

Ecological Impact Assessment



North of Oysters , Hayling Island
26th October 2021



**Tyler
Grange**

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Summary

- S.1. This report has been prepared by Tyler Grange Group Ltd on behalf of Hayling Island Builders (HIB). It sets out the findings of an ecological impact assessment of a parcel of land known as 'Land North of the Oysters' (OS Grid Reference SZ711998), hereinafter referred to as the 'site,' to inform an outline planning application for residential development.
- S.2. The site comprises a single arable field of negligible ecological importance, bound by tree line and hedgerow on the western and eastern boundaries of local ecological importance and a series of ditches of local ecological importance. The Hayling Billy Trail Local Nature Reserve (LNR) is adjacent to the site, to the west, residential development to the south and east and further arable land to the north.
- S.3. The site is located within approximately 0.3 km of the Chichester and Langstone Harbours Ramsar Site and Special Protection Area (SPA). Portsmouth Harbour is also within 7.4 km of the site. The Solent SPAs support internationally important populations of dark-bellied brent goose (*Branta bernicla bernicla*) and waders. The Solent Waders and Brent Goose Strategy (SWBGS, 2020) identifies a network of sites considered to represent functionally linked land, important to retain the conservation status of populations associated with the SPAs. The site itself is classified as a 'Secondary Support Area'. Secondary support areas "*offer a supporting function to the Core and Primary Support ecological network*" (SWBGS, 2018). As a result of the loss of the site as a potential resource for the waders and brent geese, a compensatory site will be provided to ensure suitable foraging habitat is maintained in perpetuity.
- S.4. Habitats of most ecological importance, namely boundary hedgerow, trees lines and ditches, on the site are proposed to be retained and will be protected during construction through implementation of a Construction Ecological Management Plan (CEMP), subject to planning control. Habitat creation and enhancement of retained habitats will include SuDS creation, additional tree planting and improved grassland management, expected to be confirmed through detailed design at reserved matters stage and controlled based on production and implementation of detailed soft landscape proposals, planting specification and Landscape and Ecological Management Plan (LEMP), to be conditioned.
- S.5. Based on the Illustrative Masterplan and the habitat creation and enhancement that can be achieved, a Biodiversity Net Gain (BNG) assessment (using Defra 3.0) has confirmed the site will achieve +2.22 % in Habitat Units and a gain of +7.95 % in River Units.
- S.6. In terms of fauna, retention and enhancement of the boundary tree line and hedgerow, grassland and the northern ditch will maintain suitable habitats for fauna recorded during surveys, including foraging and commuting bat species and common reptile species. Habitat enhancements which will be accommodated within the Illustrative Masterplan include planting and improved management measures to increase floristic species diversity, as well as installation of bat and bird boxes, a reptile refugia and log piles, within suitable locations, to be confirmed by an ecologist.
- S.7. With the implementation of the mitigation and enhancement strategy described, the proposed development would be in conformity with relevant legislation and planning policy, as set out in **Appendix 1**. The strategy would be controlled by appropriately worded planning controls to ensure the implementation of a CEMP, LEMP and wintering bird mitigation strategy.



Section 1: Introduction

Instruction

- 1.1 This report has been prepared by Tyler Grange Group Ltd on behalf of Hayling Island Builders (HIB). It sets out the findings of an ecological impact assessment (EclA) of a parcel of land known as 'Land North of the Oysters', West Town, Hayling Island, centred on OS Grid Reference SZ711998, to inform an outline planning application for residential development of up to 29 homes. This land, defined by the site boundary illustrated on Habitat Features **Plan 13956/P22** is hereinafter referred to as the 'site'.

Context

- 1.2 This assessment is based on the Illustrative Masterplan submitted with the outline planning application. All matters are reserved except for access; therefore, detailed design is expected to be subject to planning condition and to be provided as part of a future reserved matters application, subject to permission.
- 1.3 The Solent Waders and Brent Goose Strategy (SWBGS, 2020) has been produced by the Solent Waders and Brent Geese Strategy Steering Group to inform decisions relating to development proposals in relation to the important brent goose and wading bird populations within and around the SPAs and Ramsar wetlands of the Solent Coast. A metric-based approach has been adopted to classify habitats based on their importance, with each land parcel also allocated a reference. The site is known as (part of) H34E within this strategy, illustrated on **Figure 1.1**, below.
- 1.4 'The Oysters', land north of Station Road, Hayling Island development was consented (Planning reference APP/15/00919) in December 2015 for the development of 76 residential units and 1000sqm of light-industrial accommodation (Class B1) immediately to the south of the site. The ecology report submitted with the reserved matters application (WYG, 2015) acknowledges the 'Brent Goose Mitigation Strategy' submitted with the outline application (Tyler Grange, 2013) which identified a change in land use and habitat management of H34D (adjacent to the north of field H34E but not adjacent to the proposed site boundary), controlled by S106. The update surveys undertaken in 2015 confirmed the change from paddock to arable land had been undertaken. As a result, the WYG report did not address additional mitigation requirements in line with SWBGS, 2010 (now 2020) beyond those previously identified. The signed Unilateral Undertaking (UU) for the consented scheme made a commitment to financial contributions towards the 'Solent Mitigation Strategy' for in combination recreational impacts.





Figure 1.1: Site context (Source: Google Earth) and SWBGS classifications

Purpose

1.5 This report:

- Uses available background data, results of field surveys and consultation with Hampshire County Council and the RSPB, to describe and evaluate the ecological features present within the likely zone of influence (Zoi)¹ of the proposed development;
- Describes the actual or potentially significant ecological effects as a result of the proposed development; and
- Where appropriate, describes mitigation and enhancement proposals, together with planning controls, to ensure conformity with legislation and policy listed in **Appendix 1**.

1.6 This assessment and the terminology used are consistent with the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018).

¹ Defined as the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.



Section 2: Summary of Relevant Legislation and Planning Policy

2.1 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including those listed below, of relevance to the proposed development:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Countryside and Rights of Way (CROW) Act 2000; and
- The Natural Environment and Rural Communities Act (NERC) 2006.

2.2 Where relevant, the assessment takes account of this legislative protection.

2.3 Relevant planning policy for the proposed development is summarised below, with more detail contained in **Appendix 1**.

- The National Planning Policy Framework (NPPF) 2021;
- Havant Borough Local Plan (Core Strategy) (2011):
 - o Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough;
 - o Policy CS13 Green Infrastructure; and
 - o DM8 Conservation, Protection and Enhancement of Existing Natural Features
- Havant Borough Local Plan (Allocations) (2014):
 - o Policy DM23 Sites for Brent Geese and Waders; and
 - o Policy DM24 Recreational Disturbance to Special Protected Areas (SPAs) from Residential Development.
- Havant Borough Local Plan (Submission version) (2021), although this is not currently adopted:
 - o E14 The Local Ecological Network;
 - o E15 Protected Species;
 - o E16 Recreation impact on the Solent European Sites;
 - o EX1 Water Quality impact on Solent European Sites;
 - o E17 Solent Wader and Brent Goose feeding and roosting sites; and
 - o E18 Trees, hedgerows and woodland.



Section 3: Methodology

Scoping

- 3.1 The site is defined by the site boundary, see Habitat Features **Plan 13956/P22**.
- 3.2 The scope of the EclA was determined by undertaking a data search and initial site visit to undertake an extended Phase 1 habitat survey.
- 3.3 Consideration of the potential Zol for different ecological features as a result of the proposed development informed the search areas for the data search, described below. Subsequently the Zol was reconsidered for different ecological features to determine the scope of further surveys required to inform this assessment, where a reasonable likelihood of the species being present and affected by the proposed development meant there was potential for significant ecological effects or a requirement for mitigation measures to ensure legal compliance.
- 3.4 The scope of surveys was discussed with Tristan Norton, Senior Ecologist, Hampshire Country Council, on the 16th August, who was in agreement with the approach. The principle of providing permanent habitat for waders and brent geese within an existing core area was also discussed and welcomed in principle, subject to confirmation of the details.
- 3.5 Consultation to agree details of the wintering bird mitigation strategy is ongoing and expected to continue through the determination period. Although, the principles of necessary mitigation and enhancement measures to ensure the proposals would be in line with planning policy and legislation are included within this assessment. As a result, it is expected the shadow Habitat Regulations Assessment (sHRA) will be submitted to Havant Borough Council Local Planning Authority (LPA) once further details are confirmed, to allow the council to complete their own Habitat Regulations Assessment (HRA).
- 3.6 Potential effects that are considered unlikely to be significant have been scoped out at the relevant stages of this assessment.

Data Search

- 3.7 The aim of the data search is to collate existing ecological records for the site and adjacent areas. Obtaining existing records is an important part of the assessment process as it provides information on constraints that may not be apparent during a single survey, which by its nature provides only a 'snapshot' of the ecology of a given site.
- 3.8 Search areas for which records were requested or checked were selected for each feature/group to ensure relevant features within the Zol of the proposed development have been considered. The Solent Wader Mitigation Strategy (Bird Aware Solent, 2017) identifies the potential for residential development within 5.6 km of the Solent SPAs to cause increased recreational disturbance, as this is the zone from which 75% of coastal visitors live.



- 3.9 As a result, the study area extended to a 2 km radius for records of protected species and species of principal importance², 2 km for non-statutorily and nationally designated statutory sites and 10 km for Natura 2000 statutorily designated sites.
- 3.10 The data search was conducted in April 2021. The following organisations and resources were contacted and consulted:
- Hampshire Biodiversity Information Centre (HBIC) Records Centre, for protected and priority species and locations of non-statutory sites;
 - Multi-Agency Geographic Information for the Countryside (MAGIC) Interactive Maps, for locations of European and national statutory sites;
 - Section 41 of the Natural Environment and Rural Communities (NERC) Act for species and habitats of principal importance in England, subject to conservation action, to assist with the evaluation of ecological resources and to inform site enhancement strategies;
 - The Havant Borough Biodiversity Strategy (HBBS) (Havant Borough Council, 2019), for local priority habitats and species subject to conservation action, to assist with the evaluation of ecological resources and to inform site enhancement strategies; and
 - Havant Borough Council website for details of relevant local planning policies and supplementary planning guidance.
- 3.11 Information supplied by these organisations has, where relevant, been incorporated into the following assessment, with due acknowledgement.

Extended Phase 1 Habitat Survey

- 3.12 An extended Phase 1 habitat survey of the site was undertaken on 9th April by Katherine Bubb, an experienced ecological consultant and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 3.13 The habitat survey methodology was based on guidance set out in the 'Handbook for Phase 1 habitat survey' (JNCC, 2010). This entailed classifying and mapping broad habitat types present. A basic inventory of the habitats and representative species list was produced. Where access allowed, adjacent habitats were also considered, in order to assess the site within the wider landscape.
- 3.14 Note was taken of the more conspicuous fauna, and any evidence of, or potential for the presence of protected flora and fauna or those of principal importance.

² Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework (which superseded UK BAP in July 2012).



- 3.15 The weather conditions during the survey were bright and breezy, with an air temperature of approximately 12°C and approximately 20% cloud cover.

Further Surveys

Bats

Preliminary bat roost assessment (PBRA)

- 3.16 A PBRA was undertaken on all trees on or immediately adjacent to the site boundary to record potential roost features (PRFs) and determine the level of potential of each tree to be used by roosting bats. The assessment was undertaken on 28th June 2021 by Christian Cairns, an experienced ecologist and Qualifying member of CIEEM.
- 3.17 The location of the trees at the site are shown on Tree Constraints **Plan 13956/P01a**. All trees were inspected from the ground aided by the use of binoculars and a high-powered torch.
- 3.18 Features recorded may include woodpecker holes, frost cracks, deadwood, knot holes and limb wounds. The potential of the trees to support roosting bats was assessed using the criteria shown in **Table 3.1** below.

Table 3.1: Assessment criteria – adapted from BCT Good Practice Guidelines (Collins, 2016)

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain Potential Roost Features (PRFs) but with none seen from the ground or features seen with only very limited potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time.

Bat activity survey

- 3.19 The site is considered to have low suitability to be used by foraging and commuting bats given the relatively isolated nature of the arable site surrounded by existing residential and light industrial development to the south and east, and further arable habitat to the north. Given the proposed retention of the western boundary tree line, therefore avoiding potential impacts to this feature providing potential connectivity beyond the site, along the Hayling Billy Trail, and the small size of the site it was considered static detector surveys would provide more useful data than walked transects.
- 3.20 Seasonal activity surveys were undertaken in spring (May) and summer (June/July) and autumn (September). Full survey dates and metadata are provided in **Table A2.1** in **Appendix 2**.



- 3.21 Static Anabat Express and Anabat Swift detectors were placed in two locations, as illustrated on Fauna Results Plan **13956/P24** for a minimum of five consecutive nights on each survey visit. The number of detectors deployed on site was increased from best practice, in line with habitats of moderate suitability, in the absence of walked transects.
- 3.22 The static detectors were set to begin recording 30 minutes before sunset and continue to record for 30 minutes after sunrise. Recordings were analysed using AnalookW and Bat Explorer software, respectively to identify calls characteristic of individual bat species or groups of species.

Birds

- 3.23 Wintering bird surveys have been undertaken by Tyler Grange Group Ltd historically for surrounding development applications and ongoing monitoring. These surveys, which included the site itself (referred to as H34E within the SWBGS, 2010), were undertaken during winter seasons 2011/12, 2012/13, 2015/2016, 2017/2018, 2018/2019 and then in 2020/2021. Surveys were undertaken in line with the methodology set out in SWBGS, 2010 and subsequently updated in 2020. Full survey dates and metadata are provided in **Appendix 4**.

Great Crested Newt

Habitat Suitability Index assessment survey

- 3.24 Using OS mapping and aerial imagery two ponds were identified offsite within 250m of the site boundary. A series of drainage ditches are also present within arable fields beyond the site to the north.
- 3.25 A habitat suitability index (HSI) assessment of Ponds P1 and P2 and ditches D1- D4 was conducted on 28th June 2021 by Christian Cairns (great crested newt (GCN) licence holder ref: 2018-36206-CLS-CLS) and Oliver Kippax-Chui. The survey followed the methodology set out in current survey guidelines (Oldham, Keeble, Swan, & Jeffcote, 2000) and comprised assessing different pond parameters from the pond edge. The location of the waterbodies/courses subject to survey are illustrated on Fauna Survey Results **Plan 13956/P24**.
- 3.26 The Amphibian and Reptile Groups (ARG) Advice Note 5 (ARG UK, 2010) regarding HSI guidance was used whereby a number of factors including pond location, water quality, macrophyte cover and shading were assessed. A score is given to each waterbody between 0 and 1, with scores closer to 0 having lower probability of GCN (*Triturus cristatus*) occurrence. The HSI scores are provided below:
- <0.5 Poor;
 - 0.5 – 0.59 Below average;
 - 0.6 – 0.69 Average;
 - 0.7 – 0.79 Good; and
 - >0.8 Excellent.
- 3.27 The purpose of the HSI assessment is to provide a measurement of the habitat suitability to support amphibians and does not confirm the presence or likely absence of GCN within the site.



However, in general, ponds with a higher habitat suitability assessment score are more likely to support GCN than one with a lower score. This assessment does not replace the need for further GCN surveys.

eDNA survey

- 3.28 In order to confirm the presence or likely absence of GCN from waterbodies where potential for GCN was identified, these waterbodies were subject to environmental DNA (eDNA) analysis which following laboratory analysis confirmed a positive or negative result for GCN DNA.
- 3.29 Twenty water samples were taken from onsite D3 and offsite P1 and P2 on 28th June 2021 by licenced ecologist Christian Cairns (GCN licence holder ref: 2018-36206-CLS-CLS), following the methodology of the field protocol outlined in the Technical Advice Note (Biggs, et al., 2014). Due care and attention during eDNA sampling were taken to avoid stirring up sediment and to take samples covering the full extent of the ponds including clear areas of water, deeper areas of the pond and areas close to potential egg laying vegetation, to ensure that every possible chance of detecting GCN, should they be present, was taken for each waterbody. The samples were tested by Nature Metrics following the laboratory procedure within the same document.

Reptiles

- 3.30 A reptile survey was undertaken within areas of the site with potential to support reptile species, which included grassland habitat around the northern and eastern field margins.
- 3.31 The surveys were conducted in line with Froglife's Advice Sheet 10 (Froglife, 1999). This involved laying refuges (squares of roofing felt 1 m x 0.5 m) where potential for reptiles was noted. A total of 18 artificial refugia were set out on 5th July 2021 at a density of 14.5 refuges per hectare based on the total site area (1.24 ha).
- 3.32 Following a 'bedding in' period of at least 14 days, seven checks of the artificial refuges and natural refuges were conducted during suitable weather conditions between 26th July and 24th August 2021 by Jack Hargreaves. The dates and weather conditions of the surveys are shown in **Table A2.14**, within **Appendix 2**. Natural basking areas were also observed for the presence of reptiles during the survey checks, along with note of incidental sightings.

Water Vole

- 3.33 A water vole survey was undertaken of onsite ditches (D1, D2, D3 and D4) on 28th June 2021 by Christian Cairns and Oliver Kippax-Chui.
- 3.34 The survey comprised a habitat suitability assessment to determine the potential for each ditch to be used by water vole, if present, as well as a presence or likely absence survey to look for relevant field signs.
- 3.35 Water vole signs searched for included burrows, droppings, latrines, feeding stations, lawns, nests, footprints and runways in vegetation. The survey methods followed those detailed in the Water Vole Mitigation Handbook (Dean, Strachan, Gow, & Andrews, 2016). The survey was undertaken



from within the channel where possible and safe access allowed, or along the banks of the ditches.

Summary

- 3.36 **Table 3.2** below summarises the further surveys undertaken, together with dates. **Appendices 2 and 4** should be referred to for further details concerning survey metadata and detailed methodologies.

Table 3.2: Summary of further surveys undertaken

Survey	Date	Appendix	Summary of Scope
Bat survey	28.06.2021	2	Ground level preliminary bat roost assessment of trees within or adjacent to site boundary
	V1 27.05.2021 – 31.05.2021 V2 29.06.2021 – 03.07.2021 V3 06.09.2021 – 10.09.2021		Bat activity survey comprising deployment of two static bat detectors on site on each visit
Wintering bird surveys	Oct/November – March 2011 - 2021	4	Survey of site and other surrounding fields approximately every 2 weeks at high tide following the methodology published in the SWBGS, 2010 and updated in 2020.
GCN survey	28.06.2021	2	Habitat suitability index (HSI) assessment survey of onsite watercourses (D1-D4) and off-site ponds (P1 and P2)
	28.06.2021		eDNA survey of D3, P1 and P2 considered to have potential for GCN
Reptile survey	26.07.2021 – 28.08.2021	2	Reptile survey within suitable grassland habitat within the northern and eastern field margins
Water vole survey	28.06.2021	2	Habitat suitability and presence likely absence survey of onsite watercourses (D1 – D4)

Evaluation

- 3.37 The evaluation of habitats and species is defined in accordance with the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018).
- 3.38 The scale of importance of each ecological feature is assigned within a defined geographical context, namely international and European, national, regional, county and local³.
- 3.39 Consideration was also be given to legally protected or controlled species which are 'important features' in the context of this assessment, for which mitigation measures are required to ensure legal compliance, regardless of their geographic scale of importance.

³ In this assessment, local importance is considered within the context of the borough and/or where there is potential for significant effects, at less than the county scale.



Impact Assessment

- 3.40 The assessment of impacts identifies and characterises impacts and their effects as a result of the proposed development on important ecological features (IEFs). This includes consideration of impacts at all relevant stages of the development, including construction and occupation.
- 3.41 Characterisation of impacts has been undertaken based on CIEEM guidance (CIEEM, 2018) with reference to where they are considered to be positive or negative, their extent, magnitude duration, reversibility, timing and frequency, as appropriate.
- 3.42 Assessment of the significance⁴ of any residual impacts has been made following consideration of avoidance and mitigation measures, where these have been incorporated into the Illustrative Masterplan (Mosaic Drawing 1239 003 J) or can be guaranteed with the use of available planning controls.
- 3.43 The significance of effects on IEFs have been qualified with reference to an appropriate geographic scale of reference, as described in paragraph 2.41. Although, it is worth noting that the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important.
- 3.44 The assessment then identifies appropriate compensation measures to offset significant residual effects⁵. Finally, opportunities for ecological enhancement are identified.

Application of Mitigation Hierarchy

- 3.45 Application of the mitigation hierarchy is fundamental to the ecological impact assessment process. This requires consideration of the following measures, in order of priority, for all potential impacts⁶, to determine the most appropriate mitigation, compensation and enhancement strategy for the project. This is taken into account within **Section 5** of this report.
- Avoidance – measures to avoid harm to ecological features;
 - Mitigation – measures to avoid or minimise potential impacts as part of the design or guaranteed by planning controls;
 - Compensation – measures required to offset significant residual negative effects⁷ following avoidance and mitigation; and
 - Enhancement – measures over and above requirements for avoidance, mitigation and compensation to provide biodiversity net gain.

⁴ For the purpose of EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.

⁵ Once measures to avoid and mitigate ecological impacts have been finalised, assessment of the residual impacts is undertaken to determine the significance of their effects on ecological features.

⁶ Impacts are defined as actions resulting in changes to an ecological feature.

⁷ Effects are defined as the outcome to an ecological feature from an impact.



Limitations and Assumptions

- 3.46 The species data collated during the data search are only those records submitted to HBIC and therefore should not be taken as a definitive list of the protected species and those of principal importance to occur within the study area.
- 3.47 On visit one, the static detectors did not record for the five nights, this is thought to be caused by faulty SD cards in the devices not allowing sound files to be recorded, although they did both record for two nights. On visit three the detector in location two, in the east of the site, didn't record for five nights. Despite this the number of species recorded was consistent with the second visit. As a result, this is not considered to have affected the assessment of the assemblage of bats utilising the site and their importance due to the consistency of results between visits and with the nearby Land South of Saltmarsh Lane, Hayling Island site (Tyler Grange report reference **13956/R06**).
- 3.48 Based on best practice guidance, reptile survey visits should be undertaken when the air temperature is between 9°C and 18°C (Froglife, 1999). Survey visit one was undertaken when the air temperature was 20°C, just above this recommended maximum, although slow worm was still recorded on this visit. The remaining visits were undertaken within optimal weather conditions. As a result, this is not expected to be a significant limitation to the survey results overall and our assessment of the importance of the reptile assemblage on the site.
- 3.49 There were no limitations to the GCN or water vole surveys on the site, which were undertaken at the optimal time of year based on relevant best practice. Consultation with Tristan Norton, Hampshire Country Council, confirmed that GCN are not known/expected to be present on Hayling Island. This was also confirmed to be the case for water vole. As a result, given the lack of available records and lack of field signs recorded on the 28th June 2021, it was agreed a second survey visit (in the second half of the season between July and September) was not required.

Quality Control

- 3.50 This report has been through a technical review process, with the final sign off being undertaken by an Associate or Full member of CIEEM. All CIEEM members are bound to abide by the Institute's Code of Professional Conduct.



Section 4: Ecological Features and Evaluation

Site Context

- 4.1 The site comprises an arable field bound by a tree line and hedgerow to the west and east, respectively, and drainage ditch to the north. A drainage ditch is also present to the south of the site, with recent tree and shrub planting along its margin.
- 4.2 An attenuation pond associated with the recent residential development (known as 'the Oysters') to the south is present immediately to the south-east of the site. Additional residential housing is present to the east, with arable habitat to the north and the Hayling Billy Trail to the west.

Designated Sites

Statutorily Designated Sites

- 4.3 European and national statutorily designated sites within 10km and 2km, respectively, are listed in **Table 4.1** below, along with a summary of their qualifying features/reason for designation, distance from the site and evaluation of their ecological importance. Those present within 2km are illustrated on **Figure 4.1**, below, provided by the Hampshire Biodiversity Information Centre.

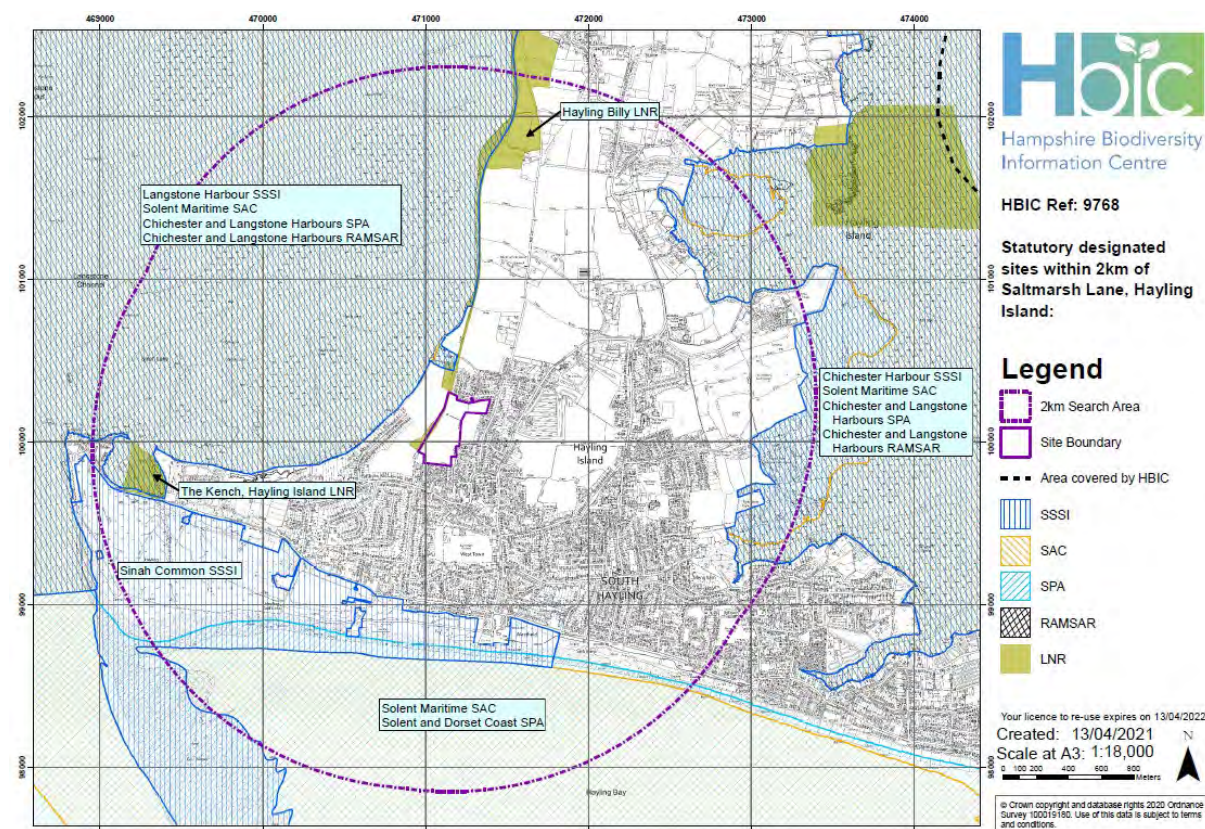


Figure 4.1: Statutory designated sites within 2km of the site. (NB: Site boundary illustrated does not represent the application boundary defined in this report).



- 4.4 The site is located within a Site of Special Scientific Interest (SSSI) impact risk zone, identified on MAGIC⁸.

Table 4.1: Statutorily designated sites within the study area

Site name and Designation	Description and reason for designation	Ecological Importance
CHICHESTER AND LANGSTONE HARBOURS Ramsar Site	Approximately 0.3 km west of site. Site is comprised of two large estuarine basins linked by a channel and including extensive intertidal mudflats, saltmarsh, sand and shingle spits, and dunes supporting reedbeds and some grassland. Numbers of wintering waterbirds regularly exceed 20,000 individuals and include internationally and nationally important numbers of several species.	International
CHICHESTER AND LANGSTONE HARBOURS Special Protection Area (SPA)	Approximately 0.3 km west of site. This site supports breeding little tern (<i>Sternula albifrons</i>) and sandwich tern (<i>Sterna sandvicensis</i>); on passage and over-wintering little egret (<i>Egretta garzetta</i>) and overwintering bar-tailed godwit (<i>Limosa lapponica</i>). The site also supports migratory ringed plover (<i>Charadrius hiaticula</i>), black-tailed godwit (<i>Limosa limosa islandica</i>), dark-bellied brent goose (<i>Branta bernicla bernicla</i>), dunlin (<i>Calidris alpina</i>), grey plover (<i>Pluvialis squatarola</i>), redshank (<i>Tringa totanus</i>) and ringed plover (<i>Charadrius hiaticula</i>). The area also regularly supports an assemblage of at least 20,000 waterfowl. The mudflats are rich in invertebrates and also support extensive beds of algae, especially, eelgrasses (<i>Zostera</i> spp.) and <i>Enteromorpha</i> species.	International
SOLENT MARITIME Special Area of Conservation (SAC)	Approximately 0.3 km west of the site. The site is a major estuarine system on the south coast of England with four coastal plain estuaries and four bar-built estuaries. It is unique in Europe as having four tides each day. Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting eelgrass (<i>Zostera</i> spp.) and green algae, sand and shingle spits, and natural shoreline transitions. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete (<i>Sabellaria spinulosa</i>) on the steep eastern side of the entrance to Chichester Harbour. The site is also designated as it is the only site for smooth cord-grass (<i>Spartina alterniflora</i>) in the UK and is one of only two sites where significant amounts of small cord-grass (<i>S. maritima</i>) are found. It is also one of the few remaining sites for Townsend's cord-grass (<i>S. x townsendii</i>) and holds extensive areas of common cord-grass (<i>Spartina anglica</i>), all four taxa thus occurring here in close proximity. It has additional historical and scientific interest as the site where (<i>S. alterniflora</i>) was first recorded in the UK and where (<i>S. x townsendii</i>) and, later, (<i>S. anglica</i>) first occurred. The site is also designated as it contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. Solent Maritime is a composite site composed of a large number of separate areas of ungrazed saltmarsh and support a different range of communities dominated by sea-purslane (<i>Atriplex portulacoides</i>), common sea-lavender (<i>Limonium vulgare</i>) and thrift (<i>Armeria maritima</i>).	International

⁸ <https://magic.defra.gov.uk/MagicMap.aspx>



Site name and Designation	Description and reason for designation	Ecological Importance
	The site also shows rare and unusual transitions to freshwater reed swamp and alluvial woodland as well as coastal grassland.	
LANGSTONE HARBOUR SSSI	Approximately 0.3 km west of site. Langstone Harbour is a tidal basin which at high water resembles an almost landlocked lake. Extensive mud flats are exposed at low tide. The harbour includes one of the largest areas of mixed saltmarsh on the south coast and is of international importance as a rich intertidal system supporting high densities of intertidal invertebrates and large populations of migrant and overwintering waders and wildfowl, dependent upon them and upon the extensive beds of eelgrass <i>Zostera</i> species. The harbour acts as a summer and autumn assembly ground for waders during the moult and as a post-moult wintering ground. The harbour supports internationally important numbers of dunlin, grey plover, black-tailed godwit, redshank and ringed plover, the total numbers of waders present sometimes exceeds 40,000. In the 1970s and 1980s Langstone Harbour alone has consistently supported in excess of 5,000 wintering dark-bellied geese, or 5-10% of the world population.	National
SOLENT & ISLE OF WIGHT LAGOONS SAC	Approximately 4.9 km north-west of site. The site is a series of coastal lagoons, including percolation, isolated and sluiced lagoons. With a range of salinities and substrates, the site supports diverse fauna including: 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>).	International
PORTSMOUTH HARBOUR SPA	Approximately 7.4 km north-west of the site. Portsmouth Harbour is a large, industrialised estuary. Together with the adjacent Chichester and Langstone Harbours, it forms one of the most important sheltered intertidal areas on the south coast of England. The site is designated as it supports non-breeding black-tailed godwit, non-breeding dark-bellied brent goose, non-breeding dunlin, non-breeding red-breasted merganser (<i>Mergus serrator</i>).	International
SINAH COMMON SSSI	Approximately 0.9 km south-west of site. Site with maritime shingle grassland, sand dunes, heath and saltmarsh. Site is designated as it supports one of two populations in the UK of childing pink (<i>Petrorhagia nanteuilii</i>) as well as supporting other nationally scarce plants.	National
CHICHESTER HARBOUR SSSI	Approximately 1.8 km east of the site. Large estuarine basin with extensive intertidal mudflats that provide feeding grounds for internationally important numbers of ringed plover, grey plover, redshank, black-tailed godwit, dunlin, sanderling (<i>Calidris alba</i>), curlew (<i>Numenius arquata</i>) and greenshank (<i>Tringa nebularia</i>). As well as supporting shelduck (<i>Tadorna tadorna</i>), teal (<i>Anas crecca</i>), and 5% of the world population of dark-bellied brent goose numbers. The unimproved permanent pasture provides alternative feeding sites for the geese and major high tide wader roosts and is floristically rich supporting a red fescue (<i>Festuca rubra</i>) sward with scarce species such as green-winged orchid (<i>Orchis morio</i>) and adder's tongue fern (<i>Ophioglossum vulgatum</i>). Shingle occurs as spits and islands and forms the main breeding grounds in the harbour for ringed plover, black-headed gull (<i>Chroicocephalus ridibundus</i>) and three species of	National



Site name and Designation	Description and reason for designation	Ecological Importance
	terns. Extensive sand dunes are dominated by marram grass (<i>Ammophila arenaria</i>). A number of small ponds occur one of which contains the rare annual beard-grass (<i>Polypogon monspeliensis</i>). Significant blocks of scrub and the semi-natural broadleaved woodland associated with the Harbour is important for breeding birds and supports two heronries. Notable invertebrates include the long-winged conehead (<i>Conocephalus discolor</i>) and the moths, starwort shark (<i>Cucullia asteris</i>), the sand dart (<i>Agrotis ripae</i>), shore wainscot (<i>Mythimna litoralis</i>) and lunar hornet (<i>Sesia bembeciformis</i>).	
HAYLING BILLY Local Nature Reserve (LNR)	Adjacent (west) of the site, beyond the 'Hayling dirt jumps'. Contains coastal footpath, bridlepath and cycleway along shoreline of Langstone Harbour, following former Hayling Billy railway route.	Local
THE KENCH, HAYLING ISLAND LNR	Approximately 1.6 km south-west of the site. The site is a saltmarsh and tidal inlet of Langstone Harbour which provides sheltered feeding areas for birds.	Local

Non-Statutorily Designated Sites

- 4.5 There are seven non-statutorily designated sites, known as Sites of Importance for Nature Conservation (SINC) in Hampshire, within 2km of the site are listed in **Table 4.2** below, along with a summary of their reason for designation and distance from the site.
- 4.6 These sites are designated for their ecological importance within Hampshire. As a result, they are considered to be of **County ecological importance**.



Table 4.2: Non-statutorily designated sites within the study area

Designation	Sites within Study Area
SINAH WARREN VILLAGE MARSH SINC	Approximately 1.10 km south-west of site. Designated for presence of sea wormwood (<i>Seriphidium maritimum</i>) and golden samphire (<i>Inula crithmoides</i>).
GUN SITE CAR PARK AND OPEN SPACE SINC	Approximately 1.21 km south-west of site. Designated for presence of one of Hampshire's rarer wildflowers, little robin (<i>Geranium purpureum forsteri</i>).
BEACHLANDS EAST SINC	Approximately 1.48 km south-east of site. Designated for presence of sand couch (<i>Elytrigia juncea</i>), burr medic (<i>Medicago polymorpha</i>), bulbous bluegrass (<i>Poa bulbosa</i>), suffocated clover (<i>Trifolium suffocatum</i>) and burr chervil (<i>Anthriscus caucalis</i>).
THE KENCH SCRUBS SINC	Approximately 1.70 km south-west of site. Designated for presence of purple glasswort (<i>Salicornia ramosissima</i>), English scurvy grass (<i>Cochlearia anglica</i>), beetle (<i>Cercyon (Cercyon) depressus</i>), golden samphire, beetle (<i>Cyclodinus salinus</i>) and sea radish (<i>Raphanus raphanistrum subsp. Maritimus</i>).
THE KENCH BEACH (EAST) SINC	Approximately 1.82 km south-west of site. Designated for sea radish, European marram grass (<i>Ammophila arenaria</i>) and golden samphire.
MILL RYTHE LANE SALTMARSH SINC	Approximately 1.94 km north-east of site. Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands.
LONG MARSH SINC	Approximately 1.95 km north of site. Designated for presence of divided sedge (<i>Carex divisa</i>), common glasswort (<i>Salicornia europaea</i>) and sea wormwood.

- 4.7 The Hayling Island South Policies Map (Havant Borough Local Plan (Allocations) adopted July 2014 illustrates the site as DM23 "Uncertain Sites Brent Geese and/or Waders". This classification has subsequently been updated as part of the Solent Waders and Brent Goose Strategy (SWBGS) (2020). The site is now classified as "Secondary Support Area" (illustrated by the pale blue colour on **Figure 1.1**).
- 4.8 Secondary Support Areas are recognised (SWBGS, 2018) to offer "a supporting function to the Core and Primary support ecological network but are generally used less frequently by significant numbers of SPA geese and waders. These sites become important when wader or brent goose populations are higher or when the habitat is in suitable management. In-combination these sites are essential to secure a long term, permanent network as this ensures a geographical spread of sites across the wider ecological network...as well as ensuring future resilience". As these sites are used by SPA species (including qualifying features and assemblage species) they are understood to support the functionality and integrity of the designated sites for these features.
- 4.9 Results of wintering bird surveys undertaken by Tyler Grange Group Ltd, which included the site itself (referred to as H34E within the SWBGS, 2010), are included in **Appendix 4**. During all survey seasons, no brent geese were recorded within the site. Ten lapwing were recorded in the field to the north (H34D) in February 2012.
- 4.10 The SWBGS (2020) confirms "at their winter peaks, the population of brent geese in Chichester and Langstone Harbours in the five winters represented 20% of the national population and 9% of the international population (Frost, T. et al., 2019). It is estimated that the Solent as a whole supports about 10-13% of the world population of dark-bellied brent geese and about 30% of the



UK population (Stillman et al., 2009)". The UK and England 25-year trend (1993/4 – 2018/19) for dark-bellied brent goose is declining (-23 and -22, respectively). The Great Britain threshold for dark-bellied brent goose is 980 (Frost, 2021).

- 4.11 Although survey data, provided within **Appendix 4**, does not necessarily support the following evaluation. Owing to the classification of the site as a non-statutory site for waders and dark-bellied brent goose, it is considered to be part of a network of sites of between **county and regional ecological importance**.

Other Sites

- 4.12 The HBIC has produced a detailed ecological network map for Hampshire on behalf of the Local Nature Partnership (LNP). The site is identified within Hampshire's ecological network mapping as 'core non-statutory' habitat. This classification is understood to apply to this site due to its classification as a Secondary Support Area within the SWBGS (2010).

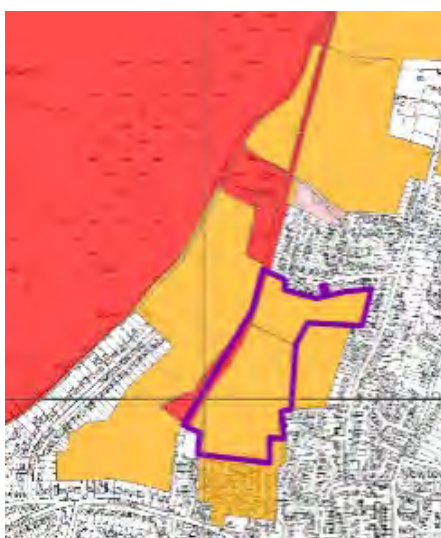


Figure 4.2: Ecological Network mapping provided by HBIC (core statutory shown in red, core non-statutory in orange and network opportunities in pink) (NB: Site boundary illustrated in purple does not represent the application boundary defined in this report).

Habitats and Flora

- 4.13 The habitats present within the site, and where possible on adjacent land, are shown on Habitat Features **Plan 13956/P22** and are described below. Where target notes are referred to below, their locations are illustrated on this plan.
- 4.14 All habitats present are described below. Where these are of less than local ecological importance they are considered further within the Biodiversity Net Gain (BNG) assessment, within **Appendix 3**, but are not considered as part of the impact assessment within **Section 5** of this report.



Arable

- 4.15 The site is dominated by arable habitat, known to be planted on a crop rotation, which we understand to alternate between winter wheat and legumes.



Photograph 4.1: Arable habitat adjacent to D1 and introduced shrub planting

- 4.16 A small area of disturbed bare ground is present in the north-east corner of the site (TN2), where the ground is disturbed by vehicle tracks as a result of farm access to the arable habitat to the north. Dog faeces was recorded at this location, and a person was seen walking a dog along the southern boundary of the site, suggesting there is unofficial pedestrian access to the site.
- 4.17 Arable land is common and widespread in the surrounding area. Arable field margins comprised species poor grassland, so are not considered to represent habitat of principal importance. As a result, arable habitat on the site is considered to be of **negligible ecological importance**.

Grassland

- 4.18 Amenity grassland (modified grassland in the BNG assessment) is present in the south-west of the site, at the boundary with the Furniss Way Business Park and in the south-east of the site at the boundary with Signal Way and around the off-site balancing pond (P2). This habitat is subject to regular mowing, maintaining a short sward height of up to approximately 5-10cm. Species present include Yorkshire fog (*Holcus lanatus*), ribwort plantain (*Plantago lanceolata*), dock (*Rumex* sp.), creeping buttercup (*Ranunculus repens*), cock's foot (*Dactylis glomerata*), dandelion (*Taraxacum* sp.) and common nettle (*Urtica dioica*).
- 4.19 Species-poor semi-improved grassland (also classified as modified grassland in the BNG assessment) is present around the western, northern and eastern site boundaries, adjacent to boundary hedgerows (including hedgerow ground flora) and drainage ditch features. There is no evidence of recent management, meaning this is tussocky in nature, particularly along the eastern boundary of the site. Rubble and fly tipping is present (TN1) within this margin, dumped via access from Charleston Close.





Photograph 4.2: Amenity grassland north of P1, with species-poor semi- improved grassland visible in the background

- 4.20 Grassland on site is species poor and limited in extent. Evidence of disturbance and enrichment of the soil from adjacent farming practices is evident due to the presence of bare ground and undesirable species including nettle and dock. As such these habitats are not considered to represent habitats of principal importance nor would they qualify under SINC criteria in Hampshire. As a result, they are considered to be of **negligible ecological importance**.

Hedgerow and Trees

- 4.21 Habitat descriptions for hedgerows along the western and eastern boundaries of the site are included in **Table 4.3**, below.



Table 4.3: Hedgerow descriptions and condition assessment

Hedgerow	Description	Photograph
H1	Well managed, intact, ornamental, species-poor hedgerow within residential garden adjacent to site boundary at the northern extent (H1a). Line of trees and shrubs further to south along bank of D2, including butterfly bush (<i>Buddleja davidii</i>), holly (<i>Ilex aquifolium</i>), elder (<i>Sambucus nigra</i>), oak (<i>Quercus robur</i>) and goat willow (<i>Salix caprea</i>) (H1b). Gappy and defunct in nature with no evidence of recent management	
H2	Tree line dominated by willow (<i>Salix</i> sp.), approximately 15 m tall with bramble (<i>Rubus fruticosus</i> agg.) scrub understorey. Adjacent to site boundary defined by D4. No evidence of recent management.	

- 4.22 Hedgerows and lines of trees on the site are species poor, although, the presence of at least one woody UK species means they comprise habitats of principal importance. Trees present are mature or early mature, so not replaceable in the short term. Hedgerows on site are considered to contribute connectivity beyond the site boundary, for which conservation objectives are established by national and local planning policy (see **Appendix 1**). As a result, they are considered to be of **local ecological importance**.

Introduced and Scattered Shrub

- 4.23 New tree and introduced shrub planting is present along the southern boundary of the site, understood to be related to the recent housing development to the south, known as 'the Oysters'. Species present, include cherry (*Prunus* sp.), holly (*Ilex* sp.) and dogwood (*Cornus* sp.).



- 4.24 Mulch is present around the introduced shrub planting meaning ground flora is sparse, although some ephemeral short perennial (ESP) vegetation is present as ground flora, including selfheal (*Prunella vulgaris*), bristly oxtongue (*Helminthotheca echioides*), spurge (*Euphorbia* sp.) and scentless mayweed (*Tripleurospermum inodorum*).
- 4.25 Scattered scrub, comprising bramble and butterfly bush is present along the eastern site boundary.
- 4.26 Introduced and scattered scrub on the site are both species poor habitats, limited in extent and lacking diverse age structure. Species present are introduced or garden varieties. As a result, these habitats are considered to be of **negligible ecological importance**.

Waterbodies and Watercourse

- 4.27 A series of drainage ditches are present around the margins of the site. At the time of the Phase 1 habitat survey ditches D2 and D4 were dry. D2 is overgrown with nettle, bramble and blackthorn. The ditch is approximately 0.5-3 m deep in places and 1 m wide. This ditch flows off-site to the south, this section of the ditch contained 10 cm of flowing water at the time of the water vole survey. Several sections of the ditch abut residential gardens and are reinforced with concrete slabs, brick and wooden stakes to prevent erosion. D4 had fallen leaves in the base at the time of the survey and was dominated by terrestrial vegetation, with lords and ladies (*Arum maculatum*) and ivy (*Hedera helix*) present within the ditch itself, adjacent to the grassy field margin.
- 4.28 Ditch D1 comprises a dry drainage ditch with bare earth and gravel substrate at the western end. The ditch is approximately 1-3 m deep and 1 m wide. It was holding water at the eastern end at the time of the Phase 1 habitat survey, approximately 10-20cm with a turbidity⁹ score of 1. Vegetation within the channel at the eastern end includes sedge (*Carex* sp.), rush (*Juncus* sp.), bulrush (*Typha latifolia*) and willow saplings.
- 4.29 Ditch D3 was holding water at the time of the Phase 1 habitat survey, up to approximately 5cm deep (likely modified to perform its drainage function), with some algae growth, but relatively clear (turbidity score 2). At the eastern end the ditch is culverted beneath the farm access to further arable land to the north and extends beyond the site boundary to the west. Steep, grassy banks were covered with species-poor semi-improved grassland, as described above around the field margins. Other species present within the banks of the ditch include hemlock (*Conium maculatum*), primrose (*Primula vulgaris*), wood avens (*Geum urbanum*), teasel (*Dipsacus fullonum*), meadowsweet (*Filipendula ulmaria*) and stitchwort (*Stellaria* sp.).
- 4.30 Owing to their drainage function the ditches on site have varying levels of water, with some found to be dry at the time of the Phase 1 habitat survey, although likely to hold water at times of heavy rainfall. Submerged and emergent vegetation is largely absent, except for within small section of D1, at its eastern end. That said, bank side vegetation is well established, so they are considered to contribute connectivity beyond the site boundary, for which national and local planning policy consideration is required (see **Appendix 1**). As a result, they are considered to be of **local ecological importance**.

⁹ Turbidity is referred to as a measure of water clarity, on a scale of 1 to 5, with 1 being clear and 5 being highly turbid (cloudy/opaque).





Photograph 4.3: Ditch D3 running along the northern site boundary

- 4.31 Two off-site ponds are present beyond the south-east of the site. P1 comprises a pooled area of water at the eastern end of drainage ditch D1, which is culverted beneath the field access way, from Signal Way. No vegetation is present within the pond. The water was very turbid (turbidity score of 4) at the time of the survey. P2 comprises a large balancing pond within a fenced area surrounded by amenity grassland. New tree planting is also present within this fencing. Bulrush is present around the pond margins.



Photograph 4.4: Balancing Pond P2, east of the site boundary



Fauna

- 4.32 Details of protected species and those of principal importance confirmed or with potential to utilise the site, including a summary of the results of surveys, are described below and should be read in conjunction with Fauna Survey Results **Plan 13956/P24**.

Bats

- 4.33 The data search returned records of common and soprano pipistrelle (*Pipistrellus pipistrellus*) and (*Pipistrellus pygmaeus*), respectively, Nathusius' pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), serotine (*Eptesicus serotinus*), Natterer's (*Myotis nattereri*), Bechstein's (*Myotis bechsteini*), Daubenton's (*Myotis daubentonii*) and Leisler's (*Nyctalus leisleri*).
- 4.34 According to Multi-Agency Geographic Information for the countryside (MAGIC) website, the closest European protected Species (EPS) licence for bats is approximately 2.21 km south-east of the site, for destruction of a resting place of common and soprano pipistrelle.

Preliminary bat roost assessment (PBRA)

- 4.35 No trees were identified within or immediately adjacent to the site boundary that possessed suitable Potential Roosts Features (PRF's). As a result, they are confirmed to have **negligible potential** to support roosting bats.

Bat activity survey

- 4.36 Bat activity on the site is dominated by common and soprano pipistrelle species, with noctule and myotis bats also recorded. The results for both static locations (shown on Fauna Survey Results **Plan 13956/P24**) are similar, suggesting both the western and eastern boundary features are used by foraging and commuting bats. Detailed results are provided in **Tables A2.2 – A2.7 in Appendix 2**.
- 4.37 Soprano pipistrelle and noctule are both species of principal importance in England. One myotis species, Bechstein's, is also a species of principal importance as well as an Annex II species of the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992 (Habitats Directive). The NBMP Annual Report (BCT, 2020) considers population trends for common pipistrelle to have increased and for soprano pipistrelle and noctule to have been stable (in comparison to the baseline year on monitoring in 1999). Known population trends for myotis species are also either increasing (Natterer's) or stable (Daubenton's, whiskered/Brandt's (*Myotis mystacinus/brandtii*)), although, trends are not available for remaining myotis species (Bechstein's and Alcahoie (*Myotis alcahoie*)) as insufficient data is available.
- 4.38 Based on the 'Bat Mitigation Guidelines' (CIEEM, 2021) common and soprano pipistrelle are both considered abundant and widespread within southern England, with noctule and the majority of myotis bat species (with the exceptions of Alcahoie and Bechstein's) recorded as less abundant. Based on this guidance, each species population is considered to be of **local ecological importance**. The assemblage of foraging and commuting bats utilising the site is considered to be



of less than county ecological importance, which given the valuation for each species present, is considered to be of **local ecological importance**.

Birds

- 4.39 Records were returned of darked-bellied brent geese (*Branta bernicla*), from HBIC, a species for which the Solent SPAs are designated, with the closest being c. 0.16 km north-west of the site. The Brent Goose and Wader Raw Data provided for H34E, which includes the site and further arable land to the north, confirmed three positive records of brent goose, with a count of 70 recorded in December 2007 and 200 recorded December 2011 and January 2012.
- 4.40 HBIC also returned records of red listed Birds of Conservation Concern (BoCC), defined in **Appendix 4**, within the study area including the following species with potential to be present on the site:
- Breeding birds: tree pipit (*Anthus trivialis*), yellowhammer (*Emberiza citronella*), linnet (*Linaria cannabina*), grey wagtail (*Motacilla cinerea*), western yellow wagtail (*Motacilla flava*), spotted flycatcher (*Muscicapa striata*), house sparrow (*Passer domesticus*), tree sparrow (*Passer montanus*), marsh tit (*Poecile palustris*), turtle dove (*Streptopelia turtur*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*) and mistle thrush (*Turdus viscivorus*).
 - Waders and wintering bird species with potential to forage on inland arable and grass-land habitats: ruff (*Calidris pugnax*), common ringed plover (*Charadrius hiaticula*), European herring gull (*Larus argentatus*), black-tailed godwit (*Limosa limosa*), curlew (*Numenius arquata*), lapwing (*Vanellus vanellus*), lesser redpoll (*Acanthis cabaret*), white-fronted goose (*Anser albifrons*), redwing (*Turdus iliacus*) and fieldfare (*Turdus pilaris*).
- 4.41 A skylark was seen to land in the field during the Phase 1 habitat surveys, illustrated by target note TN3 on Habitat Features **Plan 13956/P22**. Skylark is not expected to nest on the site given its small size. Boundary trees and surrounding residential and light industrial development reducing suitable sightlines. No evidence of nesting birds was recorded on site.
- 4.42 Although there are opportunities for breeding birds on the site within boundary hedgerows, tree lines and scattered scrub vegetation, large numbers would not be expected, and given the availability of these habitats in the wider area populations would not be expected to be dependent on the site. Any assemblage of breeding birds would therefore be considered to be of **negligible ecological importance**.

Great Crested Newt

- 4.43 Thirty-four records of GCN have been returned from HBIC, with the closest being 1.96 km east of the site from 2014. Although the grid reference provided (SU73010020) differs from the site name/location (PO9 6DG), which is actually over 10km north of the site, on the mainland.



Habitat Suitability Index assessment survey

- 4.44 HSI calculations for onsite ditches (D1 – D4) and off-site ponds (P1 and P2) are provided in **Tables A2.8 – A2.13 in Appendix 2**.
- 4.45 Onsite ditches, D2 and D4 were scoped out of further assessment by the Phase 1 habitat survey, as they were considered to be unsuitable for GCN, due to being predominantly dry, and given a lack of suitable submerged or emergent vegetation for egg-laying.
- 4.46 Based on their HSI scores, overall, D1 was determined to have **below average** suitability to be used by GCN. D3 was determined to have **poor suitability**, and off-site ponds P1 and P2 were both recorded to have **below average** suitability to be used by GCN.

eDNA survey

- 4.47 At the time of the eDNA survey, D1 was found to be dry, so unsuitable for survey. As it is connected to P1, beneath a culvert, it was expected that the results for D1 and P1 would be the same, in any case.
- 4.48 eDNA survey results were negative for D3, P1 and P2, confirming the likely absence of GCN from these waterbodies.
- 4.49 Based on this result, the absence of further suitable waterbodies within 250m of the site and consultation with Tristan Norton, Senior Ecologist, Hampshire Country Council, who confirmed that GCN are not known/expected to be present on Hayling Island, despite the presence of potentially suitable terrestrial habitats on the site, GCN are not expected to be present and are therefore not considered further in this assessment.

Reptiles

- 4.50 The data search returned records of slow worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*), the closest being 1.96km east, 1.96km east and 1.5km north of the site, respectively. The single adder record is from 2006, so more than 10 years' old.
- 4.51 Surveys confirmed the presence of a **high population** of slow worm, based on a peak count of 39 adults recorded within approximately 0.13 ha of suitable habitat within the site margins and **medium population** of common lizard, based on a peak count of 4 adults (HGBI, 1998). Detailed results are provided in **Table A2.15 in Appendix 2**. Given the availability of connected, suitable habitats beyond the site boundary, including in adjacent residential gardens to the east, reptiles present on the site would be expected to be part of a wider population, present locally.
- 4.52 The site could be considered as a 'key reptile site' (Froglife, 1999) as the assemblage of species scores 4 and the slow worm population itself could be considered 'exceptional', given the peak count of over 20 adults. Slow worm and common lizard (*Zootoca vivipara*) are both species of principal importance. Given the presence of 'one or more notable species' could be used as criterion for allocating a SINC, in Hampshire (Havant Borough Council, 2019), the assemblage of reptiles utilising the site is considered to be of **local ecological importance**.



Water Vole

- 4.53 No records of water vole (*Arvicola amphibius*) were returned by the data search. Initially, as it was not possible to discuss survey scoping with the LPA, a habitat suitability assessment was undertaken of the ditches present on the site.
- 4.54 Descriptions of the waterbodies are included in the Habitats and Flora section of this report. Habitats within the ditches could provide opportunities for water vole burrowing, foraging and commuting, if present.
- 4.55 No evidence of water vole was recorded during the survey. Based on this result and consultation with Tristan Norton, Senior Ecologist, Hampshire Country Council, who confirmed that water vole is not known/expected to be present on Hayling Island, despite the presence of potentially suitable habitats on the site, water vole are not expected to be present and are therefore not considered further in this assessment.

Other Species

- 4.56 Twenty-five records of common toad (*Bufo bufo*) have been returned by HBIC with the closest being approximately 1.96 km east of the site from 2014. There is potential for toads to be present within areas of suitable terrestrial habitat on the site, including the base of hedgerows, trees and scrub vegetation, in areas of species-poor semi-improved grassland around the field margins and within the network of ditches. Toads generally breed in large deep ponds. As a result, the ditches on site are unlikely to provide suitable conditions given their low and fluctuating water levels. Although, there is potential, they could breed in off-site ponds P1 and P2. If present on the site, their population would be considered to be of **negligible ecological importance**. Although, as common toad is a species of principal importance, consideration of this species to ensure avoidance of harm, will be combined within the reptile mitigation strategy (see **Section 5**).
- 4.57 Eight records of European hedgehog (*Erinaceus europaeus*) have been returned from HBIC with the closest being approximately 0.28 km south-east of the site from 2019. Hedgehogs are known to travel on average 1.6 km a day (Havant Borough Council, 2019), based on this, available records and presence of potentially suitable habitat on site, there is potential for hedgehog to be present, seeking shelter at the base of hedgerows, trees and scrub vegetation or foraging within grassland habitat. Hedgehog is a species of principal importance with a declining population. It is estimated that 30% of the British hedgehog population has been lost between 2002 and 2013 (Havant Borough Council, 2019). As a result, if present, a population of hedgehog utilising the site would be considered of **local ecological importance**.
- 4.58 Fifty-eight records of stag beetle (*Lucanus cervus*) have been returned from HBIC with the closest being adjacent to the site to the east from 2019. There is potential for stag beetle to be present within hedgerows or tree lines on the site, although a lack of deadwood reduces the likelihood of them being present. Stag beetle is a relatively widespread species in southern England (PTES, 2021). As a result, if present a population on the site would be considered to be of **negligible ecological importance**. Although, as stag beetle is a species of principal importance, there is potential to provide ecological enhancements of benefit to this species, discussed within **Section 5**, of this report.



Summary

- 4.59 A summary of ecological features present on the site or within the zone of influence of the proposed development is provided in **Table 4.4** below. This includes those features considered to be IEF, or those where further consideration is required to ensure legal or planning policy compliance*, which are taken forward as part of the impact assessment.

Table 4.4: Summary of important ecological features considered within the impact assessment

Ecological Feature	Ecological Importance	Relevant Legislation and Planning Policy
Designated Sites		
Solent SPAs - Chichester and Langstone Harbours Ramsar Site and SPA and Portsmouth Harbour SPA	International	Conservation of Habitats and Species Regulations 2017 (as amended) (CHSR), National Planning Policy Framework (NPPF) 2021, Havant Borough Core Strategy (HBCS) 2011 Policy CS11, Havant Borough Allocations Plan (HBAP) 2014 Policy DM24
Component designated sites to the above - Langstone Harbour SSSI and Chichester Harbour SSSI	National	Wildlife and Countryside Act (WCA) 1981 (as amended), NPPF, HBCS Policy CS11
Solent Maritime and Solent and Isle of Wight Lagoons SAC	International	CHSR, NPPF, HBCS Policy CS11
Sinah Common SSSI	National	WCA, NPPF, HBCS Policy CS11
Hayling Billy and The Kench, Hayling Island LNR	Local	National Parks and Access to the Countryside Act 1949, NPPF, HBCS Policy CS11
Seven SINC's (Non wader and Brent Goose)	County	NPPF, HBCS Policy CS11
Secondary Support Area (on site, H34E)	County to Regional	NPPF, HBCS Policy CS11, HBAP DM23
Habitats and Flora		
Arable habitat, amenity and species-poor semi-improved grassland, introduced and scattered scrub	Negligible*	NPPF
Hedgerows and lines of trees, and ditches	Local	NPPF, HBCS Policy CS11, Policy CS13, Policy DM8
Fauna		
Common and soprano pipistrelle, myotis and noctule foraging and commuting	Local	CHSR, WCA, NPPF
Breeding birds	Negligible*	WCA, Countryside and Rights of Way (CROW) Act 2000
Assemblage of slow worm and common lizard	Local	WCA, CROW, NPPF
Hedgehog (if present)	Local	The Natural Environment and Rural Communities Act (NERC) 2006, NPPF
Common toad and stag beetle (if present)	Negligible*	NERC, NPPF



Section 5: Potential Impacts, Mitigation and Enhancement

Proposals

- 5.1 The outline planning application is for residential development of up to 29 homes including affordable housing, green infrastructure landscape boundaries and sustainable urban drainage system (SuDS). The proposals are shown on the Illustrative Masterplan (Mosaic Drawing 1239 003 J) submitted with the application, although all matters are reserved except for access which will be from Billy Road.
- 5.2 Based on the Illustrative Masterplan it is assumed that boundary hedgerows and trees will be retained and protected as well as the majority of ditches (with the exception of D1) and adjacent grassland habitat along the western, northern and eastern boundaries of the site which will retain opportunities for bats and reptiles. Arable habitat, amenity grassland and introduced shrub planting of negligible ecological importance will be lost to facilitate the development, as well as D1, of local ecological importance.

Potential Impacts, Mitigation and Enhancement

Site-wide Mitigation

- 5.3 Central to the mitigation and enhancement strategy for the proposed development is:
- Production and implementation of a Construction Environmental Management Plan (CEMP) in order to ensure the protection of retained habitat features including boundary hedgerows, trees and ditches, including avoidance of lighting during construction to ensure continued opportunities for bats and an appropriate mitigation strategy to ensure the avoidance of disturbance to over-wintering birds and protection of reptiles on site during construction;
 - Installation and maintenance of tree protection fencing prior to construction works commencing in order to protect retained trees and hedgerows on and immediately adjacent to the site in accordance with BS5837:2012 (Tyler Grange report reference 13956/R02); and
 - Production and implementation of a Landscape and Ecological Management Plan (LEMP) in order to ensure appropriate management of habitats on site to allow successful establishment and ongoing management to maximise their biodiversity value and deliver expectations, as set out in the BNG assessment (provided in **Appendix 3**) as well as to continue to provide opportunities for important fauna, including foraging and commuting bats, nesting birds, slow worm and common lizard.



Designated Sites

Solent SPAs and Loss of Functionally Linked Land

- 5.4 SPAs and Ramsar wetlands within the Solent coast support internationally important dark-bellied brent goose and wading bird populations. Within the study area this includes Chichester and Langstone Harbours SPA and Ramsar Site and Portsmouth Harbour SPA. Langstone Harbour SSSI and Chichester Harbour SSSI are also designated within the same locations. These sites are referred to as the Solent SPAs for ease, for the remainder of this assessment.
- 5.5 In the winter period (October to March), especially at high tide, brent geese and other waders utilise arable and grassland habitat beyond the boundaries of the Solent SPAs for foraging and resting. This non-SPA land is termed 'Functionally Linked Land' (FLL), which is considered important to maintain species' populations at a favourable conservation status (Havant Borough Council, 2019).
- 5.6 Despite the lack of records of brent geese using the site recorded by our surveys, a maximum count of 200 'waders or brent geese recorded at any one count' was returned by the data search from December 2011 and January 2012 for H34E, which includes the site itself and further arable habitat to the north. As a result, the site is classified as a secondary support area, of importance to over-wintering wading birds and brent geese, that functionally support the Solent's SPAs.
- 5.7 Loss of the extent of arable habitat from the site has the potential to reduce the available resource of suitable habitat for foraging and resting brent geese and waders and therefore reduce the resilience of the network of FLL. That said, given the number of years (of survey data) where brent geese have not been recorded on the site, potential significant effects on the conservation status of the bird populations for which the Solent SPAs are designated would not be expected at the International scale. Onsite measures for waders and brent geese would not be appropriate within the proposed residential development, meaning a **significant effect up to a regional scale** would occur. The potential for a significant effect means the proposed development has potential to trigger the Habitats Regulations.
- 5.8 In order to offset the significant residual effect, a detailed off-site compensation strategy will be agreed during the determination period, subject to further consultation with relevant stakeholders. In line with the 'SWBGS Guidance on Mitigation and Off-setting requirements' (SWBGS, 2018), emerging planning policy E17 'Solent Wader and Brent Goose feeding and roosting sites' and discussed in principle initially with Tristan Norton, this will involve the delivery of a mitigation site/refuge, to the north of the site, to provide permanently suitable habitat for brent geese. It is expected this will involve management of an existing core area, within HIB's control, and within 1km of the site, which is currently arable land on crop rotation. As a result, this site does not currently provide suitable habitat opportunities for brent geese every winter (October to February, inclusive). Management prescriptions and the extent of habitat will be confirmed within a Costed Habitat Management Plan (CHMP), to be submitted along with a sHRA during the determination period. The extent will be agreed based on consideration of the loss of existing land for development (1.24 ha site area), assessment of the importance of the site within the ecological network and factors known to affect the suitability of sites for waders and brent geese such as perimeter shape, availability of clear sight lines to reduce risk of predation and suitable foraging habitats. It is expected implementation of this strategy would be controlled by S106, with funding provided to ensure appropriate management, in perpetuity.



- 5.9 It is considered that the above strategy will ensure that sufficient feeding and roosting resources are made permanently available, therefore maintaining the integrity of the network of sites functionally linked to the conservation status of the bird species for which surrounding Natura 2000 and SSSIs are designated.

Solent SPAs Other Impacts

- 5.10 The SSSI impact risk zone the site is located within requires the Local Planning Authority (LPA) to consult with Natural England on likely risks from all planning applications (except householder applications) due to potential for increased recreational disturbance on coastal SPAs and Ramsar sites and impacts to nutrients as a result of new development with overnight accommodation. As a result, Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) must be applied.
- 5.11 The Solent Recreation Mitigation Strategy (Bird Aware Solent, 2017) allows for strategic, Solent-wide, mitigation to address potential in-combination effects of increased recreational pressure on the Solent SPAs arising from new residential development. Financial contributions collected by Havant Borough Council, expected to be controlled by S106, will be transferred to the Solent Recreation Mitigation Partnership to implement agreed measures, as set out in the strategy, including raising awareness and education to manage visitors and provide secure habitats for birds as well as enhanced greenspaces for recreation in less sensitive areas. Financial contributions are calculated based on approximately £564 per dwelling (dependent on bedroom numbers per dwelling and inflation) which allows for in-perpetuity payments calculated on an 80-year basis, which has been accepted by Natural England.
- 5.12 Nutrient enrichment can arise from wastewater treatment required in support of new development. Emerging Policy EX1, 'Water quality impact on Solent European Sites' sets out the requirement for a Nutrient Budget to be submitted with each application resulting in a net gain in overnight accommodation. A Nitrogen Balancing Assessment has been undertaken (Tetra Tech, 2021) to calculate the change in nutrient outputs from existing to future use associated with the proposed development, which has been submitted with the planning application. This assessment confirms the proposed development would result in a net reduction of -0.204 Kg/TN/yr, therefore achieving nutrient neutrality.
- 5.13 As the proposed development will result in a net reduction in Total Nitrogen, potential adverse impacts to the surrounding designated sites due to increased nutrient burdens and eutrophication are not anticipated (Natural England, 2019). As a result, no specific mitigation is required. This will be addressed further within the sHRA report, to be submitted during determination period.

Other designated sites

- 5.14 Owing to the nature of the proposed development, the distance between the site and other designated sites within the study area (not described above) and the expected net reduction in Total Nitrogen, no impacts to the other SAC, SSSI, or SINC sites would be expected as a result of the proposals.
- 5.15 The Hayling Billy Trail LNR is managed to provide recreational access, so additional recreational pressure likely to result from residents associated with the proposed development would not be expected to result in adverse effects to the features for which the site is designated.



- 5.16 As a result, no specific mitigation measures for designated sites are required. Site wide mitigation, including production and implementation of a CEMP would avoid the potential for pollution impacts to designated sites for which there is potential for hydrological links to the site. Therefore, **no significant effects to other designated sites** are anticipated.

Habitats and Flora

- 5.17 Habitats of most ecological importance on the site, namely boundary hedgerows, tree line and ditches, will be predominantly retained as shown on the Illustrative Masterplan for the site (Mosaic Drawing 1239 003 J). There is potential for accidental damage to these retained features during construction as a result of construction machinery and/or storage of materials impacting root protection areas.
- 5.18 In order to avoid these potential impacts, retained features will be protected during construction by the production and implementation of a CEMP to ensure appropriate protection/exclusion zones and protective measures such as tree protection fencing and pollution control measures. As a result, there will be **no significant adverse effect**.
- 5.19 The proposed development will result in the loss of the entire area of arable habitat from the site as well as areas of amenity grassland and introduced scrub. **No significant adverse effect** is anticipated, as a result of their loss, although, in line with the National Planning Policy Framework (NPPF) 2021, enhancement measures to provide net gains for biodiversity have been included within the proposals.
- 5.20 Creation of a SuDS feature will provide opportunities to create a new habitat on site, of more ecological importance than those lost, providing drainage, amenity and biodiversity value. Additional habitat creation includes the provision of tree and scrub planting, along the northern boundary of the site and infill planting along the eastern site boundary, to increase species diversity and improve connectivity.
- 5.21 The proposed habitat retention, creation and enhancement measures summarised above and quantified within the BNG assessment (summarised in **Appendix 3** and detailed within 13965_Land north of Oysters_Biodiversity Metric 3.0) result in a +2.33% gain in Habitat Units and +7.95% gain in River Units. There is a 0% change in Hedgerow Units. Owing to the outline nature of the proposals, assumptions have been made based on the Illustrative Masterplan, set out in **Appendix 3**. It is expected that detailed soft landscape proposals would be conditioned as part of the reserved matters application to build on the principles set out in this assessment. Management to ensure the successful establishment of habitat planting/ creation and ongoing management measures to maximise the ecological value of retained and created habitats on site will be controlled through production and implementation of a Landscape and Ecological management Plan (LEMP), expected to be conditioned.
- 5.22 Additional compensation and enhancement measures to deliver biodiversity net gain, which cannot be quantified within the Defra 3.0 metric are described within the Fauna section, below. Off site habitat compensation for brent geese and other waders will be detailed within the sHRA and CHMP. As this compensation will be required by the Habitats Regulations, it has not been included within the BNG assessment, to avoid double counting. However, the reversion of arable habitat to permanent grassland, will also serve to deliver biodiversity gains.



Fauna

Bats

- 5.23 The retention and enhancement of existing hedgerows and tree lines will retain opportunities for foraging and commuting bats within the proposed development. Physical protection of these features during construction activities will avoid potential direct impacts. In order to avoid potential disturbance to bats utilising these features as a result of construction lighting, measures to avoid construction phase lighting at night or where necessary to direct it away from retained boundary features will be incorporated within the CEMP, to be conditioned.
- 5.24 During occupation of the site, indirect impacts could similarly occur as a result of increased lighting from street lighting and/or residential properties causing disturbance to foraging and commuting bats. Although, that said the majority of bat activity recorded on the site comprises common and soprano pipistrelle and noctule, all known to be fairly light tolerant species and have been recorded to forage around street lighting (ILP, 2018). Myotis species are known to be more light averse (ILP, 2018).
- 5.25 Detailed lighting design is expected to be subject to planning condition. This will be based on the following principles, set out in 'Bats and artificial lighting' guidance (ILP, 2018). Provided implementation of the CEMP and detailed lighting design as described, there will be **no significant adverse effects to foraging and commuting bats** on the site.
- Retention of the western and eastern site boundaries as commuting routes avoiding direct light spill, as far as possible;
 - Siting of lighting columns to avoid upward light spill (mounted on the horizontal) or onto habitat features beyond where lighting is required; and
 - Use of luminaires lacking UV elements. Ideally LED luminaires with a warm white spectrum (<2700 Kelvin) and peak wavelength higher than 550nm.
- 5.26 Habitat creation on site, including additional tree planting and SuDS, will increase species diversity and create additional opportunities for invertebrates (prey) and improve foraging opportunities and connectivity for bats. To increase roosting opportunities for bats, integrated bat boxes will be installed within proposed buildings. Locations and specifications for these boxes will be confirmed within the LEMP, expected to be conditioned. These measures will provide ecological enhancements for bats.

Birds

- 5.27 Consideration of potential impacts to dark-bellied brent goose and wading bird species with potential to be foraging and resting on the site is included within the Designated Sites section above.
- 5.28 The retention and enhancement of existing hedgerows, tree lines and scattered scrub will retain opportunities for breeding birds within the proposed development. Although not considered an important ecological feature on the site, potential impacts to breeding birds has been considered to ensure legal compliance. **No significant adverse effects** to breeding birds are anticipated.



- 5.29 All wild birds, their nests and eggs are afforded protection under the WCA 1981 (as amended). As such the removal of woody vegetation, suitable for nesting, could potentially trigger this legislation. In order to avoid this, any suitable vegetation removal should be undertaken outside of the recognised core breeding bird season i.e. between October and February inclusive. Should this not be possible, a detailed search of the vegetation would need to be undertaken by a suitably qualified ecologist immediately prior to the removal to check for signs of active nests. If any active nests are found to be present a suitable buffer would need to be retained until the young have fledged and the nest is no longer active. Such measures would be included in the CEMP.
- 5.30 Habitat creation and enhancement measures proposed will enhance the site's importance for breeding birds, providing additional nesting and foraging opportunities, as well as offering additional shelter from potential disturbance as a result of residential development and domestic cats. To further increase nesting opportunities for birds, bird boxes will be installed within proposed buildings and on retained trees along the western boundary of the site. Locations and specifications for these boxes will be confirmed within the LEMP, expected to be conditioned.

Reptiles

- 5.31 High and medium populations of slow worm and common lizard have been recorded within suitable habitat on the site, respectively. The nature of arable habitat within the majority of the site means the majority of the site is considered to be unsuitable for reptile species.
- 5.32 Due to the retention of the majority of boundary features on the site, hedgerows, tree lines and ditches (with the exception of D1), it is likely that it will be possible to retain reptiles *in situ*, within root protection areas and exclusion zones along the ditches, to be retained and protected during the construction phase of the proposed development. At Reserved Matters, if this is not the case, a reptile mitigation strategy would be provided, as part of the CEMP, to be conditioned. This mitigation strategy would provide details of the appropriate methods and timings of work to avoid killing and injuring reptiles present on the site, and therefore allow the proposed development to proceed lawfully, with respect to common reptiles.
- 5.33 Dependent on the extent of suitable habitat, used by reptiles, to be affected, this would be likely to involve a precautionary method of working in combination with habitat manipulation, to displace slow worm and common lizard from discrete areas to be affected during construction works into adjacent, suitable habitats; or a translocation, to move slow worm and common lizard out of harm's way, to suitable habitat to be retained and enhanced, such as in the east of the site within the green buffer and within proximity to the existing and proposed SuDS features. Should common toad be found during implementation of the reptile mitigation strategy, they would also carefully be moved out of harm's way, into a suitable receptor area, to be identified and protected as part of the CEMP.
- 5.34 There will be opportunities on the site to implement either of the proposed mitigation strategies, as required, following detailed design. As a result, implementation of the mitigation strategy to avoid the killing and injury of reptile species present and retain opportunities for these species (as well as common toad), through appropriate management of suitable habitats, to be detailed within the LEMP, (to be conditioned), will ensure there is **no significant adverse effect** to the reptile assemblage present nor a population of common toad, if present.



- 5.35 The creation and enhancement of new and retained habitats, such as the creation of areas of wildflower grassland and wetland habitat associated with the SuDS will enhance the site's importance for reptiles. Inclusion of a reptile refugia within suitable habitat will enhance opportunities for hibernating reptiles. The location and specifications will be confirmed within the LEMP, expected to be conditioned.

Other Species

- 5.36 The retention of and enhancement of existing hedgerows, tree lines and scattered scrub will retain opportunities for hedgehog within the proposed development. Vegetation clearance prior to construction activities has potential to cause harm to hedgehog, if present. In order to protect the conservation status of hedgehog during this phase, should any be encountered during vegetation clearance or other works on site they would be carefully moved by hand out of harm's way, to other areas of retained suitable habitat, such as the base of the eastern boundary hedgerow. A precautionary method of working would be required, to be provided within the CEMP, to ensure that suitable habitat is not removed when they may be hibernating. Or should this need to be the case, that such clearance is undertaken carefully, under ecological supervision.
- 5.37 Ongoing habitat management, to be detailed within the LEMP, subject to condition, will ensure the timing of suitable vegetation clearance avoids the hibernation season, or is preceded by a precautionary check. Measures to allow the continued movement of hedgehog across the site, if present, will also be included within the LEMP, such as inclusion of suitable gaps (approximately 13 x 13 cm) beneath fencing, in identified locations.
- 5.38 Implementation of these mitigation measures will ensure there is **no significant adverse effect** to hedgehog, if present.
- 5.39 Although stag beetle is not considered an important ecological feature on the site, as they are a species of principal importance, the local authority have a duty to consider them under section 40 of the NERC Act 2006. Although **no significant adverse effects** to stag beetle are anticipated, if present, ecological enhancements will be provided on the site to improve opportunities for stag beetle. This will comprise the installation of a log pile in a suitable location, outside of residential gardens, to be confirmed within the LEMP, expected to be conditioned.

Monitoring

- 5.40 In order for the proposed development to provide and guarantee the proposed mitigation, compensation and enhancement measures, as described above, there is a requirement to monitor the effectiveness of the mitigation strategy. Monitoring requirements will set out the expected methods, objectives, timings and remedial measures, as required.
- 5.41 Details of monitoring requirements to ensure on site habitat establishment, as expected, would be provided within the LEMP, subject to condition. Monitoring requirements associated with the wintering bird mitigation strategy, once agreed, would form part of the CHMP.



Summary

5.42 A summary of the ecological impact assessment, proposed mitigation and compensation measures and mechanism to control such measures is included in **Table 5.1**, below.

Table 5.1: Summary of ecological impact assessment and proposed mitigation strategy

Ecological Feature	Scale of Importance	Mitigation/compensation proposed	Residual Effect	Proposed mechanism for control
Solent SPAs, component SSSIs and FLL	Up to International	Off-site compensation to provide alternate foraging and resting opportunities, guaranteed in perpetuity; and Financial contributions as required but the Solent Recreation Mitigation Strategy.	Significant at regional scale in advance of compensation. Not significant after off-site compensation.	S106
Other designated sites	Up to International	CEMP to ensure pollution control measures.	Not significant	Planning condition
Hedgerows and lines of trees, and ditches	Local	Protection of retained habitats during construction activities, secured as part of the CEMP. Ongoing habitat management, secured as part of the LEMP.	Not significant	Planning condition
Common and soprano pipistrelle, myotis and noctule	Local	As above for hedgerows. Avoidance of construction lighting on retained habitat features, secured as part of the CEMP. Control of detailed lighting design.	Not significant	Planning condition
Birds	Negligible*	Timing of vegetation clearance or ecological supervision to protect wild birds' nests and eggs, secured as part of the CEMP.	Not significant	Planning condition
Reptile assemblage	Local	Implementation of reptile mitigation strategy to adopt habitat manipulation and displacement or translocation depending on the extent of suitable habitat loss, in order to avoid killing or injuring reptiles, secured as part of the CEMP. Ongoing management of suitable reptile habitat, secured as part of the LEMP. Measures for reptiles will also be of benefit to common toad.	Not significant	Planning condition



Hedgehog	Local	Precautionary methods of working during vegetation clearance to move hedgehog from harm's way, secured as part of the CEMP. Ongoing management of suitable habitats for hedgehog, secured as part of the LEMP.	Not significant	Planning condition
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* Mitigation required to ensure legal compliance despite the fact any assemblage of birds on site would not be considered an IEF. NB: Potential for birds associated with the Solent SPAs to be present is considered separately as part of the Solent SPAs IEF of up to International importance.



Section 6: Conclusions

- 6.1 With the implementation of the mitigation and enhancement strategy described in **Section 5** the proposed development would be in conformity with relevant legislation and planning policy as listed in **Appendix 1**.
- 6.2 With the land that is available to the developer there can be confidence that mitigation for loss of functionally linked land for over-wintering birds for which the SPA is notified can be provided. The detail of this will be agreed with the LPA, in line with emerging planning policy E17, and will be described within the sHRA and CHMP submitted within the determination period. The detailed mitigation strategy will confirm the location and extent of suitable off-setting and details of its management to provide permanently suitable habitat, in perpetuity.
- 6.3 The mitigation and enhancement strategy could be controlled by appropriately worded planning controls devised to:
- Ensure the production and implementation of a CEMP and LEMP. These documents will refer to a Construction Environmental Management Plan, detailed planting proposals and lighting design, also expected to be conditioned; and
 - Ensure control of appropriate mitigation for waders and brent geese associated with the Solent SPAs, expected to include delivery of an off-site refuge and financial contributions, collected in line with the Solent Recreation Mitigation Strategy (Bird Aware Solent, 2017).



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Appendix 1: Legislation and Planning Policy

Legislation

- A1.1 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:
- The Wildlife and Countryside Act (WCA) 1981 (as amended);
 - The Conservation of Habitats and Species Regulations 2017 (as amended);
 - The Countryside and Rights of Way (CROW) Act 2000;
 - The Natural Environment and Rural Communities Act (NERC) 2006;
 - The Hedgerows Regulations 1997; and
 - The Protection of Badgers Act 1992.
- A1.2 The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance. Annexes II and IV of the Directive list all species considered of community interest. The legal framework to protect the species covered by the Habitats Directive has been enacted under UK law through The Conservation of Habitats and Species Regulations 2017 (as amended).
- A1.3 In Britain, the WCA 1981 (as amended) is the primary legislation protecting habitats and species. SSSIs, representing the best examples of our natural heritage, are notified under the WCA 1981 (as amended) by reason of their flora, fauna, geology or other features. All breeding birds, their nests, eggs and young are protected under the Act, which makes it illegal to knowingly destroy or disturb the nest site during nesting season. Schedules 1, 5 and 8 afford protection to individual birds, other animals and plants.
- A1.4 The CROW Act 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' disturb a protected animal whilst it is using a place of rest or shelter or breeding/nest site.

National Planning Policy

National Planning Policy Framework (NPPF), July 2021

- A1.5 The National Planning Policy Framework (NPPF) was updated in July 2021 and sets out the Government's planning policies for England and how these should be applied. It replaces the National Planning Policy Framework published in July 2019.
- A1.6 Paragraph 11 states that:
- “Plans and decisions should apply a presumption in favour of sustainable development.”
- A1.7 Section 15 of the NPPF (paragraphs 174 to 182) considers the conservation and enhancement of the natural environment including habitats and biodiversity (paragraphs 179-182)



A1.8 Paragraph 174 states that planning and decisions should contribute to and enhance the natural and local environment by:

- “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);
- 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; and
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”

A1.9 Paragraph 175 states that plans should distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value; 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 boundaries.

A1.10 Paragraph 179 states that in order to protect and enhance biodiversity and geodiversity, plans should:

- “Identify, map and safeguard components of 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
- 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.”

A1.11 When determining planning applications, Paragraph 180 states that local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- “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;
- 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 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;



- 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
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments 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.”

A1.12 As stated in paragraph 181 the following should be given the same protection as habitats sites:

- “potential Special Protection Areas and possible Special Areas of Conservation;
- listed or proposed Ramsar sites; and
- sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”

A1.13 Paragraph 182 states that the presumption in favour of sustainable development does not apply where the planned project is likely to have a significant effect on a habitat site (alone or in combination with other plans or projects) unless an appropriate assessment has concluded the plan or project will not adversely affect the integrity of the habitats site.

Local Planning Policy

Havant Borough Local Plan (Core Strategy) (2011)

Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough

A1.14 Planning permission will be granted for development that:

1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
2. Protects and where possible enhances the borough’s statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.
3. 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].

4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.

5. Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.

6. Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.

7. Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.

8. 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.

9. Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.

10. Protects the best and most versatile agricultural land that has the greatest potential for local food security.

11. Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.

Policy CS13 Green Infrastructure

A1.15 Development will be permitted that:

1. Maintains and manages the network of green infrastructure identified at the sub regional and local levels.

2. Incorporates, where appropriate, improvements to existing green infrastructure through the restoration, enhancement or creation of additional resources.

3. Does not undermine the functional integrity of the green infrastructure.

4. Creates, where appropriate, new green infrastructure (including access management measures) either through on site provision or financial contributions.

A1.16 Development proposals that adversely affect green infrastructure will not be permitted unless superior alternative provision can be provided or where it is part of a service provider's plans to provide improved local services in equally accessible locations.



A1.17 Green infrastructure sites will be allocated in the Development Delivery (Allocations) Plan.

DM8 Conservation, Protection and Enhancement of Existing Natural Features

A1.18 Development will only be permitted where it protects and enhances local habitats and landscape distinctiveness and which addresses all of the relevant criteria as set out below:

1. Protects natural features of nature conservation and/or amenity importance on the site, for example trees, woodlands, hedgerows, soils, streams, stream corridors, springs, ditches or ponds from damage, destruction and a deterioration in quality.
2. Sympathetically incorporates existing features into the overall design of the scheme including measures taken to ensure their continued survival.
3. Provides new landscape works that integrate successfully with the local environment and existing natural features, using local materials and plant species and making provision for future maintenance of new landscape works associated with new developments.
4. Ensures sequences of greenspaces are maintained and protects the attractiveness and visual amenity of all green open spaces that contribute to the identity of the borough.

Havant Borough Local Plan (Allocations) (2014)

Policy DM23 Sites for Brent Geese and Waders

A1.19 Planning permission will be granted for developments that avoid important sites for Brent Geese and/or waders outside of the statutory designated areas, identified on the Policies Map. Where this cannot be avoided, development proposals on or adjacent to an important Brent Goose and/or wader site outside of the statutory designated areas will need to demonstrate levels of impact, alone and in combination with other proposals subject to the tests of the Habitats Regulations.

A1.20 Where a negative impact upon a site cannot be avoided or satisfactorily mitigated, and the tests of the Habitats Regulations are met as necessary, replacement feeding/roosting habitat, on a no net loss basis, will be sought.

A1.21 Where a negative impact upon an important site cannot be avoided or mitigated and replacement feeding/roosting habitat is not or cannot be provided on a no net loss basis, the proposal will be refused.

A1.22 Planning permission will be granted for development on or adjacent to uncertain sites for Brent Geese and/or waders outside of the statutory designated areas, where appropriate surveys are undertaken and it is determined that the site has no importance.

Policy DM24 Recreational Disturbance to Special Protected Areas (SPAs) from Residential Development

A1.23 Planning permission will be granted for residential developments that avoid or mitigate a likely significant effect on the SPAs, caused by recreational disturbance through the in combination effect of net additional dwellings. This mitigation can be provided through:

- A1.24
- a) A financial contribution.
 - b) A developer provided package of measures associated with the proposed development



designed to avoid or mitigate any significant effect on the SPAs subject to meeting the tests of the Habitats Regulations.

c) A combination of measures in (a) and (b) above. Where these measures cannot be provided development proposals will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be an adverse effect on the integrity of the SPAs.

- A1.25 The provisions of this policy do not exclude the possibility that some residential schemes, due to their size/and or location, may require individual assessment under the Habitats Regulations on advice from Natural England and additional site specific avoidance or mitigation measures.

Havant Borough Local Plan (Submission version) (2021)

- A1.26 The Havant Borough Local Plan was submitted for examination to the Secretary of State for Housing Communities and Local Government on 12 February 2021. As a result this is not currently adopted.

E14 / The Local Ecological Network

- A1.27 All development in Havant Borough is expected to protect, conserve and enhance the Borough's Local Ecological Network. Planning permission will only be granted where:

- a. The development results in biodiversity net gain;
- b. The development avoids the fragmentation of the Local Ecological Network including across administrative boundaries;
- c. The applicant has identified and assessed the level of ecological value of the site through adequate and proportionate information and any matters arising have been addressed through an avoidance or mitigation plan; and
- d. Any necessary mitigation plan includes provision for ongoing management and maintenance.

- A1.28 In addition to the above, priority habitats in the Borough are afforded protection by specific nature conservation designations. Development proposals which could affect a designated site will need to consider the impact and respond appropriately.

International Nature Conservation Designations

- A1.29 Development which has the potential to have an impact on an international nature conservation designation will be subject to a Habitats Regulations Assessment and, if necessary, an Appropriate Assessment, to determine the potential for likely significant effects. Development that is likely to have an adverse effect, either alone or in combination with another project/plan, on the integrity of an international site will not be permitted unless it can be demonstrated that:
- e. Necessary avoidance or mitigation is secured such that in combination with other development there will be no adverse effects on the integrity of the designated sites; or
 - f. There are no alternative sites for the proposal, there are reasons of overriding public benefit/interest and compensatory provision is secured.



National Nature Conservation Designations

A1.30 In addition to criteria a) to d), planning permission will only be granted on or adjacent to a national nature conservation designation where:

g. Development is unlikely to have an adverse effect either individually or in combination with other developments.

A1.31 An exception to j) will only be made where:

h. The benefit of development clearly outweighs the likely impact on the feature(s) of the designation; and

i. Mitigation and/or compensation measures are secured to offset any likely impacts.

Local Nature Conservation Designations

A1.32 In addition to criteria a) to d), planning permission will only be permitted on or adjacent to a local nature conservation designation where:

j. The value of the designation is retained and, where possible, enhanced in line with its original criteria for designation through avoidance and/or mitigation measures; or

k. The benefit of the development can be shown to clearly outweigh the substantive nature conservation value of the site, and where the impact cannot be avoided nor mitigated, compensation is provided.

Joint working

A1.33 The Council will continue to work collaboratively with partner authorities and bodies to develop a strategic approach towards air quality, green infrastructure and ecological networks. Under duty-to-cooperate, the Council is committed to further investigating the adverse effect of nitrogen identified at the Solent Maritime SAC within Langstone Harbour and if necessary, the preparation of a Nitrogen Action Plan for air quality in partnership with Portsmouth City Council and other appropriate partners.

E15 / Protected Species

A1.34 Development proposals which are likely to affect protected species, and/or their supporting habitats, must undertake appropriate surveys to establish their presence/likely absence. In using the findings of such surveys, proposals should, in the first instance, avoid an impact on a protected species. If this is not possible proposals should mitigate and compensate. Planning permission will only be granted where:

a. A Mitigation Plan, or if this is not possible a Compensation Plan, is provided to the satisfaction of the Council; and b. A Monitoring and Review Plan is put in place.

Bechstein's Bat

A1.35 In instances where Bechstein's bat is likely to be found on site and/or nearby, survey methods appropriate to Bechstein's bat must be used and undertaken by a suitably qualified ecologist. If the presence of Bechstein's bat is established on site and/or nearby, planning permission will only be granted where:

c. Impacts on Bechstein's bat breeding habitat (i.e. net loss of/significant disturbance to woodland or trees containing roosts) are avoided;



- d. Proposals include appropriate buffers to woodlands, trees, hedgerows and other flight corridors, considering the location of roosts and foraging/commuting habitats; and
- e. Review and monitoring plans are put in place.

A1.36 Where the above measures cannot be met planning permission will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be an adverse effect on the population of the relevant protected species.

E16 Recreation impact on the Solent European Sites

A1.37 Planning permission will be granted for new dwellings and/or overnight accommodation that mitigates the likely significant effect on the Solent European Sites. This mitigation can be provided through either:

- a. A financial contribution consistent with the Solent Recreation Mitigation Strategy (SRMS); or
- b. A developer provided package of measures associated with the proposed development supported by evidence that it will avoid or mitigate any likely significant effect; or
- c. A combination of measures in (a) and (b) above.

A1.38 Where these measures cannot be provided development proposals will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be a likely significant effect on the Solent European Sites either alone or in combination with other plans or projects.

EX1 / Water Quality impact on Solent European Sites

A1.39 New dwellings and/or development resulting in a net gain in overnight accommodation which would cause a likely significant effect on the designated sites will need to provide a nutrient budget. Planning permission will only then be granted if a mitigation package is provided which will remove the likely significant effect. This mitigation can be provided through either:

- a. A financial contribution towards the Council's strategic mitigation package, Land at Warblington Farm; or
- b. A developer provided package of measures associated with the proposed development supported by evidence that it will avoid or mitigate any likely significant effect on the Solent European Sites; or
- c. A combination of measures in (a) and (b) above. Where these measures cannot be provided development proposals will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be a likely significant effect on the Solent European Sites either alone or in combination with other plans or projects.

E17 / Solent Wader and Brent Goose feeding and roosting sites

A1.40 Development proposals on, or adjacent to, sites which are used by Solent waders and/or Brent Geese will be assessed in line with the appropriate regulations. These proposals will,



therefore, require a project level Habitats Regulations Assessment and, if necessary, an Appropriate Assessment. The Council will consider the Solent Waders and Brent Goose (SWBG) Strategy and the latest survey data when making such an assessment.

Core Areas and Primary Support Areas

- A1.41 Development proposals, other than on those sites specifically allocated in this Plan, which would involve the loss of all or part of a Core Area or Primary Support Area, will be refused.

Secondary Support Areas

- A1.42 Development proposals on Secondary Support Areas will only be permitted where either:
- g. A suitable replacement habitat is provided on a like for like basis on or within the locality of the site which is agreed and secured through a costed Habitat Management and Monitoring Plan; or
- A1.43 h. Where it can be demonstrated that criterion g) is not practicable, a smaller suitable replacement area is agreed and secured through a costed Habitat Management and Monitoring Plan and a financial contribution is provided consistent with the SWBG Strategy.

Low Use

- A1.44 Development proposals on Low Use Sites will only be permitted where:
- i. On site mitigation is provided which is based upon appropriate ecological assessments to the satisfaction of the Council and Natural England; or
 - j. A financial contribution is provided consistent with the SWBG Strategy.

Candidate Sites

- A1.45 Development proposals on Candidate Sites will only be permitted where:
- k. One or two-consecutive years' survey is undertaken to determine the classification of the site; and
 - l. Once the classification of the site is established, the above requirements are met according to the status of the site.

Indirect effects

- A1.46 Development proposals adjacent to sites used by SWBG will only be permitted where access and disturbance to the adjacent SWBG site is prevented. This can either be achieved by avoiding development close to the adjacent SWBG site, or by providing a package of avoidance and/or mitigation measures which are agreed with the Council.

Delivery and Management of Replacement Habitat

- A1.47 Where suitable replacement habitat is required to offset the loss or damage to a SWBG site, the replacement land will need to be provided prior to commencement of development.



A1.48 The land for replacement habitat should be within the locality of the site and managed in a suitable condition for SWBG prior to the loss or damage to the SWBG area being proposed for development. The land should be secured and managed through an agreed costed Habitat Management and Monitoring Plan in perpetuity.

E18 Trees, hedgerows and woodland

A1.49 Development affecting trees, hedgerows and woodlands will only be permitted where it:

- a. Reflects, conserves or enhances the existing landscape and integrates the development into its surroundings, adding visual interest and amenity;
- b. Adequately protects existing trees and hedgerows including their root systems prior to, during and after the construction process; and
- c. Will not result in the loss or deterioration of ancient woodland and ancient or veteran trees.

A1.50 The Council will refuse planning permission for proposals that threaten the retention of important trees, hedgerows, and woodland, unless the need for, and benefits of development in that location clearly outweigh the impact of the proposal.

A1.51 Provision of new trees are expected as part of development proposals for new homes and commercial floorspace. Planning permission will be granted where it:

- d. Facilitates adaptation to climate change by providing shade, shelter and cooling through new tree planting; and
- e. Includes proposals for the successful implementation, maintenance and management of landscape and tree planting schemes.



Appendix 2: Detailed Survey Methodologies and Results

Bats

Bat activity survey

Table A2.1: Dates and weather conditions for the static bat activity surveys - sourced from www.wunderground.com

Visit number	Dusk Date	Time of Sunset	Time of Sunrise	Weather conditions			
				Temp. Max (°C)	Temp. Min (°C)	Wind Speed Max (kmph)	Precipitation (mm)
1	27/05/2021	21:12	05:09	19	6	17	0
	28/05/2021	21:13	05:08	18	9	13	0
	29/05/2021	21:14	05:08	21	14	13	0
	30/05/2021	21:15	05:07	20	11	13	0
	31/05/2021	21:17	05:06	23	8	17	0
2	29/06/2021	21:30	05:04	19	15	14	0
	30/06/2021	21:30	05:04	21	13	15	0
	01/07/2021	21:30	05:05	24	14	21	0
	02/07/2021	21:29	05:06	22	14	24	0
	03/07/2021	21:29	05:06	21	16	24	0
3	06/09/2021	19:37	06:28	20.1	16.4	0	0
	07/09/2021	19:35	06:29	24.2	18.4	16.1	0
	08/09/2021	19:33	06:31	19.5	17.1	6.4	0.25
	09/09/2021	19:30	06:32	18.9	18.2	8.0	0
	10/09/2021	19:28	06:34	18.3	17.3	11.3	0



Table A2.2 – A2.7: Static bat activity survey results

Table A2.2: Visit 1, Location 1

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
27/05/2021	-	-	-	-	-
28/05/2021	125	89	2	-	216
29/05/2021	55	32	-	-	87
30/05/2021	-	-	-	-	-
31/05/2021	-	-	-	-	-
Grand Total	180	121	2	-	303

Table A2.3: Visit 1, Location 2

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
27/05/2021	163	71	-	-	234
28/05/2021	45	34	1	-	80
29/05/2021	-	-	-	-	-
30/05/2021	-	-	-	-	-
31/05/2021	-	-	-	-	-
Grand Total	208	105	1	-	314

Table A2.4: Visit 2, Location 1

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
29/06/2021	145	29	9	-	183
30/06/2021	208	136	-	-	344
01/07/2021	216	80	6	-	302
02/07/2021	167	71	2	-	240
03/07/2021	299	599	25	-	923
Grand Total	1035	915	42	-	1992

Table A2.5: Visit 2, Location 2

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
29/06/2021	128	21	-	-	149
30/06/2021	215	24	-	-	239
01/07/2021	150	53	-	-	203
02/07/2021	289	81	-	-	370
03/07/2021	459	208	-	-	667
Grand Total	1241	387	-	-	1628



Table A2.6: Visit 3, Location 1

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
06/09/2021	261	26	8	-	295
07/09/2021	36	9	1	-	46
08/09/2021	587	110	14	1	712
09/09/2021	612	70	5	2	689
10/09/2021	1486	422	36	17	1961
Grand Total	2982	637	64	20	3703

Table A2.7: Visit 3, Location 2

Dusk Date	C. pip	S. pip	Noctule	Myotis	Grand Total
06/09/2021	2835	2847	-	73	5755
07/09/2021	18886	1694	-	390	20970
08/09/2021	5076	251	-	-	5327
09/09/2021	-	-	-	-	
10/09/2021	-	-	-	-	
Grand Total	26797	4792	0	463	32052

Great Crested Newt

Habitat Suitability Index assessment survey

Table A2.8 – A2.13: HSI assessment results**Table A2.8:** Ditch D1 description and HSI score

Ditch D1	
Description – Shallow drainage ditch along the southern site boundary. Dry in west becoming wet in the centre of the ditch to approximately 2cm deep and then drying again to the east. Ditch has some macrophytes and bullrush present.	
Indices	Results
Grid references	SZ 70990 99870 – SZ 70996 99919
Distance from site	On-site
SI1 – Location	Optimal
SI2 – Pond area	150m ²
SI3 – Pond drying	Dries annually
SI4 – Water quality	Poor
SI5 – Shade	20%
SI6 – Fowl	Absent
SI7 – Fish	Absent
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Poor
SI10 – Macrophyte cover	15%
HSI Score	0.51
HSI Classification	Below average



Table A2.9: Ditch D2 description and HSI score

Ditch D2	
Description – Wet ditch running along a section of the eastern site boundary. Section on-site is dry and vegetated with the section off-site flowing	
Indices	Results
Grid references	SZ 70994 99869 - SZ 71140 99852
Distance from site	Directly adjacent
SI1 – Location	Optimal
SI2 – Pond area	150 m ²
SI3 – Pond drying	Dries annually
SI4 – Water quality	Poor
SI5 – Shade	50%
SI6 – Fowl	Absent
SI7 – Fish	Absent
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Moderate
SI10 – Macrophyte cover	20%
HSI Score	0.55
HSI Classification	Below average

Table A2.10: Ditch D3 description and HSI score

Ditch D3	
Description – Drainage ditch running along the northern site boundary. Section within the site is dry with no vegetation but heavily over shaded by adjacent crop and bankside vegetation.	
Indices	Results
Grid references	SZ 71177 99842 - SZ 71191 99972
Distance from site	On-site
SI1 – Location	Optimal
SI2 – Pond area	250 m ²
SI3 – Pond drying	Dries annually
SI4 – Water quality	N/A
SI5 – Shade	75%
SI6 – Fowl	Absent
SI7 – Fish	Absent
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Poor
SI10 – Macrophyte cover	0
HSI Score	0.00
HSI Classification	Poor



Table A2.11: Ditch D4 description and HSI score

Ditch D4	
Description – Drainage ditch running along the western site boundary and off-site. Section within the site is dry and heavily vegetated but section directly off-site to the south is wet likely caused by a blocked drain.	
Indices	Results
Grid references	SZ 71002 99916 - SZ 71186 99971
Distance from site	On-site
SI1 – Location	Optimal
SI2 – Pond area	50 m ²
SI3 – Pond drying	Dries annually
SI4 – Water quality	N/A
SI5 – Shade	90
SI6 – Fowl	Absent
SI7 – Fish	Absent
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Poor
SI10 – Macrophyte cover	0
HSI Score	0.00
HSI Classification	Poor

Table A2.12: Off-site Pond P1 description and HSI score

Pond P1	
Description – Small man-made attenuation basin directly adjacent to the eastern site boundary. Pond is connected to D1, beneath culvert.	
Indices	Results
Grid reference	SZ 71155 99861 (from centre)
Distance from site	Directly adjacent east boundary
SI1 – Location	Optimal
SI2 – Pond area	50 m ²
SI3 – Pond drying	Rarely dries
SI4 – Water quality	Poor
SI5 – Shade	50%
SI6 – Fowl	Absent
SI7 – Fish	Absent
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Moderate
SI10 – Macrophyte cover	20%
HIS Score	0.56
HIS Classification	Below Average



Table A2.13: Off-site Pond P2 description and HSI score

Pond P2	
Description – Large man-made balancing pond directly adjacent to the eastern site boundary. Pond used by a pair of breeding mute swans at the time of the survey.	
Indices	Results
Grid reference	SZ 71171 99881 (from centre)
Distance from site	Directly adjacent east boundary
SI1 – Location	Optimal
SI2 – Pond area	1000 m ²
SI3 – Pond drying	Never dries
SI4 – Water quality	Moderate
SI5 – Shade	45%
SI6 – Fowl	Minor
SI7 – Fish	Possible
SI8 – Ponds (within 1km)	6
SI9 – Terrestrial habitat	Moderate
SI10 – Macrophyte cover	40%
HSI Score	0.51
HSI Classification	Below Average

Reptiles

Table A2.14: Dates and weather conditions for the reptile survey visits

Visit Number	Date	Time	Weather Conditions			
			Air Temp (°C)	Cloud cover (%)	Precipitation	Wind (Beaufort scale)
1	26/07/21	10:53 – 11:17	20	5	Dry	0
2	31/07/21	13:05 – 13:30	18	100	Dry	3
3	03/08/21	13:42 – 14:05	17	100	Very light drizzle	2
4	05/08/21	11:55 – 12:20	18	90	Dry	3
5	10/08/21	11:37 – 12:03	17	1	Dry	2
6	16/08/21	13:04 – 13:33	18	100	Dry	3
7	24/08/21	11:09 – 11:35	17	1	Dry	4

Table A2.15: Reptile survey results

Visit Number	Date	Slow worm					Common Lizard			
		Adult male	Adult female	Sub-adult	Juvenile	Peak Count	Adult male	Adult female	Juvenile	Peak Count
1	26/07	5	7	2	6	12	0	0	0	0
2	31/07	5	19	9	11	24	3 (sex unknown)		0	3
3	03/08	10	29	18	25	39	4 (sex unknown)		5	4
4	05/08	8	14	10	8	22	0	0	1	0
5	10/08	5	11	7	11	16	0	0	0	0
6	16/08	8	18	8	13	26	1 (sex unknown)		3	1
7	24/08	0	4	3	9	4	1 (sex unknown)		1	1



Appendix 3: Biodiversity Net Gain (BNG) Assessment

Introduction

- A3.1. A Biodiversity Net Gain (BNG) assessment for the site was completed by Tyler Grange Group Ltd which was informed by an extended Phase 1 habitats survey undertaken in April 2021.
- A3.2. The habitats recorded during this survey were assessed with reference to the UK Habitat Classification (Butcher *et al*, 2020) and the Biodiversity Metric technical supplement (Panks *et al*/2021) to determine their condition and ecological importance.
- A3.3. A hedgerow survey was also undertaken using the methodology detailed in 'The Hedgerow Survey Handbook. 2nd Edition' (DEFRA, 2007), in order to determine hedgerow species-richness, as recommended in the latest version of the Biodiversity Metric 3.0.
- A3.4. This survey work enabled the accurate completion of a Natural England's BNG Metric (The Biodiversity Metric 3.0) which should be looked at in conjunction with this Appendix (13965_Land north of Oysters_Biodiversity Metric 3.0).
- A3.5. Habitat Features **Plan 13956/P22** shows the existing habitats present at the site and the new areas of planting are shown on the Illustrative Masterplan (Mosaic Drawing 1239 003 J).

Existing Baseline

- A3.6. The site primarily comprises a single arable field with grassland margins, bound by tree line and hedgerow on the western and eastern boundaries and with ephemeral ditches present on all site boundaries (see Habitat Features **Plan 13956/P22**). Areas of introduced shrub and grassland managed for amenity are also present.

Arable

- A3.7. The site primarily comprises an arable field which at the time of survey was classified as an unidentified cereal crop. This habitat is subject to intensive management and agrichemical inputs and as it is agricultural in nature, no condition assessment is required (Panks *et al*, 2021).

Modified grassland (Field margins)

- A3.8. The margins of the arable field comprise strips of grassland which are approximately 2m wide in the main. Species present include, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, ribwort plantain *Plantago lanceolata*, broadleaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, bristly oxtongue *Helminthotheca echioides*, dandelion *Taraxacum officinale*, creeping buttercup *Ranunculus repens*, teasel *Dipsacus fullonum* and meadowsweet *Filipendula ulmaria*. This habitat is subject to occasional management with a tall sward present at the time of survey.



- A3.9. The grassland was classified as modified grassland using the UK Habitat Classification (Butcher et al, 2020) as being generally species poor and with palatable grass species, namely Yorkshire fog and cocks' foot, dominating the sward and with the broadleaved species largely restricted to undesirable species such as broadleaved dock and common nettle.
- A3.10. In accordance with the Biodiversity metric technical supplement (Panks et al, 2021) this low distinctiveness grassland is assessed as being of moderate condition, with coverage of scrub and bracken both below 20% of the habitat area, physical damage and bare ground cover below 5% and with coverage of undesirable species, such as common nettle, exceeding 5% of the ground cover.

Modified grassland (Managed for amenity)

- A3.11. On the margins of the site small areas of grassland which are managed for amenity purposes are also present. These areas are located adjacent to offsite gardens and are subject to regular management with a short sward present.
- A3.12. Species present primarily comprise those recorded in the field margins with Yorkshire fog dominant and with other species including, cock's foot, ribwort plantain, bristly ox tongue, dandelion and common nettle.
- A3.13. The grassland was also classified as comprising modified grassland using the UK Habitat Classification (Butcher et al, 2020) being generally species poor and with grass species dominant in the sward.
- A3.14. In accordance with the Biodiversity metric technical supplement (Panks et al, 2021) this low distinctiveness grassland was also assessed as being of moderate condition following the same criteria as for the modified grassland field margins (see above).

Introduced shrub

- A3.15. An area of introduced shrub planting is present along the southern boundary with specimen shrubs having been planted as part of mitigation for an adjacent development.
- A3.16. In accordance with the Biodiversity metric technical supplement (Panks et al, 2021) this habitat, which comprises ornamental species is, classified as being of poor condition, which is the only condition level available in BNG 3.0.

Ditches

- A3.17. Ephemeral watercourses are present on the site boundaries. These features are less than 5m wide and are anticipated to hold water for the majority of the year and as such are classified as ditches (Butcher et al, 2020).
- A3.18. In accordance with the Biodiversity metric technical supplement (Panks et al, 2021) the condition of the majority of ditches were assessed as being of moderate condition with good water quality present with clear water, no obvious signs of pollution and less than 10% cover of filamentous algae present, a fringe of marginal vegetation is present along all ditches and no evidence of damage such as excessive poaching or any evidence of non-native plant species was recorded. The



ditches are however shallow and not anticipated to hold water above 50cm deep in summer and emergent vegetation coverage is limited in extent.

Hedgerows

- A3.19. Hedgerows are present on the western and eastern boundary of the site (see Habitat Features **Plan 13956/P22**).
- A3.20. Hedgerow H1 comprises a mix of ornamental and native species and as such is divided into two hedgerows with the northern extent comprising an ornamental hedge (H1a) and the southern extent a native hedgerow (H1b).
- A3.21. Hedgerow H1a comprises a well-managed, ornamental, species-poor hedgerow which is largely located within an adjacent residential garden. This hedgerow comprises ornamental species and in accordance with the Biodiversity metric technical supplement (Panks et al, 2021) is assessed as being of poor condition.
- A3.22. Hedgerow H1b comprises a native hedgerow with trees associated with a ditch. This hedgerow is species poor, with species present comprising elder *Sambucus nigra*, oak *Quercus robur* and goat willow *Salix caprea*. This hedgerow is assessed as being of moderate condition with height and width greater than 1.5m and whilst an undisturbed margin is present this is dominated by undesirable species such as nettles. This hedgerow is also gappy with gaps in both the understorey and canopy. Whilst no invasive species are present this hedgerow is also damaged as a result of inappropriate management and with piles of rubbish present (TN1).
- A3.23. Hedgerow H2 comprises a line of trees associated with a ditch and is dominated by willow *Salix* sp. The tree line is approximately 15m tall and with the understorey gappy and dominated by bramble *Rubus fruticosus* agg. This line of trees is also assessed as being of moderate condition with the majority of trees being native species and with continuous canopy of tree in healthy condition, but with no mature or veteran trees or a 6m wide undisturbed margin present.

Proposals

- A3.24. The proposals for the site have been designed so as to avoid ecological impacts where possible, with the existing hedgerows and majority of watercourses, which are the habitats of highest ecological importance, to be retained and buffered from the development.
- A3.25. The proposals will result in the loss of ditch D1 and all of the existing arable crop, however the majority of the grassland margins will be retained and enhanced for the benefit of biodiversity. Extensive new tree planting will also occur across the site to benefit bats and other wildlife, as well as to increase biodiversity.
- A3.26. The creation and enhancement of habitats, including trees and neutral/wildflower grassland will not only increase connectivity and the floristic diversity at the site, but will also increase the opportunities available to wildlife such as bats, birds, invertebrates and small mammals, potentially attracting a more diverse species assemblage to the site post-development.



A3.27. Further detail on the habitat creation and enhancement measures that will occur at the site are expected to be provided in a Landscape and Ecological Management Plan (LEMP), subject to planning condition, and are summarised below.

Habitat Creation

A3.28. The proposed development will result in the loss of arable farmland, modified grassland and an ephemeral ditch.

A3.29. The habitats that will be present at the site post-development will comprise urban-developed land (comprising buildings, roads and hardstanding), vegetated gardens, sustainable urban drainage features (SuDS), neutral/wildflower grassland, modified grassland, trees and reedbeds.

A3.30. The new development and associated hardstanding areas will comprise urban built form and as such no condition assessment is required. The vegetated gardens will be of poor condition, which is the maximum condition which can be achieved for these habitats within the BNG (Panks *et al*, 2021).

A3.31. Two new SuDS basins will be created and these features will be maintained at moderate condition with at least 50% of the basin designed to be permanently wet so as to maintain the water table at the surface throughout the year. A quarter of the SuDS will be planted with reedbed and aquatic, native vegetation of at least moderate condition.

A3.32. New areas of neutral/wildflower grassland will be created within the development and will be sown with a wildflower and grass species mix to maximise species diversity and managed to achieve moderate condition. To achieve this condition this grassland will be managed to have a varied sward height with at least 20% taller than 7cm, with coverage of bare ground, scrub and undesirable species less than 5% and with no bracken or non-native species present.

A3.33. Areas of new modified grassland will also be created and managed for amenity purposes. This modified grassland will be managed to good condition with at least 6-8 species present per m², coverage of scrub and bracken are both below 20%, and with physical damage, undesirable species and bare ground cover all below 5% of the habitat area.

A3.34. Extensive new tree planting (at least 40 trees) will occur across the site achieving a gain in trees post-development. These trees will comprise a mix of native and ornamental species of known value to wildlife. Post-development these trees will achieve at least poor condition with at least 70% to be native species and with trees sensitively managed to encourage wildlife and minimise adverse management impacts.

Habitat Enhancements

A3.35. Areas of retained modified grassland on the margins of the site will be enhanced as neutral/wildflower meadow and will be oversown with an appropriate wildflower and grass seed mix in order to improve species diversity. This habitat will be managed to achieve moderate condition, with a varied sward height with at least 20% of the sward taller than 7cm, with coverage of bare ground, scrub and undesirable species less than 5% and with no bracken or non-native species present.



- A3.36. The retained ditches on the margins of the site will be enhanced to good condition with planting of emergent and submerged plants used to improve the species diversity of these features. An appropriate fringe of vegetation will also be maintained.
- A3.37. The existing hedgerows within the site are to be retained and will remain unaffected by the proposals and as such no impacts to any hedgerows will occur.

Management

- A3.38. Management measures will be implemented at the site to ensure that the required habitat conditions are achieved, biodiversity is increased and opportunities for wildlife maximised. Such measures would be included within the LEMP, expected to be conditioned.

Other Biodiversity Enhancements

- A3.39. In addition to the above points, further measures are to be implemented at the site that will assist with increasing biodiversity, although they are not considered within the BNG metric which deals with only habitats.
- A3.40. Bat boxes are to be installed on the new buildings across the site that will lead to an increase in roosting provision post-development and could lead to an increased abundance and diversity of bat species roosting at the site.
- A3.41. Bird boxes are also to be installed on the new buildings and will lead to an increase in nesting provision post-development and could lead to an increased abundance and diversity of bird species nesting at the site.
- A3.42. The creation of new habitats within the site, such as wildflower grassland and trees, will not only increase the floristic diversity and quality of the habitats present on-site, but will also significantly increase the opportunities available to wildlife such as birds, invertebrates and bats, therefore attracting a more diverse species assemblage to the site post-development.

Summary

- A3.43. Overall, the site has been sensitively designed to avoid impacts by retaining the majority of habitats of ecological importance and new habitats of ecological importance are to be created, such as neutral/wildflower grassland, reedbed and trees. These measures will overall result in a net gain of +2.33 % in Habitat Units. The proposed enhancements to the retained ditches will also result in a gain of +7.95% in River Units.
- A3.44. No existing hedgerows are to be affected by the proposals and as such, with no new hedgerow planting proposed there is a 0% change in Hedgerow Units. A gain in tree numbers will however be achieved increasing opportunities for wildlife.
- A3.45. As such, it can be demonstrated that the site proposals would deliver overall gains in biodiversity and the development would therefore be in conformity with relevant planning policy and legislation.



Appendix 4: Wintering Bird Appendix

Legislation and Conservation Status

- A4.1. All birds are protected under the provisions of the Wildlife and Countryside Act (WCA) 1981 (as amended). Some receive additional species protection under Schedule 1 of the Act.
- A4.2. Several bird species are listed as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006.
- A4.3. Reference is made to Birds of Conservation Concern (BOCC) compiled by Royal Society for the Protection of Birds (RSPB)/British Trust for Ornithology (BTO). All breeding and wintering bird species in the UK, Channel Islands and the Isle of Man have been assigned to one of three groups (Red, Amber or Green) based on their conservation status. Each group is defined as follows:
- RED List species are those that are globally threatened according to the International Union for Conservation of Nature (IUCN) criteria; those whose population or range has declined rapidly ($\geq 50\%$) in recent years; and those that have declined historically and not shown a substantial recent recovery;
 - AMBER List species are those with an unfavourable conservation status in Europe, those whose population or range has declined moderately (25%-49%) in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations; and
 - The remaining species are placed on the GREEN List, indicating that they are of low conservation priority, although population sizes should be monitored.
- A4.4. A key issue with respect to any future development on this site, is the potential for adverse effects through habitat loss and increased disturbance affecting the bird interest of the nearby Solent SPAs and Ramsar site. The SPA is designated on account of the internationally important numbers of dark bellied brent geese *Branta bernicla bernicla* and some wading bird species. The birds use some of the adjacent grassland to forage and roost at high tide.
- A4.5. Brent geese and wading birds are long-lived and use a range of different sites over a winter season and over their life-time. A Solent Waders and Brent Goose Strategy was published in 2010 and updated in 2020 by the Brent Goose Strategy Steering Group, comprising a partnership of statutory and non-statutory bodies. The strategy is a "*non-statutory document presenting evidence, analysis and recommendations to inform decisions relating to strategic planning as well as individual development proposals*". The underlying principle of the Strategy is "*to wherever possible conserve extant sites, and to create new sites, enhancing the quality and extent of the feeding and roosting resource*".



Methodology

Wintering Birds

- A4.6. The Hampshire Wildlife Trust recommend a minimum of three years' winter survey data is gathered in order to assess the potential usage of sites that fall within the strategy area by waders and brent geese. The survey should cover not just the site but adjacent fields that could be indirectly affected by development. These should take place once every two weeks from October to March, at high tide following the methodology outlined in the published strategy.
- A4.7. Survey work has been gathered for fields H34E (which includes the site), H34D (to the north) and H34C (adjacent to the site) see **Figure A4.1**.
- A4.8. Accordingly, surveys undertaken by experienced ornithologists during winter seasons 2011/12, 2012/13, 2015/2016, 2017/2018, 2018/2019 and then in 2020/2021 were conducted using the method set out in the 2010 Solent Waders and Brent Goose Strategy. Dates and weather conditions of surveys are provided below.

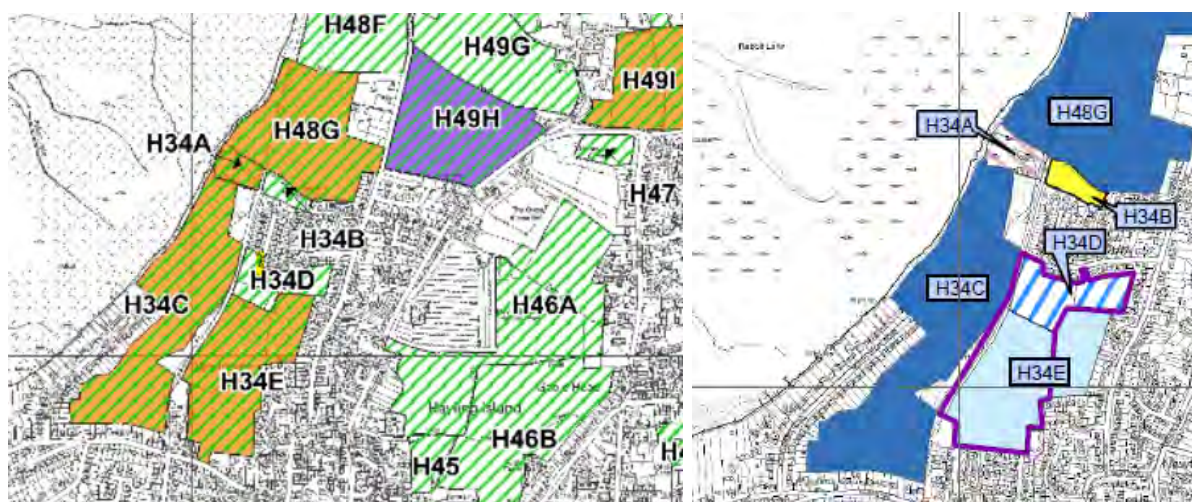


Figure A4.1: Site location

Limitations

- A4.9. Data is missing from the winter season 2019/20 but the quality of data provided is not considered to be affected due to the number of years' worth of previous data.

Survey Results and Summary

- A4.10. The data search gave results for brent geese in the surrounding areas to the site. In total 284 records were returned with the closest being 0.16 km north-west of the site.
- A4.11. The site is an area of known importance to wintering waders and brent geese. Records from the SWBGS (2020) indicate that H34E supports a maximum count of 200 brent geese, recorded in 2011/12.
- A4.12. The findings of detailed surveys in winter season 2011/12, 2012/13, 2015/2016, 2016/2017, 2017/2018, 2018/2019 and 2020/2021 at the site and adjacent fields are provided in below in **Tables A4.1- A4.6**.



A4.13. During all survey seasons no brent geese were recorded within the site (H34E). In the adjacent field H34C brent geese were recorded in seasons 2011/12, 2015/2016, 2017/2018, and 2020/2021 with a peak count of 580 on 03/02/2021. And within field H34D lapwing were recorded in 2011/12 on one occasion, with a peak count of ten.



Table A4.1: BRENT GOOSE COUNTS – SOUTH END OF HAYLING BILLY TRACK WINTER 2011/2012

Date	Time on site (High Tide)	Weather (cloud, wind)	Species	Field H34E		Field H34D	Field H34C		Use	Disturbance	Comments
				S	N		S	N			
10/11/11	10:45 (10:57)	7/8, E1	BG	0	0	0	0	1	Feeding	-	A solitary juvenile.
24/11/11	09:45 (09:59)	6/8, SW2	BG	0	0	0	0	0	-	N/A	c.1200 in H48F/G.
10/12/11	10:05 (11:05)	1/8, W1	BG	0	0	0	0	0	-	N/A	c.1500 in H48F/G.
24/12/11	10:00 (10:34)	6/8, 0	BG	0	0	0	0	c.465	Feeding	-	165 joined by 300 that flew in from north (probably disturbed from another field).
10/1/12	12:00 (11:56)	6/8, W1	BG	0	0	0	0	0	-	N/A	c.1400 in H48F/G.
23/1/12	12:00 (11:18)	6/8, W2	BG	0	0	0	0	0	-	N/A	c.1000 in H48F/G.
12/2/12	13:25 (14:25)	8/8, W1 (during a cold snap).	BG	0	0	0	0	c.300	Feeding	Dog walker?	Arriving from adjacent part of Langstone Harbour, again probably having been disturbed.
"	"	"	L.	0	0	10	0	1	Feeding	-	An isolated occurrence, presumably weather related.
"	"	"	GP	0	0	0	0	139	Feeding	-	An isolated occurrence, presumably weather related.
24/2/12	13:00 (12:56)	8/8, SW2	BG	0	0	0	0	0	-	N/A	c.600 in H48D.
10/3/12	13:40 (12:37)	1/8, 0	BG	0	0	0	0	0	-	Dog walker?	c.600 in adjacent harbour (presumably disturbed from fields).
19/3/12	10:30 (09:48)	0/8, 0	BG	0	0	0	0	c.500	Feeding	Dog walker	Flew in from adjacent water at 11:00, but flushed back there after 20 minutes.

Field H34E divided into N/S by ditch; field H34C by a line across from end of the houses. Both fields containing seeded grassland in winter 2011/12.

BG = brent goose; L. = lapwing, GP = golden plover

In addition to the north end of H34C, fields H48D-G, located further north along the west Hayling shore, were used much more regularly during this survey, with up to 1500 present. However, birds are regularly disturbed by dog walkers in all these areas. They will often fly to the adjacent water before returning to the fields to continue feeding.



Table A4.2: BRENT GOOSE COUNTS – SOUTH END OF HAYLING BILLY TRACK WINTER 2012/2013

Date	Time on site (High Tide)	Weather (cloud, wind)	Species	Field H34E		Field H34D	Field H34C		Use	Distur bance	Comments
9/10/12	16:00 (18:30)	Overcast, drizzle, E3	BG	0	0	0	0	0	-	-	100 some distance away in Langstone Harbour.
27/10/12	12:00 (11:03)	1/8 cloud, wind N5	BG	0	0	0	0	0	-	-	32 just offshore in Langstone Harbour.
12/11/12	11:00 (09:32)	Overcast, drizzle, SW1	BG	0	0	0	0	0	-	-	50 just offshore in Langstone Harbour. 1 adult in H48E.
26/11/12	11:00 (09:54)	7/8 cloud, wind SW1	BG	0	0	0	0	0	-	-	None in the vicinity.
6/12/12	15:00 (16:29)	Overcast, wind NW3	BG	0	0	0	0	0	-	-	"
17/12/12	14:10 (14:10)	1/8 cloud, wind W3	BG	0	0	0	0	0	-	-	350 in Langstone Harbour flew to H48F*.
5/1/13	15:10 (16:58)	Overcast, wind W1	BG	0	0	0	0	0	-	-	One adult just offshore in Langstone Harbour.
17/1/13	15:00 (15:19)	6/8 cloud, wind E2	BG	0	0	0	0	0	-	-	None in the vicinity.
2/2/13	15:00 (15:24)	1/8 cloud, wind NW4	BG	0	0	0	0	0	-	-	320 flew over H48G to land in Langstone Harbour. 80 more in H49H.
16/2/13	14:30 (15:28)	7/8 cloud, still.	BG	0	0	0	0	0	-	-	None in the vicinity.
2/3/13	14:30 (14:18)	Overcast, wind NE3	BG	0	0	0	0	0	-	-	11 in Langstone Harbour (but not close to the site). 40 in H48E
15/3/13	14:00 (13:38)	Overcast, wind SW5	BG	0	0	0	0	0	-	-	None in the vicinity.

Field H34E divided into N/S by ditch; field H34C by a line across from end of the houses. Both fields containing stubble in winter 2012/13.

*note: a bird scarer (and scarecrow) are present in H48F this winter, though not running all the time.

The fields alongside the Billy Track (H48D-G) were much less used this winter than in 2011-12. Many contain stubble (as do the large fields in the middle of Hayling e.g. H60N), although some have been winter-sown. Brent geese still using improved grassland fields at the north end of the island.



Table A4.3: BRENT GOOSE COUNTS – SOUTH END OF HAYLING BILLY TRACK WINTER 2015/2016

Date	Time on site (High Tide)	Weather (cloud, wind)	Spec ies	Field H34E		Field H34D	Field H34C		Use	Distur bance	Comments
31/10/15	14:00 (13.48)	6/8 cloud, wind E1	BG	n/a	0	0	0	0	-	-	-
17/11/15	15:00 (14:43)	Overcast, wind SW8	BG	0	0	0	0	0	-	-	-
30/11/15	15:00 (14:13)	7/8 cloud, wind SW7	BG	0	0	0	0	0	-	-	1200 in H48D (along West Lane).
15/12/15	15:00 (14:33)	7/8 cloud, wind S7	BG	0	0	0	0	270	Feeding	-	Also 2 MA, 25 BH. Another 400 BG flew over H48D.
12/01/16	13:30 (12:48)	1/8 cloud, wind W6	BG	0	0	0	240	160	Feeding	-	BG all towards the middle (Area B; refer to Figure 2) of H34C (see photo 5). None recorded in Area C. Also 150 BH, 50 CM, 10 HG.
25/01/16	13:00 (12:09)	6/8cloud, wind E2	BG	0	0	0	0	50	Feeding	-	Also 120 BH, 100 CM, 10 MU in H34C
8/2/16	15:10 (16:58)	7/8 cloud, wind SW8	BG	0	0	0	0	300	Flew in, then soon out again.	Dog*	Also 75 BH, 75 CM, 10 MU, 2 HG, 5 OC in H34C
20/2/16	11:00 (10:16)	Overcast, wind W4	BG	0	0	0	0	31	Feeding	-	Also 150 BH, 50 CM, 15 MU, 2 HG, 3 OC, 1 RK in H34C
1/3/16	16:00 (16:12)	5/8 cloud, wind SW6	BG	0	0	0	0	27	Flew round but didn't land.	-	1000 BG in H48D. Also 100 MU, 80 BH, 30 CM, 1 HG, 1 RK in H34C
9/3/16	10:20 (11:26)	Overcast, wind N2	BG	0	0	0	0	0	-	-	10 BH, 3 MU, 2 CM, 1 OC, 1 CU in H34C

Field H34E divided into N/S by ditch; field H34C by a line across from end of the houses. The southern area of H34E was being developed at the time of this survey; the remainder of the survey area contains winter sown crop. In comments, MA = mallard, BH = black-headed gull, CM = common gull, HG = herring gull, MU = Mediterranean gull, OC = oystercatcher, RK = redshank, CU = curlew. On 8th February around 300 brent geese arrived in H34C from the north, having evidently been flushed. Minutes later an out of control dog came tearing through the field, chasing all the geese, which promptly took off and flew back north to the field they had just been flushed from (by the same dog)



Table A4.4: DARK-BELLIED BRENT GOOSE (DB) COUNTS – SOUTH END OF HAYLING BILLY TRACK, WINTER 2017-18

Date	Time on site (High Tide)	Weather (cloud, wind)	Species	Field H34E S N	Field H34D	Field H34C S N	Use	Disturbance	Comments
16/10/17	10:30 (10:06)	7/8 cloud, wind S5	DB	n/a 0	0	0 0	-	-	BH 150, MU 3, mostly in H34C
31/10/17	09:00 (08:10)	6/8 cloud, still	DB	n/a 0	0	0 0	-	-	BH 50 DB 400 in Langstone Harbour
9/11/17	15:00 (15:06)	Overcast, still	DB	n/a 0	0	0 500	F	Photographer	DB 400 more in L. Harbour.
25/11/17	15:00 (15:28)	1/8 cloud, wind NW2	DB	n/a 0	0	0 108	F	-	BH 30
9/12/17	15:30 (15:52)	1/8 cloud, icy wind NW2	DB	n/a 0	0	0 350	F	-	BH 45, CM 12, HG 5
21/12/17	13:30 (13:07)	Overcast, wind W1	DB	n/a 0	0	0 20	F	-	DB 26 more in L. Harbour
5/1/18	13:30 (13:41)	7/8 cloud, wind SW2	DB	n/a 0	0	0 350	F	Flushed by unknown	CU 9, OC 1
19/1/18	13:00 (12:50)	3/8 cloud, wind W4	DB	n/a 0	0	0 0	-	-	BH 45, CM 5, HG 2, OC 2 DB 650 IN H48G + CU 10
3/2/18	13:30 (13:21)	8/8 cloud, wind NW1	DB	n/a 0	0	0 0	-	-	BH 35, CM 15, HG 2, OC 1 DB 450 IN H48G + CU 20
17/2/18	13:00 (12:30)	1/8 cloud, still	DB	n/a 0	0	0 0	-	-	BH 10, CM 1, HG 1 DB 200 in L. Harbour.
4/3/18	14:00 (13:01)	4/8 cloud, wind S2	DB	n/a 0	0	0 0	-	-	BH 12, CM 1, MU 1 DB 160 in L. Harbour.
17/3/18	12:00 (11:31)	8/8 cloud, wind NE6	DB	n/a 0	0	0 180	F	-	PB 1 (adult), MU 40, BH 24, CM 4, HG 10, OC 1, CU 6

All the fields within the survey site were suitable for brents this winter, but they were only recorded feeding in the north half of H34C (which is adjacent to Langstone Harbour). For a short while in Jan/Feb they moved to H48G (which is nearby to the northeast).

Field H34E is divided into N/S by ditch; field H34C by a line across from end of the houses. The southern area of H34E contains housing. In comments, BH = black-headed gull, MU = Mediterranean gull, CM = common gull, HG = herring gull, CU = curlew, OC = oystercatcher, PB = pale-bellied brent goose. The vast majority of gulls and waders were recorded in H34C.



Table A4.5: DARK-BELLIED BRENT GOOSE (DB) COUNTS – SOUTH END OF HAYLING BILLY TRACK, WINTER 2018-19

Date	Time on site (High Tide)	Weather	Sp.	Field H34E		Field H34D	Field H34C		Use	Disturbance	DB in the general area
				S	N		S	N			
30/10/18	14:30 (15:10)	4/8 cloud, wind NW4, 10°C	DB	n/a	0	0	0	0	-	-	None
11/11/18	12:15 (13:27)	3/8 cloud, wind SW3, 10°C	DB	n/a	0	0	0	0	-	-	300 in H48D
25/11/18	11:00 (12:26)	8/8 cloud, wind NE3	DB	n/a	0	0	0	0	-	-	1500 in H48D or Langstone Harbour
8/12/18	13:00 (11:49)	3/8 cloud, wind W5	DB	n/a	0	0	0	0	-	-	1000 in H48D
24/12/18	12:30 (12:11)	7/8 cloud, wind NE1, 8°C	DB	n/a	0	0	0	0	-	-	600 in H48D
8/1/19	12:20 (12:48)	4/8 cloud, wind NW2	DB	n/a	0	0	0	0	-	-	2 in H48D
23/1/19	11:40 (12:49)	8/8 cloud, wind NW2, 3°C	DB	n/a	0	0	0	0	-	-	None
6/2/19	13:00 (12:31)	8/8 cloud, still, 9°C	DB	n/a	0	0	0	0	-	-	200 in Langstone Harbour
21/2/19	14:00 (12:33)	2/8 cloud, wind SW1	DB	n/a	0	0	0	0	-	-	500 in H48D
5/3/19	12:00 (11:08)	8/8 cloud, wind SW4, 9°C	DB	n/a	0	0	0	0	-	-	500 in H48C
19/3/19	08:30 (09:57)	7/8 cloud, still, 8°C	DB	n/a	0	0	0	0	-	-	100 in Langstone Harbour

Of the fields within the survey site, only the north half of H34C was suitable for brents this winter, but appears to have been completely ignored by the birds in favour of H48C & D further north. As a result of the unseasonably hot and dry February the grass in H34C yellowed, thus becoming unsuitable for geese in March. Insignificant numbers of other birds were recorded in any of the fields (generally just a handful of black-headed gulls present).

Field H34E is divided into N/S by ditch; field H34C by a line across from end of the houses. The southern area of H34E contains housing.



Table A4.6: DARK-BELLIED BRENT GOOSE (DB) COUNTS – SOUTH END OF HAYLING BILLY TRACK, WINTER 2020-21

Date	Arrival time (High Tide)	Weather	Sp.	Field H34C S N		Field H34D	Field H34E	Use	Disturbance	DB in the general area
14/10/20	10:50 (10:09)	1/8 cloud, wind NE5, cold	DB	0	0	0	0	-	-	c.100 in Langstone Harbour
30/10/20	11:00 (10:51)	7/8 cloud, wind SW6	DB	0	0	0	0	-	-	None
14/11/20	10:40 (10:12)	8/8 cloud, wind S5, rain	DB	0	2 ad. 2 juv.	0	0	Feeding	-	480 (and ad Pale-bellied) in H48F
29/11/20	11:00 (10:47)	1/8 cloud, wind NE2	DB	0	0	0	0	Feeding	Frequent	Regularly returning to Langstone Harbour.
6/12/20	15:00 (15:10)	4/8 cloud, wind N4	DB	0	0	0	0	-	-	900 (+ PB) in H48D
21/12/20	14:00 (16:19)	8/8 cloud, wind S5, rain	DB	0	4 ad. 2 juv.	0	0	Feeding	-	1500 in H48F
3/1/21	12:30 (14:06)	6/8 cloud, wind N2	DB	0	2 ad.	0	0	Feeding	-	-
19/1/21	13:50 (15:39)	7/8 cloud, wind SW6	DB	0	3 ad. 2 juv.	0	0	Feeding	-	-
3/2/21	14:20 (15:27)	4/8 cloud, still, rain	DB	0	580	0	0	Feeding	Flushed by unknown	-
16/2/21	14:50 (14:21)	8/8 cloud, wind SW3	DB	0	1 juv.	0	0	Feeding	-	105 in Langstone Harbour, and 50 (+1PB) flew east over H34C/E.
2/3/21	15:00 (13:31)	Cloudless, wind NE1	DB	0	0	0	0	-	-	250 in Langstone Harbour.
14/3/21	10:15 (12:14)	2/8 cloud, wind W4	DB	0	0	0	0	-	-	300 in Langstone Harbour.

All the fields within the survey site were potentially suitable for brents this winter, with the exception of the southern half of H34C (ploughed). Favoured fields were H48F & G, with up to 1500 DB (and a single PB). A tiny number of DB were also feeding in H34C, with 580 there on 3rd February. Aside from gulls, up to 14 curlews were recorded in H48G and up to five oystercatchers in H34C.

Field H34C is divided into N/S by a line across from end of the houses.

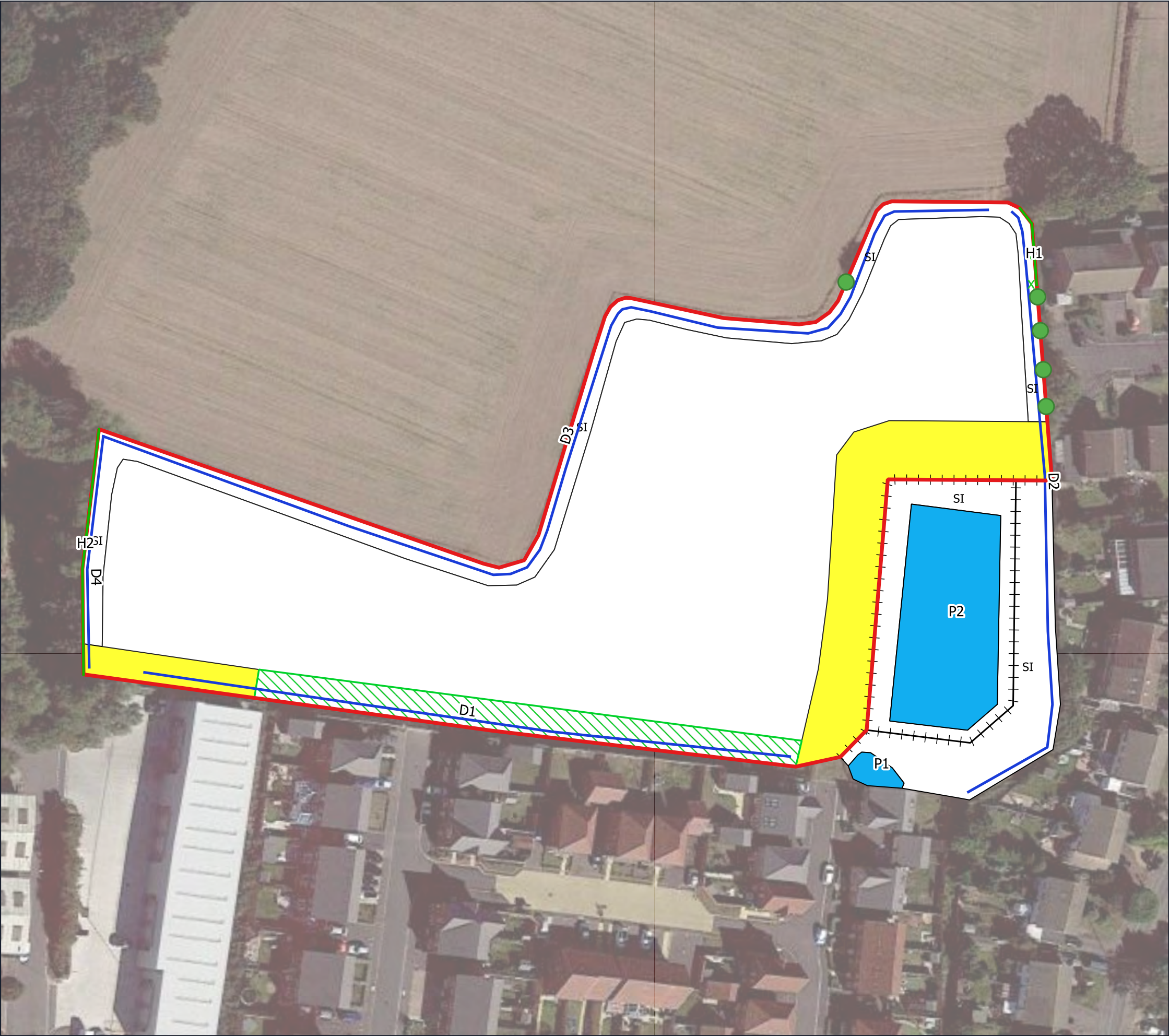


Plans:

13956/P22: Habitat Features Plan

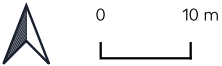
13956/P24: Fauna Results Plan





Habitat Features

- Site Boundary
- Amenity Grassland
- Arable
- Bare Ground
- Ditch
- Fence
- Hardstanding
- Hedgerow
- Pond
- Scattered Scrub
- Scattered Tree
- Semi-improved Grassland
- Tall Ruderal



Project	Land North of Oysters, Hayling Island
Drawing Title	Habitat Features
Scale	As Shown (Approximate)
Drawing No.	13956/P22
Date	September 2021
Checked	TLR/KB



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Habitat Features

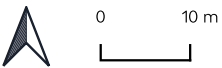
- Site Boundary
- Amenity Grassland
- Arable
- Bare Ground
- Fence
- Hardstanding
- Hedgerow
- Scattered Scrub
- Scattered Tree
- Semi-improved Grassland
- Tall Ruderal

Bat Survey Results

- Bat Activity Transect Route
- Static Bat Detector - With Numbers
- T26 - Tree with low bat roost potential
- T22 - Tree With Moderate Bat Roost Potential

GCN Survey Results

- Ditch - Scoped Out - Dry
- Ditch - Scoped Out - Flowing
- Ditch - Negative eDNA
- Off-site Pond Inaccessible
- Pond - Negative eDNA
- 250m Radius From Land North of Oysters



Project	Land North of Oysters, Hayling Island
Drawing Title	Fauna Survey Results Plan
Scale	As Shown (Approximate)
Drawing No.	13956/P24
Date	September 2021
Checked	TLR/KB



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