

## 9.0 ECOLOGY

### 9.1 INTRODUCTION

- 9.1.1 This Chapter has been produced by Tetra Tech. The Chapter outlines the baseline ecological information of the study area and assesses the likely impacts of the proposed development upon the ecological receptors.

### 9.2 ASSESSMENT METHODOLOGY AND SCOPE

#### Policy Background

A revised National Planning Policy Framework was issued in 2021 (Ministry of Housing, Communities and Local Government, 2021). The NPPF encompasses Circular 06/2005 in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system (Office of the Deputy Prime Minister, 2005).

- 9.2.1 In line with NPPF 174, Planning policies and decisions should contribute to and enhance the natural and local environment by, minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures, and 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.
- 9.2.2 In line with NPPF 179, 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.

#### Local Plan

- 9.2.3 The Havant Borough Local Plan (Core Strategy) includes Policy CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough. Planning Permission will be granted for sites that, *Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration. And, Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map): (i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar [International]. (ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves [National]. (iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].*
- 9.2.4 In addition, Policy CS13: Green Infrastructure. The aims of this policy is to ensure that green networks are retained as well as ensure enhancement and creation of new networks.
- 9.2.5 The Draft Local Plan 2036, Policy E17: Brent Goose and wader feeding and roosting sites states that appropriate mitigation will be required where new development or change to access and

management has the potential to adversely impact the function of the Brent Goose and wader network. In addition, E15: Ecological Conservation states planning permission will be refused where there is likely to be a significant effect on the SPA, SAC or Ramsar designation and the proposal is not directly connected with or necessary to the management of that site; and the development proposal is not in compliance with the relevant regulations and national policy regarding the assessment of implication for SPAs, SACs or Ramsar sites. Policy E18: Protected Species states that development will only be permitted when appropriate ecological surveys are undertaken, and where protected species are present suitable mitigation, compensation and monitoring plans are put into place. The policy also has particular regard to Bechstein's bat *Myotis bechsteinii*.

- 9.2.6 With regard to these policies, the Proposed Development does result in likely significant effects to European sites, but is capable of incorporating suitable mitigation to avoid an adverse effect on the integrity of these sites (including with reference to brent goose and wader sites). Appropriate surveys have been undertaken which have identified the presence of protected species, and mitigation is proposed to avoid any significant effect on their conservation status. Finally, no evidence of Bechstein's bat has been recorded (with reference to Policy E18).

#### Legislation

- 9.2.7 The Wildlife and Countryside Act 1981 (as amended) (W&CA) is the primary legislation covering endangered or threatened species in England and sets out the framework for the designation of SSSIs and SPAs.
- 9.2.8 The Conservation of Habitats and Species Regulations 2017 (as amended) action the UK's implementation of the Habitats Directive, including the protection of European Protected Species and the designation of SACs. They also establish the requirement for Appropriate Assessment under Regulation 63.
- 9.2.9 The Countryside and Rights of Way (CROW) Act 2000 affords a greater level of protection to SSSIs, provides better management arrangements for Areas of Outstanding Beauty and strengthens wildlife enforcement legislation. Section 74(2) of the Act requires the Secretary of State to list those habitats and species of principal importance for the conservation of biodiversity, in accordance with the United Nations Convention of Biological Diversity 1992.
- 9.2.10 The Natural Environment and Rural Communities (NERC) Act 2006 is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government Policy. Elements of the act most relevant to the proposed scheme include (i) extension of the CROW biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity; and (ii) modification of the CROW Act 2000 so that species listed under Section 74 are now listed under Section 41 of the NERC Act 2006. Priority Habitats and Priority Species for England and Wales (formerly listed in the superseded UK Biodiversity Action Plan) are detailed under Section 41.

#### Protected Species Legislation

##### Reptiles

9.2.11 The adder, grass snake, slow-worm and common lizard receive partial or full protection under the W&CA as amended which makes it an offence to:

- Intentionally or recklessly kill or injure these animals;
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisement to buy or sell individual reptiles.

#### *Birds*

9.2.12 It is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs under the W&CA. In addition, there are 194 species that are subject to special conservation measures concerning their habitat in order to ensure their survival and reproduction. This includes an offence to disturb any birds listed on Schedule 1 of the W&CA whilst nesting, or their dependant young.

#### *Bats*

9.2.13 All UK species of bat are European Protected Species which means they are protected under the Conservation of Habitats and Species Regulations 2017 - and it is an offence to deliberately, recklessly or intentionally kill, injure or take a bat; to deliberately, intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat or deliberately disturb an animal while it is occupying a structure or place which it uses for that purpose.

9.2.14 A European protected species mitigation licence (EPSM licence) from Natural England is required for any development works that would affect bat roosts.

#### *Hazel dormice*

9.2.15 Hazel dormice are a European Protected Species which means they are protected under the Conservation of Habitats and Species Regulations 2017 - and it is an offence to deliberately, recklessly or intentionally kill, injure or take a dormouse; to deliberately, intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or deliberately disturb an animal while it is occupying a structure or place which it uses for that purpose.

9.2.16 A European protected species mitigation licence (EPSM licence) from Natural England is required for any development works that would affect hazel dormouse habitat.

#### *Invertebrates*

9.2.17 A number of invertebrate species are protected by European and UK legislation, such as those listed on Schedule 5 of the W&CA and in the Conservation of Species and Habitats Regulations 2017. As a result, some species are protected from some or all of the following (amongst others): (i) killing, injuring or taking; (ii) possession or control; (iii) damage to, destruction of or obstruction of access to any places used for shelter or protection; and (iv) disturbance while using such a structure.

#### **Consultation**

9.2.18 An EIA Scoping Opinion has been previously sought and obtained from Havant Borough Council in 2018, with responses shown in Chapter 2, Table 2.1. Given the lapse between the planning applications, an updated cumulative list set out in a Scoping Note has been submitted to Havant Borough Council. The responses to this are provided in Chapter 2, Table 2.2. Those specific to Ecology are provided by Natural England, Hampshire County Council (Ecologist) and Havant Borough Council (Planning Policy).

9.2.19 Consultation feedback in 2018 from Natural England has advised that a comprehensive offsetting and mitigation strategy will be necessary due to the presence of brent geese and curlews on site. In addition, a request that lighting impacts for bats is considered within the Ecology Chapter, ancient woodland as a receptor due to its proximity to the site, and the consideration of the site as an important ecological corridor.

#### **Study Area**

9.2.20 The Study Area is defined as the area within the redline application boundary of the Site plus a 2km search area around the Site (extended to 10km for International sites) to identify ecological receptors (predominantly designated sites of nature conservation value and habitats connected to the Site via green corridors) that may be subject to impacts as a result of the proposed development and based on the advice of the Chartered Institute for Ecology and Environmental Management (CIEEM) in its Guidelines for Preliminary Ecological Appraisal (2013) and Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal 2nd edition (2016).

9.2.21 The ecological surveys of the Site extended beyond the Site boundary to include waterbodies within 500m and immediately adjacent habitats (i.e. within 50m of the Site) where accessible in accordance with published guidelines for great crested newts and badgers respectively.

#### **Assessment Methodology**

9.2.22 The impact assessment for ecology has been carried out in accordance with the CIEEM's Guidelines for Ecological Impact Assessment in the UK Ireland: Terrestrial, Freshwater and Coastal 2nd edition (2016), hereafter referred to as the CIEEM guidelines.

9.2.23 The starting point for any assessment of impacts is to determine which features should be subject to detailed assessment. These will be ecological receptors considered to be important and potentially affected by the project.

9.2.24 This approach is consistent with the EIA Regulations, which only require investigation of likely significant effects. A summary of the key points from the relevant guidance, as relevant to this assessment, is provided below.

#### **Determining Importance**

9.2.25 The CIEEM guidelines recommend that the value of ecological receptors or features is determined based on a geographic frame of reference that includes the following levels:

- International – Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar Sites, etc;
- National – Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI);

- Regional – Habitats or populations of species of value at a regional (i.e. south England) level;
- County – Designated Sites, such as Wildlife Heritage Sites (WHS) and Sites of Importance to Nature Conservation (SINCs), or habitats / species populations of value at a county (i.e. West Berkshire) level;
- Local – Habitats or species populations of value in a local context.
- Negligible – Habitats or species populations that are not considered to be valuable within the context of this assessment.

#### Habitats

9.2.26 In accordance with the CIEEM guidelines, the importance of habitats is measured against published selection criteria where available. Reference is also made to the list of habitats of principal importance in England and Wales, Priority Habitats and local Biodiversity Action Plans (BAPs). In accordance with the guidance, where important habitats are in a sub-optimal condition, their potential value should be considered.

#### Species

- 9.2.27 In accordance with the CIEEM guidelines, when assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Rarity is an important consideration because of its relationship with threat and vulnerability although since some species are inherently rare, it is necessary to look at rarity in the context of status. A species that is rare and declining should be assigned a higher level of importance than one that is rare but known to be stable.
- 9.2.28 Reference is also made to the list of species of principal importance in England and Wales and local Biodiversity Action Plans (BAPs). Legally protected species are considered important where there is potential for a breach of relevant legislation.

#### Predicting and Characterising Ecological Impacts

- 9.2.29 In accordance with the CIEEM guidelines, when describing impacts, reference is made to the following, where applicable:
- Positive/Adverse – whether an impact improves or reduces the quality of the receptor.
  - Extent – the area over which an impact occurs.
  - Duration – the time for which an impact is expected to last.
  - Magnitude – the size or intensity of the impact.
  - Reversibility – a permanent impact is one that is irreversible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it; a temporary impact is one from which a spontaneous recovery is possible.
  - Timing and frequency – whether impacts occur during critical life-stages or seasons.

#### Direct and Indirect Ecological Impacts

9.2.30 Both direct and indirect impacts are considered within this assessment. A direct impact is directly attributable to a defined action such as the physical loss of a habitat or the immediate mortality of an individual of a particular species. Indirect impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or receptor.

#### Approaches for Determining Significant Impacts

- 9.2.31 In accordance with the CIEEM guidelines, a significant impact, in ecological terms, is defined as an impact which either supports or undermines the conservation objectives for important ecological features or for biodiversity in general.
- 9.2.32 In accordance with the CIEEM guidelines, the approach adopted here aims to determine if an impact is significant or not on the basis of a discussion of the factors which characterise it – i.e. the ecological significance of an impact is not dependent on the value of the feature in question. The value of any feature that will be significantly affected is used to determine the geographical scale at which the impact is significant. For example, an ecologically significant impact on a feature of value at county level is regarded as a significant impact at county level. This in turn is used to determine the implications in terms of legislation, policy and/or development control.
- 9.2.33 As noted above, impacts are only assessed in detail for receptors of sufficient value that impacts upon them may be significant (in terms of legislation or policy).
- 9.2.34 Significant impacts remaining after mitigation (the residual impacts), together with an assessment of the likelihood of success in the mitigation, are the factors to be considered against legislation, policy and development control in determining the planning application.

#### Limitations of the Assessment

- 9.2.35 There are no significant overall limitations that are considered to compromise the validity of this chapter, although details of any qualifications or limitations that are specifically relevant to a particular floral or faunal survey, are provided in the relevant appendices (9.1 – 9.5).
- Appendix 9.1 – Ecological Appraisal
  - Appendix 9.2 – Reptile Survey Report
  - Appendix 9.3 – Dormouse Survey Report
  - Appendix 9.4 – Combined Bat Report
  - Appendix 9.5 – Wintering Bird Report (Wild New Forest, 2023)

### 9.3 BASELINE ENVIRONMENT

#### Existing baseline

9.3.1 The Ecological Appraisal (2023) with desktop study from DEFRA MAGIC Maps and Hampshire Biological Information Centre (HBIC) has informed the identification of statutory and non-statutory sites for nature conservation. The statutory and non-statutory sites are identified in table 9.1 and 9.2.

For table 9.1, these are listed in order of whether they are internationally designated or nationally designated, then by increasing distance from the site. Table 9.2 lists the Sites of Importance for Nature Conservation (SINCs) within 2km of the site.

| Table 9.1: Statutory designated sites for nature conservation within 10km of the site |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                                                                                  | Distance    | Reason for designation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Chichester and Langstone Harbour Ramsar and Special Protection Area (SPA)             | 1.2km south | <p>RAMSAR designated due to the large, sheltered estuarine basins comprising extensive sand and mud-flats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mud-flats are rich in invertebrates and support extensive beds of algae, especially <i>Enteromorpha</i> species, and eelgrasses <i>Zostera</i> spp. The basin contains a wide range of coastal habitats supporting important plant and animal communities.</p> <p>In addition, the Chichester and Langstone Harbour is designated as an SPA as it supports important overwintering populations of migratory waterfowl. It also supports important colonies of breeding terns. SPA qualifying species comprise black tailed godwit (<i>Limosa limosa islandica</i>), dark bellied brent goose (<i>Branta bernicla</i>), dunlin (<i>Calidris alpina alpina</i>), grey plover (<i>Pluvialis squatarola</i>), redshank (<i>Tringa tetanus</i>) and ringed plover (<i>Charadrius hiaticula</i>). In addition, the SPA is a wetland of international importance supporting over 90,000 over wintering waterfowl including curlew (<i>Numenius arquata</i>), oystercatcher (<i>Haematopus ostralegus</i>), lapwing (<i>Vanellus vanellus</i>) and whimbrel (<i>Numenius phaeopus</i>).</p> |
| Solent Maritime SAC                                                                   | 1.2km south | Sea inlets, tidal rivers, estuaries, mud flats, sand flats, lagoons (including saltwork basins), salt marshes, salt pastures, salt steppes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Solent & Isle of Wight Lagoons SAC                                                    | 2.6km south | Primarily designated for its coastal lagoons. The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna including large populations of three notable species: the nationally rare foxtail stonewort ( <i>Lamprothamnium papulosum</i> ), the nationally scarce lagoon sand shrimp ( <i>Gammarus insensibilis</i> ), and the nationally scarce starlet sea anemone ( <i>Nematostella vectensis</i> ). The lagoons hold a well-developed low-medium salinity insect-dominated fauna. Species diversity in these lagoons is high and the fauna includes very high densities of <i>N. vectensis</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Portsmouth Harbour                                                                    | 4.1 km SW   | Portsmouth Harbour qualifies under Article 4.2 of the Birds Directive by supporting internationally or nationally important wintering populations of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|-------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPA and Ramsar          |             | <p>dark-bellied brent geese, red-breasted merganser black-tailed godwit and dunlin.</p> <p>It is a large, industrialised estuary consisting of a saltmarsh, vast expanses of mudflats, and tidal creeks on the south coast. The mudflats, supporting extensive beds of eelgrass, green algae, and sea lettuce, provide feeding grounds for internationally important numbers of wintering dark-bellied brent geese. A unique and high-quality flora and fauna occur at the site. Nationally important numbers of grey plover, dunlin, and black-tailed godwit are supported. Set in an urban area, there is a major port facility, and large-scale military activities occur at the site.</p> |
| Langstone Harbour SSSI  | 1.3km south | Intertidal habitat as well as areas above high water important as roosting sites for wintering birds. Considered to be suffering adverse impacts due to rising sea level which will be significantly reducing the extent of habitat exposed at low tide and hence reducing the value of the area for birds.                                                                                                                                                                                                                                                                                                                                                                                   |
| Chichester Harbour SSSI | 1.3km south | Chichester Harbour is a large estuarine basin in which at low water extensive mud and sandflats are exposed, drained by channels which unite to make a common exit to the sea. The site is of particular significance for wintering wildfowl and waders and also breeding birds both within the Harbour and in the surrounding permanent pasture fields and woodlands. There is a wide range of habitats which have important plant communities.                                                                                                                                                                                                                                              |

| Table 9.2: Non-statutory designated sites for nature conservation within 2km of the site |                                                |                                                                            |
|------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------|
| Name                                                                                     | Distance                                       | Reason for designation                                                     |
| Littlepark Wood (West)                                                                   | Adjacent to north eastern boundary of the site | Ancient semi-natural woodland with hazel dormouse.                         |
| Portsmouth City Golf Course Copse                                                        | Adjacent to southern boundary of the site      | Woodland also noted for presence of fly orchid <i>Ophrys insectifera</i> . |
| Littlepark Wood (East)                                                                   | 0.1 km E                                       | Ancient semi-natural woodland.                                             |
| Gundymoor Wood (Main)                                                                    | 0.1 km N                                       | Ancient semi-natural woodland.                                             |
| Camp Down Grassland Remnants                                                             | 0.1 km S                                       | Grassland.                                                                 |
| Field East of Farlington Redoubt (North)                                                 | 0.2 km S                                       | Semi-improved grassland with significant areas of unimproved grassland.    |

**Land east of College Road, Campdown, Purbrook**  
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|                                          |           |                                                                                                                          |
|------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------|
| Portsmouth Golf Course East              | 0.2 km SW | Semi-improved grassland with significant areas of unimproved grassland.                                                  |
| Johnston's Coppice                       | 0.3 km N  | Ancient woodland supporting hazel dormouse.                                                                              |
| Fields off Havant Road                   | 0.3 km S  | Designated for hosting dark-bellied brent goose and dwarf spurge <i>Euphorbia exigua</i> .                               |
| Gundymoor Wood (West)                    | 0.4 km N  | Ancient semi-natural woodland.                                                                                           |
| Meadow Adjacent to Johnston's Copse      | 0.4 km N  | Ancient semi-natural woodland with hazel dormouse.                                                                       |
| Fort Purbrook Paddock 4 (Havant)         | 0.4 km S  | Semi-improved grassland with significant areas of unimproved grassland.                                                  |
| Fort Purbrook Paddock 3 (Havant)         | 0.5 km SW | Species rich grassland.                                                                                                  |
| Hulbert Road Meadow                      | 0.6 km N  | Fen.                                                                                                                     |
| East and West of Gillman Road            | 0.6 km S  | Semi-improved grassland with- corn parsley <i>Petroselinum segetum</i> and flattened meadow-grass <i>Poa compressa</i> . |
| Fort Purbrook Paddock 1 (Havant)         | 0.6 km SW | Species rich grasslands with small blue <i>Cupido minimus</i> and autumn lady's-tresses <i>Spiranthes spiralis</i> .     |
| Fort Purbrook Paddock 2 (Havant)         | 0.6 km SW | Species rich grassland with autumn lady's-tresses.                                                                       |
| Portsmouth Golf Course West              | 0.6 km W  | Species rich grasslands.                                                                                                 |
| Land to the north of Portsdown Hill Road | 0.7 km SW | Species rich grasslands with small blue and autumn lady's-tresses.                                                       |
| Neville's Park Areas 4-10                | 0.8 km NE | Woodland with meadow brome <i>Bromus commutatus</i> .                                                                    |
| Field to West of Gillman Road            | 0.8 km SW | Species rich grassland.                                                                                                  |
| Land to the South of Portsdown Hill Road | 0.9 km SW | Unimproved grassland.                                                                                                    |
| Fort Purbrook                            | 0.9 km SW | Species rich grasslands with sainfoin and autumn lady's-tresses.                                                         |

|                                           |           |                                                                                                                                                                                                                                               |
|-------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purbrook Park Wood                        | 0.9 km W  | Ancient woodland                                                                                                                                                                                                                              |
| Sandy Dell                                | 0.9 km W  | Ancient woodland.                                                                                                                                                                                                                             |
| Stakes Coppice Remnant 2                  | 1.0 km N  | Woodland.                                                                                                                                                                                                                                     |
| Stakes Coppice Remnant 6                  | 1.0 km N  | Ancient semi-natural woodland.                                                                                                                                                                                                                |
| Neville's Park West Wood                  | 1.0 km N  | Woodland.                                                                                                                                                                                                                                     |
| Neville's Park East Wood                  | 1.1 km N  | Ancient semi-natural woodland                                                                                                                                                                                                                 |
| Newlease Copse, Havant                    | 1.1 km NW | Woodland                                                                                                                                                                                                                                      |
| Forty Acres Farm B                        | 1.1 km S  | Noted for dark-bellied brent goose.                                                                                                                                                                                                           |
| Farlington Marshes Grassland (North-East) | 1.1 km S  | Agriculturally unimproved grassland and coastal grazing marsh.                                                                                                                                                                                |
| Birkdale Avenue                           | 1.1 km SW | Lowland calcareous grassland.                                                                                                                                                                                                                 |
| Farlington Avenue                         | 1.2 km SW | Species rich grasslands.                                                                                                                                                                                                                      |
| Neville's Park Areas 2 & 3                | 1.3 km NE | Agriculturally unimproved grassland.                                                                                                                                                                                                          |
| Bushy Lease                               | 1.3 km NE | Ancient semi-natural woodland.                                                                                                                                                                                                                |
| Farlington Marshes                        | 1.3 km S  | Semi-improved grassland with significant areas of unimproved grassland with species including wild celery <i>Apium graveolens</i> ; divided sedge; sea barley; golden-samphire; narrow-leaved bird's-foot-trefoil and parsley water-dropwort. |
| Stakes Coppice Remnant 5                  | 1.5 km N  | Ancient semi-natural woodland.                                                                                                                                                                                                                |
| Meadow west of Farlington Avenue          | 1.5 km SW | Species rich grasslands.                                                                                                                                                                                                                      |
| Frank's Coppice                           | 1.7 km N  | Woodland.                                                                                                                                                                                                                                     |
| Stakes Coppice Remnant 4                  | 1.7 km N  | Woodland.                                                                                                                                                                                                                                     |
| Stakes Coppice Remnant 7                  | 1.7 km N  | Woodland.                                                                                                                                                                                                                                     |

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|--------------------------|-----------|-----------|
| Stakes Coppice Remnant 1 | 1.7 km NW | Woodland. |
|--------------------------|-----------|-----------|

9.3.2 The EA Report (2023), Appendix 9.1, has informed the habitat types on site and in addition the HBIC Record Search Results for notable and protected species within 2km of the site.

Habitats

9.3.3 Habitats within the red line boundary recorded during the 2022 extended Phase 1 Habitat survey (Appendix 9.1) include:

- Semi-improved neutral grassland
- Scattered trees
- Dense scrub
- Hedgerows
- Semi-natural broadleaved woodland

Semi-improved neutral grassland

9.3.4 The sites main habitat type is unmanaged semi-improved neutral grassland, with areas of tall sward and inundated areas. The grassland was characterised by an abundance of cock’s foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra*, creeping buttercup *Ranunculus repens*, common fleabane *Pulicaria dysenterica* and creeping thistle *Cirsium arvense*. The sward was long in all areas and parts of the south of the site was wetter with flushes present and marshy grassland species including soft rush *Juncus effusus* and lesser spearwort *Ranunculus flammula* scattered within. The grassland on site was not considered a Habitat of Principal Importance (HPI) nor is it listed as a Hampshire priority habitat. This habitat type is common within the local area. The grassland is of **negligible** importance for this assessment.

Scattered trees

9.3.5 Scattered semi-mature field maple *Acer campestre* trees were located within the centre of the site. A number of mature and semi-mature trees were located within the boundaries of the site over areas of old hedgerows and scrub. Other species included ash *Fraxinus excelsior*, horse chestnut *Aesculus hippocastanum* and elder *Sambucus nigra*. This habitat type is common within the local area and not listed as a HPI or within the Hampshire BAP, and no trees were considered likely to be ancient or veteran. The scattered trees are of **negligible** importance for this assessment.

Dense scrub

9.3.6 Dense scrub was located in patches throughout the site, predominantly in the centre of the site as well as dominating some of the boundaries where the hedgerows had been left unmanaged and had grown out. The scrub was dominated by hawthorn *Crataegus monogyna*, bramble *Rubus fruticosus* with goat willow *Salix caprea*, bracken *Pteridium aquilinum*, common nettle *Urtica dioica*, buddleia *Buddleja davidii*, blackthorn *Prunus spinosa* and teasel *Dipsacus fullonum* present. This habitat type is common within the local area and not listed as a HPI or within the Hampshire BAP. The dense scrub is of **negligible** importance for this assessment.

Hedgerows

9.3.7 Unmanaged hedgerows dominated by species such as hawthorn and field maple *Acer campestre* lie off site adjacent to the site boundary, in particular to the east of the site. A defunct and fragmented hedgerow that was heavily cut to approximately 1m in height was recorded in along the western boundary, along College Road. Hedgerows are listed as a priority habitat in Hampshire and are of **local** importance for this assessment, with the exception of the hedgerow along College Road which is of **negligible** importance due to its extremely degraded state.

Semi-natural broadleaved woodland

9.3.8 The woodlands on site are located within the northern section of the site, extending to the eastern boundary, southwestern and southeastern boundary of the site. The northern woodland is part of Little Park Wood (West) SINC, with deciduous and semi-natural ancient woodland. The remaining woodlands are mapped as deciduous woodland on DEFRA MAGIC maps. As these woodlands are both habitats of principal importance, and either designated or connected to SINCs they are of **county** importance for this assessment.

Species

Badgers

9.3.9 The HBIC record search has returned no known records within 2km of the site. The EA survey recorded no evidence of badger setts or badger activity in the form of latrines, paths, foraging or hair within the site or within accessible areas up to 50m from the redline boundary. Due to the likely absence of badgers on site they are considered to be of **negligible** importance for the purpose of this assessment, although the Proposed Development does include best practice precautionary measures during construction.

Bats

9.3.10 The HBIC has returned ten known species within 2km of the site. Species include common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Brandt’s bat *Myotis brandtii*, Whiskered bat *Myotis mystacinus*, brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, myotis species *Myotis* sp., serotine *Eptesicus serotinus* and Alcaethoe bat *Myotis alcathoe*.

9.3.11 Additional surveys, activity and emergence surveys have been undertaken in 2022. The emergence surveys have noted a likely absence of bats within the southern trees identified as low potential to host roosting bats. The activity surveys recorded mainly common pipistrelle, alongside low and individual passes from soprano pipistrelle, barbastelle, serotine, noctule, Natterer’s bat and *Myotis* species (likely whiskered / Brandt’s bat). Activity was broadly spread around the site boundaries, with foraging and commuting bats utilising the linear, tree-lined boundaries for their routes. The site was identified as regional importance using the Wray et al. (2010) methodology. The bat assessment was assessed as being of **county** importance for this assessment.

Birds

9.3.12 HBIC returned 1309 records of birds within 2 km of the site. The site lies within 1.3 km of Chichester and Langstone Harbour SPA which hosts wintering dark bellied brent geese *Branta bernicla bernicla*

and curlew *Numenius arquata*. Fields within the site are listed as both primary and secondary support areas for Brent geese as part of the Solent Waders and Brent Goose Strategy 2020 (SWBGS) (Fields H03A, H125, H113 and H106). As the site is now no longer grazed it is considered to be of lower value and suitability for geese and curlew. The EA report notes a change in grazing management with the sites grassland overgrown in places and has likely impacted on the sites usage by foraging wintering birds, evidenced in the surveys undertaken.

- 9.3.13 Winter bird surveys were undertaken by WYG in 2016-2017 due to the proximity to Chichester and Langstone Harbour SPA and Solent Waders and Brent Goose Strategy. The site encompasses Fields H106, H113, H125 and H02A which have been monitored for the presence of brent geese as part of the Solent Waders and Brent Goose Strategy. An updated record search to support the Ecological Appraisal has now classified H02A is designated as Primary Support Area, H125, H106 and H113 as a Secondary Support Area. Data provided by the HBIC included peak counts of one wader and 70 dark-bellied brent geese (*Branta bernicula bernicula*) (at this point the whole site was listed as H02A). The 2016 and 2017 surveys noted seven red list species on site including a peak count of 103 curlew (Appendix 9.5). Four amber list species were recorded on site with a peak count of 54 brent goose and 200 black-headed gull. Use of the site has declined in recent years with surveys by Wild New Forest (2023) between 2020 – 2023 recording a maximum of five curlew on three occasions in winter 2020/21 and two on one occasion in winter 2022/23. Brent geese were recorded only once in December 2022 with a flock landing briefly before leaving the site again.
- 9.3.14 The site is likely to support an assemblage of common and widespread breeding bird species using habitat features such as scrub and hedgerows. No evidence or suitability for Schedule 1 breeding bird species has been identified.
- 9.3.15 Due to the historical known use by both red and amber listed species, with known wintering bird assemblage and support areas that support the SPA, they are considered to be of **national** importance (but are assessed under Designated Sites within this Chapter). The breeding bird assemblage is considered to have **negligible** importance, although the Proposed Development does include best practice precautionary measures during construction.

#### Dormice

- 9.3.16 HBIC returned three records of hazel dormice (*Muscardinus avellanarius*) within 2 km of the site. The nearest record is within Littlepark Wood, a SINC directly north and connected to the site. In addition, use of DEFRA Magic Maps has returned nine EPSL within 2km of the site with populations focused along the A3 corridor areas. The application site has suitable habitat for dormice in the form of hedgerows, woodland and scrub. Since the 2017 surveys, dense scrub is located throughout the site providing additional areas for foraging and nesting.
- 9.3.17 The 2022 and June 2023, have confirmed presence of dormice, with eight dormice and 23 nests were found within the hedgerows, scrub and lines of trees along the northern, eastern and southern boundaries of the site. The site is situated within the A3 corridor that provides important links and dispersion opportunities for dormice. In addition, Little Park Wood (West) SINC has as a qualifying feature its dormice population. The Hampshire BAP have dormouse as a national strong hold in

Hampshire with at least 10% of the national population located in Hampshire. Due to the historical and current use by dormice, the population is considered to be of **county** importance.

#### Great Crested Newts

- 9.3.18 In 2017, an assessment was carried out to determine suitability for GCN and widespread amphibians. No suitable water bodies for GCN were recorded on site and the was assessed as having negligible suitability for the species. Two waterbodies were identified from online mapping within Portsmouth Golf Course to the south west of the site which could not be accessed. These, like the site, are isolated from other waterbodies or habitat in the wider area by roads and built development in all directions. The 2022 re-visit noted that terrestrial habitat suitability was improved on site, however there was no improvement in the wider habitat availability or connectivity and no records local to the site (including the NBN Gateway).
- 9.3.19 The site was previously unsuitable and the immediate area (including the site and golf course) remains isolated in the landscape. There are no records within 2km of the site and therefore GCN are considered likely to be absent from the site and are considered to be of **negligible** importance, although the Proposed Development includes best practice precautionary measures during construction.

#### Invertebrates

- 9.3.20 HBIC returned over 90 invertebrate species within 2km of the site, including stag beetle (*Lucanus cervus*), box bug (*Gonocerus acuteangulatus*), dingy skipper (*Erynnis tages*), white admiral (*Limenitis camilla*), grayling (*Hipparchia semele*), chalkhill blue (*Polyommatus coridon*), cinnabar (*Tyria jacobaeae*) and garden tiger (*Arctia caja*).
- 9.3.21 The scattered trees, standing water, dense scrub, tall ruderal, hedgerows and semi-improved grassland provide a mosaic of habitats that are suitable for use by both common and notable species. These habitats are however widespread and common within the area, and throughout Great Britain and there was no significant value identified for the notable species recorded within the data search.
- 9.3.22 Invertebrates are therefore considered to be of **negligible** importance for this assessment.

#### Reptiles

- 9.3.23 HBIC returned one known record of a slow worm (*Anguis fragilis*) from within 2km of the site. The previous 2016 walkover survey noted low suitability for use by reptiles due to the high level of grazing on the site. The updated walkover survey in 2022 has noted a change in management of the site with the grassland and scrub on site providing higher suitability for use by reptiles. The EA recommended further reptile surveys.
- 9.3.24 The presence and absence surveys carried out in September to October 2022 have identified a good population of common lizard and low population of slow worm on site. The peak count (adult common lizards was 17. The peak count of adult slow worms was four. Gravid female slow worms were identified during the surveys which is supported by having also found very small juveniles on site.

9.3.25 The reptile population on site is considered to be of **local** importance for this assessment.

#### Future baseline

9.3.26 From the ecological surveys undertaken in 2016 and 2017, the site has changed from grazed pasture fields to a more complex mosaic of habitats including overgrown semi-improved neutral grassland and scrub. The changes have arguably reduced the sites overall suitability for use by curlew and brent geese but have benefited the local common lizard and slow worm populations, foraging bats, and in addition the lack of boundary management and scrub invasion has also provided more favorable conditions for dormice. In the absence of future management, the overall value of the site is likely to decline as it becomes overgrown with dense scrub. If grazing or agricultural management were to be reintroduced, it would likely result in an increase in suitability for wintering birds, but a decrease in value for other species.

## 9.4 MITIGATION WITHIN THE SUBMITTED DESIGN

### Design

- 9.4.1 The impacts will be assessed against the proposals for the site including the embedded mitigation measures described below. These measures have been ‘designed-in’ to the development proposals to reduce the ecological impacts of the scheme or are standard construction measures.
- 9.4.2 Within the southern and western central boundaries of the site, SuDs measures will be incorporated to reduce run off, prevent pollution or sedimentation and reduce surface water flooding. These have been designed to incorporate biodiversity with areas of permanent water, wetland grassland creation and reedbeds.
- 9.4.3 Within the northern section of the site to protect the ancient monument, no works are proposed with the retention and enhancement of the existing grassland, woodland, scrub and hedgerows. This retained area will also ensure a suitable buffer is in place for the adjacent SINC and provide a large receptor site for reptiles during construction.
- 9.4.4 The landscape plan GLS-050\_110\_1300 ensures that the retained boundary habitats are further fostered by native species and provide a mosaic of habitat types. In addition, the incorporation of open spaces will ensure that the boundary woodlands have additional protection by way of buffer planting. In addition, the eastern boundary will have enhancement by infilling planting ensuring connectivity along the A3 corridor. Additional connectivity to SINCS will be maintained and enhanced by native planting of hedgerows, trees and shrubs.
- 9.4.5 Lighting proposals will be in line with ILP and BCT Guidance note 08 to reduce the impacts on local bat species and nocturnal species. The site layout ensures retention of dark corridors within the northern, north-western, north-eastern and south-eastern boundaries of the site. This is reflected in the outline Lighting Strategy (MMA Lighting Consultancy Ltd, 2023) which proposes to limit horizontal light spill to between 0.2 - 0.5 lux.
- 9.4.6 The development will include a financial contribution in line with the Solent Recreation Mitigation Strategy charging schedule to mitigate recreational disturbance upon the Solent European sites.

9.4.7 The development will include the securing of credits from a suitable mitigation provider to achieve nutrient neutrality.

9.4.8 An updated Ecological Mitigation and Management Plan (EMMP) will be provided in support of the planning application which will ensure the management of the existing and created habitats on site.

9.4.9 The development will facilitate the securing of a winter bird refuge at Northey Farm on Hayling Island to compensate for the loss of functionally linked habitat. Northney is used by high numbers of both curlew (peaking at 200) and brent geese (peaking at 1245) and is a highly significant part of the network. Although relatively undisturbed, in the absence of intervention, the site is at significant risk of becoming unsuitable due to flooding and sea level rise. Therefore, the Strategy proposes to secure a Winter Bird Reserve at Northney Farm (comprising parcels H59A, H59B-1 and H59C-3 identified as the key areas during surveys in 2020/21) in-perpetuity (defined as 80 years). The Strategy will comprise the following key objectives:

- Design and implement long-term sea defences to safeguard the reserve;
- Secure long-term access management to maintain low levels of disturbance;
- Secure long-term management to maintain habitat suitability;
- Provide long-term benefits to public awareness and education;
- Provide long-term monitoring.

### Construction

- 9.4.10 The boundary habitat along the northern boundary, with sections of the eastern and southern boundary habitats are to be retained on site, with connectivity to the off-site habitat corridors to the west, north, and east. The retained habitats are to be protected during the construction phase by erecting tree protection fencing with a 5 m buffer to prevent construction impacts on trees and hedgerows and their root protection zones. Protection fencing will be to BS5837:2012, Tree Protection Plan (Barrell Ref – 21141-2). This, along with the large northern open space, will provide protection to the adjacent SINCS during construction.
- 9.4.11 Construction Environmental Management Plan (CEMP) will be developed to ensure that construction noise levels, air pollution and surface water pollution are avoided. Measures to be included are set out in Chapter 3 (Description of Development).
- 9.4.12 Specific considerations in respect of fauna include best practice measures to protect animals such as covering of trenches and capping of pipes, and the avoidance of the nesting bird season (or use of pre-works checks) for vegetation clearance. Additional pre-works checks will be undertaken for badger. Toolbox talks will be given to construction staff which will include the requirement to cease works if unexpected species are encountered (such as great crested newts).

## 9.5 LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE SCHEME

- 9.5.1 The assessment will only concentrate on the likely impacts in respect to the following receptors only:
- Statutory designated sites (International importance)
  - Non-statutory sites (County Importance)
  - Hedgerows (County Importance)

- Semi-natural broadleaved woodland (National Importance)
- Wintering birds (National Importance and assessed under Statutory Sites)
- Bats (County Importance)
- Dormouse (County Importance)
- Reptiles (Local Importance)

#### Construction Phase Effects

##### Statutory designated sites

- 9.5.2 As per Table 9.1, there are six statutory sites for nature conservation scoped into the assessment. These are fully assessed within a Report to Inform Habitats Regulations Assessment.
- 9.5.3 Pathways to likely significant effect during construction are water pollution and loss of functionally linked habitat. Water pollution could occur via sediment and chemicals running off the site during construction via a ditch south of the site which is hydrologically connected to Chichester and Langstone Harbours SPA and Ramsar, the Solent Maritime SAC and Solent and Isle of Wight Lagoons SAC. The CEMP will include measures to prevent contaminated runoff from leaving the site (Chapter 3) and with the application of this embedded mitigation there will be no adverse effect on integrity and therefore no significant adverse effect.
- 9.5.4 Loss of functionally linked habitat will occur through the loss of foraging habitat for wintering birds which are qualifying features of Chichester and Langstone Harbours SPA and Ramsar. The development will secure the delivery of compensatory habitat at Northney Farm on Hayling Island (see Section 9.4). This will maintain the integrity of the wader and brent goose network by safeguarding high tide foraging and roosting habitat which is currently unsecured and will be lost to sea level rise without intervention. With the application of this embedded mitigation there will be no adverse effect on integrity and therefore no significant adverse effect.
- 9.5.5 There are no potential construction-phase effects upon Portsmouth Harbour SPA and Ramsar.

##### Non-statutory Sites

- 9.5.6 For the construction stage of the development potential impacts include air pollution through dust deposition, noise and lighting, upon the SINCs immediately north and south of the site only. These will be temporary, and a detailed construction plan will entail the equipment used, locations and duration and details of protective fencing to be installed prior to construction. All construction must be in line with industrial good practice and secured by way of a CEMP as detailed in Chapter 3. With the application of this embedded mitigation there will be no significant adverse effect.

##### Hedgerows

- 9.5.7 The proposals will result in only minor (less than 10m) loss of hedgerow to enable pedestrian and cycle access to Scratchface Lane west of the site. The former hedgerow running east through the site is now classified as dense scrub. The remaining hedgerows on or off site are to be protected by embedded mitigation. This includes the use of protective fencing during construction. The embedded mitigation through landscape plan includes new and additional hedgerows created and

enhanced on site, approximately 0.75 km of native hedgerow and 2.89 km of ornamental hedgerow, including the restoration of the defunct hedgerow along College Road. With this embedded mitigation and habitat creation there will be a significant beneficial effect upon hedgerows.

##### Semi-natural broadleaved woodland

- 9.5.8 The proposals will not result in any loss of woodland. Embedded mitigation in the form of root protection zones and fencing as advised within the Arboricultural Impact Assessment will be followed. In addition, the CEMP will also detail the buffer zones in place and measures to monitor during the construction phase. With this embedded mitigation, the woodlands on site are considered to have no significant adverse effect at the construction phase.

##### Bats

- 9.5.9 The proposals will result in the loss of overgrown species poor grassland with pockets of dense scrub that provide foraging opportunities for local bats, however they will not result in any loss of connectivity for commuting. The construction phase has the potential to impact foraging and traversing bats through lighting. Embedded mitigation by way of a CEMP to control lighting and construction timings will ensure no impact on traversing bats. The landscape proposals incorporate new and enhanced habitat for foraging bats including grassland, scrub and wetland habitats. There is the potential for a temporary loss of foraging habitat during construction, however this is unlikely to result in a change in the conservation status of the local bat assemblage and is therefore not significant. With embedded mitigation there is considered to be no significant adverse effect during construction.

##### Dormice

- 9.5.10 The proposed development will result in a loss of approximately 1.45 ha of mixed scrub, a substantial portion of which is used by hazel dormice in the east of the site. Dormice have been recorded within the eastern boundary habitats and hedgerows and tree lines directly linked to this, including the central scrub which will be removed. Although clearance would result in a loss of suitable habitat, there will be no fragmentation of hazel dormouse habitat (proposed pedestrian/cycle access east will not present a barrier to dormouse movement due to the small width). Dormice will still be able to commute along the boundaries within the site and will be able to connect to the wider offsite habitat network. The landscape proposals include significant native hedgerow planting and approximately 1ha of mixed scrub planting to reinforce existing boundary scrub and hedgerows, resulting in a net increase in suitable dormouse habitat, and no significant adverse effect.
- 9.5.11 In the absence of mitigation, there is the potential for killing or injury of hazel dormice during vegetation clearance. This would result in a significant adverse effect at a County level.

##### Reptiles

- 9.5.12 The proposals will result in the damage and destruction of suitable grassland scrub habitats for reptiles within the central and southern sections of the site. Although this habitat loss will be temporary, the construction phase will result in the loss of suitable habitat for common lizards and slow worms. Embedded mitigation includes the retention and enhancement of suitable reptile

habitat in the north of the site, with additional habitat creation included as part of the landscape design, resulting in no significant adverse effect from habitat loss.

- 9.5.13 In the absence of mitigation, there is the potential for killing or injury of reptiles during vegetation clearance. This would result in a significant adverse effect at a Local level.

#### Operational Phase Effects

##### Statutory designated site

- 9.5.14 Pathways to likely significant effect during operation are recreational disturbance and water pollution. Water pollution could occur via sediment and chemicals (such as oils and hydrocarbons) running off the site during construction via a ditch south of the site which is hydrologically connected to Chichester and Langstone Harbours SPA and Ramsar, the Solent Maritime SAC and Solent and Isle of Wight Lagoons SAC. Water pollution could also occur via increases in nitrogen outputs both in surface water and foul water (via Budds Farm wastewater treatment works). The drainage strategy (see Chapter 11) has been designed to prevent runoff of sediment and chemicals and maintain existing greenfield runoff rates. Increases in nitrogen output will be offset through the purchase of credits from a suitable mitigation provider resulting in a net reduction in TN output and nutrient neutrality. With the application of this embedded mitigation there will be no adverse effect on integrity and therefore no significant adverse effect.
- 9.5.15 Recreational disturbance could occur to Chichester and Langstone Harbours SPA and Ramsar and Portsmouth Harbour SPA and Ramsar. The development will secure a financial contribution in accordance with the Solent Recreation Mitigation Strategy. With the application of this embedded mitigation there will be no adverse effect on integrity and therefore no significant adverse effect.

##### Non-statutory Sites

- 9.5.16 There is potential for an increase in noise from road traffic during the occupation phase to have an adverse on non-statutory designated sites adjacent to the site, primarily through disturbance to fauna supported by these sites such as birds. Chapter 10 (Noise) details the modelling of predicted changes in road traffic noise. A maximum increase of 3.5 dB is predicted along College Road which is adjacent to Neville's Park West Wood SINC, and an increase of 3.0 dB in the absence of the Proposed Development. It is concluded that this increase will result in no significant adverse effect.
- 9.5.17 The air quality assessment includes an assessment of NO<sub>2</sub> and PM<sub>10</sub> concentrations as a result of future traffic during the operational phase. This concludes that the increases in both NO<sub>2</sub> and PM<sub>2</sub> are predicted to be negligible and therefore there is anticipated to be no significant adverse effect in respect of air quality during operation.
- 9.5.18 The operational phase has the potential to result in increased recreational pressure to Littlepark Wood (West) north of the site. However, this contains a well-used footpath as part of the local right of way network. Embedded mitigation is to maintain existing rights of way within the site to decrease the potential for social trails to occur within the woodland SINC, and provide additional areas of public open space. No formal footpaths connection is proposed to Portsmouth Golf Course Copse SINC, embedded mitigation includes additional planting of this shared boundary with native shrubs

preventing access to this SINC (which is already inaccessible). With embedded mitigation it is considered that there will be no significant adverse effect.

##### Hedgerows

- 9.5.19 A Landscape and Ecology Management Plan with input from a dormouse ecologist will ensure that all existing and new boundary hedgerows are maintained for wildlife with their success and upkeep monitored to meet the conditions of the dormouse mitigation licence, as such it is considered that there will be no significant adverse effect on hedgerows during the operational phase.

##### Bats

- 9.5.20 Operational lighting can cause a significant adverse effect by reducing movement or complete avoidance of the site by this light sensitive species. These changes in behaviour due to light avoidance can further impact by roost abandonment, isolation of populations by severing important corridors and a reduction of suitable foraging areas within a territory. The development includes embedded mitigation by means of a lighting strategy which is in line with the BCT and ILP Guidance Note 8 (BCT and ILP, 2018) with dark corridors and lux levels between 0.2 – 0.5 lux. In addition, the landscaping design has ensured connectivity across the landscape by retention and enhancement of the site boundaries. It is considered through the embedded mitigation that there will be no significant adverse effect.

##### Dormice

- 9.5.21 The operational phase has the potential to result in direct adverse impacts due to predation, inappropriate hedgerow and boundary management habitat loss and lighting.
- 9.5.22 As previously discussed within the bat section, the site will have a sensitive lighting strategy as embedded mitigation.
- 9.5.23 As per the hedgerow section, the LEMP will ensure the management of the onsite boundary habitats including hedgerows and woodland during the operational phase are managed to benefit wildlife including dormice.
- 9.5.24 According to the People's Trust for Endangered Species, although hazel dormice are taken by cats, owls, weasels and grey squirrels when active (and badgers whilst hibernating), they are not generally predated. This is because they persist at low population densities and typically inhabit habitat where predation is difficult. The embedded mitigation includes measures to further reduce the risk of significant predation pressure by increasing the amount of suitable dormouse habitat (thus potentially supporting a larger population) and planting of thorny species such as hawthorn and blackthorn to provide further refuges and to buffer existing habitat. With embedded mitigation it is considered that there will be no significant adverse effect upon dormice during operation.

##### Reptiles

- 9.5.25 The operational phase has the potential to result in adverse impacts due to inappropriate habitat management.
- 9.5.26 As discussed in relation to hedgerows and dormice, an LEMP will detail long-term habitat management requirements to maintain habitats enhanced and created for reptiles in optimum

condition, validated by ongoing monitoring of both habitats and reptile populations. With embedded mitigation it is considered that there will be no significant adverse effect upon dormice during operation.

9.7.3 Assuming that the embedded mitigation is in place during both the construction and operational phase, the proposed development will result in no significant adverse residual effects.

## 9.6 ADDITIONAL MITIGATION, COMPENSATION AND ENHANCEMENT MEASURES

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- 9.6.1 To mitigate the risk of killing and injuring hazel dormice, all clearance of suitable habitat will take place under an EPS licence from Natural England. Vegetation clearance will take place under the supervision of a licensed dormouse ecologist who will check vegetation for nests prior to clearance. Vegetation will be phased (first above ground then to ground level) working towards retained suitable habitat. Nests if found will be relocated by hand unless they contain dependent young in which case works will cease until young are self-sufficient. Additional enhancement will include the installation of 50 hazel dormouse nest boxes.
- 9.6.2 To mitigate the risk of killing and injuring common reptiles during construction, a reptile translocation will move reptiles to the receptor site in the north of the site (centred on the scheduled ancient monument). This area will be fenced from the construction site with reptile fencing for the duration of construction. The translocation will take place over a minimum of 60 days due to the number of common lizard recorded on site. Artificial refuges will be placed on site with reptiles captured by hand and relocated to the receptor. During the course of the translocation, phased vegetation clearance will be used to improve the capture success. Following completion of the translocation (five clear days unless otherwise agreed), a further vegetation cut to ground level and destructive search with toothed digger bucket will be undertaken where necessary under ecological supervision. Additional enhancement will include the creation of ten reptile hibernacula across the site in areas of open space.
- 9.6.3 Additional enhancements are proposed for bats and birds through the installation of 300 bat boxes (a mix of designs for buildings and trees) and 300 bird boxes (a mix of swift box/bricks, house sparrow terraces and open and close-fronted boxes).

## 9.7 ASSESSMENT SUMMARY AND LIKELY SIGNIFICANT RESIDUAL ENVIRONMENTAL EFFECTS

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- 9.7.1 In the absence of mitigation, the proposals have the potential to cause significant adverse effects on the identified ecological receptors on site. Impacts include the direct loss of habitat with the associated indirect and direct impacts on species including dormice, bats, reptiles and wintering birds.
- 9.7.2 The embedded mitigation seeks to retain and enhance key habitat areas on site including woodland and hedgerows, with new and additional boundary habitats and species rich grassland to enhance the site in the long term for dormice, reptiles and bats in the long-term to avoid a loss in these species. Offsite compensation with the provision of the Wader and Brent Goose Refuge will ensure no impacts due to the loss of primary and secondary support areas.

Table 9.3      Assessment Summary and Residual Environmental Effects

| Summary description of the identified impact | Sensitivity of Receptor | Impact Magnitude | Significance and Nature of Effect | Additional Mitigation                                                                  | Residual Impact Magnitude | Residual Significance and Nature of Effect | Confidence Level |
|----------------------------------------------|-------------------------|------------------|-----------------------------------|----------------------------------------------------------------------------------------|---------------------------|--------------------------------------------|------------------|
| Construction                                 |                         |                  |                                   |                                                                                        |                           |                                            |                  |
| Statutory designated sites                   | International           | Not significant  | No significant adverse effect     | Embedded mitigation – pollution prevention and control within CEMP                     | Not significant           | No significant adverse effect              | High             |
| Water pollution                              |                         | Not significant  | No significant adverse effect     | Embedded mitigation – provision of compensatory habitat                                | Not significant           | No significant adverse effect              | High             |
| Loss of functionally linked habitat          |                         |                  |                                   |                                                                                        |                           |                                            |                  |
| Non-statutory designated sites               | County                  | Not significant  | No significant adverse effect     | Embedded mitigation – pollution prevention and control within CEMP                     | Not significant           | No significant adverse effect              | High             |
| Dust, noise and lighting                     |                         |                  |                                   |                                                                                        |                           |                                            |                  |
| Hedgerows                                    | Local                   | Significant      | Significant beneficial            | Embedded mitigation – protection fencing, significant increase in hedgerow provision   | Significant               | Significant beneficial                     | High             |
| Habitat loss                                 |                         |                  |                                   |                                                                                        |                           |                                            |                  |
| Semi-natural broadleaved woodland            | County                  | Not significant  | No significant adverse effect     | Embedded mitigation – protection fencing, pollution prevention and control within CEMP | Not significant           | No significant adverse effect              | High             |
| Habitat loss, degradation and disturbance    |                         |                  |                                   |                                                                                        |                           |                                            |                  |

|                            |               |                 |                               |                                                                                              |                 |                               |      |
|----------------------------|---------------|-----------------|-------------------------------|----------------------------------------------------------------------------------------------|-----------------|-------------------------------|------|
| Bats                       | County        | Not significant | No significant adverse effect | Embedded mitigation – habitat retention and compensation                                     | Not significant | No significant adverse effect | High |
| Lighting                   |               |                 |                               |                                                                                              |                 |                               |      |
| Dormice                    | Local         | Not significant | No significant adverse effect | Embedded mitigation – habitat retention and compensation                                     | Not significant | No significant adverse effect | High |
| Habitat loss/fragmentation |               |                 |                               |                                                                                              |                 |                               |      |
| Killing and injury         |               | Significant     | Significant adverse effect    | Additional mitigation – habitat clearance under EPSL                                         | Not significant | No significant adverse effect | High |
| Reptiles                   | Local         | Not significant | No significant adverse effect | Embedded mitigation – habitat retention and compensation                                     | Not significant | No significant adverse effect | High |
| Habitat loss/fragmentation |               |                 |                               |                                                                                              |                 |                               |      |
| Killing and injury         |               | Significant     | Significant adverse effect    | Additional mitigation – reptile translocation                                                | Not significant | No significant adverse effect | High |
| Operation                  |               |                 |                               |                                                                                              |                 |                               |      |
| Statutory designated sites | International | Not significant | No significant adverse effect | Embedded mitigation – surface water strategy and nutrient neutrality through credit purchase | Not significant | No significant adverse effect | High |
| Water pollution            |               |                 |                               |                                                                                              |                 |                               |      |
| Recreational disturbance   |               | Not significant | No significant adverse effect | Embedded mitigation – provision of financial contribution to SRMS                            | Not significant | No significant adverse effect | High |

|                                  |        |                 |                               |                                                                                                         |                 |                               |      |
|----------------------------------|--------|-----------------|-------------------------------|---------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|------|
| Non-statutory designated sites   | County |                 |                               |                                                                                                         |                 |                               |      |
| Dust and noise                   |        | Not significant | No significant adverse effect | N/A                                                                                                     | Not significant | No significant adverse effect | High |
| Recreation                       |        | Not significant | No significant adverse effect | Embedded mitigation – provision of open space, maintenance of footpath connections, screening planting. | Not significant | No significant adverse effect | High |
| Hedgerows                        | Local  |                 |                               |                                                                                                         |                 |                               |      |
| Inappropriate habitat management |        | Not significant | No significant adverse effect | Embedded mitigation – LEMP                                                                              | Not significant | No significant adverse effect | High |
| Bats                             | Local  |                 |                               |                                                                                                         |                 |                               |      |
| Artificial lighting              |        | Not significant | No significant adverse effect | Embedded mitigation – lighting strategy                                                                 | Not significant | No significant adverse effect | High |
| Dormice                          | Local  |                 |                               |                                                                                                         |                 |                               |      |
| Artificial lighting              |        | Not significant | No significant adverse effect | Embedded mitigation – lighting strategy                                                                 | Not significant | No significant adverse effect | High |
| Inappropriate habitat management |        | Not significant | No significant adverse effect | Embedded mitigation – LEMP                                                                              | Not significant | No significant adverse effect | High |
| Predation                        |        | Not significant | No significant adverse effect | Embedded mitigation – habitat creation                                                                  | Not significant | No significant adverse effect | High |
| Reptiles                         | Local  |                 |                               |                                                                                                         |                 |                               |      |
| Inappropriate habitat management |        | Not significant | No significant adverse effect | Embedded mitigation – LEMP                                                                              | Not significant | No significant adverse effect | High |

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