at the site was also conducted by FPCR. The results of the assessment and subsequent recommendations are detailed within the separate Arboricultural Assessment provided in Appendix 7.4

Impact Assessment Methods

- 7.3.5 Habitat and species evaluations have been made with reference to CIEEM's Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006). These guidelines aim to give a degree of consistency in approach to evaluating the importance of the ecological features within the site and any effects or impacts a scheme will have upon them.
- 7.3.6 The activities associated with the construction and implementation of the proposed development has been identified, together with the likely range within which their influence will be felt, given the nature of the area.

Evaluation

- 7.3.7 An assessment of the nature conservation value of the site (sensitivity) has been made following the criteria as identified in Table 7.1.

Table 7.1. Evaluation of Nature Conservation Importance

Level of Value	Examples
International	<p>An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified.</p> <p>A viable area of a habitat type listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of an internationally important species, which is threatened or rare in the UK (i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK) or of uncertain conservation status or of global conservation concern in the UK.</p> <p>A regularly occurring, nationally significant population/number of any internationally important species.</p>

National	<p>A nationally designated site (SSSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified.</p> <p>A viable area of a priority habitat identified in Section 41 of the NERC Act 2006 or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (local BAP).</p> <p>A regularly occurring, regionally or county significant population/number of any nationally important species.</p> <p>A feature identified as of critical importance listed in Section 41 of the NERC Act 2006.</p>
Regional	<p>Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile.</p> <p>Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a regionally important species.</p> <p>Sites which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.</p>
County/ Metropolitan	<p>County/Metropolitan sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County / metropolitan ecological criteria (County/Metropolitan sites will often have been identified in local plans)</p> <p>A viable area of habitat identified in County BAP.</p> <p>Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a County/Metropolitan important species. Semi-natural ancient woodland greater than 0.25 ha</p>
District / Borough	<p>Semi-natural ancient woodland smaller than 0.25 ha.</p> <p>Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile.</p> <p>District sites that meet the published ecological selection criteria for designation, including Local Nature Reserves selected on District/ Borough ecological criteria (District sites, where they exist, will often have been identified in local plans).</p> <p>Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource.</p> <p>A diverse and/ or ecologically valuable hedgerow network.</p> <p>A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.</p>
Local / Parish / Neighbourhood	<p>Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood (e.g. species-rich hedgerows).</p> <p>Local Nature Reserves selected on Parish ecological criteria.</p>

Site	Features or areas that provide habitat diversity and/or added wildlife interest at a site level but are not considered to appreciably enrich the habitat resource at a local/parish level or above.
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Impact Assessment

- 7.3.8 The impacts of the proposals have been predicted, taking into account different stages and activities within the development process. The significance of likely effects was determined by identifying those receptors, or features, likely to be affected. The features were evaluated to identify the important ones i.e. those which if their level of value was reduced, national or local policies (or in some cases legislation) would be triggered. The nature of the individual and combined impacts were characterised on each important feature, to determine the longevity, reversibility and consequences for the future in terms of ecological structure and function.
- 7.3.9 Where it was concluded that an effect would be likely to reduce the value given to an important feature, it was described as significant. Therefore, the ecological significance of these impacts has been assessed based upon the likely effect on the integrity or conservation status of each feature.

Significance Criteria

- 7.3.10 The ecological significance of likely effects was determined by:
- Identifying those receptors or ecological features likely to be affected;
 - Evaluating them to identify the important ones (i.e. those which, if their level of value reduced, national or local policies (or in some cases legislation) would be triggered); and
 - Characterising the nature of the individual and combined impacts on each important feature, to determine longevity, reversibility and consequences for the future in terms of ecological structure and function.
- 7.3.11 Where it has been concluded that an effect would be likely to reduce the value of an important feature, it was described as significant.

Significance Matrix

- 7.3.12 In order to provide a degree of consistency between the Ecology Chapter and the other disciplines with the ES, the significance of the impacts detailed in this Chapter have been reviewed against the significance matrix provided in Table 7.2 below.

Table 7.2. Significance Matrix

Significance following the IEEM guidelines	Equivalent significance using the seven-point scale
Significant at the international level	Major (adverse or beneficial)
Significant at the national level	Major (adverse or beneficial)
Significant at the regional level	Moderate (adverse or beneficial)
Significant at the county level	Moderate (adverse or beneficial)
Significant at the district / borough level	Minor (adverse or beneficial)

Significant at the local level	Minor (adverse or beneficial)
Significant at the site level	Minor (adverse or beneficial)
Not significant	Negligible

7.4 BASELINE CONDITIONS & EVALUATION

7.4.1 The following section outlines the baseline ecological conditions at the site and zone of influence from the results of the studies and surveys outlined in paragraph 7.3.3

Designated Sites

7.4.2 The locations of statutory and non-statutory designated sites discussed in the following sections can be found in Appendix 7.1, Figure 1: Designated Sites Plan.

Statutory Designations

7.4.3 The site does not fall within the boundary of any statutory designated site of international, national/regional or local nature conservation importance.

7.4.4 Three statutory designated sites of international importance lies within 10km of the site. Deben Estuary RAMSAR & Special Protection Area (SPA) is located approximately 350m south, Sandlings SPA lies approximately 4.2km east and Stour and Orwell Estuaries Ramsar and SPA lies approximately 9.9km to the south-west of the site.

7.4.5 The Deben Estuary SPA & Ramsar site is located 350m south of the site at its closest point. It covers approximately 981ha and extends 12km from Woodbridge to the sea just north of Felixstowe. The SPA and Ramsar site both comprise Deben Estuary Site of Special Scientific Interest (SSSI). The estuary site comprises saltmarsh and intertidal mud-flats which occupy the majority of the site, with a range of swamp communities which fringe the estuary. The estuary is of importance for its wintering waterbirds, especially dark-bellied brent goose *Branta bernicla* and avocet *Recurvirostra avosetta*. Winter populations of black-tailed godwit *Limosa limosa* are also one of the qualifying features of the SSSI.

7.4.6 Sandlings SPA lies approximately 4.2km from the site. The SPA is 3,391.8ha and includes areas of forestry land and heathland within which nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea* nest and forage. The SPA includes six component SSSI's, including Baxhall Heath, Leiston-Aldeburgh, Sandlings Forest, Sutton and Hollesley Heath, Snape Warren and Tunstall Common SSSI.

7.4.7 Stour and Orwell Estuaries SPA and Ramsar extends approximately 3672ha and includes extensive mud-flats, low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches. The mud-flats hold *Enteromorpha*, *Zostera* and *Salicornia* spp. The site also includes an area of low-lying grazing marsh at Shotley Marshes on the south side of the Orwell.

7.4.8 Table 7.3 provides a summary of the qualifying features of the statutory designated sites.

Table 7.3 Statutory Designated Sites of Nature Conservation Interest

Site and Designation	SPA qualifying feature	Ramsar qualifying feature
Deben Estuary SPA & Ramsar	<p>This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of species listed on Annex I of the Directive</p> <p><i>Species with peak counts in winter:</i></p> <p>Avocet <i>Recurvirostra avosetta</i>, 95 individuals representing at least 7.5% of the wintering population in Great Britain (5 year peak mean 1991/2 – 1995/6).</p>	A wetland of international importance
Sandlings SPA	<p>This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of species listed on Annex I of the Directive</p> <p><i>During the breeding season:</i></p> <p>Nightjar <i>Caprimulgus europaeus</i>, 109 pairs representing at least 3.2% of the breeding population in Great Britain (count as at 1992).</p> <p>Woodlark <i>Lullula arborea</i>, 154 pairs representing at least 10.3% of the breeding population in Great Britain (count as at 1997).</p>	n/a

Site and Designation	SPA qualifying feature	Ramsar qualifying feature
Stour and Orwell Estuaries SPA & Ramsar	<p>This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of species listed on Annex I of the Directive</p> <p><i>Species with peak counts in winter:</i></p> <p>Hen harrier <i>Circus cyaneus</i>, 10 individuals representing at least 1.3% of the wintering population in Great Britain (count as at 1996/7)</p> <p>This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:</p> <p>Black-tailed Godwit <i>Limosa limosa islandica</i>, 2,475 individuals representing at least 3.5% of the wintering Iceland - breeding population (5 year peak mean 1991/2 - 1995/6)</p> <p>Dunlin <i>Calidris alpina alpina</i>, 23,940 individuals representing at least 1.7% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6)</p> <p>Grey Plover <i>Pluvialis squatarola</i>, 3,660 individuals representing at least 2.4% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)</p> <p>Pintail <i>Anas acuta</i>, 878 individuals representing at least 1.5% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)</p> <p>Redshank <i>Tringa totanus</i>, 3,545 individuals representing at least 2.4% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)</p> <p>Ringed Plover <i>Charadrius hiaticula</i>, 578 individuals representing at least 1.2% of the wintering Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6)</p> <p>Shelduck <i>Tadorna tadorna</i>, 3,672 individuals representing at least 1.2% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)</p> <p>Turnstone <i>Arenaria interpres</i>, 836 individuals representing at least 1.2% of the wintering Western Palearctic - wintering population (5 year peak mean 1991/2 - 1995/6)</p> <p>The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl</p> <p>Over winter, the area regularly supports 64,768 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including:</p> <p>Cormorant <i>Phalacrocorax carbo</i>, Pintail, Ringed Plover, Grey Plover <i>Pluvialis squatarola</i>, Dunlin, Black-tailed Godwit, Redshank, Shelduck, Great Crested Grebe <i>Podiceps cristatus</i>, Curlew <i>Numenius arquata</i>, Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>, Wigeon <i>Anas penelope</i>, Goldeneye <i>Bucephala clangula</i>, Oystercatcher <i>Haematopus ostralegus</i>, Lapwing <i>Vanellus vanellus</i>, Knot <i>Calidris canutus</i>, Turnstone.</p>	A wetland of international importance

Non-statutory Designations

- 7.4.9 Seven non-statutory designated County Wildlife Sites (CWS) are located within 1km of the site, details of which are provided in Table 7.4 and shown in Appendix 7.1, Figure 1: Designated Sites Plan.

Table 7.4 Non-statutory Designated Sites within a 1km radius of the Site.

Site Ref.	Site Name	Approx. Distance from Site	Site Summary
188	Seckford Hall Camp Site	230m north-west	Wetland flora & rabbit grazed sandy grassland with scattered oak and hawthorn. Diverse acid grassland community which includes two Nationally Scarce species; mossy stonecrop and suffocated clover. Also supports a large population of the rare shepherd's cress.
182	Martlesham Creek Reed	305m south	Reedbed habitat with associated scrub which provides breeding habitat for several species of bird including; reed and sedge warbler, and reed bunting. Also of value for passage waders such as greenshank.
	Sluice Wood	610m south	Mixed broad-leaved woodland with plants such as wood spurge and pignut indicating a long history as a wooded site.
	Kyson Meadows	1km east	Cattle grazed unimproved pastures. Provide winter feeding and sheltering habitat for many birds. Associated dykes provide breeding habitat for other birds.
222	Porter's Wood	540m northeast	Woodland Trust owned site. Formed by dry oak woodland on higher ground and wet alder carr woodland on waterlogged peat soils on lower ground.
197	Woodbridge Wet Meadow	765m northeast	Diverse wetland vegetation associated with springs; this includes large populations of orchids. Drier parts of site support vegetation which is typical of the light soils within the local area.
206	Woodbridge Old Cemetery	960m northeast	Free-draining nutrient poor soils, which support areas of lichen/bryophyte heath and other areas where plants indicative of more mesotrophic conditions occur. Plant assemblage includes notable plants such as the Nationally Scarce clustered clover

Habitats

Overview

- 7.4.10 The site is formed by four fields of species-poor semi-improved grassland which has most-likely developed naturally following abandonment of cultivation of the land. A single internal species-

poor hedgerow separates two fields in the northern half of the site; additional hedgerows form the site's northern and part of the eastern boundary. Mature trees do not feature significantly within the site with two occurring within the site and a small number associated with the site boundaries. No standing water is present within the site, but a small ditch with a shallow flow, partially bisects the south-eastern extent of the site. In the south-west extent there are various buildings and areas of disturbed ground, tall ruderal herb and continuous scrub.

- 7.4.11 Broad habitat types are indicated in Appendix 7.1, Figure 3: Phase I Habitat Plan. Habitat descriptions for identified habitats are provided below. More detailed habitat descriptions and species lists are provided in Appendix 7.1: Ecological Appraisal.

Species-Poor Semi-improved Grassland

- 7.4.12 Species-poor semi-improved grassland forms the main habitat present within the site. The sward was characterised by the dominance of a limited range of common broad-leaved grasses, which included cock's-foot *Dactylis glomerata*, Yorkshire-fog *Holcus lanatus* and common couch *Elytrigia repens*, with localised areas exhibiting a finer sward characterised by red fescue *Festuca rubra*. With the exception of common nettle which was abundant, the grassland supported few herbs. Where additional species were present they comprised ruderal herbs and common forbs such as spear thistle *Cirsium vulgare*, common ragwort *Senecio jacobaea*, common mallow *Malva sylvestris*, common chickweed *Stellaria media* and annual nettle *Urtica urens*.
- 7.4.13 Species-poor semi-improved grassland of limited diversity and comprising common and widespread such as the grassland within the site is a common and ubiquitous habitat both nationally and locally accordingly it is considered to be of negligible nature conservation value.

Ephemeral/short perennial vegetation

- 7.4.14 A combination of sandy soils and rabbit grazing has resulted in ephemeral/short perennial vegetation present in two areas of the site. Along the northern boundary the sward contains locally abundant to dominant bryophytes with whitish feather-moss *Brachythecium albicans*, neat feather-moss *Pseudoscleropodium purum* and springy turf-moss *Rhytidiadelphus squarrosus* key components of this assemblage. Within the vascular plant component of the sward common cudweed *Filago vulgaris* and smooth hawk's-beard *Crepis capillaris*, common stork's-bill *Erodium cicutarium*, common ragwort and yarrow *Achillea millefolium* are abundant. Also located adjacent to the small bank separating the northern and southern elevations of the site, the vegetation in this area is very similar in composition, but with bryophytes less evident and a range of other species at lower abundance, species such as; dove's-foot crane's-bill *Geranium molle*, common stork's-bill and bugloss *Anchusa arvensis*
- 7.4.15 Common cudweed is afforded the IUCN Near Threatened Status and is listed as a Category 4 (declining and widespread) within the Suffolk Rare Plant Register and which describes it as being "*Frequent on light soils in the Sandlings and Brecks*". Investigation of the immediate local area during the assessment of the site found the species abundant on land to immediate north of the site and the footpaths which bisect the arable land to the west.
- 7.4.16 Common cudweed, despite its conservation status is widespread within East Anglia and the Sandlings area and the ephemeral/short perennial vegetation is considered to be of no greater than local value.

Hedgerows

- 7.4.17 Five individual hedgerows are associated with the site. All of the hedgerows were species-poor (defined as supporting less than five native woody species on average in a 30 metre length) with elm *Ulmus agg.* and hawthorn *Crataegus monogyna*, or in the case of hedgerow H5 hazel *Corylus avellana* dominating their respective canopies.
- 7.4.18 No hedgerows within the site were identified as being 'important' in accordance with Wildlife and Landscape criteria the Hedgerow Regulations 1997. HEGS identified one hedgerow, H3, to be of moderately high conservation value (Grade 2), the remaining hedgerows were found to be of moderate nature conservation value (Grade 3).
- 7.4.19 Hedgerows present within the site were species and structurally poor and were not considered to represent good examples of the habitat type. However, the hedgerows do provide habitat corridors within the context of the site and its immediate surrounds and shelter/foraging/nesting habitat for local wildlife including breeding birds, bats and reptiles. All of the hedgerows meet the criteria to be defined as habitats of principal importance due to the dominance of native species within their canopies. Native species dominated hedgerows are also listed as priority habitat on the Suffolk BAP. The hedgerow resource within the site is therefore considered to be of local nature conservation value.

Mature Trees

- 7.4.20 The occurrence of mature trees is limited to two within the site and a further four hedgerow standards associated with the northern and south-eastern boundaries. None of the trees were considered to be of veteran status. Pedunculate oak form the predominate species with the site; with the exception of T4, a standing dead elm, all of the relatively good condition and absent of any significant features, although standards T2 and T5 contained canopy deadwood.
- 7.4.21 The mature trees present increase the structural and habitat diversity of the site and are likely to be of some value to local wildlife. However small numbers of scattered mature trees are a common habitat both nationally and locally and the tree resource within the site is therefore considered to be of site value.
- 7.4.22 A full tree survey of the site has been completed and is reported in Appendix 7.4.

Other Habitats

- 7.4.23 Additional habitats present within the site include areas of scrub and tall ruderal herb which have formed locally from general abandonment, in addition to a drainage ditch within the south-eastern extent. These habitats were of limited extent within the site, were species-poor and comprised common and widespread. Subsequently they are considered to be of negligible value.

Fauna

Badger

- 7.4.24 No existing records of badger were provided for within 1km of the site.
- 7.4.25 No evidence of badger was observed within, or immediately adjacent to, the site during the two specific badger surveys undertaken or incidentally during the further Phase I survey or reptile survey occasions.

Bats

- 7.4.26 Records of a number of bat species were identified by the desk study for within 1km of the site. These included brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula* and pipistrelle bats *Pipistrellus spp.* In addition to these records a breeding colony of brown long-eared has been recorded in 2009 approximately 1.3km to the northwest of the site. A single static bat detector survey occasion (using two static detector units; one positioned along hedgerow H5 onsite adjacent to Sandy Lane and one to the east of the Lane off-site) covering the nights of the 15th to the 17th of June 2012 was conducted as part of the Offshore Wind Project. These surveys recorded four species of bat, common pipistrelle, soprano pipistrelle, Nathusius pipistrelle *Pipistrellus nathusii* and a *Nyctalus / Eptesicus* species. Bat activity recorded was low over the survey period with a total of 42 passes over the three nights. Common and soprano pipistrelle were the most frequently recorded species (accounting for 27 of the passes). Nathusius pipistrelle was recorded as just a single pass.
- 7.4.27 The boundary features including the hedgerows and associated trees and corridor of the railway line, with embankments of continuous scrub, forming the site's boundary, in addition to mosaic of secondary habitats within the site's western extent provide suitable foraging habitat and connective commuting routes for a range of bat species. Owing to the predominance of homogenous poor semi-improved grassland the majority of the site is considered to be of limited value to bats.
- 7.4.28 None of the buildings within the site provided suitable features for roosting bats and the few mature trees with limited potential are located at the site's boundaries and will be retained.
- 7.4.29 Bat species highlighted by the desk study for the local area and previously recorded on site, with the exception of Nathusius pipistrelle, are all relatively common and widespread species across East Anglia and Suffolk. Nathusius pipistrelle, largely a migratory species, is rarer although records have increased in recent years.
- 7.4.30 Based on the generally low value of the site for bats, with suitable foraging / commuting habitat restricted largely to the site's periphery and the based on the species previously recorded in association with the site and local area, it is considered to be of no more than local value for bats.

Breeding Birds

- 7.4.31 The desk study highlighted a large number of legally protected and notable species for within 1km of the site. A large concentration of these relate to the Martlesham Creek area to the south and southeast of the site.
- 7.4.32 Species-poor semi-improved grassland, habitat that overwhelmingly dominates the site is considered to provide few opportunities to breeding birds. However, given that the grassland supports some variation in sward height, it is recognised that the grassland field compartments are likely to offer some limited nesting and foraging opportunities for a small number of common and widespread but declining species of principal importance under S41 of the NERC Act 2006 possibly including skylark *Alauda arvensis*. Habitats of greater value to breeding birds are likely to include the boundary hedgerows and patches of scrub, particularly where this occurs at the western extent of the site. Whilst offering suitable foraging and nesting habitat for a number of generalist and typical garden bird species such as blackbird *Turdus merula* and robin *Erithacus rubecula*, these habitats are likely to support a small number of common and widespread species of principal importance associated with scrub and woodland edge habitats such as bullfinch

Pyrrhula pyrrhula, dunnoek *Prunella modularis*, house sparrow *Passer domesticus* and song thrush *Turdus philomelos*. Overall, given the nature and limited extent of the habitats present and the site's relative small size, the site is considered likely to be of no more than local value for its population of breeding birds.

Wintering Birds

- 7.4.33 As is considered likely to be the case with breeding birds, the site is unlikely to be of particular value for over-wintering birds. Whilst the grassland field compartments may offer some limited over-wintering habitat to open field specialists such as skylark, meadow pipit *Anthus pratensis* and possibly starling *Sturnus vulgaris*, any populations that occur within the site are unlikely to be recorded in significant numbers. Similarly, the hedgerows and scrub habitats are likely to offer limited shelter and foraging opportunities to those resident species that are considered to be present on site during the breeding season. The presence of berry bearing shrub species on site, which includes hawthorn and holly *Ilex aquifolium*, is likely to provide occasional foraging opportunities for winter thrushes including redwing *Turdus iliacus* and fieldfare *Turdus pilaris* which are both common and wide ranging species throughout the country in the winter.
- 7.4.34 Given the close proximity of the Deben Estuary SPA / RAMSAR and the open grassland habitat of the site, it is considered possible that the site may offer some limited foraging and loafing opportunities to bird species that visit the SPA / RAMSAR during the winter period. However, data collated and published by Suffolk Wildlife Trust Trading Ltd (Mason *et al* 2014) to give a baseline assessment of the relative importance of hinterlands up to 1km from the SPA suggests that the site is not of importance to bird populations of the SPA, including the two species cited for the designation; avocet and dark-bellied brent goose. The site is therefore not considered to represent supporting habitat of this internationally important site. The overall expected assemblage of the over-wintering birds within the site is considered to be of no more than local value, given the lack of importance for birds of the SPA and only minimal suitable resources for winter thrushes.

Herpetofauna

Amphibians

- 7.4.35 No records of great crested newt *Triturus cristatus* were identified by the desk study for within 1km of the site, although the species has been recorded within the wider local area with records dating from 2008 – 2011 from Portal Woods approximately 2.1km south-west of the site. Various records of common toad *Bufo Bufo* were provided for the study area, including from the residential adjacent to the east of the site and Martlesham Creek to the south.
- 7.4.36 No suitable waterbodies for breeding amphibians, including great crested newts, were identified within or immediately adjacent to the site. The ditch within the site's south-eastern extent was shallow and exhibited a flow and was consequently considered unsuitable for breeding amphibians.
- 7.4.37 Review of OS mapping and aerial photography covering the study area identified several potential standing waterbodies within 500m of the site (these are shown in Appendix 7.1, Figure 4). Two waterbodies to the south, adjacent to Martlesham Creek (P1 and P2) are areas of reedbed that are likely to be brackish and unsuitable for great crested newt. At a distance of at

least 320m from the site and with extensive suitable habitat surrounding them, should they be suitable, great crested newt would be unlikely to colonise the site from these ponds. Likewise, the A12 is a significant barrier to amphibian dispersal, indicating that should great crested newt be present in ponds located to the north and west of this road, they would not access the site from this location. A large area of water shown on the OS maps immediately south of Sluice Farm (P3) was investigated and found to no longer exist. Also when investigated two waterbodies to the west were either part of a flowing ditch (P4) or a concrete drainage channel with only shallow and temporary water associated with the adjacent A12 road (P5), neither being suitable for breeding great crested newt.

- 7.4.38 The lack of suitable breeding habitat and generally low suitability of the site overall in providing terrestrial habitat for amphibians suggests that the site is of negligible value for amphibians. This includes great crested newt, a species not considered likely to occur within the site.

Reptiles

- 7.4.39 Records of two common reptile species, slow-worm *Anguis fragilis* and common lizard *Zootoca vivipara* were provided for the 1km search area. Slow-worm records included records dated 2012 located approximately 400m east site on the adjacent railway and 2005 from the Seckford Hall Camp Site County Wildlife Site approximately 450m north-west. Common lizard have been previously recorded from Martlesham Creek located approximately 500m south of the site in 2005.
- 7.4.40 The reptile surveys undertaken during 2014 recorded the presence of a population of common lizard within the site. In accordance with current site survey assessment guidance (Froglife, 1999) the population was found to be 'good' with a peak count of 12 adults recorded.
- 7.4.41 Individuals were mainly recorded along the site's northern boundary and the south facing bank in the centre of the site, but also in small areas of suitable habitat associated with the boundary fence abutting the residential area of Duke's Park within the site's eastern extent. For more detail of the reptile survey refer to Appendix 7.2: Reptile Survey Report.
- 7.4.42 Common lizard are listed as species of principal importance under S41 of the NERC Act 2006 and identified as a priority species on the Suffolk BAP. Despite this, common lizard are still a widespread species, particularly within Southern and Eastern England and unremarkable populations of the size present within the site are likely to be relatively common within Suffolk. The reptile population present on site is considered to be of local nature conservation value.

Summary of Ecological Receptors

- 7.4.43 A summary of the ecological receptors and their nature conservation value is provided in Table 7.5

Table 7.5 Summary of Valued Ecological Receptors

Ecological Receptor	Comments	Nature Conservation Value
Deben Estuaries SPA & Ramsar Sandlings SPA Stour and Orwell Estuaries SPA & Ramsar	Deben Estuaries SPA & Ramsar located closest to the site at minimum distance of approx. 320m to the south. SPAs are designated for internationally important assemblages of wintering birds, Ramsar designation for wetlands of international importance	International
Deben Estuary SSSI	Notified for populations of over-wintering wildfowl and waders and for extensive and diverse saltmarsh communities.	National
County Wildlife Sites	Seven CWS located within 1km of the site, with Seckford Hall Camp Site located in closest proximity at 230m north-west of the site.	County
Species-poor Semi-improved Grassland	Species-poor habitat comprising common and widespread species. Common and ubiquitous habitat type with Suffolk and England.	Negligible
Ephemeral/short perennial vegetation – especially population of common cudweed	IUCN Near Threatened Status, listed Suffolk Rare Plant Register Category 4 (declining but widespread), although frequent in Sandlings and Brecks area.	Local
Hedgerows	Of value to local wildlife, providing foraging nesting and resting habitat and routes of movement through the site. Listed as a Habitat of Principal Importance and Priority habitat within LBAP.	Local
Mature Trees	Small number of standards. None were considered to be of veteran status. Generally increases habitat and structural diversity within the site, although such a resource is a common and widespread habitat.	Site
Tall Herb - Ruderal	Common and widespread habitat.	Negligible
Scattered & Continuous Scrub	Common and widespread habitat.	Negligible
Wetland	Species-poor and of limited extent.	Negligible
Badgers	No evidence of the species during site surveys, although grassland provides suitable foraging habitat.	Negligible
Bats	Site of low value to bats generally offering limited foraging / commuting habitat which is largely restricted to the peripheries. Assemblage of four species previously recorded in association with site; common pipistrelle, soprano pipistrelle, Nathusius pipistrelle and <i>Nyctalus</i> / <i>Eptesicus</i> . All bat species are listed on SBAP, with the exception of common pipistrelle, all Species of Principal Importance.	Local

Ecological Receptor	Comments	Nature Conservation Value
Breeding Birds	Site offers suitable habitat to a range of urban edge and farmland bird species, which may include small numbers of Species of Principal Importance and BoCC Red / Amber BoCC list species.	Local
Winter Birds	Site offers overwintering habitat of open field specialists and hedgerow species, which may include small number Species of Principal Importance and BoCC Red / Amber BoCC list species. Site may offer some limited foraging and loafing opportunities to bird species using Deben Estuary SPA / RAMSAR.	Local
Amphibians	Although common amphibians species recorded locally, site does not provide breeding habitat and only low overall suitability for terrestrial habitat for amphibians. Great crested newt considered unlikely to occur within the site	Negligible
Reptiles	'Good' population of common lizard, a listed as Species of Principal Importance and Priority species within LBAP. Common and widespread species, 'good' populations likely to be relatively common with Suffolk	Local

7.5 ASSESSMENT OF EFFECTS

7.5.1 This section describes the potential effects prior to the implementation of any mitigation or enhancement measures such as a landscaping scheme or green infrastructure (GI) strategy. Effects can be divided into those effects that arise as a consequence of construction works taking place at the site, to operation of the completed development and include increased use of habitats and designated sites. The legislation requires that attention be paid to the likely forms of effect. These may be:

- Direct or indirect;
- Short or long-term;
- Intermittent, periodic and/or permanent, and
- Cumulative.

7.5.2 Potential effects of the proposals during the construction phase and prior to implementation of mitigation are:

- Direct loss of habitats and their associated flora and associated severance or reduction in value of wildlife corridors.
- Degradation of retained habitats through soil compaction or erosion, changes in hydrology or drainage.

- Pollution of retained habitats and neighbouring habitats/designated sites through airborne and waterborne pollutants such as construction site generated dust and fumes from vehicle emissions, fuel spills, and incorrect storage of materials or chemicals.
 - Killing and injury or disturbance of protected species during site clearance.
- 7.5.3 Potential effects of the proposals during the operational phase prior to the implementation of mitigation are:
- Damage to neighbouring designated sites and/or the qualifying faunal assemblage through increased visitor pressure.
 - Degradation of retained or created habitats through mismanagement.
 - Disturbance of onsite fauna through increased human disturbance, light and noise, and predation by domestic animals.
- 7.5.4 Only impacts on those features of site level nature conservation value or above have been assessed, habitats or fauna of negligible value do not warrant further consideration in this process.

Construction Effects

Designated Sites

Statutory Designated Sites

- 7.5.5 The three statutory designated sites; Deben Estuary SPA & Ramsar approx. 350m south, Sandlings SPA approx. 4.2km east and Stour and Orwell Estuaries SPA and Ramsar approx. 9.9km south-west of the site will not be affected by the construction phase of the development. Sandlings SPA and Stour and Orwell Estuaries SPA and Ramsar are located at sufficient distances and is separated from the site from roads and residential areas that there would be no adverse effect. When consulted using their Discretionary Advice Service, Natural England did not require a Habitats Regulations Assessment of impacts to Sandlings SPA or Stour and Orwell Estuaries SPA and Ramsar, further supporting this assertion.
- 7.5.6 The Deben Estuary SPA & Ramsar site is located closer to the site, but with no functional connectivity via waterways or connected similar habitats, direct impacts from construction are not likely. Given the close proximity of Deben Estuary to the site, there is a possibility of airborne dust arising and drifting to the estuary from the site, however, adopting normal good working practice such as damping down dry material in windy weather will prevent such impacts.

Non-statutory Designated Sites

- 7.5.7 All non-statutory designated sites are considered to be located at sufficient distance from the site and isolated by major roads/railway lines and/or built development such that their conservation status will remain unaffected by the construction phase of proposals.

Habitats and Flora

- 7.5.8 Proposals will result in the direct loss of approximately 11ha of species-poor semi-improved grassland, 0.19ha of dense / scattered scrub, 0.11ha of tall ruderal, 0.3ha of disturbed ground, 0.6ha of ephemeral/short perennial vegetation, 176m of hedgerow and one mature tree.

Hedgerows affected through proposals include hedgerow H2, which will be lost in its entirety (161m loss) and an approximate 15m section from hedgerow H1, to accommodate site access off the Ipswich Road.

- 7.5.9 None of the hedgerows affected by proposals were identified as Important in accordance with the wildlife and landscape criteria of the Hedgerow Regulations Act 1997. Both hedgerows were identified as being of moderate value (Grade 3) under HEGS, in addition to being habitats of Principal Importance and Local BAP priority habitats. The total length of hedgerow lost is approximately 176m which accounts for approximately 21% of the total hedgerow habitat within the site. The loss of hedgerow resulting from the scheme is considered unlikely to appreciably reduce the hedgerow resource locally and as such the impact is considered to be adverse at no greater than a site level of significance (permanent minor adverse).
- 7.5.10 Proposals would result in the loss of common cudweed from the site, however given its common and widespread occurrence locally, this loss of the species from the site is unlikely to appreciably affect the conservation status of the species nationally or locally, as such the impact is considered to be of site level significance (permanent minor adverse).
- 7.5.11 The remaining habitats lost to proposals are either of negligible value, including the poor semi-improved grassland, scrub and tall ruderal, or in the case of the mature trees of site level value, and the impact their loss is considered to be negligible.
- 7.5.12 Adverse in-direct effects on the longevity of retained hedgerows and trees could potentially occur through physical damage to the root systems and the compaction of soils during construction works within the root protection zones. Such operations are likely to result in long-term adverse effects on retained features of site via direct mortality or alteration of species and structural diversity of the vegetation. In the absence of mitigation construction operations may result in site level (minor adverse) disturbance effects in the short-to-medium term to retained hedgerows and trees.

Effects of Construction on Fauna

Bats

- 7.5.13 None of the buildings or the single tree (T2; Appendix 7.1, Figure 3) that will be lost as a result of the proposals were identified as having the potential to support roosting bats. No effects from construction on roosting bats are therefore anticipated.
- 7.5.14 The majority of site that will be lost as a result of the development proposals comprises homogenous grassland of limited value to bats. However, proposals will result in some small loss of foraging and commuting habitat through the removal of hedgerow H2 and an approximate 15m section of H1 to allow for site access, in addition to the loss of some patches of secondary habitats, such as scrub and tall herb. However, the majority of foraging and commuting habitat, is to be retained and will therefore continue to provide habitat corridors around the site and continue to provide commuting and foraging opportunities for bats. The small losses of foraging and commuting habitat are therefore unlikely to result in any adverse effects to the local bat population or prevent continued use of the site by foraging bats and the significance of the impact is therefore negligible.

Breeding Birds

- 7.5.15 The conversion of the site from its current largely agricultural nature to a predominately urban environment will result in a change in the bird assemblage to one characterised by predominately urban species. This will result in a subsequent loss of species associated with open farmland such as potentially yellowhammer, linnet and skylark. Given the relatively small size of the site and only low numbers of birds that are likely to be present, as well as the availability of similar habitat in the surrounding area, this is likely, at worst, to result in the loss of a small number of species of conservation concern (Red, Amber BoCC and/or Species of Principal Importance), however these species are still relatively common and widespread and the significance of the impact is unlikely to be adverse at any greater than a local level (minor adverse).
- 7.5.16 Unmitigated disturbance of breeding birds during construction may result from accidental destruction of nests and the noise associated with vegetation clearance, as well as disturbance whilst breeding during subsequent ground works and construction activities that are of low frequency but high amplitude, such as piling. During the breeding season, such disturbance may lead to reduced breeding success through nest desertion or the avoidance of otherwise suitable habitat. Considering the size of the site and extent of proposed development, the magnitude of the impact is likely to be adverse at no more than a local scale (minor adverse).

Wintering Birds

- 7.5.17 The construction phase will result in only minimal losses of berry bearing shrubs with the majority of hedgerows retained, suggesting that the occasional foraging resource that these are likely to provide for winter thrushes will be retained and there will be negligible impact from the construction phase of development.
- 7.5.18 As the site does not provide a significant resource for wintering birds associated with the nearby Deben Estuary SPA there will be no direct impact on the SPA bird assemblage that may occur outside of the designated sites through loss of onsite habitats. There will be a negligible impact on wintering birds associated with the SPA and wider hinterlands.

Reptiles

- 7.5.19 Construction phase of the proposals will result in loss of all of suitable reptile habitat from the site resulting in the loss of the 'good' population of common lizard. The current development framework plan indicates that the south facing bank and internal hedgerow will be lost as part of the development proposals. In addition, a proposed main access point and a convenience store will result in a loss and degradation of suitable habitat where lizards were recorded on the north boundary. In the absence of mitigation, the development is likely to result in killing and injury of common lizard and loss of significant areas of their habitat. The construction phase effects on reptiles are considered to be at a local level (minor adverse).

Operation Effects

Designated Sites

Statutory Sites

- 7.5.20 A report providing the 'Information to enable a Habitat Regulations Assessment of the impacts on the Deben Estuary Special Protection Area and Ramsar site pursuant to Regulation 61 of The Conservation of Habitats and Species Regulations 2010 (as amended)' has been prepared by Ecology Solutions (August 2015), and is provided in Appendix 7.3. Potential impact on Deben Estuary SPA as identified in the report includes disturbance effects on qualifying bird interest features, which could result from new residents associated with the development accessing the SPA for recreational purposes thereby increasing visitor pressure on the designated site and potentially disturbing birds. Recreational pressure could include walkers and dog walkers, water sports and wildfowling/shooting
- 7.5.21 Given that the SPA is designated for its winter bird assemblage, impact from these recreational pressures is only significant in the winter months. As water sports are typically associated with the summer months impact from this particular activity is not considered significant. Furthermore, as shooting and wildfowling are highly specialised and regulated activities increases in residents that undertake such activities is considered to be minimal and therefore any impact via this activity also non-significant.
- 7.5.22 In the absence of mitigation, given the close proximity of the site to Deben Estuary SPA and Ramsar (minimum 320m), there is potential for a permanent and long term adverse impact on the qualifying features of the designated site as well as damage to the constituent SSSI. The level of impact could be such that bird assemblages are reduced to levels that no longer qualify for SPA status, an impact at an international level (major adverse).

Non-statutory Sites

- 7.5.23 Increased use of non-statutory sites can arise when they are connected to or in close proximity to the development site and attractive for recreational use, especially dog walking. Increased usage can cause damage to habitats and disturbance to fauna. Six of the seven County Wildlife Sites located in proximity to the site have formal public access via footpaths or open access. Of these the majority are located at sufficient distance from the site that they are unlikely to receive significantly increased usage via new residents associated with the development. Seckford Hall Camp Site and Martlesham Creek are located the closest to site at distances of approx. 230m and 305m, respectively, although as Seckford Hall Camp Site is separated from the site by the A12 and Martlesham Creek is a wet habitat, this increase is likely to be minimised by this reduction in the attractiveness of these as dog walking destinations. In the absence of mitigation adverse impacts through recreation pressure on non-statutory designated sites are possible but likely to be minimal, at most a local level impact (minor adverse).

Habitats and Flora

- 7.5.24 A potential operational phase impact on retained or created habitats of site or local value such as hedgerows and mature trees is degradation of the habitat or suppression of ecological value

through mismanagement; this may lead to a reversible adverse effect significant at the site level (minor adverse).

- 7.5.25 Loss of notable flora, namely common cudweed, will have already taken place during the construction phase and as such no operational phase effects are anticipated.

Fauna

Bats

- 7.5.26 Although loss of habitat is unlikely to impact bats that use the site for foraging and commuting, inappropriate lighting of retained and created habitats may have some influence over the use of these habitats by bats by deterring more sensitive species. Artificial lighting can also affect insect population dynamics and distribution, altering life cycles and ultimately decreasing prey availability for bats. In the absence of mitigation operational phase impacts via artificial lighting are considered to have a possible in-direct site level impact on bats (minor adverse).

Breeding and Wintering Birds

- 7.5.27 Operational phase impacts of the proposals on breeding birds and visiting wintering thrushes may comprise slightly increased likelihood of predation of birds that continue to utilise the site by domestic animals such as cats. This may be brought about by increased presence of such predators, but may also be as a result of increased use of the site by widespread and urban edge species owing to the presence of residential gardens providing a wider range of fruiting shrubs and bird feeders that are often provided by residents. This impact is unlikely to significantly influence the local breeding or wintering bird populations, at most resulting in a site level impact (minor adverse).

Reptiles

- 7.5.28 There is a slightly elevated risk of predation of common lizard that have been retained within the site by domestic animals, especially cats. Recent statistics suggest that 19% of UK households have cats (Pet Food Manufacturers PFMA; <http://www.pfma.org.uk/pet-population/>), which, if extrapolated from to apply to the proposed development for up to 215 dwellings, would amount to eight additional households with cats. This increase is insignificant given the close proximity of the site to existing residential areas and will therefore have a negligible impact.

7.6 MITIGATION & MONITORING

- 7.6.1 The following section includes mitigation measures and compensation for any significant effects as well as guidance to ensure that no offences are committed under European or UK Legislation. In addition to ensuring that significant effects are mitigated or compensated for. As planning permission is for an outline planning permission, the broad principles of habitat creation is provided to ensure that where possible the biodiversity of the site is retained and enhanced and that national and local policies are taken into consideration.

Construction Environment Management

- 7.6.2 All retained trees and hedgerows are to be protected from direct damage and loss as well as indirect damage through soil compaction and root damage during construction works. Exclusion

zones are to be enforced via fencing erected to the arboricultural specification (see Appendix 7.4) to prevent incursions into hedge and tree root protection zones. This will serve to protect retained habitats from adverse impacts during construction works.

Timing of works

- 7.6.3 Vegetation clearance should be conducted outside of the bird breeding season, i.e. conducted in the period October to February, inclusive, so as to avoid potential for destruction of active nests and killing and injury of birds, their eggs and dependent young. Should clearance not be possible during this period, all suitable vegetation must be checked for presence of nesting birds by a suitably experienced ecologist. This includes all trees, scrub, hedgerows as well as grassland and areas of ephemeral/short perennial vegetation for the presence of ground nesting species. Should an active nest be found, works in this area could not take place until the young have fully fledged and the nest is no longer active.

Reptile trapping and translocation

- 7.6.4 In order to avoid accidental killing and injury of common lizard during clearance operations, it will be necessary to remove the individual animals from the development zone prior to site clearance through implementation of a period of trapping and translocation. This will involve installing artificial refugia throughout areas of suitable habitat and catching any basking reptiles utilising these and existing natural refugia over an up to 60 day period during the active period (March to September) and suitable weather conditions. Captured reptiles will be moved into an onsite pre-prepared receptor site, created specifically to provide suitable habitat and refuges for common lizard. This receptor site will be fenced using reptile-proof fencing to prevent migration back into the rest of the site during works. Following the trapping period, all suitable habitat will be cleared using destructive search techniques to remove any residual individuals, under the supervision of an ecologist. More details of the mitigation strategy are provided in Appendix 7.2: Reptile Survey Report.

Habitat Creation

- 7.6.5 The following proposals are based on the current Development Framework Plan 6106-L-01 Rev. N. Approximately 3.16ha of open space, 1.26ha of structural planting and a 0.2ha sustainable drainage system attenuation basin is to be provided within the site.
- 7.6.6 Habitats to be created include native broadleaved woodland planting in the west of the site, tree, hedgerow and shrub planting throughout the public open space and specifically along the northern and southern boundaries of the central swathe of grassland where an electricity cable easement is present. Buffer planting of shrub and woodland planting is also proposed along the boundary with the railway line to the south of the site and shrub planting and hedgerow creation along the eastern boundary with Sandy Lane.
- 7.6.7 Native hedgerow and tree planting within the site will more than mitigate the impact of the required losses, planting of new native hedgerows will provide an increase in this NERC S41 list and local BAP priority habitat and planting around the site boundaries and along the central easement will maintain the permeability of the site for wildlife, providing a connective route and an overall increase in the length of native hedgerow provision.

- 7.6.8 Habitat creation and the complex of hedgerows, shrubs, scrub and trees as well as private gardens will provide increased opportunities for breeding birds that utilise such features (i.e. non ground nesting species) within the site and reducing potential for elevated predation by domestic cats.
- 7.6.9 Habitat creation will also serve to mitigate the impact of loss of suitable reptile habitat as a result of the development of the site. The reptile receptor site will be located within the area of open space in the east of the site. The area initially fenced off as a translocation zone will be designed to provide optimal conditions for common lizard during both the construction and operation phases. The area will be planted with native scrub, hibernacula will be created and the grassland will be managed to provide the cover and foraging with a tussocky sward with open areas for basking. The topography of the area would be modelled so that it provides areas of south facing banks/slopes which act as sun-traps to provide suitable basking conditions for the lizards and an element of bare ground will also be included within these sun-trap areas. In addition some specific works to make the rest of the green infrastructure suitable for lizards is also to be undertaken such as provision of log piles and connected patches of rough and tussocky grassland, allowing the population to permeate back into the rest of the open space once the construction is complete.
- 7.6.10 Open space created within the site will provide a 1.7km circular pedestrian route for recreation, including dog walking, and onsite pedestrian routes will connect with offsite public rights of way to the west of the site, connecting onsite routes with the wider countryside for those who may want to walk further or through more varied landscape. Use of these walking routes will be promoted through provision of homeowner packs for new residents detailing the available routes and highlighting the sensitivities of the SPA. Provision of onsite open space and promoted connections to the wider countryside to the west will reduce potential for increased use of non-statutory and statutory designated sites located in proximity to the site, including Deben Estuaries SPA and Ramsar and its constituent SSSI.

Access Management and Offsite Contributions

- 7.6.11 As well as provision of onsite open space and its connection to wider public footpaths, to reduce the likelihood that new residents will regularly access Deben Estuary SPA/Ramsar/SSSI and cause the associated recreational impacts on its valuable habitats and fauna, it will be necessary to restrict access from the site directly onto the adjacent Sandy Lane, thus increasing the minimum walking distance from the site to the designated site and reducing the attractiveness of the SPA as a recreational destination. This will be achieved by retaining the existing hedgerow, augmenting this with further hedgerow planting including thorny shrubs and fencing the boundary. So as to ensure the integrity of the fencing as a preventative measure, it will be monitored and any breaches repaired immediately as part of the management regime of the public open space.
- 7.6.12 The above measures will be supplemented with a developer contribution secured through the planning system to be paid towards the wardening and visitor management of the SPA to further reduce the potential for adverse impacts from excessive or inappropriate recreational usage by new residents, further reducing the potential for adverse impacts on the designated site.

Sensitive Lighting

- 7.6.13 To maximise the value of retained and created habitats, including balancing pond, woodland, hedgerows and scrub, artificial lighting of these features should be avoided. Where necessary for safety purposes lighting should be the minimum appropriate lux, directional and designed to minimise spill onto non target areas. The most up to date guidance on bat-sensitive lighting should be followed to ensure that lighting does not interfere with the continued use of the site by foraging and commuting bats.

Habitat Management

- 7.6.14 So as to prevent degradation and ensure that retained habitats at least retain and ideally increase their ecological value and that the ecological value of newly created habitats is maximised appropriate management will be necessary. This should be via preparation and implementation of a Habitat Management Plan. This will include detail such as frequency of grass cutting to maintain variable sward lengths and characteristics and hedgerow maintenance to maximise flowering and fruiting.
- 7.6.15 Habitat management is also an important component of the reptile mitigation strategy. The management plan will cover the receptor site and the wider areas of open space and implementation of the plan will serve to ensure that habitats establish and develop as optimal habitat for common lizard, allowing the population to remain onsite and maintain the current conservation status of the population.

Monitoring

- 7.6.16 Monitoring of developing habitats against the conservation objectives of the Habitat Management Plan will be necessary to ensure that management continues to be appropriate and effective and inform whether any alterations to the management plan area necessary. This monitoring and feedback mechanism informing adjustments is to continue throughout the life of the management plan as an integral component thereof.
- 7.6.17 For a minimum of two years following reptile trapping and the development taking place, the translocated population will be monitored by way of annual surveys to check that the initial mitigation strategy and ongoing habitat management are successful in maintaining the population status of the onsite population and inform whether changes to management are required.

7.7 RESIDUAL IMPACTS

- 7.7.1 Table 7.6 below provides a summary of the residual effects that will remain once the design consideration and mitigation measures outlined above are implemented.

7.8 CUMULATIVE IMPACTS

- 7.8.1 There are six approved and pending planning applications in the local area that are to be taken into consideration in terms of the cumulative effects that could arise if these and the proposed development all take place (A plan showing the location of these planning applications is provided in Appendix 1.6)

Approved applications:

- 1) DC/14/0991/OUT Land North of Woods Lane Melton (up to 180 dwellings)

2) DC/14/0715/OUT Land to Rear of Cedar House Pytches Road Melton (10 dwellings)

3) C/10/1906 Land South of Main Road Martlesham (180 dwellings)

4) C/13/0806 East Anglia Offshore Wind One Underground Cabling Between Bramford and Bawdsey (Underground cabling for offshore wind farm)

Pending applications:

5) C/09/0555 Adastral Park (Up to 60,000m employment space, up to 2000 dwellings, mixed use local centre, education provision, hotel, energy centre, public park)

6) Woodbridge Football Club (95 houses)

- 7.8.2 Given the limited value of onsite habitats and the proposed habitat creation, cumulative impacts in terms of habitat loss associated with the above applications are not anticipated. Likewise, onsite mitigation for common lizard will prevent cumulative impacts with respect to reptiles. With a likely change in the onsite assemblage of breeding birds, a similar change is possible from applications 1, 3 and 6 with a cumulative impact as a result. Although the significance of which may be limited by the continued extensive availability of farmland in the local area.
- 7.8.3 Presence of common cudweed on the sites affected by the above applications is unknown. Although given the nature of these sites, appearing to be mostly grassland or, in the case of application no.5, existing industry, presence is unlikely and cumulative impacts influenced by onsite losses are not likely. It was noted during the Phase 1 survey of the site that there is a large population of common cudweed to the north of the site on land either side of the B1438 road, land that is adjacent to Woodbridge Town Football Club, although which is not currently known to be proposed for development.
- 7.8.4 Application no.4 above has had a direct influence over the development proposals for the site in that that the easement through the centre of the site is to allow for this approved development. The easement for the cabling is partially dictating the location and layout of public open space provision and the habitats that can be created within. No cumulative impact in terms of protected species is anticipated given that clearance of existing vegetation will be necessary for both applications and protection from harm and habitat loss via mitigation measures including translocation of the common lizard will be required for both the development and cabling application.
- 7.8.5 Application no.2 is at distance from the site and is for a small number of dwellings, given the low impact of this scheme no cumulative impacts are anticipated.
- 7.8.6 The ecology assessment for Application no.1 identified that there would be no impact on designated sites from that proposed development and did not appear to have required a Habitats Regulations Assessment. Ecology assessments are not currently publicly available for applications 3, 5 and 6. However, one potential adverse cumulative impact is that of visitor pressure on the Deben Estuary SPA, Ramsar when considering the development and applications 1, 3, 5, and 6, as together they could significantly increase number of local residents looking to use the designated site for recreation. However, as set out in the report informing a Habitat Regulations Assessment for the development (Ecology Solutions August 2015), with the proposed mitigation preventing any residual adverse impacts from the proposed development as well as the strict regulation that protects and the scrutiny of proposals undertaken by Competent Authorities and the relevant Statutory Authorities (including Natural England), it is not likely that

the other proposals (i.e. projects) would come forward without appropriate and proportionate mitigation or avoidance measures to offset any perceived deleterious effects on a European designated site. No cumulative impacts in terms of visitor pressure are therefore anticipated.

7.9 REFERENCES

- 7.9.1 Institute of Ecology and Environmental Management. (2006). *Guidelines for Ecological Impact Assessment for the United Kingdom*.
- 7.9.2 Mason, N. Excell, A and Meyer, J. (2014). *The Deben Estuary and its hinterland: Evaluation of key areas for birds, recreational disturbance issues and opportunities for mitigation and enhancement*. Suffolk Wildlife Trust Trading Ltd.
- 7.9.3 Froglife (1999) *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.
- 7.9.4 Pet Food Manufacturers' Association. [online] <http://www.pfma.org.uk/pet-population-2014> Accessed 12.11.15.

Table 7.6 Residual Impacts

Valued Ecological Receptor (value)	Potential Effect	Significance of Potential Effect from Construction / Operation Phases	Design and Mitigation Measures	Residual Effect
Deben Estuary SPA and Ramsar (International)	Increased recreational pressure causing disturbance to birds and damage to habitats	Major adverse	<ul style="list-style-type: none"> Onsite open space provision Encouragement to use and connection with wider footpath network Prevent access onto Sandy Lane Developer financial contribution 	Neutral
Sandlings SPA (International)	None	n/a		
Stour and Orwell Estuaries SPA (International)	None	n/a		
Deben Estuary SSSI (National)	Increased recreational pressure causing disturbance to birds and damage to habitats	Major adverse	<ul style="list-style-type: none"> Mitigation for constituent SPA/Ramsar will cover impacts to SSSI 	Neutral
County Wildlife Sites (County)	Increased recreational pressure	Minor adverse	<ul style="list-style-type: none"> Onsite open space provision 	Neutral
Ephemeral/short perennial vegetation with common cudweed population (Local)	Loss of common cudweed population	Minor adverse	<ul style="list-style-type: none"> None appropriate, species is dependent on regularly disturbed nature of associated habitat that is to be lost 	Minor adverse

Hedgerows (Local)	Loss of one hedgerow (H2) and gap creation in another (H1) Root damage during construction Mismanagement during operation	Minor adverse	<ul style="list-style-type: none"> Protective fencing during construction Native hedgerow creation Appropriate management of retained and new hedgerows via implementation of a habitat management plan 	Increase in length and connective function of habitat provided Minor beneficial
Mature Trees (Site)	Loss of one tree (T2) Root damage during construction	Negligible Minor adverse	<ul style="list-style-type: none"> Protective fencing during construction Extensive tree planting 	Increase in number of trees onsite Moderate beneficial
Bats (Local)	Minor loss of low value habitats Potential for effect from artificial lighting	Negligible Minor adverse	<ul style="list-style-type: none"> Avoid inappropriate lighting of retained and created open space 	Habitat creation will diversify potential foraging habitat Minor beneficial
Breeding birds (Local)	Loss of farmland habitat and change to urban environment altering bird assemblage Disturbance, damage to nests whilst breeding Increased predation by cats	Minor adverse	<ul style="list-style-type: none"> Vegetation clearance outside of breeding bird season or under ecological supervision Habitat creation providing diverse nesting habitat 	Neutral
Winter birds (Local)	Minimal loss of berry producing shrubs	Negligible	n/a	Additional shrub and hedgerow planting and management will

				increase berry availability for winter thrushes Minor beneficial
Reptiles (Local)	Killing and injury during construction Loss of suitable habitat Minor increase in predation by cats	Minor adverse	<ul style="list-style-type: none"> • Programme or trapping and translocation • Destructive search of suitable habitats • Receptor site creation and management under Habitat Management Plan 	Neutral

