

Information to Inform Habitats Regulations Assessment

May 2025

Land off St Mary's Road,
Hayling Island

Prepared by
CSA Environmental

On behalf of
Gladman Developments Ltd

Report No: CSA/4956/06

Report Reference	Date	Revision	Prepared by	Approved by	Comments
CSA/4956/06	28/10/2021	-	MR	-	Working draft for comment
	16/11/2021	A	MR	CC	Finalised following receipt of AQ data
	23/11/2021	B	MR	CC	Location of off-site brent goose mitigation land redacted
	09/12/2021	C	MR	CC	Minor client comments addressed
	27/02/2024	D	SV	MR	Amended following updated nutrient calculations and brent goose mitigation strategy details
	27/05/2025	E	MR	MR	Updated air quality assessment



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1.0 INTRODUCTION

- 1.1 This document has been prepared by CSA Environmental on behalf of Gladman Developments, in relation to Land off St Mary's Road, Hayling Island (hereafter referred to as 'the Site') where outline planning permission is sought for a residential development (hereafter referred to as 'the proposed development'). The Site location is shown in Appendix A.
- 1.2 This document provides information to assist Havant Borough Council (HBC) in their consideration of whether the proposed development will have likely significant effects on European sites, and in ascertaining any adverse effects on their integrity. This process is commonly termed Habitats Regulations Assessment (HRA).
- 1.3 As the decision-making authority, HBC are the 'competent authority' in respect of Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended). This document is intended to provide the necessary information to HBC with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

Project Background

- 1.4 The Site occupies an area of c. 11.77ha and is located around central grid reference SZ 7192 9978, in South Hayling. It comprises two large cropland fields, parcels of neutral grassland and dense scrub, with a central pond and farm building (see Habitats Plan within the accompanying Ecological Impact Assessment; CSA/4956/05). The Site is bounded by residential properties to the south and east, open greenspace adjoining Hayling Island Holiday Park to the west, and an agricultural field connected to the grounds of the Church of St Mary to the north.
- 1.5 Rook Farm, Hayling Island, was previously allocated under Policy H27 of the submission version of the now withdrawn draft Havant Borough Local Plan for the development of c. 390 dwellings. Notwithstanding that the HBLP has been withdrawn, it is understood that the Council continue to support the principle of such allocations.
- 1.6 An outline planning application (APP/17/00007) for up to 210 residential dwellings and 0.6ha for apartments with care (C2) at the Site was refused in April 2017. There were a variety of reasons for refusal, however these included that the proposal lacked arrangements relating to the Solent Recreation Mitigation Project, and that the development would result in a direct loss of supporting habitat listed under the Solent Waders and Brent Goose Strategy for the Chichester & Langstone Harbours Special Protection Area (SPA).

- 1.7 The H27 allocation policy under the withdrawn draft Local Plan stated that:
- (a) A project-level Habitat Regulations Assessment will need to be carried out to inform the package of avoidance and mitigation measures to remove any likelihood of a significant effect on the Solent SPAs in line with Policy E17.
 - (b) This development is expected to secure the part delivery and implementation of the Hayling Island Brent Goose and Wader Refuge, or alternative provision in perpetuity agreed by the local planning authority as required by E17.
- 1.8 While this Policy is no longer in place, these requirements are likely to be expected for the proposed development by HBC.

Summary of Applicable Legislation and Policy

- 1.9 Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), termed European sites, collectively form part of a suite of sites known in the UK as the national site network. For ease of reference and consistent with their treatment under UK government policy, Ramsar sites are also referred to here as European sites.
- 1.10 All European sites in England and Wales are afforded strict protection through the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations, widely referred to as the 'Habitat Regulations', establish a framework for decision-making authorities to assess the potential for harmful effects on European sites to arise as a result of proposed plans or projects. This assessment process is commonly referred to as 'Habitats Regulations Assessment' (HRA).
- 1.11 Within Havant development management policies relevant to the protection of European sites are currently set out within Policy CS11 of the adopted 2011 Local Plan. Further guidance for developers is set out within their Position Statement and Mitigation Plan for Nutrient Neutral Development.
- 1.12 Further detail of the legislative and case law context, as well as national and local planning policies relevant to HRA, are provided within Appendix B.

2.0 EXEMPTION, EXCLUSION AND ELIMINATION

- 2.1 It is necessary in the first instance to undertake preliminary screening to determine whether the proposed development is exempt, excluded or eliminated from the Regulation 63 requirements, and to refine which European site designations warrant further consideration. If the proposed development 'passes' any of the preliminary screening tests shown below in Table 1, then no further screening for likely significant effects is required.

Table 1. Preliminary Screening

Preliminary Screening Test	Pass?
Is the scheme directly connected with or necessary to the management of a European site for nature conservation purposes?	No
Is the proposed scheme the continuation, without material change, of ongoing activities not subject to any form of authorisation?	No
In light of the nature, scale, duration and location of the scheme, is it obvious that it could not have any conceivable effect on any European site?	No

- 2.2 In view of the final preliminary screening test in Table 1, it is the professional opinion of the author that the following European sites could conceivably be affected by the scheme, in view of its nature, scale, duration and location. These designations will therefore be screened for likely significant effects in Section 3 of this document.

- Chichester and Langstone Harbours SPA (c. 750m east)
- Chichester and Langstone Harbours Ramsar site (c. 750m east)
- Solent Maritime SAC (c. 860m south-east)
- Solent and Dorset Coast SPA (c. 900m south)
- Solent and Isle of Wight Lagoons SAC (c. 5.38km north-west)
- Portsmouth Harbour SPA (c. 8km west)
- Portsmouth Harbour Ramsar site (c. 8km west)
- Solent and Southampton Water SPA (c. 11.2km south-west)
- Solent and Southampton Water Ramsar site (c. 11.2km south-west)

- 2.3 Comprehensive details on the characteristics of the above European sites are presented in Appendix C. These characteristics form the basis of assessment and include their spatial relationship with the Site, component Sites of Special Scientific Interest (SSSIs), qualifying features, published conservation objectives and any known vulnerabilities or threats to their favourable conservation statuses.

3.0 SCREENING FOR LIKELY SIGNIFICANT EFFECTS

Potential Impact Pathways

- 3.1 In the context of the information on European site characteristics (Appendix C), potential impact pathways shared by the proposed development and the conservation objectives of the European sites identified in Section 2 of this report are screened below (Tables 2a-i).
- 3.2 Pathways are considered in Tables 2(a-i) on the basis of the development as proposed, i.e. including any facets which, in addition/secondary to their primary purpose, may act to mitigate effects that might otherwise occur on European sites. However, in accordance with the 'People Over Wind' ruling of the Court of Justice for the European Union (CJEU; Case C-323/17), screening for likely significant effects takes place in the absence of measures specifically adopted to avoid or reduce harmful effects on European sites.

Table 2.a. Screening for Likely Significant Effects

Chichester and Langstone Harbours SPA	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	Possible
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	Possible
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
The SPA provides feeding grounds for internationally protected populations of overwintering waders and wildfowl. The effects on these species of disturbance by humans and companion animals have been widely studied, such as by Stillman <i>et al.</i> (2012). It is known that birds alerted by a perceived threat will continue to observe the threat, or otherwise flee by flying, swimming or walking. These both deplete energy reserves and reduce the time available to the birds to replenish their energy through feeding at low tide. The physiological stress response triggered by disturbance may exacerbate the energy deficit further, and repeated exposure to disturbance may displace birds from a foraging ground, leading to greater competition elsewhere. By accommodating an increase in the local population, development at the Site could lead to greater recreation pressure and associated disturbance at the SPA. The Site's importance for feeding waterfowl associated with the SPA is recognised through its adoption as a 'Core Area' (site code H46B) under the Solent Wader and Brent Goose Strategy. Direct land take from such supporting habitat (or 'functionally linked land') could undermine the viability of the winter bird assemblage associated with the European site.	

Parts of the SPA fall within 200m of the A3023, carrying traffic between Hayling Island and mainland Hampshire, as well as the A27, the main east-west route through Havant Borough. Development at the Site is likely to result in an increase in vehicle traffic on these roads, and potential therefore exists for air quality impacts on susceptible habitats/species associated with increased traffic movements.

It is noted by HBC (2020b) that residential growth drives increases in water consumption and waste water production, which are associated with negative environmental effects. Increased abstraction could, in principle, impact fresh water inputs to the SPA, with corresponding effects on salinity gradients, water circulation, vegetation communities and the waterfowl they support. However, in their Draft Water Resources Management Plan (2017) Portsmouth Water confirm that there is currently a surplus of supply for the period to 2044, therefore impacts on SPA features arising from increases in water abstraction are unlikely.

Finally, the proposed development is within the fluvial catchment of the Solent, and has the potential to significantly affect water quality within the associated European sites. While there is no direct surface water hydrological connectivity with the potential to vector pollutants to the SPA during construction and operation of the proposed development, foul water discharges from the Site will be treated at the Budds Farm Waste Water Treatment Works (WWTW), which itself returns treated effluent to the local water environment. Increased inputs associated with new residential development will have a corresponding increase in nutrient loading from treated outputs, to which the qualifying features of the Solent's European sites are known to be vulnerable.

Table 2.b. Screening for Likely Significant Effects

Chichester and Langstone Harbours Ramsar site	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	Possible
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	Possible
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
Through the pathway described above in respect of the SPA, the interest features of the Chichester and Langstone Harbours Ramsar site may be vulnerable to increases in recreation pressure.	
Also as described in respect of the SPA, development of the Site would represent land take from supporting habitat, which could undermine the winter bird assemblage associated with the Ramsar site.	
Parts of the Ramsar site fall within 200m of the A3023 and A27, with potential for air quality impacts on susceptible habitats/species associated with increased traffic movements, as described above in respect of the SPA.	

Finally, and again as described in respect of the SPA, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.

Table 2.c. Screening for Likely Significant Effects

Solent Maritime SAC	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	None
Atmospheric pollution/air quality	Possible
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
Parts of the SAC fall within 200m of the A3023 and A27, with potential for air quality impacts on susceptible habitats/species associated with increased traffic movements, as described above in respect of the Chichester and Langstone Harbours.	
As described above in respect of the Chichester and Langstone Harbours, residential growth drives increases in water consumption which could, in principle, impact fresh water inputs to the SAC. However, as there is currently a surplus of supply for the period to 2044, impacts arising from increases in water abstraction are unlikely.	
Finally, and again as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.	

Table 2.d. Screening for Likely Significant Effects

Solent and Dorset Coast SPA	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	None
Atmospheric pollution/air quality	None
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	

As described above in respect of the Chichester and Langstone Harbours, residential growth drives increases in water consumption which could, in principle, impact fresh water inputs to the SAC. However, as there is currently a surplus of supply for the period to 2044, impacts arising from increases in water abstraction are unlikely.

Also as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.

Table 2.e. Screening for Likely Significant Effects

Solent and Isle of Wight Lagoons SAC	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	None
Atmospheric pollution/air quality	None
Hydrological regime change	None
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
As described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.	

Table 2.f. Screening for Likely Significant Effects

Portsmouth Harbour SPA	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	Possible
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
Notwithstanding that the SPA supports key species which are sensitive to recreational disturbance, as described above in respect of the Chichester and Langstone Harbours, the Site falls within the catchment area from which the SPA is likely to draw regular recreational visitors.	

Also as described in respect of the Chichester and Langstone Harbours, development of the Site would represent land take from supporting habitat, which could undermine the winter bird assemblage associated with Portsmouth Harbour.

Parts of the site fall within 200m of the A27, with potential for air quality impacts on susceptible habitats/species associated with increased traffic movements, as described above in respect of the Chichester and Langstone Harbours.

As described above in respect of the Chichester and Langstone Harbours, residential growth drives increases in water consumption which could, in principle, impact fresh water inputs to Portsmouth Harbour. However, as there is currently a surplus of supply for the period to 2044, impacts arising from increases in water abstraction are unlikely.

Finally, and again as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.

Table 2.g. Screening for Likely Significant Effects

Portsmouth Harbour Ramsar site	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	Possible
Hydrological regime change	Possible
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
As described in respect of the Chichester and Langstone Harbours, development of the Site would represent land take from supporting habitat, which could undermine the winter bird assemblage associated with Portsmouth Harbour. Parts of the site fall within 200m of the A27, with potential for air quality impacts on susceptible habitats/species associated with increased traffic movements, as described above in respect of the Chichester and Langstone Harbours. Also as described above in respect of the Chichester and Langstone Harbours, residential growth drives increases in water consumption which could, in principle, impact fresh water inputs to Portsmouth Harbour. However, as there is currently a surplus of supply for the period to 2044, impacts arising from increases in water abstraction are unlikely. Finally, and again as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.	

Table 2.h. Screening for Likely Significant Effects

Solent and Southampton Water SPA	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	None
Hydrological regime change	None
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
Notwithstanding that the SPA supports key species which are sensitive to recreational disturbance, as described above in respect of the Chichester and Langstone Harbours, the Site falls within the catchment area from which the SPA is likely to draw regular recreational visitors. Through the pathway described above in respect of the Chichester and Langstone Harbours, development of the Site would represent land take from supporting habitat, which could undermine the winter bird assemblage associated with the Solent and Southampton Water. Finally, and again as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.	

Table 2.i. Screening for Likely Significant Effects

Solent and Southampton Water Ramsar site	
<i>Any potential changes to the site or its qualifying features arising as a result of the following impact pathways:</i>	
Land take by development within European site	None
Fragmentation of European site habitats	None
Increased mortality of key species	None
Disturbance to key species/deterioration of habitats within the European site	None
Disturbance to key species/deterioration of supporting habitats, beyond the European site	Possible
Atmospheric pollution/air quality	None
Hydrological regime change	None
Pollution of surface/ground water	Possible
<i>Those facets of the proposed development, or combination of facets, where the above pathways have the potential to give rise to significant effects, or where the scale or magnitude of potential effects is not known:</i>	
Through the pathway described above in respect of the Chichester and Langstone Harbours, development of the Site would represent land take from supporting habitat, which could undermine the winter bird assemblage associated with the Solent and Southampton Water. Also as described in respect of the Chichester and Langstone Harbours, development at the Site will increase foul water discharges to the Budds Farm	

WWTW, with a corresponding increase in nutrient loading from treated outputs, to which the Solent's European sites are known to be vulnerable.

The Proposed Development Alone and In Combination

- 3.3 At the screening stage it is necessary to consider whether the proposed development will have likely significant effects on European sites (having regard to the meaning of these terms as established by applicable case law) either as a result of potential impacts of the development acting alone, or when considered in combination with other plans or projects. The proposed development will consist of up to 300 dwellings, which form one component of projected housing to meet the locally identified need in Havant (Turley, 2023). Further residential development is projected within neighbouring districts.
- 3.4 In light of the foregoing, it can be concluded that in the absence of mitigation the proposed development has the potential to result in likely significant effects on nine European sites. As such, further Appropriate Assessment is required, including consideration of proposed measures intended to avoid or reduce harmful effects, in order that it may be ascertained whether the scheme will have any adverse effect on the integrity of the above European sites. A summary of screening conclusions is presented in Table 3 below.
- 3.5 The qualifying habitats and species of the Chichester and Langstone Harbours SPA and Ramsar site are known to be vulnerable to **recreation pressure**. The proposed development will contribute to an increase in the local population, and therefore has the potential to act in combination with the projected increase in housing within Havant and adjacent districts to increase recreation pressure at these European sites.
- 3.6 The Site's importance for feeding waterfowl associated with the SPA and Ramsar designations of Chichester and Langstone Harbours, Portsmouth Harbour and the Solent and Southampton Water is recognised through its adoption as a Core Area under the Solent Wader and Brent Goose Strategy. Even beyond the spatial extent a designation, any damage, deterioration or **loss of supporting habitat** has the potential to undermine conservation objectives.
- 3.7 Increased traffic flows resulting from the scale and location of the proposed development and wider projected housing growth may give rise to localised **air quality** impacts. Areas of each of the Chichester and Langstone Harbours SPA and Ramsar site, Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site exist within 200m of a major road (A-road or motorway), and could therefore experience localised increases in atmospheric and deposited pollutants. The effects of increased traffic resulting from the proposed development in isolation

are unlikely to be appreciable, given the intervening distances and diffusion of traffic. However, HBC (2022) identify a likely significant effect on these sites as a result of projected traffic increases associated with wider delivery of housing across the Borough, and development at the Site may contribute toward this.

- 3.8 It is noted by HBC (2024) that residential growth drives increases in water consumption and waste water production, which are associated with negative environmental effects. Increased abstraction could, in principle, impact fresh water inputs to European sites, with corresponding effects on salinity gradients, water circulation, vegetation communities and the waterfowl they support. However, in their Draft Water Resources Management Plan (2017) Portsmouth Water confirm that there is currently a surplus of supply for the period to 2044, therefore impacts on site features arising from increases in **water abstraction** are unlikely, either as a result of the development alone or in combination with other plans or projects.
- 3.9 Separately, **foul water discharges** from the Site will be treated at the Budds Farm WWTW, which itself returns treated effluent to the water environment of the East Solent system and its associated European site designations. The qualifying features of these designations are known to be sensitive to and already suffering from eutrophication (Natural England, 2020). Nutrient (principally nitrogen) loading within treated foul effluent resulting directly from the proposed development is unlikely to have a significant effect on the qualifying habitats and species in isolation, however may act in combination with wider projected housing growth to undermine conservation objectives.

Table 3. Screening for Likely Significant Effects

Summary			
<i>Impact pathway</i>	<i>Affected European site(s)</i>	<i>Likely significant effect: development alone</i>	<i>Likely significant effect: in combination</i>
Recreation pressure	Chichester and Langstone Harbours SPA and Ramsar site	No	Yes
Loss of supporting habitats	Chichester and Langstone Harbours SPA and Ramsar site	Yes	N/A
	Portsmouth Harbour SPA and Ramsar site	Yes	N/A
	Solent and Southampton Water SPA and Ramsar site	Yes	N/A
Air quality (vehicle emissions)	Chichester and Langstone Harbours SPA and Ramsar site	No	Yes
	Portsmouth Harbour SPA and Ramsar site	No	Yes
	Solent Maritime SAC	No	Yes

Hydrological regime change (water abstraction)	Chichester and Langstone Harbours SPA and Ramsar site	No	No
	Portsmouth Harbour SPA and Ramsar site	No	No
	Solent Maritime SAC	No	No
	Solent and Dorset Coast SPA	No	No
Eutrophication (foul water discharges)	Chichester and Langstone Harbours SPA and Ramsar site	No	Yes
	Portsmouth Harbour SPA and Ramsar site	No	Yes
	Solent Maritime SAC	No	Yes
	Solent and Dorset Coast SPA	No	Yes
	Solent and Southampton Water SPA and Ramsar site	No	Yes
	Solent and Isle of Wight Lagoons SAC	No	Yes

4.0 APPROPRIATE ASSESSMENT

The Site

- 4.1 The Site occupies an area of c. 11.77ha and is located around central grid reference SZ 7192 9978, in South Hayling. It comprises two large cropland fields, parcels of neutral grassland and dense scrub, with a central pond and farm building (see Habitats Plan in accompanying EclA). The Site is bounded by residential properties to the south and east, open greenspace adjoining Hayling Island Holiday Park to the west, and an agricultural field connected to the grounds of the Church of St Mary to the north.
- 4.2 An initial desk study and habitats survey were undertaken for the Site in August 2021 as part of a Preliminary Ecological Appraisal, with an update desktop study and site walkover carried out in January 2024. In addition, the following further survey work was undertaken between April 2021 and January 2024:
- Breeding bird surveys (April-June 2021)
 - Bat surveys (May-September 2021)
 - Reptile surveys (April-August 2021)
 - Great crested newt Habitat Suitability Index (HSI) survey (May 2021)
 - Great crested newt eDNA survey (May 2021)
 - Habitat conditions assessment (August 2021; updated January 2024)
 - Winter bird surveys (November 2021 – March 2022; updated January 2024)
- 4.3 A full description of baseline ecological conditions at the Site is provided within the accompanying Ecological Impact Assessment (CSA/4956/10). Rather than recounting in full here, findings of the above surveys will be referenced, if relevant, in the below assessment.
- 4.4 In addition air dispersion modelling presented in Chapter 6 of the Environmental Statement (Wardell Armstrong, 2021) has been referenced in respect of the potential for air quality impacts resulting from operation of the proposed development.

The Proposed Development

- 4.5 Outline planning permission is sought for residential development at the Site. The following assessment is based on the Development Framework Plan (DFP) prepared by Gladman Developments (7478-P-01 Rev B).
- 4.6 The construction phase of the proposed development will comprise the following:
- Cessation of arable cultivation

- Removal of sections of scrub along the eastern access point from St Mary's Road and adjacent to the central pond for vehicular access
- Construction of up to 300 residential dwellings
- Removal of grassland to the east of the Site
- Construction of associated gardens, parking, access infrastructure, a play area and teenage provision area
- The establishment of Public Open Space (POS) totalling c. 3.74ha, including playing fields, amenity greenspaces, parks, allotments & community gardens, gardens and natural greenspace primarily to the north of the developed area
- Establishment of Sustainable Drainage Systems (SuDS) including two large attenuation basins set within the greenspace to the west and in the south-east corner of the development

4.7 The operational phase of the proposed development will comprise the following:

- Occupation of new residential dwellings
- Increase in human activity, including use of vehicles and presence of domestic pets
- Increased artificial lighting and anthropogenic noise

Potential Adverse Effects

Recreation pressure

- 4.8 The proposed development will result in an increased human population within c. 750m of the Chichester and Langstone Harbours SPA and Ramsar site at its closest point.
- 4.9 Research into the effects of recreation on the waterfowl forming qualifying features for the European sites across the Solent has been undertaken through the Solent Disturbance and Mitigation Project (SDMP; Stillman *et al.* 2009 & 2012), coordinated by the Solent Forum. The SDMP identified that there is a likely significant effect on SPA/Ramsar sites due to recreational disturbance arising from increases in the local population brought about by new residential development.
- 4.10 The presence of humans and their companion animals, which will be perceived as a predatory threat, is believed to affect the SPA/Ramsar birds in several ways, resulting in a synergistic effect. Birds are likely to be more alert when human presence is detected, or they may move away from the source of the disturbance, either way causing a corresponding reduction in the amount of food eaten. In the latter case a bird will not only miss valuable feeding time, but will additionally waste energy in taking the evasive action. Where disturbance is substantial, then birds may be displaced from food-rich areas altogether, with a corresponding increase in competition for finite resources in other areas. The cumulative effect of these impacts may result in reduced energy reserves being available to individual birds to sustain them for their spring

migration and subsequent breeding season, ultimately resulting in reduced survival and fecundity.

- 4.11 On the basis of the above research, Natural England issued formal advice to the Solent local planning authorities in March 2013 advising that the SDMP identifies a likely significant effect associated with new housing growth around the Solent, and that this work represents the best available evidence. As such, Natural England's advice is that avoidance measures are required in order to ensure the significant effects arising from new housing development around the Solent are avoided.
- 4.12 Evidence presented by Liley D & Tyldesley D (2013) indicates that the core catchment area from which the Solent sites draw recreational visitors is 5.6km linear distance; equivalent to the zone in which 75% of coastal visitors live. In view of its scale and location, the proposed development is in itself unlikely to generate sufficient recreation pressure to appreciably affect the conservation objectives pertaining to the qualifying features of the Chichester and Langstone Harbour sites. However, it must be concluded that potential exists, in the absence of mitigation, for a contribution toward a combined effect stemming from wider residential growth within the catchment from which these sites draw recreational visitors.

Loss of supporting habitat

- 4.13 Dark bellied brent geese are attracted to the Solent due to the availability of extensive mudflats associated with the harbours and estuaries, where they can feed on eelgrass and algae, while the wading species tend to feed on invertebrates. At high tide these food sources are unavailable, so the birds will use inland terrestrial sites (such as parks, agricultural and playing fields) to feed and roost. The suitability of terrestrial sites to support these functions is influenced by their distance from the coast, management, visibility, levels of disturbance and proximity to other sites. These terrestrial sites can be described as functionally linked land or supporting habitat.
- 4.14 It is important to recognise that the species which form qualifying features of spatial designations will not restrict their movements or activities to the confines of such a designated area, and that impacts which threaten the viability of a species population will by extension undermine the integrity of an associated designation, regardless of where said impacts occur. It has been determined that the Site functions as supporting habitat for waterfowl assemblages associated with the Chichester and Langstone Harbours SPA and Ramsar Site, Portsmouth Harbour SPA and Ramsar site and Solent and Southampton Water SPA and Ramsar site.

4.15 Extensive survey work has been undertaken into the relationship between individual terrestrial sites and the protected designations, and their use by the Solent waders and brent geese, as reported within the Solent Waders and Brent Goose Strategy (SWBGS). The principle objective of the SWBGS is to inform decisions relating to strategic planning as well as individual development proposals, to ensure that sufficient feeding and roosting resources continue to be available and the integrity of the network of sites is restored and maintained, in order to ensure the survival of the Solent's coastal bird populations (Whitfield, 2020). The Strategy identifies the network of terrestrial sites around the Solent and classifies them according to their value to the waders and brent geese, as part of a framework to establish mitigation measures:

- Core Area
- Primary Support Area
- Secondary Support Area
- Low Use Site

4.16 Data from the SWBGS provided by the Hampshire Biodiversity Information Centre (HBIC) confirms that dark-bellied brent geese have consistently been recorded at the Site since 2013, with a peak count of 1100 individuals during a survey in January 2017. As a result, the entirety of the Site is classified as a Core Area under the SWBGS. Previous winter bird surveys carried out at the Site by Ecology Solutions Ltd in 2017/18 found that, at the time of the surveys, the overall habitat was unsuitable for brent geese as the arable fields had been recently ploughed leaving expansive bare ground, and no brent geese were recorded during the surveys. The presence of brent geese is dependent upon the management of the Site, particularly the state of the arable fields over the course of the season, with stubble or short improved grassland habitat being preferable.

4.17 Updated winter bird surveys were undertaken by CSA Environmental between November 2021 and March 2022 which recorded flocks of 500-600 dark-bellied brent geese recorded foraging at the Site which was planted with short grass at the time of the survey. Further supplementary wintering bird surveys carried out in January 2024 conversely recorded no dark bellied brent geese at the Site when the arable fields were planted with a brassica crop. However it is clear that given the right conditions the Site is capable of fulfilling an important role as supporting habitat for the SPA and Ramsar birds, and that its loss to accommodate development has the potential to undermine the conservation objectives of the corresponding designations.

Air quality (vehicle emissions)

4.18 It has been determined that increased traffic flows resulting from the proposed development in combination with wider projected housing growth may give rise to localised air quality impacts owing to increases

in vehicle traffic emissions. Areas of each of the Chichester and Langstone Harbours SPA and Ramsar site, Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site exist within 200m of a major road, and in accordance with guidance (Natural England, 2018) are therefore considered to be potentially affected. The primary risks to European site qualifying features from air pollution can be summarised as:

- Direct effects arising where atmospheric pollutants are taken up by vegetation, impacting plant health and viability. Assessment of potential effects of atmospheric pollution will consider the relevant 'critical level', expressed as $\mu\text{g}/\text{m}^3$.
- Indirect effects arising where pollutants (notably nitrogen) are deposited at ground level, leading to nutrient enrichment and acidification of soil, with consequent effects on plant communities and their associated fauna. Assessment of potential effects of pollutant deposition will consider the relevant 'critical load', expressed as $\text{kg N}/\text{ha}/\text{yr}$.

4.19 Road traffic has the potential to affect roadside habitats via both atmospheric and deposited pollutants. Vehicle exhaust emissions are a source of NO_x , which may lead to exceedance of critical levels for sensitive vegetation, while nitrogen deposition deriving from exhaust emissions can additionally lead to exceedance of critical loads over short distances.

4.20 It has been determined that the proposed development in isolation is unlikely to be of sufficient scale to generate traffic volumes which could result in perceptible impacts on the European site habitats, through either atmospheric or deposited pollutants. The question, therefore, is whether the proposed development may contribute toward a wider potential effect on the integrity of the designated sites, generated by the growth in the local population using the road network.

4.21 A previous assessment of the potential air quality effects of projected residential growth within Havant and the surrounding Boroughs, in specific regard to the above European sites, is presented by Ricardo Energy & Environment (2019). This ascertained that for all but one qualifying feature (Perennial Vegetation of Stony Banks; PVSB) of one site (Solent Maritime SAC) residential growth would have no adverse effect on site integrity. For the Solent Maritime SAC, it was determined that an impact on PVSB could occur as a result of cumulative exceedance of nitrogen deposition, particularly given the relatively restricted distribution of PVSB making it vulnerable to encroachment from neutrophilic vegetation types. During ground-truthing site surveys carried out in December 2018, it is reported that PVSB was identified in four discrete locations within the areas predicted to exceed the screening thresholds for nitrogen deposition. Each of these locations are adjacent to the

A2030 on the western side (opposing from Hayling Island) of Chichester Harbour. In view of its spatial relationship, it is unlikely that development of the Site would appreciably contribute toward traffic/emission increases in these locations.

- 4.22 However, as acknowledged by Ricardo Energy & Environment (2020), until detailed designs for specific sites come forward the likely transport network requirements for serving new developments is unknown. As such, this application is supported by site-specific modelling of air quality impacts, presented in Chapter 6 of the Environmental Statement. In summary, it was found that significant contributions to nutrient nitrogen deposition and nitrogen derived acid deposition could be widely screened out in respect of the Chichester and Langstone Harbours SPA and Ramsar site, Solent Maritime SAC, and their constituent SSSIs. This was the case for both the proposed development in isolation, and in combination with committed development, as the modelled deposition rates all fall below the 1% environmental benchmark.
- 4.23 A slight exceedance of the 1% threshold is predicted to occur for the annual mean NO_x process contribution as part of the in combination assessment at a location within 3m of Langstone Road, as it crosses over Chichester and Langstone Harbours SPA/Ramsar and Solent Maritime SAC (connecting Hayling Island from the mainland). At this location, however, the habitat is intertidal and regularly inundated with tidal water, with the result that air pollutants are unlikely to be capable of adversely affecting the habitats present. This conclusion is consistent with the findings of Ricardo Energy & Environment (2019).
- 4.24 In light of the foregoing, it can be ascertained that the proposed development, either alone or in combination with other plans or projects, will have no adverse effect on the integrity of the Chichester and Langstone Harbours SPA and Ramsar site, Portsmouth Harbour SPA and Ramsar site or Solent Maritime SAC as a result of air quality impacts.

Eutrophication (foul water discharges)

- 4.25 The Site is within the surface water catchment of the East Solent system, and foul water discharges from the proposed development during occupation will be treated at the Budds Farm WWTW.
- 4.26 The Budds Farm WWTW is located at Langstone, to the south of Havant. Following treatment of wastewater, final effluent is pumped beneath Langstone Harbour to the Eastney pumping station, where under normal conditions it is discharged by Long Sea Outfall (LSO) 5.7km off-shore into the Solent, within the Solent and Dorset Coast SPA (Ricardo Energy & Environment, 2020). In instances where the pumping station is overloaded by the volume of treated wastewater coming from Budds Farm, the WWTW utilises consented outfalls directly into Langstone Harbour. The Harbour falls within the Solent Maritime SAC, the Chichester

and Langstone Harbours SPA and Ramsar site, and supports a coastal lagoon at Farlington Marshes which is part of the Solent and Isle of Wight Lagoons SAC. Langstone Harbour is connected to Portsmouth Harbour SPA and Ramsar site via Ports Creek, and the wider East Solent also supports the Solent and Southampton Water SPA and Ramsar.

- 4.27 As summarised by Natural England (2020) there are high levels of nutrient loading (nitrogen and phosphorus) within the water environment of the East Solent, with evidence that this is causing eutrophication at the aforementioned European sites. Nutrient inputs are currently predominately derived from agricultural sources and residential wastewater. Eutrophication can lead to dense mats of green algae and other effects on the marine ecology of the Solent's protected habitats and bird species. There is evidence that inputs of both phosphorus and nitrogen influence eutrophication of the water environment, however, modelling and evidence suggest that the principal nutrient driving eutrophication in the marine environment is nitrogen (Natural England, 2020).
- 4.28 In light of the evidence of adverse effects on the qualifying features of the various European sites, uncertainty exists over the potential impact of any new development within the Solent catchment which would generate additional wastewater, thereby increasing the volume of treated effluent entering the East Solent system. Natural England have therefore advised the Solent planning authorities, including HBC, that any new overnight accommodation that isn't 'nitrogen neutral' will have a likely significant effect on the European sites.
- 4.29 A nitrogen budget for the proposed development, using the standardised nutrient calculator published by Natural England (Solent_Maritime_V_03_01_3; published May 2024), is provided at Appendix E. For the purposes of the budget calculation it has been assumed that:
- (a) Development proposals will be based on the maximum number of 300 units.
 - (b) 100% of the baseline 11.77ha Site may be attributed to use class 'general cropping' (bean crop at the time of survey in summer 2021 and brassica crop at the time of the 2024 update survey). A small proportion of grassland (<1/3 of the site area) is also present.
 - (c) c. 7.56ha of the proposed development is attributed to 'residential urban land', while the public open space has been divided into c. 3.25ha of 'open urban land' and c. 1.06ha of 'greenspace' (see Proposed Land Use Plan at Appendix E).
- 4.30 The budget demonstrates that in the absence of mitigation the proposal would result in a net increase in Total Nitrogen (TN) entering the water

environment. With development of the maximum number of 300 dwellings discharging foul effluent to the Budds Farm WWTW, which has an EA permit limit of 9.7mg/l TN, it is likely that an additional 218.69kg TN/year would be contributed to the local water environment via foul drainage.

- 4.31 Transferal of the 11.77ha Site from general cropping (with consequent cessation of agrochemical inputs) to urban development would itself result in a saving of 69.62kg TN/year, which would be insufficient to offset the increase from wastewater discharges.
- 4.32 The proposed development, in the absence of mitigation, could ultimately result in a net increase of up to 178.88kg TN/year entering the water environment of the East Solent system. It is important to note that this represents an overestimate, as the effect of SuDS has not been accounted for in the described calculation. While this contribution to nitrogen loading within the environment is in itself unlikely to have an appreciable effect on conservation objectives pertaining to the qualifying features of the Chichester and Langstone Harbours SPA and Ramsar site, Portsmouth Harbour SPA and Ramsar site, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Southampton Water SPA and Ramsar site or Solent and Isle of Wight Lagoons SAC, it may, in the absence of mitigation, act in combination with contributions from wider projected housing growth within the catchment to produce adverse effects on the integrity of these designations.

Mitigation Measures

Recreation pressure

- 4.33 The SDMP ultimately informed the Solent Recreation Mitigation Strategy (SRMS; Bird Aware Solent, 2024) adopted by the Solent authorities, including HBC. The SRMS is fully-supported by Natural England and is considered by them to provide sufficient mitigation to offset the bulk of recreational pressure from new development. The Strategy includes detailed mitigation measures to address the identified impacts arising from recreational disturbance, which include:
- A ranger team.
 - Communications, marketing and education initiatives.
 - Initiatives to encourage responsible dog walking.
 - Codes of conduct.
 - New/enhanced strategic greenspaces.
 - Site-specific visitor management and bird refuge projects.
 - Monitoring.
- 4.34 A financial levy is applied to each new dwelling situated within 5.6km of the Solent SPAs (including Chichester and Langstone Harbour) which is used to fund the mitigation measures. These financial contributions are secured by Policy DM24 of the adopted Local Plan (see Appendix B).

- 4.35 Subject to payment of the applicable financial contribution to the SRMS prior to occupation of the proposed development, which will be used to fund strategic mitigation, it can be concluded that the proposed development will have no adverse effect on the integrity of the Chichester and Langstone Harbours SPA or Ramsar site as a result of impacts associated with recreation pressure.

Loss of supporting habitat

- 4.36 In respect of the Site, identified as a 'Core Area' under the SWBGS, Policy E17 of the withdrawn draft Local Plan required that development proposals will only be permitted where suitable replacement habitat is provided in perpetuity as part of the Hayling Island Brent Goose Refuge (Policy E26), or alternative provision agreed in consultation with the local planning authority which:

- (a) Contributes to a biodiversity net gain to the SWBG network;
- (b) Is of an equal or, where possible, greater size and quality to the Core Area being lost or damaged; and
- (c) Is secured through a costed Habitat Management and Monitoring Plan.

- 4.37 The Policy goes on to state that mitigation/replacement land should be within the locality of, and provided prior to the loss or damage of, the site being proposed for development. The mitigation land should be secured and managed in perpetuity.

- 4.38 This policy was reinforced in the wording of allocation policy H27 itself, which stated that, *"this development is expected to secure the part delivery and implementation of the Hayling Island Brent Goose and Wader Refuge, or alternative provision in perpetuity agreed by the local planning authority as required by E17."*

- 4.39 These more recent, although now withdrawn policies, built upon the pre-existing adopted policy set out at DM23 of the 2014 Allocations Local Plan. This stated that, *"Where a negative impact upon [an important Brent Goose and/or wader 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."*

Brent Goose and Wader Refuge

- 4.40 In accordance with the above principles, the Applicant proposes to establish and fund the in-perpetuity management of a permanent brent goose and wader refuge at land west of West Lane, Hayling Island. At its closest the proposed mitigation land exists c. 1.2km north of the Site.

- 4.41 Baseline habitat conditions at the mitigation land are reported separately (CSA/4956/09). Like the Site, the land is identified as a Core Area under the SWBGS (H48C & H48D), and therefore already functions as supporting habitat for the SPA/Ramsar birds. However, the Council's Biodiversity Strategy (January 2019) draws reference to existing limiting factors to the land's suitability for SPA birds; disturbance during farming operations and by recreational visitors close to its boundary. These are factors which could be addressed through the in-perpetuity funding and implementation of appropriately targeted habitat creation and management.
- 4.42 The field proposed for use as mitigation totals 14.6ha in size, thereby exceeding the policy requirement to provide mitigation for the loss of the 11.77ha Site.
- 4.43 In their consultation response of 23 July 2023, Natural England confirmed that they are *"very supportive of the proposed sites H48C and H48D being secured as a permanent refuge."* However, concerns were raised over whether this provision would be sufficient to fully offset the loss of the Site. Natural England required further information to demonstrate:
- That the mitigation provision will provide an enhancement to the SWBGS network.
 - The potential uplift & enhancement measures that may be implemented at the proposed refuge site, given its existing Core Area status.
 - Certainty as to whether the proposed refuge site can replicate the ecological function of the Site, noting the Site's inland position and associated resilience to climate change.
- 4.44 The Council's Biodiversity Strategy (January 2019) gives further analysis of land parcels H48C and H48D. It is stated that these large arable fields routinely support large numbers of SPA bird species and, due to their adjacent coastal location, are ideally suited to become permanent refuges. The Biodiversity Strategy draws reference to existing limiting factors to the land's suitability for SPA birds; disturbance during farming operations and by recreational visitors along the Hayling Billy Trail along the western boundary.
- 4.45 Full details of the proposed refuge site, including information addressing the points raised by Natural England above, habitat creation, maintenance and monitoring provisions are provided within the Brent Goose Mitigation Strategy (CSA/4956/09).
- 4.46 Subject to the proposed mitigation land being secured in perpetuity and its management funded by the applicant for the specific purpose of supporting wintering brent geese, it can be concluded that the proposed development will have no adverse effect on the integrity of the Chichester and Langstone Harbours SPA and Ramsar Site,

Portsmouth Harbour SPA and Ramsar site and Solent or Southampton Water SPA and Ramsar site as a result of impacts associated with loss of supporting habitat.

Eutrophication (foul water discharges)

- 4.47 It has been determined that the proposed development could, in the absence of mitigation, result in an increased nitrogen load within the marine environment of the East Solent system of c. 178.88kg TN/year, and that in combination with wider projected housing growth, this increase has the potential to contribute toward adverse effects on the integrity of the associated SACs, SPAs and Ramsar sites.
- 4.48 The Havant Borough Council Nutrient Neutrality Position Statement (January 2024) states that all planning applications should include a site-specific nutrient budget with planning permission only granted if a development can demonstrate nutrient neutrality at a minimum.
- 4.49 As has been described above in respect of the loss of supporting habitat, the Applicant is to deliver 14.60ha of mitigation land off-site at land west of West Lane, Hayling Island. With the transferal of the proposed mitigation land from cereal cropping to lowland grazing factored into the nitrogen budget presented at Appendix E, it can be seen that the proposed development will be nitrogen negative (i.e. a betterment upon neutrality) at c. -16.53kg TN/year. It should be noted that Natural England's calculator does not allow lowland grazing to be selected as a New Land Use Type within the Nutrients From Future Land Use tab, therefore that with the closest nutrient export coefficient (residential urban land) has been assigned to the 14.6ha mitigation land. This will affect the overall nutrient budget by <1kg TN/year.
- 4.50 Subject to the implementation of the proposed winter bird refuge, it can be concluded that the proposed development will have no adverse effect on the integrity of the Chichester and Langstone Harbours SPA and Ramsar site, Portsmouth Harbour SPA and Ramsar site, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Southampton Water SPA and Ramsar site or Solent and Isle of Wight Lagoons SAC as a result of eutrophication linked to foul drainage impacts to water quality.

Residual Effects on Site Integrity

- 4.51 With implementation of the proposed measures intended to avoid or reduce adverse effects, it can be concluded that the proposed development will have no adverse effect on the integrity of the Chichester and Langstone Harbours SPA and Ramsar site, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Isle of Wight Lagoons SAC, Portsmouth Harbour SPA and Ramsar site or Solent and Southampton Water SPA and Ramsar site. These measures can be summarised as follows:

- Payment of the applicable financial contribution to the SRMS to fund strategic mitigation to address recreation pressures at the Chichester and Langstone Harbours SPA or Ramsar site.
- Provision of land for the Hayling Island Brent Goose and Wader Refuge, with its management funded in perpetuity for the purpose of supporting wintering brent geese, to mitigate the loss of supporting/functionally linked habitat of the Chichester and Langstone Harbours SPA and Ramsar Site, Portsmouth Harbour SPA and Ramsar site and Solent and Southampton Water SPA and Ramsar site, as well as to offset increases in nutrient loading within the water environment which would otherwise occur as a result of foul water discharges.

4.52 These measures may readily be secured through appropriate legal mechanisms as part of an outline planning permission, therefore the proposed development may be permitted without conflict with the provisions of Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).

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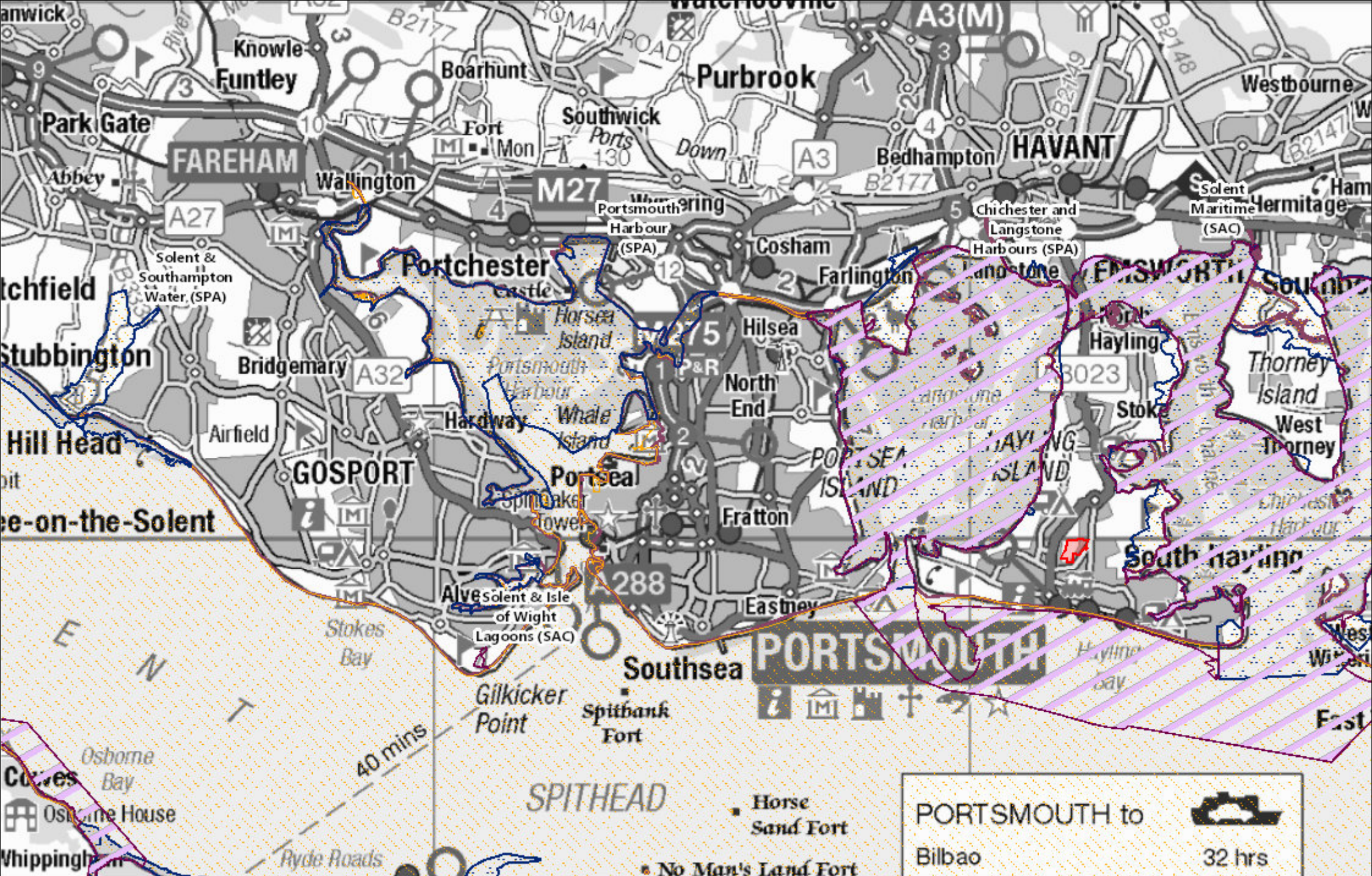
Appendix A

Site Location



Map produced by MAGIC on 26 October, 2021.
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Appendix B

Legislation and Planning Context

European Sites

- 1.1. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), termed 'European sites', collectively form part of a suite of sites known in the UK as the national site network, and are afforded strict protection from the potentially damaging effects of human activities. For ease of reference here, and consistent with their treatment under UK government policy, sites designated by the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971), or 'Ramsar sites', are also referred to here as European sites.
- 1.2. All European sites in England and Wales are afforded protection through the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations are widely referred to as the 'Habitat Regulations'. Regulation 63 of these Regulations states that, "*A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site...(either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.*" This assessment process is commonly referred to as 'Habitats Regulations Assessment' (HRA).
- 1.3. The above Regulations formerly transposed Article 6(3) of Council Directive 92/43/EEC on the 'Conservation of Natural Habitats and of Wild Fauna and Flora', commonly referred to as the 'Habitats Directive'. This Directive is the means by which the European Union meets its obligations under the Bern Convention (1992) on the Conservation of European Wildlife and Natural Habitats. Following the UK's departure from the European Union, the provisions of the Regulations have been retained through enactment of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which came into force on 31 December 2020.

Notable Case Law

- 1.4. Many procedural facets of HRA have been established through case law. In light of Section 6(3) EU (Withdrawal) Act 2018 (as amended), UK courts will continue to be bound by HRA judgments handed down by the Court of Justice for the European Union CJEU prior to 31 December 2020 when interpreting the Conservation of Habitats and Species Regulations 2017 (as amended). A non-exhaustive summary of some of some key judgements is provided below:

In Relation to HRA Screening

Waddenzee (ECJ Case C-127/02; 07.09.04.)

- 1.5. This case considered when Appropriate Assessment might be triggered and concluded that it is required where there is a, "probability or risk," of significant effects, and that, "such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will not have significant effects on the site concerned." The ruling clarifies that, "in case of doubt as to the absence of significant effects such an assessment must be carried out."
- 1.6. The ruling further states that, "in assessing the potential effects of a plan or project, their significance must be established in the light, inter alia, of the characteristics and species environmental conditions of the site concerned by that plan or project." As such, when assessing potential effects the current condition of the features for designation of a European site must be considered. Such information may be provided within, amongst other sources, published Condition Assessments of component Sites of Special Scientific Interest (SSSI's) and Site Improvement Plans (SIPs).

Boggis v Natural England (EWCA Civ 1061; 20.10.09.)

- 1.7. This case built upon guidance for the correct interpretation of what constitutes a 'likely' significant effect from that provided in Waddenzee. It was ruled that, "Notwithstanding the word 'likely'...the precondition before there can be a requirement to carry out an appropriate assessment is not that significant effects are probable, a risk is sufficient..." however this must be, "real, rather than a hypothetical, risk..."

People over Wind (CJEU Case C-323/17, 12.04.2018)

- 1.8. The recent 'People Over Wind' ruling determined whether mitigation measures may be considered when determining if a an effect is 'likely' and therefore whether it should be 'screened-in' for further assessment within the HRA process (i.e. be subject to Appropriate Assessment). Previously it has been established (R (Hart DC) v SSCLG; known as the 'Dilly Lane' decision) that any measures introduced to avoid or mitigate effects on a European sites could be considered in the initial screening stage. However, in the People Over Wind case the CJEU ruled that that such measures not be considered during HRA screening.
- 1.9. Paragraph 40: "...in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

In Relation to Appropriate Assessment

Waddenzee (ECJ Case C-127/02; 07.09.04)

- 1.10. Paragraph 59 of the ruling provides guidance on confidence thresholds in Appropriate Assessment, stating that, "An appropriate assessment of the implications for the site concerned of the plan or project implies that prior to its approval, all the aspects of the plan or project which can...affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the conclusions of the appropriate assessment of the implications of [a project] for the site concerned, in light of the site's conservation objectives, are to authorise such activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects."

National Policy

- 1.11. The term 'European site' used in reference to SACs and SPAs is derived from the above Regulations. The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021) establishes that sites designated by the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971), or 'Ramsar sites', as well as 'potential SPAs' and 'possible SACs', should be given the same protection as European sites.
- 1.12. At paragraph 182, the Framework establishes that the presumption in favour of sustainable development (also known as the 'tilted balance' in planning) does not apply where the plan or project is likely to have a significant effect on a European site, unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the European site.

Local Policy

- 1.13. The adopted 2011 Core Strategy Local Development Plan sets out development management policies relevant to HRA in Havant Borough. These are shown in Table B.1 below. Updated policies are contained in the submission version of the emerging Local Plan, however this was not adopted at the time of writing.
- 1.14. Further guidance for developers is set out within HBC's Position Statement and Mitigation Plan for Nutrient Neutral Development (August 2020).

Table 1. Summary of relevant local planning policies

Policy	Provisions
Core Strategy Local Development Plan (adopted 2011)	
Policy CS11 Protecting and Enhancing the	Planning permission will be granted for development that... Has particular regard to the following hierarchy of

Special Environment and Heritage of Havant Borough	nature conservation designations within the borough (as identified on the Proposals Map): (iii) 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].
Havant Borough Local Plan (Allocations) (adopted 2014)	
Policy DM23 Sites for Brent Geese and Waders	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. 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. 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. 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	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: 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. 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 Council Submitted Local Plan 2036 (submission version - withdrawn)	
Policy E14: The Local Ecological Network	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.
Policy E16: Recreation impact on the Solent European Sites	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. 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.
Policy EX1: Water Quality impact on Solent European Sites	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; 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.
Policy E17: Solent Wader and Brent Goose feeding and roosting Sites	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. Rook Farm (H27) Development proposals at Rook Farm (H27), which is located on a Core Area, will only be permitted where suitable replacement habitat is provided in perpetuity as part of the Hayling Island Brent Goose Refuge (E26), or alternative provision agreed in consultation with the local planning authority which: a. Contributes to a biodiversity net gain to the SWBG network; b. Is of an equal or, where possible, greater size and quality to the Core Area being lost or damaged; and c. Is secured through a costed Habitat Management and Monitoring Plan. Delivery and Management of Replacement Habitat 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. 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.

Appendix C

European Site Characteristics

Table 1. Site Characteristics

Chichester and Langstone Harbours SPA	
Distance and direction from Site	c. 750m east
Size	5810.95
Grid reference	SU761013
Component SSSIs	Chichester Harbour SSSI and Langstone Harbour SSSI
Qualifying features	This site supports breeding little tern <i>Sterna albifrons</i> and sandwich tern <i>Sterna sandicensi</i>; on passage little egret <i>Egretta garzetta</i>; overwintering bar-tailed godwit <i>Limosa lapponica</i> and little egret. The site also supports the migratory species of 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 alpina</i>, grey plover <i>Pluvialis squatarola</i>, redshank <i>Tringa tetanus</i> and ringed plover <i>Charadrius hiaticula</i>. The area also regularly supports an assemblage of at least 20,000 waterfowl.
Published Conservation Objectives	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 and 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 qualifying species rely • The populations of qualifying features, and, • The distribution of qualifying features within the site.
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura 2000 Standard Data Form include fishing and harvesting aquatic resources, outdoor sports and leisure activities, pollution to groundwater, changes in abiotic conditions and changes in biotic conditions.

Table 2. Site Characteristics

Chichester and Langstone Harbours Ramsar site	
Distance and direction from Site	c. 750m east
Size	5810.03
Grid reference	SU761013
Component SSSIs	Chichester Harbour Langstone Harbour
Qualifying features	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 dunes. The site supports internationally important assemblages of waterfowl with peak winter counts of 76480. The site supports internationally important populations of ringed plover <i>Charadrius hiaticula</i>, black-tailed godwit <i>Limosa limosa islandica</i>, common redshank <i>Tringa totanus totanus</i>, dark-bellied brent goose <i>Branta bernicla bernicla</i>, common shelduck <i>Tadorna tadorna</i>, grey plover <i>Pluvialis squatarola</i> and dunlin <i>Calidris alpina alpina</i>.

Published Conservation Objectives	N/A
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Ramsar Information Sheet include erosion, eutrophication, pollution (domestic sewage).

Table 3. Site Characteristics

Solent Maritime SAC	
Distance and direction from Site	c. 860m south-east
Size	11325.09
Grid reference	SU756003
Component SSSIs	Chichester Harbour Langstone Harbour Sinah Common
Qualifying features	Annex I habitats present within the site for which it is primarily selected include estuaries, spartina swards (<i>Spartinion maritimae</i>), Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>). Annex I habitats which are present as a qualifying feature but not the primary reason for selection include 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 <i>Ammophila arenaria</i> ("white dunes"). Annex II species present as a qualifying feature but not the primary reason for selection includes Desmoulin's whorl snail <i>Vertigo moulinsiana</i>.
Published Conservation Objectives	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 Favourable Conservation Status of its Qualifying Features, by maintaining and restoring: • The extent and distribution of qualifying natural habitats and the habitats of the qualifying features • 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.
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura Standard Data Form include fishing and harvesting of aquatic resources, outdoor sports and leisure activities, pollution to groundwater, changes in abiotic conditions and changes in biotic conditions.

Table 4. Site Characteristics

Solent and Dorset Coast SPA	
Distance and direction from Site	c. 900m south
Size	88980.55ha

Grid reference	SZ 7021 9353
Component SSSIs	Numerous, however, those within 10km of the Site are: Sinah Common SSSI Bracklesham Bay SSSI
Qualifying features	The site supports internationally important breeding populations of sandwich tern <i>Sterna sanvicensis</i> , common tern <i>Sterna hirundo</i> and little tern <i>Sternula albifrons</i> .
Published Conservation Objectives	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 and 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
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura Standard Data Form include exploration and extraction of oil or gas; renewable abiotic energy use; shipping lanes, ports, marine constructions; urbanised areas; discharges; fishing and harvesting of aquatic resources; outdoor sports and leisure activities; and military use.

Table 5. Site Characteristics

Solent and Isle of Wight Lagoons SAC	
Distance and direction from Site	c. 5.38km north-west
Size	37.93ha
Grid reference	SZ608977
Component SSSIs	Numerous, however that relevant to the Site is Langstone Harbour SSSI
Qualifying features	Annex I habitats that are the primary reason for selection include coastal lagoons.
Published Conservation Objectives	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
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura Standard Data Form include air pollution, invasive non-native species, human induced changes in hydraulic conditions, interspecific floral relations and changes in abiotic conditions.

Table 6. Site Characteristics

Portsmouth Harbour SPA	
Distance and direction from Site	c. 8km west
Size	1249.6ha
Grid reference	SU61680353
Component SSSIs	Portsmouth Harbour

Qualifying features	This site supports internationally important populations of dark-bellied brent goose <i>Branta bernicla bernicla</i> , dunlin <i>Calidris alpina alpina</i> , black-tailed godwit <i>Limosa limosa islandica</i> and red-breasted merganser <i>Mergus serrator</i> .
Published Conservation Objectives	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.
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura Standard Data Form include fishing and harvesting of aquatic resources, outdoor sports and leisure activities, pollution to groundwater, changes in abiotic conditions and changes in biotic conditions.

Table 7. Site Characteristics

Portsmouth Harbour Ramsar site	
Distance and direction from Site	c. 8km west
Size	1249.6ha
Grid reference	SU61680353
Component SSSIs	Portsmouth Harbour
Qualifying features	Intertidal mudflat areas possess extensive beds of eelgrass <i>Zostera angustifolia</i> and <i>Zostera noltei</i> which support the dark-bellied brent geese populations. The mudsnail <i>Hydrobia ulvae</i> is found at extremely high densities, which helps to support the wading birds of interest of the site. Common cord-grass <i>Spartina anglica</i> dominates large areas of the saltmarsh and there are extensive areas of green algae <i>Enteromorpha</i> spp. and sea lettuce <i>Ulva lactuca</i> . More locally the saltmarsh is dominated by sea purslane <i>Halimione portulacoides</i> which graduates to more varied communities at the higher shore levels. The site includes a number of saline lagoons supporting nationally important species. The site supports internationally important populations of dark-bellied brent goose <i>Branta bernicla bernicla</i> .
Published Conservation Objectives	N/A
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Ramsar Information Sheet include eutrophication, unspecified development and coastal engineering.

Table 8. Site Characteristics

Solent and Southampton Water SPA	
Distance and direction from Site	c. 11.2km south-west
Size	5401.12
Grid reference	SZ33559351
Component SSSIs	Numerous, none within 10km of the Site.

Qualifying features	The site supports internationally important populations of Mediterranean gull <i>Larus melanocephalus</i>, sandwich tern <i>Sterna sandvicensis</i>, common tern <i>Sterna hirundo</i>, little tern <i>Sterna albigula</i>, roseate tern <i>Sterna dougalli</i>, dark-bellied brent geese <i>Branta bernicla bernicla</i>, teal <i>Anas crecca</i>, ringed plover <i>Charadrius hiaticula</i> and black-tailed godwit <i>Limosa limosa islandica</i>. The site is regularly used by over 20,000 waterfowl and over 20,000 waders.
Published Conservation Objectives	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.
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Natura Standard Data Form include fishing and harvesting aquatic resources, outdoor sports and leisure activities, pollution to groundwater, changes in abiotic conditions and changes in biotic conditions.

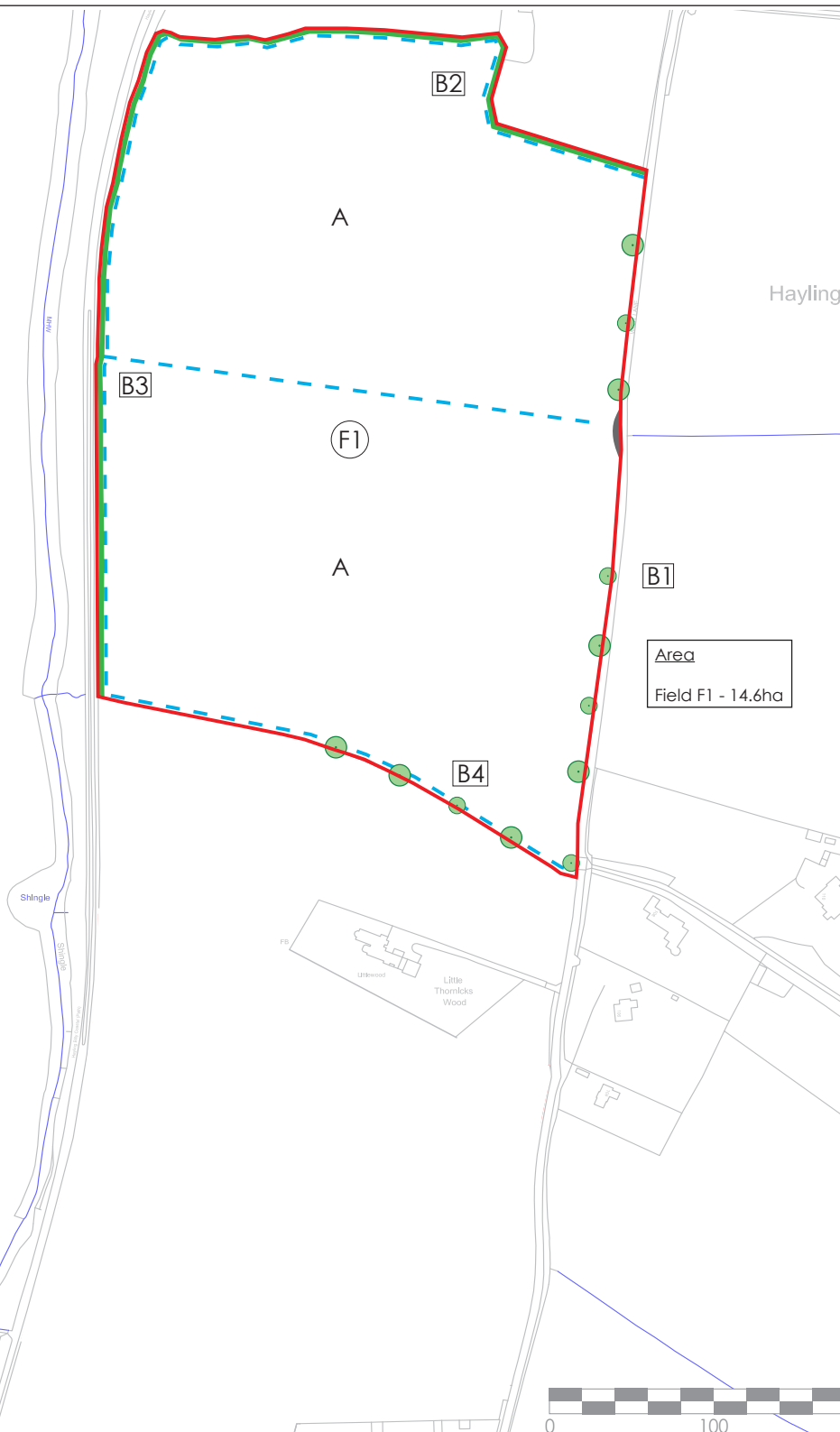
Table 9. Site characteristics

Solent and Southampton Water Ramsar	
Distance and direction from Site	c. 11.2km south-west
Size	5415ha
Grid reference	SZ33559351
Component SSSIs	Numerous, none within 10km of the Site.
Qualifying features	The site is one of the few major sheltered channels between a substantial island mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It included many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs. The site supports an important assemblage of rare plants and invertebrates, including at least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants. The site supports internationally important assemblages of waterfowl, with peak counts of 51,343. Internationally important populations of black-tailed godwit <i>Limosa limosa islandica</i>, dark-bellied brent goose <i>Branta bernicla bernicla</i> and teal <i>Anas crecca</i> are regularly present within the Site.
Published Conservation Objectives	N/A
Known vulnerabilities	Threats, pressures and activities with impacts identified on the Ramsar Information Sheet includes erosion.

Appendix D

Mitigation Land Habitats Plan

(CSA/4956/102)



 Site boundary	 Seasonally wet ditch	 Field ref. number
 Arable	 Tree	 Boundary ref. number
 Boundary vegetation	 Hardstanding	

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Project Rook Farm, Hayling Island

**Drawing
Title** Refuge Habitats Plan

Client Gladman Developments

Drawing No.
CSA/4956/104

Scale
Refer to scale

Date
November 22

Rev
-

Drawn
SV

Checked
MR

Appendix E

Nitrogen Budget and Proposed Land Use Plan

Nutrients from current land use

This sheet contains 2 tables. The tables are separated by a heading, which describes the following table.

following table.

Note: You will need to fill in cells B5 to B8 in the first table 'Current land use information'. You will need to fill in cells A11 to A27, and B11 to B27 in the second table 'Current land uses'. Cells B28 and C11 to C28 are automatically calculated and will state 0.00 unless you enter inputs have been entered. Cells D11 to D27 are automatically calculated and will state 0.00 unless you enter data. The total sum of data in cells C11 to C27, Row 28 is a Total Row. The total sum of data in cells B11 to B27, Row 28 is a Total Row. Row 28 is a Total Row. The total sum of data in cells B11 to B27 in cell B28 and C11 to C27 in cell C28. Cell D28 is intentionally blank.

How to fill in the table "Current land use information"

Cell B6: Choose the soil drainage type associated with the predominant soil type within the development site from the dropdown list.

Cell B7: Choose the annual average rainfall the development will receive from the dropdown list. If the rainfall volume is not on the list, select the nearest value.

How to fill in the table "Current land uses"

Cell A11-A27: Choose the existing (pre-development) land use type(s) from the dropdown list

Cells B11-B27: Enter the area in hectares of each land use type.
The nutrient load from current land uses is shown in cells C11-C27 for total nitrogen (TN).
The total nutrient load from current land uses is shown in cell C28 for TN.

Current land use information

Description of required information	Data entry column - user inputs required
Operational catchment:	East Hampshire Rivers
Soil drainage type:	Naturally wet
Annual average rainfall (mm):	675.1 - 700
Within nitrate vulnerable zone (NVZ):	Yes

Current land uses

Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
General	11.77	193.25	In the absence of real world data, this figure has been generated using the most relevant average nutrient export coefficient.
Cereals	14.60	352.34	In the absence of real world data, this figure has been generated using the most relevant average nutrient export coefficient.
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	26.37	545.59	

Totals:

Final nutrient budgets	
This worksheet contains one table. This table is automatically populated using the outputs from the previous worksheets. Note: You do not need to fill in any cells in the table. Cells B5 to B8 and cell B10 are automatically calculated and will state '0.00' unless the user inputs have been entered to all of the required worksheets. Cells A11 to A14, cell B12 and cell B14 are automatically generated and will state 'Not applicable' depending on the user inputs to the worksheet 'Nutrients_from_wastewater'. Cell B9, B11 and B13 are intentionally blank. This table presents calculations that underpin the final annual nutrient budget for the development site. Up to 3 values for the nutrient budget may be presented in cells B10, B12 and B14 for total nitrogen (TN).	
Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	218.69
Net land use TN change (kg TN/year):	-235.22
TN budget:	-16.53
TN budget + 20% buffer:	-16.53
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.00
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable



- Site boundary
- Greenspace
- Open urban land
- Residential urban land

0 50 100 m



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Project	Land off St Mary's Road, Hayling Island	Date	January 2024	Drawing No.	CSA/4956/111
Drawing Title	Post-Development Land-Use Plan	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	SV	Checked	MR



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