

Land East of Newgate Lane East

REPORT TO INFORM HABITATS REGULATIONS ASSESSMENT
STAGE 1 AND STAGE 2 (INC. NITRATE MITIGATION STATEMENT)

784-B030739

Miller Homes and Bargate Homes Limited

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EXECUTIVE SUMMARY

Contents	Summary
Application site location and description	<p>The site comprises a series of arable fields, bordered by hedgerows, fencing and scattered trees, located in Fareham, Hampshire. The site is centred at OS Grid Reference SU 57430 03563. The fields form part of farmland surrounded by the built-up areas of Fareham to the north, Gosport to the east and south and Stubbington to the west. The newly constructed Newgate Lane East is to the west of the site.</p> <p>The development proposals being assessed are an outline application with all matters reserved except Access for residential development of up to 375 dwellings, access from Newgate Lane East, landscaping and other associated infrastructure works on land east of Newgate Lane East, Fareham, Hampshire.</p>
Scope of this Assessment	<p>The purpose of this report is to assess the pathways to LSE (HRA Stage 1) of the development proposals upon relevant designated Natura 2000 sites, and subsequently assesses whether these would result in an adverse effect on the integrity of these sites (HRA Stage 2).</p> <p>This is a submission to inform the Competent Authority's (Hampshire CC) appropriate assessment for the application.</p>
Results of Stage 1: Screening	<p>The results from the Stage 1 Screening Assessment found three pathways to LSE that required Stage 2: Appropriate Assessment. These were:</p> <ul style="list-style-type: none"> • Loss of functionally linked habitat: Alone and in-combination; • Nutrient outputs during occupation: Alone and in-combination; and • Recreational use during occupation: Alone and in-combination.
Results of Stage 2: Appropriate Assessment	<p>The results from the Stage 2: Appropriate Assessment found there would not be any adverse effect on integrity based on:</p> <ul style="list-style-type: none"> • Loss of functionally linked habitat: On and off-site bird mitigation areas; • Nutrient outputs during occupation: changes in land use result in net loss of nitrogen; and • Recreational use during occupation: payments to mitigation schemes for New Forest and SRMS.
Conclusion	<p>Based on the assessments presented in this report, the 'Competent Authority', is considered not to require further assessment under the Habitats Regulations, and the proposed development can proceed without Stage 3 and Stage 4 being completed.</p>

GLOSSARY

AA	Appropriate Assessment
ALSE	Assessment of Likely Significant Effects
ANRG	Alternative Natural Recreational Greenspace
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CJEU	Court of Justice of the European Union
EC	European Council
Habitats Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HCC	Hampshire County Council
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
IROPI	Imperative Reasons of Over-riding Public Interest
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
RMC	Ready Mixed Concrete
SAC	Special Area of Conservation
SPA	Special Protection Area
ZoI	Zone of Influence

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Miller Homes and Bargate Homes Limited to prepare a report to inform Stage 1: Screening and Stage 2: Appropriate Assessment of a Habitats Regulations Assessment (HRA).

This report has been prepared by Tetra Tech Principal Ecologist Kevin Wood. The conditions pertinent to the report are provided in Appendix A.

1.2 SITE LOCATION

The site comprises a series of arable fields, bordered by hedgerows, fencing and scattered trees, located in Fareham, Hampshire. The site is centred at OS Grid Reference SU 57430 03563. The fields form part of farmland surrounded by the built-up areas of Fareham to the north, Gosport to the east and south and Stubbington to the west. The newly constructed Newgate Lane East is to the west of the site.

1.3 DEVELOPMENT PROPOSALS

The development proposals being assessed are an outline application with all matters reserved except Access for residential development of up to 375 dwellings, access from Newgate Lane East, landscaping and other associated infrastructure works on land east of Newgate Lane East, Fareham, Hampshire.

1.4 REQUIREMENTS FOR THE HRA

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

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

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

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

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

- Special Areas of Conservation (SACs);
- candidate and proposed SACs;
- Special Protection Areas (SPAs);
- potential SPAs;

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

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

For this site, the requirement for HRA is also triggered by Policy 3 in the Hampshire Minerals and Waste Plan (Hampshire County Council, 2013b).

Policy 3: Protection of habitats and species states:

“Protection of habitats and species:

Minerals and waste development should not have a significant adverse effect on, and where possible, should enhance, restore or create designated or important habitats and species. The following sites, habitats and species will be protected in accordance with the level of their relative importance:

- a. internationally designated sites including Special Protection Areas, Special Areas of Conservation, Ramsar sites, any sites identified to counteract adverse effects on internationally designated sites, and European Protected Species;*
- b. nationally designated sites including Sites of Special Scientific Interest and National Nature Reserves, nationally protected species and Ancient Woodland;*
- c. local interest sites including Sites of Importance for Nature Conservation, and Local Nature Reserves;*
- d. habitats and species of principal importance in England;*
- e. habitats and species identified in the UK Biodiversity Action Plan or Hampshire Authorities' Biodiversity Action Plans.*

Development which is likely to have a significant adverse impact upon such sites, habitats and species will only be permitted where it is judged, in proportion to their relative importance, that the merits of the development outweigh any likely environmental damage. Appropriate mitigation and compensation measures will be required where development would cause harm to biodiversity interests.”

2.0 ASSESSMENT METHODOLOGY

2.1.1 ASSESSMENT GUIDANCE

The Habitats Directive and Regulations do not specify how HRA should be undertaken. This assessment has therefore been undertaken in accordance with the process which is recommended within the official European Council (EC) guidance (EC, 2001). In addition, guidance contained within the DTA Publications (2020) 'The Habitats Regulations Assessment Handbook' (online) has also been used.

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

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

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

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

The Habitats Regulations Assessment Handbook (DTA Publications, 2020) confirms that during the Screening Stage, 'If significant effects cannot be excluded on the basis of objective information without extensive investigation, a plan or project should be considered to have a likely significant effect and taken through to an appropriate assessment'.

The Stage 2: AA should identify the effects of those plans or projects on qualifying features of the European sites in relation to the Conservation Objectives of those sites and determine whether these effects will result in an adverse effect on the integrity of the designated site. Only where the decision maker (the Competent Authority – in this case Fareham Borough Council), is satisfied that there will

be no adverse effect on integrity, or where there are imperative reasons of overriding public interest, can the plan or project be approved.

3.0 STAGE 1: SCREENING

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

Additionally, the mobile nature of qualifying species must also be considered. This is because adverse effects on the qualifying species of a site, can occur even if they are not present within the application site. For instance, birds may forage in one area but roost at another, but both may not be within a site for which they are designated.

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

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

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

The Habitats Regulations Assessment for the Fareham Borough Local Plan (Urban Edge Environmental Consulting, 2017) was the primary source used to identify internationally designated sites that may be affected by the proposals. This report screened the following sites, as shown in Figure 2 (the qualifying features of these sites is provided in Appendix C). These comprise:

- Butser Hill SAC (19.71 km);
- Solent and Isle of Wight Lagoons SAC (6.34 km);
- The New Forest Ramsar (13.20 km)
- The New Forest SAC (13.21 km);
- The New Forest SPA (13.21 km);
- Portsmouth Harbour SPA (0.57 km);
- Portsmouth Harbour Ramsar (0.57 km);
- Solent and Southampton Water SPA (2.38 km);
- Solent and Southampton Water Ramsar (2.38 km);
- Chichester and Langstone Harbours SPA (9.24 km);
- Chichester and Langstone Harbours Ramsar (9.23 km);
- River Itchen SAC (16.75 km);
- Solent Maritime SAC (7.23 km); and
- Solent and Dorset Coast SPA (0.55 km).

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

Identifying other plans and projects with the potential to act in-combination with these development proposals was only undertaken where an effect was actually realised. Where no effect was predicted, there is no potential for it to act in-combination. This approach was applied at Stage 1: Screening in the absence of mitigation, or if mitigation was required to achieve no effect, then it was used at Stage 2: Appropriate Assessment.

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

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

- The Habitats Regulations Assessment for the Fareham Borough Local Plan (Urban Edge Environmental Consulting, 2017);
- The designation citation of part of the site as a Low Use Site (F15) and Secondary Support Area (F23) identified in the Solent Waders and Brent Goose Strategy (Solent WBGS, 2019);
- The qualifying features of SACs and SPAs (see Appendix C);
- The conservation objectives for SACs and SPAs;
- The threats to SPAs;
- The Ramsar criteria; and
- Site Improvement Plans for SACs and SPAs.

Following this review the following potential pathways to LSE were considered to be relevant to the development proposals based on the activities during construction and operation activities:

- Loss of functionally linked habitat for SPA qualifying bird species;
- Disturbance of functionally linked habitat for SPA qualifying bird species during construction;
- Air quality changes during occupation primarily from exhaust emissions caused by increases in traffic arising from the development proposals;
- Increased recreational use during occupation use of Solent European designated sites identified in the SWBGS and the New Forest SAC/SPA; and
- Increases in nutrient outputs from changing the occupied use of the site from agricultural use to residential use.

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

This report does not discuss those pathways where there is no potential for them to result in LSE. Therefore, only those where there is a tangible risk of the effect occurring are discussed. For example, there is no hydrological connection between the site any European site (via ditches east and west of the site) therefore there is no consideration of effects from surface water changes.

3.3.1 Loss of Functionally Linked Habitat: Alone and In-combination

The site encompasses two sites identified within the Solent Wader and Brent Goose Strategy (SWBGS) (Solent WBGS, 2019).

The Northern field is F23, a Secondary Support Area of 4.67ha. F23 is designated as a Secondary Support Area due to its Local Value (it does not pass the relevant criteria for GB Importance, SPA Importance or SPA Assemblage). Specifically, across four records for F23 are above the Local Value threshold (3rd quartile) for green sandpiper and greenshank. There are also records of use by lapwing, however these fall below the Local Value threshold.

The remainder of the site includes 9.92ha of F15. F15 is identified as a Low Use Site for supporting at least 13 lapwing during the winter of 2014-15. As detailed in the SWBGS, Low Use Sites are those with the potential to be used by waders or brent geese and provide alternative options and resilience for the network.

As per the strategy, while Low Use sites have records of birds the numbers involved are low enough to ensure there is only a negligible risk of not successfully offsetting the loss of a Low Use site through enhancements of the wider network. Nevertheless, all Low Use sites have the potential to be used by waders and brent geese and the unmitigated loss of these sites would in combination negatively affect the long-term resilience of the network.

Loss of functionally linked habitat: Alone and In-combination has therefore been taken forward to Stage 2: Appropriate Assessment.

3.3.2 Disturbance of Functionally Linked Habitat During Construction: Alone and In-combination

The land immediately to the south (which is also part of F15) is subject to a planning application for a residential development of 99 dwellings allowed on appeal (P/19/1260/OA). This secures suitable mitigation for impacts on functionally linked land and as such there is no potential for disturbance of this part of F15 as a result of this development (as it will be lost). The remainder of F15 is located to the west of Newgate Lane East and is therefore separated from the development site. As such it is unlikely that construction works associated with the development would result in disturbance of F15.

Disturbance of functionally linked habitat during construction: Alone and In-combination has therefore not been taken forward to Stage 2: Appropriate Assessment.

3.3.3 Air Pollution from Traffic Emissions During Operation: Alone and In-combination

An Air Quality Assessment has been undertaken by Tetra Tech (January 2022). This identified one location where there was the potential for air quality effects – Portsmouth Harbour SPA adjacent to Gosport Road. The Air Quality Assessment was based on traffic data and modelling provided by iTransport which included TEMPRO modelling to produce current and future baseline traffic flows. The Air Quality Assessment therefore takes into account the in-combination effect of predicted future growth. The results of the Air Quality Assessment are summarised in Table 2 below.

Table 1 Predicted Annual Average Concentrations of NOx at Ecological Receptor Locations

Ecological Receptor	Critical Load (AQO) ($\mu\text{g}/\text{m}^3$)	Predicted Maximum Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
		Do Minimum 2028 NOx	Do Something 2028 NOx	Process Contribution (PC)	PC as % of AQO	Background
Portsmouth Harbour SPA	30	33.67	33.75	0.09	0.29	25.07

As detailed in the Air Quality Assessment, the maximum predicted increase in the annual average exposure to NOx at any ecological receptor, due to changes in traffic movements associated with the development, is $0.09 \mu\text{g}/\text{m}^3$ at Portsmouth Harbour SPA.

Section 5.5.4.1 of A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites' (IAQM 2020) states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over $0.4 \mu\text{g}/\text{m}^3$) and the NOx

critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_x at the identified ecological receptor, due to changes in traffic movements associated with the development, is 0.09 µg/m³ at Portsmouth Harbour SPA which is below the 0.40 µg/m³ development contribution stated within the IAQM guidance. As a result, the air quality effect can be deemed to be imperceptible, no further assessment is required and the potential for a Likely Significant Effect can be screened out.

Air pollution from traffic emissions during operation: alone and in-combination has therefore not been taken forward to Stage 2: Appropriate Assessment.

3.3.4 Recreational Use During Occupation: Alone and In-combination

The site is within 5.6 km of the Solent and Southampton Water SPA and Ramsar and the Portsmouth Harbour SPA and Ramsar. This means that the impacts arising from the development proposals due to recreational pressure must be mitigated for in accordance with the Solent Recreation Mitigation Strategy (Bird Aware Solent, 2017). This strategy determined that all residential developments within 5.6 km had the potential to result in increased visitor pressure with subsequent disturbance impacts on qualifying bird species.

In addition, recent consultation responses from Natural England have identified that there is potential for adverse effects from recreation to occur upon the New Forest SAC, SPA and Ramsar from all residential developments within 13.8km.

These effects are considered to apply both alone and in-combination. However, due to the proposed mitigation, it is not necessary to specifically identify all projects that could result in an increase in recreational pressure on Solent European designated sites or the New Forest.

Recreational use during occupation: alone and in-combination has therefore been taken forward to Stage 2: Appropriate Assessment.

3.3.5 Nutrient Outputs During Occupation: Alone and In-combination

In June 2018, an Integrated Water Management Study for South Hampshire was published by the Partnership for Urban South Hampshire (PUSH) (2018) has identified that there is uncertainty in some locations as to whether there will be sufficient capacity to accommodate new housing growth, and the potential for adverse effects upon coastal SPAs (including the Solent and Southampton Water SPA) as a result of nitrogen discharge.

Natural England have identified that there is the potential for nutrients arising from increased wastewater from residential development to affect the qualifying features of European designated sites in the Solent (Natural England, 2019).

This effect has been identified as having the potential to promote algae growth that can affect aquatic vegetation and increase turbidity thereby affecting foraging efficacy of fish-eating birds, and the availability of suitable vegetation for species such as dark-bellied brent geese. These effects could ultimately impact all aspects of the functioning of European designated sites in an interconnected manner.

Included within this guidance, Natural England have provided a calculator for establishing the change in nutrient (nitrogen) levels in water arising from the site pre- and post-development. This includes calculating the change in surface water as a result of a change in land use, and from wastewater that is discharged into the Solent with consent from Peel Common Wastewater Treatment Works (WwTW) (and eventually reaches the Solent).

Wastewater from the development proposals will be treated at the Southern Water WwTW at Peel Common, but ultimately water will discharge to the sea and may contribute to background nitrogen levels within the Solent. The development therefore has the potential to result in LSE on Solent SACs, SPAs and Ramsars due to direct and indirect effects of water pollution and therefore this pathway cannot be screened out at Stage 1 and Stage 2 Appropriate Assessment is required.

This is considered to apply both alone and in-combination, but due to the proposed mitigation, it is not necessary to specifically identify all projects within the Solent catchment that could result in an increase in nutrient discharge into the Solent.

Nutrient Outputs During Occupation: Alone and In-combination therefore been taken forward to Stage 2: Appropriate Assessment.

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

The findings of the Stage 1: Screening show that there were two potential pathways to LSE that require appropriate assessment at Stage 2. These are summarised in Table 2.

Table 2 Summary of Stage 1 Screening

Pathways	Site	Relevant Conservation Objectives	Stage 2 required
Loss of functionally linked habitat: Alone and in-combination	Portsmouth Harbour SPA and Ramsar	Maintain or restore the population of each of the qualifying species.	Yes
	Solent and Southampton Water SPA and Ramsar	Maintain or restore the population of each of the qualifying species.	
Disturbance of functionally linked habitat during construction: Alone	Portsmouth Harbour SPA and Ramsar	Maintain or restore the population of each of the qualifying species.	No
	Solent and Southampton Water SPA and Ramsar	Maintain or restore the population of each of the qualifying species.	
Air pollution from traffic emissions during Operation: Alone and In-combination	None identified.	N/A	No
Recreational use during occupation Alone	Portsmouth Harbour SPA and Ramsar	Maintain or restore the population of each of the qualifying species. Maintain or restore the distribution of the qualifying features within the site.	Yes
	Solent and Southampton Water SPA and Ramsar	Maintain or restore the population of each of the qualifying species. Maintain or restore the distribution of the qualifying features within the site.	
	New Forest SAC, SPA and Ramsar	Maintain or restore the population of each of the qualifying species. Maintain or restore the distribution of the qualifying features within the site.	

Pathways	Site	Relevant Conservation Objectives	Stage 2 required
Nutrient outputs during occupation: In-combination	Portsmouth Harbour SPA and Ramsar	Maintain or restore the supporting processes on which the habitats of the qualifying features rely.	Yes
	Solent and Southampton Water SPA and Ramsar	Maintain or restore the supporting processes on which the habitats of the qualifying features rely.	
	Solent Maritime SAC	Maintain or restore the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	
	Solent and Isle of Wight Lagoons SAC	Maintain or restore the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	
	Solent and Dorset Coast SPA	Maintain or restore the supporting processes on which the habitats of the qualifying features rely.	

The findings of the Stage 1: Screening show there are not predicted to be any potential pathways to LSE that could result in impacts on the following sites identified in Step 2 (Section 3.2).

- Butser Hill SAC;
- River Itchen SAC;
- Chichester and Langstone Harbours SPA;
- Chichester and Langstone Harbours Ramsar.

4.0 STAGE 2: APPROPRIATE ASSESSMENT

4.1.1 Loss of Functionally Linked Habitat: Alone and In-combination

The proposed development will result in the loss of 4.67 ha of F23 (Secondary Support Site) and 9.92 ha of F15 (Low Use Site). To mitigate the loss of this functionally linked habitat, a combination of off-site and on-site habitat creation is proposed.

Typically, mitigation for the loss of Low Use Sites is through the payment of a financial contribution of £35,610 which is secured via Section 106 agreement to enhance, manage and monitor the wider Solent Wader and Brent Goose Network. This funding is to be managed by the respective local authority and used to support schemes across the network, including in neighbouring authorities. Due to the lack of an established strategy within Fareham Borough, Natural England require further information to demonstrate a clear link between impact and mitigation, i.e. detail of how the financial contribution would be used to enhance the wider network.

To mitigate the partial loss of F15, it is proposed that a Winter Bird Mitigation Area measuring 5.0 ha is created at Old Street, Stubbington which will enhance the wader and Brent Goose network. A Winter Bird Mitigation Strategy setting out the background, rationale and proposed management of the Mitigation Area is included at Appendix D. This mitigation strategy has been approved as part of the Appeal allowed at Newgate Lane East (APP/A1720/W/21/3269030). Originally, it was agreed with Natural England that the proposed mitigation area was capable of mitigating the loss of F15 associated with three sites (Newgate Lane East, Land at Newgate Lane (South) and Land at Newgate Lane (North), totalling 11.84 ha. Following the unsuccessful appeals at the latter two sites, it is now proposed that the strategy is secured to mitigate the loss of F15 for Newgate Lane East and the Proposed Development (totalling 13.8 ha).

Since the above appeal was allowed, Fareham Borough Council (Fareham Borough Council, 2021a) have adopted a Solent Waders and Brent Geese Mitigation Solution. Although this does not identify specific mitigation projects, it does identify four cluster areas within the Borough where mitigation should be located. The proposed mitigation area at Stubbington is within the same cluster area as the proposed development site (Meon Valley and Fareham/Stubbington/Gosport Farmland) and therefore accords with this approach.

To mitigate the loss of F23, it is proposed that an on-site Winter Bird Mitigation Area is also created. This will be located at the western extent of the site (a field compartment which is currently part of F15). It is considered that an on-site area is more appropriate given that the value of F23 is in the habitat it provides for birds associated with Portsmouth Harbour. A Winter Bird Mitigation Strategy setting out the proposed management of the on-site Mitigation Area is included at Appendix E.

Although the proposed approach to mitigation, does result in a reduction in total area, it does provide a significant increase in habitat quality (ensuring suitable habitat every year as opposed to only when suitable crops are planted) and security in-perpetuity. The status of the two areas impacted (F15 and F23) must also be taken into account. As detailed in the SWBGS, Low Use Sites are those with the potential to be used by waders or Brent Geese and provide alternative options and resilience for the network. As per the strategy, while Low Use Sites have records of birds the numbers involved are low enough to ensure there is only a negligible risk of not successfully offsetting the loss of a Low Use Site through enhancements of the wider network. Nevertheless, all Low Use Sites have the potential to be used by waders and Brent Geese and the unmitigated loss of these sites would in combination negatively affect the long term resilience of the network. Although F23 is identified as a Secondary Support Area, this is only due to its local value for Greenshank and Green Sandpiper. Neither species is a qualifying feature of Portsmouth Harbour SPA, nor is the overwintering bird assemblage a qualifying feature (in the manner of the Solent and Southampton Water SPA). Therefore, the loss of F23 would

not result in an adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar. The numbers recorded at F23 would not meet the thresholds for Local Value when measured against the criteria for the Solent and Southampton Water SPA. Therefore, the effect on this SPA is comparable to the loss of a Low Use Site.

With the application of these two mitigation strategies, there is predicted to be no adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar or the Solent and Southampton Water SPA/Ramsar.

4.1.2 Recreational Use During Occupation: Alone and In-combination

The proposed development is for 375 dwellings. To mitigate alone and in-combination effects on Portsmouth Harbour SPA/Ramsar and the Solent and Southampton Water SPA/Ramsar a per-unit financial contribution will be made in accordance with the latest charging schedule for the Solent Recreation Mitigation Strategy (Bird Aware Solent, 2017).

In relation to the New Forest SAC/SPA/Ramsar, Fareham Borough Council have adopted an interim mitigation strategy (Fareham Borough Council, 2021b) which includes a series of projects to improve and manage open spaces within the Borough to deflect visits from the New Forest. It is proposed that a contribution of £247.05 per dwelling is made in accordance with the interim strategy.

Both sets of financial contributions will be secured by legal agreement.

With the application of this mitigation, there is predicted to be no adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar, Solent and Southampton Water SPA/Ramsar or the New Forest SAC/SPA/Ramsar.

4.1.3 Nutrient Outputs During Occupation: Alone and In-combination

A nutrient calculation has been undertaken using Version 5 of Natural England's Advice on Achieving Nutrient Neutrality for New Development in the Solent Region (Natural England, 2020) for calculating nitrogen budgets. The assumptions used in this assessment are as follows:

- 110 litres of waste water will be generated per person per day;
- Wastewater will be treated at Peel Common WwTW;
- Peel Common has a discharge consent limit of 9 mg/l TN;
- The scheme comprises a maximum of 375 dwellings;
- The post-development site will comprise 13.54 ha of urban land and 6.40 ha of open space;
- An occupancy rate of 2.4 people per dwelling as per Natural England guidance; and
- The pre-development site comprises 13.83 ha of cereals (31.20 Kg/TN/ha/yr), 4.65 ha of lowland grazing (13.00 Kg/TN/ha/yr), and 1.46 ha of urban (14.6 Kg/TN/ha/yr).

For the pre-development agricultural land uses, these represent the dominant land use for the past 10 years (minimum). The urban areas comprise Newgate Lane East and other road infrastructure (including soft estate) which lie within the red line. All areas are taken from the Biodiversity Net Gain Assessment (Tetra Tech 2022b) which includes area calculations and pre and post-development plans.

The full calculations are provided in Appendix D (Land at Newgate Lane, North) and are summarised in Table 3.

Table 2 Summary of nutrient input calculations (Land at Newgate Lane, North)

Option	Current Land Use TN Load (A)	Waste water from Future Land Use TN Load (B)	Future Land Use TN Load (C)	Change (B+C-A)
375 units	512.824 Kg/TN/yr	220.424 Kg/TN/yr	225.622 Kg/TN/yr	-66.779 Kg/TN/yr

This shows that the proposed development will result in a net decrease in Total Nitrogen.

As the combined changes in land use will result in a net decrease in Total Nitrogen output, there is no potential for an adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar, Solent and Southampton Water SPA/Ramsar, Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC or Solent and Dorset Coast SPA alone or in-combination.

5.0 SUMMARY

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

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

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FIGURES

Figure 1 – Site Location Plan

Figure 2 – Location of European Designated Sites Screened into this assessment



Site Location Plan

Newgate Lane, Fareham



Miller Homes and Bargate Homes

Legend

SiteBoundary

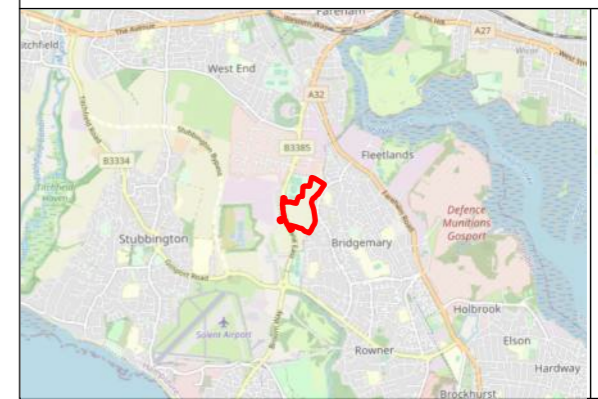
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 Checked by: DW
 Office: Southampton

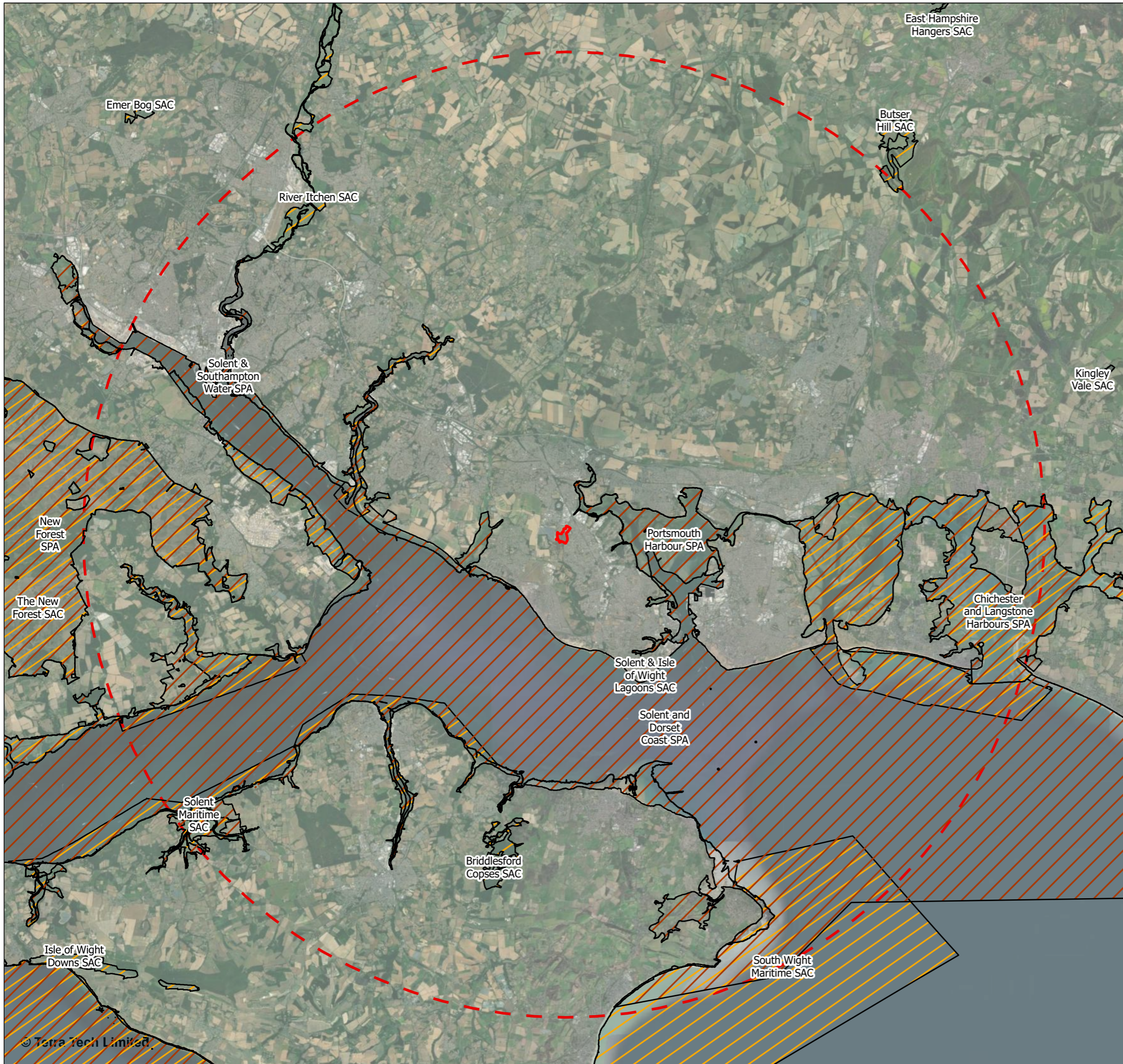
Figure No. 1
 Revision No. A

0 50 100 150 Meters 27 January 2022
 Scale 1:3,000 @A3 NGR: 457451E 103666N

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Designated Sites

Newgate Lane, Fareham

Miller Homes and Bargate Homes



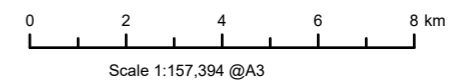
Legend

-  Site Boundary
-  Site Boundary 20km Buffer
-  Special Protection Areas (SPA)
-  Special Areas of Conservation (SAC)

Notes:

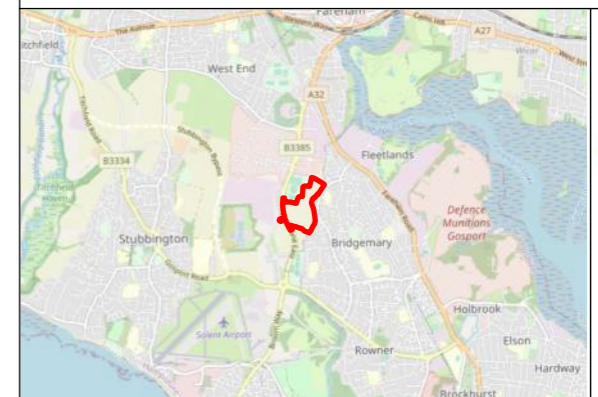
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 Office: Southampton

Figure No. 4
 Revision No. A



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APPENDIX A – REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections’. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

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

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

APPENDIX B – QUALIFYING FEATURES OF EUROPEAN SITES SCREENED INTO THIS ASSESSMENT

Butser Hill SAC (JNCC, 2015a)

Annex I habitats that are a primary reason for selection of this site

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

Solent and Isle of Wight Lagoons SAC (JNCC, 2015b)

Annex I habitats that are a primary reason for selection of this site

- Coastal lagoons

The New Forest Ramsar (JNCC, 1993)

There are three Ramsar criteria for which the Dorset Heathlands Ramsar is designated.

Ramsar criterion 1

Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their type in Britain.

Ramsar criterion 2

The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate.

Ramsar criterion 3

The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scarce wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.

The New Forest SAC (JNCC, 2015c)

Annex I habitats that are a primary reason for selection of this site

- **3110** Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae);
- **3130** Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea;
- **4010** Northern Atlantic wet heaths with *Erica tetralix*;
- **4030** European dry heaths;
- **6410** Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae);
- **7150** Depressions on peat substrates of the Rhynchosporion;
- **9120** Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion);
- **9130** Asperulo-Fagetum beech forests;
- **9190** Old acidophilous oak woods with *Quercus robur* on sandy plains;
- **91D0** Bog woodland; and
- **91E0** Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae).

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- **7140** Transition mires and quaking bogs
- **7230** Alkaline fens

Annex II species that are primary reasons for selection of this site

- **1044** Southern damselfly (*Coenagrion mercurial*); and
- **1083** Stag beetle (*Lucanus cervus*).

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

- **1166** Great crested newt (GCN) (*Triturus cristatus*)

The New Forest SPA (JNCC, 2001a)

Annex I species present during the breeding season that are qualifying species for selection of this site

- Dartford warbler *Sylvia undata*, 538 pairs representing at least 33.6% of the breeding population in Great Britain;
- Honey buzzard *Pernis apivorus*, two pairs representing at least 10.0% of the breeding population in Great Britain;
- Nightjar *Caprimulgus europaeus*, 300 pairs representing at least 8.8% of the breeding population in Great Britain; and
- Woodlark *Lullula arborea*, 184 pairs representing at least 12.3% of the breeding population in Great Britain (Count as at 1997).

Annex I species present during the over-wintering season that is a qualifying species for selection of this site:

- Hen harrier *Circus cyaneus*, 15 individuals representing at least 2.0% of the wintering population in Great Britain.

Portsmouth Harbour SPA (JNCC, 2001b)

Over winter

Dark-bellied Brent Goose *Branta bernicla bernicla*, 2,847 individuals representing at least 0.9% of the wintering Western Siberia/Western Europe population (5-year peak mean 1991/2 - 1995/6).

Portsmouth Harbour Ramsar (JNCC, 1995)

Ramsar Criterion 3

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

Ramsar Criterion 6

Dark-bellied brent goose, *Branta bernicla bernicla*, 2105 individuals, representing an average of 2.1% of the GB population (5-year peak mean 1998/9-2002/3).

Solent and Southampton Water SPA (JNCC, 2001c)

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

- During the breeding season;
 - Common tern (*Sterna hirundo*), 267 pairs representing at least 2.2% of the breeding population in Great Britain (5-year peak mean, 1993-1997);
 - Little tern (*Sterna albifrons*), 49 pairs representing at least 2.0% of the breeding population in Great Britain (5-year peak mean, 1993-1997);
 - Mediterranean gull (*Larus melanocephalus*), 2 pairs representing at least 20.0% of the breeding population in Great Britain (5-year peak mean, 1994-1998);
 - Roseate tern (*Sterna dougallii*), 2 pairs representing at least 3.3% of the breeding population in Great Britain (5-year peak mean, 1993-1997); and
 - Sandwich tern (*Sterna sandvicensis*), 231 pairs representing at least 1.7% of the breeding population in Great Britain (5-year peak mean, 1993-1997).

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

- Over winter;
 - Black-tailed godwit (*Limosa limosa islandica*), 1,125 individuals representing at least 1.6% of the wintering Iceland - breeding population (5-year peak mean, 1992/3-1996/7);
 - Dark-bellied brent goose (*Branta bernicla bernicla*), 7,506 individuals representing at least 2.5% of the wintering Western Siberia/Western Europe population (5-year peak mean, 1992/3-1996/7);
 - Ringed plover (*Charadrius hiaticula*), 552 individuals representing at least 1.1% of the wintering Europe/Northern Africa - wintering population (5-year peak mean, 1992/3-1996/7); and
 - Teal (*Anas crecca*), 4,400 individuals representing at least 1.1% of the wintering Northwestern Europe population (5-year peak mean, 1992/3-1996/7).

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

Over winter, the area regularly supports 53,948 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: gadwall (*Anas strepera*), teal, ringed plover, black-tailed godwit, little grebe (*Tachybaptus ruficollis*), great crested grebe (*Podiceps cristatus*), cormorant (*Phalacrocorax carbo*), dark-bellied brent goose, wigeon (*Anas penelope*), redshank (*Tringa tetanus*), pintail (*Anas acuta*), shoveler (*Anas clypeata*), red-breasted merganser (*Mergus serrator*), grey plover (*Pluvialis squatarola*), lapwing (*Vanellus vanellus*), dunlin (*Calidris alpina alpina*), curlew (*Numenius arquata*) and shelduck (*Tadorna tadorna*).

Solent and Southampton Water Ramsar (JNCC, 1998)

Ramsar Criterion 1

The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes 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.

Ramsar Criterion 2

The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.

Ramsar Criterion 5

Assemblages of international importance:

- Species with peak counts in winter: 51343 waterfowl (5-year peak mean 1998/99-2002/2003).

Ramsar Criterion 6

Species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

- Species with peak counts in spring/autumn:
 - Ringed plover, Europe/Northwest Africa, 397 individuals, representing an average of 1.2% of the GB population (5-year peak mean 1998/9-2002/3).
- Species with peak counts in winter:
 - Dark-bellied brent goose, 6456 individuals, representing an average of 3% of the population (5-year peak mean 1998/9-2002/3);
 - Eurasian teal, NW Europe, 5514 individuals, representing an average of 1.3% of the population (5-year peak mean 1998/9-2002/3); and
 - Black-tailed godwit, Iceland/W Europe, 1240 individuals, representing an average of 3.5% of the population (5-year peak)

Chichester and Langstone Harbours SPA (JNCC, 2001d)

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

During the breeding season;

Little Tern *Sterna albifrons*, 100 pairs representing up to 4.2% of the breeding population in Great Britain (5-year mean, 1992-1996)

Sandwich Tern *Sterna sandvicensis*, 158 pairs representing up to 1.1% of the breeding population in Great Britain (1998)

On passage;

Little Egret *Egretta garzetta*, 137 individuals representing up to 17.1% of the population in Great Britain (Count as at 1998)

Over winter;

Bar-tailed Godwit *Limosa lapponica*, 1,692 individuals representing up to 3.2% of the wintering population in Great Britain (5-year peak mean 1991/2 - 1995/6)

Little Egret *Egretta garzetta*, 100 individuals representing up to 20.0% of the wintering population in Great Britain (Count as at 1998).

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

On passage;

Ringed Plover *Charadrius hiaticula*, 2,471 individuals representing up to 4.9% of the Europe/Northern Africa - wintering population (5-year peak mean 1991/2 - 1995/6)

Over winter;

Black-tailed Godwit *Limosa limosa islandica*, 1,003 individuals representing up to 1.4% of the wintering Iceland - breeding population (5-year peak mean 1991/2 - 1995/6)

Dark-bellied Brent Goose *Branta bernicla bernicla*, 17,119 individuals representing up to 5.7% of the wintering Western Siberia/Western Europe population (5-year peak mean 1991/2 - 1995/6)

Dunlin *Calidris alpina alpina*, 44,294 individuals representing up to 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5-year peak mean 1991/2 - 1995/6)

Grey Plover *Pluvialis squatarola*, 3,825 individuals representing up to 2.5% of the wintering Eastern Atlantic - wintering population (5-year peak mean 1991/2 - 1995/6)

Redshank *Tringa totanus*, 1,788 individuals representing up to 1.2% of the wintering Eastern Atlantic - wintering population (5-year peak mean 1991/2 - 1995/6)

Ringed Plover *Charadrius hiaticula*, 846 individuals representing up to 1.7% of the wintering Europe/Northern Africa - wintering population (5-year peak mean 1991/2 - 1995/6)

Assemblage qualification: A wetland of international importance.

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

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

Chichester and Langstone Harbours Ramsar (JNCC, 1987)

Ramsar criterion 5

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

Ramsar criterion 6

Species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:

- Ringed plover *Charadrius hiaticula*, Europe / Northwest Africa 853 individuals, representing an average of 1.1% of the population (5-year peak mean 1998/9- 2002/3)
- Black-tailed godwit *Limosa limosa islandica*, Iceland/W Europe 906 individuals, representing an average of 2.5% of the population (5-year peak mean 1998/9- 2002/3)
- Common redshank *Tringa totanus totanus*, 2577 individuals, representing an average of 1% of the population (5-year peak mean 1998/9- 2002/3)

Species with peak counts in winter:

- Dark-bellied brent goose *Branta bernicla bernicla*, 12987 individuals, representing an average of 6% of the population (5-year peak mean 1998/9- 2002/3)
- Common shelduck *Tadorna tadorna*, NW Europe 1468 individuals, representing an average of 1.8% of the GB population (5-year peak mean 1998/9-2002/3)

- Grey plover, E Atlantic/W Africa -wintering 3043 individuals, representing an average of 1.2% of *Pluvialis squatarola* the population (5-year peak mean 1998/9-2002/3)
- Dunlin *Calidris alpina alpina*, W Siberia/W Europe 33436 individuals, representing an average of 2.5% of the population (5-year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species regularly supported during the breeding season:

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

River Itchen SAC (JNCC, 2015d)

Annex I habitats present that are a primary reason for selection of this site

- **3260** Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation.

Annex II species that are primary reasons for selection of this site

- **1044** Southern damselfly (*Coenagrion mercuriale*); and
- **1163** Bullhead (*Cottus gobio*).

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

- **1092** White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*;
- **1096** Brook lamprey *Lampetra planeri*;
- **1106** Atlantic salmon *Salmo salar*; and
- **1355** Otter *Lutra lutra*.

Solent Maritime SAC (JNCC, 2015e)

Annex I habitats that are a primary reason for selection of this site

- **1130** Estuaries
- **1320** *Spartina* swards (*Spartinion maritimae*)
- **1330** Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- 1110 Sandbanks which are slightly covered by sea water all the time
- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1150 Coastal lagoons * Priority feature
- 1210 Annual vegetation of drift lines
- 1220 Perennial vegetation of stony banks
- 1310 *Salicornia* and other annuals colonizing mud and sand
- 2120 "Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")"

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

- 1016 Desmoulin's whorl snail *Vertigo moulinsiana*

Solent and Dorset Coast SPA (Natural England, 2016)

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

- Common tern *Sterna hirundo*
- Sandwich tern *Thalasseus sandvicensis*
- Little tern *Sternula albifrons*

APPENDIX C – NUTRIENT BALANCING CALCULATIONS

Table 4: Calculating Total Nitrogen (TN) Load From Development Wastewater (Stage 1)

Step	Measurement	Value	Unit	Explanation
Development proposal.	Development types that would increase the population served by a wastewater system.	375.000	Residential dwellings	Number of dwellings.
1	Additional population.	900.000	Persons	Uses an average household size of 2.4 x number of dwellings.
2	Wastewater volume generated by development.	99000.000	L/day	Persons x 110 litres/day. Where relevant, deduct wastewater volume of population displaced by the proposed development.
3	Waste Water Treatment Works (WWTW) environmental limit for TN.	9.000	mg/l TN	Peel Common WwTW limit.
4	Deduct acceptable TN loading (@ 2 mg/l TN).	6.100	mg/l TN	90% of environmental limit. – 2 mg/l in accordance with NE guidance
5	TN discharged after WWTW.	603900.000	mg/TN/day	Step 2 x Step 4
6	Convert mg/TN to kg/TN per day.	0.604	Kg/TN/day	Divide by 1,000,000.
7	Convert kg/TN per day to kg/TN per year.	220.424	Kg/TN/yr	x365 days.
TN Load Wastewater 220.424 Kg/TN/yr				

Table 5: Calculating TN Load From Current Land use (Stage 2)

Step	Measurement	Farm type	Value	Unit	Explanation
1	Total area of existing land	Cereals	13.83	ha	Area of land lost to development
		Lowland Grazing	4.65		
		Urban	1.46		
2	Nitrate loss.	Cereals	31.200	Kg/ha/yr	The existing land uses
		Lowland Grazing	13.000		
		Urban	14.6		
3	Multiply total area by farm type nitrate loss	Cereals	431.50	Kg/TN/yr	Area x nitrate loss
		Lowland Grazing	60.45		
		Urban	20.88		
TN Load – Current land use 512.824 Kg/TN/yr					

Table 6: Calculating TN Load From Future Land Uses (Stage 3)

Step	Measurement	Value	Unit	Explanation
1	Future urban land	13.540	ha	Area of development that will change from agricultural land to urban land use
2	Total nitrogen load from future urban area	193.622	Kg/TN/yr	Area (ha) x 14.3 Kg/TN/yr (nitrogen leaching from urban land each year)
3	New SANG / open space	6.400	ha	Area of development that will change from agricultural land to SANG / open space
4	TN load from SANG / open space	32.000	Kg/TN/yr	Area (ha) x 5 (nitrogen leaching from SANG / open space each year)
5	Combine TN load from future land uses	225.622	Kg/TN/yr	-
TN Load – Future land use 225.622 Kg/TN/yr				

Table 7: Calculating Net Change in TN from The Development (Stage 4)

Step	Measurement	Value	Unit	Explanation
1	Identify TN loads from wastewater	220.424	Kg/TN/yr	(Stage 1)
2	Calculate TN from land use - subtract TN load from future land uses (Stage 3) from existing land uses (Stage 2)	287.202	Kg/TN/yr	(Stage 2 - Stage 3)
3	Determine nitrogen budget - the difference between the TN load for the proposed development and the existing uses	-66.779	Kg/TN/yr	(Step 1 - Step 2)
4	Calculate and include 20% buffer (does not apply to neutral projects)	N/A	N/A	N/A
TN Budget -66.779 Kg/TN/yr				

APPENDIX D – OFF-SITE WINTER BIRD MITIGATION

Site:	Old Street, Stubbington
Client:	Fareham Land LLP and Bargate Homes
Job Number:	A117387
Survey Type(s):	Winter Bird Mitigation Strategy
File Location:	I:\Projects\Projects A117000 on\A117387 Land West of Newgate Lane\Reports

1.0 Introduction

WYG were commissioned by Fareham Land LLP and Bargate Homes to prepare a Winter Bird Mitigation Strategy, covering the proposed creation of a Winter Bird Mitigation area at Old Street, Stubbington. The purpose of this is to provide compensation for the partial loss of F15, a Low Use site within the Solent Wader and Brent Goose strategy which has been used historically by lapwing *Vanellus*.

The ownership and long-term management and monitoring of the Winter Bird Mitigation Area as shown in Figure 1, will be secured via legal agreement in perpetuity (defined as 125 years) or the lifetime of the associated developments (whichever is longer).

1.1 Site Location

The site is located on land to the west of Old Street in the village Stubbington, Hampshire and is centred at Ordnance Survey National Grid Reference: SU 54133 02880. The survey area, hereafter referred to as 'the site', is shown on Figure 1 and comprises of two fields; the northern field is horse-grazed with semi-improved grassland, and the southern field is an abandoned arable field with tall ruderal vegetation and grassland, also grazed. Both fields have borders that are partially lined with trees and hedgerows.

1.2 Development Proposals

The proposals are to create a Winter Bird Mitigation Area measuring 5.0 ha maintained in perpetuity, to compensate for the loss of 11.84 ha of F15 across the proposed developments at Newgate Lane East, Land at Newgate Lane (South) and Land at Newgate Lane (North). Following these three developments, there would be 13.26 ha of F15 remaining.

2.0 Baseline

The site was subject to a series of ecological surveys and assessments as part of a proposed planning application (and subsequent appeal which was dismissed) in 2018 (ref: P/17/1451/OA). These were undertaken by Hampshire Ecological Services (HES) and WYG and comprise:

- Land west of Old Street, Stubbington: Ecological Appraisal Report (HES, 2017)
- Land west of Old Street, Stubbington: Wintering Bird Survey Report (HES, 2017)
- Land west of Old Street, Stubbington: Breeding Bird Survey Report (HES, 2017)
- Old Street, Stubbington: Bat Activity Report (WYG, 2017)
- Old Street, Stubbington: Bat Tree Assessment Report (WYG, 2017)
- Old Street, Stubbington: Dormouse Presence / Likely Absence Report (WYG, 2017)

Winter Bird Mitigation Strategy



- Old Street, Stubbington: Reptile Presence / Likely Absence Report (WYG, 2017)

A summary of the ecological baseline is given in Table 1.

Table 1: Survey completed and month conducted

Survey Type	Month Survey Conducted	Summary of Results
Ecological Appraisal	13 th April 2016	<p>The site consisted of two agricultural fields separated by hedgerows and a track (Marsh Lane). The northern field comprised horse-grazed semi-improved grassland while the southern field was arable land. The northern boundary of the site were agricultural fields; the eastern and southern boundaries were residential housing; and the western boundary was Titchfield Haven National Nature Reserve (NNR).</p> <p>The Ecological Appraisal also identified an active badger sett consisting of 9 holes at the western site boundary of the southern field.</p>
Wintering Bird Survey	Ten wintering bird survey visits were carried out between the 22 nd December 2015 and 30 th March 2016.	<p>A total of 34 bird species were recorded during the surveys within the site. Six amber list Birds of Conservation Concern, one of which (bullfinch) is also a UK BAP species were noted. The remaining amber list species are black-headed gull, common gull, dunnock, great black-backed gull and stock dove. eight red listed species were noted, of which five were UK BAP species (herring gull, house sparrow, lapwing, song thrush and starling). Other red list species include fieldfare, mistle thrush and redwing.</p> <p>The majority of the species recorded at the site were typical of farmland and improved grassland habitat. No significant numbers of wintering birds were recorded during the surveys and all species occurring on site are either common or fairly common within Hampshire and the surrounding area.</p>
Breeding Bird Survey	Five breeding bird survey visits were carried out between 26 th April and 24 th June 2016.	<p>A total of 37 bird species were recorded during the surveys within the site. Three amber list species (Dunnock, Reed Bunting and Stock Dove) and seven red list species (Cuckoo, House Sparrow, Lapwing, Linnets, Mistle Thrush, Skylark and Starling) were thought to likely be breeding on site. However, no birds were confirmed to be breeding on site during the surveys.</p>



		<p>One Schedule 1 species was recorded (Cetti's Warbler) during the surveys. The species was noted along the western boundary hedgerow.</p> <p>The majority of the species present are typical of semi-improved grassland and farmland habitat.</p> <p>No significant numbers of notable species were recorded during the surveys.</p>
Bat Activity Surveys	Activity surveys were conducted on the following days - 12 th July, 31 st August 4 th October 2017.	At least six, but up to 7 species of bat were recorded using the habitats across the site during the surveys. The site was considered to be of importance of up to <i>District, local or parish level</i> for foraging and commuting bats.
Bat Tree Assessment	11 th September 2017	All trees present within the site boundaries were assessed as providing negligible or low suitability to support roosting bats.
Dormouse Presence / Likely Absence	27 th July, 16 th August, 8 th September and 6 th October 2017.	During the survey conducted on 6 th October, a dormouse and dormouse nest was recorded within a nest tube located within the northern hedgerow boundary of the northern field.
Reptile Presence/ Likely Absence Survey	8 ^h September – 26 th September 2017	A low population of slow worms, grass snake and common lizard were recorded on-site, distributed around the boundaries of the southern field.

An updated site visit on 28th October 2020 confirmed that there had been no significant change in the site conditions since the surveys undertaken in 2017. The northern field remains horse grazed. The southern field remains a partially overgrown arable field which is not subject to grazing by horses. Therefore it is considered that there will be no significant change to the populations of notable and protected species identified on site and, taking into account the proposals for the site, these conclusions remain valid for the purposes of assessing potential impacts.

3.0 Proposed Mitigation

The purpose of the mitigation is to compensate for the loss of loss of 11.84 ha of Low Use Site (F15) identified in the Solent Wader and Brent Goose Strategy (SWBGS) (Solent WBGS, 2019). The SWBGS identifies a network of sites which lie outside the coastal European sites but which support the functionality and integrity of these sites (for example through providing high-tide foraging habitat). F15 is identified as a Low Use Site for supporting at least 13 lapwing during winter of 2014-15. It is part of the network of functionally linked habitat for the Solent and Southampton Water Special Protection Area (SPA) and Ramsar Site which is designated for supporting populations of European importance of breeding terns and overwintering waterfowl. As detailed in the SWBGS, Low Use Sites are those with the potential to be used by waders or brent geese and provide alternative options and resilience for the network.



As per the strategy, while Low Use sites have records of birds the numbers involved are low enough to ensure there is only a negligible risk of not successfully offsetting the loss of a Low Use site through enhancements of the wider network. Nevertheless, all Low Use sites have the potential to be used by waders and brent geese and the unmitigated loss of these sites would in combination negatively affect the long term resilience of the network.

Typically, mitigation for the loss of Low Use Sites is through the payment of a financial contribution of £35,610 which is secured via Section 106 agreement to enhance, manage and monitor the wider Solent Wader and Brent Goose Network. This funding is to be managed by the respective local authority and used to support schemes across the network, including in neighbouring authorities. Due to the lack of an established strategy within Fareham Borough, Natural England have requested further information to demonstrate a clear link between impact and mitigation, i.e. detail of how the financial contribution would be used to enhance the wider network.

This strategy sets out the creation and management of a Winter Bird Mitigation Area which will enhance the wader and brent goose network, and provide a buffer to Titchfield Haven NNR (part of the Solent and Southampton Water SPA).

3.1 Objectives

Based on the findings of the previously undertaken bird surveys, and the impact of the associated developments, objectives are:

- To create suitable foraging habitat for overwintering waders (in particular) lapwing; and
- To provide secondary biodiversity benefits such as for breeding farmland birds including lapwing.

3.2 Site Selection

Following the surveys in 2016 and 2017, it was concluded that the site had negligible importance for wintering birds (substantiated by the fact it is not currently included within the wader and brent goose network), therefore the provision of habitat in this location would constitute enhancement of the wader and brent goose network.

The proposed mitigation area will measure 5.0 ha and is larger than many existing Low Use sites within the wader and brent goose network in Fareham Borough. For example, F06, F12, F17J, F23, F29, F32, F48J, F79, F80 and F81 all measure less than 5.0 ha and are similarly bounded by mature tree and hedgerow margins.

The location of the mitigation area is appropriate, lying immediately adjacent to the SPA. Furthermore, two lapwing were recorded on site in March 2016 within the proposed mitigation area during surveys in support of application P/17/1451/OA (Hampshire Ecological Services, 2017). This gives high confidence that with the provision of suitable habitat the mitigation area will be used.



3.3 Management Principles

According to Sheldon *et al.* (2004)¹ a study of lapwing found 50% of birds and flocks during winter were found on crops, stubble and bare tillage, compared to 25% on pasture. Primarily foraging takes place at night for earthworms, with a resulting need for clear foraging areas. However, according to Edwards and Bohlen (1996)², on average permanent pasture supports the highest earthworm density, with lower densities in winter cereals. It is theorised by Gillings (2003)³ that foraging density may therefore be higher in arable cropped fields because a greater foraging effort is required. Taking this together with other potential environmental effects (in particular the need to minimise impacts from nitrogen outputs from the land), is proposed that the mitigation area is managed primarily as permanent pasture.

Lapwing require areas of bare ground or short vegetation from mid-March to June and will nest in grassland. There is also the potential for the grassland area to be used by other SPA qualifying species such as dark-bellied brent geese *Branta bernicla bernicla*.

Therefore, the mitigation area will be established with a grass mix of hard-wearing grasses suitable for grazing geese (including perennial rye grass *Lolium perenne*) with a high proportion of white clover *Trifolium repens*. The addition of clover into the mix will remove any need for artificial fertiliser as clover acts to fix nitrogen within the soil, and also helps to support a rich invertebrate biomass. Grassland will be managed through twice-yearly cuts with the final cut in September to make sure of a suitably short sward for winter foraging.

A 6m uncultivated margin will be maintained around the periphery of the grassland areas. This will provide potential nesting and foraging habitat for birds during summer, and provide habitat for invertebrates and reptiles (recorded on site). The provision of this margin will also avoid potential damage or disturbance of boundary woodland and hedgerow habitats which are known to support reptiles, hazel dormice, bats and badgers.

3.4 Impacts to On-Site Biodiversity

As set out in Section 2, the site predominately supports semi-improved grassland and arable habitats with non-significant populations of wintering and breeding birds, foraging and commuting activity by up to six species of bat, presence of hazel dormice within site boundary hedgerows and a low population of reptiles. It is predicted that the proposed management will result in a qualitative gain for on-site biodiversity as discussed in Table 2.

¹ Sheldon, R., Bolton, M., Gillings, S. and Wilson, A. (2004), Conservation management of Lapwing *Vanellus* on lowland arable farmland in the UK. *Ibis*, **146**: 41-49.

² Edwards, C.A. & Bohlen, P.J. (1996). *Biology and Ecology of Earthworms*, 3rd edn. London: Chapman & Hall.

³ Gillings, S. (2003). Diurnal and nocturnal ecology of Golden Plovers *Pluvialis apricaria* and Lapwings *Vanellus vanellus* wintering on arable farmland. PhD Thesis, University of East Anglia, Norwich.

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Table 2: Impacts to On-site Biodiversity

Feature	Impact	Rationale
Wintering Birds	Beneficial	The primary aim of the proposals is to create overwintering foraging habitat for wading birds (in particular lapwing). In addition to waders, the provision of short pasture, scrapes and uncultivated margins will provide foraging opportunities for other farmland birds.
Breeding Birds	Beneficial	The majority of the potential breeding birds identified were associated with boundary features which will be unaffected by the proposals. In addition the proposed grassland will provide potential habitat for ground nesting birds, although it is acknowledged that the mature tree boundaries may limit uptake. The uncultivated margins will provide foraging habitat for a wide range of farmland species in the form of seeds and invertebrates.
Bats	Beneficial	It is anticipated that the proposals, in particular the provision of uncultivated (but managed) field margins will increase the availability of invertebrate prey for bats.
Badger	Neutral	A badger sett is present at the western boundary of the site. The provision of a 6m uncultivated margin will avoid damage to the sett during management operations. Badgers currently forage within the southern field and the provision of uncultivated margins will maintain suitable foraging habitat (in addition to the managed fields).
Hazel dormice	Neutral	The provision of a 6m uncultivated margin will protect hazel dormouse habitat from damage or disturbance during management operations.
Reptiles	Beneficial	The provision of a 6m uncultivated field margin (which will be managed) will increase habitat suitability for reptiles by providing habitat variation for refuge, basking and foraging.

Consideration has also been given to quantitative biodiversity gain using the Biodiversity Metric 2.0. Pre and post-development habitats have been quantified in accordance with the Biodiversity Metric 2.0 Calculation Tool and Technical Supplement⁴.

⁴ Natural England, (2019). The Biodiversity Metric 2.0 auditing and accounting for biodiversity Technical Supplement Beta Edition



The proposals will result in the loss of 1.39 ha of grassland (modified grassland) from the northern field and 3.14 ha of cropland (cereal crops other) from the southern field. Modified grassland is the UKHab equivalent to poor semi-improved grassland (as assessed in the Ecological Appraisal). Cereal crops other has been selected to represent the southern field which is former arable land which has not been recently cultivated (and is now grazed). This is considered appropriate as all cropland habitats (with the exception of those managed specifically for wildlife such as under a stewardship scheme, or traditional orchards) are assigned low distinctiveness. Alternatively, the field could be assessed as sparsely vegetated land (ruderal/ephemeral), however this too is of low distinctiveness.

In accordance with the Technical Supplement, both habitats are assigned a condition score of 1 (poor) with no condition assessment required. Both also score 1 for connectivity (due to low distinctiveness) and 1 for strategic significance.

These habitats therefore have a value of 9.06 biodiversity units, all of which will be lost.

The proposals will result in the creation of 3.82 ha of grassland (modified grassland) and 0.71 ha of cropland (arable field margins tussocky). Modified grassland is low and the margins medium distinctiveness and in accordance with the Technical Supplement, both habitats are assigned a condition score of 1 (poor) with no condition assessment required. Both also score 1 for connectivity (due to low distinctiveness), 1 for strategic significance, 0.965 for time to target condition (1 year) and 1 for difficulty of creation.

This results in a post-development value of 10.11 biodiversity units, a gain of 1.05 units or 11.62%.

4.0 Management Actions

There will be three sets of management actions, covering the central grassland, wader scrapes and management of uncultivated margins. It should be noted that specific timings for operations such as sowing and cutting will be subject to weather and growing conditions. These areas are shown in Figure 1.

It is important that the management regime is adaptive to account for future changes in the feature bird populations, climate change etc. Therefore, either in response to external data or monitoring results, the management body is permitted to make alterations to the management actions if agreed by the LPA and Natural England.

4.1 Grassland

The fields within the mitigation area will be flailed to ground-level to remove existing vegetation and dead growth. This will be using a tractor-mounted flail. These areas will then be prepared for seeding using a disc harrow to a maximum of 150 mm depth to prevent fertile soil being moved below root depth. If necessary, a chain harrow will be used to remove arisings from flailing and prevent smothering of seedlings (this will also help seed-to-soil contact).

The seed mix to be sown will be a suitable grazing mix dominated by hard-wearing grasses (e.g. perennial rye grass *Lolium perenne*) and a minimum of 10% white clover *Trifolium repens*. Seeding will take place by broadcast at a density of approximately 18 kg/ha. Seed should be sown within 10 mm of the soil surface. Due to the inclusion of a high density of white clover in the seed mix, it is not considered necessary to include artificial fertiliser application.



Following sowing, the seed bed will be rolled. This will improve seed-to-soil contact, moisture retention and will minimise establishment of pest species.

Every 10 years, the grassland will be supplemented if necessary by additional overseeding using the same seed mix. Overseeding will be preceded by a light harrow, or chain harrow, to prepare the seedbed without causing significant damage to the established grassland. This will refresh the seed bank and make sure that perennial rye grass and white clover remain the dominant species within the sward.

Management will predominately be through cutting for hay or silage. This will comprise a first cut in late July / August (following majority of breeding bird activity) and a second cut in late September (to achieve a winter sward height of 50-60mm). Alternatively, low-intensity grazing could be conducted.

4.2 Wader Scrapes

To improve the habitat suitability for other wading birds (either qualifying species for the SPA or part of the qualifying assemblage) three wader scrapes will be created within the mitigation area. These will be of irregular shape with an average area of 50m². To create a range of conditions and support different species the scrapes will be of variable depth with shallow margins and a deeper centre of 0.5m depth. Water supply for the scrapes will come from rainfall and surface water runoff.

The primary objective is to hold perched water during the winter, but it is anticipated that deeper areas will also hold water for part of the summer and provide an enhancement for breeding birds. The deeper central section of the scrape will occupy approximately 50% of the total area to maximise the likelihood of water retention. Scrapes will be created using an excavator with arisings piled adjacent to the margins to improve water retention and provide bare ground areas suitable for invertebrates.

Locations of scrapes will be chosen by the developers ecologist by observing ground conditions during winter monitoring surveys, but will be located close to the north western boundary of the site where levels are lower. The developers ecologist will then supervise the scrape construction. If necessary following observations of water perching, the scrapes will be constructed with a compacted clay liner to aid water retention.

Scrape banks will be strimmed to ground level every three years in late September / early October to prevent scrub or ruderal species from becoming established.

During this clearance period scrapes will also be inspected for silt build-up and to make sure they still hold water. If necessary, additional excavation will be undertaken to remove material. Additional lining material will be added if necessary to aid water retention.

4.3 Margins

Margins of 6m width will be maintained around the periphery of the grassed areas. These will be maintained in accordance with RSPB stewardship guidance for rough grass margins.

After Year 1, margins will be cut no more than once every five years in autumn. To maintain habitat variation, cuts of the margins in the northern and southern fields will be separated by one year.

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The 3m of the margin adjacent to the grassed areas will be cut annually in autumn to maintain diversity within each area for invertebrates and reptiles.

Spraying or fertilising must be avoided within the margins to avoid dominance of undesirable species such as thistles and docks.

4.4 Monitoring

Long-term monitoring is proposed which is proportionate to the impact (partial loss of a Low Use site) and takes into account the negligible risk of not successfully offsetting the loss of a Low Use site through enhancements of the wider network (per the Solent Wader and Brent Goose Strategy).

It is proposed that long-term monitoring is undertaken using remote camera surveys. These will take place annually for Years 1 – 5 followed by every 10 years from Years 10 to 120. Two cameras will be deployed for a period of five days each month from October to March, one in the north of the mitigation area and one in the south. Cameras will be set to take photographs at 30 minute intervals. These will subsequently be checked by an ornithologist to confirm the presence or absence of SPA qualifying bird species. Results will be reported to the Owner and LPA.

This will be supplemented by monitoring of the implementation of the above management operations. This will comprise annual site visits during winter in Years 1-10 followed by visits every 5 years from Years 10 – 120 to monitor compliance.

Results will be reported to the Owner and LPA. Should remote camera monitoring determine that corrective action is required, this will be undertaken and a further period of manual monitoring may be required to monitor its effectiveness. This will be agreed with the LPA.

Timing of Actions

Table 4 sets out the timing of on-site management and monitoring operations.

Table 4: Timing of operations

Timing	Operation	Year
Mid-February / Mid-March	Prepare seedbed (plough or harrow to 120-200mm).	Year 1
	Broadcast sow ryegrass and clover ley (c. 18kg/ha).	Year 1
	Overseed ryegrass and clover ley (c. 18kg/ha) if necessary.	Years 10, 20 etc.
	Consolidate seed bed via rolling if required.	Year 1 then years 10, 20 etc.
	Create wader scrapes	Year 1
Late July / August	Cut grassland to 150 mm in height.	Annually
	Introduce grazing at low density if required.	

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Late September	Cut grassland to 60 mm in height.	Annually.
Late September	Cut 3m of margin adjacent to grassland to 150 mm in height.	Annually
Late September	Cut entire northern field margin to 150 mm in height.	Years 5, 10, 15 etc.
Late September	Cut entire southern field margin to 150 mm in height.	Years 6, 11, 16 etc.
Late September / Early October	Strim banks of wader scrapes for scrub encroachment. Inspect sediment build-up and remove if necessary.	Years 3, 6, 9 etc.
October to March	Site visit to monitor compliance.	Years 1-10 then 15, 20, 25 etc.
October to March	Remote camera monitoring (5 days per month).	Years 1-5 then 10, 20, 30 etc.

Quality Control

Version:

1

FINAL

Prepared by:

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Version:	Date:	Updated by:	Verified by:	Description of changes:
2	November 20	J. Simper	D. West	Altered long-term management from arable to grassland following discussions with Natural England.
3	November 20	J. Simper	D. West	Extended monitoring period to be consistent with legal agreement.
4	February 21	J. Simper	D. West	Updated maintenance frequency.
5	February 21	J. Simper	D. West	Remove references to crops/arable in management proposals.

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Figure 1: Winter Bird Mitigation Plan