

Land off St Georges Avenue, Havant

REPORT TO INFORM HABITATS REGULATIONS ASSESSMENT STAGE 1 AND STAGE 2

On behalf of Barratt David Wilson Homes

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GLOSSARY

AA	Appropriate Assessment
ALSE	Assessment of Likely Significant Effects
CEMP	Construction Environment Management Plan
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CJEU	Court of Justice of the European Union
EC	European Commission
Habitats Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
ILP	Institute of Lighting Professionals
IROPI	Imperative Reasons of Over-riding Public Interest
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
SAC	Special Area of Conservation
SPA	Special Protection Area
WwTW	Wastewater Treatment Works
ZoI	Zone of Influence

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Barratt David Wilson Homes to prepare a report to inform Stage 1: Screening and Stage 2: Appropriate Assessment of a Habitats Regulations Assessment (HRA) for the proposed development at Land off St Georges Avenue, Havant.

This report has been prepared by WYG Project Ecologist Ben Cooke and Associate Ecologist David West CEnv MCIEEM. The conditions pertinent to the report are provided in Appendix A.

1.2 SITE LOCATION

The site is located to the east of St George's Avenue, Havant and is centred at Ordnance Survey National Grid Reference SU 73244 06351 – see Figure 1. It comprises a single arable field bordered by two hedgerows and broadleaved semi-natural woodland. An area of bare ground is located within the southern extent of the field.

1.3 DEVELOPMENT PROPOSALS

The proposed development will include the construction of 194 residential properties with associated gardens, roads and open space.

1.4 REQUIREMENT FOR THE HRA

The requirement for an HRA is established through Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, hereby referred to as the 'Habitats Directive', in Articles 6(3) and 6(4). The Habitats Directive is transposed into national legislation by the Conservation of Habitats and Species Regulations 2017 (as amended). These are hereafter referred to as the 'Habitats Regulations'.

Under Regulation 63, any project which is likely to have a significant effect on a European site (either alone or in-combination with other projects) and is not directly connected with, or necessary for the management of the site, must be subject to an HRA to determine the implications for the site in view of its conservation objectives. This is determined during the Stage 1: Screening Assessment of an HRA (see below).

A Stage 2: Appropriate Assessment then needs to be carried out in respect of any plan or project which:

- either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the European network; and
- is not directly connected with the management of the site for nature conservation.

The term European site is defined fully in Regulation 8 of the Habitats Regulations and includes:

- Special Areas of Conservation (SACs);
- candidate and proposed SACs;
- Special Protection Areas (SPAs);
- potential SPAs;
- proposed Wetlands of International Importance designated or proposed for their wetland features under the auspices of the Convention of Wetlands of International Importance (commonly referred to as 'Ramsar sites'); and
- sites identified for Natura 2000 compensatory measures.

The final two categories are afforded the same level of protection as SACs and SPAs as a matter of Government policy, and the assessment provisions of the Habitats Regulations are applied to them (Natural England, 2017a).

2.0 ASSESSMENT METHODOLOGY

2.1 ASSESSMENT GUIDANCE

The Habitats Directive and Regulations do not specify how HRA should be undertaken. This assessment has therefore been undertaken with reference to the guidance provided by the DTA Publications (2020) 'The Habitats Regulations Assessment Handbook' (online).

In this report, our Stage 1: Screening found that likely significant effects (LSE) were possible and so a Stage 2: Appropriate Assessment was required. These two stages form the first of four HRA stages, as described below:

- **Stage 1: Screening** – the process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant. This is also known as an 'assessment of likely significant affects (ALSE)';
- **Stage 2:** Appropriate assessment – the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in-combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts (in accordance with guidance following the recent decision by the CJEU; *People Over Wind and Sweetman v Coillte Teoranta* (C-323/17) regarding application of embedded mitigation at Stage 1 or Stage 2 of an HRA (Freeths, 2018);
- **Stage 3:** Assessment of alternative solutions – the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site; and
- **Stage 4:** Assessment where no alternative solutions exist and where adverse impacts remain – an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Over-riding Public Interest (IROPI), it is deemed that the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of IROPI).

The Stage 1 Screening Assessment comprises four steps, as described below:

- **Step 1.** Determining whether the project or plan is directly connected with or necessary to the management of the Natura 2000 site(s);
- **Step 2.** Describing the project or plan and the description and characterisation of other projects or plans that in-combination have the potential for having significant effects on the Natura 2000 site(s);
- **Step 3.** Identifying the potential effects on the Natura 2000 site(s); and
- **Step 4.** Assessing the significance of any effects on the Natura 2000 site(s).

The Stage 2: Appropriate Assessment should identify the effects of those plans or projects on qualifying features of the European sites in relation to the Conservation Objectives of those sites and determine whether these effects will result in an adverse effect on the integrity of the designated site. Only where the decision maker (the Competent Authority – in this case Havant Borough Council), is satisfied that there will be no adverse effect on integrity, or where there are imperative reasons of overriding public interest, can the plan or project be approved.

3.0 STAGE 1: SCREENING

Projects may have spatial implications which can have further reaching effects than those predicted to fall within the development footprint. Specifically, it is recognised that the distance between a proposed development and a designated site is not a definitive determinant as to the likelihood or severity of an impact occurring. Site variables such as prevailing wind conditions, surface and groundwater flow direction will all have an influence on the relative distance at which an impact can occur.

Additionally, the mobile nature of qualifying interest bird species must also be considered, since an adverse effect on the qualifying species of a site, even if they are not present within the site for which they are a qualifying feature, may still result in a significant adverse impact upon a site.

3.1 STEP 1 – DETERMINING WHETHER THE DEVELOPMENT PROPOSALS ARE DIRECTLY CONNECTED WITH OR NECESSARY TO THE MANAGEMENT OF THE INTERNATIONALLY DESIGNATED SITE(S)

The development proposals are not connected with and are not necessary for the management of any internationally designated sites, although they do have the potential to affect them.

3.2 STEP 2 – DESCRIPTION OF THE DEVELOPMENT PROPOSALS, INTERNATIONALLY DESIGNATED SITES THAT MAY BE AFFECTED AND APPROACH TAKEN TO IDENTIFYING OTHER PLANS OR PROJECTS THAT COULD LEAD TO IN-COMBINATION EFFECTS

3.2.1 Description of the Development Proposals

The appeal development comprises the construction of up to 194 dwellings with associated gardens, roads and open space.

3.2.2 List of the Internationally Designated Sites that may be Affected by the Development Proposals

The HRA Draft Screening Statement for the Havant Borough Local Plan 2036 (Havant Borough Council, 2017) was the primary source used to identify internationally designated sites that may be affected by the proposals. This report screened the following sites, as shown in Figure 2 (the qualifying features of these sites is provided in Appendix C). These comprise:

- Chichester and Langstone Harbours SPA;
- Chichester and Langstone Harbours Ramsar;
- Portsmouth Harbour SPA;
- Portsmouth Harbour Ramsar;
- Solent Maritime SAC; and
- Butser Hill SAC.

3.2.3 Description of the Internationally Designated Sites that may be Affected by the Development Proposals

Chichester and Langstone Harbours SPA

The qualifying features are provided below, as provided by the Joint Nature Conservation Committee (JNCC) (JNCC, 2001a).

This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

- During the breeding season;
 - Little tern (*Sterna albifrons*), 100 pairs representing up to 4.2% of the breeding population in Great Britain (5 year peak mean, 1992-1996); and
 - Sandwich tern (*Sterna sandvicensis*), 158 pairs representing up to 1.1% of the breeding population in Great Britain (1998).
- On passage;
 - Little Egret (*Egretta garzetta*), 137 individuals representing up to 17.1% of the population in Great Britain (Count as at 1998).
- Over winter:
 - Bar-tailed Godwit (*Limosa lapponica*), 1,692 individuals representing up to 3.2% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6); and
 - Little Egret, 100 individuals representing up to 20.0% of the wintering population in Great Britain (Count as at 1998).

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- On passage;
 - Ringed Plover (*Charadrius hiaticula*), 2,471 individuals representing up to 4.9% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6).
- Over winter;
 - Black-tailed godwit (*Limosa limosa islandica*), 1,003 individuals representing up to 1.4% of the wintering Iceland - breeding population (5 year peak mean 1991/2 - 1995/6);
 - Dark-bellied brent goose (*Branta bernicla bernicla*), 17,119 individuals representing up to 5.7% of the wintering Western Siberia/Western Europe population (5 year peak mean 1991/2 - 1995/6);
 - Dunlin (*Calidris alpina alpina*), 44,294 individuals representing up to 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6);
 - Grey Plover (*Pluvialis squatarola*), 3,825 individuals representing up to 2.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6);
 - Redshank (*Tringa tetanus*), 1,788 individuals representing up to 1.2% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6); and
 - Ringed Plover, 846 individuals representing up to 1.7% of the wintering Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6).

The area also qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl:

- Over winter, the area regularly supports 93,142 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Wigeon (*Anas Penelope*), Bar-tailed Godwit, Dark-bellied Brent Goose, Ringed Plover, Grey Plover, Dunlin, Black-tailed Godwit, Redshank, Little Grebe (*Tachybaptus ruficollis*), Little Egret, Shelduck (*Tadorna tadorna*), Curlew (*Numenius arquata*), Teal (*Anas crecca*), Pintail (*Anas acuta*), Shoveler (*Anas clypeata*), Red-breasted Merganser (*Mergus serrator*), Oystercatcher (*Haematopus ostralegus*), Lapwing (*Vanellus vanellus*), Knot (*Calidris canutus*), Sanderling (*Calidris alba*), Cormorant (*Phalacrocorax carbo*), Whimbrel (*Numenius phaeopus*).

Chichester and Langstone Harbours Ramsar

The Ramsar Criteria for the Solent and Southampton Water Ramsar are provided below and are available from the JNCC (1998).

Ramsar Criterion 1

Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dune.

Ramsar Criterion 5

Assemblages of international importance:

- Species with peak counts in winter: 76480 waterfowl (5 year peak mean 1998/99-2002/2003).

Ramsar Criterion 6

Species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

- Species with peak counts in spring/autumn:
 - Ringed plover, Europe/Northwest Africa, 853 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3);
 - Black-tailed godwit, Iceland/W Europe, 906 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9-2002/3); and
 - Redshank, 2577 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3).
- Species with peak counts in winter:
 - Dark-bellied brent goose, 12987 individuals, representing an average of 6% of the population (5 year peak mean 1998/9-2002/3);
 - Common shelduck, NW Europe, 1468 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3);
 - Grey plover, E Atlantic/W Africa -wintering, 3043 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3); and
 - Dunlin, W Siberia/W Europe, 33436 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9-2002/3).

Species/populations identified subsequent to designation for possible future consideration.

Species regularly supported during the breeding season:

- Little tern, W Europe, 130 apparently occupied nests, representing an average of 1.1% of the breeding population (Seabird 2000 Census).

Portsmouth Harbour SPA

The qualifying features are provided below, as provided by the Joint Nature Conservation Committee (JNCC) (JNCC, 2001b).

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- Over winter;
 - Dark-bellied brent goose, 2,847 individuals representing at least 0.9% of the wintering Western Siberia/Western Europe population (5 year peak mean 1991/2 - 1995/6).

Portsmouth Harbour Ramsar

The Ramsar Criteria for the Solent and Southampton Water Ramsar are provided below and are available from the JNCC (1998).

Ramsar Criterion 3

The intertidal mudflat areas possess extensive beds of eelgrass *Zostera angustifolia* and *Zostera noltei* which support the grazing dark-bellied brent geese populations. The mud-snail *Hydrobia ulvae* is found at extremely high densities, which helps to support the wading bird interest of the site. Common cord-grass *Spartina anglica* dominates large areas of the saltmarsh and there are also extensive areas of green algae *Enteromorpha* spp. and sea lettuce *Ulva lactuca*. More locally the saltmarsh is dominated by sea purslane *Halimione portulacoides* which gradates to more varied communities at the higher shore levels. The site also includes a number of saline lagoons hosting nationally important species.

Ramsar Criterion 6

Species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

- Species with peak counts in winter:
 - Dark-bellied brent goose, 2105 individuals, representing an average of 2.1% of the GB population (5 year peak mean 1998/9-2002/3).

Solent Maritime SAC

The qualifying features are provided below, as provided by the Joint Nature Conservation Committee (JNCC) (JNCC, 2001c).

Annex I habitats that are a primary reason for site selection

- Estuaries;
- *Spartina* swards; and
- Atlantic salt meadows.

Annex I habitats that are present as a qualifying feature but not a primary reason for site selection

- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide;
- Coastal lagoons;
- Annual vegetation of drift lines;
- Perennial vegetation of stony banks;
- *Salicornia* and other annuals colonizing mud and sand; and
- "Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes).

Annex II species that are present as a qualifying feature but not a primary reason for site selection

- Desmoulin's whorl snail *Vertigo moulinsiana*.

Butser Hill SAC

The qualifying features are provided below, as provided by the Joint Nature Conservation Committee (JNCC) (JNCC, 2001d).

Annex I habitats that are a primary reason for site selection

- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites); and
- *Taxus baccata* woods of the British Isles.

3.2.4 Conservation Objectives

There are no published conservation objectives available for the Chichester and Langstone Harbours and Portsmouth Harbour Ramsar sites. Based on the commonality of qualifying/designating ecological features it is considered that the objectives for the overlapping SPAs are applicable to the Ramsar site, and this is the approach adopted in this report.

Chichester and Langstone Harbours SPA

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

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

Portsmouth Harbour SPA

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

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

Solent Maritime SAC

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Butser Hill SAC

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

3.2.5 Approach taken to identifying Other Plans or Projects that could lead to In-combination Effects

In Step 3, one potential effect pathway on internationally designated sites were identified. To identify other plans and projects that could be relevant, it was first established whether effects could be

mitigated by measures that also apply in-combination. For instance, the nutrient outputs mitigation would mitigate all effects leading to a zero-net increase in nitrogen. Therefore, no search of other projects is necessary.

Where this approach was taken, it is explained fully in the text. Where it was required to identify other plans or projects, a search was made using Havant Council Planning Portal.

3.3 STEP 3 – IDENTIFYING THE POTENTIAL EFFECTS ON INTERNATIONALLY DESIGNATED SITE(S)

The potential pathways to LSE were identified following a review of the following:

- The HRA Draft Screening Statement for the Havant Borough Local Plan 2036;
- The designation citation of part of the site as a Low Use Site identified in the Solent Waders and Brent Goose Strategy (Solent WBS, 2019);
- The qualifying features of SACs and SPAs;
- The conservation objectives for SACs and SPAs;
- The threats to SPAs;
- The Ramsar criteria; and
- Site Improvement Plans for SACs and SPAs.

Following this review the following potential pathways to LSE were considered to be relevant to the development proposals based on the activities during construction and operation activities are provided in Table 1.

Table 1 Summary of the LSE identified in the HRA of the Havant Local Plan

Effect	Pathway	Receptor
Atmospheric pollution	Eutrophication, acidification and physical injury to habitats and plant species as a result of emissions from vehicles associated with residential development.	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Portsmouth Harbour SPA; Portsmouth Harbour Ramsar; Solent Maritime SAC; Butser Hill SAC
Disturbance from recreation	Increasing recreational pressure from higher number of residents resulting from new housing and/or improved facilities	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Portsmouth Harbour SPA; Portsmouth Harbour Ramsar
Loss / degradation of supporting habitats	Loss of areas outside European site boundaries, which are important feeding or roosting sites for protected species	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar
Water resources & abstraction	Increased abstraction, pollution and changes in the composition and distribution of terrestrial and aquatic (freshwater and marine) ecological communities	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Solent Maritime SAC

These are discussed in the following section, where the differentiation is made with respect to the potential for pathways to act alone or in-combination.

This report does not discuss those pathways where there is no potential for them to result in LSE. Therefore, only those where there is a tangible risk of the effect occurring are discussed. For example,

there is no hydrological connection between the site any European site therefore there is no consideration of effects from surface water pollution during construction or occupation.

3.3.1 Atmospheric Pollution

Air quality changes can also occur as a result of deposition of nitrogen and acid in the form of oxides of nitrogen and sulphur respectively. These gases are principally released by exhausts from internal combustion engines. During construction, workers vehicles, plant machinery and generators are all potential sources of exhaust gases. During operation / occupation of a site, it is principally vehicles belonging to workers / residents / visitors that cause acid and nitrogen deposition.

These changes can result in an increase in nutrient levels developing in soils that can change species compositions. Most frequently, this results in habitats becoming dominated by eutrophilic (nutrient-loving) plants that are much faster growing and can out-compete other species. These species would include bramble *Rubus fruticosus* and common nettles *Urtica dioica* that are of limited ecological value. Deposition of acid can cause changes in soil pH, which can also alter the plant species present over time.

Nitrogen deposition already exceeds site relevant critical loads at the designated sites in the Solent (Solent SIP, Natural England, 2014), and Butser Hill (European Site Conservation Objectives: Supplementary advice on conserving and restoring site features, Butser Hill SAC, Natural England, 2019).

In accordance with Natural England and IAQM guidance, it is possible to screen out significant effects alone if a development will result in an increase in Annual Average Daily Trips (AADT) along roads within 200m of sensitive sites of below 1000 (or 100 for HDV). The proposed development is for only 194 dwellings and will result in an increase in AADT below this threshold immediately adjacent to the site, let alone at the sensitive receptors when trips will be diluted across the traffic network.

As such, atmospheric pollution during construction and occupation: Alone is screened out and is not taken forward to Stage 2.

A specific Air Quality Habitat Regulations Assessment for the Havant Borough Local Plan 2036 was completed in 2019 (Ricardo Energy and Environment, 2019). This included an in-combination effects assessment using PUSH dispersion modelling (DM). This takes into account in-combination air quality impacts associated with road traffic emissions from the anticipated development up to 2034 in:

- East Hampshire (part)
- Eastleigh
- Fareham
- Gosport
- Havant
- Isle of Wight
- New Forest
- Portsmouth
- Southampton
- Test Valley (part)
- Winchester (part)

This report therefore provides a comprehensive assessment of the impact of traffic in the PUSH region (using the PUSH DM), and is the primary source used in this section. A summary of the findings are provided in Table 2, with page numbers referenced throughout. In preparing this assessment, the same approach has been taken whereby sites with the same boundary and qualifying / citation features have been grouped together.

In all cases, no LSE are predicted as a result of in-combination air quality changes due to traffic generated by the development proposals.

Table 2: Summary of the Air Quality Habitat Regulations Assessment for the Havant Borough Local Plan 2036

Site	Pollutant			
	Nutrient nitrogen deposition	Acid deposition	Airborne NOx	Airborne NH3
Portsmouth Harbour Ramsar Portsmouth Harbour SPA Solent and Dorset Coast SPA	The modelling shows that the screening threshold for nutrient nitrogen disposition for these sites (>20 kgN/ha/yr) would only occur on the road surface of the M275 where it crosses Tipner Lake. There are no sensitive habitats supported on the road surface. (see Page 69)	The habitats present are classified as grassland and are identified as not being sensitive to acid deposition. (see Page 69, Table 3-12)	Exceedance of NOx is predicted, but only on the road surface where no sensitive habitats are present and intertidal mudflats. Intertidal mudflats are not considered to be sensitive to air pollution due to regular inundation. (see Page 71)	Concentrations of airborne ammonia are not predicted to exceed the screening threshold anywhere within the boundary of the sites listed. (see Pages 75)
Chichester and Langstone Harbours Ramsar Chichester and Langstone Harbours SPA	No sensitive habitats were recorded in the areas where exceedance of the nutrient nitrogen deposition screening threshold for significant is predicted. (see Page 42)	Common tern was identified as the only species likely to use habitats sensitive to acid deposition. However, no such suitable and sensitive habitat was found to be present in areas where the screening threshold for significant effects is predicted. (see Page 42)	The majority of habitats in the area where the screening threshold is predicted to be exceeded is regularly inundated with tidal water (intertidal mudflats and seagrass beds) and is not considered to be sensitive to airborne NOx. Where there are other sensitive habitats, these cover narrow bands either side of the A27 only, where impacts are not predicted to be significant. (Page 44)	Concentrations of airborne ammonia are not predicted to exceed the screening threshold anywhere within the boundary of the sites listed. (see Pages 48)
Solent Maritime SAC	Exceedances of the screening threshold of nutrient nitrogen deposition on PVSb is predicted, but with the application of measures in a Nitrogen Action Plan, no LSE on qualifying features are predicted. (see Page 104)	All habitats are either absent from areas where exceedance of screening thresholds is predicted, or are not sensitive to this pollutant. (Page 100–103 ,Table 3-27)	All habitats are either absent from areas where exceedance of screening thresholds is predicted, or are not sensitive to this pollutant. (Page 100–103 ,Table 3-27)	All habitats are either absent from areas where exceedance of screening thresholds is predicted, or are not sensitive to this pollutant. (Page 100–103 ,Table 3-27)

As such, atmospheric pollution during occupation In-combination is screened out and is not taken forward to Stage 2.

3.3.2 Disturbance from Recreation

The Solent Recreation Mitigation Strategy (Bird Aware Solent, 2017) identifies a buffer of 5.6km where it considered that recreational users travel from their homes to visit the designated sites, as such potentially increasing the recreational impact in the Solent designated sites. Due to the distance from the SPA, it is anticipated that any future proposals, which include residential units, are likely to result in increased recreational use from the development.

Indirect impacts could potentially occur through increased visitor disturbance from an increased recreational pressure on the qualifying species of breeding and / or wintering birds within the Chichester and Langstone Harbours SPA and Ramsar. Portsmouth Harbour SPA and Ramsar lies further than 5.6km from the site therefore there is no potential for LSE.

Disturbance of qualifying features could include affecting nesting bird behaviour at the nest, foraging or predator avoidance. Walking dogs on habitats within habitats used by mobile qualifying species can also have the impact of increasing predator numbers. For example, corvids that can rob bird nests also feed on dog faeces and litter that has not been disposed of, meaning that they may be attracted to the area.

This is considered to apply both alone and in-combination. However, due to the proposed mitigation, it is not necessary to specifically identify all projects that could result in an increase in recreational pressure on Solent European designated sites included within the strategy (i.e. those within 5.6 km).

Disturbance from Recreation during occupation: Alone and In-combination therefore been taken forward to Stage 2: Appropriate Assessment.

3.3.3 Loss / degradation of supporting habitats

The area of Low Use Site H19 that is within the boundary of the Site is 5.4ha, all of which would be lost to facilitate the Proposed Development. This would be a permanent negative impact as foraging and loafing habitat available to qualifying species and assemblages listed in the SWBGS would be reduced.

This could have an energetic cost on birds as they have further to travel to find alternative habitats, face increased competition in alternative habitats utilised, and decreased resilience to stochastic events as there are fewer alternative sites available.

This is considered to apply both alone and in-combination. However, due to the proposed mitigation, it is not necessary to specifically identify all projects that could result in loss / degradation of supporting habitat within the Wader and Brent Goose Network.

Loss / degradation of supporting habitats during construction: Alone and In-combination has therefore been taken forward to Stage 2: Appropriate Assessment.

3.3.4 Water resources & abstraction

Surface water drainage

For any residential development of a greenfield site, there is the potential for an increase in impermeable surfaces to result in changes hydrology. These can cause localised changes to primary receiver waterbodies in terms of water quantity and quality. These can then lead to impacts to secondary and tertiary receivers.

For this development, there is no hydrological connection between the site and the closest European site (Chichester and Langstone SPA and Ramsar).

As such surface water drainage during construction and operation: Alone and In-combination is screened out.

Foul water drainage

In June 2018, an Integrated Water Management Study for South Hampshire was published by the Partnership for Urban South Hampshire (PUSH) has identified that there is uncertainty in some locations as to whether there will be sufficient capacity to accommodate new housing growth, and the potential for adverse effects upon coastal SPAs (including Chichester and Langstone Harbours SPA) as a result of nitrogen discharge. Wastewater from the development will be treated at Budds Farm which discharges to sea and may contribute to background nitrogen levels within the SPA.

Foul water drainage during occupation: Alone and In-combination has therefore been taken forward to Stage 2: Appropriate Assessment.

Abstraction

There is no requirement for additional water abstraction above existing permitted levels for the development proposals and so this pathway does not have the potential to results in LSE.

Abstraction during occupation: Alone and In-combination has therefore been screened out.

3.4 STEP 4 – ASSESSING THE SIGNIFICANCE OF ANY EFFECTS ON THE NATURA 2000 SITE(S)

The Stage 1: Screening Assessment found that there were three pathways to LSE that require appropriate assessment at Stage 2. These are summarised in Table 3.

Table 3: Summary of Stage 1: Screening

Pathway	Site	Stage 2 required
Atmospheric pollution during construction and occupation: Alone and In-combination	Chichester Harbour Ramsar and SPA; Portsmouth Harbour Ramsar and SPA; Solent Maritime SAC; Butser Hill SAC	No
Disturbance from Recreation during occupation: Alone and In-combination	Chichester Harbour Ramsar and SPA	Yes
Loss / degradation of supporting habitats during construction: Alone and In-combination	Chichester Harbour Ramsar and SPA	Yes
Surface water drainage during construction and operation	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Solent Maritime SAC	No
Foul water drainage during occupation: Alone and In-combination	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Solent Maritime SAC	Yes
Abstraction during occupation: Alone and In-combination.	Chichester & Langstone Harbours SPA ;Chichester & Langstone Harbours Ramsar; Solent Maritime SAC	No

It is therefore concluded that there are no pathways for LSE on the following European designated sites and they are not taken further in the HRA process:

- Portsmouth Harbour Ramsar;
- Portsmouth Harbour SPA; and
- Butser Hill SAC.

4.0 STAGE 2: APPROPRIATE ASSESSMENT

The following sections discuss the pathway to LSE that could result in impacts on the integrity of the European sites identified during Stage 1: Screening.

4.1 DISTURBANCE FROM RECREATION DURING OCCUPATION: ALONE AND IN-COMBINATION

In order to mitigate recreational impacts a per-unit financial contribution will be made in accordance with the SWBGS (2018). This contribution is used for monitoring and management of sites included within the strategy.

The values for the contributions required are provided below and would need to be secured via a Section 106 agreement. These are correct as of 1st April 2021, but are subject to change at any time:

- 1-bedroom property £361
- 2-bedroom property £522
- 3-bedroom property £681
- 4-bedroom property £801
- 5-bedroom property £940
- Flat Rate (unknown bedroom numbers) £604

With the application of this mitigation, no impact on the integrity of the Chichester and Langstone Harbours SPA and Ramsar is predicted.

4.2 LOSS / DEGRADATION OF SUPPORTING HABITATS DURING CONSTRUCTION: ALONE AND IN-COMBINATION

In order to mitigate the loss of 5.4ha of Low Use Site H19, a financial contribution will be made in accordance with the Solent Waders and Brent Goose Strategy: Guidance on Mitigation and Off-setting Requirements (SWBGS, 2018). This comprises £35,610 per hectare (£192,294) which will be secured via Section 106 agreement to enhance, manage and monitor the wider Solent Wader and Brent Goose Network. This funding is to be managed by the respective local authority and used to support schemes across the network, including in neighbouring authorities.

With the application of this mitigation, no impact on the integrity of the Chichester and Langstone Harbours SPA and Ramsar is predicted.

4.3 FOUL WATER DRAINAGE DURING OCCUPATION: ALONE AND IN-COMBINATION

4.4 NUTRIENT OUTPUTS DURING OCCUPATION: ALONE AND IN-COMBINATION

Due to the uncertainty over whether new development can be accommodated by existing wastewater treatment infrastructure without causing harm to coastal European sites, Natural England advise that all residential development should achieve nitrogen neutrality.

To make the assessment, Version 4 of Natural England's *Advice on Achieving Nutrient Neutrality for New Development in the Solent Region* (Natural England, 2020) for calculating nitrogen budgets was used.

The assumptions used in this assessment are as follows:

- 110 litres of waste water will be generated per person per day;
- Wastewater will be treated at Budds Farm WwTW;
- Peel Common has a discharge consent limit of 9.7 mg/l TN;
- The scheme comprises 194 dwellings,
- The post-development site will comprise 4.9 ha of urban land and 0.5 ha of open space;
- An occupancy rate of 2.4 people per dwelling as per Natural England guidance; and
- The previous land use of lowland grazing has been applied (13.0 Kg/TN/ha/yr).

The full calculations are provided in Appendix B and are summarised in Table .

Table 4: Summary of nutrient input calculations

Current Land Use TN Load (A)	Wastewater from Future Land Use TN Load (B)	Future Land Use TN Load (C)	Change (B+C-A)	Apply 20% Buffer
70.200 Kg/TN/yr	125.810 Kg/TN/yr	72.570 Kg/TN/yr	128.180 Kg/TN/yr	153.815 Kg/TN/yr

The calculations show that with the inclusion of the 20% buffer the development would result in an increase in nitrogen load of 153.815 Kg/TN/yr.

It is proposed to offset this increase in nitrogen load against a further development under the control of the applicant which result in a decrease in total nitrogen – Land at Forty Acres Farm, Bedhampton (also known as Harbour Place). This site has full planning permission for 320 dwellings and a care home and is currently under construction (APP/18/00450). Land at Forty Acres Farm is located within the same catchment as the site and discharges to Budds Farm. A subsequent application has been made to increase the number of dwellings to 348. This results in a net decrease in total nitrogen of 164.067 Kg/TN/yr.

When taken in combination, the two developments result in a net decrease of 10.252 Kg/TN/yr.

As the combined changes in land use will result in a net decrease in nutrient inputs into the Solent, there is no potential for an adverse effect on the integrity of the Solent European sites for nature conservation.

5.0 SUMMARY

The Stage 2: Appropriate Assessment found that with the application of mitigation for all pathways to LSE during construction and operation, there would be no impact on the integrity of any European site.

As such, it is considered that the 'Competent Authority' can permit the proposed development and does not require Stage 3 or Stage 4 assessments to be undertaken, as described in Section 2.1.

6.0 REFERENCES

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FIGURES

Figure 1: Site location plan

Figure 2: Location of European Designated Sites screened in this assessment



Site Location Plan
St Georges, Emsworth

Barratt David Wilson Homes



Legend

 Site boundary

Notes:

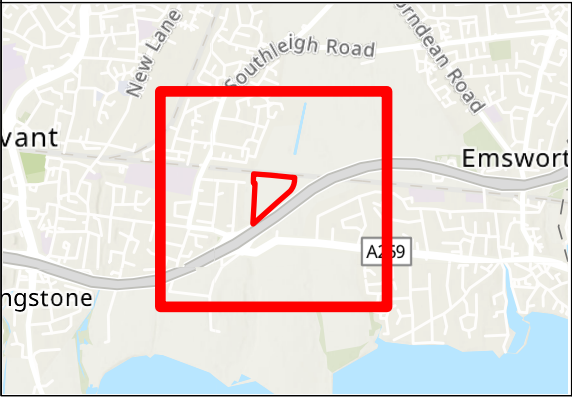
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Checked by: ET
Office: Southampton

Figure No. 1
Revision No. A

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22 February 2021
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European Designated Sites
St Georges, Emsworth

Barratt David Wilson Homes



Legend

- Site boundary
- Site boundary 5km buffer
- Site boundary 10km buffer
- Special Protection Areas (SPA)
- Special Areas of Conservation (SAC)
- Ramsar

Notes:

Drawn by: BB
Checked by: ET
Office: Southampton

Figure No. 2
Revision No. A

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Scale 1:75,000 @A3

25 June 2021
NGR: 473302E 106297N

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The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B – NUTRIENT BALANCING CALCULATIONS



Table B1 Calculating Total Nitrogen (TN) Load From Development Wastewater (Stage 1)

Step	Measurement	Value	Unit	Explanation
Development proposal	Development types that would increase the population served by a wastewater system	194.000	Residential dwellings	Number of dwellings
1	Additional population	465.600	Persons	Uses an average household size of 2.4 x number of dwellings
2	Wastewater volume generated by development	51216.000	L/day	Persons x 110 litres/day. Where relevant, deduct wastewater volume of population displaced by the proposed development.
3	Waste Water Treatment Works (WWTW) environmental limit for TN	9.700	mg/l/TN	Budds Farm WWTW limit
4	Discharge concentration	6.730	mg/l TN	90% of environmental limit – 2 mg/l as per NE guidance
4	TN discharged after WWTW	344683.680	mg/TN/day	Step 2 x Step 4
6	Convert mg/TN to kg/TN per day	0.345	Kg/TN/day	Divide by 1,000,000
7	Convert kg/TN per day to kg/TN per year	125.810	Kg/TN/yr	x365 days
TN Load – Wastewater 125.810 Kg/TN/yr				



Table B2 Calculating TN Load From Current Land use (Stage 2)

Step	Measurement	Farm type	Value	Unit	Explanation
1	Total area of existing land	Lowland grazing	5.400	ha	Area of land lost to development
2	Nitrate loss.	Lowland grazing	13.000	Kg/ha/yr	The existing land use is all cereals
3	Multiply total area by farm type nitrate loss	Lowland grazing	70.200	Kg/TN/yr	Area x nitrate loss
TN Load – Current land use 70.200 Kg/TN/yr					

Table B3 Calculating TN Load From Future Land Uses (Stage 3)

Step	Measurement	Value	Unit	Explanation
1	Future urban land	4.900	ha	Area of development that will change from agricultural land to urban land use
2	Total nitrogen load from future urban area	70.070	Kg/TN/yr	area (ha) x 14.3 Kg/TN/yr (nitrogen leaching from urban land each year)
3	New SANG / open space	0.500	ha	Area of development that will change from agricultural land to SANG / open space
4	TN load from SANG / open space	2.500	Kg/TN/yr	area (ha) x 5 (nitrogen leaching from SANG / open space each year)
5	Combine TN load from future land uses	72.570	Kg/TN/yr	-
TN Load – Future land use 72.570 Kg/TN/yr				



Table B4 Calculating Net Change in TN from The Development (Stage 4)

Step	Measurement	Value	Unit	Explanation
1	Identify TN loads from wastewater	125.810	Kg/TN/yr	(Stage 1)
2	Calculate TN from land use - subtract TN load from future land uses (Stage 3) from existing land uses (Stage 2)	-2.370	Kg/TN/yr	(Stage 2 - Stage 3)
3	Determine nitrogen budget - the difference between the TN load for the proposed development and the existing uses	128.180	Kg/TN/yr	(Step 1 - Step 2)
4	Calculate and include 20% buffer	153.815	Kg/TN/yr	Step 3 + (Step 3 / 5)
TN Budget 153.815 Kg/TN/yr				