OTTERPOOL PARK

COUNTRYSIDE • CONNECTED • CREATIVE

ENVIRONMENTAL STATEMENT

OP5 CHAPTER 7 **– ECOLOGY AND BIODIVERSITY**

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March 2022

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OTTERPOOL PARK

Environmental Statement Volume 2: Main ES

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7 Biodiversity

7.1 Introduction

7.1.1 This chapter assesses the likely significant effects of the proposed Development in terms of Biodiversity. This chapter is supported by the reports presented in ES Appendix 7.1 to 7.22, which present baseline information relating to Biodiversity and provide further detail on impact assessment and mitigation, where appropriate. The baseline against which the likely significant effects are to be assessed is the current environmental conditions at and surrounding the study area. This impact assessment addresses the construction phase and the completed development, or operational phase, relating to the outline planning application (OPA).

7.1.2 This assessment has been carried out in accordance with the guidance set out in the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines for Ecological Impact Assessment (2018) ('the CIEEM Guidelines') (Ref. 7-6) and has been undertaken by a full member of CIEEM employed by Arcadis Consulting (UK) Ltd.

7.1.3 The surveys that underpin the ecological impact assessment were undertaken during the period 2016 to 2021; ES Appendices 7.1–7.22 provide full details although the findings are summarised in the ES chapter. ES Appendix 7.1 contains the figures for the chapter, comprising:

- Figure 7.1: SPA, Ramsar and SAC designated sites within 10km of the site boundary
- Figure 7.2: SSSI and LNR designated sites within 5km of the site boundary
- Figure 7.3: Local wildlife sites within 2km of the site boundary
- Figure 7.4: Woodlands listed on the AWI within 2km of the site
- Figure 7.5: Habitats overview map and target notes
- Figure 7.6: Vegetation removal plan
- Figure 7.7: Green infrastructure strategy

7.1.4 Appendices associated with this chapter are:

- Appendix 7.1: Survey Summary, Mitigation, Impact Assessment and ES Figures
- Appendix 7.2: Consultation and EIA Scoping
- Appendix 7.3: Habitat and Hedgerow Survey Report – Update to Include 2021 Survey Data
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- Appendix 7.11: Bat Survey Results Summary, Valuation and Impact Assessment – Update to include 2020 and 2021 Survey Data
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- Appendix 7.15: Breeding Bird and Barn Owl Survey Report – Update to include 2020 and 2021 Survey Data
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- Appendix 7.18: Targeted Species Mitigation Strategies BADGER INFORMATION CONFIDENTIAL
- Appendix 7.19: Habitats Regulations Assessment – Stage 1 and Stage 2 (for Stodmarsh SPA, SAC and Ramsar Site)
- Appendix 7.21: Biodiversity Net Gain Calculations
- Appendix 7.22: Natural Capital Strategy and Ecosystem Service Impact Assessment.

Relevant Aspects of the proposed Development

7.1.5 A full description of the proposed Development is given in Chapter 4: The Site and the Proposed Development. The design of the proposed Development has taken into account the value of the baseline habitats throughout its formulation. The proposed design avoids and protects the most valuable areas for habitats, species and ecosystem services (a full explanation of ecosystem services is included in ES Appendix 7.22). In addition, the retained habitats will be enhanced.

7.1.6 High quality Green Infrastructure (GI) is proposed across the site, as shown in Figure 7 in ES Appendix 7.1. The design of this GI has included specifications for a range of species and is designed to maximise the ecosystem services delivered by the proposed Development. Details of the retention of key areas of the site are presented in the habitat and hedgerow assessment (ES Appendix 7.3). Measures to avoid and mitigate impacts upon ecological receptors are presented throughout the ES and Appendices, in the mitigation strategies (ES Appendix 7.18) and the quality design of the GI is presented in the Green Infrastructure Strategy, and Design and Access Statement (DAS (ES Appendix 4.16)).

7.1.7 The assessment utilises the following information to inform the assessment:

- Air quality impacts from Chapter 6 (informed by the traffic scenario in Chapter 16);
- Water quality impacts from Chapter 15
- The following documents for approval:

- Parameter plans (ES Appendix 4.2):
  - OPM(P)4001– Development Areas and Movement Corridors.
  - OPM(P)4002 – Open Space and Vegetation.
  - OPM(P)4003 – Heights.
- Development Specification (ES Appendix 4.1)
- Strategic Design Principles (ES Appendix 4.3)
- A description of the parameter plans in Section 4 of the Development Specification (ES Appendix 4.1).
- Information from the GI strategy (ES Appendix 4.11) on the open spaces – and Tier 2 level masterplans will need to be prepared in accordance with the site wide GI Strategy in this document.
- The following documents which are not for approval but are submitted illustratively:
  - An indicative phasing plan (ES Appendix 4.6)
  - An illustrative masterplan (ES Appendix 4.5)
  - An illustrative accommodation schedule (ES Appendix 4.4).

7.2 Assessment Methodology

Legislation, Policy and Guidance

Legislation

7.2.1 This impact assessment has been undertaken in accordance with existing legislation, and national, regional and local plans and policies relating to biodiversity and nature conservation in the context of the proposed Development. The table below (Table 7-1) provides an overview of the legislation that is applicable to the project.

Table 7-1 Summary of legislation applicable to the project

Policy/legislation	Summary of requirements
The Birds Directive 1979 as amended (79/409/EEC) Ref. 7-61	Bird species listed in Annex I of the Directive regularly occur in Britain but are protected under EU law. The Directive requires member countries to classify as Special Protection Areas (SPAs) the most suitable sites for these species and also for all regularly occurring migratory species. It also includes provisions for the maintenance of the favourable conservation status of all wild bird species across their distributional range.
The Environment Act 2021 Ref. 7-62	Act sets statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes a target to reverse the decline in species abundance by the end of 2030. The key emerging policy which impacts upon this chapter is the requirement to deliver 10% biodiversity net gain.
The Habitats Directive 1992 Directive (92/43/EEC) Ref. 7-20	The Habitats Directive 1992 is European Council legislation. Annex II of the Directive lists the European protected species that are afforded special protection under this Directive. The provisions of the Habitats Directive were transposed into English law by the Conservation of Habitats and Species Regulations 2010.

Policy/legislation	Summary of requirements
Water Framework Directive 2000(2000/60/EC) Ref. 7-49	The Water Framework Directive places an emphasis upon the Government to enhance the status and prevent further degradation of our aquatic ecosystems and associated wetlands and promotes the sustainable use of water; to this end a number of targets need to be reached by 2015. It requires that all designated inland and coastal waters within defined river basin districts must reach at least good status by 2015 and defines how this should be achieved through the establishment of environmental objectives and ecological targets for surface waters. The result will be a healthy water environment achieved by taking due account of environmental, economic and social considerations.
Conservation of Habitats and Species Regulations 2017 (as amended by the EU Exit Regulations 2019) ('Habitats Regulations') Ref. 7-54	The Habitats Regulations provide for the designation of SPAs (first established under the Birds Directive, 1979) and Special Areas of Conservation (SACs) as part of the Natura 2000 network (now known as the National Site Network) of protected areas across Europe (first established under the Habitats Directive, 1992). The Habitats Regulations also provide protection for European Protected Species (EPS) from deliberate capture, killing or disturbance. It is also an absolute offence to destroy or damage the resting site or breeding site of an EPS.
Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 Ref. 7-50	The Water Environment (Water Framework Directive [WFD]) (England and Wales) Regulations 2003 implemented the WFD in England and Wales and were amended by the Floods and Water (Amendment etc.) (EU Exit) Regulations 2019. The 2019 Regulations, specifically Regulation 20, stipulate that the substance of the WFD regime that applied pre-EU Exit will continue to apply with only relatively minor amendments. The Regulations identify the River Basin Districts (RBD) and the processes that the responsible authorities for the implementation of the Directive should follow in order to: produce the necessary River Basin Management Plans (RBMPs); identify bodies of water within each RBD that are used, or intended to be used, for the abstraction of drinking water; and produce a register of 'protected areas' within each RBD.
The Wildlife and Countryside Act 1981, as amended (WCA) Ref. 7-18	The Act provides for the designation of Sites of Special Scientific Interest (SSSI), which are selected as the best national examples of habitat types, sites with notable species and sites of geological importance. Section 1 of the Act provides for the protection of wild birds, their nests and their eggs, with special protection given to those species listed in Schedule 1, which includes black redstart. Full protection is given under Section 9 of the Act to certain animals listed in Schedule 5, including all species of bat. Partial protection under Section 9 is given to certain other species, including all widespread species of reptile. Section 13 of the Act details protection for plants and fungi listed in Schedule 8.
Schedule 9 of the WCA (animals and plants to which Section 14 applies) Ref. 7-18	Schedule 9 of the WCA provides a list of non-native invasive species. It is an offence, which, under Section 14 of the Act, makes it an offence to allow to plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9.
Environmental Protection Act 1990 (as amended) Ref. 7-51	The Act makes it an offence to consign or dispose of Japanese Knotweed in a way that contravenes the waste regulations.
Protection of Badgers Act 1992 Ref. 7-52	The Act consolidates the legislation specific to badgers. The Act makes it an offence to wilfully take, kill, injure or ill-treat a badger; to obstruct, destroy, or damage in any part, a badger's sett; or to disturb badgers within a sett.
Countryside and Rights of Way Act 2000 Ref. 7-53	The Act gives greater protection to SSSIs and strengthens wildlife enforcement legislation by the introduction of the offence of 'recklessness' in the damage/destruction or obstruction of the places of shelter or rest of protected species and the disturbance of these species within such places. The Act also requires Government Departments to have regard to biodiversity and conservation; Section 74 of the Act requires lists of habitats and species of Principal Importance to be produced, for which conservation steps should be taken or promoted. The requirement to prepare such lists of habitats

Policy/legislation	Summary of requirements
	and species was extended by the Natural Environment and Rural Communities (NERC) Act 2006 (see below).
Natural Environment and Rural Communities (NERC) Act 2006 Ref. 7-19	The NERC Act places a duty upon public bodies to conserve biodiversity within all of their actions. Sections 40 and 41 of the NERC Act superseded Section 74 of the Countryside and Rights of Way Act 2000. Section 41 lists flora, fauna and habitats considered by the Secretary of State to be of Principal Importance for conserving biodiversity in England. Within this report, this is referenced as 'S41'. In addition, the NERC Act provides for those species that were previously identified within the UK Biodiversity Action Plan (BAP) and the relevant Local BAPs as biodiversity conservation priorities. The UK BAP has been superseded by Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (see below).
The Hedgerows Regulations (1997) Ref. 7-4	The Hedgerows Regulations (1997) protect countryside hedgerows. Hedgerows are the only habitat which receives dedicated legal protection in England, with the exception of habitats protected by site designations (hedgerows can be protected whether they are within a designated site or not). This protection is conferred by the Hedgerows Regulations SI. 1160 (1997). The Hedgerows Regulations protect countryside hedgerows. It makes it an offence to remove these hedgerows without planning permission or specific approval. The Regulations only apply to hedgerows adjacent to land in agricultural/horticultural use. A hedgerow may be classified as 'Important' for archaeological/historical reasons, or according to Wildlife and Landscape criteria. To be classified as 'important' under the Wildlife and Landscape criteria, the hedgerow must be over 30 years old and should comprise at least one of several listed criteria. N.B. A hedgerow may also be classified as 'important' due to the presence/recorded presence of particular animal and plant species (if it contains protected species listed in the WCA or species that are endangered, vulnerable and rare and identified in the British Red Data books); or qualify under archaeological / historical criteria.

Policy

7.2.2 This section outlines the policy considered relevant to the project concerning biodiversity. This is presented in Table 7-2 below.

Table 7-2: Adopted Policy Relevant to the Project

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
Adopted			
National Planning Policy Framework (2021)	Paragraph 174	Planning policies and decisions should contribute to and enhance the natural and local environment by: a. protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b. recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c. maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d. minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e. preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f. remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.	The design approach to the masterplan follows the mitigation hierarchy. The iterative design approach is to retain, enhance, buffer and connect the key functional GI within the site and connect to the wider area to maximise the ecosystem services it can deliver. Initially simple 'risk/valuation maps' were input into the masterplan process to ensure that a holistic approach to masterplan design could be undertaken and impacts to notable ecological features could be minimised. Habitats of value and areas which supported notable flora and fauna were identified and prioritised for retention and buffering within the proposed Development. These included areas identified as supporting priority habitats. Irreplaceable habitats including Ancient Woodland are buffered to ensure that these areas are not adversely impacted by the proposed Development. The design has been developed using and demonstrating Biodiversity Net Gain and Natural Capital principles, exploring a range of metrics (such as the Natural Capital Planning Tool) to maximise the retention and enhancement of existing ecosystem services. This minimises the need for protected species translocations and uses the existing mature GI to provide habitat corridors and ecological mitigation. It is demonstrated within the Biodiversity Net Gain Calculations that the proposed Development has the potential to achieve a net gain of approximately 20%. Habitats targeted towards protected species will be
	Paragraph 175	Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority	

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		boundaries.	created for maximum biodiversity benefits such as species rich grassland, selected individual trees, hedgerows and scrub, ponds for great created newts (GCN), hibernacula for reptiles and GCN, bat and bird boxes. Where possible, habitat design and creation will contribute to an increase of habitats of principal importance, particularly ponds. Where possible, the proposed Development contributes towards the targets of the Kent Biodiversity Strategy 'Biodiversity Opportunity Area' of the Gault and Greensand Ridge. A SSSI is present in the centre of the site. This is designated for geological interest, and this feature is retained, with public access to study this feature being enhanced. Permeability will be maintained via dark corridors and underpasses to allow species such as badgers and amphibians to continue to utilise the area. Opportunities for building integrated vegetation such as biodiversity roofs and green walls will be explored. Integral bird and bat boxes will be included within buildings, to be secured at Tier 2 and 3. Futureproofing of the design not only using quality GI but maximising Sustainable Drainage Systems, integrating GI into the proposed Development parcels and ensuring that enhancements are included for otter, anticipating that the site will support *and* maintain otter in the future. Impacts to international designated sites (including SPA, SAC and Ramsar sites) have been quantified and assessed within an HRA Stage 1 and Stage 2 Assessment) (ES Appendix 7.19). No significant effects are considered likely resulting from the project and no further assessment is required.
	Paragraph 176	Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.	
	Paragraph 179	To protect and enhance biodiversity and geodiversity, plans should: a. identify, map and safeguard components of the local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b. promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.	
	Paragraph 180	When determining planning applications, local planning authorities should apply the following principles: a. If significant harm to biodiversity resulting from a 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 b. Development on land within or outside a site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments) should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely	

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		impact on the features of the site that make it of special scientific interest and any broader impacts on the national network of sites of Special Scientific Interest; c. Development resulting in the loss or deterioration of irreplaceable habitats (such as Ancient Woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d. Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around development should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.	
	Paragraph 181	The following wildlife sites should be given the same protection as habitats sites: a. potential Special Protection Areas and possible Special Areas of Conservation; b. listed or proposed Ramsar sites; and c. sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.	
A Green Future: Our 25 Year Plan to Improve the Environment (2018)	Chapter 1: Using and managing land sustainably	• Embedding an 'environmental net gain' principle for development, including housing and infrastructure • Focusing on woodland to maximise its many benefits • Supporting the development of a new Northern Forest • Supporting larger scale woodland creation • Appointing a national Tree Champion	The design has been developed using and demonstrating Biodiversity Net Gain and Natural Capital principles exploring a range of metrics such as the Natural Capital Planning Tool to maximise the retention and enhancement of existing ecosystem services in order to minimise the need for protected species translocations and which uses the existing mature GI to provide habitat corridors and ecological mitigation. It is demonstrated within the Biodiversity Net Gain Calculations that the proposed Development has the potential to achieve a net gain of

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
			approximately 20%. Within the proposed Development additional woodlands are to be planted. Existing woodland areas are retained and enhanced, including off-site Ancient Woodlands.
	Chapter 2: Recovering nature and enhancing the beauty of landscapes	• Protecting and recovering nature • Publishing a strategy for nature • Developing a Nature Recovery Network • Providing opportunities for the reintroduction of native species • Exploring how to give individuals the chance to deliver lasting conservation • Improving biosecurity to protect and conserve nature • Conserving and enhancing natural beauty	As part of the ES a project BAP has been written (Appendix 7.20). This forms a strategy for nature within the site during and after construction. This outlines the target communities for key habitats to be created within the Otterpool site. This should be used to guide ongoing biodiversity management and mitigation during the operational phase of the proposed Development. The selection of the habitats listed in the site BAP is based upon: • Habitats and targets listed in the Kent Biodiversity Strategy, especially those which support the aims of the Kent BOA (Biodiversity Opportunity Areas) statements, particularly the Mid Kent Greensand and Gault BOA statement due to the proximity of the BOA areas. • The habitats of value present and retained on the site within the proposed Development (particularly those which meet the criteria of habitats of principal importance under Section 41 of the NERC Act (Anon 2006). • The principal habitats listed on Section 41 of the WCA which it is appropriate to create within the site; • Habitats known to support protected or notable species which are present / have the potential to be present within the OPA. It is envisaged that this will be a live document, which is modified throughout the construction and operation

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
			of the Otterpool site. Further details of the implementation of the Otterpool BAP are presented in ES Appendix 7.20. The Code of Construction Practice (CoCP), provided as an Outline CoCP in Appendix 4.17, sets out how biosecurity within the site will be maintained, for example preventing the spread of arboricultural diseases. As a component of the proposed Development, Invasive non-native species will be controlled on the site according to a management plan.
	Chapter 3: Connecting people with the environment to improve health and wellbeing	• Helping people improve their health and wellbeing by using green spaces • Promoting health and wellbeing through the natural environment • Greening our towns and cities • Creating more green infrastructure • Planting more trees in and around our towns and cities	Approximately 50% of the site area is proposed to be GI. This includes extensive areas to promote the health and wellbeing of individuals including parks, cycleways, footpaths, play areas and areas where individuals can enjoy nature. This is fully explored in the Green Infrastructure Strategy (ES Appendix 4.11) and DAS (ES Appendix 4.16), which have been prepared in relation to the proposed Development.
	Chapter 6: Protecting and improving our global environment	• Providing international leadership and leading by example • Protecting and improving international biodiversity	Impacts upon birds (including species whose lifecycles cover multiple countries) have been quantified and appropriate mitigation has been proposed. Impacts to international designated sites (including SPA, SAC and Ramsar sites) have been quantified and assessed within a HRA Stage 1 and Stage 2 Assessment (ES Appendix 7.19). No significant effects are considered likely resulting from the project and no further assessment is required.
Folkestone & Hythe District Council Places and Policies	Policy NE2 (Enhancing and Managing Access to the Natural	European sites Development will safeguard and protect all sites of European and Global importance, designated as Special Areas of Conservation (SAC), Special	Impacts to international designated sites (including SPA, SAC and Ramsar sites) have been quantified

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
Local Plan (2020)	Environment)	Protection Areas (SPA) and Ramsar sites. Development must not result in significant adverse effects on these internationally important nature conservation sites, either alone or in combination with other projects and plans. The Council will expect development proposals to demonstrate and contribute to appropriate mitigation and management measures to maintain the ecological integrity of the relevant European site(s). National sites For nationally important sites, including sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR), where developments may have a significant impact, an ecological impact assessment will be required. For proposals where impacts cannot be avoided or adequately mitigated, these will be refused, unless exceptional circumstances can be demonstrated. Local sites Local sites, including Local Nature Reserves (LNR), Key Wildlife sites (KWS) and Regionally Important Geological and Geomorphological sites (RIGS) will be safeguarded from development, unless the benefits of the development outweigh the nature conservation or scientific interest of the site. Where development is considered necessary, adequate mitigation measures or, exceptionally, compensatory measures, will be required, with the aim of providing an overall improvement in local biodiversity and/or geodiversity. Opportunities will be sought to access and enhance the value of such sites for educational purposes, particularly in relation to promoting public awareness and appreciation of their historic and aesthetic value. Protected sites Development proposals that would adversely affect European Protected Species (EPS) or Nationally Protected Species will not be supported, unless appropriate safeguarding measures can be provided (which may include brownfield or previously developed land (PDL) that can support priority habitats and/or be of value to protected species). Development and the Natural Environment All new development will be required to conserve and enhance the natural environment, including all sites of biodiversity or geodiversity value	and assessed within a HRA Stage 1 and Stage 2 Assessment (ES Appendix 7.19). No significant effects are considered likely resulting from the project and no further assessment is required. Other designated sites within the vicinity of the site have been identified and impacts quantified. Where appropriate, measures have been incorporated to ensure no significant effects upon these receptors result from the proposed Development. This includes buffers to prevent impacts to Harringe Brooks Wood (LWS and Ancient Woodland) and drainage designed to ensure no significant effect on Lympne Escarpment (SSSI). Approximately 50% of the site area is proposed to be GI. This includes extensive areas to ensure the health and wellbeing of individuals including parks, cycleways, footpaths, play areas and areas where individuals can enjoy nature. This is fully explored in the DAS (ES Appendix 4.16) in relation to the proposed Development. Initially simple 'risk/valuation maps' were input into the masterplan process to ensure that a holistic approach to masterplan design could be undertaken and impacts to notable ecological features could be minimised. Habitats of value and areas which supported notable flora and fauna were identified and prioritised for retention and buffering within the proposed Development. This included areas identified as supporting priority habitats. Irreplaceable habitats including Ancient Woodland are buffered to ensure that these areas are not adversely impacted by the proposed Development The proposed Development uses and contributes to the existing mature GI to provide habitat corridors and ecological mitigation. It provides ecological connectivity through the site and to habitats present

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		(whether or not they have statutory protection) and all legally protected or priority habitats and species. The Council will support development that: • Enhances, retains and protects existing sites and features of nature conservation value including wildlife corridors, Ancient Woodland and geological exposure that contribute to the priorities established through the Biodiversity Action Plan and the Green Infrastructure Plan; • Does not reduce, and where feasible, improves species' ability to move through the environment in response to predicted climate change, and to prevent isolation of significant populations of species; and • Incorporates features that enhance biodiversity as part of good design and sustainable development, including the creation of new pollinator habitat suitable to the scale of development • The District has a number of undesignated sites, which may nevertheless host rare species or valuable habitats. Where a site is indicated to have such an interest, the applicant should observe the precautionary principle and the Council will seek to ensure that the intrinsic value of the site for biodiversity and any community interest is enhanced or, at least, maintained. Where an impact cannot be avoided or mitigated (including post-development management and monitoring), compensatory measures will be sought. The Council may, in exceptional circumstances, allow for biodiversity offsets, to prevent loss of biodiversity at the district level. Such compensation will be directed to Biodiversity Opportunity Areas (BOAs) within the district or projects identified in the Council's Green Infrastructure Plan.	beyond the site. Measures to mitigate for impacts to specific faunal receptors, including EPS have been outlined within the ES and in receptor specific Mitigation Strategies (ES Appendix 7.18). A pollinator strategy has been created and is included as a component of the GI Strategy being submitted in support of the application: • The proposed Development has been informed by a suite of surveys conducted to identify the presence of priority habitats and species. • Measures have been implemented to ensure that a measurable biodiversity net gain can be achieved within the proposed Development, which includes the provision of additional areas of Priority Habitats, including ponds, woodland and grassland. This is a significant beneficial effect from the project, providing approximately 20% increase in calculated biodiversity across the OPA boundary. • Measures to mitigate for impacts to specific faunal receptors have been outlined within the ES and in receptor specific Mitigation Strategies (ES Appendix 7.18). Habitats targeted towards protected species will be created for maximum biodiversity benefits such as species rich grassland, selected individual trees, hedgerows and scrub, ponds for GCN, hibernacula for reptiles and GCN, bat and bird boxes. Where possible, habitat design and creation will contribute to an increase of habitats of principal importance, particularly ponds. Where possible, the proposed Development contributes towards the targets of the Kent Biodiversity Strategy 'Biodiversity Opportunity Area' of the Gault and Greensand Ridge. This is

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
			explained within this ES Chapter.
Folkestone & Hythe District Council Places and Policies Local Plan (2020)	Policy NE3 (Protecting the District's Landscapes and Countryside)	Kent Downs Area of Outstanding Natural Beauty The impact of individual proposals and their cumulative effect on the Kent Downs Area of Outstanding Natural Beauty (AONB) and its setting will be carefully assessed. Planning permission will be granted where it can be demonstrated that all the following criteria have been met: 1. The natural beauty and locally distinctive features of the AONB and its setting are conserved and enhanced; 2. Proposals reinforce and respond to, rather than detract from, the distinctive character and special qualities including tranquillity of the AONB. The design scale, setting and materials of new development must be appropriate to the AONB; 3. Either individually or cumulatively, development does not lead to actual or perceived coalescence of settlements or undermine the integrity of the predominantly open and undeveloped, rural character of the AONB and its setting; 4. Development is appropriate to the economic, social and environmental well-being of the area or is desirable for the understanding and enjoyment of the area (where this is consistent with the primary purpose of conserving and enhancing natural beauty); and 5. Development meets the policy aims of the Kent Downs AONB Management Plan and AONB Unit produced supporting design guidance. Special Landscape Areas Special Landscape Areas (SLAs) are defined as follows and shown on the Policies Map: • North Downs (including the scarp and crest); • Old Romney Shoreline; and	Biodiversity opportunities and constraints have contributed to the landscape-led approach to the proposed Development. Initially simple 'risk/valuation maps' were input into the masterplan process to ensure that a holistic approach to masterplan design could be undertaken and impacts to notable ecological features could be minimised. Habitats of value and areas which supported notable flora and fauna were identified and prioritised for retention and buffering within the proposed Development. This included areas identified as supporting priority habitats. Irreplaceable habitats including Ancient Woodland are buffered to ensure that these areas are not adversely impacted by the proposed Development. Landscape considerations are fully explored in the DAS (ES Appendix 4.16) and Landscape and Visual Impact Assessment ES Chapter.

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		• Dungeness. Proposals should protect or enhance the natural beauty of the Special Landscape Area. The Council will not permit development proposals that are inconsistent with this objective unless the need to secure economic and social wellbeing outweighs the need to protect the SLAs' county-wide landscape significance. Local Landscape Areas Local Landscape Areas are defined as follows and illustrated on the Policies Map: • Romney Marsh; • Sandgate Escarpment and Seabrook Valley; • Eaton Lands; • Coolinge Lane and Enbrook Valley; and • Mill Lease Valley. Proposals should protect or enhance the landscape character and functioning of Local Landscape Areas. The Council will not permit development proposals that are inconsistent with this objective, unless the need to secure economic and social wellbeing outweighs the need to protect the area's local landscape importance. Landscape Character Areas Proposals should demonstrate that their siting and design are compatible with the pattern of natural and man-made features of the Landscape Character Areas, including their cultural and historical associations. Opportunities for remediation and improvement of damaged landscapes will be taken as they arise.	
Kent Biodiversity 2020 and beyond – a strategy for the natural	Mid-Kent Greensand and Gault BOA	Biodiversity Opportunity Areas (BOA) maps can be seen as a spatial reflection of the Kent Biodiversity Strategy. They indicate where the delivery of Kent Biodiversity Strategy targets should be focused in order to secure the maximum biodiversity benefits. The BOA maps also show where the greatest gains can be made from habitat enhancement,	A small area of the site (including the East Stour River and an area of farmland in the north-east of the site) falls within the mid-Kent greensand and gault BOA. The Kent BOAs show where efforts should be targeted to achieve the maximum biodiversity benefits. Each

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
environment 2015-2025		restoration and recreation, as these areas offer the best opportunities for establishing large habitat areas and/or networks of wildlife habitats. As such, they will be useful to local planning authorities in the development and delivery of Green Infrastructure and resilient ecological networks. The BOA statement documents will provide guidance on the conservation priorities which should be adopted in each area. A small area of the site (including the East Stour River and an area of farmland in the north-east of the site) falls within the mid-Kent greensand and gault BOA. The Kent Biodiversity Opportunity Areas (BOAs) show where efforts should be targeted to achieve the maximum biodiversity benefits. Each one gives broad guidance on the conservation priorities in a given BOA. In line with this, the BOAs each have targets which guide these conservation actions. For the mid-Kent greensand and gault BOA, there are 8 targets, 6 of which are applicable to the project. The project has endeavoured to contribute towards these targets, where possible. The project contributes towards these targets in a number of ways including to: 1. Restore acid grassland and heath NB. the soil types and habitats are not suitable to achieve this target on the Otterpool site. 2. Enhance 10ha of species rich grassland on acid soils. Again, the soil types are not suitable to contribute towards this target. However, within the green infrastructure of the development, extensive areas of species rich grassland are to be created. This is quantified within ES Appendix 7.21. 3. Enhance or reinstate woodland management, including reconnecting fragmented woodlands. Although there are no areas of woodland within the OPA which are on the Ancient Woodland Inventory (AVI), it is proposed that areas of new tree and woodland planting on the site will increase the connectivity between wooded areas, particularly along the west of the site, between Harringe Brooks Wood and the East Stour River. 4. Achieve a quantifiable improvement in ecological status of all water bodies, as judged by Water Framework Directive indicators. As	one gives broad guidance on the conservation priorities in a given BOA. In line with this, the BOAs each have targets which guide these conservation actions. For the mid-Kent greensand and gault BOA, there are 8 targets, 6 of which are applicable to the project. The project proposes to contribute towards these targets, where possible. This is outlined in ES Appendix 7.1.

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		evidenced in ES Appendix 7.22, the development will not have a Adverse impact upon the East Stour River (one of the Rivers within the BOA). Conversely, the increase in buffers around the river, and subsequent reduction in agricultural runoff is likely to increase the value of the river, as assessed according to WFD indicators. 5. Pursue opportunities to restore or recreate wetland habitats along the Stour and its tributaries, particularly where this may: • Provide opportunities for flood risk management and for recreation; • Contribute to the conservation of priority species; or • Extend and buffer Local Wildlife sites. • Enhance at least 20ha of species-rich neutral grassland to bring it to UK BAP priority habitat Lowland Meadow quality. Extensive actions on the site are being conducted which will contribute towards this goal. North of the East Stour River, in the north-west of the site, a new wetland area with extensive areas of ditches and pond is being created to provide habitat for a range of species, including water vole and great crested newt. All along the East Stour River corridor, a new riparian park is being created, which will contain SuDS and recreation areas, contributing to both flood alleviation and providing a recreation resource. To the west of the East Stour River, an area of grassland is to be created (to the east of Barrowhill, Sellindge). This will be targeted as BAP quality lowland meadow, with appropriate actions and targets within the Otterpool BAP (ES Appendix 7.20). 6. Maintain appropriate management of key brownfield sites. There is only one small area of brownfield site within the OPA, Otterpool Quarry south of the A20. This is to be developed, but mitigation actions to preserve the limited habitats of note are proposed. These are outlined in the 'Invertebrates' mitigation section below. 7. Infrastructure and other development should avoid further fragmentation, particularly of wetland habitats and woodlands. The development contains an extensive green grid and a large amount of	

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		GI (approximately 50%). The design of the development retains the vast majority of the notable habitats within the site and retains and enhances connectivity. Action for naturally widely dispersed habitats (ponds, traditional orchards), wildlife associated with arable farmland, and widely dispersed species such as great crested newt will need to focus across the whole of the area and not just within the Biodiversity Opportunity Area boundary. Although one very small orchard is to be lost to the development, extensive new orchard areas are proposed. Within the development, a large number of new ponds, both wildlife ponds and SuDs features are to be created, which will increase connectivity between on and off-site ponds.	
Folkestone & Hythe District Council Core Strategy Review 2022	Policy CSD4 (Green Infrastructure of Natural Networks, Open Spaces and Recreation)	Green Infrastructure of Natural Networks, Open Spaces and Recreation 1. The council will require development proposals over their lifetime: i. To provide net gains in biodiversity at least to comply with statutory and/or national policy requirements (assuming no residual loss); ii. To demonstrate that they protect and enhance valued landscapes, sites of biodiversity or geological value and soils, commensurate to their status and quality; iii. So far as possible, to deliver improvements in green infrastructure (GI) assets in the district and ensure positive management of areas of high landscape quality or high costal/recreational potential identified in the Green Infrastructure Report (2011) (or any updates to this report). 2. Green infrastructure will be protected and enhanced and the loss of GI uses will not be allowed, other than where demonstrated to be in full accordance with national policy, or a significant quantitative or qualitative net GI benefit is realised or it is clearly demonstrated that the aims of this strategy are furthered and outweigh its impact on GI. Moreover:	The design has been developed using and demonstrating Biodiversity Net Gain and the Natural Capital principles exploring a range of metrics such as the Natural Capital Planning Tool to maximise the retention and enhancement of existing ecosystem services in order to minimise the need for protected species translocations and which uses the existing mature GI to provide habitat corridors and ecological mitigation. It is demonstrated within the Biodiversity Net Gain Calculations that the proposed Development has the potential to achieve a net gain of approximately 20%. This is a significant beneficial effect. This meets requirement (a). Impacts to international designated sites (including SPA, SAC and Ramsar sites) have been quantified and assessed within a HRA Stage 1 and Stage 2 Assessment (ES Appendix 7.19). No significant effects are considered likely resulting from the project and no further assessment is required. This meets requirement (b). Designated sites within the vicinity of the site have been identified and impacts quantified. Where

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		i. The highest level of protection in accordance with statutory requirements will be given to protecting the integrity of sites of international nature conservation importance; ii. A high level of protection will be given to nationally designated sites (sites of Special Scientific Interest and Ancient Woodland) where development will avoid any significant impact; iii. Appropriate and proportionate protection will be given to habitats that support higher-level designations, and sub-national and locally designated wildlife/geological sites, to include Local Wildlife Sites (LWS),Kent Biodiversity Action Plan habitats, and other sites of nature conservation interest. iv. Planning decisions will have close regard to the need for conservation and enhancement of landscape and scenic beauty in the Kent Downs Area of Outstanding Natural Beauty (AONB, which will be given the highest status of protection in relation to these issues. Development within the setting of the AONB should be sensitively located and avoid or minimise adverse impacts on the AONB. Elsewhere development must not jeopardise the protection and enhancement of the district's distinctive and diverse local landscapes, and must reflect the need for attractive and high-quality open spaces throughout the district; and v. Planning applications will need to be supported by ecological surveys, mitigation strategies (when required) and enhancement plans, in order to follow and apply the mitigation hierarchy, as appropriate 3. The GI network shown in Figure 5.2 and identified in supporting evidence, and other strategic open space, will be managed with a focus on: i. Adapting to and managing climate change effects; ii. Protecting and enhancing biodiversity and access to nature,	appropriate measures have been incorporated to ensure no significant effects upon these receptors result from the proposed Development. This includes buffers to prevent impacts to Harringe Brooks Wood (LWS and Ancient Woodland) and drainage designed to ensure no significant effects to Lympne Escarpment (SSSI). With regards to the adjacent Ancient Woodlands, the following approaches are taken to enhance these areas: • For Harringe Brooks Woods, the buffer areas around this woodland will alleviate impacts associated with the intensive farming that currently surrounds this area up to the boundary of the Ancient Woodland. Public access to this area will be discouraged to limit trampling, impacts to fauna such as dormouse and disturbance. This woodland is private, has no public rights of way and is not within the boundary of the OPA. • For Kiln Wood, the realignment of the A20 will reduce disturbance to the broad-leaved woodland that supports the Ancient Woodland. • The realignment will also deter access to this woodland by the public. This woodland will also continue to be private. These measures comply within policy (c). A small area of the site (including the East Stour River and an area of farmland in the north-east of the site) falls within the mid-Kent greensand and gault BOA. The Kent BOAs show where efforts should be targeted to achieve the maximum biodiversity benefits. Each one gives broad guidance on the conservation priorities in a given BOA.

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		particularly in green corridors and other GI strategic opportunities in Figure 5.2, with appropriate management of public access (including the Sustainable Access and Recreation Management Strategy for Dungeness and together with a strategic approach to the international sites as detailed above); and also avoiding development which results in significant fragmentation or isolation of natural habitats. iii. Identifying opportunities to expand the GI functions of greenspaces and their contribution to a Beneficial sense of place (including enhancements to public open spaces and outdoor sports facilities); and iv. Tackling network and qualitative deficiencies in the most accessible, or ecologically or visually important GI elements, including improving the GI strategic fringe zones in Figure 5.2 through landscape improvements or developing corridors with the potential to better link greenspaces and settlements.	In line with this, the BOAs each have targets which guide these conservation actions. For the mid-Kent greensand and gault BOA, there are 8 targets, 6 of which are applicable to the project. The project proposes to contribute towards these targets, where possible (demonstrating compliance with policy (d)). Compliance with policy E is demonstrated in other chapters of the ES (Chapter 12). Approximately 50% of the site area is proposed to be GI. This includes extensive areas to ensure the health and wellbeing of individuals including parks, cycleways, footpaths, play areas and areas where individuals can enjoy nature. A green grid is included within the site, to provide ecological corridors and spaces into which species can move in response to climate change. This is fully explored in the DAS (ES Appendix 4.16) in relation to the proposed Development. Connectivity through the site by the public will be enhanced through footpaths and cycleways through GI areas, including a riparian park. The riparian park is a key green corridor through the site.

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response

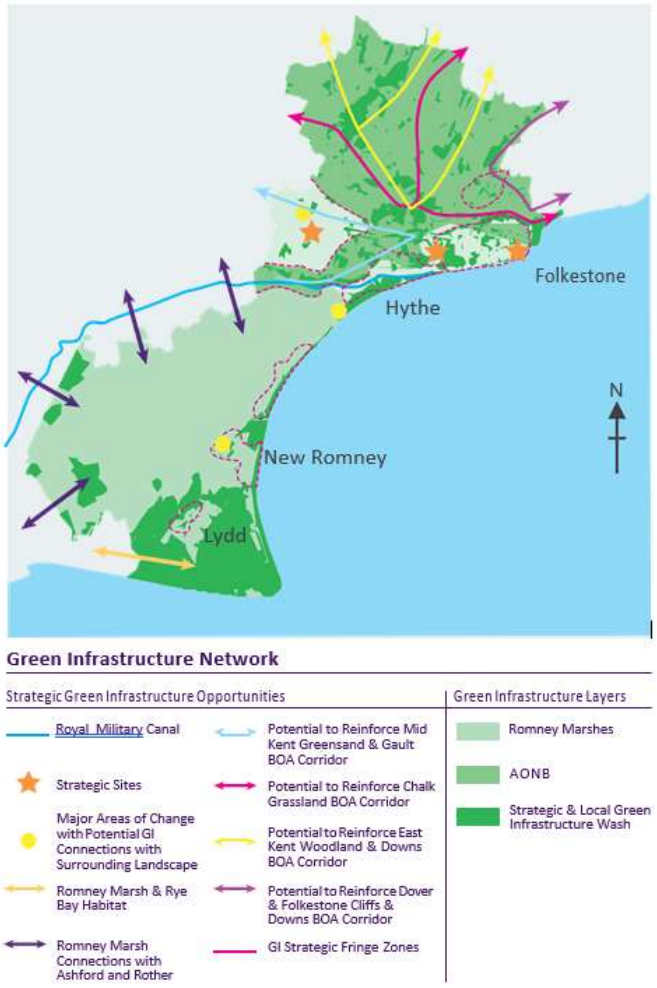


Image 7-1: Extracted Figure 5.1 – Green Infrastructure Network map as extracted from the emerging Shepway Core Strategy review (2020), updated to include Otterpool Park as a 'Strategic site'

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
	Policy SS7 (New Garden Settlement – Place Shaping Principles)	1. A landscape-led approach d. The design and layout of the development shall be landscape-led and include within it structural landscaping in order to avoid or minimise adverse impacts on the Kent Downs AONB and views into and out of the AONB. Where required to mitigate any such impacts arising from the development, structural planting shall be carried out at an appropriate stage in relation to each phase in order to optimize its effectiveness, and include the provision of new habitats for priority nature conservation species. Applications shall be accompanied by a landscape and visual impact assessment that should inform the landscaping scheme at a structural and local level. The assessment should consider the proposal itself and any cumulative impacts arising from developments in the vicinity of the proposal; and e. A green and blue infrastructure strategy shall be developed that enhances existing green and blue infrastructure assets in accordance with Policy CSD4. Additionally, the strategy shall deliver: i. Advanced woodland planting and habitat creation using native species to benefit later phases of development, particularly from prominent locations visible from the Kent Downs Area of Outstanding Natural Beauty, and to avoid as far as possible temporary loss of biodiversity value when construction begins. Advanced woodland planting, habitat creation and community green space shall also be designed to relate to local landscape character and to prevent the coalescence of the new settlement with Lympne and to separate neighbourhoods within the settlement itself. Planting and habitat creation should also be used to provide distance buffers between the M20/High Speed transport corridor for noise and air quality mitigation purposes; ii. Clear net biodiversity gains over and above residual losses through the planting of native species and the creation of green ecological corridors to improve species' ability to move through the environment in response to predicted climate change, and to prevent isolation of significant populations of	Biodiversity opportunities and constraints have contributed to the landscape-led approach to the proposed Development. Initially simple 'risk/valuation maps' were input into the masterplan process to ensure that a holistic approach to masterplan design could be undertaken and impacts to notable ecological features could be minimised. Habitats of value and areas which supported notable flora and fauna were identified and prioritised for retention and buffering within the proposed Development. This included area identified as supporting priority habitats. Irreplaceable habitats including Ancient Woodland are buffered to ensure that these areas are not adversely impacted by the proposed Development. The design has been developed using and demonstrating Biodiversity Net Gain and the Natural Capital principles exploring a range of metrics to maximise the retention and enhancement of existing ecosystem services in order to minimise the need for protected species translocations and which uses the existing mature GI to provide habitat corridors and ecological mitigation. It is demonstrated within the Biodiversity Net Gain Calculations that the proposed Development has the potential to achieve a net gain of approximately 20%. Approximately 60 ha of woodland planting is proposed within the proposed Development to screen the proposed Development from views from the nearby AONB. With regards to the adjacent Ancient Woodlands, the following approaches are taken to enhance these areas: • For Harringe Brooks Woods, the buffer areas around this woodland will remove impacts

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		species. The strategy shall enhance nearby Harringe Brooks Ancient Woodlands, Local Wildlife sites, Otterpool Quarry site of Special Scientific Interest and other sensitive ecological features, including the existing pond at the former Folkestone Racecourse. Enhancements may include improvements to ecological connections both within and outside the allocation boundary, their future management and community access where appropriate. Proposal must demonstrate that there will be non impact on the Lympne Escarpment Site of Special Scientific Interest, unless exceptional circumstances can be demonstrated, in line with Places and Policies Local Plan Policy NE2; iii. A pollinator network throughout the settlement with connection to the wider countryside, with the aim of providing all-year round support for pollinators, through the use of native species; iv. A new country park, easily accessible from the town centre and beyond and supported by and linked to other areas of strategic open space, that enhances the historic landscape setting of Westenhanger Castle; v. Playing fields and sports provision, play areas, informal open spaces, allotments and woodland located to maximise use and meet the sporting, leisure and recreational needs of the garden settlement as informed by the council's Playing Pitch and Sports Facilities Strategies; vi. Publicly accessible, well-managed and high quality open spaces, which are linked to the open countryside and adjoining settlements. This shall be informed by an access strategy that seeks to protect and enhance existing public rights of way, and create new public rights of way. The strategy shall balance demands for public access with ecological and landscape protection, taking into account the impacts of increased access on the Kent Downs AONB and	associated with the intensive farming that currently surrounds this area up to the boundary of the Ancient Woodland. Public access to this area will be discouraged to limit trampling, impacts to fauna such as dormouse and disturbance. This woodland is private, has no public rights of way and is not within the boundary of the OPA. • For Kiln Wood, the realignment of the A20 will reduce disturbance to the broad-leaved woodland that supports the Ancient Woodland. • The realignment will also deter access to this woodland by the public. This woodland will also continue to remain in private. A range of public open spaces are proposed, including a park south of Westenhanger Castle and a park to the south of the A20 incorporating the geological SSSI area of Otterpool Quarry. Extensive playing fields and sports provision are to be incorporated within the design. Approximately 50% of the site area is proposed to be GI. This includes extensive areas to ensure the health and wellbeing of individuals including parks, cycleways, footpaths, play areas and areas where individuals can enjoy nature. Within open space areas, resources to provide pollinators with year-round food resources are proposed. These are detailed in the GI Strategy. Native planting in these areas is also proposed. This is fully explored in the GI Strategy and DAS (ES Appendix 4.16) in relation to the proposed Development.

Policy	Policy/Reference	Description in Relation to Biodiversity	Project Response
		Folkestone to Etchinghill Escarpment Special Area of Conservation and other protected areas, which might necessitate the need for mitigation to be secured; vii. Sustainable drainage systems (SuDS) to maximise landscape and biodiversity values and to avoid any increase in, and where possible reduce, downstream flooding of the East Stour River, developed as part of an integrated water management solution; and] viii. A long-term security and management plan of the Green Infrastructure estate which ensures community involvement and custodianship.	

Guidance

7.2.3 The following guidance has been used to inform the assessments:

- Birds of Conservation Concern (BoCC) 4: The Red List for Birds (December 2015) available online at https://www.bto.org/science/monitoring/psob (Ref. 7-3);
- Breeding Bird methodology based on British Trust for Ornithology Breeding Bird Survey (BBS) (Ref. 7.88);
- British Standard 5837 (2012) Trees in relation to design, demolition and construction – Recommendations (Ref. 7-21).
- CIEEM, (2018): Guidelines for Ecological Impact Assessment in the UK and Ireland (Ref. 7-9);
- Collins, J. (ed) (2016): Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition), London, The Bat Conservation Trust (Ref. 7-8);
- Defra Biodiversity Offsetting Metric (2021) available online at:https://www.gov.uk/guidance/biodiversity-metric-calculate-the-biodiversity-net-gain-of-a-project-or-development) (Ref. 7-22);
- JNCC, (2004), Common Standards Monitoring Guidance for Birds, Version August 2004, ISSN 1743-8160 (Ref. 7-10);
- JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7 (Ref. 7.8);
- NARRS HSI Guidance based on Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M., 2000: Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155 (Ref. 7-9);
- Natural England (2013) Higher Level Stewardship Environmental Stewardship Handbook, 4th Edition available online at: http://publications.naturalengland.org.uk/publication/2827091 (Ref. 7-23);
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2021) Advisory Note: Ecological Assessment of Air Quality Impacts (Ref. 7-55);
- Strachan, R., Moorhouse, T., Gelling, M, 2011: The Water Vole Conservation Handbook, Wild Cru (Ref. 7-7); and
- Kent Biodiversity Strategy / BAP (Ref. 7-25).

7.2.4 The Kent BAP has largely been superseded by priority habitats and BOAs which have been transposed into Kent Biodiversity Strategy, however these species are still relevant. The Kent BAP reflects the UK BAP and aims to conserve and enhance biological diversity in Kent and to contribute to the conservation of national and global diversity. Species and Habitats on this list are selected as species of national and/or regional importance. The Kent Biodiversity Strategy (Ref. 7-28) supersedes the Kent BAP.

Consultation and Scoping

Consultation Summary

7.2.5 Table 7-3 provides a summary of the consultation undertaken for this chapter prior to and following the submission of the 2019 application (Y19/0257/FH). The table summarises how the comments have been addressed in this chapter, where relevant. Copies of the consultation responses are presented in ES Appendix 7.2.

Table 7-3 Summary of Consultation at 'Stage 1'

Consultee/Contact/Date	Summary	Actions
Environment Agency (EA) 10 October 2016 Consultation between: Fisheries Officer (EA) Ecology lead (Arcadis) Telephone conversation	Telephone conversation confirmed that signal crayfish *Pacifastacus leniusculus* were present within the East Stour Catchment which makes the co-habitability by white clawed crayfish unlikely.	This information was added to the scoping assessment for white clawed crayfish.
EA 14 November 2016 Consultation Between Team Leader (EA) Ecology lead (Arcadis) Technical Director (water)(Arcadis) In person	Key design issues were discussed. Potential impacts to watercourses were identified as key issues of concern for the EA. This included opposition to new culverts and an aspiration that existing culverts are removed.	Culvert design requests are incorporated within the masterplan. Clear span bridges are proposed with extensive new aquatic features.
Natural England 7 December 2016 Attendees included: Associate Technical Director (landscape)(Arcadis) Senior advisor (NE) Ecology lead (Arcadis) In person	An initial meeting was undertaken between Arcadis Landscape and Biodiversity team members on 7 December 2016. During this meeting key issues were discussed, including potential impacts to Natura 2000 and Ramsar sites.	Landscape concerns are addressed, the details of this are presented in the LVIA associated with this application and in Chapter 12 of this ES.
Natural England 10 May 2017 Consultation between: Senior advisor (NE) Ecology lead (Arcadis) In person	A survey scope proportional to the scale of the site, the stage in the planning process and assumed build-out time frame was proposed by Arcadis. NE was contacted to confirm the appropriate survey scope.	Arcadis implemented a proportional survey scope based on guidance and previous EIA experience. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
Kent County Council (KCC) April / May 2017 Consultation between	KCC indicated that in addition to the surveys initially proposed, bat emergence and re-entry surveys on buildings to be demolished would	The survey scope proposed was expanded to take this into account. All correspondence and details relating to the survey scopes is presented in ES

Consultee/Contact/Date	Summary	Actions
Ecology Officer (KCC) Ecology lead (Arcadis) Brief discussion of key concepts undertaken on 21 April 2017 Informal outline scoping sent to KCC by email on 9 May 2017. Site meeting undertaken to discuss specific details 24 May 2017 In person	be required.	Appendix 7.2.
Kent County Council (KCC) June 2017 Consultation between: Ecology Officer (KCC) Ecology lead (Arcadis) Formal scoping email sent 22 June 2017 Response Received 30 June 2017 In person	KCC was broadly in agreement with the level of baseline data collection scope for the EIA stating that it would provide "a good robust assessment of the potential ecological impacts". Focus points were: Consideration of habitats of principal importance; Consideration of ancient woodlands; Habitat type and quality classifications; Mitigation for farmland breeding birds.	The survey scope proposed was expanded to align with these focus areas. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2. Details of the approach to farmland birds is presented in ES Appendix 7.15 and 7.16.
Natural England (NE) 31st July 2017 Consultation Between Senior advisor (NE) Technical Director (Arcadis) Telephone conversation	The requirement to assess recreational pressure via dedicated surveys were discussed and their scope agreed.	Recreational pressure surveys scope agreed with NE. The details of this approach are presented in ES Appendix 7.19 (HRA) and Chapter 14.
EA 15 September 2017 Consultation between Planning specialist (EA) Ecology lead (Arcadis) Email outlining proposed surveys for EIA sent to the EA. A response was received on 6 October 2017. In person	The Environment Agency reviewed the proposed surveys and the following statement was made: "My colleague has reviewed the Otterpool Scoping EIA you sent through on 15th September. We'd like to advise that the only aspect we can see that is missing are surveys for invasive non-native species (INNS). We are concerned that there are a number of INNS in the area and that they might be in the development site.	Non-native invasive plant species were scoped into the EIA. Details of the locations of identified INNS is presented in ES Appendix 7.3.

Consultee/Contact/Date	Summary	Actions
	Given that it is an offence to cause the spread of some INNS, for example Japanese Knotweed, it is important for the developer to: Identify the distribution of these species prior to any development taking place Plan for control and destruction of them Ensure there is appropriate disposal of any waste that might be contaminated by them Ensure operatives working at the site can identify them and have a plan in place to deal with future infestation during development."	
Kent Wildlife Trust (KWT), F&HDC 17 November 2017 Attendees: Project Manager (F&HDC); Ecology lead (Arcadis); Officer (Kent Wildlife Trust); Planning and Conservation Officer (Kent Wildlife Trust) In person	The Otterpool Park masterplan was discussed with KWT. KWT outlined their areas of focus which included: Off-site impacts to ancient woodlands; Impacts to farmland birds; Wildlife corridor / GI corridor design. Potential for KWT to be more involved with the iteration of Otterpool Park design was discussed.	Otterpool proposals were discussed. Comments from KWT were incorporated where possible. Impacts to off-site ancient woodlands are controlled through buffers (as defined in this ES Chapter and ES Appendix 7.1), provision of connectivity through the site for wildlife and provision of recreation spaces with the site to minimise recreational pressure on off—site areas. Impacts to farmland birds are assessed and mitigation including off-site offsetting is proposed. Details of the approach to farmland birds is presented in ES Appendix 7.15 and 7.16. Wildlife corridors are incorporated throughout the development, the design of these is secured in the GI (Green Infrastructure) Strategy.
Natural England (NE) 1 December 2017 Attendees: Senior advisor (NE) Advisor (NE) Advisor (NE) Ecology lead (Arcadis) In person	Baseline information was provided, design, and mitigation discussed along with the scope of future surveys in support of detailed design. Mitigation discussions included the alignment of the scheme within the roll out of District Level Licensing for Great Crested Newt.	All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2. A determination of the appropriate licence rote for the development will be made at Tier 2.
Natural England 25 May 2018 Attendees: Senior advisor (NE)	The conversation was to discuss the HRA scoping letter (May 2018) Arcadis had produced to formally scope the content of the HRA with NE. Approach and initial thoughts	The HRA scoping was amended accordingly. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.

Consultee/Contact/Date	Summary	Actions
Ecology lead (Arcadis) Telephone conversation	outlined in the HRA scoping letter by Arcadis confirmed. Also recommended using the information from the HRA undertaken for the Shepway Core Strategy and the Shepway Places and Policies Plan to be used within our assessment and the need for assessment of in combination effects. Julia requested that the consultation between Alison Powell (Arcadis) and herself regarding the recreational pressure surveys be reported within the HRA (particularly dog walking). Suggested that air quality monitoring of the Folkestone to Etchinghill escarpment may be required post scheme.	
KCC (providing biodiversity input on behalf of F&HDC as the competent authority) PPA Meeting (Planning Performance Agreement) 21 June 2018 Multiple attendees including Landscape Designer (Arcadis) Ecology lead (Arcadis) Kent County Ecologist (KCC) In person	Primary focus of meeting was for Arcadis to outline surveys conducted to date and subsequent approaches to mitigation, where appropriate. Multiple issues discussed, including phasing of GI installation, baseline conditions.	Key issues raised by KCC to be incorporated within the EIA, including the phasing of GI provision and detailing an outline of the enhancement for ecological features. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
NE DAS (design and Access Statement) Meeting 24 October 2018 Multiple Attendees, including: Senior advisor (NE) Ecology lead (Arcadis) In person Minutes received 7 November 2018	Biodiversity net gain parameters were discussed in addition to the mitigation design for residual impacts to farmland birds.	Approaches on net gain and farmland bird mitigation agreed (including usage of DEFRA metric, leaving flexibility within mitigation approaches for changes in policy etc.). Discussion of figures relevant to DAS (ES Appendix 4.16) discussed. Issues from previous meetings discussed, including LVIA (Landscape and Visual Impact Assessment).
Planning query to (PTES) (Peoples Trust for Endangered Species) Orchard Biodiversity Officer Email received 22 November 2018 Email to Senior Planning Officer at F&HDC (Folkestone	PTES (Peoples Trust for Endangered Species) provided details of an orchard within the site inaccessible to surveyors due to lack of land owner permission.	Baseline information incorporated into the EIA. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.

Consultee/Contact/Date	Summary	Actions
& Hythe District Council) Via Email		
9 January 2019 Otterpool Park LPA Workshop Civic Centre, Folkestone PARTICIPANTS Local Planning Authority F&HDC Chief Planning Officer F&HDC Case Officer KCC Infrastructure Lead Officer Kent County Ecologist (KCC) Landscape Consultants for F&HDC GI Strategy Otterpool Park Project Manager F&HDC Otterpool Park Director F&HDC, Otterpool Park Director Quod Associate Director, Quod Master planner, Farrells Technical Director, Arcadis Associate Technical Director, Arcadis Ecology lead Arcadis	N.B. This section only discusses consultation in relation to Biodiversity. Key issues discussed were: Natural Capital / Ecosystem Services: Further information on the GI delivery of different aspects of natural capital was required. It was discussed that this was presented for the site holistically in an ES appendix. Community Engagement in Urban Wildlife Provision: It was requested that we define which habitats can be established early on in phasing so that the new community suitably understand and appreciate them. Net Gain: Comments were made on methodology, delivery and wording. SANG (Suitable alternative Natural Greenspace) requirements.	Key issues set out in GI strategy. Community engagement: Key part of the stewardship. More information to be added at Tier 2 / 3 of the application. Net gain methodology has been updated with the most up-to-date approach (BM 3.0). Wording amended accordingly to reflect comments.
F&HDC (Report compiled by Temple on Behalf of F&HDC) Dated: 05/04/2019	Comprises an interim review report. Comments were favourable with regards to the scope and assessment.	All correspondence and details are presented in ES Appendix 7.2.
Natural England comments on the 2019 application received 28/06/2019 document reference Y19/0257/FH	Natural England comments relevant to this chapter is presented in this section. Comments on soils and the Green / Blue infrastructure are addressed in the relevant ES chapters and the GI strategy. Advice and comments were provided in relation to: • Habitats Regulations Assessment (particularly air quality); • SSSI's (impacts of road run off and air quality)	With regards to the assessment of the Air quality impacts upon Folkestone to Etchinghill Escarpment SAC and SSSI, in line with current guidance, the updated local plan HRA is referred to for this submission. This approach was flagged to NE – see correspondence below. Air quality impacts to Lympne Escarpment are fully assessed within this chapter and ES Appendix 7.1. The Otterpool Quarry SSSI is not an ecological feature, therefore details of the management of this feature are not covered in this chapter (see Chapter 10:

Consultee/Contact/Date	Summary	Actions
	• Biodiversity; and • Biodiversity net gain. • Concerns were raised that there could be potential significant effects upon Folkestone to Etchinghill Escarpment SAC and SSSI and Lympne Escarpment SSSI from Air Quality Impacts. • Clarification was requested on whether increased run-off from the B2067 as a result of the proposals may reach the Lympne Escarpment SSSI, and the likely impacts of this on the notified features. • Comments were made in relation to biodiversity and the need to secure the targets and requirements through planning. This is acknowledged and the Tiered approach will need to secure this. • Comments are made on the need for inclusion of native species within the landscaping secured within the GI strategy. • Comments are made with regards to the need for community led engagement in relation to the wildlife and habitats within Otterpool Park. • With regards to biodiversity net gain, the following comments are made: • comments were made regarding the use of Metric 1.0; • comments were made in relation to the inclusion of bird and bat boxes in the BNG calculations; • comments are made in relation to the targets for biodiversity units for roads, footpaths and business areas (i.e. that these should be targeted). • Specific concerns were raised around the target conditions for created habtiats (i.e. that they were too precautionary); • concerns were raised around the application of difficulty and time multipliers;	Geology, Hydrogeology and Land Quality). Additional information is included within the GI strategy. With regards to the concerns raised in relation to hydrological pathways to the Lympne Escarpment SSSI, additional information in relation to the management of water on the B2067 and potential impact of road runoff and spray is included within this chapter. Biodiversity Within the GI Strategy, further information and commitment is provided on the inclusion of native species within landscaping. Additional information on the inclusion of species for pollinators is also provided. With regards to the comments on the need for community led engagement with wildlife, this is acknowledged in the ES and in the BAP (ES Appendix 7.20). Due to the Tiered stage of the planning application and the uncertainty around stewardship, this is not appropriate to outline in more detail at this stage. Biodiversity net gain With regards to the comments on the biodiversity net gain: - metric 3.0, the most up to date version of the calculator is used for this submission. - bat and bird boxes are removed from the BNG report; - Targets are increased for some areas referred to – inclusion of green roofs is included in the resubmission to increase the value of some areas. This is however balanced with the precautionary approach, particularly around sports pitches and roads. - - The general overarching comment that higher and more aspirational targets (for habitat types and conditions) should be targeted in the BNG assessment are not agreed with. The BNG assessment at Tier 1 is intended to assess if the development as secured in the Parameter Plans (ES Appendix 4.2) (and other documents for approval) can accommodate the required BNG uplift required by policy. It is a precautionary assessment, to account for risk and uncertainty but also to avoid concerns around 'greenwashing'. The BNG report at Tier 1 does not secure specific habitats

Consultee/Contact/Date	Summary	Actions
	• concerns around the securing of net gain were raised, considering the phased approach to the development.	or targets, but does demonstrate that approximately 20%. BNG uplift is achievable (which is more than the 10% secured in the Environment Act). Further details will be required at later Tiers and it is agreed that at these tiers, targets or habitats should be aspirational and ensure that the development meets the requirements of the Environment Act. - BNG uplifts which meet the requirements of the Environment Bill will need to be secured at later Tiers.
Case Officer report Dated: 11/07/2019	Points raised included: Would like to see how the typology associated with the biodiversity enhancements within the country park is linked to other open spaces through the GI Strategy. Attention drawn to the comments regarding long-term stewardship and management and want to see this addressed in the long-term stewardship model as a 'locked asset'. With regards to BNG, they seek clarifications in relation to the methodology deployed in questions raised in review and by Natural England. Agree with points regarding the lack of biodiversity credits in the triangle of land east of Stone Street and underscore requirement for a review of the GI structure in this location. In addition to the Ecological Management Plan we will seek to impose requirements to monitor net gain in a phased manner. Support suggestions made by Natural England in relation to community-led efforts to encourage and look after local wildlife and habitats.	Comments addressed in updated GI strategy. BNG methodology has been updatd to BM 3.0 – the most recent BNG version at the time of the survey. Community led approach to wildlife and habitats is specified in the BAP.
KCC comment on the OPA Dated: 11/07/2019	Points raised include: The proposed dark corridors for bats appear to be very narrow, and the County Council is concerned that adjacent residential areas will result in a high light spill into these areas. KCC requests that the proposed buffer is incorporated into the site. It should be ensured that no lighting will be added within this	Dark corridor lighting contours provided in this ES to address KCC queries. Discussions around the north-east area have been undertaken with the LPA. Revised approach to water voles drafted in light of new findings in the north-east triangle (water vole are absent) with mitigation in the north-west. Further detail on the approach to the breeding and wintering birds is presented

Consultee/Contact/Date	Summary	Actions
	dark corridor at a later stage. The applicant should explore whether there is capacity within the north east of the Otterpool Park development to create the replacement water vole habitat. Breeding/wintering birds -- mitigation proposal is on land outside the applicant's ownership – so it is not clear how the mitigation measures will be implementable in practice. Further clarity needed on the mitigation areas that can be developed in advance of the development taking place. The habitats on site will be multifunctional, with a number of uses – there is a need to ensure that the proposed mitigation can be implemented. Open space areas need to be developed in advance and protected during the main development phases. Management plan needed for the entire site to tie in with BAP. Notes that there will be a need for updated surveys and monitoring of the site for through the construction process across the development.	in this ES. The advance planting, open space creations and habitat creation is outlined in the GI strategy. The approach to multifunctionality is outlined within this ES chapter. Management plans will be provided at an appropriate tier of the planning application (Tier 3) as outlined in the ES Chapter 7. Approach to surveying for Tier 2 and Tier 3 is outlined in this ES Chapter.
KCC 2020 Survey Scope (Telephone Meeting) 24/10/2019	Discussion regarding the approach to maintaining the validity of the survey data for the Otterpool Park modified submission. Agreed that a mixture of a walkover survey to identify any significant changes on site, combined with proportionate resurvey (which can be compared with previous survey results to identify any changes) will be sufficient.	Proposed approach to individual receptors was agreed. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
KCC 2020 Survey Scope (Email) 29/11/2019	Email sent after the meeting on 24/10/2019 to outline the survey updates proposed for 2020.	Survey approach was agreed with KCC. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
EA 2020 Survey Scope (Email)	Email sent after the meeting with KCC on 24/10/2019 to outline the survey updates proposed for 2020.	All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.

Consultee/Contact/Date	Summary	Actions
03/12/2019		
NE 2020 Survey Scope (Email) 03/12/2019	Email sent after the meeting with KCC on 24/10/2019 to outline the survey updates proposed for 2020.	All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
KCC 2020 Survey Scope UPDATE in relation to COVID 19 (Email) 09/06/2020	Progress update regarding surveys in light of Covid-19 restrictions. Broad principles implemented included: Access not requested to parcels of land where members of the public were likely to be at increased risk of coming into contact with Arcadis employees. Access to private homes and businesses (excluding farms) was not requested. Where it was felt that the revised three-tiered approach allowed for a reduced presence on site, without impacting upon the needs of the submission, this approach was adopted to reduce risk associated with surveyor travel.	Approach agreed for individual ecological receptors in line with Covid-19 guidance at the time. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
Kent County Council (KCC) 2021 Survey Scope (Meeting) 16/12/2020 Arcadis Ecology lead (Arcadis) Ecologist (Arcadis) Kent County Ecologist (KCC)	Discussion regarding what survey updates are required for the 2021 submission.	Proposed approach agreed, focusing on mobile species and those surveys not updated in 2019 or 2020. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
Kent County Council (KCC) 2021 Survey Scope (Email) 18/01/2021 Ecology lead (Arcadis) Kent County Ecologist (KCC)	Email sent agreeing items discussed in meeting on 16/12/2020	Proposed approach agreed. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
Otterpool Meeting (Online Meeting) F&HDC & KCC 27/05/2021	Key items discussed: Ongoing surveys; Tier 1 submission contents; Dark corridors;	Approach to ongoing surveys was agreed. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2. The Tiered planning approach was discussed. To ensure it weas understood

Consultee/Contact/Date	Summary	Actions
Case officer (F&HDC LPA) Kent County Ecologist (KCC) Graduate Biodiversity Officer (KCC) Ecology lead (Arcadis)	Detail for mitigation areas; Eastern triangle; Badgers.	by all parties the information to be presented at each Tier. This is reported in this ES Chapter. Required information for the dark corridors was discussed. This is incorporated into Appendix 7.1. Approaches and compromises in the Eastern triangle were discussed. Approach to the Tiered planning and badgers was discussed.
28/05/2021 Telephone meeting with: Community Engagement Officer (White Cliffs Countryside Partnership) Project Manager short-haired bumblebee reintroduction (Bumblebee Conservation Trust) Folkestone Ranger, White Cliffs Countryside Partnership Scheme Manager White Cliffs Countryside Partnership Subsequently, information received from Project Manager,, Bumblebee Conservation Trust, Email received 21 June 2021, Email to Ecology lead, Arcadis	Areas of higher botanical and invertebrate value were reported around the airfield area, an additional NVC survey was added to the survey scope. Approaches to safeguarding Report of BioBlitz day (survey for solitary bees and bumblebees) undertaken by volunteers in 2020 on Lympne Airfield site, the report was provided by the Bumblebee Conservation Trust. Approaches to managing and safeguarding meadows were discussed and incorporated where possible	Baseline information from BioBlitz incorporated into the EIA. Additional NVC survey of the airfield added to survey scope. Glow worm survey added to survey scope. Where possible, fenced areas of meadow have been added to the scheme design. Meadow management to be considered at Tier 3 (where appropriate).
Natural England 2021 Discussion 06/05/2021	Discussion about survey scope, great crested newt licensing, BNG and imminent publication of Defra Metric v3.0 and HRA (recreational pressure).	Approach to issues raised agreed. It was agreed that the V3.0 BNG was to be used. NE officer stated that colleagues would provide feedback on our proposals.
Natural England Email regarding HRA approach to Air Quality 14/07/2021	Email to confirm the approach to Air Quality in the HRA	N/A no response. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.
KCC Ecology Email regarding black redstart and barbastelle 26/08/2021	Email to inform KCC that black redstart and a single barbastelle had been recorded on the site and to outline the proposed approach.	Approach was confirmed to be acceptable by KCC. All correspondence and details relating to the survey scopes is presented in ES Appendix 7.2.

Scoping

7.2.6 A previous EIA Scoping Opinion was undertaken for the 2019 application, where relevant, the comments from this process have been incorporated within Table 7-4. For this amended application, a request for a Scoping Opinion was submitted to F&HDC in June 2020. This outlined the work that had been undertaken to date and sets out the proposed approach to the EIA. A Scoping Opinion was issued by F&HDC in July 2020. Table 7-4 provides a summary of the scoping opinion comments relevant to this chapter, and how they have been addressed.

7.2.7 Additionally, a Scoping Addendum was submitted on 5 October 2021 to outline key changes to the application. These comprised additional land in the north-west corner of the site for provision of the waste water treatment works (WWTW), additional land for highway junction works at Newingreen Junction, minor amendments to clarify land ownership boundaries and a change in the assessment approach in relation to the future uses of Westenhanger Castle. A response was received from F&HDC on this Scoping Addendum as set out in Chapter 2: EIA Approach and Methodology. All relevant changes since the submission of the scoping report have been assessed in this ES.

Table 7-4 Summary of Scoping Opinion

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
Temple on behalf of F&HDC Received via F&HDC Case Officer Dated 25/06/2018	It was stated that the general approach and the methodology proposed for the assessment of biodiversity was considered acceptable. Main comments raised were in relation to: Grading of the significance of impacts (the CIEEM methodology proposed was not considered appropriate, however this is the accepted methodology for EIA assessment for ecological features); It was not agreed that impacts to: Invertebrates; White Clawed crayfish, Fish; Water bodies Could be ruled out from the information provided. That further ecological surveys would be required throughout the planning and buildout process, and for reserved matters applications. It was requested that the ES evidence why European designated sites (SPA, SAC or Ramsar) more than 20km away have been scoped out of the EIA.	Arcadis requested clarification with regards to these issues. The clarification requested stated that: Significance of impacts would be binary (significant or not significant) in line with the CIEEM recommendations, however the geographical scale of the impacts will be stated. KCC responded to state that the CIEEM methodology is not an EIA methodology, but is compliant with the EIA Regulations. However, as a response, Arcadis will provide further information for each impact in relation to the geographical scale of the impact, and the Extent, Magnitude, Duration, Frequency and Timing and Reversibility of the impact. It was requested by Arcadis that further information be provided within the response as to whether the survey effort proposed is considered appropriate. KCC did not confirm that the survey protocol was appropriate as *"they would defer to the statutory bodies on this. If the applicant can provide written confirmation of*	ES Appendix 7.2

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
		agreement to their survey scope from Natural England / Environment Agency this would be the best way to close out these comments". The Environment Agency has agreed with the survey scope, however Natural England were not able to review survey scope. Therefore, the applicant relies upon the agreement from KCC (acting on behalf of the LPA). With regards to the scoping out of white clawed crayfish, Arcadis consider that that there is sufficiently compelling evidence that this species is not present within the ZOI of the development to rule tis species out. This will be explained within the ES. With regards to the scoping out of invertebrates, an additional scoping survey was conducted, informing the ES. This species will be scoped into the assessment, with suitable mitigation applied. Within the ES and ES Appendices, where further surveys are foreseen, this is stated. Fish, water bodies and international designated sites between 20 and 30km form the development site will be scoped into the assessment, with appropriate evidence of mitigation demonstrated.	
EA Planning Specialist	The environment agency response outlined the following points: SuDS alone would be unlikely to provide all of the amphibian habitat / biodiversity benefit within the proposed development; The usage of motion sensitive lighting; Acknowledgement that Otter surveys are required; A request that the removal of invasive plants is included within the requirements for the development; That the biodiversity benefits of	Arcadis incorporated these comments into the development by: Including a number of waterbodies designed for biodiversity benefit within the GI of the development, including a large areas including a mosaic of new ditches in the north west of the site. Specifying that a lighting strategy that should incorporate features such as motion sensitive lighting will be required	ES Appendix 7.2

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
	recreational areas should be maximised and accounted for.	for each phase. Otter surveys have been conducted in relation to the development. Invasive plant records and survey results are presented in ES Appendix 7.3. Prescriptions for removal and control of these species is presented in the ES. The biodiversity of recreational areas is captured within the Biodiversity Net Gain report, presented in ES Appendix 7.21.	
Natural England	With regards to biodiversity, Natural England largely provided standing advice in relation to the EIA scoping.	Arcadis sought clarification that where the standing advice contradicted approaches discussed with NE and or the LPA, the standing advice was superseded by this specific advice.	ES Appendix 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	With regards to biodiversity, Natural England largely provided standing advice in relation to the EIA scoping.	Arcadis sought clarification that where the standing advice contradicted approaches discussed with NE and or the LPA, the standing advice was superseded by this specific advice.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Response to June 2020 Scoping Report. General approach and methodology were largely considered acceptable with the exception of a small number of points including aligning the significance categories with other topics. 'The 2020 Scoping Report notes that there is a relatively long construction timeframe and phasing is not known. A reasonable worst case scenario approach should be taken to construction phasing, taking into account early phase occupation as well as the order in which retail and community infrastructure is delivered, which will have implications particularly for noise, air quality, traffic, socioeconomics, health, and landscape and visual impact. We recommend a section or broader commentary explaining how reasonable worst case assessments have been derived and whether any sensitivity testing has been applied to allow for flexibility within any future uses.	Points raised have been incorporated into the EIA where applicable. In line with the long construction phase comment, a reasonable worst-case scenario is utilised in this assessment (as outlined in Chapter 7 and ES Technical Appendix 7.1.	ES Appendix 7.1 and 7.2

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	The Scoping Report commits to assessing the worst case scenario in line with 'Rochdale Envelope' principles. The parameters for assessment of the outline scheme elements should be clearly set out and should consider flexibility in size, massing, unit mix, tenure mix, provision of community facilities such as healthcare and education, and flexibility in commercial/retail use classes.	Worst case assessments based upon the parameters for approval have been conducted.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	It is noted that some surveys may be limited in their coverage due to safety measures associated with Covid-19. This is likely to be acceptable but should be clearly explained as a limitation in the ES Chapter. Surveys over three years old at the time of submission must be updated. It is likely that surveys over 18 months old may need to be updated, particularly for mobile species, in line with CIEEM guidance.	Wherever it is the case that these have been impacted, this is noted in the limitations section of the appropriate appendices. This has not impacted the veracity or robustness of the data collected or the subsequent results.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Baseline data used for the previous 2019 Application should be 'in date' and updated, if required.	Surveys have been updated throughout 2016–2021 inclusive. The scope of the survey updates has been agreed with KCC as outlined in the consultation section above.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Surveys will need to be further updated as reserved matters applications are submitted. This should be secured by planning condition. Updates to surveys are particularly important if there are any subsequent changes in land use.	This is agreed. An outline scope of the surveys likely to be required and the likely timing for these (within the planning period) is presented in the ES.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	With reference to cumulative assessment in the ES: The 'HRA' short list would provide a longer list to assess the cumulative effects on internationally designated sites (such as from recreational pressure). This assessment should be presented within the cumulative assessment in the ES.	The HRA has been modified to account for this comment. This will be carried over to the EIA section.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated	KCC Biodiversity Officer notes that the ecology information within the scoping report is not completely up to date. Updated breeding bird survey and an updated Phase 1 survey was carried out in 2020.	This ES presents the up-to-date situation with regards to the ES baseline.	ES Appendix 7.1 and 7.2

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
29/07/2021			
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Satisfied that there is no requirement for additional surveys to be carried out at this stage due to the management of the site not changing -- need to ensure this continues. If the management of the site changes it is likely that there will be a need for updated ecological surveys and the results may change what mitigation is required.	This is agreed. Surveys throughout the period 2016 – 2021 have noted any changes to the site and modified survey approaches as necessary.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Dover County Council Planning Policy and Projects Manager notes that the Thanet Coast and Sandwich Bay Ramsar site and SPA, and the Sandwich Bay SAC fall partly within 30km of the site and partly outside. It is considered that the impact upon the entirety of those designated sites should be scoped into the ES, and not just those parts which fall within 30km of the development site.	The HRA has been modified to account for this comment.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	EA comments note an error in Table 7.1 where the term 'non-native' should have been referred to rather than 'native' when talking about removal.	This is a Typo. This ES corrects this error.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	They also note an error in Table 7.2 in relation to the EA having no 'further' comments rather than no comments.	This is a Typo. This ES corrects this error.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Request from the EA for details of the percentage Net Gain that it is proposed will be delivered. On principle, they object to a low percentage being delivered and trust that the final figure will significantly exceed guideline levels.	The site design will target a net gain in excess of the 10% minimum.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	With reference to 'Proposed Surveys Table 7.5' states 2 otter signs were recorded during 6 surveys but only one additional survey will be carried out because the species is "mobile". The EA consider this to be insufficient because the species is rare	An additional update survey for Otter has been completed in 2021. However, due to the rarity of this species, it is precautionarily assumed that the site is used by otter (albeit at very low levels). As such, the ES accounts for a baseline that assumes otter utilise the site.	ES Appendix 7.1 and 7.2

Consultee/ Contact	Summary Scoping Opinion Response	Arcadis Response and Reply	Location of Correspondence
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	The EA have requested that if the recorded trap for signal crayfish was untagged, then, in future, they would be like to be informed via the EA's Incident Hotline.	This is noted. If any additional traps are discovered this will be reported.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	Support the proposal to construct and maintain wildlife tunnels in the site and, in particular, at the road bridges across the East Stour to improve the site's permeability for wildlife. Planting and use of wildlife fencing at a range of locations to reduce the chances of faunal mortality e.g. at the bridge crossings is also to be implemented. This comment is consistent with responses to other consultations on the bridge designs	The ES accounts for the requirement to facilitate wildlife movement through the site. Consultation on the bridge design is included within the Water Chapter.	ES Appendix 7.1 and 7.2
Scoping Opinion F&HDC (Report compiled by Temple as LPA advisor) Dated 29/07/2021	NE advise that previous submission responses in 2019, should be considered (letters referenced 277270, dated 03 June 2019 (part one) and 28 June 2019 (part two)).	These previous comments are accounted for in the amended application.	ES Appendix 7.1 and 7.2

7.2.8 Temple, on behalf of F&HDC, undertook a review of the Draft ES in December 2021. The topic specific comments and responses are provided in Table 7-5.

Table 7-5 Comments on the Draft ES

Consultee	Comment	Response
Temple, on behalf of F&HDC, 1 December 2021 Draft ES	Surveys supporting the Biodiversity chapter are all within CIEEM guidelines for longevity of reports and none are considered out of date, however it is noted that in the revised surveys, additional areas of land were inaccessible and our specialist reviewers will consider the implications of this for the ES in the full review.	All survey approaches are in line with the agreed survey scopes between Arcadis and KCC. Inaccessible areas are presented in the habitat maps in ES Appendix 7.3. Where additional access was obtained during 2021 these areas were surveyed. Considering the minimal area which was inaccessible this is not considered to have adversely impacted the veracity of the findings of this ES Chapter.
Temple, on behalf of F&HDC, 1 December 2021 Draft ES	The level of effect (i.e. whether an effect is considered negligible, minor, moderate or major adverse or beneficial) is not listed for a number of receptors, such as dormice, and should be included for all receptors. The minor adverse and significant effect on badgers appears to be contradicting the methodology stated for this ES chapter that effects moderate adverse and higher are considered significant.	The ES has been updated to address these comments.

The Study Area

7.2.9 The Study Area is the area within which habitat surveys have been undertaken. This includes the Zone of Influence (ZoI) area over which the activities associated with the proposed Development could influence ecological features. The ZoI varies for different ecological receptors. The Study Area and ZoI has been established on the basis of a desk-based review of ecological features in the general vicinity of the application site boundary, together with the results of field surveys undertaken since, a review of the likely areas affected by the proposed Development and the outcomes of consultation. The Study Area is approximately 700ha. In summary, the following areas are referred to in this report:

- The Study Area: the 700ha area within which habitat surveys were initially conducted.
- The OPA: the approximately 589 ha area within which development assessed within this ES is proposed. The OPA is located within the Study Area.
- ZoI: this varies from 30km from the OPA boundary (for example for international designated sites) to the OPA boundary itself (for features such as trees). Within the ES appendices detailing surveys, this is referred to as the 'survey area'. The study areas for each receptor are outlined in the relevant ES Appendix.
- FM Boundary: this is the Framework Masterplan Boundary. Within this area, which includes the OPA, a total of 10,000 homes is proposed. The additional 1,500 houses are considered as cumulative development in this chapter of the ES.

Methodology for Establishing Baseline Conditions

Establishing the Existing Baseline

7.2.10 The outline nature of the application and extended buildout of the proposed Development (approximately 19 years) has been a key factor in determining the level of survey work appropriate to inform the ES, and the appropriate level of detail required for the mitigation proposals given the outline nature of the application for planning permission.

7.2.11 The scope of the survey work was approved by the Local Planning Authority (LPA) in writing and conducted to inform the masterplan design and this ES. The correspondence agreeing the survey approach is presented in ES Appendix 7.2. Further surveys will be required following planning determination to support detailed design, planning approvals and the buildout process. These requirements are outlined within the ES and the relevant Appendices.

7.2.12 The baseline conditions have been established in part through a Desk-based Assessment that obtained existing records from Kent and Medway Biological Records Centre (KMBRC) (Raw Data presented in ES Appendix 7.5) relating to habitats and species of nature conservation concern both within the site and within the 2km search area defined on the basis of the ZoI for the proposed Development.

7.2.13 Desk-based ecological information was also analysed within 2km for non-statutory designated sites. The search area was extended to 5km for nationally designated statutory sites (including SSSIs and LNRs) and to 30km for internationally designated sites: SACs, SPAs and Ramsar sites) (Ref. 7-11);. The following resources were consulted:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website, publicly available data from “Magic” http://magic.defra.gov.uk/ the Natural England managed database (Ref. 7-11);
- Biological records centre data from KMBRC obtained March 2018 and April 2020;
- M20 Lorry Area Stanford West Interim Environmental Assessment Report (Ref. 7-13);
- NBN Atlas https://nbnatlas.org/ (Ref. 7-17);
- WYG (2016) Folkestone, Kent, Extended Phase 1 Habitat Survey, Shepway District Council (Ref. 7-12);
- Ecology Solutions Ltd (2014) Ecology Assessment, Land at Sellindge Kent (Ref. 7-31);
- Planning reporting for the Harringe Brooks Wind Park (Ecotricity) April 2012 (Ref. 7-14);
- Planning reporting for Link Park Phase 2 (Peter Brett) August 2015 (Ref. 7-15);
- Ecology Report – Lympne, Former Lympne Airfield – Proposed Housing Development (CSa) January 2013 (Ref. 7-16); and
- Kirby, G. and Gammans, N. (2020). Lympne Airfield site, Ecological Survey Report - September 2020 (Ref. 7-48).

7.2.14 In addition, fish and aquatic invertebrate data was obtained through a data request from the EA this was received on 9 January 2017. The fish data from the EA study was obtained from catch depletion electric fishing in June 2012. Data from the

closest survey point, located 1.4 km west of the site, was utilised from national grid reference TR 08040 38127.

7.2.15 Suitably qualified ecologists employed by Arcadis undertook field surveys within the Masterplan Site and the surrounding habitats, including habitat and protected species walkovers, initially conducted in October 2016 and updated between 2017 and 2021 to identify any habitats likely to be of conservation importance, and to investigate the presence (or likely presence) of protected species of plants and/or animals.

7.2.16 The results of the 2016 surveys (extended Phase 1 habitat survey, general walkovers and arboricultural scoping) were used to scope dedicated surveys to inform the assessment and the design of the Masterplan. Consequently, further surveys were undertaken for: hedgerows, grasslands, breeding and wintering birds; great crested newt; invertebrates; badger; bats (including emergence surveys of potential roost sites and bat activity / transect surveys); dormouse; water vole; reptiles; barn owl and otter. The dedicated surveys have been completed between 2017 and 2021. Further surveys undertaken in 2021 comprise bat activity surveys (statics and transects), habitat surveys, great crested newt surveys, breeding bird surveys, reptile surveys, dormouse surveys, glow worm surveys and surveys of barn owl breeding sites. An overview of the receptor specific surveys are presented in ES Appendix 7.1, with the detailed survey methodologies presented in each of the ES Appendices 7.3–7.17.

7.2.17 As outlined in the ES Appendices 7.3–7.17, further surveys would be undertaken, at an appropriate time of year, to inform the detail of mitigation measures as required. In particular to confirm the location and status of any new badger setts, bat roosts (especially those in trees) and potential locations of reptile habitat. The start of construction for the application site is currently scheduled for 2023.

7.2.18 Where incidental records were recorded during surveys, the location of these was captured using handheld GPS devices tablets.

Forecasting the Future Baseline

7.2.19 The future baseline has been assessed by considering the current baseline and which elements have the potential to change in the future if the proposed Development does not take place.

Defining the Sensitivity of Resource

7.2.20 In accordance with the EIA Regulations, and the guidance set out in the CIEEM Guidelines, it is considered inappropriate to attempt to investigate in detail all potential ecological issues in relation to the site. It is then appropriate, to focus assessment on those activities that could potentially generate significant ecological effects; this is determined by considering ‘ecological features’. In accordance with the British Standard BS42020:2013 Biodiversity - Code of Practice for Planning and Biodiversity, this assessment has followed the CIEEM guidelines.

7.2.21 In order to determine the likelihood of a significant ecological effect, it is first necessary to identify whether a receptor is sufficiently important for a significant effect upon it to be material in decision-making. To achieve this, where possible, animal species and their populations have been valued on the basis of a combination of their rarity, status and distribution, using contextual information where it exists. Habitats and plant communities are evaluated against existing selection criteria, wherever possible (such as those developed to aid the designation of SSSIs or non-statutory designated sites). Only those ecological features that it was considered could experience significant effects (i.e. effects that could adversely

affect the integrity of the habitat or the favourable conservation status of a species' local population), and which were identified as being of sufficient importance to be material to decision-making (i.e. of Medium (District/Borough) level importance or above), have been classified as being 'Ecological Features' and have been considered in the impact assessment. Those which are Ecological Features are listed in Table 7-6, below.

7.2.22 The habitats and features within the ZoI are known as the 'ecological features'. The nature conservation importance of each of the 'ecological features' considers the protected species and species of conservation concern that they may support, to avoid pseudo-replication. For example, the importance for species associated with the hedgerows (breeding birds, reptiles and hedgehogs) has been taken into account as part of categorising the overall importance of the hedgerows.

7.2.23 The following geographic frame of reference has been used to determine the importance of ecological features: International; National; Regional; County; and Local/Site, as set out in the EcIA guidance (Ref. 7-6). The specific criteria have been adapted from the document for the location, scale and duration of the proposed Development.

Table 7-6 Geographical context of Ecological Features

Importance of Ecological Features	Description
International and European	Habitats An internationally designated site or candidate site (SPA, provisional SPA, SAC, candidate SAC, Ramsar site, Biogenetic/Biosphere Reserve, World Heritage Site) or an area that would meet the published selection criteria for designation. 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. Species Any regularly occurring population of internationally important species, threatened or rare in the UK (i.e. an International Union for Conservation of Nature red list species that is also a UK Red Data Book or Section 41 species (of the NERC Act 2006). A regularly occurring, nationally significant population/number of an internationally important species.
National (England)	Habitats A nationally designated site (SSSI, National Nature Reserve (NNR), Marine Nature Reserve (MNR)) or a discrete area, which would meet the published selection criteria for national designation (e.g. SSSI selection guidelines). Some areas of priority habitat identified as a priority under Section 41, or of smaller areas of such habitat essential to maintain wider viability. Ancient woodlands are of National value. Species A regularly occurring, regionally or county significant population/number of an internationally/nationally important species. Any regularly occurring population of a nationally important species, threatened or rare in the region or county (see Local BAP). A feature identified as of critical importance in the UK under Section 41.
Regional (South-east England)	Habitats Sites that exceed the County-level designations but fall short of SSSI selection criteria. Some areas of S41 habitats. Viable areas of key habitat identified in the Regional BAP or smaller areas of habitat essential to maintain wider viability. Species

Importance of Ecological Features	Description
	Any regularly occurring, locally significant population of a species listed as being nationally scarce, which occurs in 16 of 100 10km^2 squares in the UK or in a Regional BAP. A regularly occurring, locally significant population/number of a regionally important species. Sites maintaining populations of internationally/nationally important species that are not threatened or rare in the region or county.
County (Kent County)	Habitats Sites recognised by local authorities, e.g. Local Nature Reserves or County Wildlife Sites. A viable area of habitat identified in County BAP. A diverse and/or ecologically valuable hedgerow network. Species Any regularly occurring, locally significant population of a species listed in a County BAP due to regional rarity or localisation. A regularly occurring, locally significant population of a County important species. Sites supporting populations of internationally / nationally / regionally important species that are not threatened or rare in the region or county, and not integral to maintaining those populations. Sites/features scarce in the County or that appreciably enrich the County habitat
Local / Site (Due to the scale of the proposed Development the site is considered to be significant at a Local level)	Habitats Non-statutory designations attributed by the Local Planning Authority such as Sites of Importance for Nature Conservation (SINCs) and Local Wildlife Sites (LWSs). Areas of habitat that appreciably enrich the local habitat resource (e.g. species-rich hedgerows, ponds etc). Sites that retain other elements that due to their size, quality or the wide distribution within the local area are not considered for the above classifications. Species Populations/assemblages of species that appreciably enrich the biodiversity resource within the local context. Sites supporting populations of County important species that are not threatened or rare in the County and are not integral to maintaining those population

Impact Pathways

7.2.24 This section of the report summarises the identified impact pathways which have the potential to have significant effects upon the important ecological features within the ZoI of the proposed Development. The full list of the impacts associated with each important ecological feature is presented in ES Appendix 7.1, the impacts identified for receptors include:

Construction

- Direct mortality from removal of habitat and construction vehicles;
- Loss of areas of habitat from construction;
- Fragmentation due to removal of connectivity, foraging habitats or breeding places;
- Pollution reduction in value of habitats and mortality / reduction of conservation status of receptors due to water / soil pollution / air quality / noise impacts from construction activities;
- Disturbance of species from construction and operational light, visual disturbance and noise; and

- Reduction in conservation status of species.

Operation

- Increased mortality due to presence of domestic animals particularly cats;
- Disturbance from recreational usage of areas;
- Trampling effects from recreational use of areas;
- Increases in events such as flooding (resulting from the changed hydrology due to the development) impacting important ecological receptors;
- Air quality and noise impacts from additional traffic once operational;
- Increased road mortality of species.

Selection of Features for Assessment of Air Quality Impacts

7.2.25 This section outlines the methodology for the selection of ecological receptors with regards to potential air quality associated with the proposed Otterpool development. This is a summary; a full explanation of the selection of all receptors in relation to air quality is presented in Chapter 6: Air Quality.

7.2.26 Some air pollutants (such as NOx) can have an effect on vegetation. Ambient concentrations of pollutants and deposition of particles can damage vegetation directly or affect plant health and productivity. Deposition of pollutants (such as nitrogen) to the ground and vegetation can affect the characteristics of the soil, which in turn can then affect plant health, productivity and species composition.

7.2.27 It is for these reasons that it is important to appraise potential air quality impacts on sensitive ecological receptors in the vicinity of the proposed Development. These receptors are typically those with the following ecological designations:

- Internationally designated sites: SAC; SPA; Ramsar sites.
- Nationally designated sites: SSSI.

7.2.28 In addition, a number of sensitive sites, including Ancient Woodland (AW) have been identified for assessment. These sites are summarised in Table 7-7. The 2044 assessment looks at impacts associated with the 10,000 unit development including the Framework Masterplan units. As air quality assessment tools have a horizon year of 2030 (i.e. 2030 is furthest year into future that Defra provide emission rates for purposes of local air quality) using 2042 or 2044 does not change the result in terms of per vehicle emission rates – the only variable is the amount of traffic. Therefore the approach of modelling 2044 is a worst case scenario and accounts for the highest amount of traffic, i.e. 2042 would be the same level or lower.

Table 7-7: Ecological Receptors Identified for air quality impact assessment

Site Name	Location in relation to site	Assessed for construction dust impacts?	Assessed for operational phase local air quality impacts in 2024, 2030 and 2044?
Hatch Park SSSI	3.6km to north-west	No – outside of construction dust study area	Yes
Folkestone to Etchinghill SSSI/SAC	3.6km to north-east	No – outside of construction dust study area	Yes

Site Name	Location in relation to site	Assessed for construction dust impacts?	Assessed for operational phase local air quality impacts in 2024, 2030 and 2044?
Lympne Escarpment SSSI	0.3km to the south	Yes	Yes
Otterpool Quarry SSSI	Within application site boundary	No – site classified for geological features which are not sensitive to nitrogen deposition or dust.	
Folks Wood Ancient Woodland (AW)	0.3km to the east	Yes	Yes
Bockhanger Wood AW	Overlaps with Hatch Park SSSI – 3.6km to north-west	No – outside of construction dust study area	Yes
Park Wood AW	3km to north-west	No – outside of construction dust study area	Yes
Kiln Wood AW	250m to east	Yes	Yes
House Wood AW	100m to east	Yes	Yes
Bartholomews Wood AW	1.1km to north-east	No – outside of construction dust study area	Yes
Cowtye Wood AW	1.2km to north-east	No – outside of construction dust study area	Yes
Grange Alders/Oakbanks AW	3km to east	No – outside of construction dust study area	Yes
Killing Wood AW	8.5km to north-east	No – outside of construction dust study area	Yes
Lympne Park Wood AW	450m to south-east	No – outside of construction dust study area	Yes
Perry Wood AW	500m to north-east	No – outside of construction dust study area	Yes
Hoads Wood AW	12km to north-west	No – outside of construction dust study area	Yes
Unnamed AW 1	12km to north-west. Adjacent to Hoads Wood	No – outside of construction dust study area	Yes
Unnamed AW 2	13.5km to north-west adjacent to	No – outside of construction dust	Yes

Site Name	Location in relation to site	Assessed for construction dust impacts?	Assessed for operational phase local air quality impacts in 2024, 2030 and 2044?
	M20	study area	
Unnamed AW 3	13.5km to north-west adjacent to M20, north of unnamed AW2.	No – outside of construction dust study area	Yes
Harringe Brooks Wood AW	Within FM boundary	Yes	Yes
Ashford Green Corridors Local Nature Reserve ((LNR) units adjacent to A2070 and M20)	9km to north-west	No – outside of construction dust study area	Yes

Methodology for Assessment of Air Quality impacts

7.2.29 How potential impacts upon the receptors are quantified is outlined in ES Chapter 6: Air Quality, which carried out the ecological assessment in accordance with the methods and principles detailed in the IAQM's (2020) designated sites guidance (Ref. 7-56). The assessment of likely significant effects utilised this information alongside ecological understanding of the sensitivity of different receptors to air quality changes. The ecological assessment methodology is based upon the CIEEM Advisory Note: Ecological Assessment of Air Quality Impacts (Ref. 7-55).

7.2.30 The assessment of the air quality impact on the ecological receptors identifies where the change in concentration/deposition is predicted to be 1% of the critical level/ load or more, either alone or 'in combination'. Where this is the case, an assessment is made whether the forecast change might result in an adverse effect on the designated site / receptor in question when combined with the effects from other proposals and, if so, to express the effect in ecological terms.

7.2.31 To make this assessment, a six step approach is taken to make an objective, transparent and rigorous assessment of the likelihood of an Adverse effect:

- Step 1. Identifying the Baseline Ecological Features and Air Quality
- Step 2. Assessing Confounding Factors, Background Pollution Trends and the Sensitivity of the Receptor
- Step 3. Is the Critical Load or Level Exceeded?
- Step 4. Apply Critical Loads and Critical Levels with Expert Judgement
- Step 5. Project Duration and Seasonal Effects
- Step 6. Relative Importance of Pollutant Concentration vs Deposition

7.2.32 This approach is utilised to determine if there is a residual significant effect on the identified receptors.

7.2.33 The Air Quality chapter of this ES (Chapter 6) presents a future scenario based upon traffic datasets modelled for Base Year 2018. Since this assessment an air quality sensitivity test has been conducted which assesses minor changes to the proposal, including identification of additional land in the north-west corner of the site for provision of the wastewater treatment works (WWTW), additional land for highway

junction works at Newingreen Junction, minor amendments to clarify land ownership boundaries and a change in the assessment approach in relation to the future uses of Westenhanger Castle. This model utilises higher traffic rates and is therefore more precautionary. As such, this is the data that is utilised in this ecological assessment of air quality impacts (presented in full in ES Appendix 7.1).

Methodology for Assessing Impacts

Impact Characterisation

7.2.34 As stated in the CIEEM guidelines (Ref. 7-6), the impact characterisation process involves identifying and characterising impacts and their effects. This includes:

- Incorporating measures to avoid and mitigate adverse impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

7.2.35 Within this chapter of the ES, the following parameters of each potential impact are assessed:

- Beneficial or Adverse;
- extent;
- magnitude;
- duration;
- frequency and timing; and
- reversibility.

7.2.36 These categories, along with the geographical context of the Ecological Feature (as shown in Table 7-6) are utilised to determine the 'character' of the impact and define it as 'significant' or 'not significant'. Details of how this is assessed is shown below.

Evaluation

7.2.37 The factors which will be taken into consideration in evaluating Ecological Features for both habitats and species following CIEEM guidelines. The frame of reference for the valuation of ecological resources in terms of geographical levels from International to Site level will be used as per Table 7-6. A range of documents will be consulted to assign that criteria, for example: County and Regional Biodiversity Strategies; the Birds of Conservation Concern (BOCC) 4: the Red list of Birds (2015) (Ref. 7-3) for breeding birds, which is a traffic light system of the highlighting species of nature conservation concern will also be considered.

7.2.38 In addition to the consideration of individual ecological features, the potential effects on ecosystem services will be discussed. These are the flow of benefits that people derive from the natural environment. The natural environment can be considered as a stock of natural capital from which these benefits – social, health-related, cultural or economic – flow. The ecosystem services delivered will also be considered as part of this assessment with reference to the UK National Ecosystem Assessment (UKNEA) (2011) (Ref. 7-1) and the Natural Capital Protocol (NCC 2016) (Ref. 7-2).

7.2.39 Biodiversity Net Gain calculations based on the Defra biodiversity offsetting metric 3.0 (Ref. 7-22) have been undertaken (ES Appendix 7.21). The habitats currently present on site have been mapped, and a valuation of these habitats have been

conducted to produce biodiversity units as a baseline. Also, the areas of habitat post-construction have been mapped and assigned and valued. A calculation of the overall changed biodiversity value has been provided and utilised to demonstrate the biodiversity value of the proposed Development as directed in the metric guidance where possible.

7.2.40 In the process of Ecological Impact Assessment (EcIA) it is important to select the appropriate features for inclusion in the assessment. In this case, a threshold of Site/Local level value has been set. Therefore, even habitats and species valued at the Site level are relevant to the proposed Development assessment.

Assessing Effect Significance

7.2.41 In accordance with CIEEM guidance (Ref. 7-5), a 'significant effect' is defined as an impact which is considered likely to affect the integrity or conservation status of an Ecological Feature. Where a significant effect is identified, the value of the receptor has been used to help determine the geographical scale at which the effect is significant. Thus, any Adverse effect which is considered to significantly affect the integrity of a receptor of, for example, national value will be identified as being a nationally significant effect.

7.2.42 Significant effects can be both Beneficial and Adverse. For the purpose of this ES, in line with CIEEM guidance 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'. Significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including their extent, abundance and distribution).

7.2.43 Impact magnitude has been identified as high, medium, low and negligible/neutral. The table below presents an assessment matrix which has informed the assessment of significance of effects. The nature of effects may be described as either adverse or beneficial. A combined assessment of sensitivity and magnitude has been undertaken to assist in identifying how significant an effect is likely to be. All effects of moderate significance or greater are considered to be significant.

Table 7-8 General Approach for Determining Significance

		Importance of Receptor		
		High (International/National)	**Medium (Regional/County)**	**Low (Local/Site)**
Impact Magnitude	**High**	Major adverse/ beneficial	Major adverse/ beneficial	Moderate adverse/ beneficial
	Medium	Moderate adverse/ beneficial	Moderate adverse/ beneficial	Minor adverse/ beneficial
	Low	Moderate adverse/ beneficial	Minor adverse/ beneficial	Negligible
	Negligible/ Neutral	Minor adverse/ beneficial	Negligible	Negligible

Approach to the assessment of Ecosystem Services

7.2.44 The ecosystem service baseline and the impacts to ecosystem services are assessed within ES Appendix 7.22. ES Appendix 7.22 presents the methodologies utilised for assessing the effects of the proposed Development upon the provision of ecosystem services.

7.2.45 Due to the intrinsic complexity of ecosystem services, it is not possible to allocate a geographical importance in line with Table 7-6 or determine a the Impact Magnitude to assess the overall significance of the effect upon the ecosystem service, as per the matrix presented in Table 7-8. The assessment of ecosystem service impacts is an emerging discipline, and as such the approach to this aspect of impact assessment (ie.e. identifying significance of change) is not formalised. However, an assessment of the direction of change (positive, negative or neutral) is provided.

Cumulative Effects

7.2.46 The assessment of cumulative effects has been considered in terms of inter-project and intra-project environmental effects.

7.2.47 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative effects. Cumulative effects are those effects of a development that may interact in an additive or subtractive manner with the effects arising from other committed developments that are not currently in existence but may be by the time the proposed Development is implemented.

7.2.48 These would be assessed in the EIA as:

- The combined action of interrelated proposed Development specific environmental effects causing impacts on a single receptor (intra-project); and
- The combined action of the proposed Development and other planned developments' environmental effects in combination on a single resource/receptor (inter-project).

Intra-project cumulative effects

7.2.49 An assessment of all likely impact pathways has been undertaken for each ecological feature scoped in. The potential for these impact pathways to act cumulatively on the ecological feature has been considered, and the likelihood of a significant effect occurring has been stated based on professional judgement.

Inter-project cumulative effects

7.2.50 In assessing cumulative effects, major developments within the ZoI of the proposed Development have been identified through consultation with F&HDC and other relevant consultees on the basis of those that are:

- Permitted and under construction; and
- Permitted application(s), but not yet implemented.

7.2.51 Consideration has been given to developments identified in the adopted and emerging development plans.

7.2.52 The committed schemes that have been identified through interrogating F&HDC and Ashford BC websites is provided in ES Appendix 2.5.

7.2.53 The cumulative effects of the proposed Development in combination with the Permitted Waste Facility (SH/08/124) within the application site boundary have also been assessed. With regards to biodiversity, the Permitted Waste Facility, should it

go ahead, will increase the provision of greenspace within the proposed Development, due to the requirement of a 250m buffer around this facility. As such, within this assessment, the future scenario where the Permitted Waste Facility is not installed is assessed. This future scenario is considered to provide a more precautionary assessment and is therefore in line with EIA assessment protocols.

7.2.54 In terms of inter-project effects, a review of nearby consented schemes (ES Appendix 2.3) has been undertaken. Those included in the assessment are shown in Table 7-9. The additional proposed 1,500 housing units within the FM have been included.

7.2.55 The FM is considered as a 'cumulative' scheme because the proposed Development for this area is so far in the future (at least 21 years away). A cumulative assessment has been made to ensure that the mitigation outlined within the OPA documents is compatible with the likely future cumulative impacts of the additional FM housing.

Table 7-9: Schemes assessed in the cumulative assessment

ES Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
G	F&HDC	Y06/1079/SH	Mixed use development including 1,050 residential units, open space, employment. Potential cumulative impact on species
H	F&HDC	Y14/0873/SH	Proximity of application for 250 residential units to the site. Potential cumulative impact on species Potential cumulative impact on designated sites.
AQ	F&HDC	20/0604/FH	Outline planning application for the erection of up to 55 dwellings with public open space, landscaping, sustainable drainage system (SUDS), a vehicular access point from Ashford Road. All matters reserved except for access Potential cumulative impact on species Potential cumulative impact on designated sites.
H	F&HDC	NMA Y18/0009/NMA	Hybrid application for the redevelopment of land between the A20 and M20 at Sellindge. Application for outline permission (with all matters reserved except access) comprising up to 200 dwellings including affordable housing, local mixed use centre. Potential cumulative impact on species
AM	F&HDC	Y16/1122/SH	Outline planning application for a neighbourhood extension for the creation of up to 162 houses including affordable, self-build and retirement housing, up to 929 square metres Class B1 Business floorspace, allotments, recreational ground and multi-use games area, nature reserve, and associated access, parking, amenity space and landscaping Potential cumulative impact on designated sites.

7.2.56 There are other further consented schemes within the vicinity of the Study Area. Some of these schemes are of relevance with regards to the HRA and are considered within the separate HRA screening report (ES Appendix 7.19).

Approach to the Tiered Planning Application

7.2.57 The masterplan demonstrates that the proposed design can appropriately accommodate the mitigation proposed (illustrated in ES Appendices 7.18, 7.21, the GI Strategy and the DAS (ES Appendix 4.16)). Additionally, it is considered that

there is sufficient flexibility in mitigation parameters to respond appropriately to likely flex in planning policy, potential future baselines, best practice guidance and/or legislation.

7.2.58 Following consultation on the ES submitted as part of the 2019 planning application (the '2019 ES'), a 'three-tier' approach is proposed for the amended planning application and accompanying EIA. This comprises the three stages of the planning process: Tier 1 Outline Planning Application, Tier 2 detailed masterplan and Tier 3 reserved matters application. The design and mitigation will therefore evolve in line with the tiers. The table below outlines the proposed methodology for evolving the planning permission through the tiers in relation to biodiversity.

Table 7-10 Methodology for the evolution of ecological mitigation through the tiered planning process

Aspect of the development	Tier 1	Tier 2	Tier 3
Designated sites	HRA to assess impacts to international designated sites Identification of any mitigation or monitoring in relation to designated sites.	Ensure any mitigation for designated sites outlined at Tier 1 is accommodated within the Tier 2 designs (for example through a Landscape and Ecological Management Plan).	Ensure requirements for mitigation is incorporated into each Tier 3 application area
Natural Capital / Ecosystem services	High level assessment of Natural Capital / Ecosystem service impacts from the development.	Assessment of each Tier 2/3 application area in line with the accepted methodology for assessment at the time of the Tier 2/3 application.	
Biodiversity net gain	Assessment of the entire OPA development to determine if the parameter plans and proposed illustrative masterplan can deliver the required biodiversity net gain.	Assessment of each Tier 2/3 application area as it progresses to ensure that it delivers the required net gain to deliver on the target for the entire site.	
Biodiversity Action Plan	Provision of an outline masterplan level BAP identifying key habitats and species and a general approach to safeguarding and enhancing for these receptors. An outline for community engagement with relation to wildlife.	No further input into BAP. (However, the design specification for the Phase will include specifications for the inclusion of biodiversity features within the phases).	Evolution of the sitewide BAP (this should be kept as a live document). Details of approaches to safeguard and enhance the habitats and species identified in the BAP within each parcel. Details of the approach to community engagement in relation to wildlife and biodiversity.
Species surveys	Surveys as outlined in this ES – surveys	No additional surveys likely to be required	Any further surveys required to inform detailed mitigation approaches or

Aspect of the development	Tier 1	Tier 2	Tier 3
	sufficient to provide surety on the assessment of impacts and to outline appropriate mitigation.	unless a substantial amount of time has elapsed between the Tier 1 surveys and the Tier 2 application. In this case update surveys may be required to re-baseline the site information.	licensing. This is likely to include: • Update bat building assessments and surveys; • Detailed tree assessments and surveys of trees to be removed.
Species licensing	Ensure that the masterplan can accommodate approaches to licensing where this is likely to be required. Outline broad approaches and mitigation likely to be secured in the licences.	N/A	Identify licensing approach to be used for the Tier 3 application area. The licensing approach pursued will follow the best option at the time of the application. The approach may include: • Derogation licences • Conservation licences • Organisational licences; • District licences • Low impact licences The licensing approach will be dependent upon the nature of the phase being progressed.
Species mitigation	Outline of accommodation of species needs within the landscape masterplan, including identification of areas for species mitigation. Identification of key corridors for wildlife, including habitat creation (including tunnels etc. and dark corridors).	Inclusion of aspects of the mitigation in the design code, for example bird and bat boxes in built parcels. Accommodation of habitat protection, buffers, and dark corridor requirements. Ensuring the Tier 2 application meets the parameters of Tier 1 to accommodate required mitigation.	Detailed species mitigation for each Tier 3 application area, tying in with licensing approach outlined above. The detailed approach to mitigation will need to evolve at Tier 3 to remain compliant with best practice at the time of the Tier 3 applications.
Ecological input into GI design	Securing parameters including habitat buffers, areas for habitat creation and retention, areas for translocations. High level input into selection of species for planting, outline design of areas for wildlife, protection of identified areas from impacts from dogs	Ensuring the Tier 2 design, particularly of green spaces accommodates the biodiversity needs identified at Tier 1.	Detailed design GI, including details of habitat features to be provided. Details of planting, maintenance etc also required.

Aspect of the development	Tier 1	Tier 2	Tier 3
	etc.		
Code of Construction Practice	Outline CoCP	N/A	Detailed CoCP providing Tier 3 application area specific approaches

Limitations and Assumptions

Limitations

7.2.59 The ecological baseline for this assessment has largely been informed by surveys undertaken and updated between 2016 and 2021. Surveys undertaken in 2021 revealed that the conditions of the habitats on the site had not changed significantly, and all of the survey data represented in Appendices 7.1–7.22 is considered appropriate to inform the masterplanning and ES.

7.2.60 Consultation with regards to the survey scope was initiated with a number of stakeholders, including Natural England, the LPA (represented by KCC) and the Environment Agency (EA) as presented in the scoping and consultation section of this report. The scope was agreed with KCC and the EA provided additional input. Natural England deferred to standing advice and as such no site-specific input was received.

7.2.61 Natural England were also contacted with regards to the approach to air quality in the HRA. No response was received; therefore, it is assumed that reverting to standing guidance is appropriate and this is followed (deferring to the local plan HRA as appropriate, Ref 7-63).

7.2.62 Within each of the ES Appendices (7.1–7.22) the individual limitations to each of the baseline surveys have been listed. As explained within the introduction, the level of survey conducted was robust, providing adequate baseline information for the masterplanning and EIA exercise for the outline application. Limitations which are fully listed in the EIA appendices include:

- Areas where access was not obtained or could not be obtained throughout the survey season;
- Areas and structures that were not accessed due to health and safety concerns;
- Surveys where weather impacted upon the survey protocol;
- Instances where technological equipment malfunctioned; and/or
- Instances where human interference in surveys took place (reptile refugia being repeatedly removed from one area).

7.2.63 In each instance where this occurred, survey protocol was modified or data handled in a manner to minimise the impact of this upon the project, and it was determined that the limitations of the surveys did not impact upon the value of the data collected and allowed sufficiently accurate conclusions to be drawn.

7.2.64 Due to the Covid-19 pandemic, it was necessary to implement the following broad changes to 2020 and 2021 surveys:

- Access was not requested to parcels of land where members of the public were likely to be at increased risk of coming into contact with surveyors;
- Access to private homes and businesses (excluding farms) was not requested, both to reduce exposure risk and to avoid potential for adverse reactions (largely related to Covid concerns) to interactions with surveyors; and

- Where it was felt that the three-tiered approach allowed for a reduced presence on site, without impacting upon the needs of the submission, this approach was adopted to reduce risk associated with surveyor travel. It is considered that the surveys provided to support this ES are sufficient to provide surety on the impact assessment.

7.2.65 Habitat validation was carried out during other targeted surveys to record any changes to habitats. In addition, a minimum of bi-monthly (once every two months) visits to site was proposed (if not covered by other surveys). Approaches to individual species surveys were also considered and amended where necessary as detailed in ES Appendix 7.2 and relevant species survey reports.

7.2.66 It was discussed with consultees that the proposed Development would take place over a large number of years and that pre-construction surveys would be undertaken in advance of each planning tier to inform licensing, refine any mitigation measures and take account of any changes in legislation or guidance. This approach would ensure that the mitigation employed on the site during site clearance and construction is up-to-date and follows best practice guidelines.

7.2.67 Some areas of the site were inaccessible due to landowners / residents declining permission to access. The details of the locations where access was not permitted is shown in Figure 5 in ES Appendix 7.1 and detailed in ES Appendix 7.1. Overall, the areas which were not possible to fully survey were approximately 3ha (or 0.5% of the OPA area) and are largely residential areas, this is not considered to have significantly impacted the veracity of the results.

7.2.68 In 2019, 2020 and 2021, access was not permitted for dedicated surveys to areas of land associated with the farms at Otterpool Manor and Harringe Court. These areas had been previously surveyed in 2016 – 2018 and this data has been used to inform the assessments (areas where access was restricted are presented in ES Appendix 7.3).

7.2.69 This ES is supported by a BNG assessment presented in ES Appendix 7.19. As the Otterpool Park development is currently only in the outline stage of the planning process, a detailed landscape and habitat design and management plan will not be produced for this planning tier. In order to carry out the BNG assessment of the post construction habitats, the Otterpool Park Green Infrastructure Strategy (ES Appendix 4.11) (GI Strategy) was used define illustrative post construction land-use typologies. The location and design these typologies meet the parameter specifications and the requirements of the strategy documents. For each of these typologies an assumption was generated of the likely habitat composition by percentage of the typology, and the likely condition of those component habitats. The percentages generated were then combined with the area coverage of the typologies to generate the respective area coverage of each component habitat.

7.2.70 As such, this assessment of the BNG potential of the Parameter Plans (ES Appendix 4.2) and specifications is sufficient to demonstrate that the application as secured at Tier 1 would permit a development that can deliver in excess of 10% net gain (as required by the Environment Act).

7.2.71 The composition of the post construction habitat typologies and assumed condition of those component habitats was informed by:

- The Illustrative Masterplan (ES Appendix 4.5);
- The Otterpool Park Green Infrastructure Strategy (ES Appendix 4.11);
- Requirements for Sustainable Urban Drainage Systems (SuDS) and drainage;

- Habitat requirements secured within the species mitigation strategies (ES Appendix 7.18);
- A precautionary approach which balances the best possible habitat that is likely achievable against the varied levels of potential impact from people who will come to live on the site;
- Cross referencing assumptions made against the BM 3.0 condition assessment sheets;
- Discussions with the project landscape and master planning teams; and
- Professional opinion based on experience of what is achievable on similar developments.

7.2.72 It is not considered that these necessary assumptions reduce the veracity of the conclusions of the BNG assessment. The assumptions are based on an illustrative layout which meets the requirements of the Tier 1 planning specification and Parameter Plans (ES Appendix 4.2) and therefore demonstrates that the Tier 1 design specifications meet the emerging requirements of the Environment Act and could deliver substantially more that the 10% requirement of this legislation.

Assumptions

7.2.45 Further surveys will be conducted at a later stage in the planning process, in line with the three-tier approach, to inform detailed design and the evolution of mitigation. The survey results presented in this Chapter are however considered sufficient to inform mitigation at this stage (Tier 1).

7.3 Baseline

Existing Baseline Overview

7.3.1 Baseline conditions of the site were assessed through on-site field surveys. Full details of the surveys conducted and the results of these assessments are presented in the ES Appendices. A suite of surveys was undertaken within the Study Area by Arcadis Consulting, the results of which are presented in Appendices 7.1 to 7.22. These Appendices are:

- ES Appendix 7.3 Habitat and hedgerow survey report;
- ES Appendix 7.4 Arboricultural scoping report;
- ES Appendix 7.5 Desk study and incidental records;
- ES Appendix 7.6 Reptile survey report;
- ES Appendix 7.7 Confidential badger survey report;
- ES Appendix 7.8 Hazel dormouse survey report;
- ES Appendix 7.9 Great crested newt survey report;
- ES Appendix 7.10 Otter and water vole survey report;
- ES Appendix 7.11 Bat survey results summary and impact assessment;
- ES Appendix 7.12 Bat activity survey (transects);
- ES Appendix 7.13 Bat building assessment and emergence / re-entry surveys;
- ES Appendix 7.14 Bat static detector surveys;
- ES Appendix 7.15 Breeding bird survey report including barn owl assessment;
- ES Appendix 7.16 Wintering bird survey report; and

- ES Appendix 7.17 Invertebrate Scoping Report.

7.3.2 Within the surveys a number of boundaries and site areas are referred to in the reporting. These vary between the surveys conducted, based upon the ZoI of the proposed Development for a given receptor.

7.3.3 For clarity, the OPA/study area and FM boundary are presented in Figure 1.1 in ES Appendix 1.1.

Existing Baseline

Site Overview

7.3.4 The site ('the area of search') comprises predominantly arable fields and grazed pasture supporting improved grassland. Some areas of the site support species-poor semi-improved grassland, namely areas within the Folkestone racecourse site, within Lympne airfield and smaller areas around field margins and woodland edges. Most of the field boundaries within the site were hedgerows. These varied, including defunct species poor hedgerows, intact hedgerows and species rich hedgerows with trees. A subset of these hedgerows would be classified as 'important' under the Wildlife and Landscape Criteria of the Hedgerows Regulations (1997). Several of the hedgerows supported mature trees.

7.3.5 The mainline railway that links Folkestone to London (including the HS1 high speed line) and the M20 (which lies beyond the railway line) form the northern boundary to the site. This railway line is on an embankment covered by trees and scrub.

Designated Sites: 'International' Designated Sites within 30km of the site

7.3.6 Within 30km of the proposed Development, 18 international designated sites were identified. The impacts to these sites are fully explored within the HRA Stage 1 and Stage 2 report (ES Appendix 7.19). Figure 1, in ES Appendix 7.1, shows the location of these designated sites.

7.3.7 The international designated sites within 30km of the site are presented. The closest of these, Dungeness, Romney Marsh and Rye Bay SPA is located 2.9km to the south-east of the site, however, this is only the Marine Component of the SPA. The terrestrial area of this SPA is located 8.75km to the south east (which overlaps with a SAC and Ramsar in the same location). The proposed Development has the potential to increase recreational impacts upon these designated sites and have effects through functionally linked land for avian receptors.

Table 7-11: 'International' designated sites within 10km of the site.

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
Dungeness, Romney Marsh and Rye Bay SPA (Marine Component)	**2.9km south-east**	The SPA protects intertidal and marine habitats for internationally important breeding and wintering waterbirds, birds of prey, passage warblers and breeding seabirds. The seaward boundary reaches, at its furthest, approximately 9 km out to sea at Rye Harbour. The western most point is Norman's Bay just west of Bexhill; the northern most point lies just south of Hythe. The landward boundary of the SPA follows the SSSI boundary and follows Mean High Water (MHW). No impact pathways to this SPA were identified.	**OUT**
Folkestone to Etchinghill Escarpment SAC	**4.2km NE**	**Annex I habitats that are a primary reason for selection of this site:** • 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	**IN**
Wye and Crundale Downs SAC	**5.8km N**	**Annex I habitats that are a primary reason for selection of this site:** • 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
Dungeness, Romney Marsh and Rye Bay SPA (with Marine extension)	**8.7km S (with Marine extension 2.9km S)**	**Qualifies under article 4.1 of the Directive (2009/147/EC), as it is regularly used by >1% of the UK population of the following Annex I species:** • Bewick's swan *Cygnus columbianus bewickii* • Bittern *Botaurus stellaris* • Hen harrier *Circus cyaneus* • Golden plover *Pluvialis apricaria* • Ruff *Philomachus pugnax* • Aquatic warbler *Acrocephalus paludicola* • Marsh harrier *Circus aeruginosus* • Avocet *Recurvirostra avosetta* • Mediterranean gull *Larus melanocephalus* • Sandwich tern *Sterna sandvicensis* • Common tern *Sterna hirundo* • Little tern *Sterna albifrons* Qualifies under article 4.2 of the Directive (2009/147/EC), as it is regularly used by >1% of the biogeographical populations of the following migratory species: • Shoveler *Anas clypeata*: 485 wintering individuals (1.2% NW & C Europe non-breeding population)	**IN**
Parkgate Down SAC	**9.1km NE**	**Annex I habitats that are a primary reason for selection of this site:** • 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	**IN**
Dungeness SAC	**9.9km S**	**Annex I habitats that are a primary reason for selection of this site:** • 1210 Annual vegetation of drift lines	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
		• 1220 Perennial vegetation of stony banks • Annex II species that are a primary reason for selection of this site: • 1166 *Triturus cristatus*: Great crested newt	
Dungeness, Romney Marsh and Rye Bay Ramsar	**9.9km S**	**Criterion 1 (contains rare, unique examples of natural wetland types), including:** • Annual vegetation of drift lines and the coastal fringes of perennial vegetation of stony banks (Ramsar wetland type E – sand, shingle or pebble shores). • Natural shingle wetlands: saline lagoons (Ramsar wetland type J – coastal brackish/saline lagoons), freshwater pits (Ramsar wetland type K – coastal freshwater lagoons) and basin fens (Ramsar wetland type U – non-forested peatlands). **Criterion 2 (supports threatened ecological communities), including:** • Bryophytes e.g. wetland thread-mosses *Bryum* species • Vascular plants e.g. sea barley *Hordeum marinum*, Borrer's saltmarsh-grass *Puccinellia fasciculata* and slender hare's-ear *Bupleurum tenuissimum*, sea-heath *Frankenia laevis*, sharp-leaved pondweed *Potamogeton acutifolius*, divided sedge *Carex divisa* and rootless duckweed *Wolffia arrhiza*. • Invertebrates e.g. reed beetles *Donacia*, snail-killing flies (*Sciomyzidae*) and soldierflies (*Stratiomyidae*) **It also supports vulnerable, endangered or critically endangered wetland species, including:** • Greater water-parsnip *Sium latifolium* • Warne's thread-moss *Bryum warneum* • Water vole Arvicola amphibius • Aquatic warbler Acrocephalus paludicola • Great crested newt • Medicinal leech Hirudo medicinalis	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
		• A ground beetle Omophron limbatum • Marsh mallow moth Hydraecia osseola hucherardi • De Folin's lagoon snail *Caecum amoricum* **Criterion 5 (regularly supports >20,000 waterbirds); in the non-breeding season the site supports 34,957 waterbirds (5-year peak mean 2002/3 – 2006/7).** **Criterion 6 (regularly supports 1% individuals in the population of the following species):** • Mute swan *Cygnus olor*; 348 wintering individuals (1.1% British population) • Shoveler: 485 wintering individuals (1.2% NW & C Europe non-breeding population)	
Lydden and Temple Ewell Downs SAC	**15.1km NE**	**Annex I habitats that are a primary reason for selection of this site:** 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	**IN**
Dover to Kingsdown Cliffs SAC	**20.1km NE**	**Annex I habitats that are a primary reason for selection of this site:** 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	**IN**
Blean Complex SAC	**21.6km N**	**Annex I habitats that are a primary reason for selection of this site:** 9160. Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*; Oak-hornbeam forests	**IN**
Stodmarsh SAC	**23.2km N**	**Annex II species that are a primary reason for selection of this site:** 1016 Desmoulin's whorl snail *Vertigo moulinsiana*	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
Stodmarsh SPA	**23.2km N**	**Qualifies under article 4.1 of the Directive (2009/147/EC), as it is regularly used by >1% of the UK population of the following Annex I species:** • Great bittern *Botaurus stellaris* (Non-breeding) • Hen harrier *Circus cyaneus* (Non-breeding) **Qualifies under article 4.2 of the Directive (2009/147/EC), as it is regularly used by >1% of the biogeographical populations of the following migratory species:** • Gadwall *Anas strepera* (Breeding) • Northern shoveler *Anas clypeata* (Non-breeding) **It further qualifies under Article 4.2 by virtue of regularly supporting a diverse waterbird and breeding bird assemblage.**	**IN**
Stodmarsh Ramsar	**23.2km N**	**Criterion 2 (supports threatened ecological communities), including:** • Invertebrates (six British Red Data Book wetland species) • Vascular plants (two nationally rare plants, and five nationally scarce species) • Rare wetland birds	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
The Swale Ramsar	**25.2km N**	**Criterion 2 (supports threatened ecological communities), including:** • Nationally scarce plants e.g. Bupleurum tenuissimum, Carex divisa, Hordeum marinum and Spartina maritima. • At least seven red data book invertebrates e.g. Bagous cylindrus, Erioptera bivittata, Lejops vittata, Peocilobothris ducalis, Philonthus punctus, Micronecta minutissima, Malchius vulneratus, Campsicnemus majus, Elachiptera rufifrons and Myopites eximia • The Mediterranean gull *Larus melanocephalus* • Criterion 5 (regularly supports >20,000 waterbirds); in the winter the site supports 77,501 waterbirds (5-year peak mean 1998/99 – 2002/03). **Criterion 6 (regularly supports 1% individuals in the population of the following species):** • Ringed plover *Charadrius hiaticula*; 917 individuals in spring/autumn (1.2% of the Europe/Northwest Africa population) • Black-tailed godwit *Limosa islandica*: 1504 individuals in winter (4.2% of the Iceland/W Europe population) • Eurasian wigeon *Anas Penelope:* 15296 individuals in winter (1% of the NW Europe population) • Northern pintail *Anas acuta:* 763 individuals in winter (1.2% of the NW Europe population) • Northern shoveler *Anas clypeata*: 483 individuals in winter (1.2% of the NW & C Europe population)	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
The Swale SPA	**25.2km N**	**Qualifies under article 4.1 of the Directive (2009/147/EC), as it is regularly used by >1% of the UK population of the following Annex I species:** • Marsh Harrier Circus aeruginosus • Mediterranean Gull Larus melanocephalus • Avocet Recurvirostra avosetta • Bar-tailed Godwit *Limosa lapponica* • Golden Plover Pluvialis apricaria • Hen Harrier Circus cyaneus **Qualifies under article 4.2 of the Directive (2009/147/EC), as it is regularly used by >1% of the biogeographical populations of the following migratory species:** • Ringed Plover Charadrius hiaticula • Black-tailed Godwit *Limosa islandica* • Grey Plover Pluvialis squatarola • Knot Calidris canutus • Pintail Anas acuta • Redshank Tringa totanus • Shoveler Anas clypeata,	**IN**
Thanet Coast and Sandwich Bay SPA	**28.5km NE**	**Qualifies under article 4.2 of the Directive (2009/147/EC), as it is regularly used by >1% of the biogeographical populations of the following migratory species:** • Turnstone Arenaria interpres	**IN**
Sandwich Bay SAC	**28.9km NE**	**Annex I habitats that are a primary reason for selection of this site:**	**IN**

Protected Site	Approximate distance from proposed Otterpool study area (km)	Qualifying features	Scoped in / Out
		• 2110 Embryonic shifting dunes • 2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") • 2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes") • 2170 Dunes with Salix repens ssp. argentea (Salicion arenariae) **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:** • 2190 Humid dune slacks	
Tankerton Slopes and Swalecliffe SAC	**29.5km N**	**Annex II species that are a primary reason for selection of this site:** • 4035 Fisher's estuarine moth *Gortyna borelii lunatawye* **Tankerton Slopes and Swalecliffe supports the majority of the north Kent population of this moth which is approximately 20% of the UK population. The site's north facing slopes are composed of London Clay and support a tall herb community dominated by its food plant hog's fennel *Peucedanum officinale*, together with areas of neutral grassland also required by the species for egg laying.**	**IN**

Designated Sites: National Statutory Designated Sites within 5km of the Site (SSSI)

7.3.8 Within 5km of the site, there are seven national statutory designated sites. These sites are listed in Table 7-12 and their locations are presented on Figure 7.2 in ES Appendix 7.1. These consist of six SSSI (Sites of Special Scientific Interest) and one Local Nature Reserve (LNR). One of these sites, Otterpool Quarry (SSSI) is within the proposed Development site. However, this site is not designated for biodiversity value. The sites considered relevant to the proposed Development are SSSI's Lympne Escarpment, Gibbin's Brook, Hatch Park, Seabrook Stream, Folkestone to Etchinghill Escarpment and LNR Poulton Wood, Aldington. The impacts to all of these sites are considered within the ES.

Table 7-12: SSSI and LNR (within 5km of the site)

Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description	Scoped In / Out
Sites of Special Scientific Interest – SSSI						
Otterpool Quarry	Geological SSSI	10.9	Within study area	N/A	This quarry shows the finest section through the Cretaceous Hythe Beds in East Kent and is of significance in showing the contact between this formation and the Sandgate Beds above. N.B. Only included within this chapter of the ES for completeness, assessed within Chapter 10: Geology, Hydrogeology and Land Quality.	OUT
Lympne Escarpment	SSSI	143.1	300	S	The grassland and woodland of this SSSI are among the best remaining examples of semi-natural habitats on ragstone in Kent. Wet ash-maple is the predominant woodland type with a small area of calcareous ash-wych elm wood. Many plants usually associated with chalk soils occur in the grassland. The south-facing slope is close to the sea and the resulting mild humid conditions encourages the growth of ferns and mosses.	IN
Gibbin's Brook	SSSI	16.6	650	N	The SSSI is comprised of an area of marshy grassland on peaty soils which has developed from an acidic valley bog and still retains many features characteristic of a bog. The site is also notable for its invertebrates, particularly moths.	IN
Hatch Park	SSSI	71.8	3,500	NW	The SSSI is designated for supporting unimproved acidic grassland, a scarce habitat in Kent, and ancient pollard woodlands, the latter supporting the richest epiphytic lichen community in the	IN

Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description	Scoped In / Out
					county.	
Seabrook Stream	SSSI	23.8	3,800	E	The SSSI is comprised of alder carr and fen communities which support an exceptional number of cranefly species.	IN
Folkestone to Etchinghill Escarpment	SSSI	269.5	3700	NE	NOTE: Part of the SSSI is also designated as Folkestone to Etchinghill Escarpment SAC. See above for description.	IN
Local Nature Reserve – LNR						
Poulton Wood, Aldington	LNR	11.3312	3,400	W	Bluebell woodland with adjoining garden, fields, ponds, hedgerows, and willow plots.	IN

Designated Sites – Non-statutory Designated Sites and Ancient Woodlands

7.3.9 Within 2km of the OPA redline, there are nine non-statutory designated sites, all of which are Local Wildlife Sites (LWS). These include one site, Harringe Brooks Wood, which is immediately adjacent to the west of the site. The majority of this site is an Ancient Woodland (also listed below). This site is within the ZoI of the proposed Development and is considered within the ES. Folks Wood is an Ancient Woodland 200m to the east of the site. This site, along with the other sites within 2km of the OPA site are also considered within the ES, where these are scoped in in Table 7-13 below. Non-statutory designated sites are presented in Table 7-13 and Table 7-14 and shown on Figure 3 and Figure 4, in ES Appendix 7.1.

Table 7-13: Non-statutory designated sites (within 2km of the site)

Site Name	Designation	Distance (m)	Direction	Scoped in / out of the assessment
Harringe Brooks Wood, Sellindge	LWS	0m	Immediately adjacent to the west of the site	IN
Folks Wood, Pedlinge	LWS	200m	East	IN
Pasture and Woods Below Court-at-Street, Lympne	LWS	500m	South-west	IN
Royal Military Canal	LWS	850m	South	IN
Chesterfield Wood, Sandling Park	LWS	1150m	East	OUT (due to distance from the site)
Postling Wents Woods	LWS	1350m	North-east	OUT (due to distance from the site)

Site Name	Designation	Distance (m)	Direction	Scoped in / out of the assessment
Brockhill Country Park, Saltwood	LWS, Country Park	1650m	East	OUT (due to distance from the site)
Tolsford and Summerhouse Hills	LWS	1700	North-east	OUT (due to distance from the site)
Blackhouse Wood, near Aldington	LWS	1850m	West	OUT (due to distance from the site)

7.3.10 Within 2km of the site, 24 Ancient Woodland blocks were recorded upon the Ancient Woodland Inventory (AWI). The majority of these are small, isolated blocks away from the proposed OPA development boundary, but there is potential for an air quality impact associated with traffic flows on roads. The Ancient Woodlands that are considered to be within the ZoI of the proposed Development in relation to impacts other than air quality are: Harringe Brooks Wood; Great Priory Wood; Kiln Wood; Birches Rough; Folks Wood; Aldergate / Hillhurst Wood; Lympne Park Wood; Perry Wood; House Wood; Round Wood; House Wood and Butcher Wood. All are located less than 1km from the site and is discussed within this chapter of the ES. A summary of the sites within this assessment is presented in Table 7-14.

Table 7-14: Ancient woodlands within 2km of the site

Name and identification on the AWI (Ancient Woodland Inventory)	Type	Size (ha)	Distance from site	Direction from site	Scoped in / out of the assessment
Harringe Brooks Wood 1486880	Ancient & Semi-Natural Woodland	22.6	0m	West	IN
Great Priory Wood 1486901	Ancient & Semi-Natural Woodland	3.9	125m	North	IN
Kiln Wood 1486641	Ancient & Semi-Natural Woodland	8.6	200m	East	IN
Birches Rough 1484602	Ancient & Semi-Natural Woodland	13.0	200m	West	IN
Folks Wood 1486890	Ancient & Semi-Natural Woodland	41.0	300m	East	IN
Aldergate / Hillhurst Wood 1486794 1486793	Ancient & Semi-Natural Woodland	17.1	450m	South-west	IN

Name and identification on the AWI (Ancient Woodland Inventory)	Type	Size (ha)	Distance from site	Direction from site	Scoped in / out of the assessment
1486792 1486798					
Lympne Park Wood 1486657	Ancient Replanted Woodland	18.8	450m	South	IN
Perry Wood 1486799	Ancient & Semi-Natural Woodland	3.7	500m	North-east	IN
House Wood 1486851	Ancient & Semi-Natural Woodland	7.3	500m	East	IN
Round wood 1484498	Ancient & Semi-Natural Woodland	1.7	550m	West	IN
House Wood 1486929	Ancient Replanted Woodland	3.4	600m	East	IN
Butcher Wood 1486627	Ancient & Semi-Natural Woodland	1.6	700m	North	IN
Unnamed woodland 1486919	Ancient & Semi-Natural Woodland	0.9	750m	North	IN
Unnamed woodland 0484213	Ancient & Semi-Natural Woodland	1.3	1000m	West	IN
Black Hill 1486887	Ancient & Semi-Natural Woodland	1.7	1100m	East	IN
Bartholomew's Wood 1486724	Ancient & Semi-Natural Woodland	8.6	1100m	North-east	IN
Unnamed woodland 1486739	Ancient & Semi-Natural Woodland	2.6	1250m	East	IN
Cowyte Wood 1486723 1486722	Ancient & Semi-Natural Woodland	23.1 (two parcels)	1300m	North-east	IN
Heane / Willow Woods 1486785	Ancient & Semi-Natural Woodland	3.1	1550m	East	IN
Harp Wood 1486942	Ancient & Semi-Natural Woodland	1.1	1600m	East	IN

Name and identification on the AWI (Ancient Woodland Inventory)	Type	Size (ha)	Distance from site	Direction from site	Scoped in / out of the assessment
Coopers Wood 1484796	Ancient & Semi-Natural Woodland	2.4	1600m	North	IN
Hayton Wood 0486922	Ancient & Semi-Natural Woodland	11.7	1600m	North	IN
Bolden Wood 1484282	Ancient & Semi-Natural Woodland	3.2	1700m	West	IN
Backhouse Wood 1484476	Ancient replanted woodland	25.5 (two parcels)	1900m	West	IN

Designated Sites: Other Designations

7.3.11 The site partially lies within the Biodiversity Opportunity Area - Mid Kent Greensand & Gault. The location of this is shown within the Desk Study Data (ES Appendix 7.5) as is the citation for this opportunity area. A summary of the key targets for this area are presented below (extracted from Ref. 7-28) – 2020 targets referred to are still current at the time of writing.

"Targets:

Major opportunities exist to recreate and restore acid grassland and heath. This should include restoration, by 2020, of at least 4ha at Ashford Warren; and creation of at least 10ha of acid grassland and heath in the heathland corridor from Lenham to Brabourne Lees, plus at least 10ha of acid grassland around the northern edge of Maidstone. Habitat blocks should be no smaller than 1 ha if no more than 500m from other existing or new acid grassland, and no smaller than 6ha if more isolated. Additional opportunities should be pursued for creation of acid grassland and heathland where this would contribute to the county-wide target of creating 28ha by 2020.

Enhance at least 10 ha of species rich grassland on acid soils, including newly created habitats, to bring them to UK BAP priority habitat quality.

Enhance or reinstate woodland management – including wood pasture management where appropriate – and restore plantations on Ancient Woodland sites to native woodland; extend and reconnect fragmented woodlands where this would not conflict with grassland conservation and enhancement.

Achieve a quantifiable improvement in ecological status of all water bodies, as judged by Water Framework Biodiversity Opportunity Area Statement Directive indicators.

Pursue opportunities to restore or recreate wetland habitats along the Rivers Medway, Stour and Len and their tributaries, particularly where this may:

- Provide opportunities for flood risk management and for recreation;
- Contribute to the conservation of priority species; or
- Extend and buffer Local Wildlife Sites.
- Enhance at least 20ha of species-rich neutral grassland to bring it to UK BAP

priority habitat Lowland Meadow quality.

Secure and maintain appropriate management of key brownfield sites, particularly where these support UK BAP priority species.

Infrastructure and other development should avoid further fragmentation, particularly of wetland habitats and woodlands.

Action for naturally widely dispersed habitats (ponds, traditional orchards), wildlife associated with arable farmland, and widely dispersed species such as great crested newt will need to focus across the whole of the area and not just within the Biodiversity Opportunity Area boundary."

Existing Baseline - Habitats

Habitats on Site

7.3.12 There are a range of habitats on the site, as presented and described in ES Appendix 7.3. The location and details of these habitats are presented within Table 7-15 below. Within this table, only habitats which are treated as an area in the Biodiversity Net Gain calculations are included (i.e. linear habitats are not noted).

7.3.13 Linear habitats which are also present on site are:

- Fences
- Ditches
- Defunct hedge species poor
- Intact hedge species poor
- Earth Bund
- Hedge with trees native species-rich
- Parkland scattered trees
- Hedge with trees species poor
- Running Water
- Conifer hedge
- Intact hedge native species-rich
- Walls.

7.3.14 Full details of the habitats described in this section are presented in ES Appendix 7.3. An overview of the site habitats is presented in Figure 5 in ES Appendix 7.1.

Table 7-15: Habitat receptors present within the site and approximate areas

Habitat	Approximate % of total site area*
Arable	52.6
Improved grassland	21.0
Species poor semi-improved grassland	14.7
Semi-improved neutral grassland	3.4
Hardstanding	1.5
Amenity grassland	1.5
Broad-leaved semi-natural woodland	1.1
Riparian edge (largely broadleaved trees)	0.7
Mixed plantation woodland	0.6
Dense/continuous scrub	0.6
Tall ruderal	0.6
Standing water	0.5
Bare ground	0.4
Building	0.3
Plantation woodland	0.2
Parkland Scattered Trees	0.1
ESP	0.1
Introduced shrub	0.1

* N.B. the Biodiversity Net Gain (BNG) tool and Environmental Benefits from Nature tool which are used to quantify changes in habitats within this ES handle area inputs differently (for example rivers have zero area in the BNG tool, tree canopies add onto the total area etc.) there for there are slight differences in the reported areas in each tool. These differences are insignificant and are therefore not discussed further.

Habitat Evaluations

7.3.15 Table 7-16 summarises the results of the baseline studies conducted along with the value of the habitat receptors. The valuation is based upon the presence and distribution of habitat within the site and their distribution and conservation status (including vulnerability, legal protection and listing on S41 of the NERC Act / Local BAP) of the habitat within Site, Kent, UK and International context. Habitats listed on Section 41 of the NERC Act are considered Habitats of Principal Importance, generally those that are most threatened and/or in greatest decline. Kent BAP is now superseded by the Kent Biodiversity Strategy; however, both of the documents contain relevant information, and both are utilised within the assessments. The geographical valuation of each receptor is conducted according to the criteria presented in Table 7-6.

7.3.16 Within Table 7-16, the assessment of habitats that are scoped into the ES is also presented.

7.3.17 Data upon the distribution of habitats across Kent was utilised, obtained from the Kent Habitat Survey 2012 (Ref. 7-39) and the Kent BAP (Ref. 7-25). The Kent BAP is not currently in use and has been superseded by the Kent Nature Partnership Kent Biodiversity Strategy (Ref. 7-28) however the BAP contains more habitat-specific information and is still relevant in this context.

Table 7-16 Valuation table for the habitat receptors

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
Ancient Semi-Natural Woodland registered on the Ancient Woodland Inventory	Harringe Brooks Wood, immediately adjacent to the west of the site. Kiln Wood to the east of the site (Figure 7.5). Details in ES Appendix 7.3.	Data from habitat surveys conducted across the site between 2016 and 2021.	Ancient woodland only covers 2% of the UK and is an irreplaceable habitat. There are two Ancient Woodlands listed on the AWI in the vicinity of the site, namely Harringe Brooks Wood to the west and Kiln wood to the east Harringe Brooks Wood is approximately 30ha in area. The topography through the woodland is varied with a range of slopes. The canopy is dominated by Oak, Field Maple, Hornbeam, Ash and Sweet Chestnut, with the relative proportions of these species varying throughout the wood. The understorey is Hazel and Hornbeam coppice with Bramble. Ground flora is rich, and indicative of an Ancient Woodland, including Bluebell, Wood Avens, Wood Sedge, Dog's Mercury, Wood Spurge and Enchanter's- nightshade. There are a number of 'rides'; through the woodland creating heterogeneity. In addition, there are three ponds within this woodland and a number of small flowing ditches. The woodland supports species including hazel dormouse, bats and great crested newt. Kiln Wood is 200m to the east of the site beyond the A20. This woodland contains a pond and a small stream that drains to the east. This woodland contains mature Sweet Chestnut, Oak, Hazel, Hornbeam. The understorey is largely bramble, elder and hazel coppice. Considering that both of these woodlands are an irreplaceable habitat, will qualify as a S41 habitat and provide a range of ecosystem services, including landscape screening, drainage, erosion control, biodiversity and provisioning services, it is assessed that these are of National Value.	National	IN
Lowland mixed deciduous woodland (S41 Habitat),	Small woodlands on site including broad-leaved woodland (likely to be	Data from habitat surveys	The woodlands on site vary, with some woodland on site having large mature trees, and varied species composition, such as Park Wood in the east of the site, and some woodlands with a younger age profile and	County	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
broadleaved woodland and plantation woodland	partially an Ancient Woodland, Park Wood), plantation woodlands. Ecosystems services of this habitat are presented in ES Appendix 7.22.	conducted across the site between 2016 and 2021.	more limited species composition, such as the small woodlands south of the A20. Park Wood, the areas around the River Stour and around the Racecourse and Westenhanger Castle have been there prior to 1877 (Old Maps). They comprise mature Oak and Ash (currently under threat from ash die back) with areas of Hazel coppice. Park Wood has ground flora indicative of Ancient Woodland. According to the Kent BAP (Ref. 7-25) (no longer active but still relevant), in 2008 there were approximately 44,072ha of woodland in Kent, with 37,247ha of this being Broadleaved woodland. The total woodland cover had declined by approximately 3000ha between 1961 and 2008, however an increase in woodland had occurred (Ref. 7-39). Kent is one of the more densely wooded counties in England but there is a scarcity of woodlands to the south of the site beyond Lympne Escarpment. The blocks of woodland are an important feature on site, supporting woodland plants that are uncommon in Kent and providing a range of ecosystem services including carbon sequestration, flood attenuation, erosion protection. They are a landscape feature which are visible in the wider area. They are also an important habitat for protected species including bats, dormouse (adjacent to the site) breeding birds and small mammals. It is considered that a number for the woodlands on site would qualify as priority habitats under Section 41 of the NERC Act.		
Hedgerows (S41 Habitat)	Hedgerows present across the site. Of the 67 hedgerows on site which were surveyed, only 12 are likely to qualify as 'Important' under the Hedgerow Regulations. Details in ES Appendix	Data from habitat surveys conducted across the site between 2016 and 2021.	Species rich hedgerows, hedgerows identified as important in the hedgerow assessment, intact hedgerows (ES Appendix 7.3). There are 8,112km. of hedgerows in Kent (Ref. 7-25), however, approximately 62.6% of these are considered defunct, and only 14% are species-rich. These provide important refuges for woodland plants and wind erosion and pollution butters as well as carbon sequestration. They are wildlife corridors for a number of protected species. They form part of the	County	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
	7.3. Ecosystems services of this habitat are presented in ES Appendix 7.22.		farmland habitat complex that supports farmland birds.		
			Other hedgerows, defunct and species poor hedgerows These hedgerows provide many of the services above to a lesser quality and are much more numerous and widespread within Kent than the other hedgerow types.	Local / Site	IN
Arable field margins (S41 Habitat)	Field margins are largely species-poor semi improved grassland. These vary in width from 0 – 20m but are largely 3 – 6m where present. The wider field margins are largely in areas of the site under High Level Stewardship (HLS). Details in ES Appendix 7.3. Ecosystems services of this habitat are presented in ES Appendix 7.22.	Data from habitat surveys conducted across the site between 2016 and 2021.	Arable field margins within areas of the site managed under the HLS Scheme / S41 on the NERC Act quality field margins. The areas managed under the HLS scheme are presented in ES Appendix 7.21. The arable field margins that are likely to qualify as S41 quality are largely contiguous with these areas and are more species rich than the other margins across the site. They have the potential to support annual arable weeds and perennial plants. These margins are unlikely to qualify under faunal criteria, i.e. due to the presence of nesting birds or rare invertebrates but will qualify due to having >18 plant species per 100m square. Although these margins are currently impacted by the intensive arable farming on the site, these margins are wider and more floral species rich than those elsewhere on the site and are likely to be being managed to maximise ecological value (i.e. with regards to cutting regime). These areas have the potential to be a valuable environmental resource. Therefore, considering the future baseline of the habitat an assessment of county importance is made.	County	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
			Other field margins These are largely species poor, narrow and intensively managed for agriculture. However, they do still have value as a wildlife corridor and as a foraging resource for a range of species including invertebrates and birds.	Local / Site	
Semi-improved and species-poor semi-improved neutral grasslands (important for a range of faunal and floral features)	The semi-improved and species-poor semi improved neutral grassland are across the site, and despite having low intrinsic value are important for invertebrates and reptiles and other notable fauna. Details in ES Appendix 7.3. Ecosystems services of this habitat are presented in ES Appendix 7.22.	Data from habitat surveys conducted across the site between 2016 and 2021.	Semi-improved neutral grassland There are approximately 81,496 ha of grassland within Kent (Ref. 7-39). The grassland on site is not particularly notable, i.e., none of the grassland is considered to qualify as a S41 habitat. In addition, only a very small area of the site (2.84%) of the site is this habitat. In the areas surrounding the site, there are extensive areas of much higher quality grasslands. Particularly across the AONB to the north of the site and the Lympne Escarpment to the south. However, these habitats provide a range of ecosystem services including carbon sequestration, flood attenuation and erosion protection. They are a landscape feature which are visible in the wider area. They are also an important habitat for protected species including bats, birds and small mammals. Considering all of this information, where this habitat does not qualify as a county value field margin as stated above, the areas of semi-improved neutral grassland on the site are considered to be of local/site value.	Local / Site	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
			Species poor semi-improved neutral grassland Where this habitat does not qualify as a county value field margin as stated above, in line with the description for semi-improved neutral grassland, this is a relatively low value habitat when considered in the context of the vicinity of the site and across Kent. However, these habitats provide a range of ecosystem services including carbon sequestration, flood attenuation and erosion protection. They are a landscape feature which are visible in the wider area. They are also an important habitat for protected species including bats, birds and small mammals. Considering all of this information, the areas of species poor semi-improved neutral grassland on the site are considered to be of local/site value.	Local / Site	IN
Open mosaic habitats on previously developed land (S41 Habitat i.e. Priority Habitat Listed n Section 41 of the NERC Act)	Only one area of this 'habitat' type is present within the site, within a disused quarry / lorry park south of the A20. Details in ES Appendix 7.3. Ecosystems services of this habitat are presented in ES Appendix 7.22.	Data from habitat surveys conducted across the site between 2016 and 2021.	Only one area of the site supported this type of habitat, a small disused lorry park in the centre of the site south of the A20. This habitat is largely compacted aggregate of hardstanding, within only small areas of tipped aggregate and sand/soil offering more interesting habitats. These habitats are easily translocated and / or replicated.	Local / Site	IN
Standing water Ponds (S41 Habitat)	Within the ZoI of the site, over 40 ponds were identified, of which 19 are within the proposed Development site application boundary 13 of which are considered to be of notable ecological	Data from habitat surveys conducted across the site between 2016 and 2021 and	Most of the S41 qualifications are based upon their support of Great Crested Newts and other notable species. The ponds that are likely to qualify as S41 ponds within the site are those that meet one or more of the following criteria: • Qualify under Annexe 1 of the Habitats Directive; • Supporting species of high conservation importance.	County (10 ponds)	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
	value. Details in ES Appendix 7.3 and 7.9. Ecosystems services of this habitat are presented in ES Appendix 7.22	GCN surveys conducted 2017–2021.	• Supporting exceptional assemblages of key biotic groups. • Ponds of high ecological quality. These include the following ponds which are on or around the site: • Pond 5; • Pond 9; • Pond 11; • Pond 12; • Pond 15; • Pond 17; • Pond 22, 23 and 23a (all adjacent) • Pond 27. • Ponds likely to qualify based on habitat and floral composition are: • Pond 8 (off site) in Harringe Wood despite being recently reprofiled the surrounding vegetation was indicative of a diverse habitat that will rapidly recolonise; • Pond 6 (off site) in Harringe Wood; • Pond 16; • Pond 19 (Folkestone Racecourse Lake); • This is due to their: • Size (greater than 0.3ha); • Reasonable water quality; • Diversity of emergent and marginal plants of less common of species; • Heterogenous banks with varied bankside vegetation.		

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
			Details on the locations of the ponds referred to and their habitats are presented in ES Appendix 7.9. Due to their classification as S41 habitats these are of National importance. However, ponds are widespread in Kent, therefore these features are not considered to be of greater than County value.		
			All other ponds on the site are of variable quality but are largely devoid of especially notable species (although they are, for example, a resource and foraging habitat for bats and birds). There are Schedule 9 species present such as New Zealand pigmyweed and parrot's-feather present in some of these ponds reducing their overall nature conservation value.	Local / Site	IN
Running Water including the East Stour River, tributaries to the East Stour River and ditches.	The East Stour River runs through the site, from Westenhanger Castle in the east to Harringe Lane in the west. In addition, two tributaries to the East Stour River (south of the A20 and from Harringe Brooks Wood) are within the site. Ditches area also present within the site of which some contain running water. Details in ES Appendix 7.3 and 7.10. Ecosystems services of this habitat are presented	Data from habitat surveys conducted across the site between 2016 and 2021 and otter and water vole surveys from 2017 and 2018, with an update survey carried out in 2020.	There are five main river catchments in Kent, covering c.6,000 ha (Ref. 7-25). Within the OPA site, there is approximately 0.15ha of running water. The most significant riverine habitat within the site is the East Stour River. As of 2016, this river was classified under the WFD parameters as having moderate ecological status, moderate biological quality elements, good fish and invertebrate status and moderate macrophytes and phytobenthos status. In addition, this feature provides a range of ecosystem services, including drainage, water cycling, pollution control, landscape and recreational services and provisioning services, such as irrigation. This feature is known to support an assemblage of notable receptors, including fish, foraging bats and birds and aquatic invertebrates. Downstream of the site, the East Stour River is a tributary to the Great Stour, sections of which are the rare habitat 'chalk stream'. Due to the rarity and sensitivity of these chalk streams (there are only six which occur within Kent), the East Stour is assessed as being of Regional importance.	Regional (East Stour River)	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
	in ES Appendix 7.22.		The two significant tributaries on the site drain to the East Stour River corridor. These run from the south of the A20 joining the East Stour to the west of Folkestone Racecourse and from Harringe Brooks Wood in the south-west to the East Stour River in the north-west of the site. These features provide a range of ecosystem services, including drainage, a landscape feature and a provisioning resource (for irrigation etc.). In addition, these features support an assemblage of notable receptors, including fish, foraging bats and birds and aquatic invertebrates. However, these features would not qualify as S41 habitats of principal importance. Considering these factors, these habitats are assessed as having County value.	County (tributaries of the East Stour River)	IN
			There are over 40 ditches on the site, these are described in ES Appendix 7.10. Many of the ditches on site are of limited value. The majority of the diches are heavily managed (through cutting and dredging), impacted by farming activities with a denuded flora and fauna. However, these features do provide a drainage resource and are commuting and foraging resource and habitat for a range of flora and fauna, including invertebrates and water voles (in a subset of the ditches). Considering these factors, ditches on the site are considered to be of local/site value.	Local / Site (ditches)	IN
Traditional orchard (S41 Habitat)	One very small orchard is present south of the A20. This area was not accessed for survey. Ecosystems services of this habitat are presented in ES Appendix 7.22.	Data from habitat surveys conducted across the site between 2016 and 2021 (access	Only one orchard is present on the site, a small area (c.0.9ha) south of the A20. Within the surveys conducted, as outlined in ES Appendix 7.3, access to this area was not permitted. A high level of assessment was made from the roadside. In addition, information was obtained from PTES (People's Trust for Endangered Species) in relation to the orchard area. No specific survey information was obtained but general information on concerns regarding the status of the habitats (as S41) the age of the tree stock present and	County (precautionary assessment)	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
		not permitted).	the presence of noble chafer/other saproxylic species. The full response provided is presented in ES Appendix 7.2.		
'Riparian Corridor' (habitat for a range of faunal receptors and an ecological corridor)	This corridor is either side of the East Stour, and is largely uniform throughout its length, with trees and scrub vegetation, dominated by Alder, Willow, Oak, Ash and Bramble. Ecosystems services of this habitat are presented in ES Appendix 7.22.	Data from habitat surveys conducted across the site between 2016 and 2021.	The riparian corridor represents a relatively homogenous habitat either side of the East Stour River with mature trees such as Alder and scrub. This vegetated area is largely between 1 and 5m wide on each side of the river, being wider (up to approximately 20m) in a small subset of areas. This habitat buffers the river from the intensively managed and farmed surrounding areas. It is also likely to provide bank stabilisation, shading and leaf litter and wood will provide in water heterogeneity. This vegetation provides landscape screening and is a feature visible from the surrounding areas. This is also an important wildlife corridor in an otherwise agricultural landscape supporting foraging bats and birds and terrestrial invertebrates (particularly within standing deadwood habitats). Considering all of these aspects, overall this habitat is considered to be of County value.	County	IN
Individual scattered trees, parkland scattered trees	Across the site, scattered trees are present. These vary from small self-sown trees to significant field trees including Oaks, some of which have TPO's. A small area of parkland trees is present located between Westenhanger Castle and Folkestone Racecourse. Details in ES Appendix 7.3 and 7.4. The natural capital value	Data from arboricultural and habitat surveys conducted across the site between 2016 and 2021.	Parkland trees, veteran trees and trees with TPOs Within the application site boundary, there are in excess of 500 trees. A subset of these are within parkland (around Westenhanger Castle), and have been present since prior to 1877 (from OS map evidence). Some of these may qualify as veteran trees (including large Oaks present within fields across the site) and / or have TPOs. These trees are an important landscape feature, providing historical context, screening and aesthetic services. In addition, trees provide water and drainage control, ground stabilisation, air quality remediation and urban cooling. In addition, these trees provide valuable resources for a range of fauna including birds and bats. Considering each of these aspects, it is considered that these tree types are of County value.	County	IN

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
	of this habitat is presented in ES Appendix 7.22.		Further details of trees on the site are presented in ES Appendix 7.4.		
			Other trees on site In addition to the tree types listed above, there are a number of other scattered trees within the site including a large number of mature Horse Chestnut, Ash, Willow and Hawthorn and in the south of the site, Sycamore. These trees are an important landscape feature, providing historical context, screening and aesthetic functions. In addition, trees provide water and drainage control, ground stabilisation, air quality remediation and urban cooling. Also these trees are a habitat for a range of fauna such as birds, bats and invertebrates. Within the wider area surrounding the site, there are a much greater number of scattered trees, particularly within the area to Sandling Park in the east and associated with Port Lympne in the south. Considering these factors, overall the other trees across the site are considered to be of Local / Site value. Further details of trees on the site are presented in ES Appendix 7.4.	Local / Site only	IN
Arable / improved grassland	These are the most prevalent habitats on site by area and are distributed across the site. They are of minimal intrinsic value, but support farmland birds. Areas of the farmland on site are managed under the Higher Land Stewardship Scheme (HLS), a scheme where farmers are paid to	Data from habitat surveys conducted across the site between 2016 and 2021.	Within Kent, these habitats are common and widespread, with over 127,272ha of arable land across the county. These habitats are not rare but have been under management for a long period of time, the soil quality is high in terms of agricultural value in the areas which were tested (largely being ‘Grade 2’) and they provide a habitat for annual and permanent plants typical of arable environments. These habitats provide flood attenuation and carbon sequestration in the permanent pasture. These are also part of the farmland complex with the hedgerows that support a range of protected species particularly farmland birds. Details of soil status is presented in ES Chapter 5: Soils and Agriculture.	Local / Site only	OUT

Habitat (and reason for selection as ecological feature)	Notes, locations and location of details in ES.	Age and source of data	Evaluation Statement	Value	Scoped in / out of the ES
	undertake certain actions to benefit wildlife. The location of the HLS areas within the site is presented in Figure 11 of Appendix 7.15. Details in ES Appendix 7.3. The natural capitol value of this habitat is presented in ES Appendix 7.22.				

Existing Baseline - Species

Notable Species Overview

7.3.18 Data on the presence of notable species recorded within the ZoI of the proposed Development was collected between 2016 and 2021, through desk studies and surveys. The results are presented in ES Appendices, namely:

- ES Appendix 7.3 Habitat and hedgerow survey report;
- ES Appendix 7.4 Arboricultural scoping report;
- ES Appendix 7.5 Desk study and incidental records;
- ES Appendix 7.6 Reptile survey report;
- ES Appendix 7.7 Confidential badger survey report;
- ES Appendix 7.8 Hazel dormouse survey report;
- ES Appendix 7.9 Great crested newt survey report;
- ES Appendix 7.10 Otter and water vole survey report;
- ES Appendix 7.11 Bat survey results summary and impact assessment;
- ES Appendix 7.12 Bat activity survey (transects);
- ES Appendix 7.13 Bat building assessment and emergence / re-entry surveys;
- ES Appendix 7.14 Bat static detector surveys;
- ES Appendix 7.15 Breeding bird survey report including barn owl assessment;
- ES Appendix 7.16 Wintering bird survey report;
- ES Appendix 7.17 Invertebrate scoping report;
- ES Appendix 7.19 Habitats Regulations Assessment (HRA);
- ES Appendix 7.22 Natural Capital Strategy and Ecosystem Service Impact Assessment

7.3.19 Desk study and incidental results that are relevant to the current site but are not presented in any of the appendices listed above are presented in the sections immediately below.

Additional Notable Species: Small Mammals

7.3.20 Full details of the mammal records returned from the desk study (excluding those records explored in detail elsewhere within the ES Appendices) are presented in Table 7-17.

7.3.21 A number of notable mammal records were recorded within the desk study, namely, brown hare (*Lepus europaeus*) (observed once on site on 12.06.2018 at OSGR TR 09648 37241 in the west of the site.); Eurasian water shrew (*Neomys fodiens*); harvest mouse (*Micromys minutus*) and west European hedgehog (*Erinaceus europaeus*). Considering the habitats present on the site, it is considered likely that all of these species are present on the site.

Table 7-17: Notable small mammals from records centre data from within the last 20 years

Species Common Name	Species (Binomial)	Date of most recent record	Distance (direction) from site	Conservation Status	
				NERC S41*	Kent RDBK**
Brown hare	Lepus europaeus	10/02/2014	Within site	Y	N
Eurasian Water Shrew	Neomys fodiens	11/06/2009	1500m (north west)	N	Y
Harvest Mouse	Micromys minutus	01/01/2007	Within site	Y	Y
West European Hedgehog	Erinaceus europaeus	23/06/2012	Within site	Y	N

Table Notes:

* Species listed on S41 of the NERC Act (Ref. 7-19) i.e. Species of Principal Importance (these are species that are a material consideration within the planning process and are usually declining or of conservation concern).

** Kent Red Data Book – Species of county importance

Additional Notable Species: White Clawed Crayfish

7.3.22 While white-clawed crayfish (*Austropotamobius pallipes*), have been recorded from the River Darent, the River Stour and the River Medway Catchments in Kent (EA data) populations are now largely limited to their headwaters with only four locations reported. One of which is a record from the Seabrook Stream near Hythe (>3km to the east of the site) in 2017.

7.3.23 Their habitat requirements are for relatively hard, mineral-rich unpolluted water with plenty of refuges, gravel beds being ideal. The East Stour River within the site does not support habitat typical of the requirements for this species.

7.3.24 The data search did not return any other records of the presence of white clawed crayfish, however a record of the non-native invasive signal crayfish was returned from within the site. These are the key competitor for resources of the native crayfish and also predate them. Most significantly they carry a crayfish plague (*Aphanomyces astaci*), a fungal disease that can wipe out populations of white-clawed crayfish.

7.3.25 A formal EA data request did not return any records of white-clawed crayfish within the Study Area. The EA are the holders of white clawed crayfish data and were contacted via telephone and the EA confirmed that white-clawed crayfish are considered absent from the East Stour (pers. comm. EA Fisheries Officer, 10 October 2016).

7.3.26 As a result, it is considered that in all probability white clawed crayfish are absent from the site. In addition, the East Stour River, the only waterbody which is likely to offer habitat to this species (if they are present) is being retained and buffered within the proposed Development, and this species is not considered further within the ES.

Additional Notable Species: Fish

7.3.27 Environmental data was obtained from the EA through their information service within regards to fish within the East Stour. The results have been extracted directly from EA data as follows.

7.3.28 **"**Minnows were most abundant numerically whereas eel, brown trout and gudgeon dominated the standing crop. Eight species were present which is slightly higher than the national average of seven. They included brook lamprey, brown trout, bullhead and eel which are of conservation interest Standing crop in 2012 was dominated by eel and then salmonids (brown trout). Values recorded in 2012 were similar to those recorded in 2001-2 but less than those in 2003-6. The proportion of salmonids in the catch has decreased since 2006 whereas the standing crop of eels has remained stable since 2003".

7.3.29 In addition, the WFD baseline conditions for East Stour River (GB107040019640) from Cycle 2 of the WFD assessment (Ref. 7-57) recorded the status of fish within the EIA to be 'good' (EA, 2016). Overall, it is considered that the River East Stour is likely to support an assemblage of fish, including eel (*Anguilla anguilla*).

7.3.30 During the other surveys conducted on the site, fish were incidentally recorded in some of the water bodies. Table 7-18 below outlines the details of the incidental records of fish on site.

Table 7-18: Other fish species recorded across the site

Location (water body reference numbers ES Appendix 7.9)	Species recorded	Source of data
16	Stickleback (*Gasterosteus* sp.), carp (*Cyprinus* sp.). Managed as a fishing pond.	Recorded during great crested newt surveys. Presence of sturgeon confirmed through liaison with pond manager (Pers. Comm. Spring 2017).
19	Stickleback, carp.	Recorded during great crested newt surveys.

7.3.31 Although the presence of carp, stickleback and sturgeon within the standing water bodies on the site is not particularly ecologically notable, this does contribute to an understanding of the distribution of the species across the site, including great created newts (which are adversely impacted by the presence of fish).

7.3.32 The desk study data returned by KMBRC also returned records of Bullhead (Cottus gobio) within the East Stour River which runs through the site.

Additional Notable Species: Non-Native Invasive Animal Species (listed on Schedule 9 of the WCA)

7.3.33 Across the site, non-native fauna (listed on Schedule 9 of the WCA) were recorded during the desk study and surveys (Table 7-19).

Table 7-19: Schedule 9 listed animal species recorded during the surveys conducted across the site.

Common Name	Scientific Name	Records of presence	Notes in relation to conservation objectives on the site
Signal Crayfish	Pacifastacus leniusculus	Records returned by NBN from within the site and presence within the East Stour River was confirmed by the EA. One trap for signal crayfish was found within the Stour River at OSGR TR09431 37713.	Signal crayfish are known to be vectors of crayfish plague, which can have a major impact upon native white clawed crayfish (*Austropotamobius pallipes*) within a catchment.
American Mink	Neovison vison	Records returned from records search from KMBRC. NBN also returned records of this species from within 2km of the site. Evidence of this species including footprints and scats recorded during otter and water vole surveys conducted in 2017 and 2018, with a follow up survey undertaken in 2020. Locations presented in ES Appendix 7.10	Mink are voracious predators and are known to prey upon native fauna, including water voles.
Marsh Frog	Rana ridibunda	Found on site during habitat and amphibian surveys (amphibian surveys) in ponds including pond 9, pond 16, and pond 19 (OSGR TR 10352 36663, TR 11816 36270 and TR 12364 36893 respectively).	Marsh frog impacts upon native amphibian species, through predation and by carrying disease.

Additional Notable Species: Non-native Invasive Plant Species (listed on Schedule 9 of the WCA)

7.3.34 During the surveys, a number of invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended) were recorded. It was noted in liaison with the EA that American Skunk Cabbage is known to be present in the East Stour River catchment, but none was observed within the surveys.

Table 7-20: Non-native invasive plants listed on Schedule 9 of the WCA observed within the site.

Common name	Scientific name	Location recorded within site	Indicative grid reference
Parrot's Feather	*Myriophyllum aquaticum*	Pond within Hilhurst Farm, Lake within racecourse.	TR 1317 3704 TR 1234 3687
Canadian Pondweed	*Elodea canadensis*	Ornamental pond within racecourse	TR 1253 3714
Japanese Knotweed	*Fallopia japonica*	Area adjacent to Barrowhill	TR 1095 3754
Montbretia	*Crocosmia x crocosmifolia*	In the garden of the Willows	TR 1231 3634

Common name	Scientific name	Location recorded within site	Indicative grid reference
Cotoneaster (Wall)	*Cotoneaster horizontalis*	In the garden of Upper Otterpool In the front garden of 'White House' north of the A20.	TR 1129 3626 TR 1157 3665
Virginia Creeper	*Parthenocissus quinquefolia*	Upper Otterpool adjacent to Westenhanger Castle	TR 1245 3729
Giant Rhubarb	*Gunnera manicata*	On island in the centre of pond	TR 1183 3624
New Zealand Stonecrop	*Crassula helmsii*	Pond adjacent to Hilhurst Farm	TR 1317 3704
Variegated Yellow Archangel	*Lamiastrum galeobdolon subsp. argentatum*	In front of Twin Chimneys, Stone Street	TR 1279 3661
Himalayan Balsam	*Impatiens glandulifera*	Lyvenden (off Stone Street)	TR 1276 3652

Notable Species Evaluation

7.3.35 Table 7-21 summarises the results of the baseline studies conducted along with the value of the receptors. The valuation is based upon the presence and distribution of the species / receptor within the site and their distribution and conservation status (including vulnerability, legal protection, listing on S41 or local BAP etc) of the species / receptor within the site, Kent, UK and International context. The valuation criteria are presented in Table 7-6. For some species and groups, a formal evaluation process is possible, utilising survey data. For bats, a valuation methodology based on published reports was utilised to value this species group, utilising the same geographical criteria. Full details of this valuation is presented in ES Appendix 7.11. A qualitative evaluation process was also conducted for birds, the following data was reviewed in order to inform the assessment of each species, and the overall assemblage:

- The survey data from the 2016–2021 surveys, including the peak counts of birds recorded;
- The notable status of the species;
- The data from the desk study regarding the number of species and distribution of species recorded;

Data on population sizes recorded from the most recent 2019 Kent Bird Report (Ref. 7-38) (NB: It must be noted that this largely reports amateur and incidental sightings of birds and data not collected in a systematic fashion. The data that provided the most context for the site was utilised, whether that be the Kent wide cited distribution or data from a specific site survey);

Information on the availability and quality of habitat for a given species within the site.

7.3.36 All of this data has been considered to calculate a 'geographical value' for each bird species and subsequently a valuation for the assemblage, of both wintering birds and breeding birds. Where the peak count of birds on the site exceeded 50% of the countywide reported peak counts and the habitat on site is likely to support or

maintain the species, an evaluation of importance at "County" level was ascribed. These evaluations are presented in ES Appendices 7.15 and 7.16.

Receptors scoped into the assessment

7.3.37 The following species have been scoped into the assessment:

- Birds (wintering and breeding and farmland, barn owl, kingfisher)
- Bats
- Water Vole
- Badger
- Reptiles ('common' species)
- Great Crested Newt (GCN)
- Otter
- Hazel Dormouse
- Invertebrates (terrestrial and aquatic)
- Fish
- Brown Hare
- Common Toad
- Hedgehog
- Harvest mouse
- Invasive Plants.

7.3.38 The baseline status of these receptors is presented in Table 7-21.

Receptors scoped out of the assessment

7.3.39 The following receptors have been scoped out of the EIA as they are not considered to be present in the Study Area or ZoI or because the proposed Development is considered unlikely to have potential to cause significant adverse effects.

7.3.40 White clawed crayfish: The data search did not return any records of the presence of white clawed crayfish *Austropotamobius pallipes*, however a record of the non-native invasive signal crayfish *Pacifastacus leniusculus* was returned from within the Study Area. The formal Environment Agency (EA) data request did not contain any specific data on crayfish, however, the EA were contacted via telephone and it was confirmed that white-clawed crayfish are considered absent from the East Stour River. A trap for signal crayfish was found within the site during the water vole surveys conducted within the site. While the white-clawed crayfish has been recorded from the River Darent, River Stour and River Medway Catchments, populations are now largely limited to the headwaters with only four locations reported. Recent records also exist for the Seabrook Stream near Hythe which is south of the Lympne Escarpment SSSI (Kent Biodiversity Action Plan). Their habitat requirements are for relatively hard, mineral-rich unpolluted water with plenty of refuges, gravel beds being ideal. The East Stour River within the Study Area does not support habitat typical of the requirements for this species. The data search did not return any records of the presence of white clawed crayfish, however a record of the non-native invasive signal crayfish was returned from within the site. These are the key competitor for resources of the native crayfish and also predate them. Most significantly they carry a crayfish plague (*Aphanomyces astaci*), a fungal disease

that can wipe out populations of white-clawed crayfish. The Environment Agency (EA) data request did not return any records crayfish within the Study Area. The EA are the holders of white clawed crayfish data and were subsequently contacted via telephone and the EA confirmed that White-clawed crayfish are absent from the East Stour.

7.3.41 Other Non-native Invasive Animals (listed on schedule 9 of the WCA) American Mink (*Neovison vison*) and Marsh Frog (*Rana Ridibunda*) are also scoped out as the proposals have limited potential to impact on these species (or spread them).

7.3.42 Protected plants: From the Phase 1 habitat survey, no habitats likely to support protected plants were recorded within the Study Area, the most notable habitats will be retained and buffered from development.

7.3.43 Details of the baseline status of these species is presented in Table 7-21.

Table 7-21 Summary of species recorded within the site

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
Wintering birds assemblage	The site supports a varied assemblage of wintering birds typical of a farmland setting, with a total of 69 species being recorded during the 2016/2017 wintering bird surveys. Of these, 30 were considered notable. On average, around 2,500 birds were recorded on each of the eight surveys. Update survey in 2019 recorded 49 species, of which 22 were notable with one species (raven) that had not been recorded in the previous surveys, bringing the total number of recorded species during all wintering bird surveys to 70. Update surveys in December 2020 recorded a total of 59 species, 32 of these were considered notable. Five additional species were recorded that had not been identified during	Wintering bird surveys, conducted 2016 – 2020.	Overall, the majority of species are of local value, with the exception of: Song thrush Starling Yellowhammer Mistle Thrush Common gull Redwing Fieldfare Mediterranean gull Meadow pipit which were of County value. Full details on evaluation within ES Appendix 7.16.	Local to County Key receptors are wintering farmland birds and wintering thrushes and gull species (common gull) N.B. This valuation should be considered alongside the valuation of 'Farmland Birds'.	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	previous surveys: firecrest, cormorant, little grebe, lapwing and pochard, these are all notable with the exception of firecrest. Three species recorded peak counts higher than previous surveys: skylark, stock dove and kestrel. The 2020 surveys brought the total number of species recorded over all surveys to 77. Details located within ES Appendix 7.16.				
Breeding birds assemblage	Activity levels varied dependent upon the habitats as follows: A high density of birds were recorded in the north-east of the site: the surrounds of Folkestone Racecourse Lake. This is likely due to the variety of habitats present in this area, including grassland, hedgerows, urban areas, ponds and scrub/trees; The woodlands to the west of the site, namely Harringe Brooks Wood (immediately adjacent to	Breeding bird surveys, conducted 2017 - 2021	The valuation of each of the notable species recorded on the OPA site is presented within ES Appendix 7.15. Overall, the majority of species are of local value, with the exception of: Dunnock Linnet Skylark Starling Stock dove Turtle dove	County Key receptors are wintering farmland birds and wintering thrushes and gull species (common gull)	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	the site) and Park Wood (in the west of the site), had a high number of records, both within the woods and foraging adjacent to the woods; Along the East Stour River corridor, a significant number of birds were recorded, including some more notable species such as kingfisher. This area is likely to be of value because of the variety of feeding resources available, and the nesting opportunities offered by the dese habitats along the river corridor; The records returned from within the arable and pastureland within the site were variable, with significant groups of farmland birds being recorded on some occasions, and low number being recorded within other surveys. In total 85 bird species were recorded during the 2017 field surveys (of which 79 are considered to		Yellow wagtail Yellowhammer Kingfisher Song thrush Black Redstart which were of County value.		

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	be breeding birds, the remaining 6 were from an outlying early March survey and are discussed in the wintering bird report). Of these 79, 39 are considered 'notable'. The assemblage was typical of the habitats present within the site, with a few exceptions. One black redstart was unusual, this species is usually associated with urban areas, particularly large developments adjacent to water within the UK. It was considered that this species was a non-breeder in relation to the site and is unlikely to be supported or maintained by the site. An additional survey was undertaken in April 2020, to update the validity of the survey. This recorded 52 species, of which 17 were notable with three species (cuckoo, nightingale and sedge warbler) that had not been recorded in the previous surveys, bringing the total number of				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	recorded species during all surveys to 88. The habitat assessment conducted in 2019 identified no significant changes likely to greatly impact upon the populations of birds supported by the site (when compared to the 2017 assessments). This was supported by the results of the surveys, which did not identify any significant changes in the bird assemblage of the site Surveys undertaken in April 2021 recorded a total of 58 species, of which 25 were notable with two species (raven and wheatear) that had not been recorded in previous surveys, bring the total number of recorded species during all surveys to 90. The 2021 surveys did not identify any significant changes in the bird assemblage. Details located within ES				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	Appendix 7.15.				
Farmland bird assemblage (wintering and breeding) (A list of 'farmland' species was selected based upon the 19 species listed on the UK Farmland Bird Indicator List 1970 – 2007 (Ref. 7-40); and more generalist species which were observed to be reliant on the farmland within the site.)	In the wintering surveys 2017 – 2020 over 7,000 'farmland birds' were recorded. There were significant numbers of some of the farmland bird species overwintering on the site. Starling were regularly recorded on the site (in fairly stable numbers) with a peak count of 450 birds, and there were significant numbers of other farmland species recorded within the site, including goldfinch (peak count 106), meadow pipit (peak count 96) and rook (peak count 183 animals). Although none of the numbers are particularly high, the results suggest that the site has value for wintering farmland birds. This value of the site for this bird group is likely to be reduced due to the current management of the site. The arable land on site is largely winter sown, which reduces the overwintering value of the	Breeding and wintering bird surveys, conducted 2016 - 2021	Considering the number of species from the farmland bird indicator list recorded both wintering and breeding on the site (a number of which are also of value in their own right), an assessment of County value is made.	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	land for farmland birds as winter feeding resources are ploughed into the ground. Across the majority of the site, arable field margins are largely narrow although they vary from negligible to c.10m in width. Of the 'farmland bird assemblage' species list species identified, all were confirmed, probably or possibly breeding species within the site. In total during the breeding surveys, 4219 'farmland birds' were recorded, with an average number of records of 522 birds per survey recorded. This is a recorded average of less than 1 bird per hectare of survey area, per survey. In addition, it was noted that the number of each farmland bird species recorded during the surveys differed greatly between surveys. This suggests that the species recorded utilise a larger area which includes the site. For example,				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	goldfinch numbers recorded varied between 8 and 49, linnet between 1 and 47, starling between 11 and 412 and yellowhammer between 13 and 95. Details located within ES Appendix 7.15.				
Schedule 1 bird - barn owl	Barn Owl Nesting Ninety-four buildings/building groups were assessed for their potential to support nesting barn owls. Of these, only eleven buildings / groups had the potential to support nesting barn owls, and only one building had definitive evidence of barn owl usage. Anecdotal evidence provided by conversation with the owner of Westenhanger Castle (pers. comm. 2017) suggested that a barn owl was known to roost and had been seen resting in a window of the castle's barn (building 2a) on	Data from KMBRC 2020, Wintering birds 2016 – 2021 and breeding bird surveys 2017–2021	Across the UK barn owl population appear to have increased between 1995 and 2008 (Ref. 7-41). Within Kent, barn owls are widespread but scarce, with 185 individuals being recorded in 2014 (Ref. 7-38). Barn owls were observed on the site and anecdotal evidence suggests that they may be breeding on the site. Only 18% of the site offers foraging habitat for this species. There are extensive areas of barn owl foraging habitats in the areas surrounding the site, and the value of the site is likely to be further reduced due to the presence of a	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	multiple occasions. The only two barn owl observations on site were during bat surveys: one flew from north-east to south-west on 25/07/2017 at OSGR TR 11868 36984 and one flew from west to east on 16/08/2017 at OSGR TR 12342 37196; both observations suggested that the barn owl might be flying away from the castle's barn though this cannot be confirmed (see limitations section). Additional land owner communications suggest that barn owl had historically utilised the structures in Upper Otterpool and Otterpool Manor. Details of this are presented alongside the relevant building descriptions in ES Appendix 7.15. Of the eleven buildings with the potential to be roosts, only three are proposed to be removed, and only one of these is		motorway to the immediate north – it is known that major roads have a detrimental impact upon barn owls up to 1km from the road (Ref. 7-42). Considering all of these factors, a value of local/site is considered appropriate.		

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	considered to have significant barn owl nesting potential (having barn owl pellets present). Barn Owl Foraging ***Within the Otterpool Park proposed Development area, there were observations during the*** surveys of barn owls, and this species is likely to be foraging within the site. The habitat assessment recorded that only 18% of the site offers Type 1 or Type 2 habitats (optimal or sub-optimal habitats), and the remaining 82% is very poor or has little or no value for foraging barn owls. Details located within ES Appendix 7.15, 7.16.				
Schedule 1 bird - Kingfisher	Two records (on one visit three individuals were recorded and one more in June 2017, a juvenile breeding birds visits 2 & 6) plus incidental records of nest-burrow and behaviour indicative of breeding	Data from KMBRC from April 2020, breeding bird surveys from 2017–2021.	Four individuals recorded, breeding confirmed on site. Stable breeding population of 75 – 100 pairs in Kent, reports from 38 sites throughout Kent but only a handful of breeding activities	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	recorded during surveys. A kingfisher nest-burrow was observed by an ecological surveyor during a water vole survey on 25/05/2017. The location is consistent with observations made by an Arcadis bird surveyor on 17/05/2017 during a reptile survey, when a kingfisher called every few seconds for approximately one minute near this location – such behaviour being suggestive of breeding activity. Details located within ES Appendix 7.15.		reported. (Ref. 7-38).		
Bats (foraging and commuting)	Nine species were recorded and identified to species level. The vast majority of bats recorded were common or soprano pipistrelles. Some rarer and / or less recorded bats were identified. Areas of the site important for these species were identified. The most valuable areas appeared to be the	Bat surveys conducted between 2017 and 2021. Full details in Appendices 7.11, 7.12, 7.13 and 7.14.	The assemblage of bats recorded on the site supported a reasonable number of species (with nine species being recorded and identified to species level) but the vast majority of bats recorded were common or soprano pipistrelles. Some rarer and / or less recorded bats were identified, the important areas of the site for these species were	Local / Site With the exception of: the below foraging areas which are County An area above and adjacent to Folkestone Racecourse Lake; Adjacent to Harringe Brooks woodland in the west of the site; Adjacent to Park Wood in	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	following: • The corridor along the East Stour tributary in the south east of the site; • The area around the Folkestone Racecourse Lake; • An area around the racecourse buildings, although the activity here was almost all pipistrelles; • An area around Park Wood in the west of the site. • Harringe Brooks Woods and adjacent to Sandling Park Wood and a small woodland nearby the Link Park industrial area. Four locations had a notably higher proportion of not common or soprano pipistrelle calls. These locations were: • An area adjacent to Folkestone		identified. Rarer and less recorded species were largely confined to discreet areas. When compared to similar sites (using Ecobat) the activity recorded on the site would put it in top 40% of activity levels for comparative sites, meaning the activity level was medium to high however, this is likely to be an overestimation (due to survey bias) and the site is considered to have medium activity levels when compared to similar sites. Full details of the evaluation of this Ecological Feature represented in ES Appendix 7.11.	the west of the site. Along the tributaries to the East Stour River, Areas along the East Stour River.	

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	Racecourse Lake; • Within the bunker area to the west of the site; • Adjacent to Harringe Brooks woodland in the west of the site; • Adjacent to Park Wood in the west of the site. Full details in Appendices 7.12, 7.13 and 7.14.				
Bats (roosting and breeding	A total of 125 buildings were assessed for bat roosting potential in 2017, of which 33 were assessed as having negligible roosting potential, 47 were assessed as having low potential,36 as having moderate potential and 9 as having high roost potential. Full details, including exact locations, are in ES Appendix 7.13. The follow-up survey in 2020 assessed the buildings for roosting potential. One new building with low potential	Bat surveys conducted between 2017 and 2021. Full details in Appendices 7.11, 7.12, 7.13 and 7.14.	A full explanation in the surveys conducted is presented in ES Appendix 7.12 and an explanation of the valuation methodology is presented in ES Appendix 7.11. Bat roosts are valued based upon the species utilising these features and the type of roost. Within the OPA boundary the bat roosts identified are predominantly of local value, with one maternity roost of brown long-eared bats being of county value.	County: Likely maternity roost of brown long eared bats (within building 7j). Local / Site: All other roosts	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	was noted and two buildings had their bat roost potential ungraded from negligible to low and low to moderate respectively. Further follow-up survey in 2021 upgraded one building from negligible to low and downgraded one building from moderate to low. Of these structures assessed, a subset consisting of those structures with moderate or high roosting potential was selected for emergence and re-entry surveys and backtracking to identify any roosts present. Where individual structures were to be surveyed, a standard emergence / re-entry survey approach was undertaken, where multiple structures were to be surveyed together a backtracking approach was undertaken. During these surveys a total of 13 confirmed / probable roosts and three possible roosts were				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	identified. All but one of these roosts was a small roost of common or soprano pipistrelles, with one roost being a likely maternity roost of brown long eared bats (within building 7j), south of the A20- location in ES Appendix 7.13). In addition, the desk study revealed a number of roosts on and around the site which had been recorded previously and within surveys conducted for previous planning applications. These included a maternity roost of pipistrelle bats within Lympne Village. Within the castle and associated buildings, a Natterers' dropping, brown long eared bat dropping and serotine dropping were found, along with pipistrelle droppings. Full details in Appendices 7.12, 7.13 and 7.14.				
Water vole	Of the 44 water bodies surveyed (on site and in	Data from KMBRC and Otter and Water Vole	The south east of England has the highest	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	the ZoI of the proposed Development) for water vole during the 2017 and 2018 surveys, two water bodies had high water vole populations, three water bodies had medium water vole populations and 19 water bodies had low water vole populations (once all of the survey results were combined). The results of the 2020 survey suggested the water vole population across the site was lower than in the previous surveys, however there was no significant change in water vole habitat within the site. It is considered that this is the result of natural cycles in population size and not a change in the suitability of the site resulting in a long-term population decline. The results of the 2020 surveys concluded that no further water vole surveys are required to inform a resubmission of the ES; and the valuations utilised in the 2018 submission are	surveys conducted in 2017 and 2018 with an update survey undertaken in spring of 2020.	percentage of occupied water vole sites and shows the slowest rate of decline. As such it represents the stronghold of the species. The Kent population is in the highest 1/3 of counties in mainland Britain (Ref. 7-25). The site has a number of areas which support a population of water vole including areas with medium and high population densities.		

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	considered to be valid. Details located within ES Appendix 7.10.				
Badger	Across the survey area 103 badger setts were recorded, in addition to multiple latrines, hairs, pathways and mammal runs. Of the 103 setts, 18 were classified as active Main setts with the number of entrances ranging from 10 – 35. Eight setts were classified as Annexe, and six Subsidiary setts were classified as active and two as partially used. The remaining 66 setts were all classified as outlier setts. These consisted of three disused setts, 26 partially used setts and 37 active setts. The setts were widely distributed across the survey area, however they were largely associated with woodland, hedgerows or embankments. In surveys undertaken in 2020, 59 badger setts were recorded within the accessible survey area in	Badger surveys conducted in 2016, 2017, 2018 and 2020	This species is widespread in Kent and is not currently of nature conservation concern at any geographical level.	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	addition to multiple latrines, hairs, pathways and mammal runs. Of the 59 setts, eleven were classified as Active Main setts and two of Unknown usage. Six setts were classified as Annexe setts, 34 as Outlier setts and 6 of Unknown usage. Due to the outbreak of Covid-19 in 2020, survey scope was greatly impacted and had to be altered to what was safe and practical to achieve, reducing the survey area re-assessed. The 2020 surveys concluded that no further badger surveys are required to inform a resubmission of the ES and the valuations utilised in the 2018 submission are considered to be valid, with only minor and documented changes in the usage of the site by badgers. Details located within ES Appendix 7.7 (confidential report).				
Common Reptiles	Across the site, three	Reptile surveys conducted	Largely low numbers of	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	common reptile species were recorded, common lizard, grass snake and slow worm. In 2017, over 500 individual records of reptiles were recorded across the site; in 2021, over 600 individual records of reptiles were recorded in the targeted areas. Common lizard was widely distributed across the site, with most survey areas supporting this species, but also a few key areas where populations were higher and a 'good' population was supported. The results of the survey suggested that no area of the site supported a particularly high population of grass snake, with peak counts in all areas not exceeding two adults. Distribution across the site was widespread but at low density. The distribution of slow worm across the site was much more variable, with the majority of the survey areas not supporting this	in 2017 and 2021	'common' species of reptiles recorded. Higher populations were recorded in discreet areas. Within Kent, these species are relatively abundant and widely recorded (KMBRC data).		

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	species, and good populations being present in a number of areas where this species was present. During the Arcadis surveys, adder were not observed within the survey area. However, it is known that this species has been recorded within the vicinity of the site (from desk study data) and anecdotal evidence from local residents suggests that this species has been noted within the site area. Details located within ES Appendix 7.6				
Great Crested Newts	In the 2017/2018 surveys, thirty-nine ponds were identified within the ZoI of the proposed Development. Of these 21 were surveyed for GCN, eight ponds had confirmed GCN presence. One pond, 15 had a medium population, while the rest were low. The highest peak adult count on any one night of survey was 11 found on the 15 April 2017	GCN surveys conducted in 2017, eDNA surveys conducted in 2018, resurveyed in 2020 and updates / additions in 2021.	Great crested newts are relatively common and widespread in Kent (Ref. 7-25). The site supports largely low populations (with isolated medium population of GCN) across a large area.	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	at Barrow Hill Farm in pond 15. In April and May 2020 ponds that were accessible were resurveyed for their current suitability for GCN. In total 17 ponds were visited. Of these ponds three were dry and could not be surveyed and one was a new pond that had not been surveyed before. Eight ponds were deemed suitable for GCN and had no previous records of GCN and eDNA samples were taken to check their presence. Two ponds gave a Beneficial eDNA result. Two extra ponds were surveyed in 2021 near Stone Street to the east of the site; one had an eDNA and I survey undertaken the second pond had a HSI assessment carried out. One of the ponds was not suitable for GCN (HSI poor) and one was Adverse on the eDNA test i.e. GCN Absent.				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	On 2 September 2021 a single GCN was observed within the edge of an arable field (at approximately TR 12545 36263) <50m south-west of Pond 31. It is therefore considered that Pond 31 is likely to be colonised by GCN in the future, despite previous surveys concluding that GCN were absent. Details located within ES Appendix 7.9.				
Otter	Two probable otter signs were identified on the 28 September 2017. These included one otter spraint and one 'anal jelly', located approximately 185m apart, in the north-west corner of the site, along the East Stour River between Harringe Lane and Somerville Court Farm. These results are the first evidence of otter found within the local area (i.e. within 2km of the site) in over 40 years. No other otter signs were observed within the surveys,	Conducted in 2017 and 2018 with a follow up survey in 2020	For the 5th National Otter Survey of England in 2010 (Ref. 7-43) reports of otter in the southern region (in which most of Kent is based) were extremely low. For Kent including the area surrounding Otterpool Otter were absent, that is the Kentish Stour, East Rother North Kent. The report concluded the apparent demise of the otter population(s) in Kent and East Sussex. In 2011 two otter were spotted, with holts on the Medway and Eden rivers (Alastair	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	although anecdotal evidence from local residents suggests that otter have been observed. Surveys undertaken in 2020 did not identify evidence of otter. The results of the 2020 surveys concluded that no further otter surveys are required to inform a resubmission of the ES; and the valuations utilised in the 2018 submission are considered to be valid. Details located within ES Appendix 7.10.		Driver, the national conservation manager for the EA) which was the first return of otter to the county. Otter are still however very rare in Kent. The East Stour River has the potential to support rather than maintain a low number of individual otter.		
Hazel Dormouse	No evidence of dormouse being present within the site or within the woodland to the east of the site (Sandling Park and Kiln Wood). There are dormouse present within Harringe Brooks Wood, with one nest being found and records showing that a nest has been found previously. Details located within ES Appendix 7.8.	Desk study data from KMBRC in April 2020 and surveys conducted from previous projects. Updated with comprehensive surveys in 2017 and 2018 with updated surveys undertaken in 2020 and 2021.	Not on site. Adjacent habitats support what is likely to be a low density population of dormouse, this species is not widespread in the UK and is in decline. Kent is one of the main strongholds for the species (Ref. 7-58). Not many records of this species have been recorded within the vicinity of the site.	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
Invertebrates (terrestrial)	A walkover of the site was conducted on the 8 of August 2018 of the areas most likely to have potential to support invertebrates of note. Most of the site has been intensively farmed for many decades (arable/grazing) and is of limited value to invertebrates. The field margins and hedgerows in the intensively farmed areas are species poor and would support impoverished invertebrate communities. Indeed, very few species of conservation concern have been recorded from the site. The habitats with most potential within the site include species rich hedgerows, semi-improved neutral grassland, Ancient Woodland, water bodies and riparian habitats. With the exception of the riparian corridor, these habitats are poorly connected at the landscape scale.	Scoping survey conducted in 2018. Desk study data obtained from KMRC in April 2020, survey data from the Bumblebee Conservation Trust (2020) (Ref. 7-48) and from surveys conducted for previous planning applications. Glow worm survey conducted on the Lympne airfield area in 2021	There is limited suitable habitat on site, and few species of conservation concern in the biodiversity records.	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	The invertebrate surveys conducted on the former Lympne Airfield Housing Development recorded two nationally scarce species, both of which are flea beetles (Longitarsus parvulus Na and Longitarsus dorsalis Nb). In addition, eight locally scarce species were recorded: a flea beetle (Aphthona euphorbiae), a seed weevil (Aspidapion aenuem); a seed weevil (Ceratapion carduorum); a flower beetle (Oedemera lurida); a weevil (Phyllobius maculicornis); a weevil (Sitona humeralis); short-winged cone-head (Conocephalus dorsalis) and Roesel's bush-cricket (Metrioptera roeselli). The two latter species have both undergone dramatic range expansions in recent years and their conservation status requires revising. The KMBRC search of a 2km radius around the centre of the site returned a list of 120 species of				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	conservation concern. The data was collated and analysed to present only the most recent record for each species. All pre-1998 records were also deleted. Most of the records were for Lepidoptera, which is likely to be an effect of survey bias, as these are the most conspicuous and commonly recorded group of insects. Most of the Lepidoptera on the list are UK BAP research only species. Notable exceptions to this include the Sussex emerald moth (Thalera fimbrialis) and the four-spotted moth (Tyta luctuosa). The list also included a number of nationally scarce and locally scarce Coleoptera and a small number of nationally scarce Hymenoptera, Diptera and Hemiptera. Some of the species on the list, such as the beewolf (Philanthus triangulum) can no longer be considered as of conservation concern				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	because of recent, rapid range expansions. The majority of these records are from Gibbin's Brook, Brockhill Country Park and Lympne Park Wood. Cinnabar moth (Tyria jacobaeae) was observed once on site on 13.06.2018 at OSGR TR 12242 37353 in the north-east of the site. A survey of the Lympne Airfield site was undertaken by volunteers (Bumblebee Conservation Trust) on 5 August 2020. Five bumblebee species and three solitary bee species of conservation interest were identified. Rarer species comprised brown-banded carder (Bombus humilis), ruderal bumblebee (Bombus ruderatus) and moss carder bee (Bombus muscorum). Targeted glow worm surveys were undertaken in July and August 2021. Two incidental records				

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	of adult female glow-worm were made during the bat activity surveys on 14 July 2021. The first of these was sighted at TR121372, to the west of Westenhanger Castle and the second at TR110375, along a hedgerow to the south of the railway line. No observations of glow-worms were made during the glow-worm field surveys. Anecdotal reports from people in the local area reported that adult female glow-worms had been observed on the disused Lympne airfield area over three years ago. Habitats on site are potentially suitable for this species, including but not limited to arable margins, woodland edges, Folkestone Racecourse an d the disused Lympne Airfield. Details located within ES Appendix 7.17.				
Fish	Habitats for fish located within the East Stour River	Data from EA obtained in January 2017.	Fish within the East Stour River include eel (which	Fish (particularly eel) within the East Stour	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	corridor and other water bodies, including the Folkestone Racecourse Lake and a pond south of the A20 (referred to as pond 16 in Appendices of the ES).		receive legal protection and are a priority species under S42 of the NERC Act) The other water bodies on site are either devoid of fish (as confirmed within the GCN surveys (ES Appendix 7.9) or stocked with fish for recreational fishing. Therefore, these receptors are of minimal ecological value.	County Fish within the other water bodies on the site Local / Site	
Invertebrates (Aquatic)	Habitats for aquatic invertebrates located within the East Stour River corridor, tributaries and ditches across the site and other water bodies, including the Folkestone Racecourse Lake and a pond south of the A20 (referred to as pond 16 in Appendices of the ES). Details located within ES Appendix 7.17.	Data from EA obtained in January 2017.	The EA data defined the assemblage of aquatic invertebrates within the East Stour as being 'good' no species of particular note were reported. However, the aquatic features on the site are limited in distribution, all of the quality aquatic habitats are retained within the proposed Development (Ref. 7-26).	Local / Site	IN
Brown Hare	Records returned from KMBRC. Observed once on site on 12.06.2018 at OSGR TR 09648 37241 in the west of the site.	Incidental results from surveys in 2018. Desk study data from KMBRC, April 2020	Incidental recording on one occasion in the surveys. In Kent, numbers have declined dramatically and the distribution in the	County	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	Details located within ES Chapter.		county is now limited; they are recorded most commonly from the north Kent and Romney marshes (Ref. 7-26).		
Common Toad	Records returned from KMBRC. Recorded during the GCN surveys conducted in spring 2017. Toads were found associated with ponds 15 and 19, the Folkestone Racecourse Lake (OSGR TR 12364 36893 and TR 11138 37095). Details located within ES Chapter and ES Appendix 7.9	Desk study data from KMBRC, April 2020 and recorded during GCN survey conducted in 2017.	Toad were present in two ponds and in very low numbers.	Local / Site	IN
Hedgehog	Records of this species returned from within the site in the desk study. This species was not observed on site but no specific surveys were conducted. Details located within ES Chapter.	Desk study data from KMBRC, April 2020	Recorded on site, but there is relatively limited availability of suboptimal habitat, (i.e. intensively farmed arable land). Likely to be present in discreet areas.	Local / Site	IN
Harvest Mouse	Records of this species returned from within the site by KMBRC. No incidental reports during	Desk study data from KMBRC, April 2020	Recorded on site, but there is relatively limited availability of suboptimal habitat, (i.e. intensively	Local / Site	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	surveys. Details located within ES Chapter.		farmed arable land).		
Non-native Invasive Plants (Schedule 9 of the WCA)	The following species were recorded within the site. • Swamp stonecrop *Crassula helmsii* • Parrot's Feather Myriophyllum aquaticum • Canadian Pondweed *Elodea canadensis* • Japanese Knotweed *Fallopia japonica* • Montbretia *Crocosmia x crocosmifolia* • Cotoneaster (Wall) *Cotoneaster horizontalis* • Virginia Creeper *Parthenocissus quinquefolia* • Giant Rhubarb *Gunnera manicata*	Desk study data from KMBRC, April 2020 Habitat surveys conducted 2016–2021	These species have an Adverse impact on the semi-natural habitats on site.	Local / Site (adverse)	IN

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	• New Zealand Stonecrop *Crassula helmsii* • Variegated Yellow Archangel *Lamiastrum galeobdolon* subsp. *Argentatum* • Water fern *Azolla filiculoides* • Wall Cotoneaster *Crocosmia x crocosmifolia* • Himalayan Balsam *Impatiens glandulifera* Full details are located in ES Appendix 7.3.				
Non-native Invasive Animals (listed on schedule 9 of the WCA)	Signal Crayfish (*Pacifastacus leniusculus*) records returned by NBN from within the site and presence within the East Stour River was confirmed by the EA. One trap for signal crayfish was found within the Stour River at OSGR TR09431 37713. Signal crayfish are known to be vectors of crayfish plague, which can have a	Desk study data from KMBRC, April 2020 Incidental records from surveys conducted 2016–2021.	Mink are widespread and abundant on site, they are likely to be the limiting factor for the water vole population on site which have been evaluated at a County level. White clawed crayfish are rare within Kent and the habitat on site is not suitable therefore the signal crayfish are unlikely	American Mink, County (adverse) Signal Crayfish and Marsh Frog, Local / Site (adverse)	OUT

Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	major impact upon native white clawed crayfish (*Austropotamobius pallipes*) within a catchment. American Mink (*Neovison vison*) records returned from KMBRC. NBN also returned records of this species from within 2km of the site. Evidence of this species including footprints and scats recorded during otter and water vole surveys conducted in 2017 and 2018. Mink are voracious predators and are known to prey upon native fauna, including water voles. Details of signs observed in ES Appendix 7.10. Marsh Frog (*Rana Ridibunda*) found on site during habitat and amphibian surveys (GCN surveys) in ponds including pond 9, pond 16, and pond 19 (OSGR TR 10352 36663, TR 11816 36270 and TR 12364 36893 respectively). Marsh frog impacts upon native amphibian species,		to be having an effect on any receptor on site or surrounds, however they are a widespread issue throughout the UK. Marsh frog while having an adverse effect on native amphibian species are not likely to be the limiting factor for GCN on site.		

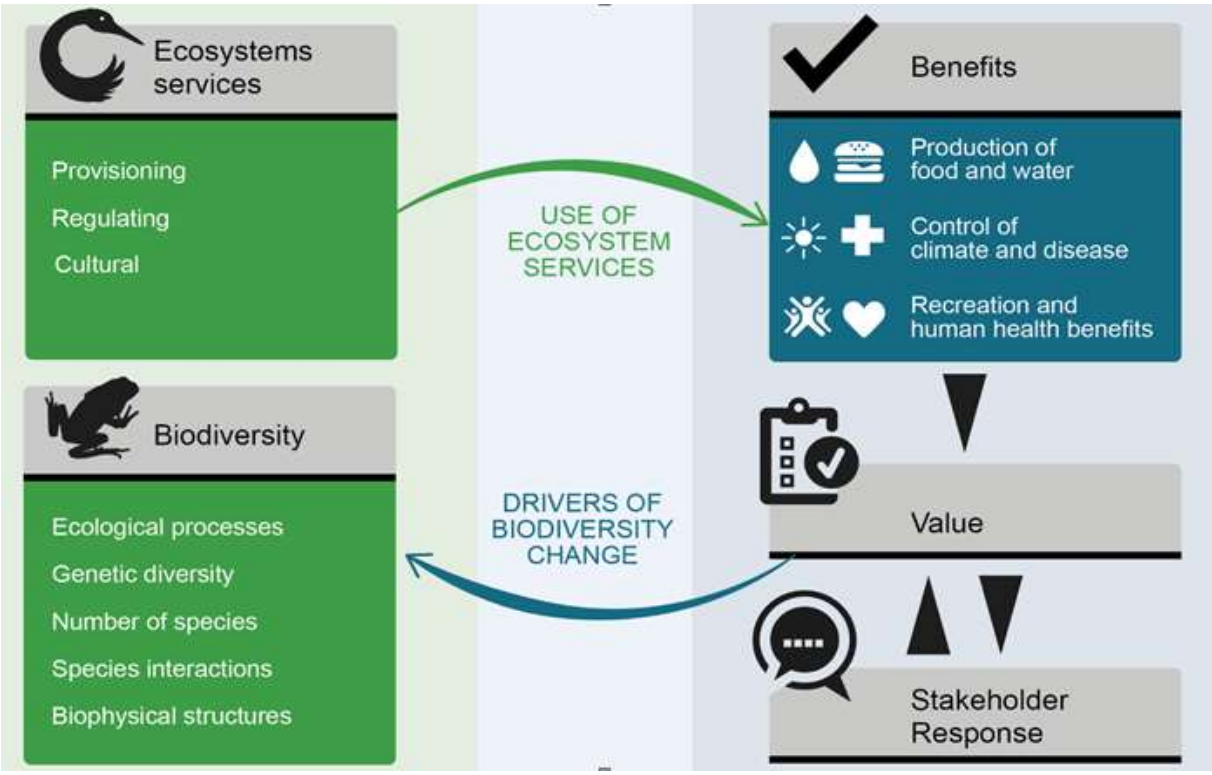
Species	Details of presence within the site, location of details in ES	Age and source of key data	Evaluation Statement	Value	Scoped In / Out of the ES assessment
	through predation and by carrying disease. Full details in ES Appendix 7.9.				

Existing baseline – Ecosystem services

7.3.44 This section of the report considers the baseline of the proposed Development site with regards to the Ecosystem Services provided by the site, such as the services provided by farmland, woodland and other habitats within it.

7.3.45 Ecosystem Services are the flows of benefits that people depend upon from ecosystems; ecosystems comprise communities of living organisms in conjunction with the non-living components of their environment (such as air, water and soil), interacting as a system. Ecosystem Services are separated into provisioning, regulating and cultural services; 'supporting services' were amalgamated into 'regulating services' by Common Classification of Ecosystem Services (CICES) version 5.1 (Ref. 7-45) but are separated here as appropriate to the site. Provisioning services include timber, food and drinking water; regulating services are those such as the soil cycle, pollination and disease control, cultural services include recreation and wellbeing which can also have a spiritual component. How biodiversity fits into this structure is still being debated – in the UK, biodiversity is often viewed as an indicator of ecosystem condition (Ref. 7-44). A graphic illustrating how ecosystem services relate to biodiversity and the provision of ecosystem benefits is presented as Image 7-2.

Image 7-2: Graphic illustrating how biodiversity and ecosystem services are linked



7.3.46 The majority of the site is farmland, a mixture of arable and permanent pasture with woodland, hedgerows and scattered trees and a riparian corridor of trees along the East Stour River, with its tributaries, ditches and scattered ponds providing the only wetland features.

7.3.47 The baseline habitats within the site are described within Section 7.3, in this section these have been considered as broad ecosystem types:

- arable farmland;
- permanent grassland;
- woodland scrub, hedgerows and trees; and
- wetland.

7.3.48 Two other broad typologies are not discussed in detail: bare ground (due to the very limited area on site) developed areas (no ecosystem service provision).

7.3.49 A baseline status of the site's ecosystem services is presented in Table 7-22 and Table 7-23 and ES Appendix 7.22 presents these features and ecosystem service benefits in greater detail.

Table 7-22: Ecosystem services typologies - approximate areas

Habitat	Approximate Area (ha)*
Cropland	306.98
Grassland	237.74
Heathland and shrub	3.34
Lakes / Wetlands (not including the River East Stour as under the area calculation methodology (BM3.0) this is a linear feature and does not add to the total area	2.74
Sparsely vegetated land	3.87
Urban	18.46
Woodland and forest (including tree lined areas along the River East Stour)	16.2

Table 7-23: Qualitative description of the ecosystem services provided by the site.

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
Provisioning	Food	Grasslands in the UK are the result of the human expansion to provide grazing and fodder for animal production— meat, dairy products, wool, etc. (Ref. 7-34). Arable land and orchards are similarly the result of a need to provide food for people.	Food for pollinators	All of the areas of grassland within the site and the hedgerows and trees will provide food for pollinators all though the majority of this is low quality. The most valuable areas of the site for pollinators are likely to be the semi-improved grassland areas and the species rich hedgerows.
			Grazing pasture for cattle and sheep	The majority of the grassland is managed as pasture, some of which is left ungrazed to provide a hay / silage crop. Grazing is mostly by sheep, although some fields have cows or horses. The grassland therefore provides valuable provisioning services for livestock (and thus people).
			Crop	The better-quality agricultural land is located at the north and eastern area of the proposed Development. Approximately 306ha of the site is currently arable land, providing food resources for people.
			Fish	No commercial (or recreational) fishing on site.
	Water	Provision of water depends on how land is used and managed.	Water provision	Ponds and water-filled ditches are scattered throughout the site. They will provide a water resource for cattle and sheep for farmers and maintain native species, and are used for irrigation. No potable water extraction is currently undertaken. No commercial fishery is known to be present within the site OPA.
Regulating	Carbon and climate regulation	The soil and vegetation type will attenuate carbon to varying degrees. UK grasslands sequester carbon at a higher rate than forests and arable land, which is a source of carbon emissions. However, overall attenuation values depend on the management of the land (Ref. 7-34). Grazing can result in the consumption of a large	Carbon sequestration and climate regulation	Owing to the predominance of improved grassland within these farmland areas, the carbon storage function is likely to be poorer-performing than would be the case if there were extensive areas of unimproved or semi-improved grassland. The woodland, hedgerows and scrub would provide a greater degree of sequestration.

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
		proportion of the annual above-ground net primary production. As grazing by livestock is the most common grassland management on the proposed Development site, there are also carbon emissions resulting from the animals' biology (ruminants or not) and the way they are managed (intensive or extensive farms). Taking all factors into account (Ref. 7-35) it was concluded that grasslands remaining as such were net emitters of 0.2-0.3 Mt C yr^{-1}, whereas Janssen et al. (Ref. 7-36) suggested that UK grasslands (they did not differentiate between improved and unimproved types) sequestered 242±1990 kg C ha-1 yr^{-1}. Overall grazed grasslands are thought to sequester -2.20 tCO2-e ha^{-1} yr^{-1} (Ref. 7-37). Recent research by Devon Wildlife Trust (Ref. 7-38) has demonstrated that unimproved Culm grasslands store up to twice as much carbon compared to intensively managed grassland soils. One of the most important regulating services that woodlands provide. The total carbon stock in UK forests (including their soils) is around 800 megatonnes of carbon (approximately 2,900 Mt of carbon dioxide equivalent). Woodland creation is judged to be a highly cost-effective and achievable form of net emission-reduction, and because forests are less limited in where they can be grown, they have a greater potential to generate income as a land use (through timber, etc.), and have potentially high value for other services (Ref. 7-37). The sequestration ability depends on management, and estimates calculate that unmanaged woodlands		

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
		sequester at a rate of 6 tCO2-eq ha-1 yr^{-1} (Ref. 7-46).		
		Green areas provide a source of passive cooling by reducing temperature of surrounding areas (Ref. 7-38).	Heat attenuation	While it is likely that the areas of farmland, greenspace and trees are providing passive cooling to some degree, it is not possible to quantify this capacity in this report.
	Water flow and flood regulation	Semi-natural grassland stores less water than more woody vegetation, such as trees or bracken. Intensive grazing and the resulting compaction of the soil causes decreased infiltration and increased runoff, which both increases the risk of flooding and reduces the recharging of aquifers (Ref. 7-34). Furthermore, soil compaction in grasslands is caused by high stocking rates, winter grazing and the use of heavy machinery which can decrease water infiltration and increase runoff (Ref. 7-34). Recent research by Devon Wildlife Trust (Ref. 7-38) has demonstrated that unimproved Culm grasslands store and release water up to five times more slowly than improved grassland, reducing the risk of downstream flooding and maintaining a sustainable water supply. Woody debris creates dams in watercourses that increases storage and slows the water flow (contributing to flood hazard reduction, a regulating service). In addition, by interception of rainfall, woodlands moderate flooding by delaying and attenuating peak river flows (Ref. 7-47).	Water flow regulation	Field ditches drain the agricultural land and the East Stour River and tributaries provide flood capacity. The areas of permanent grassland and to a greater extent the small areas of woodland will slow the flow of water to these water bodies.

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
	Water quality regulation	Water pollution is a result of a number of processes including soil erosion, fertiliser inputs and contamination from manure and slurry. The lower intensity management of semi-natural grassland is critical in maintaining water quality and quantity. Semi-natural grassland soils are able to store significant amounts of deposited nitrogen, which would reduce the pollution of groundwater (Ref. 7-34). In contrast, areas of arable and other crop production will increase soil erosion and fertiliser inputs. Woodland cover of catchments can minimise the need for water treatment by excluding livestock from watercourses and their immediate catchments, thus reducing the risk of potential water contamination. The presence of trees can also contribute to water quality by maintaining cool temperatures for fish, intercepting pollution from point sources and capturing diffuse pollution (Ref. 7-37).	Water quality	It should be noted that, owing to the predominance of improved grassland and arable land within the farmland areas, the water quality regulation function is likely to be poorer-performing than would be the case if there were extensive areas of unimproved or semi-improved grassland. Furthermore, while it is likely that the areas of semi-improved grassland might be providing some water quality attenuation to some degree, the areas of improved grassland, arable and other crop production will be having the opposite effect, owing to the fertiliser and pesticide inputs involved. However, it is not possible to quantify this capacity in this report. While the existing woodlands in the area are likely to contribute towards water quality, particularly the riparian areas, there is a relatively small amount of woodland cover in the OPA site.
	Improvement in air quality	Plants are involved in the uptake, transport and assimilation (or, in some cases, decomposition) of many gaseous or particulate pollutants and can play an important role in influencing urban air quality, and in mediating some of the adverse effects of pollutants.	Air quality	The areas of trees, and farmland will likely provide regulation with regards to the existing road traffic.
	Human health regulation	Open farmland and woodland, if accessible, can increase well-being and quality of life if visually attractive and supportive of physical recreation.	Health and well-being	Pedestrians, cyclists and equestrians currently have access to a relatively limited network of PRoW across the area, which enables local people to access the area for recreational purposes, thus contributing to increased well-being and better health. However, the degree of access in the site overall is very low.
Cultural	Science and	Grasslands have been the testing ground for key ecological concepts, such as: ecological stability, the	Science	With the exception of the Otterpool Quarry SSSI, overall, the site is realistically, likely to provide negligible opportunities for science

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
	education	productivity-diversity relationship, the regeneration niche, plant strategy theory, population biology (Ref. 7-37). The types of benefit derived from woodlands range from formal learning through Forest Schools to personal development gained through volunteering and apprenticeships. Studies show the long-term educational importance of connecting children and young people with nature (Ref. 7-47).		and education.
	Tourism and recreation	Landscape features and habitats can form important elements in the appeal of an area for tourism and recreation such as petting farms, woodland walks, rambling etc, (Ref. 7-37).	Tourism and recreation	The Racecourse is no longer operational and Westenhanger Castle is currently used for private events and is not open to the public. Access to the site is minimal, there are no known attractions for tourists, there is a motocross site to the west of the site. Adjacent to the site there is a Safari Park, Port Lympne. It is not considered that a significant proportion of the visitors to this site come from within the Otterpool OPA site.
	Sense of place and history	Farmland and open grasslands can also be a source of important archaeological finds. Trees and woods are highly valued by people for their historic and cultural values. Ancient woodland and veteran trees are historic features in their own right and provide a link to past society and culture. Ancient woodland is also increasingly appreciated for its archaeological content because the woodland soil surface has often been less disturbed than surrounding land.	Cultural heritage and aesthetic amenity	The Cultural Heritage features present on the site which give a sense of place and history are fully described and evaluated in Chapter 9: Cultural Heritage of this ES but include: Westenhanger Castle and its surrounds and associated features; Barrows across the site; A Roman villa identified south of the A20. In addition, there are trees in the landscape that have been present for over 200 years and the site itself buffers the Kent Downs Area of Outstanding Natural Beauty.
Supporting	Biodiversity	The site supports a range of biodiversity features, as outlined within this report. Semi-improved grasslands provide habitats for	Biodiversity	Areas of the site have notable biodiversity interest, including the hedgerows, ponds, riverine areas, ditches and trees. Generally, though, these large areas of open farmland are

Category	Ecosystem services	Potential ecosystem services benefits	Type of benefit	Description of the ecosystem services provided by the site
		species of conservation interest, such as UK BAP priority species. Arable land has very limited benefit for biodiversity.		relatively poor with regard to biodiversity, as much of the grassland is improved or species-poor semi-improved, and the remaining areas comprise arable fields. Details of the biodiversity on the site are presented above.
	Non-Native Invasive Species	Non-native invasive species can spread to semi-natural areas and de-value them in terms of biodiversity and function. These can spread to urban areas where some species such as Japanese knotweed and Buddleia may cause structural damage. Remediation of such species can be costly and time consuming. Certain species are on Schedule 9 of the WCA (Ref. 7-18) for these it is an offence to grow or cause these species to grow in the wild.	Disbenefit	Cotoneaster, Montbretia, Virginia Creeper and Variegated Yellow Archangel are all associated with the built development. The ponds on site have a large number of non-native invasive namely Canadian Pondweed, Parrot's Feather, New Zealand Stonecrop and Giant Rhubarb. There is one stand of Japanese Knotweed on the edge of a field adjacent to Barrowhill, Sellindge. Himalayan balsam is present in a residential property off Stone Street (Lyvenden) The wetland plants and Japanese Knotweed are most likely to cause progressive damage to the semi-natural habitats.
	Soil	Soil formation and functional benefits could be reduced by development. Compaction can decrease water infiltration and increase runoff, increase emissions of nitrous oxide and ammonia, decrease uptake of methane, reduce the abundance of soil fauna, decrease plant growth and yield, and limit food availability for some birds (Ref. 7-34).	Soil formation and function	The quality of this land varies between Grade 2 to Grade 3 in the ALC (Agricultural Land Classification). Soils on the site include: Freely draining slightly acid loamy soils; Loamy soils with naturally high groundwater; Freely draining slightly acid but base rich soils and slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. Details of the soils present on the site are presented in Chapter 5: Agriculture and Soils of the ES.

Future Baseline

7.3.50 In the absence of the proposed Development, it is anticipated that the majority of the site would continue to be managed as it currently is, as follows:

- The fields would continue to be cultivated or grazed and the hedgerows would continue to be managed. It is considered that the land under Higher Level Stewardship (HLS – areas where farming is conducted to benefit wildlife and a payment is made to the farmer by the government) could increase in value in the future (discussed in ES Appendix 7.15 and 7.16).
- Former Folkestone Racecourse would continue to receive a minimal level of maintenance, including some individual tree maintenance and grass / hay cutting, with no significant change of use.
- Residences within the site application boundary would continue to be occupied;
- The areas of semi natural woodland and plantation woodland may receive some management (there is no apparent active management at present) which may enhance the nature conservation importance of these habitats in the future;
- Mature trees present in the hedgerows and stream corridors may be felled or receive tree surgery in response to damage or disease (discussed in ES Appendix 7.3). Some new tree planting may take place.
- The number and species of birds present on the site may change in response to alterations in cropping regimes and in response to changes that occur in the wider countryside.
- It is likely that the buildings at Folkestone Racecourse, warehouses and structures north of Holiday Extras and outbuildings associated with 'Red House Farm' south of the A20 would further deteriorate (they are largely not in use) and hat the buildings associated with Hillhurst Farm would continue to be maintained.
- The importance of the site for nature conservation could be enhanced through deliberate intervention, but this would only occur if funds were provided by an external source. Similarly, the importance of the site for nature conservation could decline if there was a major change in management; however, this is unlikely to occur in the absence of the proposed Development. Overall, it is considered that in the absence of the proposed Development the site would continue to support a similar suite of habitats and species.

7.3.51 As identified in Chapter 2: EIA Approach and Methodology, there are a number of consented and proposed Developments in the vicinity of the site including residential developments. The new residents associated with these developments could cause disturbance to flora and fauna within the site. However, the site is intensively managed for agriculture and/or private and not open to the public. There are existing footpaths within the site. Most of these footpaths are on tracks and not through particularly sensitive habitats, and increased use would not physically affect habitats of conservation importance.

7.3.52 Mobile species such as birds could be displaced onto the site by adjacent development. It is not anticipated that such displacement would significantly increase the importance of the site for these species, since the importance of the site is determined by the carrying capacity of the habitats on the site and this would not change.

7.3.53 It is considered that in the absence of the proposed Development the site would continue to be intensively managed and its importance for flora and fauna would

remain largely unchanged. Overall, it is considered that management on the site is relatively stable, that development nearby is unlikely to have any direct or indirect effects on the site, and the future baseline would be similar to the current conditions on the site. Species numbers and distributions may alter, in response to weather conditions and cropping regimes but fundamentally the site will remain as agricultural fields with hedgerows, a disused racecourse, a watercourse, private residences and structures and woodlands, both semi-natural and planted trees.

7.3.54 Species assemblages and cropping regimes may also alter in response to climate change. In particular, some invertebrate species may not remain on site (moving north in response to temperature increases), but new species would be expected to replace them. Storm events could lead to adverse effects on aquatic flora and fauna as banks are scoured by flash flooding. Nevertheless, these features would continue to be of nature conservation importance.

7.3.55 The habitat on site would also likely deteriorate if diseases such as ash dieback continue to spread in the environment.

7.4 Design and Mitigation

Structure of this section of the ES

7.4.1 In line with the CIEEM EcIA guidelines (Ref 7-9), all potential effects prior to mitigation are captured in the assessment, these are reported in ES Appendix 7.1.

7.4.2 Within this section, the mitigation which is applied to avoid and/or minimise impacts to receptors is outlined. This is formed of two sections, embedded mitigation (including design and mitigation which is secured in the Parameter Plans (ES Appendix 4.2), parameter specification and GI strategy and standard good practice approaches) and additional mitigation. The residual significant effects which are identified after the application of this avoidance and mitigation are presented. For both 'embedded design measures' and 'additional mitigation', a section outlining the construction and operational approaches are outlined.

7.4.3 Subsequent to this, to address any significant residual effects, compensation and offsetting is outlined. This includes off-site approaches to addressing significant adverse residual effects. The remaining residual effects subsequent to this application of offsetting and compensation are outlined.

7.4.4 As such, the following sections are presented within this section of the ES, these apply to designated sites, habitats and species:

- Embedded mitigation – Construction and Operation
- Additional mitigation – Construction and Operation

7.4.5 To aid the readability of the ES, a summary of the embedded design measures along with the impact assessment is presented. Additional information is presented in ES Appendix 7.1.

Potential Impacts addressed by Embedded Design Measures and Additional Mitigation

7.4.6 For Biodiversity, a full assessment of the pre mitigation impacts is presented in Appendix 7.1. This is conducted in line with the CIEEM guidelines outlined in Section 7.2 of this report. The following potential impact pathways, as identified earlier in this report have been considered within this impact assessment.

Construction

- Direct mortality from removal of habitat and construction vehicles;

- Loss of areas of habitat from construction;
- Fragmentation due to removal of connectivity, foraging habitats or breeding places;
- Pollution reduction in value of habitats and mortality / reduction of conservation status of receptors due to water / soil pollution / air quality impacts from construction activities;
- Disturbance of species from construction and operational visual disturbance, light and noise; and
- Reduction in conservation status of species.

Operation

- Increased mortality due to presence of domestic animals particularly cats;
- Disturbance from recreational usage of areas;
- Trampling effects from recreational use of areas;
- Increases in events such as flooding impacting important ecological receptors;
- Air quality impacts from additional traffic once operational;
- Increased road mortality of species; and
- Reduction in value of habitats due to modified hydrogeology.

7.4.7 After this initial assessment, embedded design measures are applied. This is mitigation that is embedded within the design of the development. This is secured within the following documents:

7.4.8 Parameter Plans (ES Appendix 4.2) and documents submitted for approval:

- OPM(P)4001– Development Areas and Movement Corridors
- OPM(P)4002 – Open Space and Vegetation
- OPM(P)4003 – Heights
- Development Specification (ES Appendix 4.1)
- Strategic Design Principles (ES Appendix 4.3)

7.4.9 Information from the GI strategy on the open spaces –Tier 2 level masterplans will need to be prepared in accordance with the site wide GI Strategy in this document.

7.4.10 The following documents which are not for approval but are submitted illustratively:

- An indicative phasing plan (ES Appendix 4.6)
- An Illustrative Masterplan (ES Appendix 4.5)
- Green Infrastructure Strategy
- An illustrative accommodation schedule

7.4.11 Where this leaves a residual effect, additional mitigation is proposed. This is secured in documents in support of the application, for example the Targeted Species Mitigation Strategies (Appendix 7.18) and will be secured via planning condition (for example additional surveys).

7.4.12 For a limited number of impact pathways, a significant adverse residual effect remains. Where appropriate, offsetting is proposed to address this impact.

7.4.13 Finally, any residual effects not addressed by the embedded design measures or additional mitigation or offsetting, are identified, where they are considered significant adverse. The table below outlines which impact pathway is mitigated through design (embedded design measures), additional mitigation and offsetting, with an example of the mitigation included within each category applied where appropriate. The application of the mitigation is outlined for construction and mitigation impacts in Table 7-24.

7.4.14 Within the assessment of impacts, where the detail of the embedded design measures is not outlined, the likely worst case has been assumed to inform the assessment.

Table 7-24: Application of Embedded design measures, additional mitigation, and offsetting to address impact pathways during construction and operation

Impact Pathway	Embedded Design Measures	Additional Mitigation	Offsetting
Direct mortality from removal of habitat and construction vehicles (construction)	Yes – e.g. retention of areas and buffers etc.	Yes – further survey, method statements, translocations etc.	Yes – off-site habitat creation in relation to some species receptors
Loss of areas of habitat from construction (construction)	Yes – valuable habitats retained etc.	Yes- Method statements, species mitigation, monitoring etc,	Yes – off-site habitat creation in relation to some species receptors
Fragmentation due to removal of connectivity, foraging habitats or breeding places (construction);	Yes – e.g. retention of areas and buffers etc.	Yes - Underpasses,	Yes – off-site habitat creation in relation to some species receptors
Pollution reduction in value of habitats and mortality / reduction of conservation status of receptors due to water / soil pollution / air quality impacts from construction activities (construction)	Yes - Inclusion of SuDS etc. CoCP etc.	N/A	N/A
Disturbance of species from construction and operational visual disturbance, light and noise (construction);	Yes – e.g. retention of areas and buffers etc, layout.	Yes - CoCP etc.	N/A
Reduction in conservation status of species (construction).	Yes – valuable habitats retained etc.	Yes - Method statements, species mitigation, monitoring etc,	Yes – off-site habitat creation in relation to some species receptors
Increased mortality due to	Yes – e.g. retention of	Yes – further survey,	Yes – off-site habitat

Impact Pathway	Embedded Design Measures	Additional Mitigation	Offsetting
presence of domestic animals particularly cats (operation);	areas and buffers etc.	method statements, translocations etc.	creation in relation to some species receptors
Disturbance from recreational usage of areas (operation);	Yes – e.g. inclusion of green space, buffers etc.	Yes – Species mitigation, monitoring etc,	Yes – off-site habitat creation in relation to some species receptors
Trampling effects from recreational use of areas (operation);	Yes – e.g. inclusion of green space, buffers etc.	N/A	N/A
Increases in events such as flooding impacting important ecological receptors (operation);	Yes - Inclusion of SuDS etc.	N/A	N/A
Air quality impacts from additional traffic once operational;	Yes - Design of public transport, connectivity and layout.	N/A	N/A
Increased road mortality of species (operation); and	Yes - Road tunnels	N/A	N/A
Reduction in value of habitats due to modified hydrogeology (operation).	Yes - Inclusion of SuDS, drainage layouts and water management.	N/A	N/A

Embedded Design Measures – Construction and Operation

7.4.15 This section of the ES presents the design avoidance and mitigation for designated sites (including Ancient Woodlands) habitats and species, in the vicinity of the site. This is a summary, the full description of the approaches employed is presented in ES Appendix 7.1.

7.4.16 Within ES Appendix 7.1, the assessment of the effectiveness of the embedded mitigation is also outlined. This includes:

- Descriptions of the effectiveness of buffers for dark corridors;
- Assessment of air quality impacts
- Discussion of the suitability of greenspaces and the buffers to deter recreational damage
- The positioning of roads and buffers to deter domestic animals.

7.4.17 The key approaches to be employed to avoid and minimise impacts with embedded design measures are listed below. How these approaches are applied in relation to the receptors are presented in Table 7-25, Table 7-26 and Table 7-27. The approaches are targeted against the impact pathways identified are as below:

Avoiding Direct Habitat Degradation

- Avoidance of habitat loss (retention);
- Habitat creation;

- Habitat enhancement; and
- Habitat buffering.

Avoiding Indirect Habitat Degradation and Disturbance (Recreational Impacts)

- The creation of extensive areas of high quality public open space within the masterplan;
- Routing of footpaths away from certain sensitive adjacent areas;
- Creation of buffer areas which uses planting and topography to discourage access to sensitive sites;

Avoiding Indirect and Direct Pollution (Air Quality)

- Design and road layout.

Avoiding Indirect and Direct Pollution (Water Quality)

- SuDS and other features; and
- Nitrate and Phosphate management through on-site water treatment.

Avoiding Indirect and Direct Mortality and Disturbance (from construction)

- Direct disturbance has the potential to affect sites through noise, light and visual disturbance. These impacts are controlled through buffering.

Avoiding Indirect and Direct Mortality and Disturbance (Domestic Animals)

- Buffers around key areas to deter access and a new road between the site and Kiln Wood;
- Designated 'no dogs' areas; and
- Fencing.

Avoiding Indirect and Direct Hydrological Disruption

- Three designated sites are located within the ZoI of the proposed Development, Impacts to these sites are avoided through drainage design and modification (buffers etc.).

7.4.18 The following sections represent the implementation of design and mitigation for designated sites, habitats and species. The approaches are presented in a table form for ease of assessment. Within the tables, a tick is utilised to show when an approach has been employed. A cross is used where an approach is not required for a given ecological feature.

Designated Sites

7.4.19 Table 7-25 below summarises how each of these approaches has been applied to each of the designated site receptors scoped into the assessment (where applicable). The full assessment and details are presented in ES Appendix 7.1.

Table 7-25: Summary of embedded design approaches used to safeguard designated sites

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
Dungeness, Romney Marsh and Rye Bay SPA (Non-marine Component)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Folkestone to Etchinghill Escarpment SAC, SSSI	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	✓ – air quality design measures outlined in ES Chapter 6: Air Quality.	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Wye and Crundale Downs SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Dungeness, Romney Marsh and Rye Bay SPA	✓ - No direct	X – No impact pathway for	X – No impact pathway for this source of	✓ – inclusion of suitable open space in the masterplan design	X – No impact pathway	X – No impact pathway for this	X – No impact pathway for this source of	X – No impact pathway for this source of

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
(with Marine extension)	impacts	this source of impact	impact	to reduce recreational impacts	for this source of impact	source of impact	impact	impact
Parkgate Down SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Dungeness SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Dungeness, Romney Marsh and Rye Bay Ramsar	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Lydden and Temple Ewell Downs SAC	✓ - No direct impacts	X – No impact pathway for this source	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design	X – No impact pathway for this	X – No impact pathway for this source of impact	X – No impact pathway for this source of	X – No impact pathway for this source of

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
		of impact		to reduce recreational impacts	source of impact		impact	impact
Dover to Kingsdown Cliffs SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Blean Complex SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Stodmarsh SAC	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	✓ – Nutrient neutrality achieved	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Stodmarsh SPA	✓ - No direct impacts	X – No impact pathway for this source	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational	X – No impact pathway for this source of	✓ – Nutrient neutrality achieved	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
		of impact		impacts	impact			
Stodmarsh Ramsar	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	✓ – Nutrient neutrality achieved	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
The Swale Ramsar	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
The Swale SPA	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Thanet Coast and Sandwich Bay SPA	X - No direct or indirect impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
					impact			
Sandwich Bay SAC	X - No direct or indirect impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Tankerton Slopes and Swalecliffe SAC	X - No direct or indirect impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact
Lympne Escarpment (SSSI)	✓ - No direct impacts	✓ - GI areas are located between the development areas and this site to minimise impacts.	X – this site is not sensitive to this impact	✓ - Placement of open space and integration of footpaths to deter public use of this area. Inclusion of accessible open space within the masterplan design	✓ - air quality design measures outlined in ES Chapter 6: Air Quality.	X - Lympne Escarpment lies to the south of the site, and the drainage for the site is to flow to the north-west, removing the potential for impacts. No design mitigation is required.	✓ - Buffers are included within the masterplan to this area to minimise impacts from domestic animals	X - Lympne Escarpment lies to the south of the site, and the drainage for the site is to flow to the north-west, removing the potential for impacts. No design

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
								mitigation is required.
Gibbin's Brook (SSSI)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Hatch Park (SSSI)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Seabrook Stream (SSSI)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Folkestone to Etchinghill Escarpment (SSSI)	✓ - No direct impacts	X – No impact pathway for this source	X – No impact pathway for this source of impact	✓ – inclusion of suitable open space in the masterplan design to reduce recreational	✓ – air quality design measures	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
		of impact		impacts	outlined in ES Chapter 6: Air Quality.			
Poulton Wood, Aldington (LNR)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Harringe Brooks Wood, Sellindge (LWS) and Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	✓ - suitable buffers around this suite are incorporated	✓ - kept as a private woodland.	✓ - air quality design measures outlined in ES Chapter 6: Air Quality.	X – Harringe Brooks Wood is off-site to the immediate the south-west of the site, and drainage from this woodland area flows north through the site to the East Stour. No impact pathway for this impact	✓ - Buffers are included within the masterplan to this area. Fences will prevent dogs accessing this area. Topography will be used to deter access by dog walkers and water features (SuDS) will	X – Harringe Brooks Wood is off-site to the immediate the south-west of the site, and drainage from this woodland area flows north through the site to the East Stour. No impact pathway for this impact

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
							deter cats.	
Folks Wood, Pedlinge (LWS) and Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	✓ - This designated site is isolated from the proposed Development by the A20. Landscape buffering is included in the masterplan. Proposed A20 works will move this road further asway from Folks Wood.	✓ -Placement of open space and integration of footpaths to deter public use of this area. Inclusion of accessible open space within the masterplan design	✓ - air quality design measures outlined in ES Chapter 6: Air Quality.	X – Folks Wood is off-site to the immediate east of the site. The drainage of the site flows to the west away from this development. No design modification is required. Lympne Escarpment lies to the south of the site, and the drainage for the site is to flow to the north-west, controlling the potential for impacts.	✓ - Buffers are included within the masterplan to this area.	X – Folks Wood is off-site to the immediate east of the site. The drainage of the site flows to the west away from this development. No design modification is required. Lympne Escarpment lies to the south of the site, and the drainage for the site is to flow to the north-west, controlling the potential for impacts.

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
Pasture and Woods Below Court-at-Street, Lympne Local Wildlife Site (LWS)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	✓ – Placement of open space and integration of footpaths to deter public use of this area. Inclusion of accessible open space within the masterplan design	✓ – air quality design measures outlined in ES Chapter 6: Air Quality.	X – No impact pathway for this impact	X – No impact pathway for this impact – isolated by main road	X – No impact pathway for this impact
Royal Military Canal (LWS)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Harringe Brooks Wood Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	✓ - suitable buffers around this suite are incorporated	✓ - kept as a private woodland.	✓ - air quality design measures outlined in ES Chapter 6: Air Quality.	X – Harringe Brooks Wood is off-site to the immediate the south-west of the site, and drainage from this woodland area flows north through the site to the East Stour. No impact pathway for this impact	✓ - Buffers are included within the masterplan to this area. Fences will prevent dogs accessing this area. Topography will be used to deter access	X – Harringe Brooks Wood is off-site to the immediate the south-west of the site, and drainage from this woodland area flows north through the site to the East Stour.

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
							by dog walkers and water features (SuDS) will deter cats.	No impact pathway for this impact
Great Priory Wood Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Kiln Wood Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Birches Rough Ancient Woodland	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact
Folks Wood	✓ - No	X – No impact	X – No impact pathway for this source of	Y – inclusion of suitable open space in	Y – air quality	X – No impact pathway for this	X – No impact pathway for	X – No impact pathway for

Receptor	Habitat retention	Habitat buffering	Dark corridors / dark buffers	Measures to prevent recreational impacts	Measures to prevent air quality / noise impacts	Measures to prevent water quality impacts (nutrient neutrality)	Measures to prevent Predation and Disturbance from Domestic Animals	Measures to prevent Hydrological Disruption
	direct impacts	pathway for this source of impact	impact	the masterplan design to reduce recreational impacts	design measures outlined in ES Chapter 6.	impact	this impact	this impact
Other Ancient Woodland blocks (as described in Table 7-14)	✓ - No direct impacts	X – No impact pathway for this source of impact	X – No impact pathway for this source of impact	Y – inclusion of suitable open space in the masterplan design to reduce recreational impacts	Y – air quality design measures outlined in ES Chapter 6.	X – No impact pathway for this impact	X – No impact pathway for this impact	X – No impact pathway for this impact

Habitats and Species

7.4.20 This section of the ES presents the design avoidance and mitigation for habitats and species on site (within the OPA boundary). This is a summary, with the full description of the approaches employed presented in ES Appendix 7.1. The design avoidance and mitigation presented for habitats includes numerous dedicated habitats created to support and maintain protected and notable species (primary habitats). Additional design avoidance and mitigation for species is presented in full in ES Appendix 7.1. Within ES Appendix 7.1, a full description of the habitat creation proposed for each species receptor identified is presented.

7.4.21 The key approaches to be employed to avoid and minimise impacts to habitats are listed in the sections below. A summary of how each of these approaches applies to the habitats on the site is presented in Table 7-26.

7.4.22 The key approaches to be employed to minimise impacts to species are also listed in the below sections. A summary of how these apply to each species / species group is presented in Table 7-27.

Approaches to Embedded design measures for habitats and species

Habitat Categorisation for Masterplanning (to inform avoidance)

7.4.23 The design of the masterplan has been considered in line with the mitigation hierarchy to avoid and minimise impacts to important ecological receptors.

7.4.24 In order to inform the masterplan layout, habitats and areas were initially categorised depending on their likely biodiversity and ecosystem service value to determine their requirement for retention.

7.4.25 This valuation was utilised to inform the masterplan and identify areas where development should be avoided (detailed in the ES Appendix 7.3). Valuable retained habitats were 'buffered' within the design to reduce potential impacts. Buffers have been based upon the requirements of these habitats and the species which they support.

Habitat Retention

7.4.26 Habitats which are assessed as being of high value have been preferentially retained within the proposed Development, these areas are described in the Development Specification (ES Appendix 4.1), Strategic Design Principles (ES Appendix 4.3) and the information from the GI Strategy (ES Appendix 4.11) on the open spaces –Tier 2 level masterplans will need to be prepared in accordance with this document.

Habitat Buffers

7.4.27 Habitat buffers were implemented as required by the sensitivity of the habitats adjacent and the ecosystem services and species that they support.

7.4.28 Details of the size and nature of habitat buffers are provided within ES Appendix 7.1. Habitat types to be buffered comprise hedgerows, trees, ancient woodland, woodland and the East Stour River. Dark corridors will also be buffered.

7.4.29 Maximising the biodiversity value by enhancing these buffers also contributes to the proposed Development being able to achieve quantifiable net gain, as described within ES Appendix 7.21.

Habitat Creation

7.4.30 Dedicated habitats have been created for providing maintenance and support for floral and floral species, primary biodiversity habitat. The biodiversity of other green space areas (not primarily designed for biodiversity) has also been maximised

wherever possible to maximise ecosystem service benefits, secondary biodiversity habitat. Multiple large areas of green space have been incorporated into the proposed masterplan which would provide habitats of benefit to biodiversity. Overall, approximately 50% of the proposed Development area is identified as GI, both retained habitats and newly created GI areas.

7.4.31 The detailed design of these open spaces will evolve at Tier stages 2-3. Within these areas of substantial green space there will be areas that would support Section 41 habitats and species, which is presented in the mitigation strategies for protected species and within the GI Strategy (ES Appendix 4.11). Habitats proposed to be created include: orchards; hedgerows; ponds and lowland meadows, tree planting and scrub and additional ditches. These habitats would provide conditions suitable for the Section 41 species that have been recorded on the site and those that may colonise the site in the future, particularly amphibians, including common toad and great crested newt; reptiles, including common lizard, grass snake; mammals including hedgehog, bats (soprano pipistrelle, brown long-eared bat, noctule); and invertebrates. Habitats to be created as mitigation for impacts to a particular species are described in ES Appendix 7.18. The key areas within this GI for ecology are listed in ES Appendix 7.1. These habitats also provide a wide range of ecosystem service benefits such as food provisioning, water quality and quantity attenuation, recreational benefits etc. These are reported within the ES Appendix 7.22.

7.4.32 Other GI features for which recreation or water attenuation are the primary function, for example SuDS features including ponds, drainage ditches, swales and rain gardens, will also be maximised for their biodiversity value during the design evolution.

7.4.33 Within the GI, valuable habitats are to be created, including:

- Ponds;
- Areas of woodland planting;
- Areas of ditch to be created for water voles;
- Hedgerows;
- Species rich wildflower grassland;
- Scattered trees;
- Scrub;
- Microhabitat features, including earth banks and deadwood piles for invertebrates.

7.4.34 Biodiversity net gain has been calculated using the Defra 3.0 offsetting metric (Ref. 7-22). It is calculated that there could be a biodiversity net gain of approximately 20% for areas-based habitats and 75% for hedgerows once the proposed Development is completed. This calculation is based on the Illustrative Masterplan (ES Appendix 4.5), which shows one way in which the proposed Development could be built out within the parameters submitted. Full details of this net gain calculation are presented in ES Appendix 7.21.

7.4.35 At Tier 2/3, for each relevant open space, a design and management document will be prepared to outline the targets of the open space, for both wildlife, the public and other requirements (for example water management). Within this document, the habitats to be created will be defined, with species lists and targets underpinned by monitoring and prescriptions for their successful establishment (including soil conditions required) and maintenance. Management and monitoring will be target driven and outline areas to be fenced for wildlife, if applicable.

Habitat Enhancement

7.4.36 Retained habitat has also been enhanced. The locations of all of the habitat enhancement areas are presented in Figure 7 in ES Appendix 7.1 and further detail on the river corridor enhancement is provided in ES Appendix 7.8.

7.4.37 Areas where habitat enhancement is proposed includes (but is not limited to):

- Hedgerows;
- Woodlands;
- Grasslands;
- Ponds; and
- River corridor (described in further detail in ES Appendix 7.8).

7.4.38 Overall, the habitat enhancement areas combined with the retention and creation of habitats within the site achieves a quantifiable net gain in line with the biodiversity offsetting metrics (as evidenced in ES Appendix 7.21). This has been calculated using the scheme design, represented by GI typologies, each of which has associated habitat parameters detailed within the Biodiversity Net Gain Report. Any evolution of these parameters, through detailed design, must fulfil the required net gain and ecosystem function as required by local and national policy.

Operational Measures

7.4.39 The items that will be particularly supportive in avoiding and minimising operational effects are summarised below:

- On-site and off-site areas which are sensitive to human disturbance have been identified and buffered to minimise impacts. Footpaths in the vicinity of these areas are positioned and designed to deter access by members of the public. It is envisioned that these areas will remain private and access will be discouraged.
- Areas of high quality open space (Suitable Alternative Natural Greenspaces) will be provided to minimise recreational impacts upon sensitive areas.
- Buffers are designed to minimise light spill onto sensitive areas and in general.
- A lighting design will be created to minimise light disturbance in line with best practice guidance.
- The approach to phosphates and nitrates outlined in the Water Chapter of this ES outlines how the SuDS design controls operational pollution.

7.4.40 In addition, a development BAP has been compiled (ES Appendix 7.20). This is a live document designed to ensure that operational impacts are identified and addressed throughout the operation of the proposed Development. This specifies ongoing targets for mitigation and conservation approaches and outlines a framework for stakeholders (Wildlife Trusts, residents' groups), to assist with the achievement of conservation goals. It is within this section that the general approach to community engagement in the ongoing maintenance and enhancement of the site for biodiversity is captured.

7.4.41 Specific receptors which are included within the Otterpool Park BAP submitted within this ES are presented below. However, it should be noted that this is envisaged to be a live document and should be updated as the operational phase of the proposed Development progresses.

Table 7-26: Summary of embedded design measure approaches to safeguard habitats

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from dogs
Ancient Semi-Natural Woodland registered on the Ancient Woodland Inventory (not on site but immediately adjacent)	✓ - 100% retained	✓ - minimum 50m offset from development (Harringe Brooks Woodland).	X – No creation of Ancient Woodland required	X – No enhancement is required as the woodlands are off-site and privately owned.	✓ – Topography around the woodland and buffers to minimise impacts.	✓ – Fences and signage will be used to safeguard this habitat.
Lowland mixed deciduous woodland, broadleaved woodland and plantation woodland	✓ - 100% retained	✓ - 25m offset from edge of woodland (other than ancient woodland)	✓ - Extensive areas of woodland planting for habitat creation, placemaking and visual screening proposed.	✓ – Enhancement as part of site creation is proposed.	✓ – Topography around the woodland and buffers to minimise impacts.	✓ – Fences and signage will be used to safeguard this habitat.
Hedgerows	✓ - >90% retained	✓ - 5m from the edge of the hedgerow, 25m from the edge of the hedgerow if dark corridors	✓ - Hedgerow planting proposed across the site	✓ – Enhancement as part of site creation is proposed – to include gapping up and addition of new species to improve diversity.	X – Not sensitive to this impact	X – Not sensitive to this impact
Arable field margins	✓ – Retention where possible within the buffers for hedgerows – new areas	X – No defined buffer	X –Creation of this habitat not possible, however a similar habitat will be created within buffer areas featuring floristic diversity to	✓ – Enhancement as part of site creation is proposed - particularly to improve floral diversity for	X – Not sensitive to this impact	X – Not sensitive to this impact

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from dogs
			create a resource for pollinators.	pollinators.		
Semi-improved and species-poor semi-improved neutral grasslands (important for a range of faunal and floral features)	✓ – Retention where possible, including areas of Lympne Airfield, Otterpool SSSI site, Racecourse area and woodland edge habitats.	X – No defined buffer	✓ –Areas of semi-improved grassland habitat to be created, particularly targeted for reptiles, amphibians and invertebrates	✓ – Enhancement as part of site creation is proposed - particularly to improve floral diversity for pollinators.	✓ – Areas of 'meadow' will be fenced and signage will be used to safeguard this habitat.	✓ – Areas of 'meadow' will be fenced and signage will be used to safeguard this habitat.
Open mosaic habitats (OMH) on previously developed land (S41 Habitat)	X – Not possible to retain within the proposed Development	X – No defined buffer	✓ – Areas of OMH habitat to be created, particularly targeted for invertebrates	X – No enhancement required	X – Not sensitive to this impact	X – Not sensitive to this impact
Standing water / Ponds	✓ – Majority of ecologically valuable ponds retained. Of the remaining ponds with ecological value only one is to be removed to facilitate the proposed Development (pond 27). Eleven of 13 ponds with notable ecological value retained. Eleven of 19 ponds identified from mapping retained in total.	✓ – Ponds buffered in suitable greenspace	✓ – Extensive areas of standing water are proposed, for placemaking, GCN habitat creation and water quality management/ SuDS.	✓ – Habitat quality of retained ponds will be improved	✓ – Topography around the ponds and buffers to minimise impacts.	✓ – Fences and signage will be used to safeguard this habitat.
Running Water including	✓ – Entire length of East	✓ –Offset buffer is in excess of	X – No river habitat	✓ – Habitat quality of	✓ – Fences	✓ – Fences

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from dogs
the East Stour River, tributaries to the East Stour River and ditches.	Stour retained.	50m (100m total) along its length, with the exception of where the river is crossed by roads or pathways.	creation proposed. Aquatic features alongside the river habitat creation is proposed.	the river is proposed to be improved, including improving the naturalness of the surrounding area.	and signage will be used to safeguard this habitat.	and signage will be used to safeguard this habitat.
Traditional orchard	X – Very small areas of this habitat are present and these cannot be retained within the proposed Development.	X - Minimal retention of this area to buffer	✓ – Significant areas of orchard are proposed within the Illustrative Masterplan (ES Appendix 4.5).	X - Minimal retention of this area to enhance	X – no mitigation required	X – Not sensitive to this impact
'Riparian Corridor' (habitat for a range of faunal receptors and an ecological corridor)	✓ – existing area retained where possible (majority of the way along the East Stour)	✓ –Offset buffer is in excess of 50m (100m total) along its length, with the exception of where the river is crossed by roads or pathways.	X – No riparian habitat creation proposed.	✓ – Habitat quality of the riparian corridor is proposed, including increasing the heterogeneity	✓ – Signage will be used to safeguard this habitat.	✓ – Topography (including the creation of ditches) and signage will be used to safeguard this habitat.
Individual scattered trees, parkland scattered trees	✓ – Retained wherever possible	✓ - Buffers will depend upon the size of the tree but are likely to be a minimum of 15m for woodland a minimum of 10m for trees, with 15m buffers for significant trees.	✓ – Tree planting, both within the open spaces and development areas is proposed which will far exceed the trees to be removed to facilitate the proposed Development.	X – Not applicable	X – Not sensitive to this impact	X – Not sensitive to this impact

Table 7-27: Summary of embedded design measure approaches to safeguard species

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
Wintering birds assemblage (excluding farmland birds)	✓ - Areas of habitat including the Racecourse lake are retained where possible.	✓ - The lake and river corridors and woodlands etc. are buffered as defined in ES Appendix 7.1	✓ - Extensive areas of wetlands and standing water are proposed.	X – No specific enhancements are required	✓ – Fences, topography and signage will be used to safeguard habitats which are of value for this species, including wetlands and areas of woodland and rough grassland.	✓ – Fences, ditches and signage will be used to safeguard habitats of value for this species group.	X – no specific intervention proposed or required
Breeding birds assemblage (excluding farmland birds)	✓ - Areas of habitat including woodland retained where possible.	✓ - Buffers as defined in ES Appendix 7.1 around key areas such as woodland and hedgerows.	✓ - Extensive areas of woodland planting, hedgerow planting, orchards and wetlands proposed.	✓ – Enhancement as part of site creation is proposed. Includes the creation of new nesting features.	✓ – Fences, topography and signage will be used to safeguard habitats which are of value for this species, including wetlands and areas of woodland and rough grassland.	✓ – Fences and signage will be used to safeguard this habitat.	X – no specific intervention proposed or required
Farmland bird assemblage (wintering and breeding)	X – Not possible to retain significant areas of this habitat on site	N/A - See offsetting section of this ES	N/A - See offsetting section of this ES	N/A - See offsetting section of this ES	X – Not sensitive to this impact	X – Not sensitive to this impact	X – No specific intervention proposed or required
Schedule 1 bird - barn owl	✓ – Retention of barns where	✓ – Buffers around	✓ – Breeding boxes are	✓ – Areas of grassland will be enhanced to	X – Not sensitive to this impact (breeding areas	X – Not greatly sensitive to this	✓ –New boxes to be places >1km from

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
	species breeds and rough grassland for foraging.	woodlands are defined as per ES Appendix 7.1.	proposed, as are areas of rough grassland for foraging.	create more foraging for this species.	are in private grounds)	impact	the M20
Schedule 1 bird - Kingfisher	✓ – Retention of areas where this species is known to breed, including the East Stour river corridor and the Racecourse Lake..	✓ – Buffers around the river corridor are defined as per ES Appendix 7.1.	✓ - Extensive areas of wetlands and standing water are proposed.	✓ – Creation of heterogeneity within the river corridor will benefit this species.	✓ – Fences, topography and signage will be used to safeguard habitats which are of value for this species, including wetlands and the River corridor.	✓ – Fences, ditches and signage will be used to safeguard habitats of value for this species.	X – no specific intervention proposed or required
Bats	✓ – Retention of commuting and foraging areas and roosts. Details in ES Appendix 7.1 and 7.18	✓ – Buffers of hedgerows and dark corridors as defined in ES Appendix 7.1.	✓ – Creation of bat barns and roost boxes, foraging areas including woodland and wetlands.	✓ – Improvement of grasslands to provide more resource for invertebrates (and therefore food for bats)	X – Not sensitive to this impact (breeding areas are in private grounds)	X – Not greatly sensitive to this impact. New roost features will be designed and located to minimise the risk of predation by cats.	✓ –Integration of 'hop-overs' to allow bats to cross infrastructure features safely are proposed.
Water vole	✓ – Retention of the vast majority of habitats present for this	✓ – Buffers from water courses and ditches as defined in ES	✓ – Creation of new waterbodies and ditches, including a	✓ – Habitat quality improvements of the river is proposed, including improving the naturalness of the	✓ – Fences and signage will be used to safeguard habitats.	✓ – Topography including wet ditches, fences and signage will be used to safeguard these	X – no specific intervention proposed or required

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
	species.	Appendix 7.1.	specific area in the north-west of the site.	surrounding area and increase in heterogeneity. This will provide more feeding resource for water voles.		habitats. Complexity of habitat will reduce predation.	
Badger	✓ – Where possible setts are retained.	✓ – Where setts are retained, these will be within a suitable buffer area. Green corridors such as hedgerows have suitable buffers as defined in ES Appendix 7.1.	✓ – Significant areas of orchard, allotment, rough grassland are proposed within the Illustrative Masterplan (ES Appendix 4.5). Artificial setts will be created if required.	X – No specific habitat enhancement is required.	✓ – Fences and planting will be used to safeguard this habitat.	X – Not greatly sensitive to this impact	✓ –Tunnels underneath roads to allow badgers to cross beneath the roads safely are proposed.
Common Reptiles	✓ – Existing area retained where possible (areas near to the racecourse and in the	✓ – Buffer habitats will safeguard key areas, with the buffers themselves providing reptile	✓ – Significant areas of, rough grassland are proposed within the	✓ – Inclusion of new hibernation features is proposed.	✓ – Signage will be used to safeguard this habitat.	✓ – Topography (including the creation of ditches) and signage will be used to safeguard this habitat. Complexity of	X – No specific intervention required

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
	Lympne Airfield south of the site and all along the river corridor).	foraging habitats.	Illustrative Masterplan (ES Appendix 4.5). These include areas to the West of the Otterpool SSSI site, in the Lympne Airfield and along the East Stour river corridor. As presented in ES Appendix 7.18.			habitat will reduce predation.	
Great Crested Newts	✓ – Ponds are largely retained. Eleven of 12 ponds with notable ecological value retained.	✓ - Buffers around the key areas for this species as defined in ES Appendix 7.1.	✓ – Multiple areas of pond and wetland creation is proposed.	✓ – Enhancement of existing areas of pond and wetland creation is proposed.	✓ – Signage and fencing will be used to safeguard key areas of habitat.	✓ – Topography (including the creation of ditches) and signage will be used to safeguard habitats. Complexity of habitat will reduce predation.	X – no specific intervention proposed or required
Otter	✓ – Retention of the vast majority of habitats	✓ – Buffers from water courses and ditches as defined in ES	✓ – Creation of new waterbodies and ditches,	✓ – Habitat quality improvements of the river is proposed, including improving the	✓ – Fences and signage will be used to safeguard habitats.	✓ – Topography including wet ditches, fences and signage will be used	✓ – BAP will specify

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
	present for this species.	Appendix 7.1.	including a specific area in the north-west of the site.	naturalness of the surrounding area and increase in heterogeneity. This will provide more feeding resource for water voles.		to safeguard these habitats. Complexity of habitat will reduce predation.	
Hazel Dormouse	✓ - Areas of habitat including woodland retained where possible.	✓ - Buffers around the Harringe Brooks Woodland where this species is are proposed as defined in ES Appendix 7.1.	✓ – Multiple areas of hedgerow and woodland planting are proposed	X – Key habitat area (Harringe Brooks woods) is privately owned.	✓ – Signage will be used to safeguard key areas of habitat.	✓ – Topography (including the creation of ditches) and signage will be used to safeguard habitats Complexity of habitat will reduce predation.	X – no specific intervention proposed or required
Invertebrates (terrestrial)	✓ - The key approach for invertebrates has been to ensure that existing areas with value are safeguarded.	✓ - Buffers around retained habitats are proposed as defined in ES Appendix 7.1.	✓ – Multiple areas of diverse grassland and areas of specific habitat creation for invertebrates (log piles, rubble piles etc.) are proposed	✓ – Improvement of grasslands to provide more resource for invertebrates	X – Not greatly sensitive to this impact	X – Not greatly sensitive to this impact	X – Not greatly sensitive to this impact

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
Fish	✓ – Retention of the vast majority of habitats present for this species, including the East Stour River Corridor, and ponds / lakes.	✓ - Buffers around retained habitats are proposed as defined in ES Appendix 7.1.	✓ - Multiple new wetlands are proposed.	✓ – Habitat quality improvements of the river is proposed, including improving the naturalness of the surrounding area and increase in heterogeneity.	✓ – Controlled and managed fishing across the site.	X – Not greatly sensitive to this impact	X – no specific intervention proposed or required
Invertebrates (Aquatic)	✓ – Retention of the vast majority of habitats present for this species group, including the East Stour River Corridor, and ponds / lakes.	✓ - Buffers around retained habitats are proposed as defined in ES Appendix 7.1.	✓ - Multiple new wetlands are proposed.	✓ – Habitat quality improvements of the river is proposed, including improving the naturalness of the surrounding area and increase in heterogeneity.	X – Not greatly sensitive to this impact	X – Not greatly sensitive to this impact	X – no specific intervention proposed or required
Brown Hare	X – Not possible to retain significant areas of this habitat on site.	N/A - See offsetting section of this ES	N/A - See offsetting section of this ES	N/A - See offsetting section of this ES	X – Not sensitive to this impact	X – Not sensitive to this impact	X – no specific intervention proposed or required
Common Toad	✓ – Ponds are	✓ - Buffers	✓ – Multiple	✓ – Enhancement of	✓ – Signage and fencing	✓ – Topography	X – no specific

Receptor	Habitat Retention	Habitat buffers (Details in ES Appendix 7.1)	Habitat Creation	Habitat Enhancement	Protection from recreational pressures	Protection from impacts from domestic animals	Mitigation for specific potential impacts
	largely retained. Eleven of 12 ponds with notable ecological value retained.	around the key areas for this species as defined in ES Appendix 7.1.	areas of pond and wetland creation is proposed.	existing areas of pond and wetland creation is proposed.	will be used to safeguard key areas of habitat.	(including the creation of ditches) and signage will be used to safeguard habitats (from cats). Complexity of habitat will reduce predation.	intervention proposed or required
Hedgehog	✓ - Areas of habitat including woodland retained where possible.	✓ - Buffers as defined in ES Appendix 7.1 around key areas such as woodland and hedgerows.	✓ - Extensive areas of woodland planting, hedgerow planting, orchards etc.	✓ – Enhancement as part of site creation is proposed. Includes the creation of new nesting features.	✓ – Fences, topography and signage will be used to safeguard habitats which are of value for this species, including woodland and rough grassland.	✓ – Fences and signage will be used to safeguard habitats.	X – no specific intervention proposed or required
Harvest Mouse	✓ - Areas of habitat including grassland retained where possible.	✓ - Buffers as defined in ES Appendix 7.1 around key areas such as woodland and hedgerows.	✓ - Extensive areas of natural habitat proposed including woodland planting, hedgerow planting, orchards and wetlands proposed.	X – No specific enhancement required.	X – No specific approaches required.	X – No specific approaches required.	X – No specific intervention required

Good Practice Measures

7.4.42 This section includes an outline of the measures which are included within the Outline Code of Construction Practice (CoCP), ES Appendix 4.17. Subsequent to this, a Detailed CoCP will be formulated at Tier 3 of the planning process that will further outline the approaches to be implemented to safeguard ecological features.

7.4.43 This section outlines the details of the general construction mitigation to be applied throughout the proposed Development. Where additional mitigation to ensure specific impacts to habitats and species are controlled, this is presented in the subsequent sections.

7.4.44 An Outline CoCP for the proposed Development is provided in ES Appendix 4.17. A Detailed CoCP, prepared on the basis of the Outline CoCP, would be in place in advance of site clearance to ensure that measures are put in place to protect the environment, including biodiversity. The CoCP requires that the proposed Development adhere to relevant legislation for the protection of the environment and implement best practice guidelines for works within or near water. Relevant guidance at the time of construction would form the basis for pollution control measures. Mitigation timings are presented in Image 7-3. Generally, the CoCP ensures that:

- Appropriate measures are put in place to protect water quality in the East Stour watercourse and its tributaries. This would also protect downstream habitats.
- Appropriate measures are put in place to control dust and other emissions that could affect air quality.
- Site compounds, storage facilities and staff facilities are suitably bunded and located in places that would not have an adverse effect on the environment; in particular, the CoCP would ensure that retained are protected.
- In advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (the watercourse, mature trees and hedgerows) and their associated buffer zones to ensure that they are not subject to accidental damage.
- Haul routes, storage compounds and staff facilities would be located away from retained habitats to minimise disturbance to the species they support.
- Pre-construction surveys are carried out by an ecologist to confirm the nature and extent of any ecological constraints in advance of site clearance, to ensure that appropriate mitigation measures including licences are in place in advance of site clearance, and to confirm that no new constraints have arisen since the publication of the Environmental Statement.
- An ecological clerk of works is in place to oversee site clearance, in particular any works that have the potential to disturb notable ecological features. They would also ensure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred.
- To avoid impacts on breeding birds, works close to retained habitats would commence outside of the bird breeding season (i.e. they would commence in the period between the months of September and February, inclusive). Where this is not possible, specialist ecological supervision would be provided to confirm the absence of nesting birds prior to vegetation removal and ensure the protection of any confirmed nesting sites. Should the presence of nesting birds be established, buffer zones would be fenced to ensure the birds are not disturbed and works would cease in the locality until the young birds have fledged. Note: the area of

buffer zones for ground nesting species such as skylark may exceed a 50m radius.

- In advance of construction, bird nesting boxes would be installed in the hedgerows and on retained trees, in suitable locations away from the construction. This would ensure alternative nesting opportunities are provided to mitigate for any disturbance effects.
- Prior to any removal of hedgerows, pre-construction checks for any species of conservation concern, such as reptiles and hedgehogs, would be undertaken. Any features of value to hibernating reptiles would not be disturbed during the reptile hibernation period (October through to March). Should hedgehog(s) be found at this time, they would be moved to a safe location.
- The construction site drainage solutions would incorporate measures to ensure that all surface water runoff is balanced and treated and returned to the watercourse at greenfield runoff rates.
- Care is taken with the design of site drainage to prevent unbalance of and untreated silt laden surface water runoff from entering retained habitats.
- If night-time construction lighting is required, it would be kept away from the watercourses and the hedgerows, during the period April to November when bats are active.
- The CoCP will ensure that Schedule 9 plants (invasive species) are not allowed or caused to spread within or outside of the proposed Development area.
- An ecological clerk of works would be employed to ensure that the ecological protection measures outlined in the CoCP are adhered to. They would also undertake regular monitoring to ensure that the protection measures remain in place for the time that they are required.
- The Ecological Clerk of Works would report to the Site Manager and Environmental Clerk of Works to ensure that remedial actions are undertaken in a timely manner.

Additional Mitigation - Construction

7.4.45 This section of the report outlines the additional mitigation required above the embedded design measures and good practice approaches to avoid significant effects on ecological receptors/features as set out in Table 7-24. The structure of this section is as follows:

Dedicated Additional Construction Mitigation

7.4.46 This section of this ES Chapter outlines the additional mitigation applied in addition to the design mitigation outlined above. The broad approaches to additional mitigation that are outlined are presented in the following sections.

- Additional mitigation for habitats:
  - Bespoke Method Statements.
  - Further surveys
  - Additional mitigation for species:
  - Further surveys;
  - Requirements for licensing;
  - Bespoke Method Statements.

- Translocations.
- Otterpool BAP.

Designated Sites

7.4.47 No dedicated additional construction mitigation is considered necessary.

Habitats

Bespoke Method Statements and Translocations

7.4.48 In advance of site clearance, protective fencing would be installed to protect retained/ translocated and/or ecologically sensitive habitats (the watercourse, mature trees and hedgerows, prevention of spread /eradication of non-native invasive species) and their associated buffer zones to ensure that they are not subject to accidental damage. For trees, where appropriate, this should be as specified within the appropriate AIA (Arboricultural Impact Assessment), likely to be required at Tier 3 of the Application process. An ecological clerk of works would supervise the works to ensure that the method statements were adhered to. The method statements and translocation works would be included as part of a Detailed CoCP, likely to be required at Tier 3 of the planning process.

Further surveys

7.4.49 Additional habitat surveys are required to inform construction mitigation, as detailed in (Table 7-28). Recommended survey timings are presented in Table 7-28.

Table 7-28: Details of future habitat surveys required

Species	Further surveys required
Habitats general	It may be necessary to update the surveys should site conditions change, and to update the habitat information throughout the extended buildout process. The management of the site will be monitored to ensure that where possible, the site continues to be managed as it currently is to maintain the status on the site.
Invasive non-native plants	Update surveys may be required to determine the distribution of invasive non-native species within the site and to inform eradication / mitigation plans.
Trees and arboriculture	At the reserved matters (Tier 3) application stage of the planning process, it will be necessary to fully evaluate the quality of the tree stock and tree numbers by carrying out a detailed Arboricultural survey in line with BS 5837: 2012. This would be a pre-requisite of any detailed planning application and complying with the F&HDC Local Plan. Given the scale of the proposed Development and uncertainty over specific proposed Development plots at OPA stage, more detailed information would be provided at the reserved matters application stage, as agreed with Impact Assessment (AIA) will also be required once detailed design footprints are available to assess the impacts and any required tree removal, protection required for protection for the trees to be retained, and a tree replacement strategy. A full topographical survey would be required to accurately complete the AIA report. Within the area supporting the traditional orchard, there may be a need for further surveys prior to development occurring in this area. These may include surveys for veteran trees and surveys for saproxylic species. There may also be a requirement to take scionwood for propagation of the cultivars to preserve cultural heritage. This would need to be determined in liaison with appropriate stakeholders, once access to this area is permitted at the appropriate juncture in the planning process (likely when reserved matters for proposed Development in this area are being addressed)

Species

Further surveys

7.4.50 In order to inform the planning process and mitigation, a range of further surveys are considered to be required. The surveys which are considered likely to be required are presented in Table 7-29 below. Recommended survey timings are presented in Table 7-29.

Table 7-29: Further surveys required throughout the planning and construction process.

Species	Further surveys required
Invertebrates	The vast majority of the habitats that have potential for invertebrates are being retained and further detailed surveys are not deemed necessary to inform the masterplan design or ES. There are a small number of areas which would benefit from further survey to inform the detailed design for the subsequent detailed planning applications (at Tier 3) and to provide a baseline. Due to the extended timeframe for build out of the proposed Development (at least 19 years in duration), the timing of the surveys should be aligned with the detailed design. While the Folkestone Racecourse Lake is being retained, there will be landscaping around the northern and southern margin. This work would need to be proceeded by detailed surveys, which should be conducted at an appropriate time in the planning process. If any modification works are required within this area, detailed invertebrate surveys may be required to inform the detailed planning, design and mitigation. There was a limited resource of bare ground habitat, largely isolated areas within the site's grassland and scrub habitat. There are some large, predominantly bare mounds and areas of bare ground in the grassland surrounding these mounds north of the Link Park area (TN165 and 167 in ES Appendix 7.5 and 7.17). Ground nesting solitary bees (probably Lasioglossum spp.) were observed to be active in this area. It may be necessary to conduct invertebrate surveys to inform detailed design and mitigation prior to proposed Development within this area. There were also significant areas of bare ground in the disused lorry park (TN180 and 182 in ES Appendix 7.5 and 7.17), but minimal aculeate (barbed invertebrates such as bee and wasps) activity was observed in this area. Surveys, where required should be conducted at an appropriate stage of the planning process. Standardised pond netting and sweeping/beating of marginal vegetation based surveys should be undertaken in May, June and July.
Badger	Considering the extended timescales for buildout of the project, it is considered that further survey and input will be required to inform mitigation proposals. Further surveys are likely to be required where significant sett disturbance/destruction is deemed necessary. Bait marking surveys may be required to inform the detailed planning of the proposed Development. Bait marking is a technique that relies upon badgers marking their territorial boundaries with latrines. Bait is placed outside the main sett, with indigestible coloured markers within it. Then when the badger later defecates, coloured markers allow the surveyor to trace which main sett the badger belongs to and therefore map clan distribution. Bait marking surveys may also be conducted to help further determine the boundaries of different clan territories. Considering the high density of main setts within the site recorded during the 2016–2020 surveys, it is considered that the proposed Development could affect the behaviour and territories of social groups. It is likely that this will need to be understood within the detailed planning of mitigation for each proposed Development parcel. Bait marking is also likely to be required to establish if there are alternative neighbouring setts that badgers could colonise if destruction of the current sett they occupy is deemed necessary and could also help to determine the most suitable locations for mitigations e.g. replacement artificial setts, if required. Camera trapping to assist the surveys may also be required, camera traps may be used to monitor the use setts and determine the significance of the sett to a clan.

Species	Further surveys required
Bats	Bat surveys referred to within this document are considered sufficient to inform the EIA, masterplan design, and outline planning. However, due to the evolution of the detailed design and the requirement for an extended build out, subsequent surveys are likely to be required. These surveys will inform detailed planning and construction mitigation and avoidance. This section of the report outlines the survey work likely to be required as the proposed Development progresses. The following surveys are likely to be required during the buildout: • As the masterplan evolves into a detailed design, additional areas may require scoping for potential impacts to bats. • Further 'preliminary roost assessment' surveys of structures (PRA), as access to previously inaccessible areas is obtained. • Once detailed design is finalised, hibernation surveys may be required on buildings to be removed which have been identified as having hibernation potential during the building assessments (where safe to do so) ES Appendix 7.13 • Further, and more detailed PRA and subsequent emergence / re-entry surveys to identify roosts to safeguard individual roosts (of structures to be removed, once this is known). These should be timed appropriately and be designed to ensure that sufficient data can be collected to allow a licence from Natural England to be obtained (determined by the current best practice and licence guidelines at the time of the development); • No tree roosting potential has been considered to date. Assessment of the roosting potential of trees, especially those identified within these surveys as likely to support bat roosts; once the details of tree impacts and removal is known. Followed requirement for emergence / re-entry surveys where required. • Monitoring of the bat usage of the site may need to be conducted, to inform detailed design and the success of avoidance mitigation for existing roosts and communing corridors.
GCN	The requirement for further survey at later stages of the planning process will be determined by the details of the proposed Development, and the mitigation approach determined. If an individual licence approach (or site wide licence) is determined to be the most appropriate mitigation strategy for a given parcel, updated population surveys may be required but should be considered in line with NE's relatively new planning policy implementation approach which allows more holistic decisions to be undertaken.
Water vole	Updated water vole surveys are likely to be required to inform the licencing to facilitate water vole mitigation and for detailed design iteration. The need for further survey would be monitored throughout the build out process.
Birds (wintering and breeding), reptiles	Due to the extended build out of the project, surveys to update the baseline information on the site may be required throughout the buildout of the site, in relation to changing site habitats.

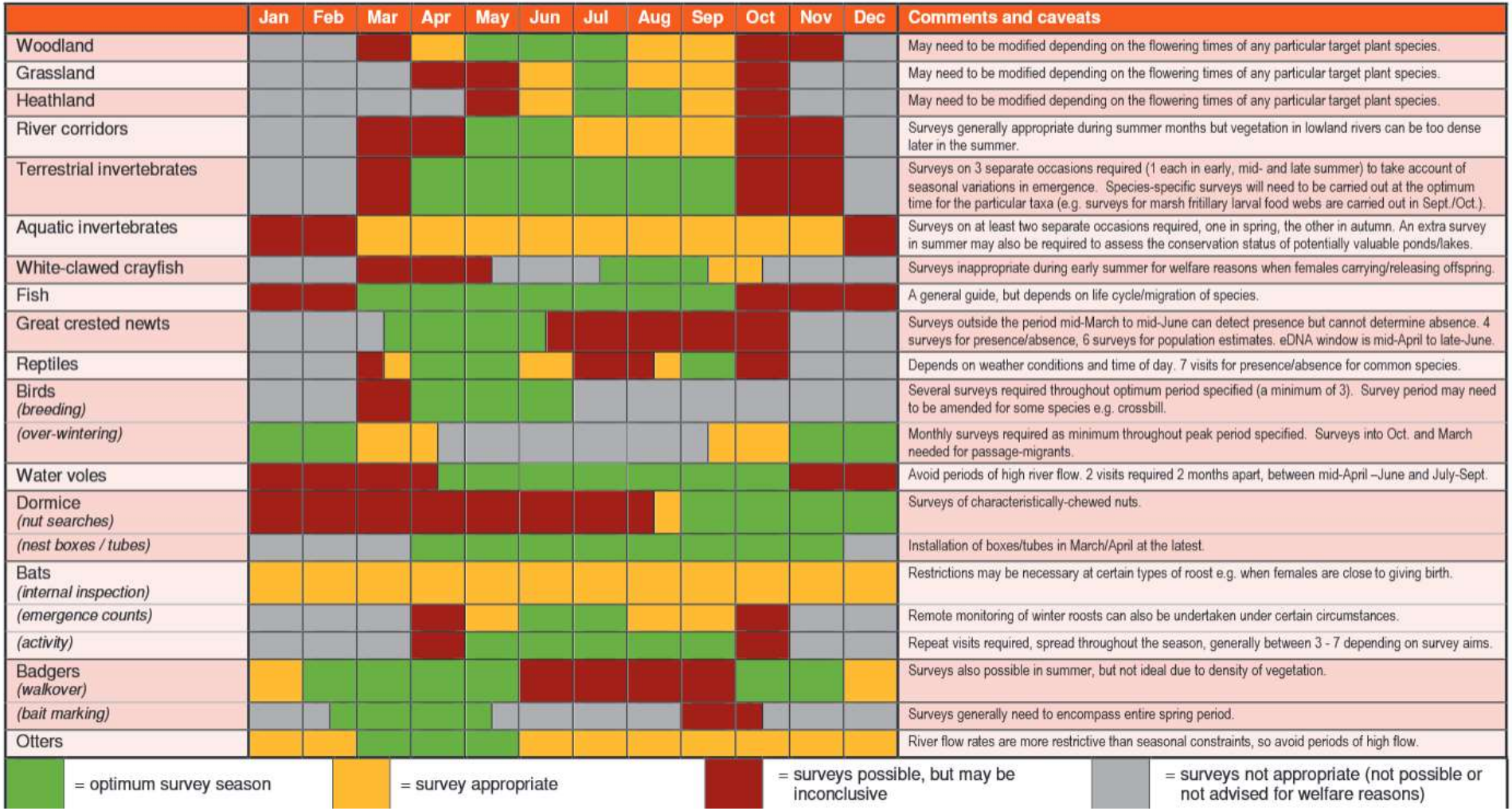


Image 7-4 Recommended survey timings

Licensing requirements

7.4.51 As a component of the construction phase of the proposed Development, a number of protected species licenses are likely to be required. These will need to be obtained from Natural England. The timing of the application for these licences will depend upon the exact chronology of the buildout. The licences considered likely to be required in relation to the project are presented in Table 7-30 below. Mitigation timings are presented in Image 7-3.

Table 7-30: Licences for protected species that may be necessitated during the construction phase of the proposed Development

Species	Licence requirement	Licence type	Notes
Great crested newts	Confirmed	Derogation licence	The exact licensing approach will depend upon the regulatory framework in place at the time of application. Locations are shown in Appendix 7.18.
Badgers	Confirmed	Licence to interfere with setts for development purposes	Setts will need to be closed to enable the proposed Development (although the design has been iterated to avoid impacts). Locations are shown in Appendix 7.18.
Bats	Confirmed	Derogation licence	For the removal of structures and / or trees where bat roosts are present. Additional roosts may be identified which will require licensing. Locations are shown in Appendix 7.18.
Water voles	Confirmed	Conservation licence	Translocation and displacement will be required from ditch 1 and potentially areas of the East Stour River. Locations are shown in Appendix 7.18.
Kingfisher	Potential	Conservation licence	To be avoided. The progression of works and the Noise Mitigation and Management Plan should avoid the need to obtain this licence.
Barn owl	Potential	Conservation licence	To be avoided. The progression of works and the Noise Mitigation and Management Plan should avoid the need to obtain this licence.
Dormouse	Potential	Derogation licence	Pre-commencement surveys of habitats in the vicinity of Harringe Brooks Woods will determine the status of dormice in this area. If confirmed to be present, a licence may be required to remove any habitat suitable for dormice.

Bespoke Method Statements and Translocations

7.4.52 Where impacts to legally protected or notable species cannot be fully mitigated through design, a range of approaches to limiting impacts to these species from construction impacts are proposed. These are specified in detail in each of the dedicated species survey reports, presented in ES Appendix 7.3 – 7.17. A summary is provided in below in Table 7-31, which proposes more detailed measures that would be required for a Detailed CoCP at the reserved matters stage. The timings of the mitigation outlined within this section are presented in Image 7-3.

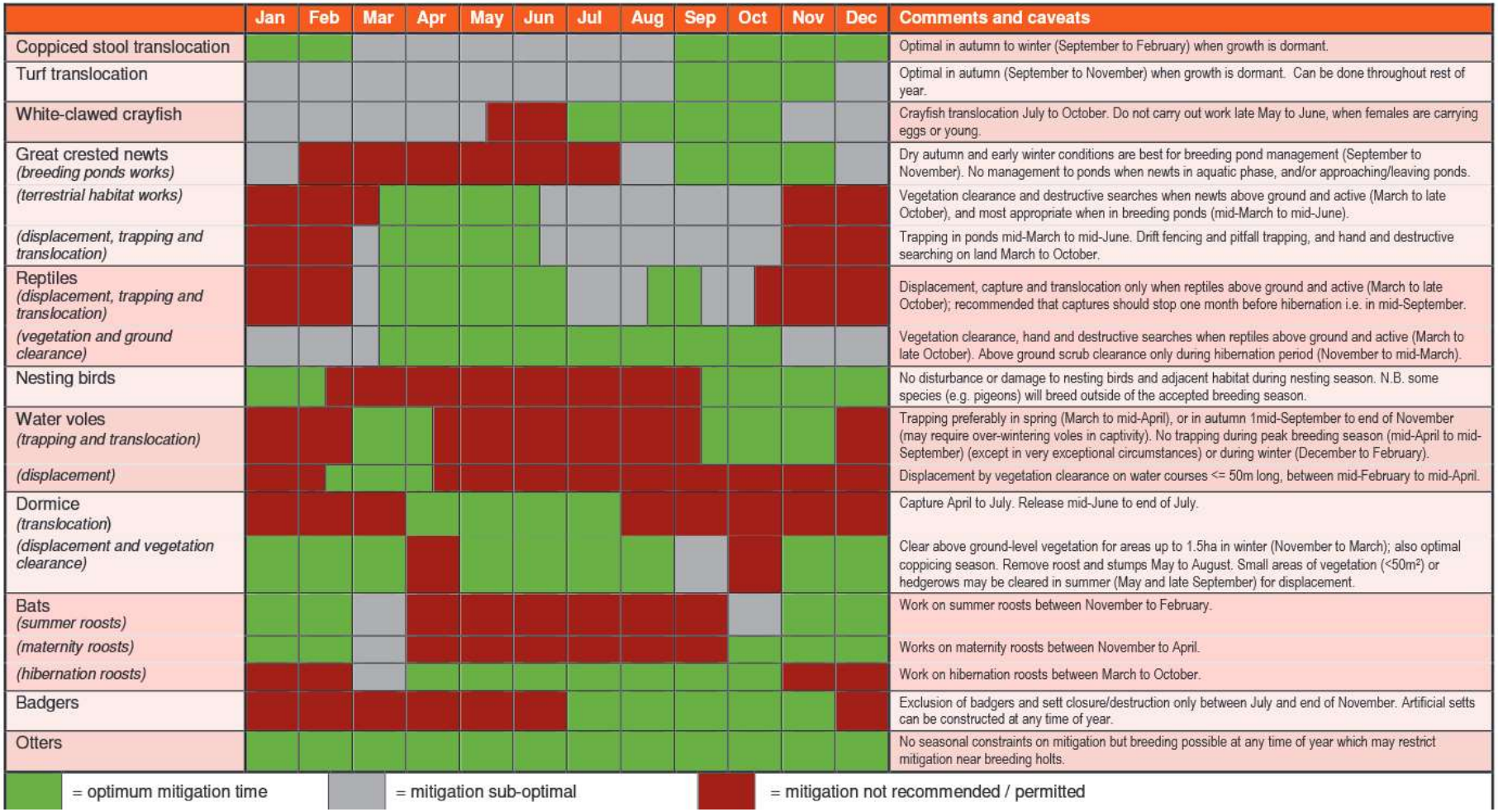
Table 7-31: Summary of construction specific mitigation for species

Species	Additional construction mitigation
Invertebrates	• Clear demarcation of areas that are to be retained with minimal disturbance to the buffers. Many species of invertebrate overwinter as eggs, larvae or adults in the soil, leaf-litter, under bark, etc. so it is imperative that these habitats are not disturbed in the buffers surrounding the more important retained habitats. This would be secured in the Detailed CoCP at Tier 3. • Translocation of microhabitat features into retained GI where possible – including deadwood, bare earth mounds and banks etc. • Creation of invertebrate micro habitats including log piles throughout the clearance of the site.
Badger	• Displacement of badgers from setts to be removed is likely to be required (subject to detailed design at Tier 2). Initial impact assessments suggest that two main setts may need to be closed. Replacement setts may also be required, dependent up status at the time of the impact. This is detailed in ES Appendix 7.18. • Setting appropriate offsets from any badger setts to be retained (with appropriate fencing and demarcation if required) during construction to ensure that disturbance to setts is minimised. • Ensuring that badgers are not attracted to works sites, by ensuring good housekeeping particularly with regards to storage of food and disposal of waste. • Measures should be implemented to prevent badgers becoming trapped in excavations, including covering and ramping open excavations, as necessary.
Bats	During demolition on the site, there may be a need to safeguard roosting bats within structures and trees to be removed. Mitigation for these individuals is likely to require a licence form the statutory Authority (Natural England) and may specify: • Specific timings for works; • Displacement and exclusion of bats from structures; • Supervision by a licensed ecologist of demolition works. • Suitable alternative roosting provision will also be likely to be required, which may include bat barns and houses and / or bat boxes. During the construction phase of the proposed Development, a range of measures will need to be implemented to ensure that impacts to bats are minimised. Prescriptions for the provision of tool box talks for on-site contractors and staff, informing them of the legal protection afforded to bats: • Prescriptions for site lighting to minimise the impacts and disturbance to bats; • Pollution control measures; • Buffers and offsets from sensitive areas.
Dormouse	• In advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (woodlands, mature trees and hedgerows) and their associated buffer zones to ensure that they are not subject to accidental damage (to be determined on a phase by phase basis). • An ecological clerk of works is in place to oversee site clearance, in particular any works that have the potential to disturb notable receptors. They would also ensure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred. • The ecological clerk of works would ensure that hedgerow translocation is undertaken in accordance with an agreed method statement. They would also ensure that the retained and translocated hedgerows are monitored to ensure that they are managed appropriately. • Any contractors involved in the removal or disturbance of potential dormouse habitat should be aware of the legal protection afforded to dormouse. Should a dormouse be incidentally found during works, all work in the area must stop immediately and the advice of a qualified

Species	Additional construction mitigation
	ecologist be sought.
GCN	During detailed design and construction of the proposed Development, it is likely that additional actions may be required to safeguard GCN. These actions may include: • Habitat creation plans to be evolved with the detailed design and phasing of the proposed Development (i.e. outlining the habitats within the proposed Development parcels) to create and enhance habitats; • Habitat manipulation to displace great crested newts into retained habitats adjacent to habitats to be removed; • Tool box talks to be created and provided to on site staff to inform them of the protected status of Great Crested Newts; • Licensed capture and translocation of GCN from areas to be lost into retained / enhanced habitats may be required, this will need to be determined in liaison with Natural England. There is potential that a small number of GCN may be moved from the pond to be lost to the newly created area in the north west, to 'seed' this area with a population of GCN, which will have connectivity to the metapopulation in the west of the site (around pond 5, 9,11 and 12). • The exact details of the additional construction mitigation for GCN will need to be determined as reserved matters applications for proposed Development within the site are progressed. An outline of how mitigation for impacts to GCN are being approached is presented in ES Appendix 7.18.
Water vole	In areas where water bodies which support water vole would be removed to facilitate the proposed Development, there is likely to be a requirement for measures to safeguard individual water vole and populations of water vole. These measures may include translocation (where by animals are captured and moved to newly created or enhanced habitats) or displacement (whereby animals are encouraged to move away from the works through habitat manipulation. The preferred method between these two broad options is outlined for each zone in more detail in the water vole mitigation strategy (ES Appendix 7.18), however, it is likely that the exact methodology will need to be determined on a phase by phase and development parcel by development parcel basis, as the most appropriate option will need to be determined by: • The water vole population in the affected water bodies at the time of the mitigation implementation; • The status of adjacent water bodies, with regards to habitat, connectivity and population status; • The habitat and population status of translocation receptor areas; and • The current best practice guidelines. The broad approach to mitigation is outlined in the Water Vole Mitigation Strategy (ES Appendix 7.18), with details applicable to each phase / parcel being finalised at the appropriate tier in the planning process. It is likely that an appropriate conservation licence to conduct translocation works would need to be obtained from the relevant statutory body (Natural England). The is a risk of pollution to water bodies due to construction. This could Adversely impact the availability of foraging resources, adversely impacting the water vole population. It is therefore important that best practice industry pollution prevention measures are implemented, for example, soil would be prevented from entering the watercourses using soakaways and silt fencing and all chemicals and waste materials would be stored in secure containers with drip trays etc.
Birds	All nesting birds are protected by law and the site clearance to enable the proposed Development is likely to have impacts to nesting bird habitats. In addition to those measures outlined within a general CoCP, the following mitigation would be included: • Pre-construction nest checks for barn owl and kingfisher in particular should be undertaken where there is appropriate habit with the potential to be disturbed. • In advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (woodlands, mature trees and hedgerows) and their

Species	Additional construction mitigation
	associated buffer zones to ensure that they are not subject to accidental damage (to be determined on a phase by phase basis). • Haul routes, storage compounds and staff facilities would be located away from retained habitats to minimise disturbance to the species they support. • An ecological clerk of works is in place to oversee site clearance, in particular any works that have the potential to disturb notable receptors. They would also ensure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred. An ecological clerk of works would be employed to ensure that the ecological protection measures outlined in the Detailed CoCP are adhered to. They would also undertake regular monitoring to ensure that the protection measures remain in place for the time that they are required. During the progression of the work there will be a requirement for a Noise Mitigation and Management Plan with regards to breeding birds. This mitigation would be evolved with the proposed Development.
Reptiles	During construction of the proposed Development, it is likely that displacement and translocation actions will need to be undertaken to ensure that individual reptiles and populations of reptiles are safeguarded during the works. This is likely to include: • Habitat Enhancement Creation and Management plans to be evolved with the detailed design and phasing of the proposed Development • Detailed Reptile Mitigation Strategies will be required to be evolved with the detailed design and timing of the proposed Development. An outline reptile mitigation strategy is presented in ES Appendix 7.18. • Habitat manipulation to displace reptiles into retained habitats adjacent to habitats to be removed; and • Manual capture and translocation of reptiles from areas to be lost into retained / enhanced habitats. It is likely that there will need to be a suite of enhancement conducted to ensure that areas identified for reptiles to be translocated into are prepared for the translocation ahead of the translocation commencing. It is also likely that a suite of monitoring and maintenance works will be required in relation to the proposed Development.
Fish	To ensure the quality of the water environment does not deteriorate during construction, a Code of Construction Practice (CoCP) will be produced and implemented. This will document best practice construction methodologies and describe procedures for the management of environmental impacts during construction, including a Pollution Control Plan, to safeguard the quality of surface water during the construction phase. Method statements will be prepared, and activities will be managed and monitored, to include the following best practice measures: • Avoiding the storage of any potentially polluting materials in close proximity to any water bodies, including stockpiles of soil to reduce potential for sedimentation. Where this is not possible works will be undertaken in accordance with approved method statements and in accordance with environmental permitting requirements / restrictions in order to safeguard the water environment; • Soil stripping managed to ensure the minimum area of exposed soil at any one time; • Fuels and chemicals will be stored, and refuelling will take place within bunded areas to prevent leakage, and these will be located away from waterbodies. Drainage from these areas will incorporate an isolation facility such that the outlet could be sealed in the event of a spill • Provision made for water treatment to remove sediment before discharge to a surface water feature • Concrete will be laid only following the suitable preparation of the ground surface and temporary shuttering used to contain potential leaks

Species	Additional construction mitigation
	• Designated washing out areas will be set up for concrete lorries with impermeable liners to protect the soil and groundwater below, and • Waste water generated from the construction compound(s) will be disposed of via appropriate means, for example pumped out and removed from site by tanker. An emergency spillage response plan will document measures to be implemented to prevent pollutants infiltrating into the soils beneath the site and reaching surface water receptors. Appropriate equipment (e.g. absorption mats) will also be made easily accessible on site to deal with accidental spillages and the plan will also provide a full list of protocols and communication channels with the EA in the event of an accidental pollution incident. Should any pollution incidents occur, the EA incident hotline will be called immediately in tandem with dealing with any spillages. To promote the sustainable use of water resources, measures will be implemented to promote general water use efficiency and particularly to reduce the use of potable water. Examples include rainwater harvesting to provide water supply for the construction welfare facilities and for use in dust suppression, the collection of greywater for use in wheel washing facilities and leakage prevention.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments and caveats
Coppiced stool translocation													Optimal in autumn to winter (September to February) when growth is dormant.
Turf translocation													Optimal in autumn (September to November) when growth is dormant. Can be done throughout rest of year.
White-clawed crayfish													Crayfish translocation July to October. Do not carry out work late May to June, when females are carrying eggs or young.
Great crested newts *(breeding ponds works)*													Dry autumn and early winter conditions are best for breeding pond management (September to November). No management to ponds when newts in aquatic phase, and/or approaching/leaving ponds.
(terrestrial habitat works)													Vegetation clearance and destructive searches when newts above ground and active (March to late October), and most appropriate when in breeding ponds (mid-March to mid-June).
(displacement, trapping and translocation)													Trapping in ponds mid-March to mid-June. Drift fencing and pitfall trapping, and hand and destructive searching on land March to October.
Reptiles *(displacement, trapping and translocation)*													Displacement, capture and translocation only when reptiles above ground and active (March to late October); recommended that captures should stop one month before hibernation i.e. in mid-September.
(vegetation and ground clearance)													Vegetation clearance, hand and destructive searches when reptiles above ground and active (March to late October). Above ground scrub clearance only during hibernation period (November to mid-March).
Nesting birds													No disturbance or damage to nesting birds and adjacent habitat during nesting season. N.B. some species (e.g. pigeons) will breed outside of the accepted breeding season.
Water voles *(trapping and translocation)*													Trapping preferably in spring (March to mid-April), or in autumn 1mid-September to end of November (may require over-wintering voles in captivity). No trapping during peak breeding season (mid-April to mid-September) (except in very exceptional circumstances) or during winter (December to February).
(displacement)													Displacement by vegetation clearance on water courses <= 50m long, between mid-February to mid-April.
Dormice *(translocation)*													Capture April to July. Release mid-June to end of July.
(displacement and vegetation clearance)													Clear above ground-level vegetation for areas up to 1.5ha in winter (November to March); also optimal coppicing season. Remove roost and stumps May to August. Small areas of vegetation (<50m²) or hedgerows may be cleared in summer (May and late September) for displacement.
Bats *(summer roosts)*													Work on summer roosts between November to February.
(maternity roosts)													Works on maternity roosts between November to April.
(hibernation roosts)													Work on hibernation roosts between March to October.
Badgers													Exclusion of badgers and sett closure/destruction only between July and end of November. Artificial setts can be constructed at any time of year.
Otters													No seasonal constraints on mitigation but breeding possible at any time of year which may restrict mitigation near breeding holts.

= optimum mitigation time
= mitigation sub-optimal
= mitigation not recommended / permitted

Image 7-3 Recommended / required mitigation timings

Additional Mitigation - Operational

7.4.53 As part of the operational mitigation the creation and evolution of the following various strategies will be required to mitigate the significant effects identified in Table 7-24:

- BAP evolution and monitoring (ES Appendix 7.20);
- Ecological Management Plan (EMP) creation (outlining the detail of the ongoing management of created and retained habitats;
- Detailed design evolution (particularly in relation to habitat creation and design of features for species); and
- Lighting Strategy.

Otterpool Park BAP

- A site BAP has been compiled (ES Appendix 7.20). This outlines the target communities for key habitats to be created and retained within the Otterpool site. This would be used to guide ongoing biodiversity management and mitigation during the operational phase of the proposed Development. The selection of the habitats listed in the site BAP is based upon:
- Habitats and targets listed in the Kent Biodiversity Strategy, especially those which support the aims of the Kent BOA (Biodiversity Opportunity Areas) statements, particularly the Mid Kent Greensand and Gault BOA statement.
- The habitats of value present and retained on the site within the proposed Development (particularly those which meet the criteria of habitats of principal importance in under Section 41 of the NERC Act (Ref. 7-19).
- The principal habitats listed on Section 41 of the WCA (Ref. 7-18) which it is appropriate to create within the site;
- Habitats known to support protected or notable species which are present / have the potential to be present within the proposed Otterpool Park development site.

7.4.54 During the operational phase, impacts to retained and newly created habitats are largely minimised through detailed GI design to focus recreational impacts (i.e. from trampling, disturbance etc.) in certain areas and to minimise impacts to other areas, utilising topography, habitat and fencing to control recreational pressures.

7.4.55 As the proposed Development progresses, it will be necessary to manage and monitor the habitats created on the site. An overview of the management and mitigation is provided within the Otterpool BAP (ES Appendix 7.20). This is a live document and would be updated throughout the proposed Development and lifetime of the operational phase of the Otterpool Park site.

Habitats listed within the Otterpool BAP

- Hedgerows;
- Neutral Grassland;
- Ponds and Ditches;
- Rivers.

Species listed with the Otterpool BAP

- Bats (all species recorded within the surveys);
- Reptiles (common species);

- Water Vole;
- Otter;
- Terrestrial invertebrates;
- Hazel dormouse;
- House sparrow;
- Kingfisher.

7.4.56 Table 7-32 details how operational mitigation is proposed to mitigate and significant adverse operational effects.

Table 7-32 Operational Additional mitigation

Receptor	Operational Mitigation
Habitats	Habitat design has been outlined in the BAP (ES Appendix 7.20), GI Strategy (ES Appendix 4.11), Species Mitigation Strategies (ES Appendix 7.18) and DAS (ES Appendix 4.16), however these will be progressed via detailed design. The habitats created will be managed via an Ecological Management Plan to achieve the target condition as outlined in the BAP. Monitoring will be required on a yearly basis to ensure that management is effective. Progressive updates of the EMP may be required to be reviewed following the monitoring reports.
Non-native invasive plants	Within the operation phase of the proposed Development, it will be necessary to control and eradicate non-native invasive species within the site. The approach to this will need to be specified within a Non-native Invasive Species Management Plan.
Invertebrates	In order to minimise operational impacts to retained and enhanced invertebrate populations. The following approaches would be implemented: • Green infrastructure must be designed in detail at the operational stage to limit human accessibility to the most sensitive areas, GI design will minimise impacts to these areas, utilising topography, habitat and fencing to control recreational pressures. The success of this will need to be monitored. • Buffers will be maintained around retained and created notable invertebrate areas; It is imperative that the long-term management of the habitats (both retained and created) be agreed before the proposed Development. This will need to be specified in a management plan at the appropriate time in the planning process, likely within an EMP (Ecological Management Plan) prior to any parcel of the proposed Development being developed. The Otterpool Park BAP (ES Appendix 7.20) will specify broad target for species and groups, including invertebrates. This will drive future management and conservation actions. It is envisioned that this will be alive document, to be updated with input from key stakeholders, including the town's residents.
Badger	During the operational phase of the proposed Development, a number of approaches will be employed to limit impacts to badger populations. Where areas which are of key importance for badgers are identified, the design of the proposed Development limits human activity in these areas. This includes ensuring that key corridors remain unlit. In addition, during the detailed planning process for each of the proposed Indicative phases, it will need to be determined what management and monitoring will be required in relation to badgers in these areas. This is likely to include: • Maintenance of mitigation features created, including setts (if applicable); • Maintenance of any tunnels or crossings installed, and associated badger fences (to limit road deaths); • Monitoring of any impacted setts, particularly using remote camera and badger bait marking techniques.

Receptor	Operational Mitigation
Bats	In order to minimise the potential for operational impacts to the bat populations within the site, measures will be implemented to minimise these impacts. These are likely to include: • Implementation and maintenance (in line with current practice) of a suitable lighting strategy, ensuring that dark corridors and areas important for foraging bats are kept dark; and • Features being installed to limit access by humans in areas where disturbance may adversely impact bats. This could include fences or carefully deployed SuDS features, if required. Maintenance and monitoring will be required of any retained or created habitats, including roosts. An outline of the desired outcomes for the monitoring and maintenance is provided within a site BAP (ES Appendix 7.20). As each proposed phase is brought forward for development, detailed strategies will be required for creation, management and maintenance of the habitats created will be required (this is beyond the remit of this document).
Dormouse	Post construction, certain measures could be taken to encourage dormouse to colonise the available habitat including: • The Otterpool BAP includes dormouse as a priority species. An Ecological Management Plan will be produced to ensure that targets set in the Otterpool BAP can be achieved; • Maintaining high species diversity within woodland areas, a mixture of scrub and trees which are well linked. This could be achieved by appropriate planting, coppicing, thinning and felling; • Maintenance of hedgerows to ensure sufficient connectivity between suitable habitats. This might be achieved by small scale pruning and coppicing. It should be noted that the level of maintenance required often depends on the dominant species present within the hedgerow as different species take different amounts of time to flower/fruit. • The provision and maintenance of nest boxes. This can increase the carrying capacity of the habitat, increasing population density. If not occupied by dormouse, then these boxes can be beneficial to a range of other wildlife.
GCN	In order to minimise operational impacts to retained and enhanced GCN populations, likely to be predominantly through human disturbance and impacts from domestic animals, the following approaches would be implemented: • Maintenance and monitoring will be required of any retained or created habitats. An outline of the desired outcomes for the monitoring and maintenance is provided within a site BAP (ES Appendix 7.20). As each proposed parcel is brought forward for development, detailed strategies will be required for creation, management and maintenance of the habitats created will be required (this is beyond the remit of this document). A broad outline of the locations of proposed habitat creation is provided within the mitigation strategies (ES Appendix 7.18).
Water vole	• In order to minimise impacts to water vole populations, likely to be predominantly through human disturbance and impacts from domestic animals, the following approaches would be implemented: • Buffers will be maintained around water vole areas to limit impacts from humans and pets; • Complexity of existing and new water bodies will be created and enhanced to provide refugia from predation by pets and non-naïve invasive species including strategic bankside vegetation.
Birds	Operational mitigation is proposed to safeguard and maximise the value of the proposed Development for nesting birds. This includes: • Maintaining high species diversity within woodland areas, a mixture of scrub and trees which are well linked. This could be achieved by appropriate planting, coppicing, thinning and felling;

Receptor	Operational Mitigation
	• Maintaining species rich grassland to provide optimal foraging habitat; • Maintenance of hedgerows. This could be achieved by small scale pruning and coppicing. It should be noted that the level of maintenance required often depends on the dominant species present within the hedgerow as different species take different amounts of time to flower/fruit; • The provision and maintenance of appropriate nest boxes. This can increase the carrying capacity of the habitat, increasing population density. Within the design barn owl nest boxes should be erected, however only a small number are likely to be required (five is recommended at this stage, this may increase if nests are found within trees to be removed). These should be located at least 1km from the M20, locations along the southern and western boundaries of the site is recommended as this will enable any pairs utilising these boxes to forage in retained habitats in the south and west of the proposed Otterpool Park development and on off-site habitats. Targets for the maintenance and monitoring of actions for birds are specified within the Otterpool site BAP (ES Appendix 7.20). In addition, during the operation phase, impacts to retained and newly created habitats would be minimised through GI design to focus recreational impacts in certain areas and to minimise impacts to other areas, utilising topography, habitat and fencing to control recreational pressures.
Invertebrates	In order to minimise operational impacts to retained and enhanced invertebrate populations it is imperative that the long-term management of the habitats (both retained and created) be agreed before the proposed Development.. The Otterpool Park BAP (ES Appendix 7.20) will specify broad target for species and groups, including invertebrates. This will drive future management and conservation actions. It is envisioned that this will be alive document, to be updated with input from key stakeholders, including the town's residents.
Reptiles	In order to minimise operational impacts to reptile populations, likely to be predominantly through human disturbance and impacts from domestic animals, areas around retained and created reptile areas to limit impacts from humans and domestic animals. Maintenance and monitoring will be required of any retained or created habitats. An outline of the desired outcomes for the monitoring and maintenance is provided within a site BAP (ES Appendix 7.20). As each proposed parcel is brought forward for development, detailed strategies will be required for creation, management and maintenance of the habitats created will be required (this is beyond the remit of this document). A broad outline of the locations of proposed habitat creation is provided within the mitigation strategies (ES Appendix 7.18).

7.5 Assessment of Residual Effects

7.5.1 This section of this ES Chapter presents the assessment of the effects of impact pathways which have the potential to result in significant residual effects, following the implementation of embedded and additional mitigation measures proposed. It contains the following sections outlining the residual effects:

- Designated Sites
- Habitats
- Species
- Assessment of Ecosystem effects
- Assessment of Cumulative effects

7.5.2 Within this section of the ES, a summary of the assessment is presented. Assessment tables listing the details of the assessment are presented in ES Appendix 7.1, along with additional information where a detailed assessment is required (for example for air quality impacts).

7.5.3 Details of the valuation of each of the features assessed is presented in Appendix 7.1 Table 13.

Assessment of Residual Effects – Designated Sites

7.5.4 Within this section, the assessment of effects in relation to designated sites is presented. This contains both Construction and Operational effects, as for Designated sites the impact pathways are comparable between these project stages.

Hydrological and Hydrogeological Disruption (Construction and Operation)

7.5.5 Three designated sites are located within the hydrological ZoI of the proposed Development, namely Lympne Escarpment SSSI, Harringe Brooks Wood (LWS and Ancient Woodland) and Folks Wood (LWS and Ancient Woodland). Impacts to these sites are avoided through design mitigation:

- Lympne Escarpment lies to the south of the site, and the drainage for the site is to flow to the north-west, controlling the potential for impacts.
- Harringe Brooks Wood is off-site to the immediate the south-west of the site, and drainage from this woodland area flows north through the site to the East Stour. This drainage is to be retained and buffered. No significant effects upon the hydrology of this woodland are considered likely.
- Folks Wood is off-site to the immediate east of the site. The drainage of the site flows to the west away from this development. It is not considered that the proposed Development has the potential to impact upon the hydrology of the site.

7.5.6 For each of these sites, a negligible / neutral magnitude impact upon features of up to national importance therefore the residual effect is identified as **not significant**.

Recreational Impacts (Operation)

7.5.7 Recreational usage of designated sites, including dog walking and other usage has the potential to impact upon a range of designated sites, especially those supporting an assemblage of fauna which is sensitive to recreational disturbance (Gibbins Brook, Harringe Brooks Wood, Lympne Escarpment and Kiln Wood – Ancient Woodland and LWS). Recreational use of sites can also cause trampling and other effects such as littering.

7.5.8 Within the proposed Development, extensive areas of high quality public open space are being created for dog walking and recreation, to control recreational impacts upon adjacent and nearby designated sites. This includes the routing of footpaths away from certain sensitive adjacent areas (such as Harringe Brooks Wood LNR and Ancient Woodland) to prevent recreational impacts. It is considered that the two designated sites adjacent to the proposed Development (Harringe Brooks Wood and Kiln Wood, both LWS and semi-natural Ancient Woodlands on the AWI), will remain private and public access to these areas will be discouraged.

7.5.9 Access will be discouraged to Harringe Brooks Woods, through a 50m buffer area around the woodland which uses planting and topography to discourage access. For Kiln Wood, moving the A20 road away from the woodland will reduce disturbance of the broad-leaved woodland that supports the Ancient Woodland. The positioning to the A20 realignment between the proposed Development and the woodland will discourage access to this woodland.

7.5.10 Details of the assessment of recreational impacts upon international designated sites are presented within the HRA Stage 1 and Stage 2 report (ES Appendix 7.19). In summary, no significant effects are considered likely resulting from the proposed Development, and no further assessment (beyond HRA Stage 2) was considered necessary.

7.5.11 For each of these sites, a negligible / neutral magnitude impact upon features of up to national importance therefore the residual effect is identified as **not significant**.

Pollution (air quality)

7.5.12 Impacts upon air quality, including impacts from traffic relating to the proposed Development are fully quantified within ES Chapter 6: Air Quality. Folks Wood LWS and Ancient Woodland are predicted to experience an increase in nitrogen deposition which exceeds 1% of the site-specific lower critical load in 2024, 2030 and 2044.

7.5.13 At all other designated sites impacts are below 1% of the relevant critical load until 2044 when several sites show an increase in nitrogen deposition greater than 1% of the relevant lower critical load. Full details are presented in ES Chapter 6 Air Quality. In summary, the sites exceeding the 1% in 2044 are as follows:

- Folks Wood AW;
- Lympne Escarpment SSSI;
- Folkestone to Etchinghill SSSI/SAC (10m Grid);
- Folkestone to Etchinghill SSSI/SAC (Transect);
- House Wood AW;
- Perry Wood AW;
- Bartholomew's Wood AW;
- Cowtye Wood AW;

- Grange Alders/Oak Banks AW.

7.5.14 As outlined in Appendix 7.1, Section 3, when assessed, there is negligible likelihood of an impact upon the identified designated sites resulting from changes in air quality.

7.5.15 The increase in NOx and nitrogen deposition predicted in 2044 is also likely to be highly pessimistic since the air quality predictions assume no air quality improvements between 2030 and 2044. In all future baselines, due to the predicted use of electric vehicles the total NOx will actually decrease in real terms. This is anticipated to result in the actual deposition rates in 2044 to be less than predicted, which is already relatively small in the worst-case scenario for most of the designated sites; any elevated nitrogen deposition rates are likely to be minor and constrained to within 20m of a road; in the context of the designated sites' integrity and features of interest within the overall designated area, effects are considered likely to be not significant.

7.5.16 For each of these sites, a negligible / neutral magnitude impact upon features of up to international importance therefore the residual effect is identified as **not significant**.

717273Pollution - water quality (Construction and Operation)

7.5.17 The predominant potential sources of pollution are via water pollution. The design of the site, including SuDS and other features should ensure that this operational risk is controlled. This is outlined in the Surface Water Resources and Flood Risk Chapter of the ES (Chapter 15) and within the Water Framework Directive (WFD) Screening Assessment (Chapter 15).

7.5.18 Nitrate issues with regards to Stodmarsh SAC, SPA and Ramsar Site were raised. An onsite plan to address nutrient issues has been designed and is outlined in Chapter 15 Surface Water Resources and Flood Risk. This is not considered a residual impact.

7.5.19 Potential issues with regards to road runoff impacts upon Lympne Escarpment were raised by Natural England in repose to the 2019 submission. The site is not directly or hydrologically linked to the Lympne Escarpment as the existing surface and groundwater flow routes are to the north and north-west direction towards the River East Stour. No new built-development is currently proposed at the southern portion of the existing site adjacent to the Roman Road B2067, which can direct additional surface or groundwater flows towards the Lympne Escarpment at the south. There are no upgrades planned to B2067 Road as part of the proposed Development, which can increase surface runoff. The proposed onsite SuDS system within Otterpool Park will closely mimic the existing drainage patterns and the runoff from the proposed Development is captured, treated and discharged through a full SuDS management train, which will ultimately drain the excess surface runoff to the north and north-west towards the River East Stour. Therefore, there is no impact pathway between B2067 road runoff or other hydrological pollutants that can adversely impact the Lympne Escarpment.

7.5.20 The habitats for which Lympne Escarpment is designated are suitably distanced from the road that road spray in heavy train has no potential to impact upon these habitats.

7.5.21 For each of these sites, a negligible / neutral magnitude impact upon features of up to national importance therefore the residual effect is identified as **not significant**.

Disturbance from development (Construction and Operation)

7.5.22 Direct disturbance has the potential to affect designated sites through noise, light and visual disturbance. The designated sites which have the potential to be directly impacted are Harringe Brooks Wood (LWS and Ancient Woodland) and Kiln Wood (LWS and Ancient Woodland). These impacts are controlled through buffering and retention of these sites as a private area. Full details of this are presented in ES Appendix 7.1.

7.5.23 For each of these sites, a negligible / neutral magnitude impact upon features of up to national importance therefore the residual effect is identified as **not significant**.

Predation and disturbance from domestic animals (Operation)

7.5.24 Buffers have been integrated into the design around the key areas for ecological receptors, particularly Harringe Brooks Wood and Kiln Wood (LWS and Ancient Woodland). The buffer area around Harringe Brooks Wood is a minimum of 50m of semi-natural habitat with a mixture of permanent grassland, trees and water features to deter frequent access by domestic animals. There will be a new road between the site and Kiln Wood, which will also deter access by domestic animals. This is realigned to be further from the woodland. Full details of this are presented in ES Appendix 7.1.

7.5.25 The wildlife area to the north-west of the site will be a designated 'no dogs' area. This will be controlled through signage. Impacts from dogs will be further controlled through the layout of this area, with the water features (proposed for habitat creation and water quality attenuation) making this area unsuitable for dog exercising. Fenced areas within the major open spaces will also safeguard other areas from dogs. Full details of buffer sizes and specifications are presented in ES Appendix 7.1, Table 7 and Table 8.

7.5.26 For each of these sites, a negligible / neutral magnitude impact upon features of up to national importance therefore the residual effect is identified as **not significant**.

Assessment of Residual Effects – Habitats

7.5.27 The design of the masterplan has been considered in line with the mitigation hierarchy to limit impacts to important ecological receptors. As outlined above, habitats which are assessed as being of high value are preferentially retained within the proposed Development, and will be enhanced where appropriate. Overall, approximately 50% of the proposed Development area is GI, both retained habitats and newly created GI areas (see ES Appendix 7.1 for further detail). Details of habitat buffers are provided within ES Appendix 7.1. The design mitigation employed to minimise / prevent impacts to habitats are outlined in Section 7.4 and the additional mitigation is presented in Section 0.

7.5.28 Further detail of the design mitigation is presented in the Biodiversity Net Gain Report (ES Appendix 7.21) and the design of buffer habitat is presented in the DAS (ES Appendix 4.16) (Design and Access Statement accompanying the Application). The buffers are secured in the Development Specification (ES Appendix 4.1) and full details presented in ES Appendix 7.1.

7.5.29 The planting within the buffers also contributes to the proposed Development being able to achieve quantifiable net gain, as described within ES Appendix 7.21.

7.5.30 Multiple large areas of green space have been incorporated into the proposed masterplan which would provide habitats of benefit to biodiversity. Overall, approximately 50% of the proposed OPA site is identified as GI, both retained habitats and newly created GI areas. The detailed design of these open spaces will evolve at Tier stages 2-3. However, within these areas of substantial green space

there will be areas that would support Section 41 habitats and species, which is presented in the mitigation strategies for protected species and within the GI Strategy (ES Appendix 4.11). Habitats proposed to be created include: Orchards; Hedgerows; Ponds and Lowland meadows, tree planting and scrub and additional ditches. These habitats would provide conditions suitable for the Section 41 species that have been recorded on the site and those that may colonise the site in the future, particularly amphibians, including common toad and great crested newt; reptiles, including common lizard, grass snake; mammals including hedgehog, bats (soprano pipistrelle, brown long-eared bat, noctule); and invertebrates.

7.5.31 The key areas within this GI for ecology are listed in ES Appendix 7.1. Where these habitats are to be created as mitigation for impacts to a particular species, these are described in ES Appendix 7.18. Integrated GI and artificial habitat to be included within the proposed built development areas are presented in ES Appendix 7.21. An overview of the GI to be created on the site is presented in Figure 7 in ES Appendix 7.1.

7.5.32 The valuation of habitats ranges from local/site to national value, and the magnitude of positive change in overall habitat value following mitigation is considered to be medium beneficial. Therefore, there is likely to be a direct, permanent, long-term moderate (significant) beneficial effect on habitats following the implementation of mitigation measures. On a habitat-by-habitat basis, additional areas of notable and S41 habitats will be created and following this there are assessed to be no residual adverse effects upon any individual habitat types. In addition, there is evidenced potential for an overall gain in biodiversity value of habitats. This is evidenced by the Biodiversity Net Gain assessment presented in ES Appendix 7.21.

7.5.33 The presence of non-native invasive plants impacts upon habitats whos value ranges from local/site to county value, and the magnitude of positive change in overall habitat value following mitigation to address the presence of invasive plants is considered to be medium beneficial. Therefore, there is likely to be a direct, permanent, long-term moderate (significant) beneficial effect on habitats following the implementation of mitigation measures for invasivcve plants.

Assessment of Residual Effects – Species

7.5.34 This section presents the assessment of residual effects in relation to species, where further clarity on the residual effects has been identified through additional assessment. The assessment presented below is a summary of the residual effects assessment for species. The full assessment of all ecological features is presented in ES Appendix 7.1. Each key species receptor is listed in Table 7-33 below. This impact assessment assumes that all mitigation outlined in Section 7.4 (embedded design measures and additional mitigation) is applied.

7.5.35 Where potential for residual significant effects is identified, offsetting approaches are proposed where appropriate. The offsetting approaches which are proposed are outlined in Section 7.9.

Table 7-33: Summary of impact assessment on Species

Receptor	Geographical importance of ecological feature (as outlined in Table 7-6	Potential Impact	Residual Effects (full details in ES Appendix 7.1)
Wintering Birds (Assemblage)	County An assemblage of wintering birds was recorded, but the species recorded and number of birds present did not suggest that the population was of greater than county importance (however, the site is within a mosaic of excellent habitats for wintering birds)	Disturbance (noise, lighting) Loss of foraging habitats Increased predation (from domestic animals)	Potential residual significant adverse effects identified in the construction and operation phase – offsetting required as identified in Section 7.9. In the absence of offsetting there is potential for a Moderate Adverse residual effect (Medium Impact upon a county importance receptor), which would be **significant**.
Breeding Birds	County An assemblage of breeding birds was recorded, but the species recorded and number of birds present did not suggest that the assemblage was of greater than county importance (however, the site is within a mosaic of other excellent habitats for breeding birds)	Disturbance (noise, light) Disturbance from recreation Loss of nesting habitats Loss of foraging habitats Increased predation (from domestic animals)	Potential residual significant effects identified in the construction and operation phase – offsetting required as identified in Section 7.9. In the absence of offsetting there is potential for a Moderate Adverse residual effect (Medium Impact upon a county importance receptor), which would be **significant.**
Farmland Birds (Assemblage)	County	Disturbance (noise, light) Disturbance from recreation Loss of nesting habitats Loss of foraging habitats Increased predation (from domestic animals)	Potential residual significant effects identified in the construction and operation phase – offsetting required as identified in Section 7.9. In the absence of offsetting there is potential for a Moderate Adverse residual effect (Medium Impact upon a county importance receptor), which would be **significant**.
Barn Owl	Local Presence of barn owl was recorded in a single location within the site. Only 18% of the site offers 'optimal' or 'suboptimal' habitat for barn owl and The presence of the M20 to the immediate north of the site reduces the value of the site for barn owl.	Disturbance (light and noise) Loss of foraging habitats Loss of nesting and roosting habitats Increased road mortality.	Potential residual significant effects identified in the construction and operation phase – offsetting required as identified in Section 7.9. In the absence of offsetting there is potential for a Minor Adverse residual effect (Medium Impact upon a local importance receptor), which would be **not significant.**
Kingfisher	County	Disturbance (light and	Once the design and additional

Receptor	Geographical importance of ecological feature (as outlined in Table 7-6	Potential Impact	Residual Effects (full details in ES Appendix 7.1)
	Two areas where kingfisher were recorded were found within the site. However, this species is relatively widely recorded within Kent (229 records from within the vicinity of the site), therefore the importance of this receptor is considered to be Local only.	noise) Loss of foraging habitats Loss of nesting habitats Increased predation (from domestic animals)	mitigation is applied, there is considered to be a negligible magnitude impact upon a feature of county importance, therefore **there is a not significant** residual effect in the construction or operation phase.
Bats	Local to County Within the site, the assemblage of bats was assessed as being limited, with only relatively common and widespread species being recorded within the site. Activity levels were not exceptionally high when assessed using the 'ecobat' methodology. Areas of high activity were largely isolated to heterogeneous areas within the wider homogenous arable landscape. Roosts were largely limited to common and soprano pipistrelle roosts, with one brown long-eared bat maternity roost recorded. As a result, bats are assessed as being of Local importance with the exception of the brown long eared bat roost distinct foraging and commuting areas which are assigned County importance	Direct mortality Loss or reduction value of foraging habitats Loss or reduction value of commuting routes Disturbance (light and noise) Loss of roosting habitats Increased predation (from domestic animals)	Once the design and additional mitigation is applied, there is considered to be a negligible / neutral magnitude impact upon a feature of up to county importance, therefore a **not significant** residual effect in the construction or operation phase is foreseen.
Water vole	County A largely small population of water voles was recorded within the site and ZOI of the proposed Development, with	Direct mortality Loss and degradation of habitats Pollution Disturbance (light and noise)	Once the design and additional mitigation is applied, there is not considered to be any residual significant effects from the majority of impact pathways There is considered to be a residual effect from disturbance and predation by domestic animals in the

Receptor	Geographical importance of ecological feature (as outlined in Table 7-6	Potential Impact	Residual Effects (full details in ES Appendix 7.1)
		Increased predation (from domestic animals)	operational phase. This is considered to be a low magnitude impact upon a feature of county importance and is therefore **not significant**.
Badger	Local / site	Direct mortality (through works) Increased mortality on roads Increased persecution Loss or reduction value of foraging habitats Loss or reduction value of commuting routes Disturbance (light and noise)	Once the design and additional mitigation is applied, there is not considered to be any residual significant effects from the majority of impact pathways There is considered to be a medium magnitude Adverse effect upon a local /site value ecological feature resulting in a minor adverse effect from loss of foraging habitat, and increased road mortality in the construction and operation phase. This is **not significant**.
Common Reptiles	Local / site	Direct mortality Loss or reduction value of foraging habitats Loss or reduction value of connectivity Disturbance (light and noise) Loss of hibernation features and places of shelter Increased predation (from domestic animals)	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Great crested newts	Local / site	Direct mortality Loss of ponds for breeding Loss or reduction value of foraging habitats Loss or reduction of connectivity Disturbance (light and noise) Loss of places of shelter or hibernation Increased predation (from domestic animals) Increase mortality on roads and in gully pots	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.

Receptor	Geographical importance of ecological feature (as outlined in Table 7-6	Potential Impact	Residual Effects (full details in ES Appendix 7.1)
Otter	County	Loss or reduction value of foraging habitats Loss or reduction value of commuting routes Disturbance (light and noise)	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of county importance which are therefore **not significant** residual effects in the construction or operation phase
Hazel dormouse	County	Disturbance / impact from domestic animals Loss of habitat Fragmentation Direct Mortality	Once the design and additional mitigation is applied, there is not considered to be any residual effects from the majority of impact pathways There is considered to be a low magnitude residual effect from disturbance and predation by domestic animals n a feature of county importance. This is a **not significant** effect.
Invertebrates (terrestrial)	Local / site	Direct mortality Loss or reduction in value of notable habitats Reduction in availability of food for pollinators	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Fish	Local / site County for eel within the East Stour River	Loss of habitats Habitat modification Direct mortality Reduction in value of notable features (pollution etc).	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Invertebrates (Aquatic)	Local / site	Loss of habitats Reduction in value of aquatic features (pollution etc).	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Invertebrates (Aquatic) – White Clawed Crayfish	N/A – SCOPED OUT	N/A not considered present on site or within ZOI of the proposed Development	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Brown hare	Local Only very low numbers of hare observed. Hares are	Loss of foraging and breeding habitats	There is minimal opportunity to mitigate for this species group. After design and additional mitigation, prior

Receptor	Geographical importance of ecological feature (as outlined in Table 7-6	Potential Impact	Residual Effects (full details in ES Appendix 7.1)
	widespread within Kent, therefore the population is assessed as being of Local value only.	Increased persecution Direct mortality	to the application of the offsetting, this is a medium magnitude of impact on a local importance receptor resulting in a minor adverse residual effect, which is **not significant.** Offsetting for birds will address this residual effect in Section 7.9.
Common Toad	Local / site Toad were recorded across the site, largely in the vicinity of the	Direct mortality Loss of ponds for breeding Loss or reduction value of foraging habitats Loss or reduction of connectivity Disturbance (light and noise) Loss of places of shelter or hibernation Increased predation (from domestic animals) Increased mortality on roads	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Hedgehog	Local / site	Direct mortality (during construction) Direct mortality (on roads) Loss or reduction value of foraging habitats Loss or reduction of connectivity Disturbance (light and noise)	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.
Harvest Mouse	Local / site	Direct mortality Loss or reduction value of foraging habitats Loss or reduction of connectivity	Once the design and additional mitigation is applied, there is considered to be negligible / neutral impacts upon a feature of local / site importance which are therefore **not significant** residual effects in the construction or operation phase.

Assessment of Residual Effects – Ecosystem Services

7.5.36 This section broadly describes the design and net change in ecosystem typologies and the direction of change in ecosystem services with further detail presented in ES Appendix 7.22. Where mitigation is specified elsewhere within this ES or associated

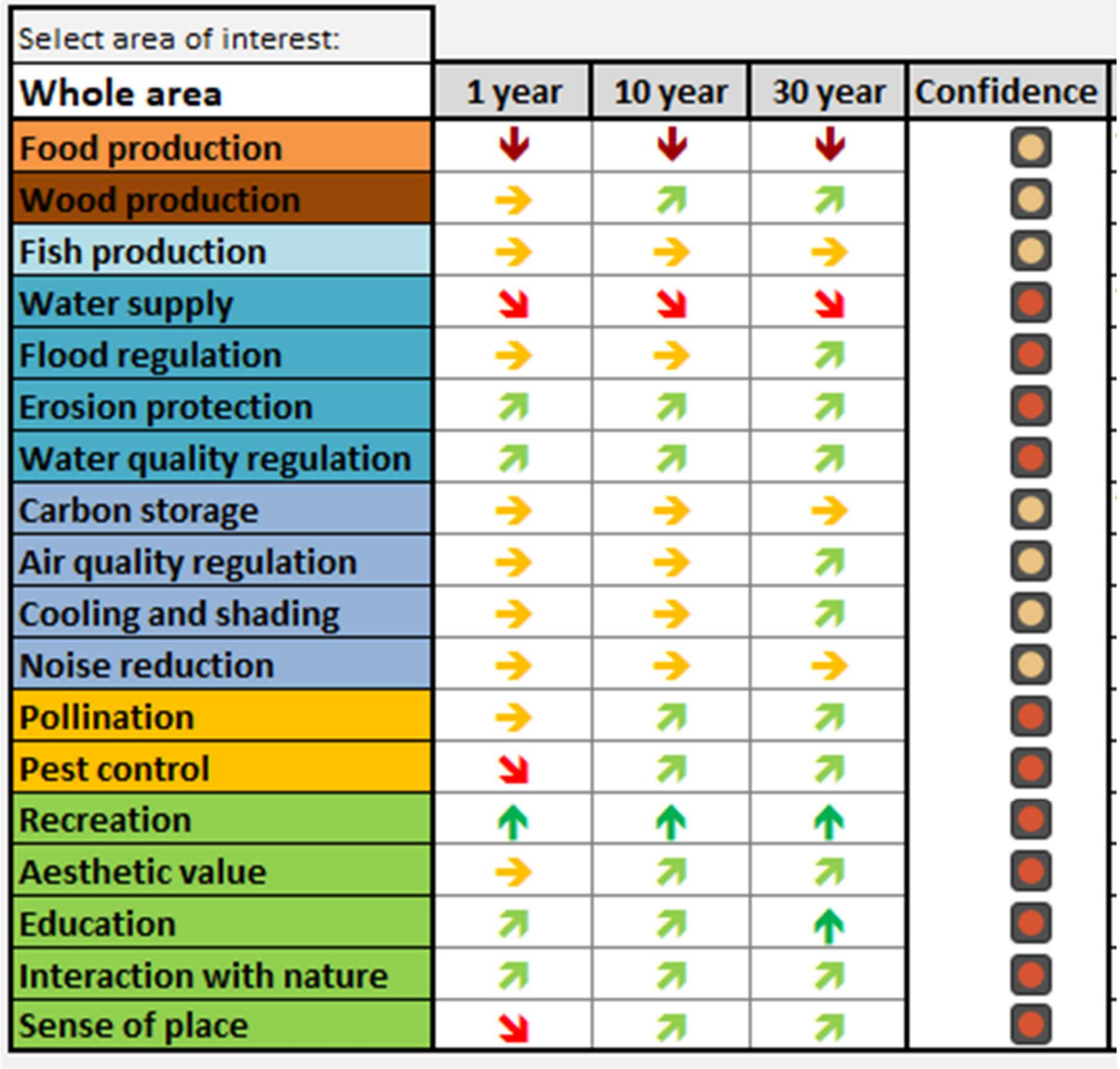
documents, it is cross-referenced in the table. Table 7-34 provides a breakdown in the broad habitat changes which the development may result in and Table 7-35 provides a summary of the potential impact of the project upon ecosystem services. Out of 20 'benefits' considered (the goods and services provided to humanity by the natural environment), nine of these are likely to increase in qualitative terms, five with no change and six a potential Adverse impact. The largest likely Adverse impacts are due to a loss in farmland and tranquillity but likely substantial increases for biodiversity (approximately 20%), health and tourism due to the proposed Development design. In addition, a quantitative assessment of ecosystem service impacts was conducted using the Environmental Benefits from Nature (EBN) Tool. This is reported in full in ES Appendix 7.22, the results were largely comparable to the qualitative assessment. A summary of the outputs from the EBN tool is presented in Image 7-4 – the estimated change in provision is presented by the direction of the arrows.

Table 7-34: Ecosystem services typologies areas of the OPA after development

Habitat group	Existing area (ha)*	Change in area (ha)	Area After (ha)*
Cropland	306.98	-306.98	0
Grassland	237.74	-58.97	178.77
Heathland and shrub	3.34	20.91	24.25
Lakes and wetland (not including the River East Stour as under the area calculation methodology (BM3.0) this is a linear feature and does not add to the total area	2.74	18.5	21.24
Sparsely vegetated land	3.87	-3.87	0
Urban	18.46	266.29	284.75*
Woodland and forest	16.2	64.13	80.33

* This will contain some GI (gardens, street trees, SuDS biodiversity roofs etc.) but this cannot be accurately quantified at this stage.

Image 7-4: Summary of Ecosystem changes as a result of the development as calculated by the EBN Tool



Select area of interest:				
Whole area	**1 year**	**10 year**	**30 year**	**Confidence**
Food production	↓	↓	↓	
Wood production	→	↗	↗	
Fish production	→	→	→	
Water supply	↘	↘	↘	
Flood regulation	→	→	↗	
Erosion protection	↗	↗	↗	
Water quality regulation	↗	↗	↗	
Carbon storage	→	→	→	
Air quality regulation	→	→	↗	
Cooling and shading	→	→	↗	
Noise reduction	→	→	→	
Pollination	→	↗	↗	
Pest control	↘	↗	↗	
Recreation	↑	↑	↑	
Aesthetic value	→	↗	↗	
Education	↗	↗	↑	
Interaction with nature	↗	↗	↗	
Sense of place	↘	↗	↗	

Table 7-35: Summary of ecosystem service impacts change associated with the proposed Development.

Category	Ecosystem service	Type of benefits	Location of additional information (if applicable)	Assessment of Change (in the Operational Phase)
Provisioning	Food	Food for pollinators	Pollinators Strategy is defined within the GI Strategy (ES Appendix 4.11) in relation to the proposed Development).	Beneficial Owing to the extensive creation and/or enhancement of flower-rich habitat as part of the Scheme, in comparison to the relatively species-poor habitats due to be lost, a net gain in habitat for pollinators is expected. A pollinators strategy is provided within the separately provided GI Strategy (ES Appendix 4.11).
		Hay crop, Silage, Grazing pasture (cattle, sheep, horses)	None Management of farmland to increase biodiversity will be undertaken as an offsetting measure primarily for farmland birds, this may result in more sustainable and long-term increased productivity but productivity is not the primary aim of this mitigation. Details of loss of farmland are presented in ES Chapter 5 Agriculture and Soils.	Adverse All of the grassland area used for pasture will be lost. There will be an overall net loss of grassland of over 20%.
		Crop	None Management of farmland to increase biodiversity will be undertaken as an offsetting measure primarily for farmland birds, this may result in more sustainable and long-term increased productivity but productivity is not the primary aim of this mitigation. Details of loss of farmland are presented in ES Chapter 5 Agriculture and Soils.	Adverse There will be a loss of arable land. Allotments are being provided within the masterplan although they will provide a small amount of food they will be more of a recreational and health benefit.
		Fish	The mitigation for impacts to waterbodies is presented in the WFD (ES Appendix 7.22) and within the Habitats section of this ES Chapter.	No Change There is unlikely to be a significant effect on the abundance of fish.

Category	Ecosystem service	Type of benefits	Location of additional information (if applicable)	Assessment of Change (in the Operational Phase)
	Water	Water provision	N/A	No Change calculated in the water chapter (see evidence in Water Chapter – ES Chapter 15).
Regulating	Carbon	Carbon sequestration	Mitigation presented in Chapter 8 Climate Change of the ES.	Construction will result in an initial loss of carbon. However, when the habitat matures the permanent species rich grassland establishes and woodlands and the GI within proposed Development parcels is included there may be will provide a small increase in greater carbon sequestration potential. Timelines likely to be 30+ years. The Energy Strategy also outlines measures to further reduce carbon through onsite mitigation or off-site compensation/offsetting or sequestration.
	Climate	Climate regulation	Mitigation presented in Chapter 8 Climate Change of the ES.	Adverse / Neutral There will an increase in radiating heat due to the built environment. The GI integrated into the proposed Development parcels and the additional SuDS, hedgerows and woodlands will provide some mitigation but there is likely to be an overall increase in radiating heat.
	Water flow and flood regulation	Water flow regulation	Mitigation presented within ES Chapter 15 Surface Water Resources and Flood Risk.	No Change SuDS, woodland, hedgerows, species rich grasslands and GI within the built parcels with additional water drainage design will result in no net change in flow requirements. While the ecosystem services are not delivering 100% of the water purification, they will be delivering a greater degree than they are at the baseline scenario.
	Groundwater recharge	Groundwater recharge and quality	Mitigation presented within ES Chapter 15 15 Surface Water Resources and Flood Risk..	No Change SuDS and water drainage design will meet no net change in flow requirements

Category	Ecosystem service	Type of benefits	Location of additional information (if applicable)	Assessment of Change (in the Operational Phase)
	Water quality regulation	Water quality	Mitigation presented within the WFD (ES Appendix 7.22) and within Chapter 1515 Surface Water Resources and Flood Risk. of this ES.	Beneficial Water protection measures are designed to ensure no change in water quality in associated water bodies including SuDS, woodland, hedgerows, species rich grasslands, as detailed within the Water Framework Directive Screening report (ES Appendix 7.22). The water quality of the East Stour River will improve due to a reduction in inputs of agricultural chemicals including fertilisers and pesticides.
	Air quality regulation	Air quality	Mitigation presented in Chapter 6 Air Quality of this ES.	No Significant Change Whilst there would by some local decreases in air quality directly adjacent to the Scheme, there would be no noticeable change to the functioning of the notable receptors including identified within the Air Quality Chapter 6 of the ES.
	Human health regulation	Health and well-being	Green space design presented within the associated DAS (ES Appendix 4.16).	Beneficial A beneficial impact upon human health, through the provision of homes within an environment which encourages interaction with green spaces, sports and activity and healthy travel, including cycling and walking. Sports pitches are also being provided across the site. Allotments will provide recreational opportunities that are likely to contribute towards improved health due to activity and locally grown provisions.
Cultural	Science and education	Education	Proposals for natural play areas and access to SSSI presented within the associated DAS (ES Appendix 4.16).	Beneficial The provision of new educational resources would represent a net benefit with regard to science and education, including the proposed provision of Natural Play areas and increased access to the Otterpool Quarry SSSI. Port Lympne Safari Park is likely to be in greater use for educational purposes by the newly created schools and residential families.
	Tourism and recreation	Tourism	N/A	Beneficial The proposed Development proposes to enhance the setting of

Category	Ecosystem service	Type of benefits	Location of additional information (if applicable)	Assessment of Change (in the Operational Phase)
				Westenhanger Castle and it has the potential to become a tourist destination. Remains of a Roman Villa that are likely to be of high regional importance has been discovered during the cultural heritage surveys and may become a future tourist destination.
		Recreation	Proposals for recreational areas presented within the associated DAS (ES Appendix 4.16).	Beneficial A significant increase in the recreation value of the site are considered. Currently, there is minimal access to the site by the public. There will be a large increase in the availability of accessible greenspace, including a river park, town park, country park, green routes and play areas. Sports pitches are also being provided across the site.
	Sense of place and history	Cultural heritage and aesthetic amenity	Mitigation presented in Chapter 9 Cultural Heritage of the ES and within the Design and Access Statement.	Beneficial The proposed Development proposes to enhance the setting of Westenhanger Castle and open up views which has the potential to enhance its heritage value. Remains of a Roman Villa that are likely to be of high regional importance has been discovered during the cultural heritage surveys and may become a future tourist destination.
		Historical archaeological sites	Heritage Strategy	
		Tranquillity	Proposals for natural play and recreational areas are presented in the associated DAS (ES Appendix 4.16).	Adverse Although the tranquil setting was not enjoyed by a large number of people this sense of place and tranquillity will be Adversely impacted
Supporting	Biodiversity	Increased diversity of habitats, increased provision of habitats of	Mitigation outlined in this Chapter, Biodiversity Net Gain Report (ES Appendix 7.21) and the BAP (ES Appendix 7.20)	Beneficial Approximately 20% net gain using the Biodiversity Metric 3.0. This scheme design has been represented by GI typologies, each of which has associated habitat parameters detailed within the Biodiversity Net Gain Report. Any evolution of these parameters, through detailed design, must fulfil the required net gain and

Category	Ecosystem service	Type of benefits	Location of additional information (if applicable)	Assessment of Change (in the Operational Phase)
		valuable habitats for notable species.		ecosystem function as discussed within this Biodiversity ES Chapter and associated appendices.
	Non-Native Invasive Species	These will be eradicated from site, a dedicated Non-Native Invasive Species Management Plan	Mitigation outlined in this Chapter	Beneficial
	Soils	Soil quality	Completion of a Soil Resources Survey and incorporate results into a Soil Management Plan (SMP) which would be aligned to a Site Waste Management Plan. The SMP will ensure that soil is stripped, stored and generally managed to conserve its condition and will be reused onsite. Mitigation presented in ES Chapter 5 Agriculture and Soils.	Adverse There will be a loss of agricultural land as a result of the proposed Development. The quality of this land varies between Grade 2 to Grade 3 in the ALC (Agricultural Land Classification). Soils on the site include: • Freely draining slightly acid loamy soils; • Loamy soils with naturally high groundwater; • Freely draining slightly acid but base rich soils and slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

7.6 Assessment of Cumulative Effects

Introduction

7.6.1 This section outlines the assessment of cumulative effects from the proposed Development. Two aspects of cumulative effects are considered, intra project effects, i.e. the effects between multiple impact pathways from the proposed Development on a receptor, and inter project effects which are those of the proposed Development that interact with effects related to other consented schemes. The ZoI of other consented schemes in relation to the identified important ecological features is relatively small: only those with the likelihood to impact upon the important ecological features of the proposed Development are assessed within this section of the ES.

Intra-project effects

7.6.2 These impacts are generated by the project which may combine to contribute to a significant effect. For example, light and noise may combine to create a significant in-combination effect from two non-significant effects.

7.6.3 Within the proposed Development, mitigation measures are implemented to minimise each impact pathway to reduce effects to not significant. However, there is potential for impacts to combine to create significant effects.

Table 7-36: Intra project in-combination effects

Impacts which have the potential to have an in-combination effect greater than their individual impact (additive)	Ecological features which may be impacted	Assessment
Lighting, noise and recreational pressure	Fauna sensitive to disturbance including bats, hazel dormouse, reptiles and badgers.	The approaches employed to safeguard habitats for these species, ensuring that this effect is **not significant**.
Habitat loss and road mortality	Badgers have the potential to be impacted by a significant by an additive effect of these two impact pathways.	This is likely to be an in combination impact contributing to a **significant effect.**
Recreational pressure and air quality impacts	These two impacts may combine to have an in-combination effect upon designated sites.	As presented in the air quality assessment section above (Section 7.5), there is limited potential for any impact resulting from air quality impacts upon ecological receptors. In addition, recreational pressure will be limited due to the distance of the proposed Development from the majority of the designated sites and the lack of connectivity for recreational usage of these sites. In addition, the habitats most sensitive to air quality impacts have limited sensitivity or accessibility to result in recreational impacts. As such, this in-combination effect is not considered to result in a

Impacts which have the potential to have an in-combination effect greater than their individual impact (additive)	Ecological features which may be impacted	Assessment
		significantly increased overall effect.
Pollution impacts in-combination, including air and water quality	Habitats – sensitive habitats such as woodlands and riparian habitats.	Chapter 6Air Quality Chapter outlines that there will be no significant effects upon ecological receptors, and accounts for other consented developments. The Outline CoCP will control other pollution pathways. As a result, there is limited potential for an in-combination effect.

7.6.4 In summary, the only intra project cumulative effect which is likely to have an effect not assessed elsewhere in this assessment is the in-combination effect of road mortality and loss of foraging habitats on badger. However, this is a medium magnitude impact on a low value feature therefore the effect is still **not significant**.

Inter project effects

7.6.5 This section outlines the assessment of inter-project effects – i.e. the effects that may be additive or incremental in relation to other developments' impacts with that of the proposed Development.

Permitted Waste Facility

7.6.6 In relation to the scenario of the construction of the Permitted Waste Facility (SH/08/124), which is a consented scheme, a 250m green space buffer would be implemented and maintained, with the current land-use retained were this project to progress. With the exception of a proposed Development area (5.1) (presented in Development Areas and Movement Corridors ES Appendix 4.2) to the north of the proposed waste plant, the majority of the 250m buffer is designated as green space as part of the OPA, in both scenarios. The removal of the proposed developed area (5.1) and its retention as undeveloped green space would result in additional benefits for ecological receptors associated with the East Stour River and proposed parks, due to an increase in habitat (approximately 15ha) compared to the OPA in the absence of the waste plant.

7.6.7 The open space Parameter Plans (ES Appendix 4.2) in the future scenario with and without the waste facility are presented in ES Appendix 2.8 and 4.1 respectively.

7.6.8 As such, the future scenario where the Permitted Waste Facility is progressed would result in a lower impact upon ecological features than the proposed Development. As such, this ES Chapter, by assessing the future scenario without the Permitted Waste Facility is assessing a worst case scenario (in line with the precautionary approach in EIA).

7.6.9 With regards to Air Quality impacts from emissions, the SLR Consulting Environmental Statement (Referenced in ES Chapter 6) which accompanied the Permitted Waste Facility (PWF) at Otterpool Quarry included an aspirational plan to operate a gas combustion plant as a means of generating power and heat from excess gasses generated by the anaerobic digestion plant. Any emissions from this plant would need to be vented by a stack. However, the PWF ES was limited to a discussion of the applicable planning system and that for any operation of the plant

to occur, a Pollution Prevention and Control (PPC) permit would need to be sought from the Environment Agency (section 5.2 of Chapter 5 Air Quality Assessment). The ES served to defer any assessment of this plant to the point in time that the PWF site applicant would apply for a PPC permit. However, the PWF ES was limited to a discussion of the applicable planning system and that for any operation of the plant to occur, a Pollution Prevention and Control (PPC) permit would need to be sought from the Environment Agency (section 5.2 of Chapter 5 Air Quality Assessment). The ES served to defer any assessment of this plant to the point in time that the PWF site applicant would apply for a PPC permit. After the PWF ES was submitted, Kent County Council requested further modelling be undertaken which defined the likely quantitative impacts associated with the operation of the PWF. A further assessment (Ref 6.35) was carried out by SLR Consulting which quantified impacts of NO2 and PM10 at human and ecological receptors. The ecological assessment identified impacts at sites within 5km of the plant. The assessment demonstrated that process contributions were imperceptible (i.e. less than 1% of the air quality objectives/critical level) at all of the assessed human and ecological receptors. At the time of publication, it is understood that the PWF site applicant has not applied for a PPC permit. Should the applicant seek permission to operate, it is envisaged that they would employ Best Available Technology (BAT) measures to minimise any impacts as means of successfully gaining a PPC permit. For these reasons emissions from the PWF gas combustion plant can be considered negligible and would not require consideration in terms of cumulative effects. Ecological impacts from stack emissions at sites within 5km concluded impacts on ecological receptors would be imperceptible and effects to be negligible.

7.6.10 With regards to noise, the area proposed for the waste plant is not in an area where ecological features sensitive to noise are known to be present.

7.6.11 As such, there is no need for any additional cumulative assessment. No other impacts (i.e. from noise or air quality) are considered to be notably increased in this scenario.

Other developments and the Framework Masterplan

7.6.12 Other potential cumulative schemes are listed and shown on a map in ES Appendix 2.4. Those schemes identified for assessment within this ES Chapter are presented in Table 7-37. Table 7-38 presents an assessment of which receptors have the potential to be subject to a cumulative impact from the proposed Development and the cumulative schemes identified in Table 7-37 The assessment of these scoped in receptors / impact pathways is presented in Table 7-39.

7.6.13 Within this section, the additional housing proposed within the wider Framework Masterplan area is treated as a cumulative development in addition to the Permitted Waste Facility (SH/08/124). The rationale for this is presented in the methodology section of this chapter. Within this chapter, this is referred to as the ‘additional Framework Masterplan (FM) development’.

Table 7-37: Schemes assessed in the cumulative assessment

ES Appendix 2.5 Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment	Approximate distance from proposed Development
N/A (Framework Masterplan development)	Folkestone & Hythe District Council	N/A. See Figure 1.1 of ES Appendix 1.1 for site boundary	Further development in the vicinity of the OPA has the potential to contribute to a cumulative effect.	Adjacent to the proposed Development
Permitted Waste Facility	Folkestone & Hythe District Council	SH/08/124	Within OPA boundary with consent. Potential to have an impact on the masterplan layout and therefore the impacts of the proposed Development.	Within the OPA development boundary
G	Folkestone & Hythe District Council	Y06/1079/SH	Mixed use development including 1,050 residential units, open space, employment. Potential cumulative impact on species	2.3 km south-east
H	Folkestone & Hythe District Council	Y14/0873/SH	Proximity of application for 250 residential units to the site. Potential cumulative impact on species Potential cumulative impact on designated sites.	0.5 km north
AQ	Folkestone & Hythe District Council	20/0604/FH	Outline planning application for the erection of up to 55 dwellings with public open space, landscaping, sustainable drainage system (SUDS), a vehicular access point from Ashford Road. All matters reserved except for access Potential cumulative impact on species Potential cumulative impact on designated sites.	0.5 km north
AM	Folkestone & Hythe District Council	Y16/1122/SH	Outline planning application for a neighbourhood extension for the creation of up to 162 houses including affordable, self-build and retirement housing, up to 929 square metres Class B1 Business floorspace, allotments, recreational ground and multi-use games area, nature reserve, and associated access, parking, amenity space and landscaping Potential cumulative impact on designated sites.	0.3km north

Table 7-38: Matrix for scoping receptors to be assessed for potential cumulative impacts

Receptor	Permitted Waste Facility	Framework masterplan development (outside OPA area)	G	H	AQ	AM
International Statutory Designated sites	The assessed proposed Development in the absence of the Permitted Waste Facility has a greater potential impact than the future scenario where both the proposed Development and the Permitted Waste Facility go ahead. Therefore, no in-combination assessment is required.	Assessed within HRA – cumulative impacts assessed within ES Appendix 7.19				
National Designated sites		Assessed for potential recreational effects.			No pathways for significant cumulative effects identified	
Non-Statutory designated sites.		Potential cumulative effects from recreational pressure on Lympne Escarpment			No pathways for significant cumulative effects identified	
Ancient Woodlands		No pathways for significant cumulative effects identified				
Habitats		Potential cumulative effects to common and widespread habitats				
Wintering birds assemblage (excluding farmland birds)		No pathways for significant cumulative effects identified				
Breeding birds assemblage (excluding farmland birds)		No pathways for significant cumulative effects identified				
Farmland bird assemblage (wintering and breeding)		No pathways for significant cumulative effects identified		Scoped in for cumulative impact assessment due to the cumulative impact of farmland loss	No significant cumulative effect considered likely	
Schedule 1 bird - barn owl		No pathways for significant cumulative effects identified		Scoped in for cumulative impact assessment due to the cumulative	No significant cumulative effect considered likely	

Receptor	Permitted Waste Facility	Framework masterplan development (outside OPA area)	G	H	AQ	AM
				impact of foraging habitat loss		
Schedule 1 bird – Kingfisher		No pathways for significant cumulative effects identified				
Bats		Pathway for potential significant effect identified – increase in lighting could reduce bats ability to forage and commute through the landscape	No pathways for significant cumulative effects identified	Pathway for potential significant effect identified – increase in lighting could reduce bats' ability to forage and commute through the landscape	No pathways for significant cumulative effects identified	
Water vole		No pathways for significant cumulative effects identified				
Badger		Potential cumulative impact on loss of foraging habitat and increased road mortality	No pathways for significant cumulative effects identified	Potential cumulative impact on loss of foraging habitat and increased road mortality		
Common Reptile		As this species will be mitigated for fully as a component of each development, pathways for significant cumulative effects are not considered likely				
Great Crested Newt		As this species will be mitigated for fully as a component of each development, pathways for significant cumulative effects are not considered likely				
Otter		No pathways for significant cumulative effects identified				

Receptor	Permitted Waste Facility	Framework masterplan development (outside OPA area)	G	H	AQ	AM
Hazel Dormouse		No pathways for significant cumulative effects identified				
Invertebrates (terrestrial)		No pathways for significant cumulative effects identified				
Fish		No significant cumulative impacts on this species considered likely – other schemes identified do not have an impact pathway upon the East Stour River				
Invertebrates (Aquatic)		No significant cumulative impacts on this species considered likely – other schemes identified do not have an impact pathway upon the East Stour River				
Brown Hare		Potential cumulative impact on loss of foraging habitat and increased road mortality				
Common Toad		No significant cumulative impacts on this species considered likely – other sites will need to mitigate for loss of habitat so no impact are considered.				
Hedgehog		No significant cumulative impacts on this species considered likely				
Harvest Mouse		No significant cumulative impacts on this species considered likely (extensive habitat creation prevents a potential cumulative impact)				

Potential Cumulative Impacts

7.6.14 In line with the matrix presented above (Table 7-38), there is potential for cumulative impacts upon the following receptors:

- Habitats (generally those which are common and widespread);
- Farmland birds, and
- Schedule 1 bird - barn owl
- Dormouse;
- Bats;
- Badgers;
- Brown hare.

7.6.15 These potential cumulative impacts are described within this section of the report and assessed in combination with the impacts of the proposed Development, to determine if there is a significant residual effect.

Cumulative Residual Effects

7.6.16 The cumulative effects summary is presented in Table 7-39. Following mitigation, the only residual cumulative effects are likely to remain for:

- Harringe Brooks Wood due to recreational impacts and vandalism,
- Farmland birds and brown hare due to further loss of habitat;
- Loss of habitat and increased road traffic accident mortality for badger; and
- Farmland birds and dormouse due to increased predation by domestic animals.

Table 7-39: Qualitative assessment of 'in-combination' cumulative effects (schemes which are considered to have a potential cumulative ecological impact)

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
Additional housing and associated infrastructure within the Framework Masterplan area excluding common land within the OPA boundary, excluding the Permitted Waste Facility (SH/08/124)	International designated sites	Recreational impacts	Applicable international sites (SPA, SAC, Ramsar sites) were identified within the HRA for the OPA development (ES Appendix).	Assessment presented in the HRA (ES Appendix	No likely significant cumulative effects are considered likely. Not considered further.
		Air quality impacts			No likely significant cumulative effects are considered likely. Not considered further.
	National designated sites listed in Table 7-12 and non-statutory designated sites listed in Table 7-13	Impacts from disturbance, recreational impacts, domestic animals, fragmentation.	Information on the site identified within the OPA application (presented above)	Harringe Brooks Wood LNR has the potential to be impacted by the additional 1500 homes, particularly as these are proposed to be located to the south east of this woodland. Within the proposed Development, buffers to the woodland will need to be applied (in line with best practice) (Ref. 7-30).	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.
	Habitats	Additional loss of habitats	Although the areas within the Framework Masterplan area which are not within the OPA (additional FM areas) have not been specifically surveyed, habitat information is available from Kent County Council (online) (Ref. 7-29).	The area within the FM but out with the OPA is largely of low value being intensively farmed arable land or industrial area. As such, it is considered that there will be no significant cumulative impact upon the loss of priority habitats. In addition, the FM area will be subject to an assessment to demonstrate that they do not result in impacts to the favourable conservation of this species (through one of the licensing	No likely significant cumulative effects are considered likely. Not considered further.

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
				opportunities available). As a result, no likely significant cumulative effect is considered likely	
	Bats	Impacts upon roosts (direct and indirect) loss of foraging habitats and commuting routes.	Assemblage of bats present around the site was assessed within the surveys. The assemblage of bats around Harringe Brooks Wood (the main areas with the likelihood of being of value to bats)/	The areas within the additional FM boundary are considered to offer limited potential for roosting bats. Significant cumulative impacts to roosting bats are considered unlikely. Likewise, the additional impacts from the FM additional area development upon foraging bats are considered unlikely. The additional FM area is largely intensively farmed arable land, which offers poor foraging habitat for bats. The areas immediately around the Ancient Woodland would need to be buffered in line with policy (Ref. 7-30), which would safeguard this foraging area. Significant cumulative impacts upon foraging bats are considered unlikely. Commuting bats are likely to utilise areas within the additional FM area. There is potential for cumulative impacts upon commuting bats.	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.
	Badger	Additional loss of foraging habitats, severance of movement routes. Increased	Badger setts known to be present within the adjacent Harringe Brooks Wood. Limited value foraging habitats (predominantly arable and	There is potential for a cumulative impact upon foraging badgers and badgers moving through these areas.	Cumulative impact is considered alongside the proposed OPA development in determining the

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
		disturbance and road mortality.	industrial areas) within the additional FM area. Badgers are likely to move through this area.	This is likely to be a small cumulative impact.	significance of effect. Assessment presented in section 7.10.
	Brown hare	Loss of foraging and breeding habitats.	Within the additional FM areas, habitats with value to these species is present (as identified from habitat mapping, Ref. 7-29)	There will be a small cumulative loss of farmland resulting from the FM development. However, the OPA and FM are within a large area of arable land which would benefit from modified management for these species. This is outlined within this chapter of the ES and ES Appendices 7.15 and 7.16.	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.
Nearby residential developments including Sellindge Extension Y14/0873/SH (scheme H) (Ref. 7-31) Includes up to 600 units north of the M20 (250 units approved).	Designated sites (international)	Potential cumulative impacts from recreational impacts and air quality impacts.	Baseline information obtained from the HRA conducted on the Shepway 2018 Core Strategy and Places and Polices Plan (Ref. 7-32, Ref. 7-33).	The HRA assessments conducted in 2018 (Ref. 7-32, Ref. 7-33) found that there were no effects resulting from the developments. No likely significant cumulative impacts are considered likely.	No likely significant cumulative effects are considered likely. Not considered further.
	National statutory designated sites and non-statutory designated sites listed in Table 7-38	Impacts from, recreational usage	N/A	Considering the limited additional recreational pressure from the 250 units significant in-combination impacts are considered unlikely, particularly as no impact upon international designated sites is considered likely. Lympne Escarpment is isolated from this development.	No likely significant cumulative effects are considered likely. Not considered further.
	Habitats	Loss of valuable habitats.	Details of the habitats within these development areas were obtained from the	Some S41 habitats are impacted by the works, however it is understood that the impacts to habitats are	No likely significant cumulative effects are considered likely. Not

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
			Ecological assessment provided to inform the proposed Development (Ref. 7-31). Most habitats on site were semi improved grassland and arable land, with some priority habitats including ponds.	being mitigated for as a component of the proposed Development. No likely significant cumulative impact are considered likely.	considered further.
	Farmland birds, brown hare, barn owl	Loss of foraging and breeding habitats.	Baseline surveys conducted in 2013 and 2014 (Ref. 7-31)	Within this area, only a small number of common birds were recorded during surveys conducted in 2013 and 2014 (Ref. 7-31). As a result, no likely significant cumulative impacts will arise.	No likely significant cumulative effects are considered likely. Not considered further.
	Bats	Impacts upon roosts (direct and indirect) loss of foraging habitats and commuting routes.	Assemblage of bats present around the site was assessed within the surveys.	Significant cumulative impacts upon foraging bats are considered unlikely. Commuting bats are likely to utilise areas within the additional FM area. There is potential for cumulative impacts upon commuting bats.	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.
	Badger	Additional loss of foraging habitats, severance of movement routes. Increased disturbance and road mortality.	Badger setts known to be present within the adjacent Harringe Brooks Wood. Limited value foraging habitats (predominantly arable and industrial areas) within the additional FM area. Badgers are likely to move through this area and forage.	There is potential for a cumulative impact upon foraging badgers and badgers moving through these areas. This is likely to be a small cumulative impact.	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
Scheme G Y06/1079/SH,.	Habitats	Potential cumulative impacts from recreational impacts and air quality impacts.	Scheme G is located approximately 2km to the south-east of the proposed Development. Within the ES of Scheme G (Ref. 7-59), there are no significant effects to the habitats identified once mitigation is proposed.	No potential for significant effects	Not considered further
	National statutory designated sites and non-statutory designated sites listed in Table 7-38	Impacts from, recreational usage	N/A	Considering the distance between the site and the proposed Development, the pathways for in-combination effects is limited.	No likely significant cumulative effects are foreseen. Not considered further.
	Farmland birds, brown hare	Potential cumulative impacts from recreational impacts and air quality impacts, and the presence of domestic animals	These three sites will support farmland birds and brown hare and there is potential for a cumulative loss of habitat in the area affecting the conservation status.	Potential for significant cumulative effects	Offsetting in relation to this receptor is proposed as outlined in Section 7.9. Once this offsetting is implemented there will be no significant effect therefore it is not considered there will be any significant cumulative effect. Not considered further.
Scheme AQ 20/0604/FH and AM Y16/1122/SH	Habitats	Loss of valuable habitats.	Details of the habitats within these development areas were obtained aerial imagery. Scheme AQ is limited in size (3ha) (Ref. 7-60) and has	Some S41 habitats may be impacted by the proposed works, however it is understood that the impacts to habitats are being mitigated for as a component of the	No likely significant cumulative effects are considered likely. Not considered further.

Scheme	Ecological Feature	Cumulative impact	Baseline information	Assessment	Summary
			minimal potential to contribute to a cumulative habitat impact. Scheme AM- Habitats on this site are different to the ones on site, therefore there is limited cumulative impact pathway.	proposed Developments. No likely significant cumulative impact are considered.	
	Badgers	Additional loss of foraging habitats, severance of movement routes. Increased disturbance and road mortality.	Badger setts known to be present within the adjacent Harringe Brooks Wood. Limited value foraging habitats (predominantly arable and industrial areas) within the additional FM area. Badgers are likely to move through this area and forage.	There is potential for a cumulative impact upon foraging badgers and badgers moving through these areas. This is likely to be a small cumulative impact.	Cumulative impact is considered alongside the proposed OPA development in determining the significance of effect. Assessment presented in section 7.10.
	Brown hare	Potential cumulative impacts from recreational impacts and air quality impacts, and the presence of domestic animals	These three sites will support farmland birds and brown hare and there is potential for a cumulative loss of habitat in the area affecting the conservation status.	Potential for significant cumulative effects	Offsetting in relation to this receptor is proposed as outlined in Section 7.9. Once this offsetting is implemented there will be no significant effect therefore it is not considered there will be any significant cumulative effect. Not considered further.

7.7 Monitoring

7.7.1 This section details monitoring programmes that are required within the construction and operational phases of the proposed Development.

Construction

7.7.2 An ecological clerk of works would be employed to ensure that the ecological protection measures outlined in the CoCP are adhered to. They would also undertake regular monitoring to ensure that the protection measures remain in place for the time that they are required.

Operational

7.7.3 Ongoing monitoring will be required in accordance with the Otterpool Park BAP (ES Appendix 7.20), which will be maintained as a live document. In addition, any monitoring required by the EMP, offsetting strategy and any protected species licences will be implemented at the operational stage of the development.

7.8 Summary of Residual and Cumulative Effects (prior to offsetting)

7.8.1 This section of the report summaries all of the effects from the proposed Development, subsequent to the application of outlined mitigation (both embedded design and additional), prior to the offsetting. These effects are presented in Table 7-40. All other effects to receptors have been assessed as **not significant** through the mitigation listed within this ES (Sections 7.4 and 0) and associated Appendices.

Table 7-40: Summary table of all potential residual effects prior to offsetting.

Receptor	Potential impact	Phase (Construction / Operation) /Cumulative?	Residual Effect(s)
Habitats	Increase in biodiversity value of habitats as calculated using the Biodiversity Net Gain metrics	Construction	A medium magnitude impact upon a receptor of up to county importance resulting in a significant moderate beneficial effect.
Invasive non-native plants	Reduction in the negative impact on local flora and fauna through species removal	Construction and Operation	A medium magnitude impact upon a receptor of up to county importance resulting in a significant moderate beneficial effect.
Birds (breeding and wintering), farmland birds, wintering gulls, wintering thrushes, barn owl	Habitat loss, disturbance, disturbance and predation from domestic animals	Operation and Cumulative	Medium magnitude impact upon a feature of up to county value resulting in a significant moderate adverse effect.
Farmland birds (breeding and wintering), wintering gulls, wintering thrushes, barn owl	Habitat loss, disturbance, disturbance and predation from domestic animals	Operation and Cumulative	Medium magnitude impact upon a feature of local / site value resulting in a significant moderate adverse effect.

Receptor	Potential impact	Phase (Construction / Operation) /Cumulative?	Residual Effect(s)
Brown hare	Loss of habitat, increased persecution, mortality	Construction and Cumulative	Medium magnitude impact upon a feature of up to county value resulting in a significant adverse effect.

7.9 Offsetting

7.9.1 Where a significant adverse residual effect is identified after the application of the design and additional mitigation, offsetting is proposed to address these effects. The approaches to offsetting are presented in this section of the ES.

7.9.2 Offsetting is not required to mitigate for impacts to European protected species or designated sites, and as such the offsetting is not required to inform the HRA (ES Appendix 7.19).

7.9.3 For species which require large areas of arable land, i.e. wintering and breeding farmland birds, wintering gulls, wintering thrushes, barn owl and brown hare it will not be possible to fully mitigate for effects to these species' habitats within the site. Habitat mitigation and enhancement will be undertaken on site where possible, however, it will not be possible to fully mitigate for impacts to these groups within the site, due to the space and mosaic habitat requirements of these species. Therefore, an off-site mitigation strategy – or "offsetting" - will be required. It is not within the remit of this report to determine the exact location or methodology for off-site mitigation provision, as this will need to be determined as the proposed Development progresses and may change due to the following, for example:

- Partnerships with NGOs / other organisations may change, making collaborative offsetting projects more (or less) practicable.
- The management of farmland to be developed may change, i.e. additional areas may be brought into or taken out of HLS management. Therefore, the baseline will need to be updated to ensure that the mitigation provided is appropriate.
- Policy, such as HLS enhancement measures are likely to be updated or modified by the government during the Tier 2 and 3 design stages and construction phase of the project.

7.9.4 This section outlines how a suitable mitigation approach and quantum should be identified prior to development of each development area defined on OPMP 4001 and how a suitable financial payment for this can be calculated. It should not be read as a prescriptive document which fixes contributions – these should be evolved through Tier 2 and 3 of the development process.

7.9.5 It is proposed to compensate for the significant adverse effects on wintering and breeding farmland birds, wintering gulls, wintering thrushes and barn owl by funding habitat improvements off-site. Funds would be provided to enhance local habitats for farmland birds through appropriate, proven management regimes to increase the carrying capacity of local habitats. Offsetting areas will be as close to the proposed Development site as possible so that benefits are as locally-linked to the site as far is

as practicable, given land ownership and other influencing factors. It is considered that such enhancement measures would mitigate for the loss of habitat for these species as a result of the proposed Development.

7.9.6 Initially, for Town Centre and Castle Park indicative phase of the development, an area to the west of the development site is proposed to be enhanced. This area is shown in Image 7-5 below. This area would be enhanced as outlined below to offset the initial impacts from the Town Centre and Castle Park indicative phase. Beyond this, additional areas will need to be identified for enhancement.

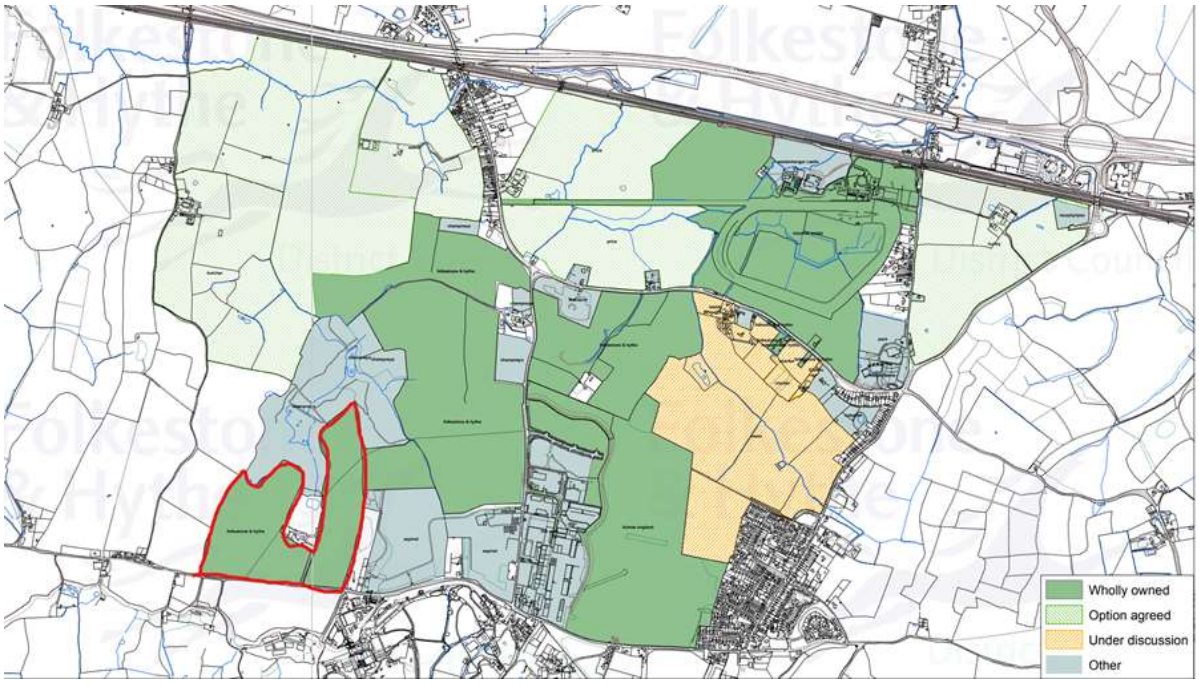


Image 7-5:: Proposed location of enhancement for Farmland Birds for Phase 1 of the development (indicatively shown in red)

7.9.7 Measures developed as part of HLS which could be adopted include: the provision of over-wintering seed food as a crop; the provision of bought seed to provide supplementary feeding in winter; the creation of insect-rich foraging habitat such as unharvested fertiliser-free conservation headland and uncropped, uncultivated margins for rare plants on arable land.

7.9.8 It is not considered necessary to purchase land specifically for the habitat management, since it is not the lack of farmland that is limiting bird numbers, but the lack of appropriate management. It is proposed to contribute funds to body such as a specifically created group or NGO, a wildlife trust or conservation group which would guarantee, through a legal agreement, that the money would be used to deliver the proposed benefits for farmland birds in the local area. The detail of this agreement would be set out in a S106 or similar legal agreement which would form part of the reserved matters for the planning application.

7.9.9 The disturbance and habitat loss that would have the largest effect on nesting farmland birds would occur during site clearance; it is therefore proposed that the

monies would be provided to the grant-giving body at least six months, and ideally one year, in advance of the impacts occurring (i.e. at last six months and ideally one year in advance of site clearance for each indicative phase of the development).

7.9.10 It is proposed that funds provided should be sufficient to enhance farmland for farmland birds for a period of 30 years (the management time expected as stated in the emerging Environment Act 2021). The sums would be provided as lump sums in advance of each phase of site clearance sufficient to cover management for the 30-year period. The payments provided would be in line with the payments provided by 'Countryside Stewardship: Higher Tier' (Rural Payments Agency 2021) as outlined in Table 7-41 and Table 7-42. A mark-up on the area of enhancement provided is proposed, as areas of the site are currently under HLS stewardship (the predecessor scheme to 'Countryside Stewardship: Higher Tier'), and the requirement for offsetting should be against the future baseline. The calculation of this is shown in Table 7-42 below. It should be noted that management / implementation costs are likely to be in addition to these costs.

7.9.11 A study of the effect of HLS management on breeding bird populations in the UK showed an approximate 30% increase in breeding bird abundance under HLS management after 5 years (Redhead et al 2018). The habitat on site does not yet show obvious habitat improvements nor farmland bird abundance differentiation (ES Appendix 7.15) but is likely to do so in the future under continued HLS management. Therefore, to account for the future baseline, a calculation has been undertaken based on the area of suitable habitat for farmland birds to be lost, both conventional and HLS managed. Multipliers of 1 and 1.3 respectively have been employed to give an area of new habitat proposed to be established under optimum management for farmland birds as compensation.

Table 7-41: Calculation of multiplier for requirement for farmland birds

Area of the site	Area (ha)	Value for birds	Proposed offsetting quantum (multiplier)	Explanation	Total offsetting 'area' required (ha)
Arable land currently under HLS stewardship	175ha	Currently has value for farmland birds, wintering thrushes and feeding gulls (likely to increase according to the future baseline).	1.3*	The additional 0.3 increase is to take into account the increased value and the future baseline of this habitat	175 x 1.3 = 227.5ha
Arable / pastureland not under HLS	352 ha	Currently has limited value for farmland birds, wintering thrushes and feeding gulls. Unlikely to change in future baseline.	1	A '1 for 1' enhancement should be sufficient*	352 x 1 = 352 ha
Total					579.5ha

*1.3 to account for benefits from future baseline

Table 7-42: Proposed interventions for off-site mitigation (based on 'Countryside Stewardship: Higher Tier' but implementation should go above the base requirements

Item (codes from the HLS typology guide Ref 7-36)	Unit price*	Suggested minimum (per 100ha as per 'Countryside Stewardship: Higher Tier' guidance)
AB1 Nectar flower mix	£511 per hectare	1.5ha
AB11 Cultivated areas for arable plants	£532 per hectare	1.5ha
AB11 Cultivated areas for arable plants	£532 per hectare	1ha
AB12 Supplementary winter feeding for farmland birds	£632 per tonne (2 hectares)	50 tonnes
AB15 Two-year sown legume fallow	£522 per hectare	1.5ha
AB16 Autumn sown bumblebird mix	£550 per hectare	1.5ha
AB2 Basic overwinter stubble (or OP1 Overwintered stubble	£84 per hectare	5ha
AB4 Skylark plots	£18 per hectare (£9 per plot, minimum 2 plots per hectare)	2 plots per ha -= 200 plots

Item (codes from the HLS typology guide Ref 7-36)	Unit price*	Suggested minimum (per 100ha as per 'Countryside Stewardship: Higher Tier' guidance)
AB6 Enhanced overwinter stubble	£436 per hectare	2.5ha
AB8 Flower-rich margins and plots	£539 per hectare	1.5ha
AB9 Winter bird food	£640 per hectare	1/2ha depending upon implementation
BE3 Management of hedgerows	£8 per 100 meters for 1 side of a hedge	500m
GS1 Take field corners out of management (outside SDA)	£365 per hectare	1ha
GS3 Ryegrass seed-set as winter food for birds	£331 per hectare	1ha
GS4 Legume and herb-rich swards (or OP4 Multi- species ley)	£309 per hectare	1.5ha
Management Fee	TBC	TBC
OP1 Overwintered stubble	£116 per hectare	5ha
OP2 Wild Bird Seed mixture	£640 per hectare	1ha
OP3 Supplementary feeding for farmland birds	£494 per tonne (for every 2 hectares of wild bird seed mixture)	N/A
SW1 4-6m buffer strip on cultivated land	£353 per hectare	1ha
SW4 12-24 m watercourse buffer strip on cultivated land AB3 Beetle banks	£512 per hectare	1ha
WD3 Woodland edges on arable land	£323 per hectare	0.5ha
WT1 Buffering in-field ponds and ditches in improved grassland	£201 per hectare	0.5ha
WT2 Buffering in-field ponds and ditches on arable land	£501 per hectare	0.5ha
WT3 Management of ditches of high environmental value	£37 per 100m (for management of both sides of the ditch)	500m

* Should be based on 'Countryside Stewardship: Higher Tier' guidance or equivalent scheme.

7.9.12 The 'Countryside Stewardship: Higher Tier' options that will be applicable to each parcel of land to be enhanced and the palette of options that will be suitable for implementation from the table above will vary greatly. As such, it is not possible to confirm the likely cost of the overall intervention. However, the 'Countryside Stewardship: Higher Tier' guide provides some examples of a compliant scheme, the payments on these schemes are in the region of £3000 - 3500 per 100 ha per annum. Assuming the offsetting interventions for the proposed scheme would go over and above the minimum requirements, and 2X the base requirements were implemented, this would suggest an annual cost of between £6000 and £7000 per 100ha of offset (excluding any management costs).

7.9.13 It is considered that providing sums that would cover enhancements on 597.5ha of land would more than mitigate for the impacts on farmland birds that would be generated by the development in the OPA. The RSPB have found that they were able to more than double the number of farmland birds on their Hope Farm Site in Cambridgeshire in a ten-year period by managing their farmland in a manner beneficial to farmland birds (Source: RSPB website). It is therefore anticipated that enhanced management of 597.5ha of land would mitigate for the impact on birds associated with the loss of suitable farmland bird habitat within the site. The provision of grants to local landowners via a grant-giving body would ensure that the monies are provided for appropriate measures, and that the measures would be implemented since the grants would not be awarded if the works were not completed.

7.9.14 As it is considered that 597.5ha of enhancement would offset the Otterpool impact to farmland birds, this allows an estimate of the total cost to be calculated. Assuming an annual cost of between £6000 and £7000 per 100ha of offset, over 30 years, the total cost would be:

- 6000/7000 (cost) x 30 (years) x 5.795 (number of 100ha blocks) = £1,043,100 to £1,216,950 (ESTIMATED).
- This equated to a cost of £34,770 to £40,565 per year
- Assuming a total of 8,500 residential units, this would be £4.09 to £4.77 per unit per year.

7.9.15 It is considered that this alternative provision would mitigate for impacts resulting from the loss of barn owl habitats. This would be in line with the prescription of the Barn Owl Trust which state:

"Barn Owl foraging habitat has no statutory protection at any time (other than by virtue of the presence of other more highly protected species of fauna or flora). Nevertheless, we recommend that the loss of foraging habitat is mitigated by the creation and subsequent management of alternative areas of habitat."

Selection of off-setting provision

7.9.16 As explained above, it is not practicable to determine the exact application of the off-site mitigation requirements outlined within this document at this time. Image 7-5 below outlines the potential options for the implementation of the off-site mitigation and a process through which an appropriate course should be selected.

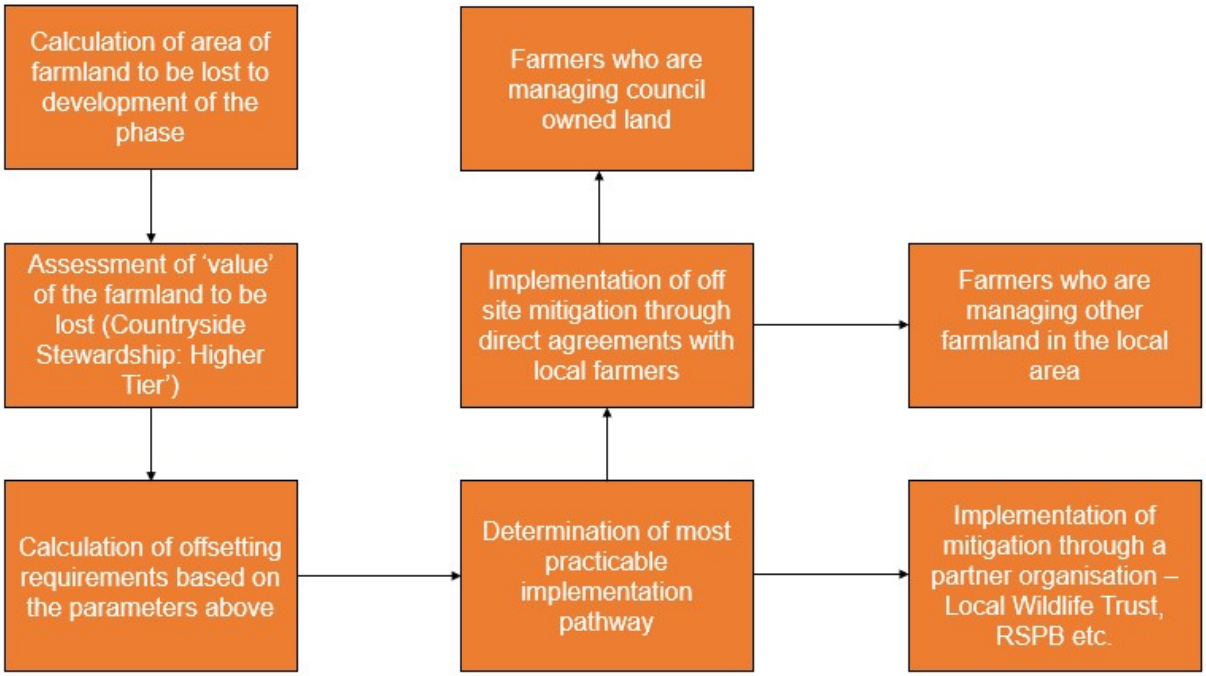


Image 7-6: Options for the selection of implementation of off-site mitigation

7.10 Summary of Residual Effects (following offsetting)

7.10.1 This section of the report outlines the residual significant adverse effects of the proposed Development after the embedded design measures, additional mitigation and offsetting has been applied. A full outline of how impacts to individual receptors have been assessed in relation to the identified impacts pathways is presented in ES Appendix 7.1. This section is subdivided according to each important ecological feature identified which will experience residual impacts.

Residual Effects from Construction

7.10.2 The mitigation measures outlined in this Chapter and within ES Appendices have been incorporated into the proposed Development to address the likely potential ecological impacts. Full impact assessment is presented in ES Appendix 7.1. The residual effects following proposed mitigation measures are described below.

Designated Sites

7.10.3 No significant adverse residual effects from construction upon designated sites are considered likely once the mitigation above is applied (design mitigation as presented in Section 7.4 and additional mitigation as presented in Section 0).

Habitats and Species

7.10.4 There are residual significant beneficial effects upon habitats identified as resulting from the construction phase of the works (subsequent to all mitigation and compensation). This is evidenced by the biodiversity net gain calculations (ES Appendix 7.21).

7.10.5 The significant residual effects are set out in Table 7-43.

Table 7-43 Residual effects upon species from construction

Important ecological feature	Significant Residual Effect	Geographical scale of effect
Habitats	Increase in biodiversity value of habitats as calculated using the Biodiversity Net Gain metrics	A medium magnitude impact upon a receptor of up to county importance resulting in a significant moderate beneficial effect.

Residual Effects from Operation

Designated Sites and Habitats

7.10.6 There are no significant residual operational effects considered likely upon designated sites and habitats.

Species

7.10.7 Table 7-44 outlines residual effects identified from the operation phase and the any potential additional mitigation proposed. There are no other residual significant effects on species considered likely.

Table 7-44: Residual effects from operation

Ecological feature	Residual impacts (operation)	Geographical scale of impact
Invasive non-native plants	Reduction in the negative impact on local flora and fauna	A medium magnitude impact upon a receptor of up to county importance resulting in a significant moderate beneficial effect.

7.11 References

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